

FLORIDA

Freight Mobility and Trade Plan



Policy Element

June 2013





Florida Freight Mobility and Trade Plan Policy Element

June 2013

Page Intentionally Left Blank



Table of Contents

Chapter 1: Introduction	1-1
Setting the Stage	1-1
Florida's Prior Freight Initiatives	1-3
Legislative Foundation and Freight Initiatives	1-3
Freight Mobility and Trade Plan	1-5
Report Organization	1-6
Chapter 2: Florida's Freight System	2-1
Freight Overview	2-1
Cargo Dimension of Florida's Freight System	2-1
Economic Dimension of Florida's Freight System	2-2
Geographic Dimension of Florida's Freight System	2-3
Supply Chain Dimension of Florida's Freight System	2-4
Modal Dimension of Florida's Freight System	2-5
Geographic and Modal Elements of Florida's Freight System	2-7
Truck	2-7
Rail	2-14
Seaports	2-19
Intermodal Logistic Centers (ILCs)	2-27
Airports	2-28
Spaceports	2-32
Pipelines	2-35
Current and Future Demands on Florida's Freight System	2-38
Florida's Population and Tourism Trends	2-38
Linking Florida's Population and Freight Movement	2-39
Key Markets and Top Commodities	2-40
Forecasted Growth and Modal Choice	2-43
Industry Composition	2-46
Linking Freight and the Economy	2-49
Summary of What the Trends Imply	2-51
Chapter 3: Identifying Key Freight Issues – What Florida Faces	3-1
The FMTP Process and Collaborative Approach	3-1
Regional Listening Forums	3-3
Florida Freight Leadership Forum	3-6

Business Forum I: Scenario Planning	3-8
Business Forum II: Plan Development	3-10
Webinar	3-11
Business Forum III: Plan Review	3-11
Future Opportunities for Input and Partnerships.....	3-11
Future Workforce Needs.....	3-12
Florida Freight Document Review	3-13
Summary of Key Freight Issues Identified	3-13
Chapter 4: Addressing the Challenges – Policy Directions.....	4-1
Review of the 2060 Florida Transportation Plan.....	4-1
FTP Goal: Invest in transportation systems to support a prosperous, globally competitive economy	4-1
FTP Goal: Make transportation decisions to support and enhance livable communities	4-1
FTP Goal: Make transportation decisions to promote responsible environmental stewardship	4-2
FTP Goal: Provide a safe and secure transportation system for all users	4-2
FTP Goal: Maintain and operate Florida’s transportation system proactively.....	4-2
FTP Goal: Improve mobility and connectivity for people and freight.....	4-2
Legally Required Issues	4-2
House Bill 599.....	4-3
Moving Ahead for Progress in the 21 st Century Act (MAP-21).....	4-4
Florida Freight Mobility and Trade Plan.....	4-5
Governor Scott’s Policy Agenda.....	4-5
Freight Mobility and Trade Plan Policy Directives	4-5
Consistency with 2060 FTP Goals.....	4-10
Consistency with MAP-21.....	4-11
Consistency with Florida Chamber of Commerce Six Pillars	4-13
Consistency with Department of Economic Opportunity Strategic Plan for Economic Development.....	4-14
Other Existing State Policy Plans.....	4-15
Other Florida Freight Plans.....	4-16
Chapter 5: Next Steps – The Investment Element	5-1
Background.....	5-1
Needs Identification	5-2
Project Prioritization	5-3

Evaluation of Consistency with Objectives and Strategies.....5-4

Return on Investment5-6

Specific FDOT Policy Actions (The Implementation Plan)5-6

Appendices.....

List of Figures

FIGURE 1: CASH FLOW OF THE HIGHWAY ACCOUNT OF THE HIGHWAY TRUST FUND	1-2
FIGURE 2: DIMENSIONS OF FLORIDA’S FREIGHT SYSTEM	2-1
FIGURE 3: FLORIDA MOVES FREIGHT	2-2
FIGURE 4: TOTAL FREIGHT FLOWS BY MODE, 2009 (MILLIONS OF TONS)	2-6
FIGURE 5: FLORIDA’S SIS AND EMERGING SIS HIGHWAYS AND CONNECTORS	2-8
FIGURE 6: MAJOR FLOWS BY TRUCK TO, FROM, AND WITHIN FLORIDA 2007	2-10
FIGURE 7: HEAVILY CONGESTED CORRIDORS 2012, 2022, AND 2035	2-11
FIGURE 8: STATEWIDE SIS BOTTLENECKS	2-12
FIGURE 9: DISTRIBUTION CENTERS IN FLORIDA	2-14
FIGURE 10: FLORIDA RAIL NETWORK	2-17
FIGURE 11: FLORIDA SEAPORTS	2-20
FIGURE 12: INVESTMENT IN FLORIDA SEAPORTS	2-24
FIGURE 13: FLORIDA AIRPORTS	2-29
FIGURE 14: FLORIDA AIRPORTS WITH SCHEDULED AIR CARGO SERVICE	2-30
FIGURE 15: FLORIDA SPACEPORTS	2-33
FIGURE 16: SPACE FACILITIES	2-34
FIGURE 17: FLORIDA PIPELINES	2-36
FIGURE 18: CNG AND LNG FUEL STATIONS	2-37
FIGURE 19: FLORIDA’S POPULATION 1980-2040	2-39
FIGURE 20: FLORIDA’S VISITORS 1980-2011	2-40
FIGURE 21: 2011 FLORIDA TOTAL FREIGHT FLOWS	2-42
FIGURE 22: COMMODITY FLOW (WEIGHT AND VALUE) TRENDS FROM 2011 TO 2040	2-44
FIGURE 23: CHANGES IN EMPLOYMENT BY OCCUPATION, FLORIDA, 2000-2010, PERCENT	2-48
FIGURE 24: FLORIDA’S FUTURE GLOBAL TRADE	2-49
FIGURE 25: FLORIDA MOBILITY AND TRADE PLAN PROCESS PLAN WITH EXECUTION DATES	3-1
FIGURE 26: COLLABORATIVE APPROACH TO BUILDING THE FMTP	3-2
FIGURE 27: REGIONAL LISTENING SESSION INVITATION/POSTER	3-4
FIGURE 28: DIFFERENT METHODS OF LONG-RANGE PLANNING	3-8
FIGURE 29: TIMELINE OF KEY EVENTS	4-3
FIGURE 30: SIX PILLARS OF THE FLORIDA CHAMBER OF COMMERCE	4-4

List of Tables

TABLE 1: MODES OF FREIGHT MOVEMENT	2-6
TABLE 2: FLORIDA FREIGHT RAILROADS 2013	2-16
TABLE 3: FLORIDA RAILROAD PRINCIPAL YARDS	2-18
TABLE 4: FLORIDA RAILROAD MULTIMODAL TERMINALS.....	2-18
TABLE 5: FLORIDA’S IMPORT AND EXPORT PERCENTAGES (BY VALUE) 2003 TO 2012	2-23
TABLE 6: THREE-YEAR COMPARISON OF CONTAINER TEUS HANDLED BY FLORIDA’S SEAPORTS	2-25
TABLE 7: WATERBORNE CARGO TYPES HANDLED BY FLORIDA’S SEAPORTS (BY TONNAGE).....	2-25
TABLE 8: REVENUE CRUISE PASSENGERS AT FLORIDA’S SEAPORTS	2-26
TABLE 9: FLORIDA INCOME, POPULATION, AND HOUSING TRENDS	2-40
TABLE 10: FLORIDA’S TOP 5 MERCHANDISE EXPORTS	2-41
TABLE 11: FLORIDA’S TOP 5 MERCHANDISE IMPORTS.....	2-41
TABLE 12: FLORIDA’S TOP 5 MERCHANDISE EXPORT DESTINATIONS	2-41
TABLE 13: FLORIDA’S TOP 5 MERCHANDISE IMPORT ORIGINS	2-41
TABLE 14: COMMODITY FLOW INTO AND OUT OF FLORIDA.....	2-43
TABLE 15: TONNAGE BY MODE (2011 TO 2040)	2-44
TABLE 16: VALUE BY MODE (2011 TO 2040) (MILLIONS OF 2007 DOLLARS)	2-45
TABLE 17: EXPORTS VIA FLORIDA PORTS (RANKED BY 2040 FLORIDA EXPORTS WEIGHT AND VALUE).....	2-46
TABLE 18: INDUSTRY EMPLOYMENT BY SECTOR, 2011, U.S. AND FLORIDA	2-47
TABLE 19: COMPARISON OF THE 2060 FTP GOALS AND FMTP OBJECTIVES.....	4-10
TABLE 20: COMPARISON OF THE NATIONAL FREIGHT POLICY GOALS AND FMTP OBJECTIVES.....	4-12
TABLE 21: COMPARISON OF THE FLORIDA CHAMBER OF COMMERCE SIX PILLARS AND FMTP OBJECTIVES	4-13
TABLE 22: COMPARISON OF THE STRATEGIC PLAN FOR ECONOMIC DEVELOPMENT AND FMTP OBJECTIVES	4-15
TABLE 23: 2060 FTP GOALS AND SIT MEASURES	5-4

Page Intentionally Left Blank

Chapter 1: Introduction

Florida is a freight mobility and international trade state. Freight, or the movement of goods and commodities, affects the state's economy and quality of life for all Floridians. From the movement of citrus products to the home delivery of Internet-ordered items, the safe and efficient movement of goods and commodities moves Florida. Freight movement is the economy in motion. Several conditions exist that underline the prominent role of freight in the Sunshine State:

- **First**, as the fourth most populous state in the U.S., Florida consumes a significant amount of goods and commodities. These goods and commodities reach the consumer via many transportation modes, including truck, rail, ship, barge, aircraft, and pipeline, and by various means.
- **Second**, Florida has major agricultural and mining industries which supply many markets, as well as diverse manufacturing and distribution industries and significant tourism.
- **Third**, Florida is strategically positioned geographically as a regional gateway and corridor, and as a national gateway to the Western Hemisphere and other international points.
- **Fourth**, in Florida all freight transportation modes -- trucking, rail, water, air, and pipeline and even space -- play critical roles in moving goods and commodities.

From a freight perspective, Florida has it all—that's the good news. The danger is that Florida moves a significant amount of freight, and must keep up with the growing demand. If the supply chain is not efficient, reliable, safe, secure, and cost-effective, then private sector industries cannot continue to be competitive. ***The challenge for Florida is to continue to improve and expand transportation infrastructure and to set policies and regulations that allow the private sector markets to flourish.***



Setting the Stage

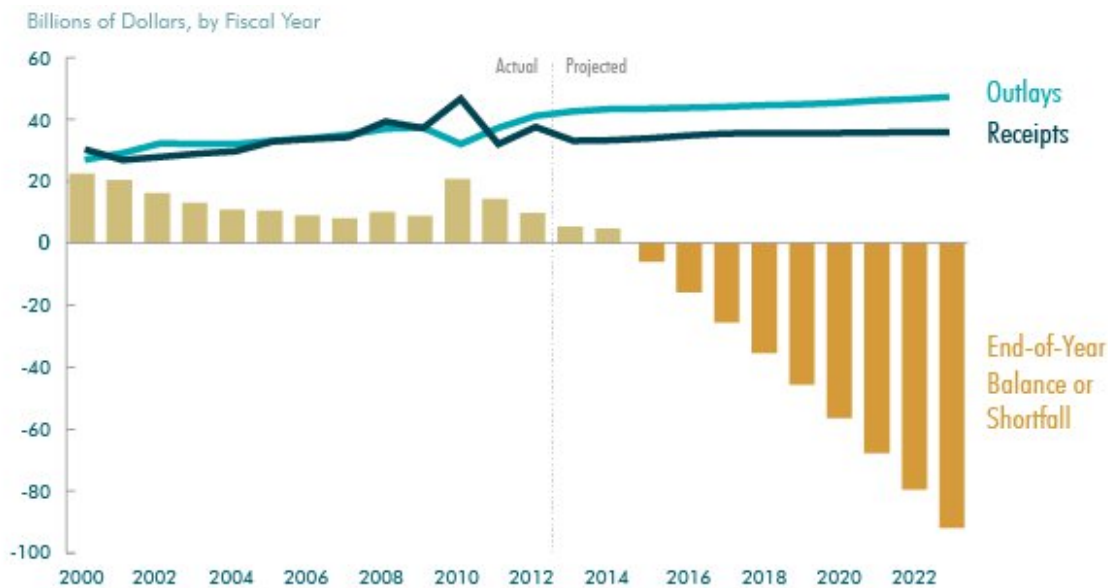
The United States is the most consumer-driven market in the world, and Florida is characteristic of the high demand for goods, commodities, and services. Americans and Floridians expect and demand a high standard of living, and freight movement is a critical element in fulfilling this robust demand. Florida's demographics also have a keen effect on consumer demand. In 2013, Florida's permanent population is approximately 19.5 million, which is double the state's population in 1980. Moreover Florida is an international destination¹; each day tourism adds another 1.4 million people to the total with their own mobility and consumption needs. This growth puts a tremendous strain on the transportation infrastructure, as roadway capacity has increased at a much lesser rate in the same timeframe. Over roughly the same time period, Florida's state roadway lane miles increased by 32%. While this increase in

¹ In 2011, 15% of Florida's annual visitors came from Canada or Overseas, www.floridatransportationindicators.org

roadway capacity is much higher than the national average of less than 5%, it has not kept pace with population growth and the increased volume of cars and trucks. In turn, congestion has worsened. Congestion results in longer driving times, increased safety risks, and decreased air quality. Further, this drives increased transportation costs and reduced reliability in timely pick-up and delivery of products. The bottom line is that increased logistics costs are passed on to consumers, and the increased business costs and transportation inefficiency degrade Florida's ability to compete in the regional, national, and global marketplaces. ***To achieve maximum value, businesses must get the right product, to the right place, at the right time, to the right person, for the right price, to fill the right need.***

While there is increased visibility on freight mobility in Florida and across the U.S., funding has not risen to match the interest of local, state, and national decision-makers. Rather, funding has failed to keep pace with inflation and the shift to fuel-efficient or alternative fuel vehicle technology. This has forced most states to focus on preservation and maintenance of the system rather than on improvements needed to keep pace with growth, as shown in **Figure 1**.

Figure 1: Cash Flow of the Highway Account of the Highway Trust Fund



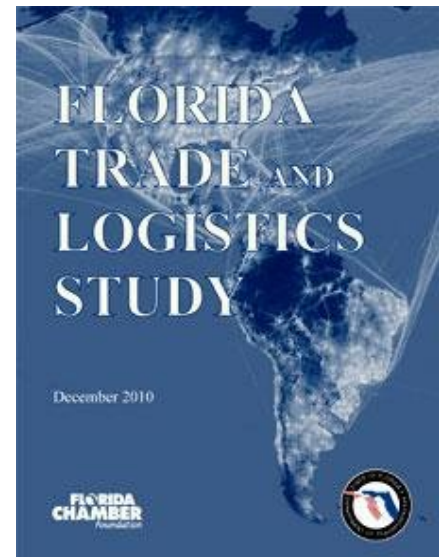
Source: Congressional Budget Office, 2013

By reviewing the cash flow of the highway account of the Highway Trust Fund, one can conclude that real interest in freight transportation can only be shown by the resources allocated to improve the freight transportation system. Fuel taxes are increasingly insufficient and, in the long run, can no longer sustainably provide the funds necessary to maintain and expand the transportation system. Alternative and innovative methods are required to fund and finance transportation infrastructure adequately.

Florida's Prior Freight Initiatives

In 2010, the Florida Chamber Foundation and the Florida Department of Transportation (FDOT) collaborated on the Florida Trade and Logistics Study. The study documented existing and estimated future trade flows, as well as identified opportunities for Florida to compete globally and recommended strategies to pursue. Data from the Florida Trade and Logistics Study showed freight is expected to increase in the future.

The Florida Trade and Logistics Study was an important first step that identified a need and advocated a call to action. The study recognized that Florida faced a once-in-a-generation opportunity to fundamentally transform its economy. Because of the shift in U.S. population growth to the south, the Panama Canal expansion, the resurgence of Latin American and Caribbean trade, and the continued evolution of supply chain management and logistics practices, the Honorable Rick Scott, Governor of the State of Florida, championed this vision.



"Florida has a once in a lifetime opportunity, with the expansion of the Panama Canal, to transform the state's economy to become a global hub for trade, logistics and export-oriented manufacturing activities. In order to create the conditions for the private sector to produce better jobs, Florida must have the best transportation and infrastructure system in the nation."

~ Governor Rick Scott

Legislative Foundation and Freight Initiatives

In 2011, FDOT Secretary Ananth Prasad unveiled the Florida Transportation Vision for the 21st Century². The Plan implements Governor Scott's goals to spur private sector job creation and to get our economy growing by having the best transportation and infrastructure system in the nation. The Transportation Vision plan uses creative financing alternatives, offers transportation choices, places strong emphasis on port development, reduces bureaucracy and streamlines decision making, plans and develops future corridors, and provides faster project delivery. In order to facilitate the greater focus on freight, the FDOT established the Office of Freight, Logistics and Passenger Operations (FLP). In less than a year, the FLP office was created and nationally recognized by the Brookings Institute as one the Top 10 State and Metropolitan Innovations to Watch³.

The 2012 Florida Legislature echoed Governor Scott's freight vision for Florida and passed House Bill (HB) 599, which included a number of meaningful elements for the FDOT. Key legislative directives included:

- Increase in minimum funding of the Florida Seaport Transportation and Economic Development (FSTED) program from \$8 million to \$15 million annually.

² <http://www.dot.state.fl.us/planning/vision/default.shtm>

³ <http://www.brookings.edu/research/interactives/2013/innovationstowatch#default>

- Creation of a Strategic Port Investment Initiative to set aside \$35 million annually from the Statewide Transportation Trust Fund for certain seaport projects, which are selected jointly by the FDOT and representatives of the state's seaports.
- Creation of an Intermodal Logistics Center (ILC) Infrastructure Support Program and allocation of \$5 million per year toward funding for up to 50% of the eligible costs of local government or private projects at ILC facilities that meet certain criteria.
- Designation of ILCs as part of the Strategic Intermodal Systems (SIS) and waive transportation concurrency requirements for ILCs that meet certain criteria.
- Requirement for the FDOT to develop a Freight Mobility and Trade Plan (FMTP).⁴

In 2012, HB 599 was enacted and requires an FDOT-led plan to “enhance the integration and connectivity of the transportation system across and between transportation modes throughout the state.” The Policy Element of the FMTP will address all requirements of the HB 599 legislation. The four specific goals are:

- Increasing the flow of domestic and international trade through the state's seaports and airports, including specific policies and investments that will recapture cargo currently shipped through seaports and airports located outside the state.
- Increasing the development of ILCs in the state, including specific strategies, policies, and investments that capitalize on the empty backhaul trucking and rail market in the state.
- Increasing the development of manufacturing industries in the state, including specific policies and investments in transportation facilities that will promote the successful development and expansion of manufacturing facilities.
- Increasing the implementation of compressed natural gas (CNG), liquefied natural gas (LNG), and propane energy policies that reduce transportation costs for businesses and residents located in the state.

These efforts were further affirmed with the release of national freight guidance. The freight provisions of the “Moving Ahead for Progress in the 21st Century Act” (MAP-21) underscored that Florida is a leader in freight issues through its ongoing work in developing a FMTP. Together with this Policy Element, the next endeavor, the Investment Element of the FMTP, will address the requirements of MAP-21 legislation. Passed by Congress on June 29, 2012, the Act encourages states to develop comprehensive freight plans to guide state investments. Freight projects must be identified in a state plan to qualify for the increased federal funding share. Under MAP-21, state freight plans must include:

- “An identification of significant freight system trends, needs and issues with respect to the State
- A description of the freight policies, strategies, and performance measures that will guide the freight-related transportation investment decisions of the state
- A description of how the plan will improve the ability of the state to meet the national freight goals established under section 167 of title 23, United States Code
- Evidence of consideration of innovative technologies and operational strategies, including intelligent transportation systems, that improve the safety and efficiency of freight movement
- In the case of routes on which travel by heavy vehicles (including mining, agricultural, energy cargo or equipment, and timber vehicles) is projected to substantially deteriorate the condition of roadways, a description of improvements that may be required to reduce or impede the deterioration

⁴ <http://www.flsenate.gov/Committees/bills/summaries/2012/html/210> January 15, 2013

- An inventory of facilities with freight mobility issues, such as truck bottlenecks, within the state and a description of the strategies the state is employing to address those freight mobility issues.”⁵

Freight Mobility and Trade Plan

The Florida FMTP provides the State with an integrated and comprehensive plan to focus on objectives and strategies to benefit the movement of goods, commodities, and services. The 2012 Florida Legislature in HB 599 directed the FDOT to develop this plan, and the federal reauthorization bill, MAP-21, also encouraged the creation of state freight plans to fulfill federal requirements. However, too often, functions—such as transportation freight plans—are analyzed in an isolated method. The FMTP is much more than just a freight plan. This effort couples commerce and energy with transportation to provide an integrated analysis to provide solutions to solve issues and needs in a cross-cutting, multi-functional approach. Freight movement is the economy in motion. Thus, while transportation, trade, and energy are functions that exist to support citizens and businesses, these activities are inherently linked and collectively impact and support the economic wellbeing of Florida.

The FMTP also supports the 2060 Florida Transportation Plan—the long-range transportation plan for the state, which defines Florida’s future transportation vision—and its six strategic goals to guide transportation decisions. Finally, the FMTP reflects the FDOT actions needed to implement the strategies outlined in the Florida Chamber/FDOT Florida Trade and Logistics study.

Thus, while HB 599 initiated the FMTP, the FMTP is much broader than the key goals articulated in this legislation. **The first—and arguably the key—goal of the FMTP is to increase the flow of domestic and international trade through the state’s seaports and airports.** This can be achieved by improving the transportation infrastructure of all modes, liberalizing trade regulation and policies, and expanding the diversification of energy sources to increase the flow of goods. Optimizing these measures requires a synchronized and integrated effort by all state and local public sector agencies. Further, the state needs to work with adjacent states to develop and maintain multi-jurisdictional freight corridors.

The second goal, to increase the development of ILCs in the state, hinges on the success of achieving the first goal. If the flow of goods and commodities increases, then there likely will be increased demand for logistics services. All carrier modes will rise to meet the demand. Local planning should be proactive in studying potential sites for ILC clusters with FDOT leadership and guidance.

The third goal, to increase the development of manufacturing industries in the state, can be challenging. Private sector investment in manufacturing is predicated on many variables, including transportation infrastructure, access to supply chains, workforce (availability, costs, skills), taxes, availability of resources (raw materials, funding, etc.), proximity to the market(s), energy and utility costs, capital building costs, regulatory and permitting processes, environmental conditions, and climate. Again, public planning is necessary to streamline processes to meet private sector needs, and a consistent outreach effort is needed to ensure the private sector knows that “Florida is open for business.” The FDOT will expand its collaboration with Enterprise Florida⁶ and Workforce Florida⁷ to accomplish this goal.

⁵ Enrolled text of 112th Congress H.R. 4348, <http://www.gpo.gov/fdsys/pkg/BILLS-112hr4348enr/pdf/BILLS-112hr4348enr.pdf> July 6, 2012

⁶ **Enterprise Florida** is the official economic development organization for the State of Florida with the mission to help innovative, high-growth businesses start up, locate, or expand in Florida. For more information: <http://www.eflora.com>

The fourth goal, to increase implementation of compressed natural gas (CNG) and liquid natural gas (LNG) and propane energy policies, is intended to reduce transportation costs. These alternative energy types are cheaper than traditional fuel types; however, the higher costs for equipment may delay adaptation by many transportation carriers and manufacturers. The state, through the FDOT and the Department of Agriculture, and other public agencies may need to review policies and regulations that pertain to alternative transportation energy and enhance private sector efforts to make these energy sources available.

Florida's freight future is bright. The collaborative development of the Policy Element of the FMTP has uncovered a culture and climate in Florida that is progressive. The leadership and desire to improve conditions to enhance freight mobility is clearly evident. The Policy Element of the FMTP has laid the foundation by developing objectives, strategies, and actions with the private sector. The next step is to develop a collaborative and transparent project prioritization process to match funding for short-term and long-term requirements to ensure maximum return on investment (ROI). Together the Policy and Investment Elements of this plan will form a dynamic document that will be updated as needed, and, will demonstrate that, when all stakeholders communicate and collaborate, maximum effort can be energized to propel Florida forward as the nation's freight leader.

Report Organization

The Policy Element of FMTP begins by providing background information regarding freight transportation planning and reviewing the structure of the plan. Next, the report summarizes a freight overview, including the five dimensions of freight, and lays the foundation by reviewing Florida's existing freight system, including demands, trends, and performance. Using the analysis of the existing conditions, the report identifies key freight issues and the opportunities and obstacles. The report documents policy directions to address challenges and emphasizes the need for interagency cooperation to attract the private sector. In conclusion, the Policy Element of the FMTP tells the "Florida Freight Story" by reviewing the existing system, identifying key freight issues, addressing policy challenges, and leading to the next step—the Investment Element.

The Policy Element of the FMTP is organized into the following chapters:

- **Chapter 1** serves as the introduction, presents the purpose and development of the Policy Element of the FMTP, and describes how the report is organized.
- **Chapter 2** provides a summary of Florida's existing freight system, including demand, trends, and performance.
- **Chapter 3** summarizes key freight issues that Florida faces and discusses the process used in developing the FMTP.
- **Chapter 4** is the essential piece of the Policy Element. This chapter highlights the Objectives and Strategies developed during the FDOT-led, industry participation process and links the FMTP to existing planning processes including the Florida Transportation Plan (FTP), Federal reauthorization bill Moving Ahead for Progress in the 21st Century (MAP-21), the Florida Chamber Six Pillars, and the Florida Department of Economic Opportunity's Strategic Plan for Economic Development.

⁷ **Workforce Florida** is the statewide, business-led workforce policy board. Charged with overseeing the state's workforce system, Workforce Florida develops strategies to help Floridians enter and advance in the workforce while supporting economic development priorities and strengthening the state's business climate. For more information: <http://www.workforceflorida.com>

- **Chapter 5** presents the next steps after the completion of the Policy Element.
- **Appendices** provide additional information concerning Policy Element Implementation Responsibilities and a Glossary of terms and acronyms.

Page Intentionally Left Blank

Chapter 2: Florida's Freight System

Florida's freight system is critical to the economic wellbeing of the state, as an increasing population and an educated workforce generate additional economic activity. These increases, however, place additional demands on Florida's freight system, which must consistently improve to accommodate the increased demand. This chapter discusses Florida's freight system, including a freight overview, identification of the geographic and modal components, population growth, and system demands.

Freight Overview

The dimensions of the Florida freight system reflect the dimensions and needs of the Florida economy. Consequently, the freight system in Florida has evolved to serve not only the increasing domestic freight demand but also an even higher increase in international freight movement. Florida's freight system can be defined in several dimensions or perspectives, as illustrated in **Figure 2**.

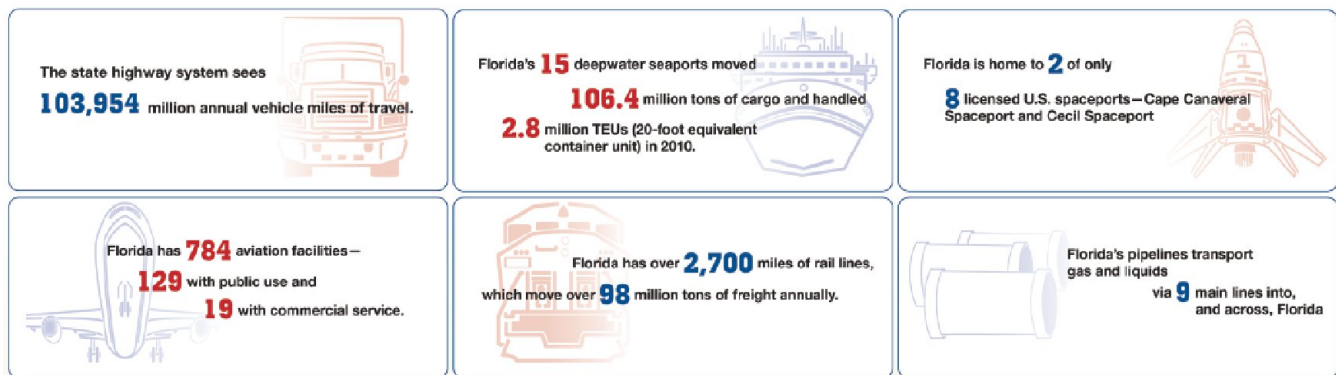
Figure 2: Dimensions of Florida's Freight System



Cargo Dimension of Florida's Freight System

The efficient movement of goods is essential to the prosperity of Florida. Florida's freight transportation system is the lifeline of the state's domestic and international trade. Over 762 million tons of freight are moved out of, into, and within the state every year. Florida has distinct advantages when it comes to freight, as highlighted in **Figure 3**.

Figure 3: Florida Moves Freight



Source: County Freight and Logistics Overview Fliers, Florida Department of Transportation, Enterprise Florida, and the Florida Energy Pipeline Association, 2013

The state's comprehensive transportation system of highways, rail lines, pipelines, airports, spaceports and seaports serves a diverse range of needs for the movement of goods. The goods movement transportation system provides for the movement of local, regional, interregional, interstate, and international commerce on an integrated, multimodal network. This system supports the economy by delivering raw materials, intermediate goods, and finished products to production, consumption, and disposition points. This excellent transportation system and Florida's robust economy are intricately linked. Additionally, Florida's geographic position makes it a natural gateway for trade with the Western Hemisphere and the new capacities enabled by the expansion of the Panama Canal.

Economic Dimension of Florida's Freight System

The economic success of Florida is inescapably tied to freight activity. Florida has the 3rd largest logistics and distribution industry in the nation, and the 5th number of logistics and distribution jobs⁸. Thriving in the global economy is dependent upon efficient freight movements. Global, national, regional, and local markets are very competitive, and Florida must capitalize on its advantages and position itself to compete well.

In 2010, the American Association of State Highway and Transportation Officials (AASHTO)⁹ Past President coined the term "Transconomy" to help emphasize the critical interdependent relationship between economic activity and freight demands.

"In 10 years, an additional 1.8 million trucks will be on the road; in 20 years, for every two trucks today, another one will be added. Already bottlenecks on major highways used by truckers every day are adding millions of dollars to the cost of food, goods, and manufacturing equipment for American consumers... the simple fact is: no transportation, no economy. They are inseparable. We must invest to maintain and strengthen the American 'transconomy.'"

~ AASHTO Past President Larry L. "Butch" Brown

⁸ Enterprise Florida, 2013

⁹ AASHTO is a nonprofit, nonpartisan association representing highway and transportation departments in the 50 states, the District of Columbia, and Puerto Rico. It represents all five transportation modes: air, highways, public transportation, rail, and water. Its primary goal is to foster the development, operation, and maintenance of an integrated national transportation system. <http://www.transportation.org/Pages/default.aspx>

The past AASHTO president noted the need to improve efficiency with which freight moves into, out of, and within regions, and stressed the fact that efficiency is an important indicator of a region's economic vitality. Businesses that rely on the freight transportation system to obtain supplies and transport products are attracted to regions with well-placed intermodal hubs, roads in good repair with few bottlenecks, and easy access to rail, water, and air transportation. It's important to note that there should also be a balance between freight mobility and quality of life, which helps to attract businesses and employees.

Geographic Dimension of Florida's Freight System

The traditional public planning view of freight has focused on the geography of freight in terms of system inventory or supply (nodes and networks) and system demands (commodity flows and heavy vehicle traffic counts). More recently, more attention is being focused on intermodal connectivity and "last mile" issues and the residual effects associated with freight movement such as emissions, noise, safety, and compatibility of land uses (neighborhood issues).

The phrase "last mile" has been used by telecommunications and technology industries to refer to the technological and cost problems associated with the end link connecting broadband infrastructure to the consumer. Addressing the "last mile" has also been a key concern of Florida's multimodal freight system, the Strategic Intermodal System (SIS).

In order to make investment decisions strategically, the Florida Legislature and the Governor established Florida's Strategic Intermodal System (SIS) in 2003. The SIS emphasizes the use of objective criteria and thresholds to designate facilities of statewide and interregional significance. These facilities improve the state's position to compete for the movement of additional goods into and through the state and are classified into three types:

- Transportation hubs (seaports, airports, spaceports and terminals) moving people or goods
- Interregional corridors (highways, rail lines, waterways, and other exclusive-use facilities) connecting major origin/destination markets
- Intermodal connectors (highways, rail lines, or waterways) linking hub-to-corridor, hub-to-hub, or strategic military installation-to-corridor.

Intermodal connectors serve as the "last mile" connection between hubs and the interregional corridors. Including "last mile" connections in the statewide multimodal freight system confirms FDOT affirmation for providing appropriate infrastructure to promote the complete movement of goods.

Similarly, in the freight realm, the last mile is often the last leg of the supply chain when the package is no longer being shipped in bulk. Shipping the last mile into crowded urban areas or communities that discourage freight can often be quite difficult and costly. Delivery vehicles often require different standards for turning movements, acceleration/deceleration, etc. The geography of the neighborhood can significantly impact freight movements. Key factors that often influence and impact the last mile include:

- Land use
- Safety
- Noise
- Emissions/Air Quality.

Land use is a common influence on many last mile problems. Zoning codes and development guidelines are often not set up to handle freight movements, sometimes by design. The result is often an older urban

area or small town with many barriers to efficient goods movement. Florida varies widely on land use patterns, so some regions have more problems than others. Traffic signals can also pose problems, as they are often programmed for commuter vehicles. Trucks are often not considered, and they need more time to accelerate or come to a stop. This can lead to reduced efficiency and red light running, which also demonstrates how planning land use for freight can also avoid safety problems.¹⁰

In addition, operational constraints and roadway design such as inadequate turning radii and lack of “loading zones” lead to increased safety concerns. For example, roadway geometry can cause issues when not designed for safe and efficient truck movement. If a right turn is too tight, trucks are often forced to swing left or into other lanes to continue. When this occurs in oncoming traffic, it can be quite dangerous and cause congestion. It could also cause safety concerns for smaller vehicles and pedestrians that often can't be seen.

While these factors are already difficult to address, in freight, the last leg of a supply chain can often be much longer than literally the last mile. Therefore, we must go beyond the traditional definition of last mile and consider other key factors. Some of these other factors not often considered include:

- Connections between modes
- Customs
- Freight forwarding
- Break bulk
- Transloading.

These are some example elements of a supply chain that can also slow the freight process regardless of how fast individual modes of transportation function. The geography of freight transportation is only the beginning.

The geography of Florida defines its capabilities and strengths. The state boasts an impressive number of ports, as well as a number of urban areas to support international airports. Other hubs are situated according to the location of the highway, rail, and waterway system. Florida is ideally suited to be the Western Hemisphere gateway and provide direct freight movements to South and Central America, as well as the Caribbean.

Supply Chain Dimension of Florida's Freight System

The emergence of worldwide production markets for consumer products and an increasingly competitive marketplace have positioned supply chain management as an integral facet of the overall business strategy. Supply chains encompass the myriad of multiple transportation legs and logistics functions associated with the complete process of bringing goods and commodities from its origin to market. These supply chains incorporate people, processes, and physical entities, which are linked together by information and transportation. This transformation from simple logistics to supply chain management over the past three decades has redefined many businesses and how consumers purchase goods.

Supply chain management practices govern the selection of an appropriate mode for the movement of goods and materials within a given industry, company, or geographical area. This pattern of modal selection progresses from the movement of raw materials, through manufacturing facilities, to the consumer within a simplified region, utilizing a single mode, to multi-modal solutions across the

¹⁰ Tampa Bay Regional Goods Movement Study, 2013

global landscape. In addition, recent trends impacting supply chains include ever-quicker deliveries, a shift to online buying, and the growing role of reverse logistics.

FDOT conducted user interviews to gain private sector insight into the supply chain process for each of the five sectors with intensive freight needs. By interacting with Florida supply chain professionals within each sector, an initial view as to the modal selection patterns and the strategic supply chain employed was identified. A complete and detailed review of all the supply chains analyzed is available in the full report¹¹.

This has led to the need for the FDOT and its partner agencies to meet a wider range of supply chain needs. Meeting those needs requires an appropriate infrastructure and assistance in providing various modal choices for goods movement, resulting in a healthy economic environment. It is important to not simply respond to the changing needs of existing businesses and foster retention of those businesses, but to present the willingness or ability to meet the needs of new companies or business sectors. In meeting these changing or potentially new modal needs, public agencies may pursue solutions encompassing publicly available funding or in conjunction with private sector investments. Regardless of funding avenues, familiarity with the infrastructure and policy requirements requires the supplemental knowledge of the “whys” behind the choices among the variety of potentially available modal solutions.

Modal Dimension of Florida's Freight System

Different commodities often have very different transportation service needs. These needs may be expressed in the varying adaptation of the following six criteria, as applied by shippers to their choice of transportation mode:

- Speed of transport
- Reliability
- Cost
- Capacity
- Safety/security
- Accessibility.

Modal selection involves choosing the mode that creates an optimal mix of these criteria. The degree of each is related to the needs of the shipper and receiver. This balance is most often achieved by using more than one mode across the entire supply chain or even a single segment. For example, speed or security may be more important in the final stages of a supply chain, whereas the first stages may be more cost driven. Geography can also play a large role in mode availability. Intercontinental movements are restricted to the modes of air or water. **Table 1** depicts an overview of the modes and the factors affecting modal selection.

¹¹ Supply Chain Management, Systems Planning Office, 2013

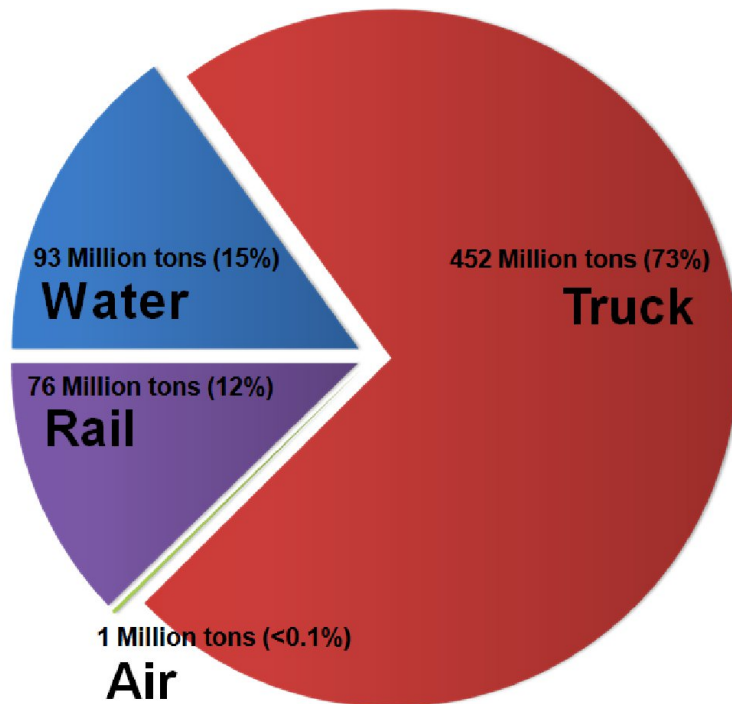
Table 1: Modes of Freight Movement

Mode	Space	Air	Truck	Rail	Water	Pipeline
Speed of Transport	Fast					Slow
Reliability	Variable	High	Variable		Low	High
Cost (\$/lb)*	>	>\$1.00	\$0.10-\$0.03		\$0.01-\$0.005	<
Capacity	Low	Low	Variable		High	Variable
Safety/Security	High	Med	Variable		Low	Low
Accessibility	Low	Med	High	Med	Med	Variable
Freight Profile: What types of products are likely to be shipped by this mode?	Variable weight, high value, high time sensitivity, high inventory cost Example: satellites	Low weight, high value, high time sensitivity, high inventory cost Example: flowers	Broad range of weight, value, time sensitivity, and inventory cost		High weight, low value, low time sensitivity, low inventory cost Example: petroleum	Variable due to the specialized nature of the commodity Example: natural gas

* Comparative cost purposes only

Source: Supply Chain Management, Systems Planning Office, 2013

Of the six modes of freight movement discussed, four are common and have the greatest volume of associated data: air, truck, rail, and water. Truck is more dominant nationally, and, in Florida as in most states, it is the dominant mode by tonnage, with a majority share of all freight movements.¹² Second is rail, followed by water and air. Rail is made up of a carload and an intermodal component, with the intermodal component as a majority. Examples of carload include boxcars, gondolas, liquid tank cars, or dry bulk railcars. Intermodal includes Trailer on Flat Car (TOFC) or Container on Flat Car (COFC), as shown in **Figure 4**.

Figure 4: Total Freight Flows by Mode, 2009 (millions of tons)

Source: Florida Trade and Logistics Study, 2010

¹² Supply Chain Management, Systems Planning Office 2013

Geographic and Modal Elements of Florida's Freight System

Florida's transportation system developed over the years as the needs of its residents and businesses evolved. In the early days, Florida transportation infrastructure supported industries such as agriculture, fishing, forestry, and mining. Seaports such as Pensacola, Jacksonville, and Tampa flourished, and the transportation system developed to meet their commodity movement needs. The first pieces of the roadway system were often old trails connecting towns for purposes of moving goods and people. Entrepreneurs brought rail lines to connect emerging commerce areas such as Southeast Florida and Tampa to Jacksonville and the rest of the country.

In the 1960s, the roadway network expanded as the prominent mode of transportation. Florida's Turnpike and the development of the Interstate Highway System improved mobility for people and goods alike. This phenomenon was the catalyst for economic expansion which has continued for decades. Airports traditionally used by the military turned to commercial use to support the tourism industry and some former military sites have been transformed to support space transport needs. Likewise, Florida seaports have expanded to handle increases in global trade and cruise activities.

Florida boasts a multimodal freight system that has answered past transportation challenges, and is poised to continue to do so in the future only with continued strategic investment. In order to make investment decisions strategically, the Florida Legislature and Governor established Florida's Strategic Intermodal System (SIS) in 2003. The SIS is a designated system composed of facilities and services of statewide and interregional significance. This section will detail freight facilities in Florida by mode.

Truck

Florida's trucking industry is heavily dependent on the highway system to bring their goods to market. Florida has 121,759 centerline miles of public roads, with 12,076 of those miles included in the State Highway System and over 4,365 miles designated as the highway portion of the Strategic Intermodal System (SIS). SIS Highways are the backbone of the Strategic Intermodal System, as they link the majority of Florida's SIS hubs such as airports, spaceports, seaports, and other intermodal/freight facilities. They also provide access to SIS rail terminals, which serve 90% of all state freight rail tonnage¹³. The SIS network provides high volume access to population centers, employment centers, and major military installations.

Highway Overview

The trucking industry is segmented by various trucking modes, which are differentiated by cargo weight, cargo type, and ownership. Trucks come in many sizes and designs to accommodate freight movement. Generally, trucks fall into the basic categories of Truckload, Less Than Truckload (LTL), Express, and Specialized. Trucking in Florida accounts for the majority of all freight volume by both tonnage and value. Trucking is characterized by speed, flexibility, and versatility, and regularly performs the final leg for freight transported by air, rail, water, and pipeline. As shown in **Figure 5**, trucks move the majority of freight in the state, and are often the mode choice for the final leg of a supply chain due to their flexibility. The distribution of mode choice in supply chains is not likely to change dramatically in the next 15 years; therefore improving Florida highways is vital to freight mobility in the state¹⁴.

In terms of tons of commodities shipped nationwide by commercial trucks, 54% move by private fleets operated by manufacturers, distributors, and other businesses to meet internal freight movement

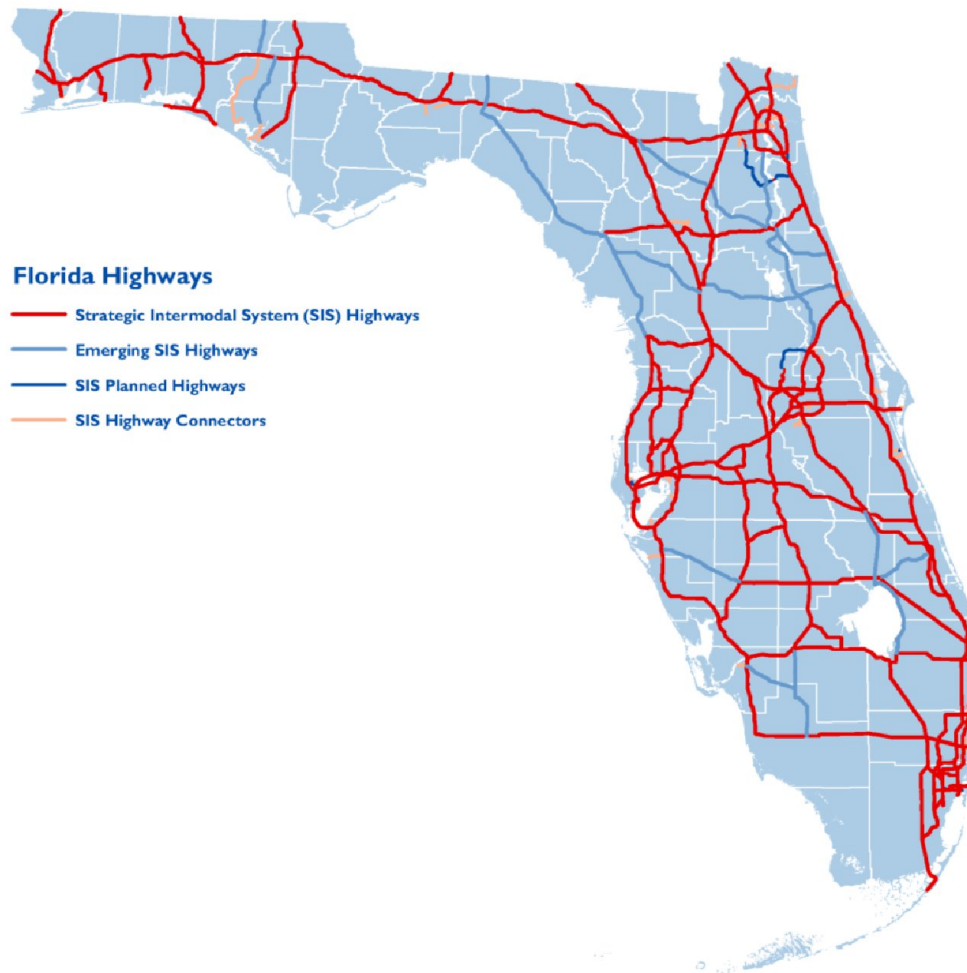
¹³ Keeping Florida's Economy Growing, Systems Planning Office, 2009

¹⁴ Supply Chain Management, Systems Planning Office, 2013

requirements. For example, Publix Super Markets, based in Lakeland, FL, operates a private fleet of 600 trucks to move products from their distribution centers to their stores. For-hire trucking moves the remaining 46%. Private fleets ship 41% of the value of freight, with for-hire providing the remaining 59%. The average number of miles per shipment for a private fleet is 57, while the average for-hire is 599¹⁵.

Both the state and federal governments have provided significant funds to highway projects through sources such as the FDOT Five-Year Work Program. In Fiscal Year 2012, the Work Program funded 170 SIS Highway Projects totaling over \$2.2 billion¹⁶. Significant investments have also been made over the year on public and private roads at the local level. Not all of these projects were freight projects; however, often improvements to improve passenger mobility also benefit freight movements.

Figure 5: Florida's SIS and Emerging SIS Highways and Connectors



Source: Systems Planning Office, 2013

Key Freight Highways

SIS highways represent only 3% of the entire Florida roadway network, but they carry over 54% of all daily traffic and 70% of truck traffic.¹⁷ Although SIS highways are selected based on both passenger and freight

¹⁵ 2007 Commodity Flow Survey, U.S. Census Bureau, 2013

¹⁶ Prioritizing Florida's Highway Investments, Systems Planning Office, 2013

¹⁷ Vehicle miles traveled and truck miles traveled as of November 2012. Includes Planned Add SIS and Planned Add Emerging SIS.

criteria and thresholds, this system includes all major freight highways in the state. See **Figure 5** for a map of the current SIS Highways and Connectors.

This system of strategic highways and connectors in Florida is quite similar to those facilities on the National Highway System (NHS)¹⁸ and the National Network¹⁹ but not identical. Both of these federal networks include roughly 200,000 miles but differ in extent and purpose. The Surface Transportation Act of 1982 authorized the National Network for Conventional Combination Trucks, the purpose of which was to create a network that supports interstate commerce by allowing the passage of trucks of a designated size and weight. Congress approved the NHS in 1995 to create a system of the most important roadways in order to focus resources strategically.

Florida interstates (I-4, I-10, I-75, and I-95) are included in the National Network, the NHS, and the SIS. These are clearly key highway facilities for moving freight in Florida as well as moving freight to and from Florida, as shown in **Figure 6**. Other critical freight highway facilities included in all three networks are US 301 from Jacksonville to I-75, Florida's Turnpike, and US 27 from I-75 to Okeechobee.

The Moving Ahead for Progress in the 21st Century Act (MAP-21) requires the USDOT to establish a national freight network, within one year of enactment, to assist states in strategically directing resources toward improved movement of freight on highways. This network should be finalized in June 2013. The national freight network will consist of three components:

- A primary freight network (PFN), as designated by the USDOT secretary
- Any portions of the interstate system not designated as part of the PFN
- Critical rural freight corridors, as designated by each state.

For Florida, this means all state interstate highways will likely come onto the primary freight network. Therefore in the near future, potentially any project on a Florida interstate could be eligible for the increased flexibility of up to 95% federal share²⁰. The financial impacts of a higher federal share could be significant. Critical rural freight corridors in Florida will likely be limited to connectors given the limited amount of miles. The primary freight network may contain a maximum of 27,000 centerline miles, and only 3,000 additional centerline miles of roads critical to future efficient movement of goods on the primary freight network. If these 3,000 miles were to be distributed equally among the 50 states, Florida would be allowed to designate 60 miles of critical rural freight corridors.

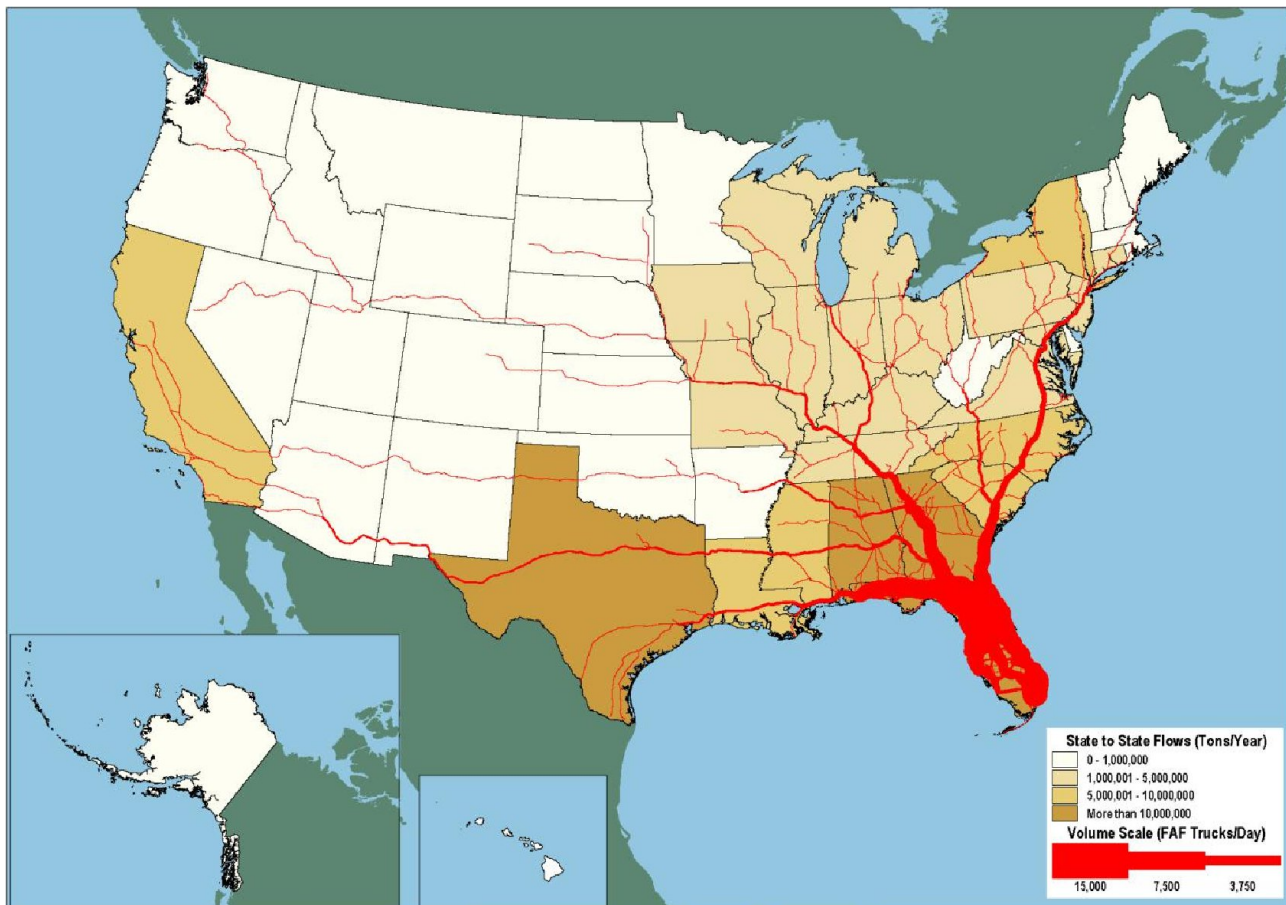
¹⁸ The National Highway System was authorized by the National Highway System Designation Act of 1995 (P.L. 104-59).

¹⁹ The National Network was authorized by the Surface Transportation Assistance Act of 1982 (P.L. 97-424).

²⁰ As MAP-21 did not create a separate freight fund, the higher match percentage does not represent additional funds. However, the option to increase the Federal share of a project that demonstrably improves the efficiency of freight movement allows FDOT to have greater flexibility by freeing up state funds for projects that may not be federally eligible.

<http://www.fhwa.dot.gov/map21/fedshare.cfm>

Figure 6: Major Flows by Truck To, From, and Within Florida 2007



Source: Federal Highway Administration, 2011

State Highway System Trends

As noted in Chapter 1, Florida's population has increased faster than roadway capacity since 1980. While the state has increased roadway capacity at a much higher rate than the national average, it has not kept pace with the volumes of automobiles and congestion has gotten worse. Heavy congestion in Urban Areas is defined as Level of Service (LOS) E or worse, and LOS D or worse in Non-Urban Areas. **Figure 7** shows the highway facilities in Florida forecast to be Heavily Congested Corridors as of 2012, 2022, and 2035.

These estimates include lanes added as a result of constructing the SIS Ten-Year Plan through 2022 and the SIS Cost Feasible Plan through 2035. SIS Highway unfunded needs are accumulating and this backlog has caused the significant gaps between needs and available funding. Florida needs to continue to invest in SIS Highway trade and tourism corridors to support economic growth.

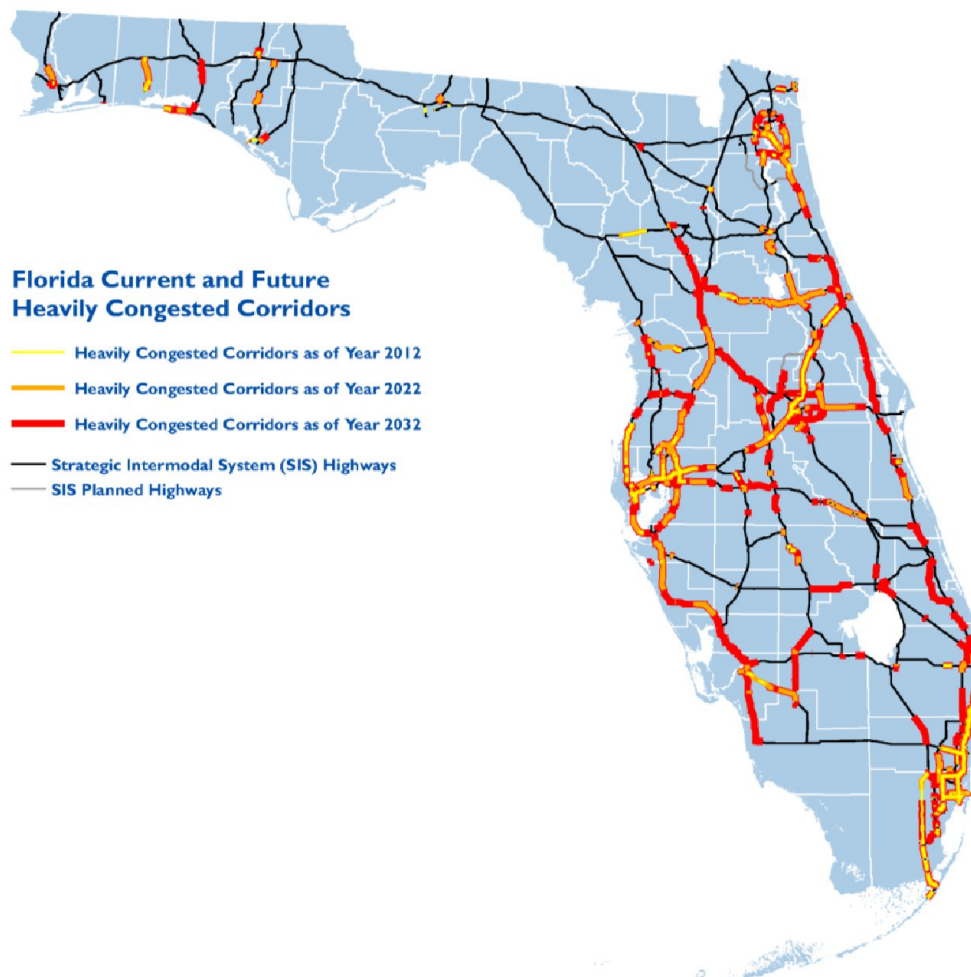
SIS highways grouped by Annual Average Daily Traffic (AADT) in 2010 showed facilities such as I-4, I-75, I-95, Florida's Turnpike, and roadways surrounding Jacksonville, Orlando, Tampa, and Miami carried the most traffic. By 2040, AADT is projected to be as high on nearly all SIS highways rather than just a few select segments. This additional traffic has the potential to increase congestion and bottlenecks for freight movements.

Truck traffic in 2010 was highest on these segments:

- I-75 between I-10 and the Turnpike
- I-4 from north of Orlando to Tampa
- Florida Turnpike through Orlando
- I-95 from north of Jacksonville to Daytona
- I-95 from the junction with Florida's Turnpike to Miami
- Florida Turnpike from the junction with I-95 to Miami.

By 2040, truck AADT is forecasted to be just as high on the majority of the length of the interstates and Florida's Turnpike.

Figure 7: Heavily Congested Corridors 2012, 2022, and 2035



Source: Systems Planning Office, 2012

Physical/Geometric Capacity and Safety

Geometric capacity and other concerns can lead to bottlenecks and further increasing congestion. The FDOT recently completed a study of bottlenecks on the SIS, shown in **Figure 8**. Bottlenecks are usually found at certain locations on roadways such as:

- Lane drops
- Weaving areas
- Freeway on and off ramps
- Interchanges
- Changes in highway alignments
- Narrow lanes or lack of shoulders
- Traffic control devices.



Lane drops and narrow lanes/lack of shoulders are specifically related to geometric capacity and may need to be addressed in the future. The growth of traffic congestion and bottlenecks on Florida's roadways is a major concern for commercial traffic. Top statewide SIS bottlenecks identified include mostly roadway segments in Miami-Dade County, as well as Hillsborough and Orange Counties (see **Figure 8**).

Figure 8: Statewide SIS Bottlenecks



Source: Systems Planning Office, 2013

The physical capacity of the roadway system can be negatively impacted by barriers such as poor or inadequate pavement or bridge condition, as well as bridge restrictions due to weight. The State of Florida ranks among the lowest in the nation for percent of bridges that are considered structurally deficient. This does not mean a bridge is unsafe; the term “structurally deficient” means that the FDOT

believes a bridge should undergo a series of repairs or replacement within the next six years. The FDOT's policy is to repair or replace all the structurally deficient state-owned bridges during that time. Overall, 6,369 (about 96%) of the state-maintained bridges are in excellent or good condition.²¹ Restrictions on bridges for overweight vehicles vary across the state. However, the FDOT created an interactive website to provide the traveling public with maps that show where restricted bridges are located on the state highway system.²²

In the same manner, Florida has made significant improvements in pavement conditions in recent years. FDOT is resurfacing 2,550 lane miles of the State Highway System in 2011-2012, including Florida's Turnpike. Maintenance and Pavement conditions on the state highway system continue to exceed standards set by the Florida Legislature²³.

Large Truck Generators and Related Facilities

Common generators of truck traffic include airports, seaports, major industry sites, military installations, warehousing/distribution centers, intermodal logistics centers (ILCs), and other intermodal facilities. Maintaining adequate highway facilities and removing barriers near freight hot spots is vital to freight mobility in the state. The FDOT is working with agency partners such as Enterprise Florida and the Florida Chamber of Commerce to keep up-to-date inventories of these important facilities. Florida realizes the importance of the last mile; therefore the Strategic Intermodal System (SIS) includes hubs, corridors, and connectors. Examples of connectors include the SIS Connectors and Military Access Facilities (MAFs) that provide that last connection between hubs and corridors to form a complete system. Intermodal Logistics Centers (ILCs) have been added to the SIS as hubs due to recent legislation, and are discussed in further detail later in this chapter.

As shown in **Figure 9**, there are freight distribution centers in many areas of Florida. As to be expected, there are large clusters in Jacksonville and South Florida, as well as in Orlando and Tampa and along the I-4 corridor between these cities. Smaller clusters are present in Southwest Florida and coastal cities along the I-95 corridor and the Panhandle. The SIS highways are obviously a key feature in location decisions, as nearly all of the distribution centers in Florida are on the system.

Intermodal facilities are also large truck generators and are found in similar areas of the state. SIS freight terminals are found in Jacksonville (CSX Transportation [CSX]/Florida East Coast Railway [FEC]/Norfolk Southern [NS] Railway), Fort Lauderdale (Florida East Coast Railway [FEC]), Miami (FEC), Orlando (CSX), and Tampa (CSX).

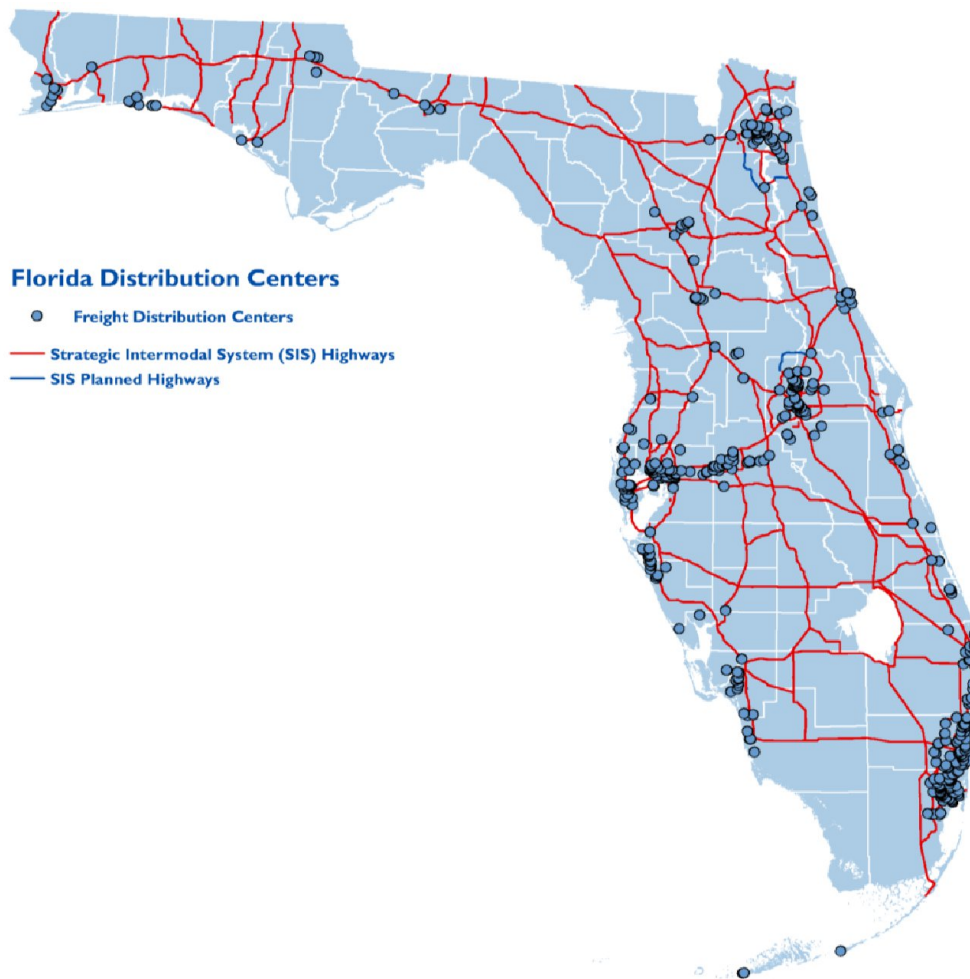
In addition to generators of truck traffic, related facilities such as weigh stations and rest areas are part of the highway system in Florida. Weigh stations and welcome centers can be found on entry facilities to Florida. Other weigh stations and rest areas are scattered in various locations. Agricultural inspection stations are located in a line across North Florida along all major routes, as well as at the Alabama state line.

²¹ For information on individual Florida bridges, see <http://www.dot.state.fl.us/statemaintenanceoffice/CBR/Florida%20Bridge%20Information%2001-02-13.pdf>

²² <http://www3.dot.state.fl.us/OversizedVehiclePermitsGISpublic/MapPagePublic.aspx>

²³ Pocket Guide to Florida Trends and Conditions, 2012

Figure 9: Distribution Centers in Florida



Source: *Florida Trade and Logistics Study, 2010*

Rail

From the days that all freight moved in small freight cars of limited types assembled into trains, one car at a time, railroads have adapted to changing transportation demands in terms of both equipment and operations. Today's railroads have commodity-specific rolling stock, infrastructure capable of transporting large and heavy loads, and powerful and fuel-efficient motive power to move them. Operations have also evolved with sophisticated signal systems, computer-aided dispatching, innovations such as unit trains, and service tailored to meet each shipper's unique needs and schedules. Florida's 15 freight railroads operate over almost 2,800 route miles of track that cover the state.

Commodity Groups

Railroads transport a wide variety of freight typically viewed as commodity groups for railroad sales and service purposes. Examples include:

- Automotive
- Coal
- Agriculture Products
- Chemicals and Fertilizers
- Construction and Forest Products
- Consumer Goods
- Energy Products and Fuels
- Food and Beverage
- Intermodal
- Metals
- Machinery
- Minerals
- Pulp and Paper
- Waste

In Florida in 2010, the largest rail commodities were phosphate rock; coal; chemicals; stone, sand and gravel; intermodal; and food products. These commodities comprised 83% of total originating and terminating tonnage²⁴. The quantities are somewhat distorted as the summation does not separate originating and terminating volumes for intrastate rail traffic, that which both originates and terminates in Florida, and thus many carloads are double counted. In 2008, intrastate traffic, mostly phosphate rock; stone, sand and gravel; and intermodal, accounted for 40% of all Florida tonnage²⁵. The fact that intermodal traffic is measured in units, numbers of containers and trailers, not tons or carloads as other commodities, also underplays the role of intermodal. Taking a different approach, 2008 Florida rail traffic was comprised of 835,000 carloads and 761,000 intermodal units²⁶.

Coal is the largest rail commodity at 43% of total tonnage and 24.7% of revenue in 2011²⁷. With 95% of coal in the state transported by unit train²⁸, principally moving from mines to power plants. Coal is its largest inbound commodity and mostly steam plant bound. Phosphate rock also moves in unit trains around the Bone Valley. Aggregates are another big Florida unit train commodity as are other more unique commodities as is the case with Tropicana's juice train. Haul distances can be long such as unit coal trains moving from the Powder Basin of Wyoming to southeastern power plants (although Kentucky and West Virginia are the largest Florida sources) to mini-shuttles operating 10-20 car trains in a continuous fashion over short distances.

The growth of marine containerization intensified the use of rail intermodal transportation and economies lead to the conversion of trailers to domestic containers. In 2011, containers comprised 87% of intermodal traffic with international traffic at 55%; however, domestic intermodal is growing. Intermodal is the fastest growing rail business sector and the second largest revenue producer next to coal accounting for 21.5% of 2011 gross revenue²⁹.

²⁴ Data compiled by the Association of American Railroads.

²⁵ *2010 Florida Rail System Plan – Investment Element*, Florida Department of Transportation, pp. 2-19, and 2-25.

²⁶ *2010 Florida Rail System Plan*, p. 2-19.

²⁷ *Railroads and Coal*, Association of American Railroads, June, 2012, p. 6

²⁸ *Railroads and Coal*, p. 8

²⁹ Data derived from *Rail Intermodal Keeps America Growing*, Association of American Railroads, July, 2012.

Freight Railroads

Freight rail service is provided by two Class 1³⁰ carriers, CSX Transportation (CSXT) and NS Railway; one Class 2 carrier, FEC; with the remainder classified as Class 3 carriers, or terminal companies. All of the state's railroad operators are listed in **Table 2**, along with mileage owned and operated and routes shown in **Figure 10**.

Table 2: Florida Freight Railroads 2013

Railroad	Miles of Railroad Operated in Florida			
	Owned	Trackage Rights	Contract	Owned not Operated
Alabama and Gulf Coast (AGR)	45			
AN Railway (AN)	96			
Bay Line (BAYL)	63			
CSX Transportation (CSXT)	1,459 ¹	47 ¹	138 ²	124 ¹
Central and South Florida Rail Corridors (CFRC, SFRC)	138			
First Coast (FCRD)	22			
Florida Central (FCEN)	68	10		
Florida East Coast (FEC)	351			
Florida Midland (FMID)	28	10		
Florida Northern (FNOR)	104			
Georgia and Florida (GFRR)	50			
Norfolk Southern (NS) ¹	96 ¹	53 ¹		
Seminole Gulf (SGLR)	115			
South Central Florida Express (SCXE)	156			
Talleyrand Terminal (TTR)	2			
TOTALS	2,793³	120	138	124

¹ Data derived from 2012 R-1 reports to the Surface Transportation Board; other railroads, American Short Line and Regional Railroad Association, company websites, past Florida Rail System Plans, and various maps.

² Over the state owned Central and South Florida Rail Corridors (CFRC, SFRC).

³ Includes CFRC and SFRC

Freight rail ownership totals 2,793 miles, including 138 miles of line in public ownership with freight operations conducted under contract. Trackage rights granted by the owning railroad to another rail carrier involves another 120 miles. In addition, two railroads have haulage rights over the FEC—NS from Miami to Jacksonville and South Central Florida Express (SCFE) from Fort Pierce to Jacksonville.³¹

³⁰ Class 1 railroads are those that exceed a certain revenue level that is adjusted yearly by the Surface Transportation Board. For 2011, the level was \$433.2 million; Class 2, \$34.7 to \$433.2 million; and Class 3, less than \$34.7 million.

³¹ Haulage rights differ from trackage rights in that the route's owner operates trains for the other railroad as opposed to the other railroad operating its own train over the route as per trackage rights.

Figure 10: Florida Rail Network



Terminals

The railroads in Florida operate a number of terminals, including classification yards with and without rolling stock servicing/repair facilities that are listed in **Table 3**. Railroad multimodal facilities such as rail-container/trailer facilities (intermodal) and carload transloading terminals are listed in **Table 4**. In addition to the railroad facilities, the carriers also serve a number of private facilities that provide transloading services and storage. These include bulk terminals, warehouses, and commodity distribution centers (paper, steel, and lumber, for example). The terminals can be located on the railroad's system, on one of its short line connections, or accessed through a marketing agreement. In the case of an intermodal terminal, it could also be associated with a seaport.

In addition to the existing terminals, CSX is constructing its Intermodal Logistics Center (ILC) on 1,250 acres near Lake Wales. The ILC will include both intermodal and automobile terminals with land available for associated warehousing, distribution, and service facilities. There are a variety of other ILCs across Florida currently in planning stages, and none are designated as SIS facilities yet. ILCs are discussed in more detail later in this chapter.

Table 3: Florida Railroad Principal Yards

Railroad	Location
CSXT	Jacksonville (Moncrief)
	Winston
	Tampa (Uceta)
	Baldwin
	Wildwood
	Hialeah
FEC	Pensacola
	Jacksonville (Bowden)
	Fort Pierce
NS	Hialeah
	Jacksonville (Simpson)

Table 4: Florida Railroad Multimodal Terminals

Type	Railroad	Location	Highway Access	
			Facility Roadway	Nearby Major Roadway
Intermodal	CSXT (CSX Intermodal)	Jacksonville	Sportsman Club Road	I-295
		Orlando	East Landstreet Road	Beachline Expressway, I-4
		Tampa	N. 62 nd Street	I-4, SR 60, Selmon Expressway
	NS	Jacksonville ¹	N. Edgewood Drive	I-295, I-10, I-95
		Titusville	Tico Road	SR 405, I-95
		Jacksonville	US 1	I-95
	FEC	Fort Pierce	Indian Hills Drive	I-95, US 1
		Fort Lauderdale	Andrews Avenue	I-95, US 1
		Miami	NW 69 th Avenue	I-75, I-95
Bulk Transfer	CSXT (Transflo)	Jacksonville	Druid and Warrington Streets	I-10, I-95, I-295
		Sanford	West 5 th Street	I-4
		Tampa	N. 34 th Street	I-4, Selmon Expressway, I-275
	NS (Thoroughbred Bulk Transfer Terminal)	Fort Lauderdale	SW 21 st Avenue	I-95
		Jacksonville	West 20 th Street	I-295, I-10, I-95
		Miami	NW 62 nd Street	I-95
Automobile	CSXT (TDSi ³)	Jupiter	Corporate Road S	Bee Line Highway, FL Turnpike, I-95
		Jacksonville	Blount Island Boulevard	I-295
		Jacksonville	W. 12 th Street	I-295

Type	Railroad	Location	Highway Access	
			Facility Roadway	Nearby Major Roadway
		Ocala	600 NW 1 st Avenue	I-75
		Orlando	East Landstreet Road	Beachline Expressway, I-4
		Winter Haven ²	Pollard Road	SR 60
		Tampa	Anderson Road	Veterans Expressway, I-275
	NS	Jacksonville	Old Kings Road	I-295
		Titusville	Tico Road	SR 405, I-95
	FEC	Miami	NW 67 th Avenue	I-75, I-95, Palmetto, and Dolphin Expressway

¹ Also serves as the facility for NS Triple Crown Service, which uses Road Railer trailers, reinforced highway trailers that are mounted on rail bogie assemblies rather than lifted on/off rail cars.

² Under construction at the ILC.

³ TDSI is a CSX Subsidiary

Seaports

Florida's proximity to east-west trade lanes that enter and leave the western hemisphere and the north-south shipping corridor supplying the Americas places it squarely in the center of international commerce. With 15 deep-water seaports strategically positioned along the state's coastlines, Florida's trade with more than 220 global partners encompasses the world (see **Figure 11**)³². Waterborne commerce flowing through Florida's deep-water seaport gateways was valued at \$85.6 billion in 2012, cementing their role as major catalysts in the movement of goods. The current Florida Freight Story as it relates to waterborne commerce and deep-water seaports can best be summarized with a broad overview of the state seaport system, by reviewing industry facts, and by enumerating the measures of international trade.

³² 2012/2013 – 2016/2017 Five Year Seaport Mission Plan

- Port Canaveral
- Port Citrus
- Port Everglades
- Port of Fernandina
- Port of Fort Pierce
- Port of Jacksonville
- Port of Key West
- Port Manatee
- Port Miami
- Port of Palm Beach
- Port Panama City
- Port of Pensacola
- Port of Port St. Joe
- Port of St. Petersburg
- Port of Tampa.

Figure 11: Florida Seaports



Major Cargo Gateway Port- Gateway for non-Florida commodities; gateway for strategic Florida commodities: containers, petroleum, coal, aggregates, etc; very strong truck, rail, barge connectivity

Regional Cargo Gateway Port- Gateway for regional commodities; special services, niche commodities; effective truck, rail barge connectivity

Major Cruise Port- Strong auto/transit/air connectivity; strong truck connectivity for provisioning

Source: Seaports and Waterways Office, 2013

Seaport Overview

Florida's seaports are all different, with opportunities and challenges reflective of their geography, resources, and service models. Yet, collectively, they serve as a network of transportation hubs linking global markets, moving goods to final destinations.

The publicly owned seaports are local government entities created by special acts of the Florida Legislature and referred to as deep-water seaports in Chapter 311, Florida Statutes (F.S.).

The financial resources available to seaports for capital and operating expenses come from a variety of sources. Generally considered enterprise entities, seaports collect revenues from users of their facilities and services. Sources include land and terminal leases, wharfage and dockage charges to ships utilizing berth capacity, storage and water usage, parking fees for cruise- and non-cruise-related vehicles, line handling, foreign trade zone access, camping and recreational parking, grants, and interest earnings. In addition to enabling legislation, Chapter 315, F.S., entitled "Port Facilities Financing," provides specific authority for Florida's public seaports to acquire, construct, lease, operate, and maintain any seaport facilities, as well as to issue revenue bonds for financing port facilities. Chapters 311 and 320, F.S., provide capital investment funding for seaport development.

Both the state and federal governments have provided significant grant and matching funds to seaport projects through sources such as the FDOT Five-Year Work Program, the U.S. Army Corps of Engineers (USACE), Environmental Protection Agency (EPA), and the Department of Homeland Security. The FDOT's SIS has designated Port Canaveral, Port Everglades, the Port of Jacksonville, Port Manatee, Port Miami, the Port of Palm Beach, and the Port of Tampa as SIS seaports. The Port of Fernandina, Port Panama City, the Port of Pensacola, and the Port of Port St. Joe are designated as Emerging SIS seaports. The remaining four seaports are not eligible for SIS funding at this time.

Often quoted in the industry is the phrase "If you have seen one port, you have seen one port." This quote means that every seaport is completely unique with its own strengths, characteristics, and needs. Some are relatively small in size such as the Ports of Fort Pierce, Key West, Port St. Joe, St. Petersburg, Fernandina, and Pensacola; others are more than 1,500 acres in size, such as the Ports of Tampa, Everglades, and Jacksonville. Port Miami is located on an island connected to the mainland by a vehicular bridge, rail bridge, and future tunnel and, like Port Everglades and Port Canaveral, located in a tourist-based community that supports the cruise industry. Some seaports are in urban areas locked in the middle of busy downtowns such as the Port of Palm Beach; others are in rural areas such as Port Manatee. The Port of Jacksonville has three geographically separated marine terminals and a cruise terminal. Port Citrus recently has selected a consultant to explore the opportunities of utilizing the assets of the former Cross Florida Barge Canal to foster economic development in their region.



Port Miami container and cruise facilities and the Port of Tampa gateway rail terminal.

A foreign trade zone (FTZ) is a geographical area where commercial merchandise, both domestic and foreign, receives the same U.S. Customs treatment it would as if it were outside the U.S. Commodities may be held, assembled, repackaged, sorted, labeled, etc. in the FTZ without being subject to Customs duties, tariffs, or other ad valorem taxes. This tax relief is designed to lower the cost of U.S.-based operations engaged in international trade and create and retain employees and capital investment opportunities from those operations. The location of an FTZ may be within or adjacent to the boundaries of a port of entry, or, in some cases, individual warehouse facilities may qualify as a component of a larger multi-county or county designation. The Ports of Canaveral, Everglades, Fernandina, Fort Pierce, Jacksonville, Manatee, Miami, Palm Beach, Panama City, Pensacola, and Tampa (11 of the seaports) have FTZs within their borders, adjacent, or nearby, providing value-added benefits for trade operations.

Most of the seaports are landlord seaports. They lease their terminals and facilities to companies both union and non-union to provide the actual loading, unloading, moving, storing, and stacking of goods and other related services. Port Panama City is an operating port and provides both the infrastructure and stevedoring methods to handle, store, and package commodities.

Landside Connection to Florida's Seaports

Florida seaports have continually improving landside connectivity described in detail in both the rail and highway sections of this chapter. Florida's interstates and major highways are the primary connection for the seaports to the National Freight Network, NHS, and Florida's SIS. Freight highway facilities include I-75, I-4, I-95, and I-10 along with US 301 from Jacksonville to I-75, Florida's Turnpike, and US 27 from I-75 to Okeechobee. Florida's seaports also are the primary users of the 15 freight railroads that operate the over almost 2,800 route miles of track throughout the state. Freight rail service is provided by two Class 1 carriers, CSXT and NS, and one Class 2, FEC. The other major rail lines are described in the Rail section of this document.

Seaport Industry Facts

In 2012, Florida ranked sixth in the nation in exporting goods produced or with significant value added while in the state. Waterborne international trade moving through the state's seaports was valued at a record \$85.6 billion in 2012, increasing by 3.5% from the \$82.7 billion in 2011. This \$85.6 billion represented 53% of Florida's \$162.2 billion total international trade. Of the \$85.6 billion in waterborne international trade, \$42.3 billion were imports and \$43.2 billion were exports contributing to efforts to balance the nation's trade deficit. Exports represented 56% of the state's total international trade value, and imports represented 44%, as seen in **Table 5³³**.

³³ These waterborne and airborne numbers total \$161.5 billion, based on the port-level data obtained from the U.S. Census Bureau, Foreign Trade Division, which uses the District of Unlading methodology. In other parts of this report, data obtained from Enterprise Florida, will be used – it uses a District of Entry methodology (and obtains slightly different results at \$162.2 billion), but is based on the same U.S. Census Bureau data.

Table 5: Florida's Import and Export Percentages (By Value) 2003 to 2012

Year	Imports	Exports
2003	55.7%	44.3%
2004	53.8%	46.2%
2005	53.1%	46.9%
2006	51.8%	48.2%
2007	47.9%	52.1%
2008	43.2%	56.8%
2009	41.0%	59.0%
2010	41.4%	58.6%
2011	41.8%	58.2%
2012	44.0%	56.0%

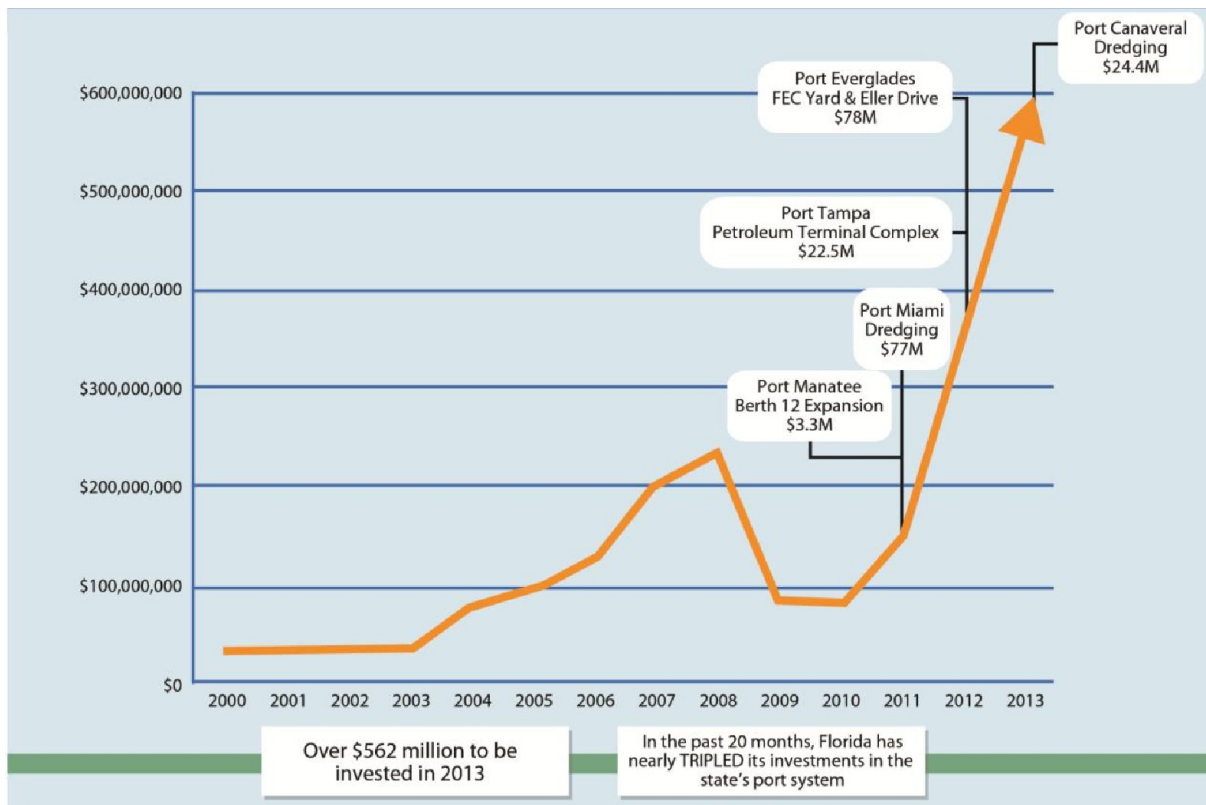
Source: U.S. Census Bureau, 2013



Container operations at the Port of Jacksonville and Port Manatee.

A 2012 Florida Ports Council Economic Analysis prepared by Martin Associates indicates maritime cargo activities at Florida seaports generated more than 551,250 direct, indirect, induced, and related-user jobs and \$90.3 billion in total economic value. These activities contribute \$2.4 billion in state and local tax revenues. According to a study commissioned by the FDOT, every \$1.00 invested in the seaports yields \$6.90 to the state's economy. Florida Governor Rick Scott has repeatedly supported prioritizing seaport and transportation projects to promote international trade and facilitate economic development, as shown in **Figure 12**.

Figure 12: Investment in Florida Seaports



Source: Executive Office of the Governor, 2012

Employment in the seaport industry continues to support good-paying jobs. For example, the average wage of \$54,400 per year for seaport-related jobs is also one of the highest average wages for a non-advanced degree job. Florida is the national leader in the cruise industry, with nearly 60% of all U.S. cruise embarkations leaving from a Florida seaport. This industry generates significant economic activity through its Florida-based operations and the state is home to the corporate and administrative offices of all of the major cruise lines.

Containerized Cargo at Florida Seaports

Florida's seaports moved approximately 3.1 million containers in 2012, increasing by 2.3% from 2011, as shown in **Table 6** and **Table 7**. In 2012, Florida's three largest container ports, Jacksonville, Everglades, and Miami, were in the top fifteen container ports in the country ranking 13th, 14th, and 15th, respectively.

**Table 6: Three-Year Comparison of Container TEUs Handled by Florida's Seaports
FY 2009/2010 to 2011/2012**

Port*	FY 2009/2010	FY 2010/2011	FY 2011/2012	FY 2011/ 2012 Ranking	Projected FY 2015/2016
Canaveral	659	646	253	10	5,000
Everglades	793,227	880,999	923,600	2	1,000,000
Fernandina	32,885	22,005	14,092	7	60,000
Fort Pierce	15,080	11,853	6,156	9	Not Available
Jacksonville	826,580	900,433	923,660	1	1,449,698
Manatee	30,431	14,576	12,610	8	58,028
Miami	847,249	906,607	909,197	3	1,300,000
Palm Beach	213,286	206,537	223,463	4	245,276
Panama City	40,000	41,900	41,456	5	65,000
Tampa	44,827	39,632	39,882	6	200,000
TOTAL	2,844,224	3,025,188	3,094,369		4,383,002

* No containerized cargo reported for Port Citrus, the Port of Key West, the Port of Pensacola, the Port of Port St. Joe, or the Port of St. Petersburg at this time.

Source: Individual Seaports

**Table 7: Waterborne Cargo Types Handled by Florida's Seaports (By Tonnage) FY 2011/2012
(With Prior Year Comparisons)**

Port*	Dry Bulk	Liquid Bulk	Break-Bulk	General Cargo	Total
Canaveral	461,657	3,011,978	409,145	22,206	3,904,986
Everglades**	973,191	14,830,384	120,812	5,944,513	21,868,900
Fernandina	0	0	324,115	60,384	384,499
Fort Pierce	20,400	880	0	74,343	95,623
Jacksonville	6,451,830	7,596,225	3,411,136	4,420,070	21,879,260
Manatee	1,222,212	5,073,401	120,101	422,097	6,837,811
Miami	0	0	110,233	7,997,837	8,108,070
Palm Beach	541,926	324,622	71,043	1,067,870	2,005,461
Panama City	670,230	24,430	477,672	248,333	1,420,665
Pensacola	169,156	4,620	49,999	384	224,159
Tampa	11,870,872	20,795,047	899,858	341,787	33,907,564
TOTAL FY 2011/2012	22,381,474	51,661,587	5,994,114	20,599,824	100,636,998
TOTAL FY 2010/2011	22,318,083	53,181,770	5,466,384	18,986,620	100,300,718
TOTAL FY 2009/2010	27,301,873	55,057,465	5,755,767	17,888,320	106,361,422

* No cargo reported for Port Citrus, the Port of Key West, Port St. Joe, or the Port of St. Petersburg at this time.

** See Tables 10-11 for key Florida commodities are included in these totals.

Source: Individual Seaports

Waterborne Cargo Types at Florida Seaports

The total tonnage of waterborne cargo handled by Florida seaports exceeded 100.6 million tons in FY2012. The table below shows a comparison of bulk cargoes moving through Florida's seaports by type and tonnage. Dry bulk, including cement, aggregates, fertilizers, and other products, represents 22.2% of total tonnage weight. Liquid bulk commodities, including primarily petroleum, fuels, and oils, represents 51.3% of total tonnage weight, and break-bulk and general cargo represents 26.5% of total weight as shown in Table 7. General cargo includes containerized cargoes.

Florida Cruise Seaports

Florida continues to be the international leader in the cruise industry. In 2011, a Cruise Lines International Association (CLIA) study prepared by Business Research and Economic Advisors determined that the cruise industry brings \$6.7 billion in spending to the state. This industry is a significant contributor to the state's economy providing nearly 130,950 jobs paying \$5.8 billion in annual wages. In 2012, nearly 60% of all U.S. cruise embarkations originated from a Florida seaport and more than 13.9 million revenue passengers sailed in and out of Florida seaports. As shown in **Table 8**, Port Canaveral, Port Miami, and Port Everglades are the top three cruise ports in Florida. More importantly, they are also the top three international cruise homeports in the entire industry.

Table 8: Revenue Cruise Passengers at Florida's Seaports FY 2011/2012
(With Prior Year Comparison and FY 2015/2016 Projections)

Port	FY 2010/2011			FY 2011/2012			Projected FY 2015/2016
	One-Day*	Multi-Day	Total	One-Day	Multi-Day	Total	
Canaveral	44,469	3,100,199	3,144,668	243,227	3,761,056	4,004,283	4,250,000
Everglades	288,740	3,644,103	3,932,843	68,298	3,689,022	3,757,320	3,926,697
Jacksonville	0	188,726	188,726	0	195,426	195,426	377,000
Key West	154,821	852,673	1,007,494	73,181	832,887	906,068	900,000
Miami	0	4,018,161	4,018,161	0	3,774,452	3,774,452	4,900,000
Palm Beach	0	303,000	303,000	0	341,004	341,004	350,000
Tampa	0	875,611	875,611	0	974,259	974,259	1,100,000
TOTAL	488,030	12,982,473	13,470,503	384,706	13,568,106	13,952,812	15,803,697

* The one-day columns include passenger counts from casino cruises, day cruises, and passenger-only ferries but exclude harbor tours and fishing excursions.

The multi-day columns include passenger counts from home-ported and port-of-call vessels.

Source: Individual Seaports

In managing and operating a seaport, the operational and capital investments are different for cruise than for cargo and significantly impact the utilization of resources and space. In March of 2012, 52,266 cruise passengers and crew disembarked and embarked cruise ships at Port Everglades in a single day. This effort required transportation efficiencies and infrastructure to include airport capacity and connectivity, road and highway access, parking garages, queuing lanes for buses, taxis, and trucks, ship provisioning and processing facilities, baggage handling areas, passenger processing facilities, inspection facilities, as well as seaport, local, state, and federal support agencies.

At Port Miami, the average cruise ship is provisioned by between 30 and 35 trucks loading hotel supplies, fresh fruit and flowers, beef, pork, chicken, eggs, beer and alcoholic beverages, ship store items, cleaning supplies, replacement parts and equipment, and more. Three to five trucks meet each ship returning to Port Miami to handle trash, recycled materials, gray water and more. The average number of homeported cruise ship calls requiring provisioning each year ranges from between 700 – 750 calls.

The movement of passengers and crew on and off each ship coupled with the goods and services needed to supply each ship ripple throughout Florida's transportation system and economy creating jobs and offering freight and distribution challenges and opportunities. The continued growth of the cruise industry is a significant factor in planning and implementing Florida's freight mobility and trade plan.



Port Canaveral cruise ships.

Intermodal Logistic Centers (ILCs)

As discussed briefly in the introduction to this chapter, HB 599 had greater impacts on the FDOT than simply requiring the preparation of the FMTP. This legislation also created ILCs as a new type of hub included in the SIS and created a program with \$5 million annually to fund projects at ILCs that meet certain criteria.

The definition of an ILC varies from an industry and from a geographic perspective. In addition, ILCs support or are supported by a complex and interconnected transportation network that includes highways, railways, seaports, and airports. The ILC serves as the hub for many spokes of transportation modes. As part of the 2012 legislation, the Florida Legislature provides a clear definition of what the State of Florida considers to be an ILC.

According to Section 311.101(2), F.S.:

The term “intermodal logistics center,” including, but not limited to, an “inland port,” means a facility or group of facilities serving as a point of intermodal transfer of freight in a specific area physically separated from a seaport where activities relating to transport, logistics, goods distribution, consolidation, or value-added activities are carried out and whose activities and services are designed to support or be supported by conveyance or shipping through one or more seaports listed in s. 311.09, F.S.

ILCs represent an entirely new SIS hub and will have their own set of designation criteria and thresholds, which are currently being defined. In addition to choosing which facilities meet the criteria for designation as SIS, only certain projects at these facilities will be considered eligible for funding under the new ILC program. Rule 14-118.001, proposed in January 2013, defines project eligibility according to five key aspects. Projects must:

- Efficiently and cost effectively serve one or more seaports³⁴
- Contribute to increased economic activity rather than simply relocating existing Florida business
- Have a 50% minimum committed private or local funding match
- Have local government and private support in the form of funding commitments and consistency with local plans
- Connect to the state transportation system to provide a mechanism for the efficient transfer of goods.³⁵

ILCs are defined in statute, but criteria and thresholds for determining which facilities are of strategic statewide are still being developed by FDOT. An example ILC currently under development with potential to be designated as a SIS ILC is the Winter Haven Integrated Logistics Center. The Winter Haven Rail Terminal is expected to be operational by May 2014.



Ceremonial groundbreaking for Winter Haven terminal

Source: Railway Track and Structures (RT&S) magazine

Airports

Florida's public airport system includes 19 commercial service airports and 110 general aviation (GA) airports, in addition to 11 military airfields and 637 private airports and heliports, all but private airports are shown in **Figure 13**. Florida is the only state in the U.S. with four large hub airports—Orlando International, Tampa International, Fort Lauderdale-Hollywood International, and Miami International. Miami International Airport is the number one airport in the U.S. and tenth in the world for international freight³⁶. Florida's aviation system contributes \$114 billion to the state's economy each year.

³⁴ Must be a seaport listed as a member of the Florida Seaport Transportation and Economic Development Council in Section 311.09, F.S.

³⁵ See proposed text for specific phases considered as total project costs and other details, including proposed application and award procedures, <https://www.flrules.org/gateway/ruleNo.asp?id=14-118.001>

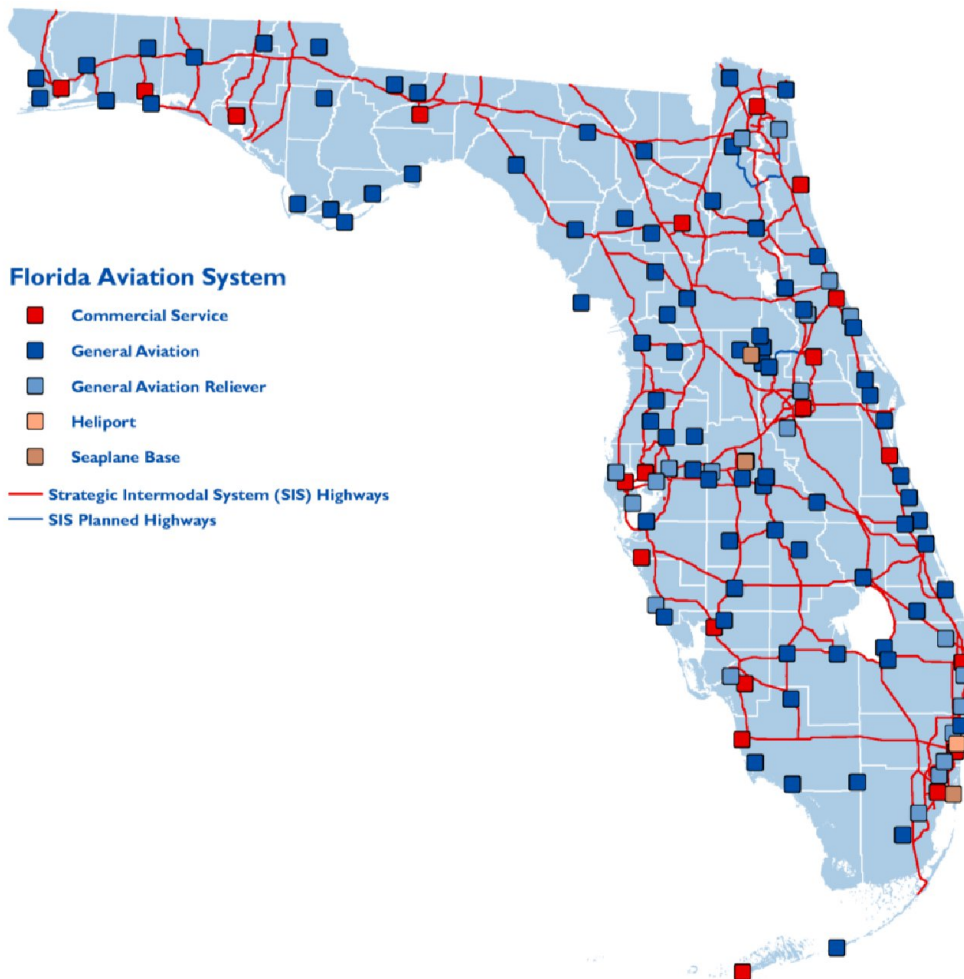
³⁶ Miami International Airport, U.S. and Worldwide Airport Rankings, 2011

There are only a few airports in the world that are considered strictly “air cargo airports.” Nearly all airports that support the air cargo industry are either passenger airports with extensive cargo activity or “industrial” airports where cargo is one of many aviation activities taking place on the airport. Commercial, GA, and industrial airports can each experience various levels of air cargo activity.

Air Cargo Facilities

Florida's air cargo system spans a wide variety of airports in the state, ranging from major international gateways such as Miami International Airport to remote airports like Key West International. Even a number of Florida's GA airports are used for the transport of air cargo. At these GA airports, smaller aircraft typically carry medical supplies, bank materials, and critical manufacturing components.

Figure 13: Florida Airports

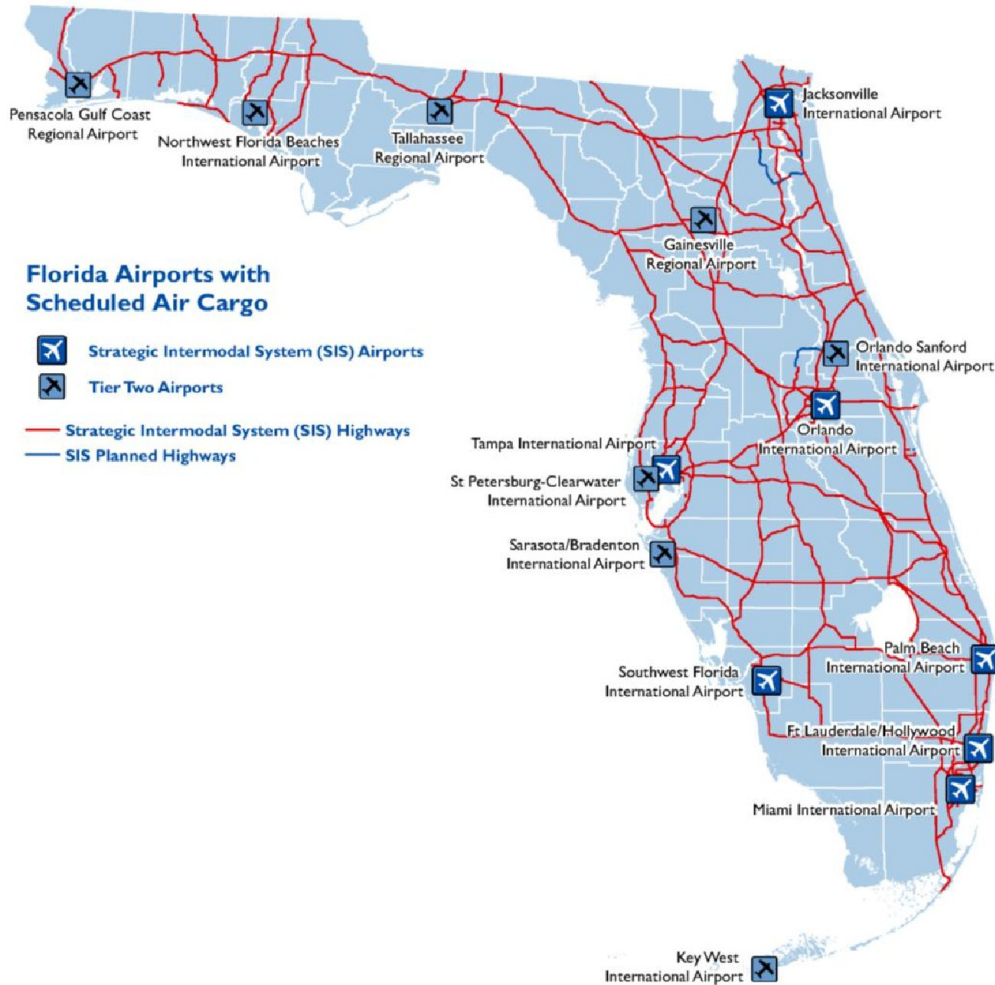


On an annual basis, over 2.5 million tons of air cargo are accommodated at Florida's airports—enough to fill over 60 Boeing 747 freighters per day. This cargo is transported in and out of the state to other airports in the U.S., as well as to Latin America, the Caribbean, Europe, and Asia. Through a combination of integrated express carriers such as FedEx, UPS, and DHL; all-cargo carriers such as China Airlines and AmeriJet; and commercial passenger carriers such as Delta, American, and Lufthansa, research indicates that Florida's airports directly serve 41 domestic and 94 international destinations with either dedicated all-cargo or wide-body passenger aircraft.

Air Cargo Volumes by Airport

While many airports in Florida can accommodate air cargo activity to a certain degree, there are 15 airports in Florida that have scheduled air cargo service supporting business and industry throughout the state. For purposes of this study, these airports are divided into two categories: SIS Tier One Airports and Tier Two Airports. It is important to note that, since the 2008 economic downturn, the global air cargo industry has been negatively impacted both domestically and internationally. Tier Two airports can be, and often are, used to move cargo traffic to larger SIS airports and airports outside of the state, as shown in **Figure 14**.

Figure 14: Florida Airports with Scheduled Air Cargo Service



Air Cargo Activity at General Aviation Airports

Florida's GA airports also play a significant role in facilitating the transport of airfreight, both regionally and nationally, by providing several unique advantages over commercial service airports that enable air cargo carriers to optimize the markets they serve. GA airports typically offer less congested airspace and less congested roadway access. Due to the small loads carried by air cargo aircraft operating at GA airports, ground support requirements—such as loading, unloading, and fueling—are less labor intensive. Together, all of these factors enable the air cargo carriers to get closer to their customer base and shorten turnaround times at airports along multi-stop routes. Florida has many such small markets, and its geography, diverse economy, and favorable flying climate make the state well suited for GA air cargo.

The types of carriers operating at GA airports in Florida include those that carry medical supplies and specimens, bank materials, and specialty cargo on both a scheduled or ad hoc basis. Additionally, some carriers are contracted feeder aircraft for larger integrated express carriers such as FedEx Express and UPS. The aircraft that operate cargo routes to GA airports are significantly smaller and have far less capacity than the aircraft used by the major air cargo carriers at commercial service airports. These aircraft are typically single or twin engine piston, turboprop, or jet aircraft that are capable of operating on the shorter runways of GA airports and are more economical when operating on shorter routes. While large cargo aircraft payloads can range from 18,000 to 95,000 pounds for narrow-body jets and 80,000 to 240,000 for wide-body jets, the capacities of cargo aircraft operating at GA airports have payloads ranging from 800 up to around 7,000 pounds.

Air Cargo Warehousing Capacity

Airports with significant air cargo activity typically have on-airport warehouse facilities. These storage facilities keep cargo off of the ramp area and provide a holding area for goods awaiting air and Road Feeder Service (RFS) connections to final destination. These facilities also function as sortation centers for cargo carriers. All SIS Airports have at least one dedicated air cargo building.

Minimum Airport Infrastructure Requirements

There are basic airport infrastructure requirements that must be met for an air carrier to locate at a particular airport. Some of the most important requirements include adequate runway length and pavement strength, 24-hour air traffic control operations, de-icing capabilities, aircraft rescue and fire fighting (ARFF) facilities, adequate fuel availability, a precision instrument approach landing system, and an acceptable number of days that the airport could be potentially closed due to poor weather conditions. Beyond the basics listed above, the airports need to provide the following:

- Adequate ramp space, lighted ramp for night operations, clearly marked aircraft parking pads and taxiways, security fence to prevent loss, and secured gates that allow ease of entry for cargo vehicles
- Interlining capabilities with connecting passenger carriers, charters, and motor carriers—especially important to the non-integrators since they must rely on other modes and carriers to provide, or extend, the service they cannot provide
- Direct access to aircraft by trucking operations
- Superior roadway network in the airport's vicinity
- Support services such as cargo terminal handling; aircraft handling (maintenance, repair, fueling, etc.), and security
- On-airport regulatory authorities including U.S. Customs, Federal Aviation Administration (FAA), the U.S. Department of Agriculture (USDA), and the U.S. Postal Service (USPS)
- Strong presence of freight forwarders in the local marketplace – an airport-to-airport cargo carrier cannot exist without the presence of a strong freight forwarder network within the community.

Smaller airports that support prop or turbo prop “feeder” aircraft (generally payloads of under 5,000 pounds) are exempt from a majority of the above-mentioned criteria. However, for large cargo jet aircraft (payloads of 18,000 to 200,000 pounds per aircraft) to operate efficiently at an airport, the listed facilities and services must be provided. If airports currently supporting jet aircraft service become overly constrained as air freight volumes continue to grow and become unable to provide the necessary space and facilities, alternate facilities may be sought by air cargo carriers. It is highly unlikely that a carrier would abandon its presence at a major market area airport if that airport becomes constrained.

A more likely scenario would be diverting some material to a secondary or reliever airport via smaller feeder aircraft for express air carriers, or increasing truck operations.

Highway Connections

In addition to the air cargo industry's reliance on numerous supporting airports, the industry also relies on a vast roadway and highway network to transport cargo to customers and consumers in state, as well as beyond state borders. On a daily basis, integrated express companies such as FedEx, DHL, and UPS transport packages via roadway network, parcels and pallets bound for awaiting cargo aircraft at Florida's airports. Additionally, air cargo for export arrives at Miami International Airport on trucks that originate as far away as New York, Chicago, and Los Angeles. For example, every morning flowers imported from Colombia arrive at Miami International Airport and are trucked to nearby processing warehouses before being loaded onto specially equipped trucks bound for grocer and floral distribution centers throughout North America.

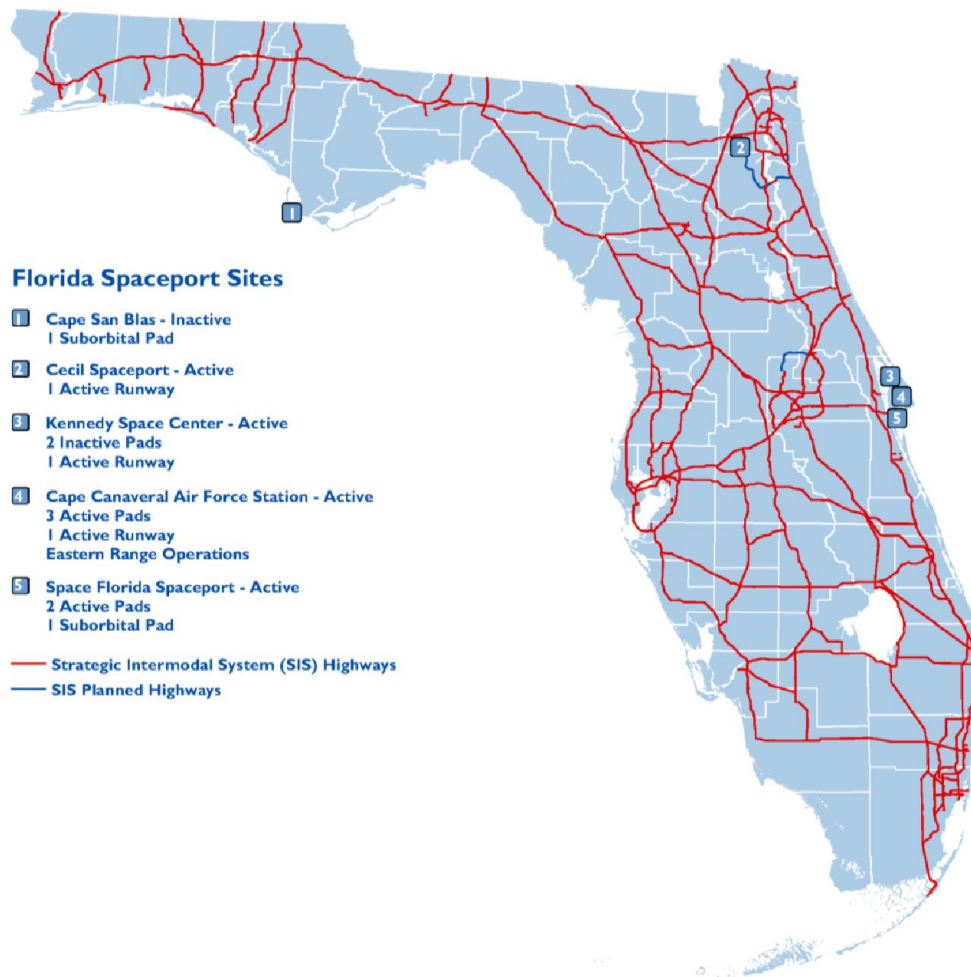
The surface transportation of air cargo represents a major component of the air cargo system in Florida. Surface transport is an equally vital component of the logistics network since air cargo moves beyond the airport's boundary. Moving freight between the point of pick-up/delivery and the aircraft involves complex coordination of truck movements between the customer-to-station and the station-to-airport. Integrated express carriers and air freight forwarders comprise the majority of air cargo surface transport volume and, as a result of the major role Florida plays within the air cargo industry, maintain significant/extensive operations throughout the state.

In addition to their extensive aircraft operations at Florida airports, FedEx and UPS both have significant surface transportation networks. Statewide, the two carriers combine for a total of 77 stations that have a combined area of over 4.5 million square feet of warehouse space. A total of over 2,300 truck docks and nearly 700 truck doors can be found at these stations. With a total distance of 2,833 linear miles between these stations and the airports they serve, the surface transport of air cargo utilizes all roadway types, including arterial, limited access highway, and limited access toll highway roads. The number of trips and cargo volumes associated with the daily operations between these facilities and their respective airports are unknown; however, the size and quantity of these facilities is an indicator of the importance of surface transportation within the entire air cargo process.

Spaceports

Space transportation has made great strides in the past 50 years. Initially motivated by defense concerns and national pride, the space industry has grown from the wonder of putting a man on the moon to touching the daily lives of billions of people across the globe. Through the introduction of Global Positioning System (GPS) satellites, communication satellites, national security sensing constellations, and weather systems, millions of people rely on space exploration and satellite activity every day. Florida has five spaceport sites, as shown in **Figure 15**.

Figure 15: Florida Spaceports







Florida has always been a leader in the space industry. With a combination of existing infrastructure and strategic investment in a space transportation system, Florida will continue to lead the world in space exploration, industry, and development.

Space Facilities

Transportation to support space activities is most prominent in Florida. Although technology is constantly evolving, there are five definable components of a spaceport system: spaceports, control centers and airspace, payload processing facilities, launch vehicles and space craft, and intermodal connections.

Figure 16 defines each of these elements and describes Florida's existing system.

Figure 16: Space Facilities

SYSTEM COMPONENT	DEFINITION	FLORIDA ASSETS
Spaceport 	<p>A public gateway to space that typically provides both launch and re-entry sites. In the U.S., launch facilities that serve commercial, non-governmental customers must be licensed by the Federal Aviation Administration (FAA).</p>	<ul style="list-style-type: none"> • Cape Canaveral Spaceport: commercial facilities at Kennedy Space Center (KSC) and the 45th Wing at Cape Canaveral Air Force Station (CCAFS), • Cecil Spaceport: a newly licensed facility in western Jacksonville.
Control Centers and Airspace 	<p>Centers that coordinate the details for space flight operations. Airspace in space transportation is primarily concerned with <i>ranges</i>, a flight path area used for launching rockets, missiles, and vehicles designed to reach high altitudes.</p>	<ul style="list-style-type: none"> • Launch Control Center (LCC) at KSC. • Morrell Operations Center (MOC) at CCAFS, manages the 15-million square mile Eastern Range. • Dedicated Launch Vehicle Control Centers for the Atlas V, Delta IV, and Falcon 9,
Launch Vehicles and Spacecraft 	<p>A <i>launch vehicle</i> is a rocket used to launch a spacecraft or satellite into high altitude or orbit. Typically they are classified as reusable (RLVs) or expendable (ELVs). <i>Spacecraft</i> are manned or unmanned vehicles that are designed to operate in space to accomplish a specific mission.</p>	<ul style="list-style-type: none"> • The Atlas V, Delta IV, and the Falcon 9 that will launch from CCAFS. • Development of the Space Launch System (SLS) at KSC. • Suborbital-ready facilities at Cecil Spaceport.
Payload Processing Facilities 	<p>Facilities that prepare payloads (the cargo necessary to complete a mission or flight's purpose) for launch, and processing following the flight.</p>	<ul style="list-style-type: none"> • 12 major facilities at KSC and CCAFSs with the capability to process a variety of payload types and sizes. • Astrotech in Titusville,
Intermodal Connections 	<p>Transportation modes that enable the movement of people and goods to spaceports, including roadways, airports, seaports, and rail lines.</p>	<ul style="list-style-type: none"> • Strategic Intermodal System (SIS), a system of key roadway, rail, airport, seaports, and spaceport infrastructure identified by the Florida Department of Transportation (FDOT).

Source: Florida Spaceport System Plan, 2013

Current Demand and Need

Florida currently has the capacity to launch any class of launch vehicle using its existing infrastructure and has the ability to launch a large number of flights per year. The challenge for Florida is not one of physical infrastructure but of positioning itself to stay competitive in nurturing existing industry and attracting emerging markets. To maintain its place as the heart of space transportation, Florida must address the following five challenges:

- **Face the Market:** Florida should draw on its historical strengths to stay competitive, leveraging the best from all partners to better meet national, state, and commercial needs.
- **Upgrade and Maintaining Infrastructure:** Florida has ample infrastructure to support almost any kind of launch, but some of the buildings and facilities need to be upgraded to compete with newer spaceport facilities. Other facilities need to be the right size to serve launch demand.
- **Communicate the Importance of Florida's Spaceport System:** The aerospace industry touches nearly every county in Florida and impacts the daily lives of millions of residents via GPS, communications, and weather satellites. The positive impacts of the system must be communicated strongly and consistently to ensure public support.
- **Maintain Strong Governance, Management, and Partnerships:** All of the managing entities and partnerships of the Florida Spaceport System must work together to cooperatively manage system resources and serve a variety of customers.
- **Provide Great Customer Service (Space-Ready and Space-Friendly):** To continue attracting new customers, Florida will need to promote its safety, low rates, and proven reliability at every opportunity.

Future Vision

As discussed in the Florida Spaceport System Plan, when Cape Canaveral was built, there was only one customer to serve: the U.S. federal government. Now, with an increasing interest in commercial flight, the market has expanded to include a greater diversity of customers with different needs. Over the past few decades, other launch facilities have developed across the U.S., creating a competitive context formerly unknown to the Cape. Although Florida is still the primary place for orbital launches, there are now multiple other facilities that compete for suborbital flights. To move forward and be competitive, Florida's Spaceport System will need to strategically develop to embrace this expanding market and diverse customer base.³⁷ Florida's future spaceport system will be lean, flexible, and agile. It will have the right infrastructure in place for the *right launch vehicle* or *spacecraft* at the *right time*. It will also demand a higher level of communication, coordination, and partnerships to maximize available resources to generate the greatest benefit for Florida residents.

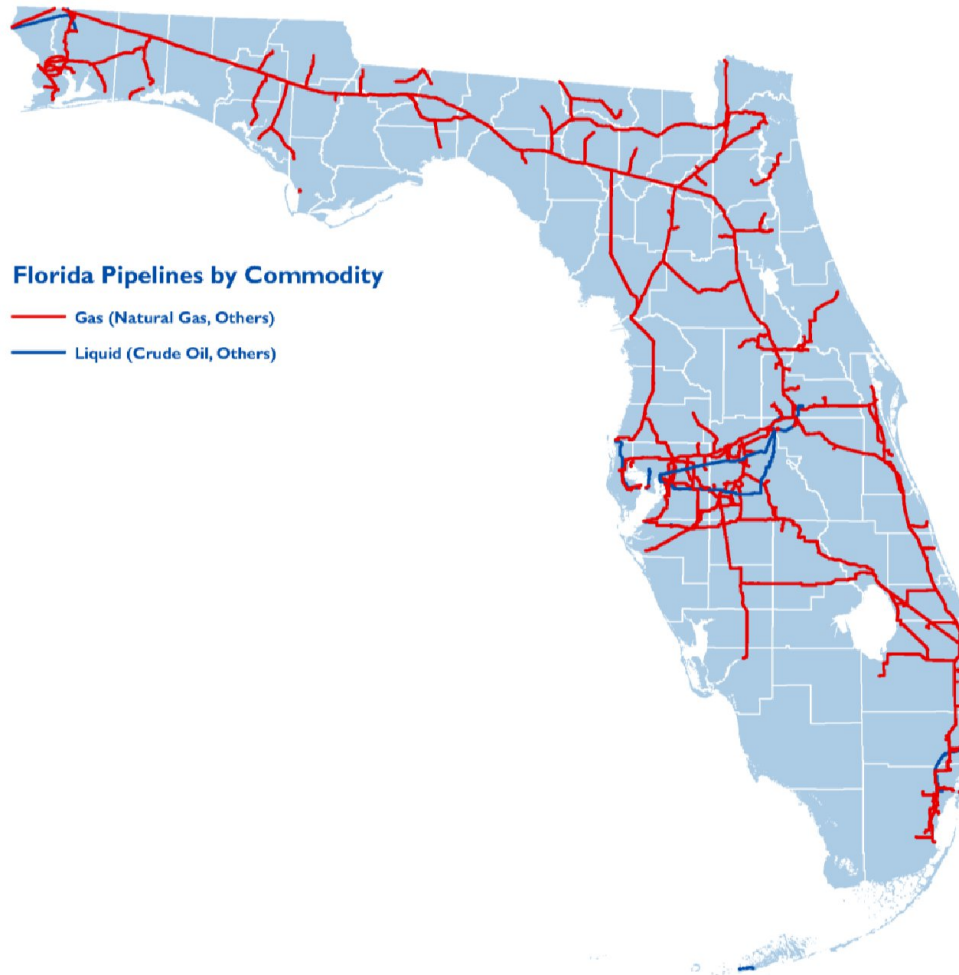
Pipelines

Pipelines play a significant role in the transport of commodities into and within Florida. Because pipelines are passive in nature and are subterranean, they are often overlooked and underappreciated. Florida has two main options available for transporting by pipeline: gas and liquid. Gas in Florida is usually natural gas, with service in the Jacksonville and Tallahassee areas connecting north, service in the Pensacola area connecting west, and service across the Panhandle connecting to the Orlando area, Tampa area, and South Florida, as shown in **Figure 17**. There is also a line across the Gulf of Mexico connecting Tampa, Orlando, and along Florida's Turnpike. Liquid pipelines are used for petroleum and are available in Central and South Florida, as well as Key West.

³⁷ Florida's Spaceport System Plan, Aviation and Spaceport Office, 2013

Approximately 60% of Florida's power is generated by plants that burn natural gas that must be transported from outside the state. According to Florida Power and Light (FPL), Florida has only minimal natural gas production. In addition, these pipelines are nearing full capacity, and the state needs another pipeline by 2017 to meet the increasing need for natural gas power and to expand access to natural gas from offshore sources.

Figure 17: Florida Pipelines



Source: National Pipeline Mapping System (NPMS), 2013



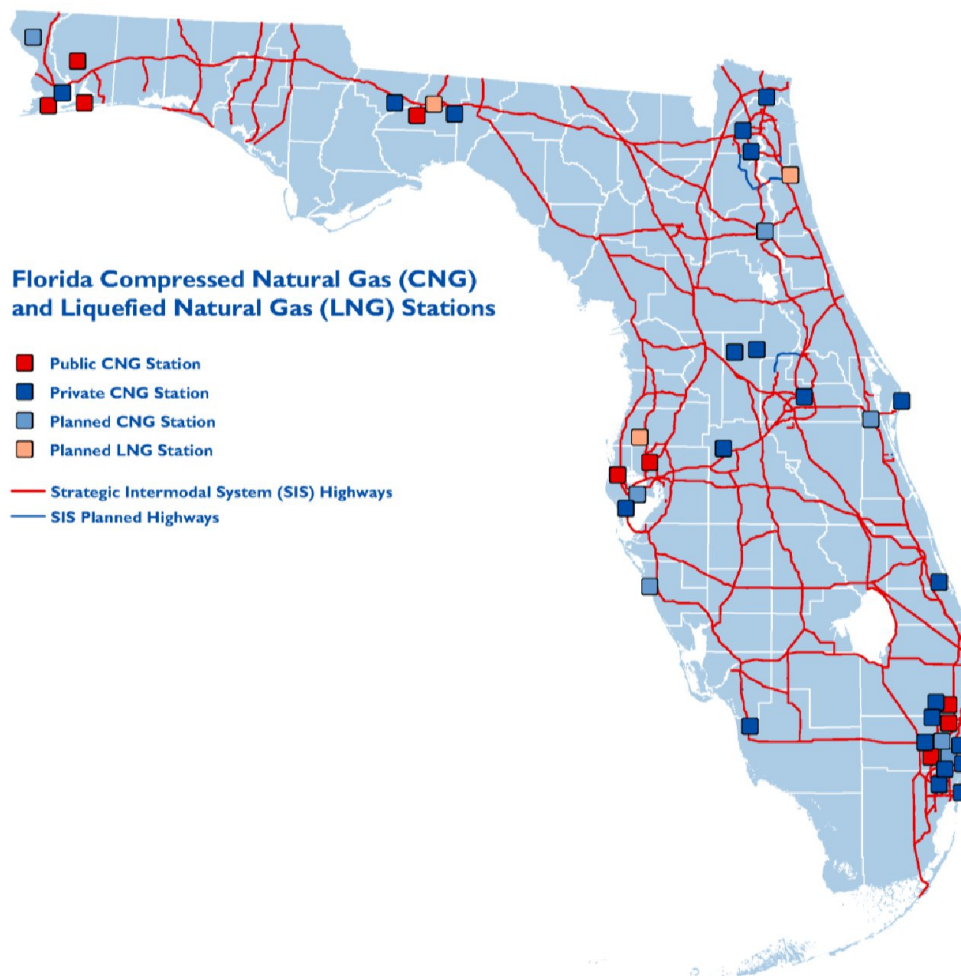
Natural gas pipeline construction, Tampa petroleum pipeline.

Source: Florida Department of Environmental Protection, 2013 and Allied Aviation, 2013

Traditionally, natural gas is primarily used to provide power for homes and businesses. Florida annually consumes more than 728 billion cubic feet of natural gas, and 85% of Florida's existing natural gas use is in the electric utility sector. In Florida, 59 of the 67 counties have natural gas services available for industrial, commercial, and residential use.³⁸ To reduce fuel costs, trucking fleets have been transitioning to Compressed Natural Gas (CNG) and Liquefied Natural Gas (LNG) powered engines. Railroads are also evaluating natural gas as a possible fuel for locomotive use. As this trend continues, the increased demand for natural gas will exacerbate the need for a third major natural gas pipeline to enhance reliability and security and reduce risks to the state's fuel transportation system.

In addition, CNG and LNG fueling are beginning to be developed throughout the state, as illustrated in **Figure 18**. However, the limited number of existing fueling stations throughout the state restricts the wide-spread use of alternative fuelled vehicles.

Figure 18: CNG and LNG Fuel Stations



Source: Florida Natural Gas Association, 2013

³⁸ <http://www.floridagas.org/NaturalGasInformation/Facts.aspx>, February 27, 2013

Current and Future Demands on Florida's Freight System

While the preceding sections of this chapter discussed the geographic and modal dimensions of Florida's freight system, including infrastructure, facilities, and modal options, this section discusses the demand placed on that system. These demands are greatly impacted by population growth.

Florida's Population and Tourism Trends

Population growth is an important indicator of economic and social wellbeing. During the past decade, population in the U.S. has continued to shift from rural to urban areas as the 100 largest metropolitan areas grew by 10.5% compared to a 5.8% population growth in other areas of the country. The suburban regions around many of the metropolitan areas expanded at a faster rate than core cities. Many of these suburban "cities" have developed employment and commercial centers that promote live-work environments that have changed commuting and delivery patterns. The recession in 2008-2009 caused a slowdown in population migration and household formation, as employment and new home construction fell substantially (see **Table 9**) and has yet to recover to pre-recession peaks.

Table 9: Florida Income, Population, and Housing Trends

	2003	2004	2005	2006	2007	2008	2009	2010	2011
Real Per Capita Income *	33,163	34,599	35,489	36,807	36,974	36,262	34,028	34,221	34,413
Population Estimate **	17.0	17.4	17.8	18.2	18.4	18.6	18.7	18.8	18.9
Working Age Population **	10.3	10.5	10.8	11.1	11.3	11.4	11.3	11.5	11.6
Housing Permits	213,567	255,893	287,250	203,238	102,551	61,042	35,329	38,679	42,360

* 2005\$;

** Millions

Source: Bureau of Economic and Business Research, University of Florida

In Florida, following the 2008-2009 recession, projected growth in state population shows an increase from 18.7 million residents in 2009, to 21.4 million in 2020, and to 33.5 million in 2060.³⁹ This population growth provides opportunity for improvement in business growth, employment, and income, yet also has implications for the growth in freight transportation activity in the state. For the U.S. as a whole, it leads other developed countries in population growth, due to higher birth rates and more net migration than other developed countries. From a production potential perspective, this is positive for the country and the domestic markets served by Florida. Emerging markets overseas have the fastest population growth (and largest populations) in the world, so countries such as Brazil, India, and Indonesia will continue to provide growing trade opportunities for Florida. China is the largest population country in the world today but with a rapidly aging and more slowly-growing population. This phenomenon of a higher projected growth of consumer markets in China, even as its population growth slows, means that China will continue to be a large market even as more rapid future growth in emerging markets will be elsewhere.

Population growth is fundamental to freight demand, as the consumption of goods and some services increases the need for freight transportation. Population is also generally considered an indicator of workforce availability—a critical factor for the state's economic development and growth. The projected population growth in Florida will drive the demand for regional products and services, requiring additional

³⁹ Florida Department of Transportation extrapolation of University of Florida, Bureau of Economic and Business Research, 2035 forecast

freight transportation capacity. Conversely, because of the interrelationship between economic growth and freight, the state's economic development and additional employment facilitated by additional freight transportation capacity will help foster likely contributions to state population growth. It should be noted that in addition to Florida's resident population, there is a substantial additional demand for freight derived from the approximately 81 million out-of-state visitors each year, who represent an additional element of demand for movement of goods they consume while in Florida.

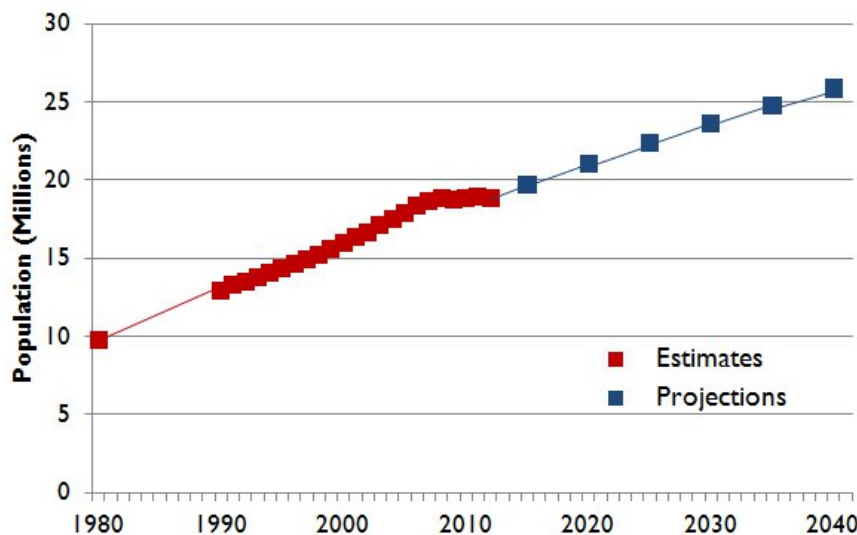
Linking Florida's Population and Freight Movement

Florida is forecasted to experience significant population growth. The transportation system will be required to adjust to these increased demands for the movement of people, goods, and services for the state to prosper. According to the Florida Chamber of Commerce:

"In 2014-2015, Florida will pass New York as the third most populous state in America. By 2030, Florida will grow by approximately six million new residents. Needless to say, this growth will require much from Florida's transportation systems."⁴⁰

In the 30-year period from 2010 to 2040, Florida's population is expected to increase by over 35%, to almost 26 million people, shown in **Figure 19**. Consumption of goods will grow and production will expand. In 2010, Florida's employment growth relative to population slightly outpaced California, Nevada, and the U.S.⁴¹ In addition, visitors to Florida has also increased since 1980 from approximately 20 million visitors to over 80 million visitors, as shown in **Figure 20**. According to the U.S. Census Bureau, the average American citizen consumes 45 tons of goods and commodities each year. This demands direct action be taken by the state to maintain and improve the state's goods movement transportation system.

Figure 19: Florida's Population 1980-2040

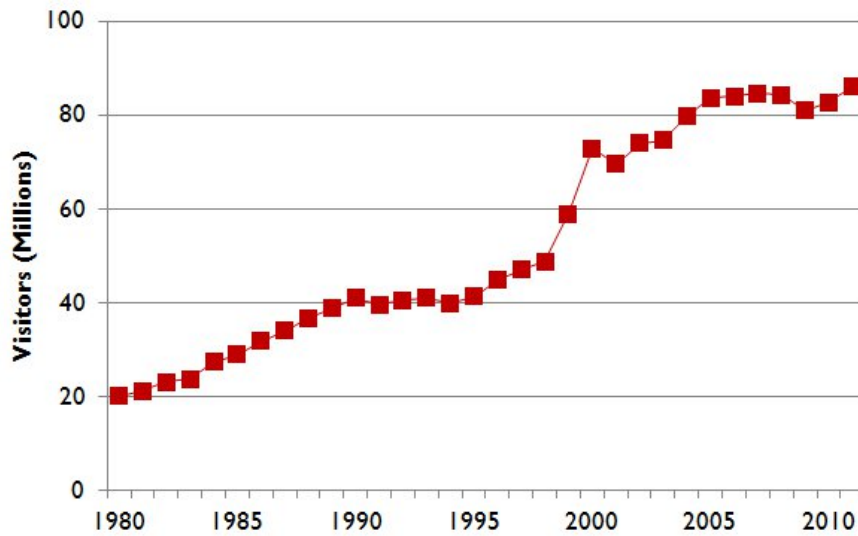


Sources: Office of Policy Planning, 2013

⁴⁰ <http://www.flchamber.com/issue/transportation-investments>, February 17, 2013

⁴¹ Florida's Long Term Economic Trajectory Emerging from the Great Recession, Bureau of Economic and Business Research, Dewey, 2013.

Figure 20: Florida's Visitors 1980-2011



Note: New visitor estimation method adopted in 1999 and updated 2009.

Source: Office of Policy Planning, 2013

Florida's transportation system must continue to be a balanced, integrated, and multimodal network. Swift economic movement of goods through our highway, airports, rail system, pipelines, and seaports throughout the state gives Florida businesses a competitive edge by adding value to their products and services. **One aim of the FDOT is to foster the development of an integrated, multimodal goods movement transportation system that is safe, efficient, and effective.** It recognizes this statewide system of highways, rail lines, pipelines, air cargo facilities, seaports, ILCs (distribution and warehousing), and space launch and recovery facilities is essential to a healthy economy and quality of life in Florida.

Key Markets and Top Commodities

In 2012, FDOT Secretary Ananth Prasad embraced Governor Scott's goal to turn Florida into a global hub for trade, logistics, and export-oriented manufacturing. Since then, the FDOT's partnership with Enterprise Florida has only grown. Understanding the relationship between transportation and the economy is crucial to this initiative.

Understanding what and where goods are moving is a critical step. The supply chain for furniture looks very different than that for dairy products. Often, a quick look at the top commodities will help to understand what types of commodities the state is best suited to move well. In the same manner, the top trading partners can give insights into where there are trade relationships and which modes are effective. See **Tables 10, 11, 12, and 13** for details.

Table 10: Florida's Top 5 Merchandise Exports

Rank	HS Code*	Commodity	Billions of U.S. Dollars in 2012
Total Exports			90.4
1	7108	Gold (Incl Plat Plated), Unwrought, Semimanufactured	7.9
2	8703	Motor Cars & Vehicles For Transporting Persons	7.3
3	8800	Civilian Aircraft, Engines, And Parts	7.0
4	8517	Electrical Apparatus For Line Telephony Etc, Parts	5.1
5	8471	Automatic Data Process Machines; Magnetic Readers Etc	4.6

* 4-digit Harmonized System Code (HS Code)

Source: International Trade Statistics, Enterprise Florida, 2013

Table 11: Florida's Top 5 Merchandise Imports

Rank	HS Code*	Commodity	Billions of U.S. Dollars in 2012
Total Imports			71.8
1	7108	Gold (Incl Plat Plated), Unwrought, Semimanufactured	7.2
2	8703	Motor Cars & Vehicles For Transporting Persons	5.7
3	2710	Oil (Not Crude) From Petroleum & Bituminous Mineral Etc	5.6
4	8542	Electronic Integrated Circuits & Microassemblies, Pts	4.7
5	9801	Expts Of Artic Imptd For Repairs; Impts Of Artic Exptd Returned	2.6

* 4-digit Harmonized System Code (HS Code)

Source: International Trade Statistics, Enterprise Florida, 2013

Table 12: Florida's Top 5 Merchandise Export Destinations

Rank	Country	Billions of U.S. Dollars in 2012
Total All Countries		90.4
1	Brazil	15.8
2	Switzerland	8.2
3	Venezuela	6.7
4	Colombia	5.8
5	Chile	4.3

Source: International Trade Statistics, Enterprise Florida, 2013

Table 13: Florida's Top 5 Merchandise Import Origins

Rank	Country	Billions of U.S. Dollars in 2012
Total All Countries		71.8
1	China	8.1
2	Japan	6.7
3	Costa Rica	6.0
4	Colombia	4.8
5	Brazil	3.8

Source: International Trade Statistics, Enterprise Florida, 2013

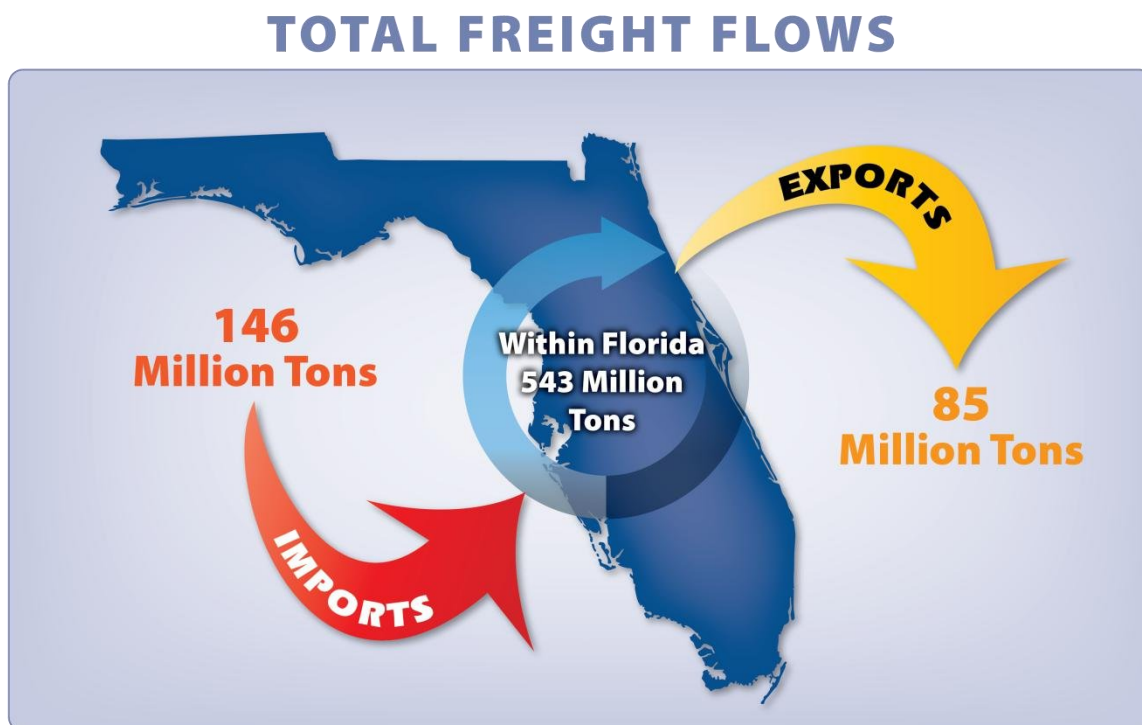
With a long history of military presence and aerospace expertise, it is not surprising that Florida exports a considerable amount of industrial and electrical equipment, as well as aircraft and spacecraft. Another

important aspect of the state's freight flows includes the movement of vehicles as a commodity. Imports are quite similar, which suggests a cluster of aviation and aerospace businesses in Florida. Florida ranks second among states for aviation, aerospace, and space establishments, with more than 2,000 aviation and aerospace companies employing some 87,000 workers⁴². South Florida has seen considerable trade in recent years due to the growth of Latin America or Pan America, specifically Brazil and Colombia. Gold has become the number one commodity traded through South Florida, and may continue to grow unless the price drops significantly⁴³.

Florida's top trading partners showcase the existing strong relationship with Central and South America, as well as the Caribbean. This region represents Florida's key market. Many countries in this region are growing and making investments in their seaports, which could mean either additional competition or cargo growth for Florida in the future. Continued investments in freight projects such as channel deepening and maintenance will allow Florida to take advantage of these opportunities. Without these investments, the state could lose jobs to off-shore transshipment facilities. Another top trade area is Eastern Asia. Together, China and Japan make up over 20% of the total imports.

In addition to international trade, Florida moves a significant amount of freight within the state. This internal movement of freight places a higher demand on the state's infrastructure because 70% of freight is moved within Florida rather than imported or exported. Regional freight flows within Florida often vary, and these unique characteristics may be further explored in regional and local plans. **Figure 21** provides an overview of freight flows in Florida.

Figure 21: 2011 Florida Total Freight Flows



Source: FHWA, Freight Analysis Framework 3.4

⁴² Enterprise Florida, 2013

⁴³ South Florida poised for record trade in 2013, Sun Sentinel, 2013

Forecasted Growth and Modal Choice

The location of Florida and its demographic profile offer unique opportunities for freight to play a big role in the economic development of the state. This is especially true in the context of the expansion of the Panama Canal and cultural ties between Florida, South and Central America, and the Caribbean. **Table 14** illustrates the tonnage and value for 2011, 2020, 2030, and 2040. **Tables 14, 15, and 16** show the total flows moved between domestic origins and destinations, and includes both domestic and foreign shipments. For import shipments, the origin of the flow is the zone (state or region) of entry, and for export shipments, the destination of the flow is the zone (state or region) of exit. Mode of transportation is the mode used from zone of entry to the domestic destination, domestic origin to domestic destination, and domestic origin to zone of exit.⁴⁴

Table 14: Commodity Flow Into and Out of Florida

	2011		2020		2030		2040	
	Weight (KTons)	Value (M\$ 2007)	Weight (KTons)	Value (M\$ 2007)	Weight (KTons)	Value (M\$ 2007)	Weight (KTons)	Value (M\$ 2007)
Within Florida	542,757	\$509,477	730,073	\$739,726	813,189	\$1,001,110	924,986	\$1,290,479
From Florida	85,467	\$158,827	116,434	\$276,875	142,810	\$473,632	172,884	\$700,054
To Florida	146,095	\$295,165	165,612	\$393,300	182,007	\$519,374	207,973	\$652,852
Total	774,320	\$963,470	1,012,119	\$1,409,901	1,138,006	\$1,994,116	1,305,843	\$2,643,384

Source: FHWA, Freight Analysis Framework 3.4

The total weight of goods imported into and exported out of Florida is expected to grow from 232 Million tons in 2011 to 381 Million tons (a growth of 64%) in 2040, and the total value of goods imported into and exported out of Florida is expected to grow from \$454 billion⁴⁵ in 2011 to \$1.353 trillion (a growth of 198%) in 2040. Within Florida, it is expected that freight will grow by 70% in weight and 153% in value from 2011 to 2040.

Figure 22 shows the overall growth in freight in weight and value from 2011 to 2040. While Florida continues to be a consuming state in terms of weight of goods, the value of goods exported from Florida is expected to increase from 16% to 26%, a reverse of current trends, and can be economically

⁴⁴ Important Note: The numbers presented are from the Federal Highway Administration's (FHWA's) Freight Analysis Framework (FAF) Version 3.4, which has been updated to include 2011 data. These numbers are different from the tables sourced from the individual seaports. There has been no attempt to reconcile the two numbers due to the following reasons discussed below.

The seaports report only tonnage moving through their facilities. For example, transshipment activity via Port Miami (shipment from Europe to South America via Miami) is accounted for in the total tonnage passing through the port, but, since it does not impact the transportation system, including it in the modal comparisons is not appropriate. This information will overestimate the waterborne traffic, leading to imprecise estimates.

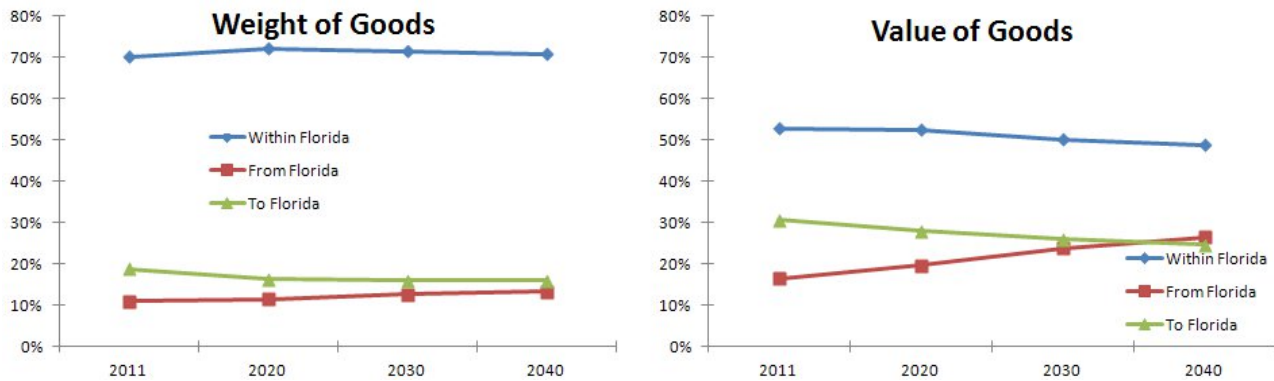
Another issue is the port estimates do not account for intrastate and interstate commodity movement. For example, commodities shipped via truck from Georgia to North Florida are not accounted for in the port data and, once again, using multiple data sources for different modes leads to misleading identification of mode shares. Therefore, it was decided to keep the numbers in this section confined to the estimates from the FAF since it gives state level estimates for all modes, allowing for easier comparisons and determination of mode shares.

⁴⁵ All values in 2007 dollars

beneficial to the state. Within Florida, it is expected that the value of goods shipped will fall from a share of 53% to 49% of the total goods shipped from, to, and within the state, as imports and exports continue to grow fast.

In terms of mode used for shipping goods, Truck continues to predominate by weight (**Table 15**) and is poised to grow from 81% in 2011 to 83.7% in 2040. By 2040, the category of Other and Unknown is forecast to move above Pipeline and Water as the fourth largest mode by weight from its position as just above Air in 2011. However, in terms of value of goods shipped via truck, there is an increase of 74% from 2011 to 2040.

Figure 22: Commodity Flow (Weight and Value) Trends from 2011 to 2040



Source: FHWA, Freight Analysis Framework 3.4

Table 15: Tonnage by Mode (2011 to 2040)

Mode	2011 (KTons)	2020 (KTons)	2030 (KTons)	2040 (KTons)
Truck	627,582	837,847	949,507	1,093,274
Rail	58,073	71,322	77,584	85,328
Multiple Modes & Mail	40,947	52,835	63,740	77,973
Pipeline	22,948	23,582	20,165	18,750
Water	14,530	11,862	8,378	7,384
Other and Unknown ¹	9,868	14,132	17,873	22,108
Air (Include Truck-Air)	372	539	760	1,025
Total	774,320	1,012,119	1,138,006	1,305,843

¹Includes flyaway aircraft, vessels, and vehicles moving under their own power from the manufacturer to a customer and not carrying any freight, unknown, and miscellaneous other modes of transport.

Source: FHWA, Freight Analysis Framework 3.4

While Air has the lowest share in terms of weight, in terms of value of goods shipped, it is above Pipeline and Water, as is to be expected. Further, by 2040, air is forecast to ship more goods in terms of value compared to rail. **Table 16** shows the value by mode from 2011 to 2040.

Table 16: Value by Mode (2011 to 2040) (Millions of 2007 Dollars)

Mode	2011 (M\$)	2020 (M\$)	2030 (M\$)	2040 (M\$)
Truck	\$724,806	\$1,031,519	\$1,393,319	\$1,793,602
Multiple Modes & Mail	\$155,350	\$256,816	\$431,050	\$623,622
Other and Unknown ¹	\$26,113	\$41,319	\$58,896	\$78,593
Rail	\$22,032	\$31,806	\$39,583	\$47,783
Air (Include Truck-Air)	\$20,693	\$34,927	\$60,320	\$89,442
Pipeline	\$8,592	\$8,655	\$7,295	\$6,757
Water	\$5,883	\$4,860	\$3,653	\$3,584
Total	\$963,470	\$1,409,901	\$1,994,116	\$2,643,384

¹Includes flyaway aircraft, vessels, and vehicles moving under their own power from the manufacturer to a customer and not carrying any freight, unknown, and miscellaneous other modes of transport.

Source: FHWA, Freight Analysis Framework 3.4

On the basis of weight, aggregate was the top commodity to move within Florida in 2011, and nonmetal mineral products are projected to take the top place in 2040. In 2011, fertilizers were the top export, and newsprint/paper is projected to be the top export in 2040. In 2011 and 2040, coal is slated to be the top import.

In 2011 and 2040, the top commodity shipped within the state in terms of value is machinery. Precision instruments and electronics are the top commodities both imported into and exported out of Florida in 2011 and 2040.

Domestically, Florida trades primarily with Georgia, along with a few other states in the Southeast. Outside of the Southeast, Florida trades primarily with California and New York, especially in terms of value.

Top Domestic Export and Import Markets

In looking at the top ten domestic import and export markets, a consistent theme emerges. Whereas the southeastern states rank in the top ten in terms of weight of commodities imported and exported, when it comes to value of commodities exported, the larger states such as California, New York, and Illinois, among others, rank highly. Going into 2040, Georgia continues to be Florida's most important trading partner, ranking first among all states that import and export commodities into Florida. The top ten domestic markets account for 60% of the value and 72% of weight of all goods shipped to and from Florida.

Top Foreign Exports and Imports

Florida is and will continue to be the top export market to the rest of the Americas. **Table 17** shows the weight and value of exports via Florida seaports for both Florida and non-Florida origins. Overall, the share of exports from Florida seaports is expected to grow to 264% by weight from 2011 to 2040 and to 304% by value from 2011 to 2040. This growth is, however, not uniform. Florida's share of exports to Southeast Asia, East Asia, and Oceania is expected to decline sharply in terms of weight of commodities exported. However, in terms of value, the decline in exports from Florida via Florida seaports is not as sharp.

Table 17: Exports via Florida Ports (Ranked by 2040 Florida Exports Weight and Value)

	Non-Florida Exports via Florida Ports				Florida Exports via Florida Ports			
Exporting To	2011 (KTons)	2020 (KTons)	2030 (KTons)	2040 (KTons)	2011 (KTons)	2020 (KTons)	2030 (KTons)	2040 (KTons)
Rest of Americas	4,185	6,483	10,323	14,090	7,965	14,191	23,329	31,655
Mexico	639	1,033	1,533	2,038	789	1,403	2,145	3,047
Europe	603	760	920	1,152	879	1,261	1,749	2,247
Eastern Asia	487	1,117	2,425	4,180	756	1,309	1,821	1,934
Canada	14	22	28	44	356	507	624	749
SW & Central Asia	388	602	815	1,087	107	233	380	543
SE Asia & Oceania	41	81	159	267	269	368	464	512
Africa	122	214	318	423	54	109	187	267

	Non- Florida Exports via Florida Ports				Florida Exports via Florida Ports			
Exporting To	2011 (in 2007 M\$)	2020 (in 2007 M\$)	2030 (in 2007 M\$)	2040 (in 2007 M\$)	2011 (in 2007 M\$)	2020 (in 2007 M\$)	2030 (in 2007 M\$)	2040 (in 2007 M\$)
Rest of Americas	\$10,410	\$16,991	\$28,196	\$38,927	\$97,130	\$170,532	\$283,830	\$396,460
Europe	\$914	\$1,429	\$2,025	\$2,737	\$8,023	\$14,109	\$23,611	\$33,143
Mexico	\$1,260	\$2,107	\$3,491	\$4,799	\$1,085	\$2,032	\$3,504	\$5,057
Eastern Asia	\$293	\$539	\$882	\$1,320	\$842	\$1,494	\$2,449	\$3,404
SW & Central Asia	\$1,434	\$2,331	\$3,303	\$4,286	\$586	\$1,175	\$1,944	\$2,818
Africa	\$780	\$1,411	\$2,113	\$2,760	\$465	\$920	\$1,568	\$2,256
Canada	\$20	\$36	\$65	\$94	\$146	\$244	\$376	\$510
SE Asia & Oceania	\$155	\$271	\$429	\$625	\$135	\$216	\$326	\$445

Industry Composition

Freight transportation demand varies by type of industry, with goods movement needs varying considerably across farming, mining, manufacturing, and services sectors. Consequently, the composition of industry within the state's economy is important to characterizing freight demand in the state. A common measure of the importance and size of an industry is the number of jobs it provides within the state. To see how Florida compares to the rest of the country, state employment by industry sector is compared to that of the U.S. as a whole is shown in **Table 18**.

Table 18: Industry Employment by Sector, 2011, U.S. and Florida

Industry Sector Employment, 2011	U.S. Total	Florida	Florida
Total, All Industries	108,184,795	6,150,504	6%
NAICS 11 Agriculture, Forestry, Fishing and Hunting	1,160,311	82,797	7%
NAICS 21 Mining, Quarrying, and Oil and Gas Extraction	730,048	3,877	1%
NAICS 22 Utilities	549,921	22,430	4%
NAICS 23 Construction	5,473,045	334,292	6%
NAICS 31-33 Manufacturing	11,701,497	311,263	3%
NAICS 42 Wholesale Trade	5,545,802	308,305	6%
NAICS 44-45 Retail Trade	14,666,625	955,898	7%
NAICS 54 Professional and Technical Services	7,672,567	444,266	6%
NAICS 55 Management of Companies and Enterprises	1,914,543	80,980	4%
NAICS 56 Administrative and Waste Services	7,711,123	527,549	7%
NAICS 61 Educational Services	2,545,941	130,315	5%
NAICS 62 Health Care and Social Assistance	16,489,393	944,296	6%
NAICS 48-49 Transportation and Warehousing	4,055,639	205,027	5%
NAICS 51 Information	2,674,852	134,258	5%
NAICS 52 Finance and Insurance	5,506,634	322,862	6%
NAICS 53 Real Estate and Rental and Leasing	1,909,775	151,144	8%
NAICS 71 Arts, Entertainment, and Recreation	1,922,644	188,899	10%
NAICS 72 Accommodation and Food Services	11,371,959	765,226	7%
NAICS 81 Other Services, Except Public Administration	4,408,735	234,513	5%
NAICS 99 Unclassified	173,741	2,307	1%

Source: U.S. Department of Labor, Bureau of Labor Statistics, Census of Employment and Wages Data

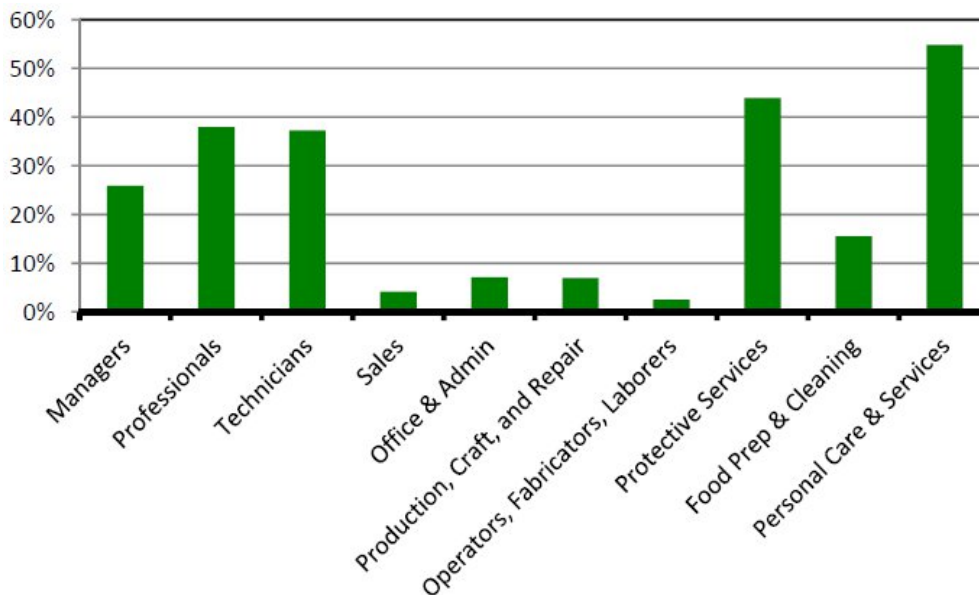
The largest industries in Florida, measured by employment, are the service sectors: Retail Trade, Health Care, and Accommodations and Food Services. These three sectors provide over 2.6 million jobs in the state, accounting for 43% of total industry employment in Florida. The dominance of service sectors in employment is common throughout the country but even more pronounced in Florida, where these three categories account for 43% of total industry employment in the state, compared with 39% for the country as a whole. The Agriculture, Mining, Utility, Construction, and Manufacturing sectors combined provide about 755,000 jobs, or 12.3% of total industry employment in the state. At a national level, these sectors comprise 18.1% of industry employment. This means Florida's freight transportation system is already serving a more services-oriented economy than that of the country as a whole.

The industry share of employment in Florida compared to that of the country as a whole varies widely. The top two industries in Florida, Retail Trade and Health Care and Social Assistance, are the same as for the U.S. as a whole, but, where Accommodation and Food Services is third in Florida, it is Manufacturing that is third-ranked nationally. Manufacturing provides 10.8% of the jobs in the country, while, in Florida, Manufacturing provides just over 5% of employment, ranking seventh after Construction and two other service sectors.

From a workforce and income perspective, the industry mix presents a challenge for Florida. Rather than mid-skill jobs providing for middle-income households, the skills required for the higher growth industries

are increasingly shifting toward the ends of the skill spectrum⁴⁶. Faster growing industries include services for tourists and retirees that require large numbers of low-skilled and relatively lower-wage jobs, as well as the information technology and professional and technical service sectors where the workforce largely requires workers with greater higher education in higher wage jobs. The routine task jobs of office clerical work and fabricators that require medium levels of education and earn middle incomes have grown more slowly. This “hollowing out” can be seen in **Figure 23**, showing Florida employment growth by occupation from 2000-2011.

Figure 23: Changes in Employment by Occupation, Florida, 2000-2010, Percent



Source: Dewey, J., and D. Denslow, University of Florida, 2012

With the trends for continued technological progress and adoption, it is likely that the need for middle-skill positions will continue to grow more slowly than for those for higher- and lower-skilled positions. In addition, with the aging of the population and the success of Florida as a destination for retirement and tourism, the service sector needs for higher numbers of lower-skilled workers will likely continue to grow. Workforce Florida is the agency partner for information on existing workforce training programs.⁴⁷

External economic factors affecting Florida include the more rapid pace of growth in the economies of developing countries than among the traditional U.S. trading partners in the developed countries. Competition from exporters in these countries can present challenges to Florida businesses trying to compete in export markets. Conversely, these faster-growing overseas markets provide more rapidly growing demand for products, especially for imports, as incomes in those countries afford the population the means to purchase more imported goods. Increased Florida exports can contribute to the health of Florida's economy through higher job creation, company sales, and tax revenue at a pace not sustainable if businesses were just trying to serve the domestic U.S. economy alone.

⁴⁶ Dewey, Jim, and David Denslow. "Low, Declining, Polarizing: Job Skill in Florida", Economic Analysis Program, Bureau of Economic and Business Research, University of Florida. Florida Regional Economic Symposium, April 2012.

⁴⁷ <http://www.workforceflorida.com/PrioritiesInitiatives/FundingOpportunities/TrainingGrants.php>

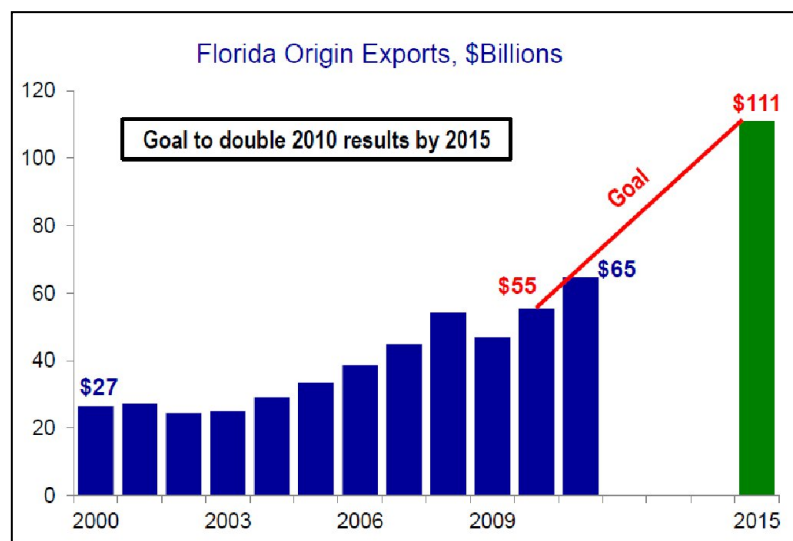
Linking Freight and the Economy

In the U.S., new orders for manufactured goods in the fourth quarter of 2012 increased \$8.6 billion (1.8%) to \$484.8 billion, while shipments increased \$1.8 billion (0.4%) to \$484.9 billion.⁴⁸ In Florida, according to Enterprise Florida, the manufacturing industry counts nearly 18,000 manufacturers who employ some 311,300 workers across the state. Florida's manufacturing industries are diverse and include companies in traditional manufacturing industries, such as plastics, food processing, and printing, as well as those that are engaged in breakthrough technologies, like electronics, medical devices, and aviation/aerospace. These specialized operations benefit from the presence of advanced research facilities at Florida's universities and colleges, military installations, and NASA. In addition to an increasing focus on technology, Florida has a strong, skilled manufacturing workforce, which represents about 5% of the state's workforce. The state's multicultural and multilingual diverse workforce provides Florida manufacturers with a distinct advantage, especially when conducting business overseas in the growing Latin America global market. These strategic advantages ensure that Florida manufacturers are a powerful economic engine for the state's economy and can compete in the global market.

America is a trading nation, and a majority of U.S. exports are related to goods production industries. For 2012, exports of goods were up \$66.7 billion from 2011. Increases occurred in capital goods (\$33.7 billion); automotive vehicles, parts, and engines (\$12.9 billion); consumer goods (\$6.7 billion); foods, feeds, and beverages (\$6.6 billion); other goods (\$6.3 billion); and industrial supplies and materials (\$0.5 billion). Capital goods include advance technology products such as semiconductors, civilian aircraft, instruments, and industrial engines, which accounted for 34% of the total goods exported from the U.S.⁴⁹

In 2000, Florida's origin exports were valued at \$27 billion and were increasing until the recession of 2008. After the recession, Florida has been steadily increasing its origin exports, which were valued at \$67 billion in 2011. Florida is also focusing on more global trade and has the goal of increasing its exports to \$111 billion by 2015, shown in **Figure 24**.

Figure 24: Florida's Future Global Trade



Source: U.S. Census Bureau, Foreign Trade Division

⁴⁸ Full Report on Manufacturers' Shipments, Inventories and Orders, U.S. Census Bureau, December 2012

⁴⁹ U.S. International Trade in Goods and Services – December 2012, U.S. Census Bureau & U.S. Bureau of Economic Analysis, February 8, 2013

Repeating previous growth performance, this would mirror Florida's origin export surge from \$37 billion, adjusted for inflation, in 2005, to the record \$55 billion in 2010. This positioned Florida fourth in the U.S. in origin export revenues. Currently, Florida origin exports account for 7.3% of the state's gross domestic product (GDP), below the 9.2% average nationally. Florida's recent export growth has been led by technology and manufactured goods, including computers, machinery, transportation equipment, and fabricated metal products. High-technology exports totaled \$14.6 billion in 2009, representing 30% of all exports in the state.⁵⁰

Existing or emerging industry clusters as designated by Enterprise Florida such as aerospace, life sciences, and CleanTech⁵¹ industries all could create manufacturing exports. Growing Florida origin exports would have broad impacts throughout the economy, creating opportunities not only for transportation and logistics businesses but also for manufacturing, technology, mining, and agricultural businesses. A broader global market could foster much-needed diversification of Florida's economic base, including a stronger manufacturing sector. Florida's geographic distance from U.S. markets has been one factor that has limited manufacturing to industries relying on Florida's natural resources and agricultural products, as well as industries serving Florida's local market. An enhanced supply chain management, together with a multi-directional logistics system, would reduce costs and produce economies of scale, shifting Florida to a central position in global trade lanes. These changes could make Florida a more viable location for advanced manufacturing to serve broader markets in the Western Hemisphere and globally.

The competitive global, national, regional, and local markets have made U.S. businesses more dependent upon an integrated, agile, and efficient transportation and goods movement system. To compete successfully, businesses must optimize all of their strategic economic assets, including their location and access to a skilled workforce. In addition to economic assets, there are several transportation factors that heavily influence the competitiveness of U.S. businesses in the global marketplace. Transportation costs, reliability, and speed to markets are a few of the most influential factors. In a recent study of users, shippers, and suppliers involved in goods movement, reliability was considered by users to be the key factor in their transportation choice.⁵²

Transportation and Warehousing Industry Sector

In addition to manufacturing, the transportation and warehousing sector is a vital aspect of freight and the economy. This sector includes industries providing transportation of passengers and cargo, warehousing and storage for goods, scenic and sightseeing transportation, and support activities related to modes of transportation. Establishments in these industries use transportation equipment or transportation-related facilities as a productive asset. The type of equipment depends on the mode of transportation. The modes of transportation are air, rail, water, road, and pipeline.⁵³

Increases in population and freight volumes in this sector have a tremendous effect on revenue. The last economic census conducted in 2007 showed the transportation and warehousing sector establishments increased by 10% over the previous five years, while the corresponding revenue increased by 68%.

⁵⁰ Florida Trade and Logistics Study, Florida Chamber of Commerce Foundation, February 2011

⁵¹ With many definitions available, a comprehensive definition borrowed from CleanTech Group LLC, identifies CleanTech as "...new technology and related business models that offer competitive returns for investors and customers while providing solutions to global challenges." Florida Supply Chain Management, FDOT, 2012

⁵² "Modernizing the U.S. Freight-Transportation System for Future Economic Growth," RAND Supply Chain Policy Center, 2009

⁵³ Transportation and Warehousing: Geographic Area Series: Comparative Statistics for the United States (2002 NAICS Basis): 2007 and 2002, 2007 Economic Census

In Florida, this accounted for \$41 billion, or 6% of the total U.S. revenue for the transportation and warehousing sector.⁵⁴ The transportation and warehousing sector is an important economic generator and jobs creator in Florida.

According to the Florida Department of Economic Opportunity and the U.S. Bureau of Labor Statistics, the trade, transportation, and utility sector is the largest non-agricultural business employment sector in Florida, with approximately 20% of the non-agricultural jobs. From 2008 to 2010, there was a sharp downturn in the number of employees in this sector; however, from January 2010 to November 2012, there has been a 5.5% increase in employment.⁵⁵

Overall, the 4.4 million employees⁵⁶ of the transportation and warehousing sector keep America moving. They transport people and merchandise on airlines, ships, barges, railways, trucks, and urban transit systems, and they store raw materials and manufactured goods in warehouses along the way.

The availability and capability of the transportation workforce is critical to future economic growth and development in Florida. As noted in the 2010 Florida Chamber Foundation study, Florida has long been an important gateway for trade in the Latin America and Caribbean nations. Yet, in the coming years, there will be opportunities to expand that role. Achieving the vision of the plan will require coordinating efforts on the development of a global trade and logistics workforce.

Summary of What the Trends Imply

Future performance of the transportation system serving trade and goods movement will be affected by the geographic and modal dimensions of freight and the system demands and growth trends discussed in this chapter. There are different dimensions of freight, but overall the system is critical to the economic well-being of the state. Florida's business sector will be affected by the state's ability to accommodate infrastructure and transportation operational needs to maintain goods movement and trade mobility. Sufficient capacity and performance will be required to not impede the competitiveness of companies in Florida trying to survive and thrive in the face of opportunities for and threats to their business.

The transportation system's performance is increasingly important to the site location and network design decisions of companies and their supply chain partners. Future performance of the network is threatened from the impact of the trends toward faster growth in projected demand than additions to network capacity. Congestion and other related system performance problems, such as increases in incident-caused delay or higher accident rates will have consequences for Florida's economy. Florida's freight system highlights from this chapter include:

- Highways provide connections between a variety of freight hubs across the state, including airports, seaports, rail terminals, distribution centers, military facilities, Intermodal Logistics Centers (ILCs) and other intermodal facilities. Trucks carry a majority of freight in the state, yet much of the State Highway System is forecasted to be heavily congested by 2040 even with planned improvements.

⁵⁴ Transportation and Warehousing: Geographic Area Series: Summary Statistics for the United States, States and Metro Areas: 2007, 2007 Economic Census

⁵⁵ *Economy at a Glance*, Florida, Bureau of Labor Statistics, <http://www.bls.org>, February 18, 2013

⁵⁶ Transportation and Warehousing: Geographic Area Series: Summary Statistics for the United States, States and Metro Areas: 2007, 2007 Economic Census

- Rail congestion is harder to determine, but the growth of marine containerization has intensified the use of rail intermodal transportation and there may be impacts going forward. There is also a growth in passenger rail, which has implications for freight rail.
- The proximity of Florida's seaports to east-west trade lanes places it square in the center of international commerce, and has over 220 global trade partners. Every port is completely unique with its own strengths, characteristics, and needs. In addition, Florida continues to be the international leader in the cruise industry.
- Intermodal Logistics Centers (ILCs) are a new type of hub included in the SIS. Florida House Bill (HB) 599 defined ILCs and created a program with \$5 million annually to fund projects at ILCs that meet certain criteria. These facilities have strong ties to highways, railroads, seaports, and other transportation infrastructure.
- Florida's aviation system contributes \$114 billion to the state's economy each year. Florida is the only state in the U.S. with four large hub airports. There are 15 airports in Florida that have scheduled air cargo service supporting business and industry throughout the state. Most commercial airports, however, are nearing runway capacity and unless new capacity is added, air freight could be negatively affected.
- With an increasing interest in commercial flight, the space market has expanded to include a greater diversity of customers with different needs. With a combination of existing infrastructure and strategic investment in a space transportation system, Florida will continue to lead the world in space exploration, industry, and development.
- Because pipelines are passive in nature and are subterranean, they are often overlooked and underappreciated. Florida has two main options available for transporting by pipeline: gas and liquid. Florida's natural gas pipelines are nearing full capacity, and will need more capacity to meet increasing needs in the future. Trucking companies have been transitioning to CNG and LNG powered engines to reduce fuel costs, and railroads are also evaluating natural gas. This could create stresses on Florida's pipeline system.

Florida boasts a comprehensive transportation system; however there are needs in all modes. Florida's Strategic Intermodal System carries much of the freight in the state, and yet SIS Unfunded Freight Needs through 2040 total \$107.5 billion.⁵⁷ That includes \$2.4 billion in Aviation, \$82.7 billion in Highway, \$14.6 billion in Rail, \$7.2 billion in Seaport, and \$691.3 million in Spaceport.

Transportation system performance characteristics matter to businesses making decisions to invest or expand in Florida as they have direct cost consequences for companies. Site location decisions by companies are no longer just a matter of convenient access to the highway, railway, marine, or air transportation networks in the desired regional markets. Reliable service and predictable costs are important. Potential for future growth and expansion of network capacity can also matter to those businesses with longer term planning horizons.

The state's need for system performance should balance the potential growth in jobs, income, and state revenue that can come from business growth against the potential high cost of supporting system performance improvements that serve the nation as a whole. The international trade gateway role for Florida is a unique opportunity. International trade, especially with South America, can be a powerful economic driver to bolster Florida's economy.

⁵⁷ IS projects are not currently designated as freight or passenger. Freight needs for the purposes of this document include all projects excluding Transit. The definition of a freight project will be determined during the development of the Freight Mobility and Trade Plan Investment Element. 2040 Multi-Modal Unfunded Needs Plan, Systems Planning Office, 2011

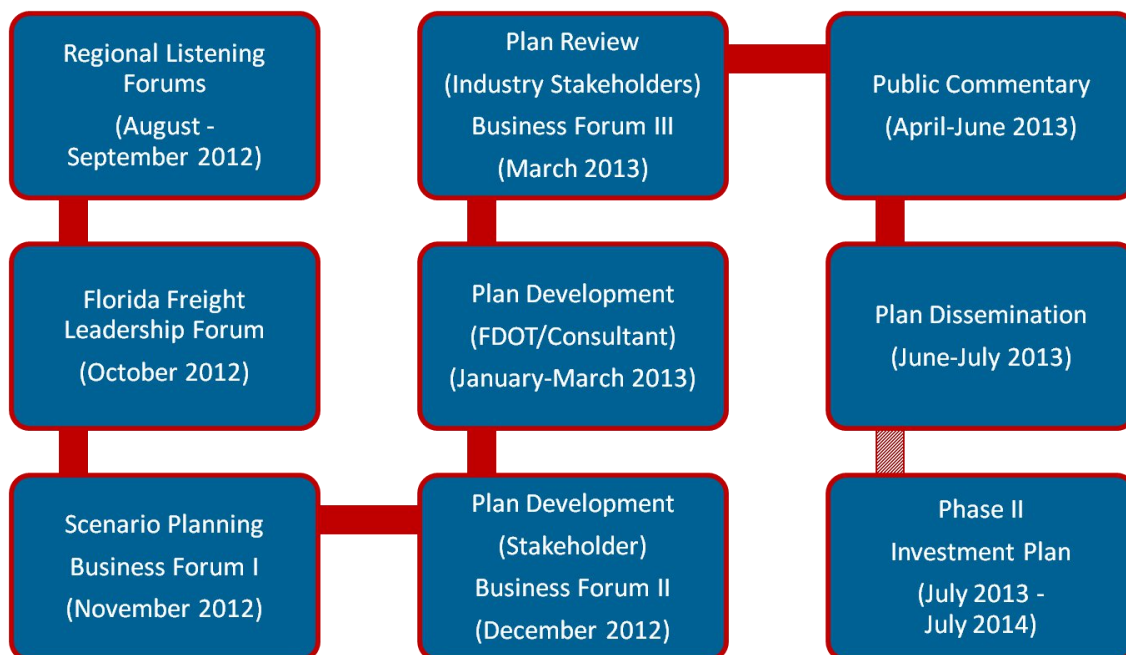
Chapter 3: Identifying Key Freight Issues – What Florida Faces

The previous chapters of this plan have clearly documented Florida’s existing freight network, the linkages between freight and the economy, the demands placed on the system with a growing population, and the importance of continuing to invest in freight infrastructure. While continued investment in infrastructure is a key component, there are numerous other freight issues to be resolved. This chapter discusses the process used to identify key freight issues, as the development of the FMTP included all levels of engagement, from the grassroots level with individual private sector stakeholders to the executive level with Governor Scott and CEO business executives.

The FMTP Process and Collaborative Approach

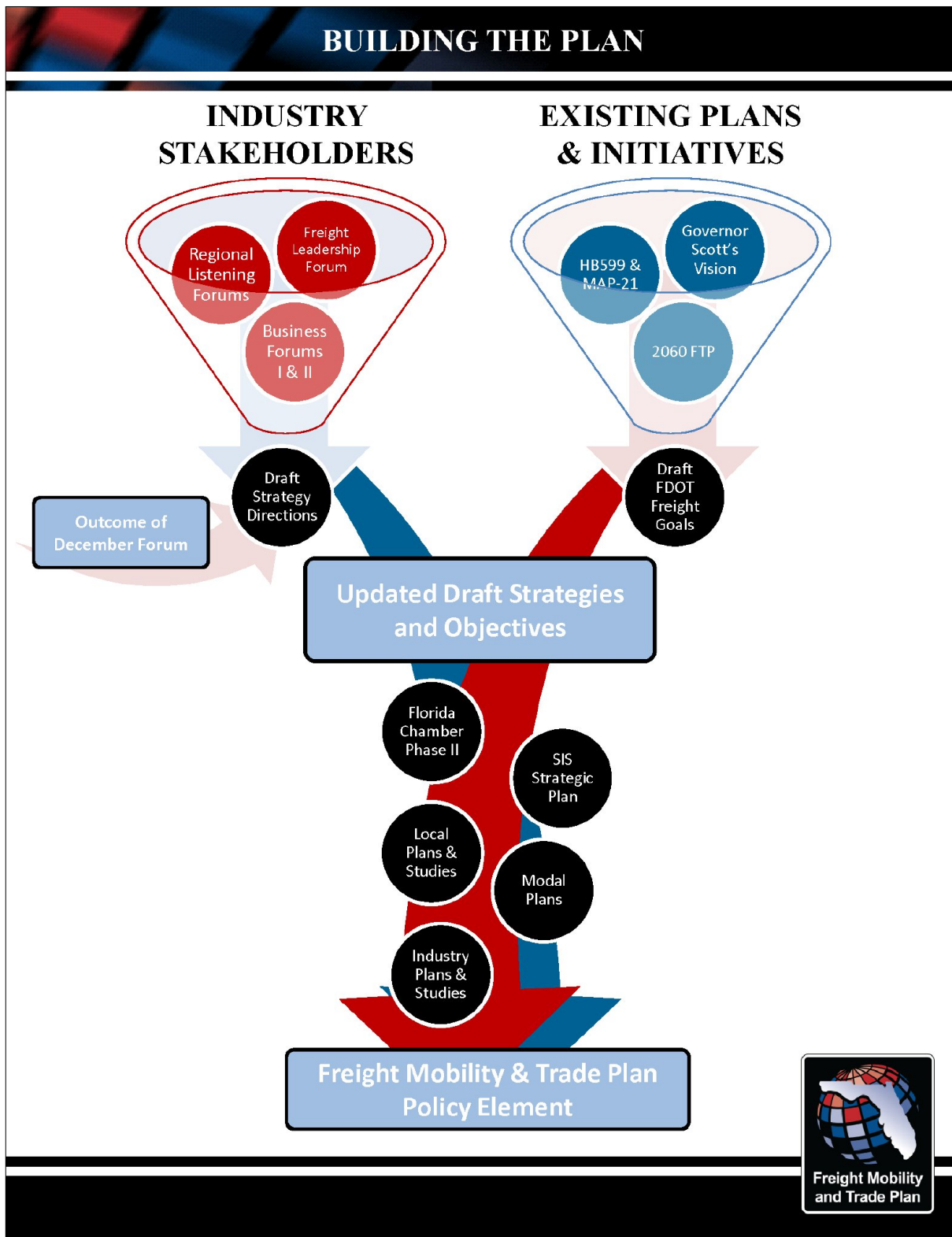
To facilitate involvement by the private and public sector in the development of the Plan, five stages of direct engagement were scheduled: Regional Listening Forums, the 1st Florida Freight Leadership Forum, Business Forum I: Scenario Planning, Business Forum II: Plan Development, and Business Forum III: Plan Review. **Figure 25** illustrates the Plan’s process.

Figure 25: Florida Mobility and Trade Plan Process Plan with Execution Dates



This collaborative approach for utilizing input from statewide leaders and key private sector business leaders, as well as local/regional partners, freight logistics, and users of the freight system, has led to a collaborative effort and will lead to a long-lasting and sustainable plan as illustrated in **Figure 26**. Incorporating an industry participation approach rather than a government-only focus better reflects the needs of freight stakeholders, allows the state to be more proactive and responsive, and streamlines freight investments. This collaborative process provides venues and opportunities for significant interaction with those who utilize, provide, and plan for the freight transportation system.

Figure 26: Collaborative Approach to Building the FMTP



Regional Listening Forums

The Regional Listening Forums provided an open invitation to all participants within the public and private sectors. This group of stakeholders has a vested interest in the current operation and future success of Florida's freight transportation system. The FDOT conducted six sessions across the state to maximize participation and gather a wide-range of regional participants. These sessions offered observations and comments on the current and future condition of the freight transportation system from all interested participants.

Extensive efforts were made to hear from private industry on:

- Deficiencies of the system
- Solutions to remedy those conditions
- Future needs envisioned to support growth.

The sessions were held between August 8 and September 11, 2012. Each location afforded access to the plan for residents, system planners, system users, and system providers for a given region within the state. All meetings, sessions, and forums were open to all participants, and the RLS did not target a specific audience. However, in order to capture the most diverse audience vested in freight transportation efforts, an invitation, shown in **Figure 27**, was provided to associations and groups for distribution to their respective membership.

Participation at each session ranged from about 50 to 90 attendees. The total participation for all six sessions was 432 participants, not including presenters or consultant staff. An important aspect of the RLS was to understand and fully appreciate the needs of and the conditions in which local businesses operate throughout the state, so observations and resulting themes for each session were withheld until all sessions were concluded. This technique was employed to reduce or eliminate the potential for local or regional reaction to the comments made at previous sessions. There was a concerted effort to limit exposure to previous comments that would overshadow the immediate concerns and observations of a given region and artificially inflate the results of a particular theme.

The three general areas focused on during each RLS were:

- What are the most important current issues affecting Florida's freight community?
- What does the future hold for freight mobility in Florida?
- How should the FMTP address these opportunities and challenges, as well as the needs of the business community in Florida?

Figure 27: Regional Listening Forum Invitation/Poster



FLORIDA

Freight Mobility & Trade Plan





Make your voice heard!

Join discussions about Florida's ability to meet the needs of our businesses in transporting goods to, from and within the State, U.S., and across the globe.

The Office of Freight, Logistics, and Passenger Operations (FLP) for the Florida Department of Transportation (FDOT) will be hosting Regional Listening Sessions as the initial step in crafting Florida's Freight Mobility and Trade Plan.

Four sessions will be held across the state during August 2012 to hear your thoughts on:

- What are the issues, opportunities, and potential solutions affecting today's freight community in Florida?
- How can FDOT assist you in helping to expand Florida's economy and create jobs?
- What future strategies should be advanced by FDOT to better position Florida as a global freight hub?
- In looking to the future, how should FDOT structure its Freight Mobility and Trade Plan to meet the needs of the business community?

Sessions are planned from 9:00AM to Noon on each of the following dates:	
MIAMI Aug. 8, 2012	Greater Miami Chamber of Commerce Ray Goode Ryder Conference Center Ballroom Level 1601 Biscayne Blvd, Miami 33132
ORLANDO Aug. 9, 2012	Turnpike Headquarters Building 5315 Rooms 1093 & 1094 (Auditoriums A & B) Florida Turnpike Mile Post 263, Ocoee 34761
JACKSONVILLE Aug. 16, 2012	JAXPORT Cruise Terminal 9810 August Dr, Jacksonville 32226
PANAMA CITY Aug. 17, 2012	Bay County Library Community Room 898 W 11th St, Panama City 32401
FT MYERS Aug. 29, 2012	Southwest Florida International Airport Airport Training & Conference Center 15924 Air Cargo Ln, Ft Myers 33913
TAMPA Sept. 11, 2012	Tampa Port Authority Board Room 1101 Channelside Dr, Tampa 33602

Registration is free, but SPACE IS LIMITED. Register at https://www.surveymonkey.com/s/Regional_Listening_Session or email holly.munroe@dot.state.fl.us with questions.



Regional Listening Forum in Jacksonville, Florida, August 2012.

Source: JAXPORT

Detailed information, including agendas, specific results per session, and a listing of associations and groups participating, is available in the *Florida Mobility and Trade Plan – Regional Listening Forum Summation Report, December 2012*. However, there were many common themes that emerged from the sessions, including the following:

Current Conditions

Positive Conditions

- Modal coordination
- Private and public sector cooperation
- Latin America and international trade
- Infrastructure investment and maintenance
- Regional and statewide approach by the FDOT toward freight mobility

Negative Conditions

- Workforce education and availability
- Freight flow imbalances across all modes
- Lessened local approach to freight emphasis
- Congestion
- Funding availability
- Lack of specific modal availability in every region
- Federal slowdown of trade due to staffing

Anticipated Future Conditions

Opportunities

- Trade imbalance
- Coordination across all levels of public sectors
- High level of freight investment and awareness
- Re-introduce previous industries

Challenges

- Planning to the “final mile”
- Addressing conflicting goals
- Climate change
- Education of citizenry and officials (local) of importance on freight planning
- Congestion
- Funding

The results⁵⁸ of these six sessions were then gathered and presented to a group of senior business leaders at the First Annual Florida Freight Leadership Forum.

Florida Freight Leadership Forum

Where the Regional Listening Forums sought private and public sector input from the grassroots level, the Freight Leadership Forum focused on those with unique strategic insight on freight needs associated within the business community. Invitations were provided to a select group of executive and senior leadership of firms with corporate headquarters in the state, operating within the state, or those that the state seeks to attract to the state. 38 unique companies and 72 individuals attended, discussing a variety of viewpoints with FDOT.

Key participants included:

- | | |
|-------------------------------|----------------------|
| • Boeing | • Jaxport |
| • NASA | • Port Canaveral |
| • Bank of America | • McTyre Trucking |
| • Florida Chamber of Commerce | • CSX |
| • Publix | • FEC |
| • U.S. Sugar | • CEMEX |
| • Coca-Cola | • RaceTrac Petroleum |
| • PepsiCo | • Rooms-To-Go |
| • Orlando Health | • Rayonier |
| • Bealls | • Tropicana |
| • Port Miami | • Office Depot. |

Also included were a number of key associations, like the Florida Trucking Association, and representatives from airports and seaports to gain insight from all modes. A complete and detailed

⁵⁸ Regional Listening Forums Summation <http://www.freightmovesflorida.com/docs/default-source/fmtpdocs/regional-listening-summation.pdf>

roster is available in *Florida Mobility and Trade Plan – Freight Leadership Forum Summation Report, December 2012*.⁵⁹

Set up as a two-part exchange, this forum discussed the outcomes of the RLS and promoted similar discussions with these freight community leaders. This same group contributed to the plan's development by discussing specific freight topics to be addressed in the plan, representing the beginning of an ongoing conversation between the FDOT and statewide freight stakeholders.

Example observations and topics to address identified by the Freight Leadership Forum include:

- Focus on return on investment (ROI) for projects
- All freight stakeholders and all modes should work together (supply chain)
- Pursue joint projects (combine modes)
- Address trade imbalances
- Incentives to create more outbound freight
- Bringing business to Florida requires longer-term commitments and investments
- Communicating the “freight story”

This forum is an example of the FDOT's commitment, along with its partners, Enterprise Florida, Workforce Florida, and the Department of Economic Opportunity, to make the process an industry-led rather than a government-only focus. In addition to the high level of commitment from key businesses in Florida, there was strong support from government officials. Speakers during the forum included Governor Rick Scott, U.S. Congressman John Mica, Florida State Representative Lake Ray, as well as senior state agency leaders. This demonstrates the resounding support, importance, and level of collaboration on this project.



Freight Leadership Forum in Orlando, Florida, October 2012.

⁵⁹ Florida Freight Leadership Forum Summation <http://www.freightmovesflorida.com/docs/default-source/fmtpdocs/leadership-forum-summation.pdf>

Business Forum I: Scenario Planning

Public transportation planning typically involves very long time frames of 20 to 30 years and encompasses forecasts for future traffic flows, population growth, and commodity movements to compare existing levels of infrastructure capacity to future predicted demands.

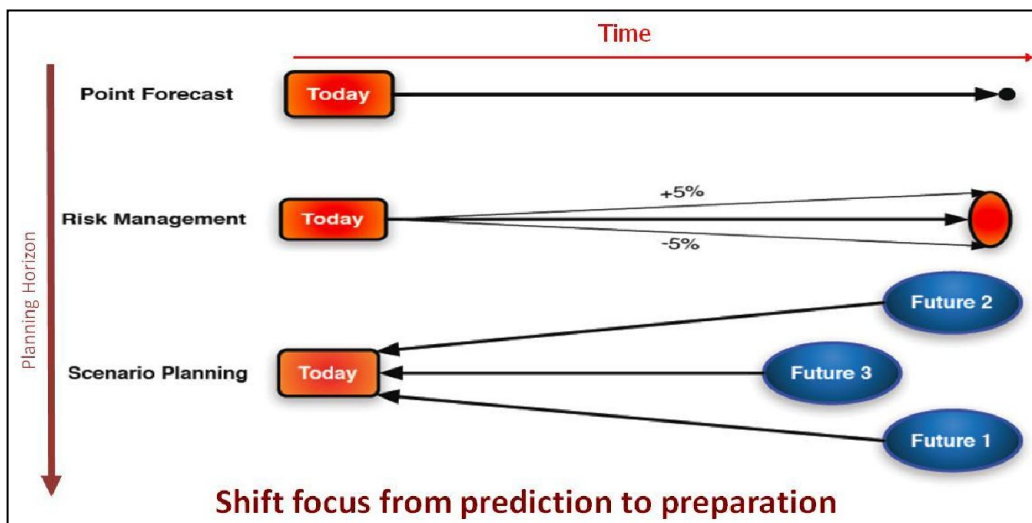
“The goal of forecasting is not to predict the future but to tell you what you need to know to take meaningful action in the present... Prediction is possible only in a world in which events are preordained and no amount of action in the present can influence future outcomes. That world is the stuff of myth and superstition. The one we inhabit is quite different—little is certain, nothing is preordained, and what we do in the present affects how events unfold, often in significant, unexpected ways.”⁶⁰

The quote above from a Harvard Business Review article on effective rules for forecasting makes an unequivocal distinction between predictions and forecasts. Because the future rarely moves in incremental and expected ways, forecasting is especially difficult when planning for freight transportation infrastructure projects that take decades to complete. The Transportation Research Board (TRB) awarded the Massachusetts Institute of Technology (MIT) a grant to investigate an alternative approach to freight planning that moves beyond the traditional forecast or prediction model. This initiative was launched as part of the National Cooperative Highway Research Program (NCHRP) Project 20-83(01) and is primarily concerned with improving freight infrastructure investment methodology using scenario planning.

For many years, planners have used scenario planning in “visioning” exercises to facilitate better citizen engagement in long-range planning for cities and regions. However, the MIT approach develops a range of future visions, all of which are feasible but are different in significant ways. Participants are assigned to an alternative future subgroup and asked to absorb themselves in this alternative future and discuss how it would likely impact their investment decisions.

This approach shifts the focus from prediction to preparation, shown in **Figure 28**.

Figure 28: Different Methods of Long-Range Planning



Source: Dr. Chris Caplice, MIT; Material adapted from Dr. Mahender Singh, SC2020

⁶⁰ Six Rules for Effective Forecasting, Harvard Business Review, 2007

The FDOT decided to employ the MIT approach to scenario planning with the following objectives in mind:

- To introduce scenario planning and prepare participants to engage in the process of developing the FMTP
- To identify and discuss potential implications of divergent scenarios for the movement of freight and for transportation system needs
- To identify and prioritize transportation strategies and policies Florida would need to address future opportunities and challenges under each scenario
- To review and discuss results of divergent scenario discussions and identify common potential strategies and policies
- To identify and discuss next steps for the business forums.

On November 8, 2012, the FDOT hosted “Business Forum I,” a scenario planning workshop with interested freight stakeholders from around the state. There were over 60 people in attendance, including representatives from both the public and private sectors and a variety of subgroups. Participants suggested strategies FDOT should consider that were appropriate to their assigned future scenario. There were many common themes or strategies across scenarios, including:

- **Seamless Modal Integration: Become more Intermodal/Multimodal** (supports mobility and connectivity goal of the 2060 Florida Transportation Plan [FTP])
- **Support a New Energy Future** (supports economic competitiveness and environmental stewardship goals of the 2060 FTP)
- **Plan Now to Capture Manufacturing Opportunities in the Future** (supports economic competitiveness goal of the 2060 FTP)
- **Focus on Coordinated Regional Planning and Land Use to Increase Freight Mobility and Seize Economic Opportunities** (supports community livability goal of the 2060 FTP)
- **Use Florida’s Seaports as a Strategic Advantage** (supports mobility and connectivity and economic competitiveness goals of the 2060 FTP)
- **Enhancing Operations and Efficiency with Technology** (supports mobility and connectivity, maintain and operate goal of the 2060 FTP)
- **Explore Public Private Partnerships (P3) Approaches to Expand Funding and Financing Options** (supports mobility and connectivity and maintain and operate goal of the 2060 FTP).

In addition, there were other repetitive themes and strategies, including:

- Need an education/marketing/messaging campaign
- Build upon what exists
- Pick low-hanging fruit (quick-fix projects)
- Identification of spines, hubs, and spokes
- Need distributed, redundant systems
- Need clear, consistent terminology.

Detailed information, including scenario brochures, specific results per session, and a detailed listing of participants and groups, is available in the *Florida Freight Mobility and Trade Plan – Business Forum I: Scenario Planning Summation, December 2012*.⁶¹

Business Forum II: Plan Development

The goal of the Plan Development Business Forum was to present draft strategic directions gleaned from the strategies suggested at Business Forum I that were common to all strategy breakout groups. This session was intended to solicit participant feedback and to build consensus. Participants were asked to review the draft strategic directions that emerged from the previous business forum (scenario planning), the Freight Leadership and the Regional Listening Forums. Before engaging in a more in-depth discussion, the facilitator asked participants to rate the initial acceptability of each of the suggested strategic directions using the following scale:

Initial acceptability scale:

3 Green = “I can support this as is” (from “wholehearted support” to “I can live with this”)

2 Yellow = “I can support this, but would like a clarification or to see the following changes...”

1 Red = “I cannot support this unless serious concern(s) are addressed as follows...”



Business Forum II: Plan Development in Orlando, Florida, December 2012.

The purpose of the initial rating is to provide the facilitator with an indication of where the most attention should be given in the discussion during the forum. Participants were also asked to submit additional written comments using a worksheet that was to be left behind at the end of the meeting.

The outcomes of the acceptability scale and participant review include:

⁶¹ Scenario Planning Summation <http://www.freightmovesflorida.com/docs/default-source/fmtpdocs/scenario-planning-summation.pdf>

- 53 strategies tested for acceptability
- 31 of the 53 strategies had no voters with major concerns
- Only four strategies had over 10% of voters with major concerns
- Draft strategies are mostly in line with stakeholder desires.

Webinar

In addition to business forums for direct engagement with freight stakeholders, a webinar was held in February 2013.⁶² This session was intended to familiarize the participants with changes made to the draft strategy directions they rated for acceptability in Business Forum II, as well as to provide a draft outline of the full Policy Element of the FMTP. This served to explain to participants how their feedback was being incorporated into the plan, to give them a preview of the plan's structure so they would know what to expect, and to keep the momentum flowing until the final business forum.

Business Forum III: Plan Review

The final direct engagement with freight stakeholders statewide was held in March 2013. This session included an overview of the stakeholder outreach process, as well as rolling out a full draft of the Policy Element of the FMTP prior to public comment. Participants were able to see the connection between their contributions in the various forums and how that was molded and shaped into the first draft of the full Policy Element. This last chance for input allowed the consultants and the FDOT staff to adapt the text to better reflect industry needs before the public comment period.



Business Forum III: Plan Review in Orlando, Florida, March 2013.

Future Opportunities for Input and Partnerships

As the FMTP moves into the project selection and implementation phase, there will be additional opportunities for stakeholder involvement. The development of the Policy Element has been an innovative and collaborative approach with genuine industry participation and partnerships with the Florida Chamber of Commerce, Enterprise Florida, Workforce Florida, the Florida Department of Economic Opportunity (DEO), the Florida Department of Agriculture, and others. This is an uncommon

⁶² Webinar Summation <http://www.freightmovesflorida.com/docs/default-source/fmtpdocs/webinar-summation.pdf>

approach for state government and has been generally applauded by the freight community statewide during the development of the Policy Element. As briefly described in the beginning of this chapter, the FDOT could not realistically satisfy all requirements of HB 599 without agency partners. The development of the Policy Element also introduced the first Florida Freight Leadership Forum, which will be repeated annually to keep freight stakeholders involved. Going forward to the development of the Investment Element, the FDOT will continue to gather significant input from the private sector and local/regional entities. See **Chapter 5** for details on what will be included in that process.

Repeating the Florida Freight Leadership Forum annually will also allow the private sector to provide input on updates needed, if any, as well as to maintain relationships with partners to create the best possible FMTF for the State of Florida. Due to the dynamic nature of freight needs, FDOT may determine updates to the Policy Element are warranted. Updates to the Objectives and Strategies will be made as needed, and freight stakeholders will continue to be given opportunity for review and comment.

Future Workforce Needs

In addition to stakeholder outreach, there are other needs that have emerged due to natural methods of recognition. This section addresses workforce needs based on future projections of emergent industries and the ability to achieve the Governor’s policy goals.

Industry growth forecasts in Florida have implications for workforce requirements in the future. As discussed previously in this report, Florida’s workforce growth has been shifting due to the nature of the higher growth industries increasingly needing workers toward both ends of the skill spectrum, more so than those in mid-skill jobs. Because the biggest industries are not all expected to grow the fastest in the forecast, meeting the workforce requirements does not mean simply adding to the workforce of the largest sectors today. A workforce with skills and education needed by the growing industry sectors is necessary for the potential of the Florida economy to be achieved.

In terms of employment, the fastest growing industries forecast by the University of Central Florida⁶³ for the medium term through 2016 includes construction, recovering from the severe long-lasting recession in that sector, plus professional and business services, and the transportation warehousing services sector. Growth in wholesale trade and the large education and health services sectors are projected to be the next most rapid, all with average annual growth over 2%—contrast that with forecasts of mining and federal government employment, both of which are expected to shrink on average more than 1% per year.

Average annual growth in construction employment is projected to be a rapid 10.4% through 2016, as the sector recovers. This growth implies over 155,000 additional workers will be employed in 2016 versus those in the sector today statewide. At projected growth rates averaging 5.6% annually, Florida’s professional and business services industries will need over 131,000 additional workers. The transportation and warehousing sector is forecast to have above average annual workforce growth of 3%, needing almost 30,000 additional workers by 2016. In number, this growth in the transportation and warehousing workforce is about the same as projected need for the much larger, but more slowly growing, leisure and hospitality sector.

⁶³ Source: Univ. of Central Florida, Institute for Economic Competitiveness, Dec. 2012 *Florida & Metro Forecast* of Florida employment growth from payroll survey data

Whereas the jobs for construction and the leisure and hospitality service sectors require a greater proportion of lower-skilled and relatively lower-wage jobs, the professional and business services sectors require workers with—on average—higher skills and more education. The transportation and warehousing sectors traditionally offer lower-skill jobs, but that is changing. Increasingly, the workforce in the transportation and warehouse sectors requires workers with greater training and skills, as the information technology skills required of those workers continues to increase with the adoption of technology across the sector. There are also increased safety and security regulations affecting the transportation and warehousing sector workforce, requiring greater training of workers qualified to fill jobs in those sectors.

Military veterans have long been considered a good match for warehousing and logistics jobs, due to the crossover in applicable skills. A recent article on the subject noted that overseas-deployed personnel have extensive experience managing the accountability of equipment and assets across several locations.⁶⁴ With the U.S. military presence in Afghanistan declining, this issue has resurfaced and should be considered as part of this process.

The availability and capabilities of the transportation workforce is critical to future economic growth and development in Florida. The predicted growth in the other sectors depends on an adequate transportation system workforce to keep Florida’s economy moving forward. With the appropriate preparations now, Florida should be able to capitalize on its potential for growth in exports and other trade-related activity. Building on Florida’s position as a gateway for U.S. trade with Latin America and the Caribbean will be possible if the state’s workforce can expand to remain competitive. The fundamental requirement from a workforce perspective is clear: education and training lead to workforce quality across a diversifying state economy, which leads to development and growth. Achieving the vision of the FMTP and meeting the Governor’s objectives will require coordinating efforts on the development and recruitment of a qualified global trade, transportation, and logistics workforce. The FDOT has already begun collaborating with Workforce Florida to achieve this objective, as discussed in **Chapter 4**.

Florida Freight Document Review

Local and statewide freight documents were also gathered during the data collection process. As a combined effort with the FDOT Freight District Coordinators, the freight document collection includes statewide, FDOT District, regional, metropolitan planning organization (MPO), and local studies. The level of freight detail from these collected plans varies greatly from a statewide modal plan that establishes policies. The localized corridor plans focus more on the implementation process. Existing policies and objectives from plans with a statewide perspective have been identified in **Chapter 4** of the Policy Element. Documents with a local or regional perspective will be considered during the Investment Element of the FMTP as part of the prioritization process. See **Chapter 5** for a discussion on how District priorities will be rolled up into a list of statewide freight projects.

Summary of Key Freight Issues Identified

This chapter provides an overview of the innovative process used to identify and refine freight issues, as well as how to begin to address these issues. FDOT strived to collect a diverse group of freight stakeholders together to provide valuable input. During the stages of outreach, we captured:

⁶⁴ Special Report on Logistics Talent, February 2013: <http://www.dcvelocity.com/articles/20120226-hire-our-heroes--the-right-way/>

- current conditions (positive and negative) related to Florida’s infrastructure, workforce, federal and state policies, etc.
- future opportunities and challenges
- freight issues important to the executive level leadership of Florida, as well as companies that do business in Florida
- draft strategy directions common to four distinct potential future scenarios
- refinement of draft strategy directions into draft objectives, strategies, and actions to address key freight issues identified and those required by state and federal legislation

Freight and logistics workforce concerns continued to surface during the process, and therefore were explored in more detail. Many other plans include the identification or response to freight issues, including other statewide plans as well as regional and local plans. These were integrated as appropriate, and will be considered again as part of the prioritization process.

The process is described in some detail to show the importance of FDOT’s new collaborative mindset. However the process used to identify freight issues, both in this chapter and in the summation documents on each stage of outreach, also serves to validate the results. This outreach process was not intended to build consensus, however we achieved a high level of acceptability as participants saw their input applied. Freight stakeholders with a variety of perspectives also found that many of their concerns were common to the group. Industry stakeholders were involved early and stayed involved throughout, which speaks to the success of the process. FDOT is very grateful for the extensive agency partner and stakeholder contributions.

Chapter 4: Addressing the Challenges – Policy Directions

In order to establish policies, goals, and objectives to move freight and logistics forward in Florida, it is important to identify the policies already in place that the FMTP objectives and strategies should follow. There are three overarching policy documents that provide direction for the FMTP:

- The 2060 Florida Transportation Plan
- State Legislation: 2012 HB 599
- Federal Legislation: Moving Ahead for Progress in the 21st Century Act (MAP-21).

Review of the 2060 Florida Transportation Plan

Developed by the FDOT in 2010, the 2060 FTP is the state's long-range transportation plan and provides guidance for transportation in Florida for the next 50 years. The 2060 FTP establishes six goals, with long-range objectives associated with each of the goals. The FTP provides guidance for the SIS and the FDOT modal programs, each of which has improvement plans. The goals and objectives of these plans are based on the FTP goals.

The 2060 FTP goals and objectives are:

FTP Goal: Invest in transportation systems to support a prosperous, globally competitive economy

Goal Objectives:

- Maximize Florida's position as strategic hub for international and domestic trade, visitors, and investment by developing, enhancing, and funding Florida's SIS
- Improve transportation connectivity for people and freight to established and emerging regional employment centers in rural and urban areas
- Plan and develop transportation systems to provide adequate connectivity to economically productive rural lands
- Invest in transportation capacity improvements to meet future demand for moving people and freight
- Be a worldwide leader in development and implementation of innovative transportation technologies and systems.



FTP Goal: Make transportation decisions to support and enhance livable communities

Goal Objectives:

- Develop transportation plans and make investments to support the goals of the FTP and other statewide plans, as well as regional and community visions and plans
- Coordinate transportation investments with other public and private decisions to foster livable communities
- Coordinate transportation and land use decisions to support livable rural and urban communities.

FTP Goal: Make transportation decisions to promote responsible environmental stewardship

Goal Objectives:

Plan and develop transportation systems and facilities in a manner that protects and, where feasible, restores the function and character of the natural environment and avoids or minimizes adverse environmental impacts

Plan and develop transportation systems to reduce energy consumption, improve air quality, and reduce greenhouse gas emissions.

FTP Goal: Provide a safe and secure transportation system for all users

Goal Objectives:

- Eliminate fatalities and minimize injuries on the transportation system
- Improve the security of Florida’s transportation system
- Improve Florida’s ability to use the transportation system to respond to emergencies and security risks.

FTP Goal: Maintain and operate Florida’s transportation system proactively

Goal Objectives:

- Achieve and maintain a state of good repair for transportation assets for all modes
- Reduce the vulnerability and increase the resilience of critical infrastructure to the impacts of climate trends and events
- Minimize damage to infrastructure from transportation vehicles
- Optimize the efficiency of the transportation system for all modes.

FTP Goal: Improve mobility and connectivity for people and freight

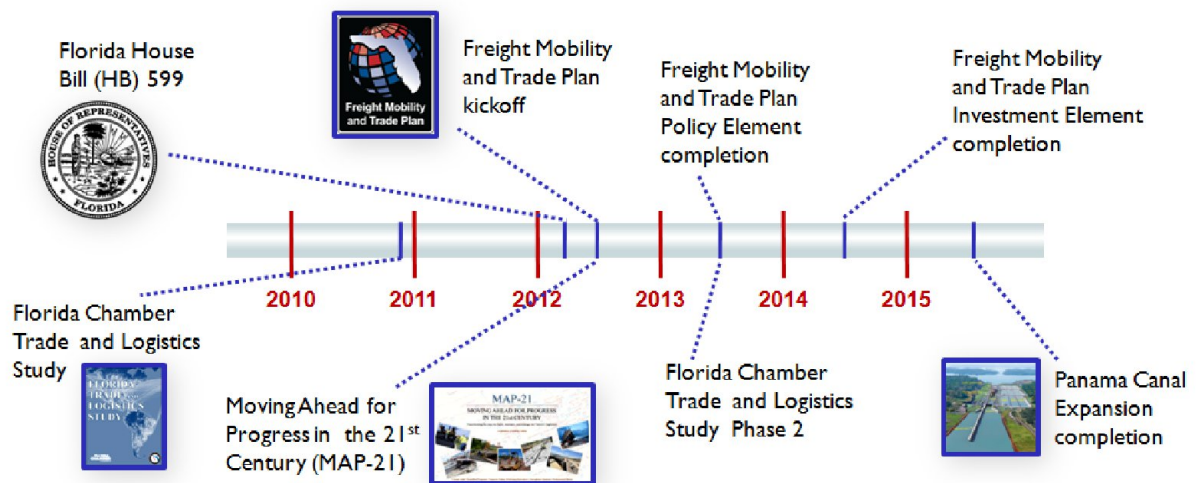
Goal Objectives:

- Expand transportation options for residents, visitors, and businesses
- Reinforce and transform Florida’s Strategic Intermodal System facilities to provide multimodal options for moving people and freight
- Develop and operate a statewide high speed and intercity passenger rail system connecting all regions of the state and linking to public transportation systems in rural and urban areas
- Expand and integrate regional public transit systems in Florida’s urban areas
- Increase the efficiency and reliability of travel for people and freight
- Integrate modal infrastructure, technologies, and payment systems to provide seamless connectivity for passenger and freight trips from origin to destination.

Legally Required Issues

As discussed in **Chapter 1**, Governor Scott has a vision for Florida. He announced in 2012 that he wanted to transform the state’s economy to become a global hub for trade, logistics, and export-oriented manufacturing activities. This was in part spurred by the expansion of the Panama Canal, as well as other recent freight initiatives, including the development of the Florida Trade and Logistics Study. **Figure 29** provides a visual overview of events related to legislatively mandated issues the FDOT must address in this plan.

Figure 29: Timeline of Key Events



House Bill 599

As noted in **Chapter 1**, the 2012 Florida Legislature supported Governor Scott's freight vision for Florida by passing HB 599, which required the FDOT to develop a FMTP. Other notable elements included additional money for seaport projects and ILCs, and designating ILCs as part of the SIS.⁶⁵ The bill mandated delivery of the plan to the Legislature and the Governor by July 1, 2013, and included specific areas to be addressed.

According to the codification of HB 599, s. 334.044(33)(a)1, F.S., states that the FMTP Policy Element is to include, but not be limited to, proposed policies and investments that promote the following:

- Increasing the flow of domestic and international trade through the state's seaports and airports, including specific policies and investments that will recapture cargo currently shipped through seaports and airports located outside the state
- Increasing the development of ILCs in the state, including specific strategies, policies, and investments that capitalize on the empty backhaul trucking and rail market in the state
- Increasing the development of manufacturing industries in the state, including specific policies and investments in transportation facilities that will promote the successful development and expansion of manufacturing facilities
- Increasing the implementation of CNG, LNG, and propane energy policies that reduce transportation costs for businesses and residents located in the state.

Development of the FMTP must be in coordination with its partners and stakeholders. Such plans should enhance the integration and connectivity of the transportation system across and between transportation modes and throughout the state.

The first four requirements are set topics to address in the FMTP, and these items are visible in the objectives and strategies discussed later in this chapter. These are areas the Governor and the Legislature felt warranted special attention. As the FDOT does not have direct control over some of these aspects, another requirement, unstated, was that the FDOT work with other agencies. This collaborative approach

⁶⁵ <http://www.flsenate.gov/Committees/bills/summaries/2012/html/210>, January 15, 2013

will help align the various related initiatives going on across the state. HB 599 also required the FDOT to reach out to stakeholders, involving the private sector and local/regional groups to gain a greater perspective.

As noted previously, the Florida Trade and Logistics Study was one of the initiatives that helped set the stage. The Florida Chamber of Commerce represents a key partner and stakeholder, and the critical near term actions listed in the Florida Trade and Logistics Study are related back to Six Pillars of the Florida Chamber of Commerce (see **Figure 30**). The Six Pillars will be compared to the FMTP Objectives to review the consistency of these two initiatives. Also reviewed is the Florida Department of Economic Opportunity's Strategic Plan for Economic Development.

Figure 30: Six Pillars of the Florida Chamber of Commerce



Source: Florida Chamber of Commerce

Moving Ahead for Progress in the 21st Century Act (MAP-21)

As shown in the timeline, shortly after Florida passed legislation with specific requirements for the FDOT in regards to freight planning, federal legislation was passed with an additional set of requirements. The MAP-21 does not require states to develop a freight plan; however, freight projects must be identified in a state plan to qualify for the increased federal funding share. Passed on June 29, 2012, the Act encourages states to develop comprehensive freight plans to guide state investments.

MAP-21 requires a national freight strategic plan to be developed within three years of enactment of MAP-21. This national freight plan must be developed in cooperation with States and other stakeholders, and the plan must be updated every five years. A state freight plan must describe how the plan will improve the ability of the state to meet national freight goals. A summary of the national freight policy goals include:

- Improving the contribution of the freight transportation system to economic efficiency, productivity, and competitiveness
- Reducing congestion on the freight transportation system

- Improving the safety, security, and resilience of the freight transportation system
- Improving the state of good repair of the freight transportation system
- Using advanced technology, performance management, innovation, competition, and accountability in operating and maintaining the freight transportation system
- Reducing adverse environmental and community impacts of the freight system.

This Policy Element together with the Investment Element of the FMTP will address the requirements of MAP-21 legislation, as discussed in **Chapter 1**. Specific MAP-21 freight plan requirements for the FMTP Investment Element at a minimum must include:

- *“An identification of significant freight system trends, needs and issues with respect to the State*
- *A description of the freight policies, strategies, and performance measures that will guide the freight-related transportation investment decisions of the State*
- *A description of how the plan will improve the ability of the State to meet the national freight goals established under section 167 of title 23, United States Code*
- *Evidence of consideration of innovative technologies and operational strategies, including intelligent transportation systems, that improve the safety and efficiency of freight movement*
- *In the case of routes on which travel by heavy vehicles (including mining, agricultural, energy cargo or equipment and timber vehicles) is projected to substantially deteriorate the condition of roadways, a description of improvements that may be required to reduce or impede the deterioration*
- *An inventory of facilities with freight mobility issues, such as truck bottlenecks, within the State, and a description of the strategies the State is employing to address those freight mobility issues.*⁶⁶”

Florida Freight Mobility and Trade Plan

Governor Scott’s Policy Agenda

As discussed in **Chapter 1**, freight and the link to the economy have been key aspects of Governor Scott’s policy agenda. The emphasis on freight in Florida has picked up dramatically over the last few years as the state prepares for the expansion of the Panama Canal and meeting the needs of the larger, post-panamax ships. The objectives and strategies of the FMTP Policy Element were partially shaped by these factors.

Freight Mobility and Trade Plan Policy Directives

The Florida FMTP provides guidance to the FDOT on freight and goods movement related policy and investment decisions and inform other governmental agencies and the private industry on the logistics and trade vision for Florida.

A key part of the Policy Element for the Florida FMTP is the set of objectives and strategies that form the core of the FMTP. The following set of objectives and strategies has been developed after extensive outreach to stakeholder groups. They represent a synthesis of the various, at times conflicting, views and issues that were expressed. **Chapter 3** provides a detailed description of the freight stakeholder outreach process involved in developing these objectives and strategies.

⁶⁶ Enrolled text of 112th Congress H.R. 4348, <http://www.gpo.gov/fdsys/pkg/BILLS-112hr4348enr/pdf/BILLS-112hr4348enr.pdf>, July 6, 2012

Objective 1: Capitalize on the Freight Transportation Advantages of Florida through Collaboration on Economic Development, Trade, and Logistics Programs

Characterize and highlight the strategic strengths of Florida's freight transportation system including hubs like seaports, airports, and ILCs collaboratively with industry, and with other agencies and states, to establish Florida as the international gateway for trade. Strategies to achieve this objective are:

- 1.1 *Maximize the strategic advantage of Florida's transportation hubs for trade logistics*
 - 1.1.1 *Characterize and highlight the unique strengths of each seaport*
 - 1.1.2 *Develop criteria for strategic port investments in tandem with private investments to respond to market needs nimbly and transparently*
 - 1.1.3 *Determine the operating characteristics of transportation hubs and improve the connecting distribution/transportation system (spokes) to match their particular logistic needs and opportunities*
 - 1.1.4 *Develop a comprehensive plan to support and facilitate international exports and interstate commerce*
- 1.2 *Foster the development and deployment of ILCs through cooperative efforts with industry*
 - 1.2.1 *Include ILCs in the SIS and roadways and railways serving ILCs*
 - 1.2.2 *Expedite the resolution of local issues for ILC development*
 - 1.2.3 *Include onsite capacity to facilitate international exports*
 - 1.2.4 *Implement the ILC infrastructure support program*
- 1.3 *Support the branding of Florida as the Gateway to the Western Hemisphere for trade*
- 1.4 *Focus general collaboration with other agencies*
 - 1.4.1 *Host a joint website as a comprehensive portal for freight mobility and trade matters with Enterprise Florida, Workforce Florida, and the Florida Chamber of Commerce to facilitate manufacturers locating and expanding in Florida; e.g., "the freight base"*
 - 1.4.2 *Include Enterprise Florida, Workforce Florida, and the Department of Economic Opportunity as ex officio members of the predominantly industry sector CEO Freight Leadership Group*
- 1.5 *Support the Statewide Economic Development Strategic Plan led by the DEO*
 - 1.5.1 *Factor logistics efficiency and sustainability into comprehensive economic development strategies*
 - 1.5.2 *Proactive participation by the FDOT economic development liaison to the DEO*
 - 1.5.3 *Coordinate and inform transportation programs with the initiatives and policies of the Department of Economic Opportunity (DEO)*
 - 1.5.4 *Expand interagency collaboration and coordination*
 - 1.5.5 *Foster relationships with local government economic development staff*
- 1.6 *Collaborate with Enterprise Florida to address transportation and logistics needs for the targeted industries*
 - 1.6.1 *Identify and address transportation issues and challenges for each of the targeted industries*
 - 1.6.2 *Match trade and transportation needs of the targeted industries with the characteristics of the ports, airports, and ILCs as branding enhancements*
 - 1.6.3 *Inventory and brand beneficial transportation characteristics of the different regions to support economic development branding*
- 1.7 *Collaborate with Workforce Florida to develop a trade and logistics workforce*

- 1.7.1 *Identify needed skills, abilities, and best strategies for attracting and developing the necessary workforce*
- 1.7.2 *Develop jointly sponsored vocational and technical training academies for maritime operations, trade and logistics staff, and other skills needed for increased manufacturing, trade, and logistics operations in Florida*
- 1.8 *Explore mutual interests and highlight value that Florida can bring to neighboring states*
 - 1.8.1 *Participate in the update of the Latin American Transportation and Trade Study*
 - 1.8.2 *Coordinate freight planning activities with states in our region as encouraged by federal legislation*

Objective 2: Increase Operational Efficiency of Goods Movement

Identify and strengthen the critical freight network, and use ITS and other enhancements to increase the efficiency, reliability, safety, and security of freight movements, including under emergency situations. Strategies to achieve this objective are:

- 2.1 *Identify the critical freight transportation network for the state, which includes the national freight network designated by the USDOT*
- 2.2 *Identify and implement freight movement gap-closing improvements*
 - 2.2.1 *Improve hub connections (last mile and beyond)*
 - 2.2.2 *Work with local governments to support and back-up efforts to maintain and improve freight movement access and reduce negative local impacts*
- 2.3 *Identify and implement freight movement efficiency enhancements*
 - 2.3.1 *Prioritize investments on connections (distribution hubs, ILCs, etc.)*
- 2.4 *Promote and support use of Intelligent Transportation Systems (ITS) technology to increase efficiency and reliability of freight movements*
 - 2.4.1 *Establish appropriate role to promote and support the use of best practice information technology among all Florida trucking companies (in coordination with transportation systems management and operations [TSM&O])*
 - 2.4.2 *Foster uniform information technology among all Florida seaport for trucking and rail operators*
 - 2.4.3 *Expedite the implementation of recommendations and lessons from the Freight Advanced Traveler Information System (FRATIS) pilot*
- 2.5 *Champion and support needed freight capacity expansions*
 - 2.5.1 *Identify and implement projects to eliminate freight bottlenecks*
 - 2.5.2 *Examine dedicated freight facilities or freight shuttles when existing capacity has been maximized*
 - 2.5.3 *Explore the appropriate role of marine highways or short-sea shipping*
 - 2.5.4 *Anticipate future freight facility needs*
 - 2.5.5 *Examine dedicated facilities for “non-freight” activity that serves to restore capacity for freight movement*
- 2.6 *Identify and implement safety and security enhancements*
 - 2.6.1 *Information technology cargo and truck, truck parking, dedicated truck lanes*
 - 2.6.2 *Employ alternative delivery mechanisms for rest-stops/lay-over areas and other safety-enhancing facilities*
 - 2.6.3 *Facilitate the safe implementation of autonomous vehicles (driverless vehicles and unmanned space vehicles)*

- 2.7 *Assess possible freight network disruptions and develop contingency plans or principles that support the logistics industry and disaster response*
 - 2.7.1 *Conduct periodic strengths, weaknesses, opportunities, and threats (SWOT) analyses of the complete freight and logistics network*

Objective 3: Minimize Costs in the Supply Chain

Support and facilitate the use of more economical and environmentally friendly fuels like LNG and CNG; evaluate new approaches to freight infrastructure financing and regulatory reform; and balance trade flows. Strategies to achieve this objective are:

- 3.1 *Advance the use of more environmentally friendly alternative fuels*
- 3.2 *Support and facilitate the deployment of CNG/LNG use for hub logistics and long-haul trucking in collaboration with the Florida Department of Agriculture*
 - 3.2.1 *Explore alternative fuel corridors with suppliers and first-adopters (facilitation to address local issues)*
 - 3.2.2 *Coordinate initiatives for user conversions as market evolves (via incentives to level playing field)*
- 3.3 *Evaluate alternative fuel taxing options as a successor to gasoline taxes*
 - 3.3.1 *Assess impact of alternative tax or user fee proposals*
- 3.4 *Advocate for regulatory reform and federal inspection agencies staffing to reduce impediments to goods movement (e.g., weight limits)*
- 3.5 *Support manufacturing and assembly that reduces empty backhauling*
 - 3.5.1 *Expand FTZ benefits to ILCs with potential for manufacturing capacity*
 - 3.5.2 *Facilitate transportation and CNG/LNG supply to support such ILCs*
 - 3.5.3 *Strategize with freight forwarders on how to maximize freight forwarding opportunities for goods manufactured in other states for export through Florida ports and airports*

Objective 4: Align Public and Private Efforts for Trade and Logistics

Formalize private sector engagement for freight policy through the Freight Leadership Group and develop frameworks for joint public-private investments in freight facilities. Strategies to achieve this objective are:

- 4.1 *Formalize CEO Freight Leadership Group from the FMTP Florida Freight Leadership Forum to function in the role of the freight advisory committee encouraged by federal law*
 - 4.1.1 *Establish freight policy and program input and feedback mechanisms*
 - 4.1.2 *Convene regularly to discuss and strategize on trade and logistics issues*
- 4.2 *Devise public-private partnership framework options for joint investments for freight mobility*
 - 4.2.1 *Focus public investment in long-term infrastructure*
 - 4.2.2 *Leverage private investment in technology and operational improvements*
 - 4.2.3 *Solicit public-private partnership for infrastructure investments*
- 4.3 *Bring business community into transportation planning process*

Objective 5: Raise Awareness and Support for Freight Movement Investments

Coordinate a common language public-private campaign to tell Florida's Freight Story by educating the public, businesses, young people, and elected officials. Strategies to achieve this objective are:

- 5.1 *Tell the Freight Story – undertake a joint public-private communications campaign*
 - 5.1.1 *To educate the public about the importance of freight transportation*
 - 5.1.2 *To educate young people about the job opportunities in the freight and logistics field*
 - 5.1.3 *To educate and inform elected officials about freight*
- 5.2 *Develop a common lexicon of freight terms for transportation and business partners to use to minimize confusion over terms*

Objective 6: Develop a Balanced Transportation Planning and Investment Model That Considers and Integrates All Forms of Transportation

Align state, regional, and local initiatives for freight movement, including regional partnership and integration, and strive for consistency of state policies and programs to enhance freight transportation. Strategies to achieve this objective are:

- 6.1 *Provide transportation and land use planning guidance and direction to local and regional agencies for enhanced economic development and freight efficiencies that support community goals*
- 6.2 *Coordinate across state agencies to ensure consistency of regulations that impact freight operations and mobility*
- 6.3 *Coordinate and integrate freight-related plans and programs of freight facility owners, local jurisdictions, Metropolitan Planning Organizations (MPOs) and the FDOT (Central Office & Districts) for expedited and informed decision-making*
- 6.4 *Facilitate and maintain regional partnerships for multi-jurisdictional consensus and collaboration*
- 6.5 *Assign specific responsibility to FDOT leadership to ensure alignment of state and local freight transportation policies, plans, and programs*

Objective 7: Transform the FDOT's Organizational Culture to Include Consideration of Supply Chain and Freight Movement Issues

Adopt a supply chain perspective for the FDOT's programs and operations with an integrated approach across the modes and inform planning, programming, and operational decisions with freight performance needs. Strategies to achieve this objective are:

- 7.1 *Integrate modal perspectives with multimodal supply chain perspective*
 - 7.1.1 *Add freight factors to Strategic Investment Tool (SIT) prioritization process*
 - 7.1.2 *Add freight movement metrics to the FDOT performance measures*
 - 7.1.3 *Add criteria for inclusion of ILCs in the SIS*
 - 7.1.4 *Position and support emerging freight facilities: spaceports, marine highways, etc.*
- 7.2 *Instill goods movement perspective in the transportation planning process and decisions*
 - 7.2.1 *Revise FDOT policies to incorporate freight movements in planning, design, and operations*
 - 7.2.2 *Revise FDOT organization and processes to be more truly multimodal*
 - 7.2.2.1 *Integrate processes and maintain modal technical competencies*
 - 7.2.3 *Provide freight policy guidance to Districts and local agencies*

- 7.2.4 *Streamline FDOT procedures to respond nimbly to market changes*
- 7.3 *Prioritize freight projects across the modes*
 - 7.3.1 *Establish procedures to identify critical freight infrastructure investments that reflect private sector and local goals and needs*
 - 7.3.2 *Leverage freight infrastructure investments to amplify private sector investments*
 - 7.3.3 *Establish ROI or value criteria to focus investments*
 - 7.3.4 *Develop multimodal investment and decision tools*
 - 7.3.4.1 *Focus on intermodal benefits (supply chain efficiencies)*
 - 7.3.4.2 *Balance qualitative societal goals with quantitative goals like ROI*
 - 7.3.5 *Support freight infrastructure investments from the SIS, State Infrastructure Bank (SIB), Transportation Infrastructure Finance and Innovation Act (TIFIA), etc.*

Consistency with 2060 FTP Goals

As discussed in the beginning of **Chapter 4**, the FMTP policy directions are consistent with the direction put in place for the entire FDOT in the 2060 FTP. The following tables display how the seven FMTP objectives and their related strategies correspond to the 2060 FTP. These strategies and later actions will be the basis for analyzing projects to be included in the Investment Element of the FMTP. These objectives and strategies will also serve to guide the individual modal plans under the Office of Freight, Logistics, and Passenger Operations, and the SIS Plan on freight priorities. **Table 19** displays the relationship between the FMTP Objectives and the 2060 FTP goals by comparing them side-by-side.

Table 19: Comparison of the 2060 FTP Goals and FMTP Objectives

FTP Goal	Invest in transportation systems to support a prosperous, globally competitive economy
FMTP Objectives	<p>Objective 1: Capitalize on the freight transportation advantages of Florida through collaboration on economic development, trade, and logistics programs</p> <p>Objective 2: Increase operational efficiency of goods movement</p> <p>Objective 3: Minimize costs in the supply chain</p> <p>Objective 4: Align public and private efforts for trade and logistics</p> <p>Objective 5: Raise awareness and support for freight movement investments</p> <p>Objective 6: Develop a balanced transportation planning and investment model for all forms of transportation</p> <p>Objective 7: Transform the FDOT's organizational culture to include consideration of supply chain and freight movement issues</p>

FTP Goal	Make transportation decisions to support and enhance livable communities
FMTP Objectives	<p>Objective 1: Capitalize on the freight transportation advantages of Florida through collaboration on economic development, trade, and logistics programs</p> <p>Objective 2: Increase operational efficiency of goods movement</p> <p>Objective 6: Develop a balanced transportation planning and investment model for all forms of transportation</p>

FTP Goal	Make transportation decisions to promote responsible environmental stewardship
FMTP Objectives	Objective 2: Increase operational efficiency of goods movement Objective 4: Align public and private efforts for trade and logistics Objective 6: Develop a balanced transportation planning and investment model for all forms of transportation

FTP Goal	Provide a safe and secure transportation system for all users
FMTP Objectives	Objective 4: Align public and private efforts for trade and logistics Objective 5: Raise awareness and support for freight movement investments

FTP Goal	Maintain and operate Florida’s transportation system proactively
FMTP Objectives	Objective 1: Capitalize on the freight transportation advantages of Florida through collaboration on economic development, trade, and logistics programs Objective 2: Increase operational efficiency of goods movement Objective 4: Align public and private efforts for trade and logistics Objective 5: Raise awareness and support for freight movement investments Objective 6: Develop a balanced transportation planning and investment model for all forms of transportation

FTP Goal	Improve mobility and connectivity for people and freight
FMTP Objectives	Objective 1: Capitalize on the freight transportation advantages of Florida through collaboration on economic development, trade, and logistics programs Objective 2: Increase operational efficiency of goods movement Objective 3: Minimize costs in the supply chain Objective 4: Align public and private efforts for trade and logistics Objective 5: Raise awareness and support for freight movement investments Objective 6: Develop a balanced transportation planning and investment model for all forms of transportation Objective 7: Transform the FDOT’s organizational culture to include consideration of supply chain and freight movement issues

Consistency with MAP-21

The FMTP policy directions are also consistent with the direction put in place by MAP-21. The following tables display how the seven FMTP objectives and their related strategies correspond to the national freight policy goals of MAP-21. These strategies and later actions will be the basis for analyzing projects to be included in the Investment Element of the FMTP. **Table 20** displays the relationship between the FMTP objectives and the national freight policy goals by comparing them side-by-side.

Table 20: Comparison of the National Freight Policy Goals and FMTP Objectives

National Freight Policy Goals	Improving the contribution of the freight transportation system to economic efficiency, productivity, and competitiveness
FMTP Objectives	<p>Objective 1: Capitalize on the freight transportation advantages of Florida through collaboration on economic development, trade, and logistics programs</p> <p>Objective 2: Increase operational efficiency of goods movement</p> <p>Objective 3: Minimize costs in the supply chain</p> <p>Objective 4: Align public and private efforts for trade and logistics</p> <p>Objective 5: Raise awareness and support for freight movement investments</p> <p>Objective 6: Develop a balanced transportation planning and investment model for all forms of transportation</p> <p>Objective 7: Transform the FDOT's organizational culture to include consideration of supply chain and freight movement issues</p>
National Freight Policy Goals	Reducing congestion on the freight transportation system
FMTP Objectives	<p>Objective 1: Capitalize on the freight transportation advantages of Florida through collaboration on economic development, trade and logistics programs</p> <p>Objective 2: Increase operational efficiency of goods movement</p> <p>Objective 4: Align public and private efforts for trade and logistics</p> <p>Objective 5: Raise awareness and support for freight movement investments</p> <p>Objective 6: Develop a balanced transportation planning and investment model for all forms of transportation</p> <p>Objective 7: Transform the FDOT's organizational culture to include consideration of supply chain and freight movement issues</p>
National Freight Policy Goals	Improving the safety, security, and resilience of the freight transportation system
FMTP Objectives	<p>Objective 1: Capitalize on the freight transportation advantages of Florida through collaboration on economic development, trade and logistics programs</p> <p>Objective 2: Increase operational efficiency of goods movement</p> <p>Objective 3: Minimize costs in the supply chain</p> <p>Objective 4: Align public and private efforts for trade and logistics</p> <p>Objective 5: Raise awareness and support for freight movement investments</p> <p>Objective 6: Develop a balanced transportation planning and investment model for all forms of transportation</p> <p>Objective 7: Transform the FDOT's organizational culture to include consideration of supply chain and freight movement issues</p>
National Freight Policy Goals	Improving the state of good repair of the freight transportation system
FMTP Objectives	<p>Objective 1: Capitalize on the freight transportation advantages of Florida through collaboration on economic development, trade and logistics programs</p> <p>Objective 4: Align public and private efforts for trade and logistics</p> <p>Objective 5: Raise awareness and support for freight movement investments</p> <p>Objective 6: Develop a balanced transportation planning and investment model for all forms of transportation</p> <p>Objective 7: Transform the FDOT's organizational culture to include consideration of supply chain and freight movement issues</p>

National Freight Policy Goals	Using advanced technology, performance management, innovation, competition, and accountability in operating and maintaining the freight transportation system
FMTP Objectives	Objective 1: Capitalize on the freight transportation advantages of Florida through collaboration on economic development, trade and logistics programs Objective 2: Increase operational efficiency of goods movement Objective 3: Minimize costs in the supply chain Objective 4: Align public and private efforts for trade and logistics Objective 5: Raise awareness and support for freight movement investments Objective 6: Develop a balanced transportation planning and investment model for all forms of transportation Objective 7: Transform the FDOT’s organizational culture to include consideration of supply chain and freight movement issues

National Freight Policy Goals	Reducing adverse environmental and community impacts of the freight system
FMTP Objectives	Objective 1: Capitalize on the freight transportation advantages of Florida through collaboration on economic development, trade and logistics programs Objective 2: Increase operational efficiency of goods movement Objective 4: Align public and private efforts for trade and logistics Objective 5: Raise awareness and support for freight movement investments Objective 6: Develop a balanced transportation planning and investment model for all forms of transportation Objective 7: Transform the FDOT’s organizational culture to include consideration of supply chain and freight movement issues

Consistency with Florida Chamber of Commerce Six Pillars

The Florida Chamber of Commerce has a vision for Florida- vibrant communities enjoying prosperity and high-paying jobs through competitive advantage in a global economy. The Six Pillars is a framework offered to organize strategic planning at the state and local level. **Table 21** displays the relationship between the FMTP objectives and the Florida Chamber Six Pillars by comparing them side-by-side.

Table 21: Comparison of the Florida Chamber of Commerce Six Pillars and FMTP Objectives

Florida Chamber Pillars	Talent Supply and Education
FMTP Objectives	Objective 1: Capitalize on the freight transportation advantages of Florida through collaboration on economic development, trade, and logistics programs Objective 5: Raise awareness and support for freight movement investments

Florida Chamber Pillars	Innovation and Economic Development
FMTP Objectives	Objective 1: Capitalize on the freight transportation advantages of Florida through collaboration on economic development, trade, and logistics programs Objective 2: Increase operational efficiency of goods movement Objective 3: Minimize costs in the supply chain Objective 4: Align public and private efforts for trade and logistics Objective 6: Develop a balanced transportation planning and investment model for all forms of transportation Objective 7: Transform the FDOT’s organizational culture to include consideration of supply chain and freight movement issues

Florida Chamber Pillars	Infrastructure and Growth Leadership
FMTF Objectives	Objective 1: Capitalize on the freight transportation advantages of Florida through collaboration on economic development, trade, and logistics programs Objective 2: Increase operational efficiency of goods movement Objective 3: Minimize costs in the supply chain Objective 4: Align public and private efforts for trade and logistics Objective 5: Raise awareness and support for freight movement investments Objective 6: Develop a balanced transportation planning and investment model for all forms of transportation Objective 7: Transform the FDOT’s organizational culture to include consideration of supply chain and freight movement issues

Florida Chamber Pillars	Business Climate and Competitiveness
FMTF Objectives	Objective 1: Capitalize on the freight transportation advantages of Florida through collaboration on economic development, trade, and logistics programs Objective 2: Increase operational efficiency of goods movement Objective 3: Minimize costs in the supply chain Objective 4: Align public and private efforts for trade and logistics Objective 5: Raise awareness and support for freight movement investments Objective 6: Develop a balanced transportation planning and investment model for all forms of transportation Objective 7: Transform the FDOT’s organizational culture to include consideration of supply chain and freight movement issues

Florida Chamber Pillars	Civic and Governance Systems
FMTF Objectives	Objective 1: Capitalize on the freight transportation advantages of Florida through collaboration on economic development, trade, and logistics programs Objective 2: Increase operational efficiency of goods movement Objective 3: Minimize costs in the supply chain Objective 4: Align public and private efforts for trade and logistics Objective 6: Develop a balanced transportation planning and investment model for all forms of transportation Objective 7: Transform the FDOT’s organizational culture to include consideration of supply chain and freight movement issues

Florida Chamber Pillars	Quality of Life and Quality Places
FMTF Objectives	Objective 1: Capitalize on the freight transportation advantages of Florida through collaboration on economic development, trade, and logistics programs Objective 2: Increase operational efficiency of goods movement Objective 3: Minimize costs in the supply chain Objective 6: Develop a balanced transportation planning and investment model for all forms of transportation Objective 7: Transform the FDOT’s organizational culture to include consideration of supply chain and freight movement issues

Consistency with Department of Economic Opportunity Strategic Plan for Economic Development

The Florida Department of Economic Opportunity Division of Strategic Business Development is required by Florida Statute to create a five year statewide strategic plan to guide the future of Florida’s economy. This planning effort used the Six Pillars framework developed by the Florida Chamber to organize their Area-Specific strategies, but also developed goals and objectives unique to this plan. **Table 22** displays the relationship between the FMTF objectives and the Florida Chamber Six Pillars by comparing them side-by-side.

Table 22: Comparison of the Strategic Plan for Economic Development and FMTP Objectives

Strategic Plan for Economic Development	Lead the nation in global competitiveness as a location for business, investment, talent, innovation, and visitors
FMTP Objectives	Objective 1: Capitalize on the freight transportation advantages of Florida through collaboration on economic development, trade, and logistics programs Objective 2: Increase operational efficiency of goods movement Objective 3: Minimize costs in the supply chain Objective 4: Align public and private efforts for trade and logistics Objective 6: Develop a balanced transportation planning and investment model for all forms of transportation Objective 7: Transform the FDOT’s organizational culture to include consideration of supply chain and freight movement issues
Strategic Plan for Economic Development	Lead the nation in economic growth and prosperity
FMTP Objectives	Objective 1: Capitalize on the freight transportation advantages of Florida through collaboration on economic development, trade, and logistics programs Objective 2: Increase operational efficiency of goods movement Objective 3: Minimize costs in the supply chain Objective 4: Align public and private efforts for trade and logistics Objective 6: Develop a balanced transportation planning and investment model for all forms of transportation Objective 7: Transform the FDOT’s organizational culture to include consideration of supply chain and freight movement issues
Strategic Plan for Economic Development	Lead the nation in quality of life
FMTP Objectives	Objective 1: Capitalize on the freight transportation advantages of Florida through collaboration on economic development, trade, and logistics programs Objective 2: Increase operational efficiency of goods movement Objective 3: Minimize costs in the supply chain Objective 6: Develop a balanced transportation planning and investment model for all forms of transportation Objective 7: Transform the FDOT’s organizational culture to include consideration of supply chain and freight movement issues

Other Existing State Policy Plans

Utilizing the guidance established from the 2060 FTP, other statewide level plans such as the SIS Plan and modal system plans have existing goals and objectives that were also considered in the development of these strategies. The policy directions of the FMTP Policy Element will serve to guide each of these plans as updates are completed, but, while the FMTP was being developed, the existing goals of these plans were taken into account. Each plan identifies its own set of goals and objectives based upon the 2060 FTP goals, which form the guidance of each program.

The FDOT plans include:

- 2025 Florida Aviation System Plan
- 2010 Florida Rail Plan
- 2009 Florida Seaport Plan
- 2010 SIS Strategic Plan

Other Florida Freight Plans

In addition to guiding policy plans at the statewide level, the FMTP Policy Element will serve as a guide for regional freight plans undertaken in the state. While the FMTP was being developed, goals and policies from regional plans were considered. Also, many of the projects that will form the Investment Element of the FMTP will likely come from local and regional freight studies. However each of these plans is focused on the priorities of a particular region, and therefore may differ from state priorities. The process of including district projects in the Investment Element of the FMTP is discussed in Chapter 5.

Current regional freight plans include:

- 2012 North Florida Freight, Logistics and Intermodal Framework Plan
- 2013 Tampa Bay Regional Goods Movement Study
- Freight, Goods and Services Mobility Strategy Plan Updates (in development)
- Broward County Regional Freight Plan (in development)

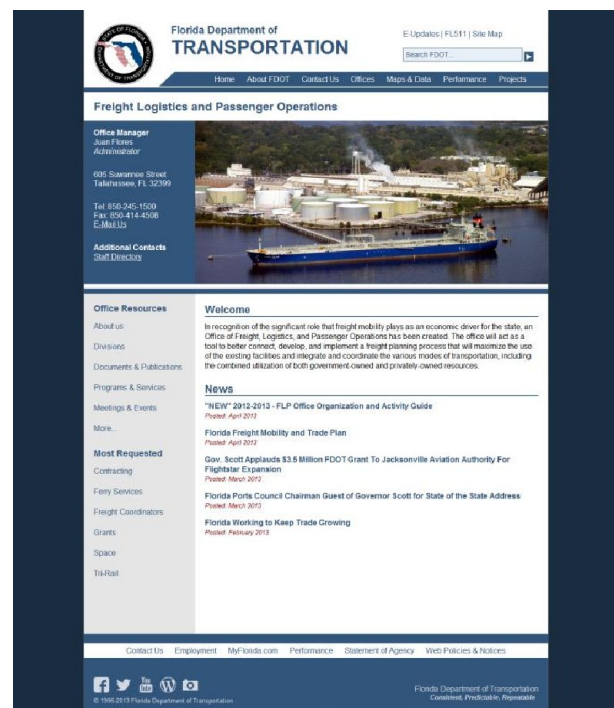
Chapter 5: Next Steps – The Investment Element

Background

As described briefly in **Chapter 1**, the FMTP will be developed in two elements: this Policy Element addressing the legal mandates of HB 599 and an Investment Element identifying and prioritizing needs. The investment element will be developed the following year and will also address additional issues required by MAP-21. The development of the Policy Element relied heavily on the involvement of the private and public sector, with five stages of direct engagements: Regional Listening Forums, the first Florida Freight Leadership Forum, Business Forum I: Scenario Planning, Business Forum II: Plan Development, and Business Forum III: Plan Review.

FDOT is not waiting until the Investment Element is complete to make investments in freight. Based on input received from the FDOT districts and the business community, FDOT has already accelerated many National Highway System (NHS) and Strategic Intermodal System (SIS) Roadway Freight Connector projects with the Quick Fix initiative. This advanced nearly \$8 million in current year and over \$14 million to be programmed in FY 2013/14 and 2014/15. Governor Scott has also announced port investments and ILC legislation is being implemented. The development of the Investment Element will continue this collaborative approach for gaining valuable insight from statewide leaders and local/regional partners, as well as key private sector business leaders and users of the freight system. By including all freight stakeholders in the process, the plan better reflects actual needs and allows the FDOT to make better decisions regarding freight investments.

Florida has emerged as a national leader in freight mobility, as the release of national freight guidance offered in MAP-21 came after the Florida Legislature had already tasked the FDOT with developing a statewide freight plan. The FDOT is the leading state agency for the planning and development of transportation policies and investment in support of freight transportation. As noted previously, to focus resources on the growing significance of freight, FDOT Secretary Ananth Prasad created the Office of Freight, Logistics, and Passenger Operations, which is specifically designed to play a key role in advancing Governor Scott's initiatives. The office provides for a multi-modal, freight-centric focus on the state's infrastructure and policy needs. The office consists of the Aviation and Spaceport Office, the Rail and Motor Carrier Office, the Seaports Office, and the Transit Office. Extending this coordination outward to the seven Districts and the Turnpike Enterprise, a District Freight Coordinator was designated within each entity. These individuals form a level of connectivity between the central FDOT office and the Districts. This also allows each District to focus on those challenges and opportunities for freight within the boundaries of their geographical areas.



The Brookings Institute, an internationally recognized and trusted policy and research organization, recognized Florida's actions and named Florida's freight focus as one of the 2013 Top 10 State and Metropolitan Innovations to Watch.⁶⁷ This honor is bestowed upon states and metropolitan areas that excel in the areas of meeting the national goal of doubling exports, bolstering innovative industries, reducing environmental impacts, growing a skilled workforce and increasing opportunity, and strengthening collaborative governance. Florida was chosen primarily due to pragmatic solutions in the area of exports.

Interactive | January 18, 2013

Innovations To Watch

By: Bruce Katz and Owen Washburn

Email Tweet StumbleUpon Share Print

For the second year in a row, the Brookings-Rockefeller Project on State and Metropolitan Innovation identified the Top 10 State and Metropolitan Innovations to Watch—actions undertaken by states and metropolitan areas in 2012 that seem ripe for meaningful impact in 2013 and beyond, as well as for replication by other communities. (See our 2012 Innovations to Watch and a recap of their progress in the last year.) Looking across the country, we find a nation teeming with smart, pragmatic solutions to national economic challenges: meeting a national goal of doubling exports, bolstering innovative industries, cracking the code on low carbon, growing a skilled workforce and increasing opportunity, and strengthening collaborative governance.

These innovations in policy and practices show that American problem solving does not rely exclusively on the machinations of the federal government. More than any other nation, we devolve ample powers and responsibilities to states and metropolitan areas that, in turn, smartly share governing with leaders in the corporate, civic, university and environmental sectors. [View the related opinion.](#)

Exports Innovation Low Carbon Opportunity Governance

Why Exports?

The world is rapidly urbanizing and industrializing, with global demand increasingly coming from abroad: three-quarters of the fastest-growing metropolitan economies in 2012 were located in developing Asia, Latin America, the Middle East and Africa. The top 100 US metropolitan areas produced almost 65 percent of U.S. goods and services exports in 2010.

More information: Export Nation 2012, Global Metro Monitor 2012



The article described Florida as the United States' Gateway to Latin America and illustrated key seaport investments as proof that Florida has begun to prepare for growth in the Caribbean economies and the expansion of the Panama Canal. The Brookings Institute specifically praised the establishment of the Office of Freight, Logistics, and Passenger Operations and the goal to align infrastructure systems across the state through the SIS and the FMTP. Florida is taking an innovative approach to prioritizing freight needs at the state level rather than simply providing money to individual seaports and intermodal centers based on geographic equity.

While the FDOT has already taken steps to implement the Governor's vision to transform Florida into a global hub for trade, logistics, and export-oriented manufacturing activities, there are specific components that must be included in the state freight plan envisioned at the federal level. This Policy Element and the Investment Element of the FMTP together will address all state freight plan requirements of the MAP-21. As discussed in **Chapter 4**, the Act encourages states to develop comprehensive freight plans to guide state investments. This is not a Federal requirement; however, freight projects must be identified in a state plan to qualify for the increased federal funding share of 95%.

The Policy Element of the FMTP began the process of identifying significant freight system trends, needs, and issues with respect to the state, as well as laying out freight policies and strategies to guide freight-related transportation investment decisions in the state. The Investment Element will build on existing information and include additional analyses and detail.

The following sections provide a brief overview of components to be included in the Investment Element of the FMTP based on the above listed MAP-21 requirements.

Needs Identification

This component of the Investment Element will include a discussion on the strengths and problems of the state's freight transportation system. MAP-21 guidance states that state freight plans must include:

⁶⁷ <http://www.brookings.edu/research/interactives/2013/innovationstowatch#Exports>, January 25, 2013

“...an analysis of the strengths of the State’s freight system that it wishes to preserve and the problems that it wishes to solve. This analysis would show what the strengths of the State’s freight system are that the State wishes to build upon; it would also show in what respects the State’s freight system does not meet the State’s goals, and indicate which problems are most important for the State to address. Some of these might include problems that the State expects to develop in the future as a result of increasing demand for freight transportation or other trends that the State is anticipating.”

This process has begun in the Policy Element with the overview of existing trends of the state freight transportation system in **Chapter 2**, as well as with the identification of key freight issues in **Chapter 3**.

Chapter 2 of the Policy Element describes the transportation system and its importance to freight mobility and trade. This in-depth look at Florida’s freight system provides a base for evaluating system needs in the Investment Element. Going forward, additional tools and analyses will be used to paint a picture of what Florida is doing well and where there is room for improvement. The FDOT is currently in the process of developing a statewide freight model, as well as individual seaport simulations. These will likely be valuable tools in the next phase of the plan.

Chapter 3 of the Policy Element aims to inventory freight issues of statewide significance required to be addressed in recent state and federal legislation, as well as those captured from an extensive outreach process and identified in other freight and modal planning efforts. The Investment Element will build on this foundation and possibly gather more needs from newly-released related plans.

A large part of the additional needs identification during the Investment Element development will be based on reaching out to freight stakeholders to gather specific project proposals. Once the freight community in Florida is aware of how the FDOT intends to prioritize freight projects for statewide significance, they can help the FDOT develop needs. Project proposals will be collected from the FDOT Districts, MPOs, modal plans, and stakeholders, and grouped by timeframe, such as short-term and long-term. Beyond listing the specific needs, the Investment Element will also prioritize those needs.

Project Prioritization

Perhaps most importantly, the Investment Element of the FMTP will need to address how the state will prioritize freight projects. States are required to identify freight projects in a state plan to qualify for a higher Federal share of up to 95% on the Interstate System and up to 90% on non-Interstate facilities, and the federal government wants to make sure they are getting the best value for the nation with those funds. MAP-21 guidance requires:

“...a State Freight Plan includes a discussion of the State’s decision-making process on freight transportation improvements, including how the State conducted outreach to stakeholders and the public and how the State prioritized the various strategies, projects, and policy changes it considered. This discussion would show how the State coordinated improvements to different modes of transportation in order to achieve its goals in the most cost-effective way. It would also discuss ways in which the State coordinated with other States in regional freight planning efforts, and with metropolitan areas within the State that have done freight planning.”

The Investment Element will address requirements by providing an overview of existing project prioritization methods, as well as documenting any changes or new factors added to adequately prioritize freight projects statewide. The discussion will include a narrative on how the FDOT District priorities will be considered as part of the state prioritization process.

For example, the FDOT has already documented the prioritization process of highway investments and recently developed a companion to documenting the current modal prioritization process. The Investment Element of the FMTP will likely follow a similar outline.

SIS projects originate from the FDOT district offices and modal plan priorities, and use the Strategic Investment Tool (SIT) to evaluate and rank highway projects. Other modes use different prioritization methods and measures. There are other factors, such as existing funding commitments, phasing or timing issues, availability of appropriate funding, and geographic distribution concerns. Together, all these aspects are reviewed to develop the list of SIS projects.

Given the success of the SIS and the related project prioritization process, this seems like an appropriate model to start with in the development of a methodology for prioritizing statewide freight projects.

Evaluation of Consistency with Objectives and Strategies

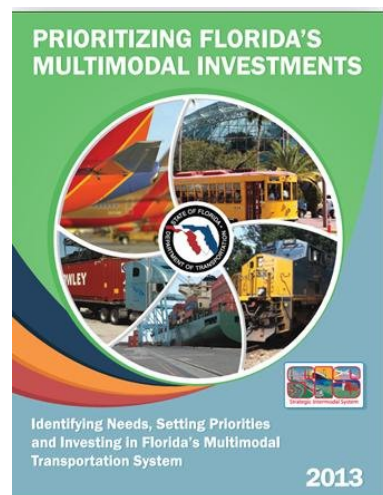
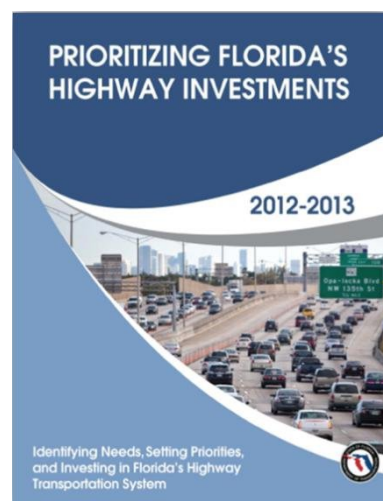
Part of the project prioritization process is to assess how well the project actually accomplishes the objectives of the FMTP Policy Element. This can be accomplished in a number of ways, and the Investment Element will suggest appropriate methodologies.

For example, to assist in the selection of SIS highway projects, the association of projects with the 2060 FTP goals is done using the Strategic Investment Tool (SIT).

Table 23 shows a list of measures used to score each project, and each is categorized based on the implementation of a specific 2060 FTP goal. Projects are automatically analyzed and assigned points based on how well they do in each measure. The overall scores can be used to gauge how well the project addresses statewide transportation goals. This scoring method is used as part of the process of prioritizing SIS highway projects currently.

Table 23: 2060 FTP Goals and SIT Measures

2060 FTP Goal	Measure
Safety and Security (5 measures)	Crash Ratio
	Fatal Crash Ratio
	Bridge Appraisal Rating
	Link to Military Bases (MAF)
	Emergency Evacuation
Maintenance and Operations (4 measures)	Travel Time Reliability
	Truck Volume (AADTT)
	Adaptation Measure
	Bridge Condition Rating



2060 FTP Goal	Measure
Mobility and Connectivity (8 measures)	Connector Location
	Volume/Capacity (v/c) Ratio
	Truck Percentage (% Trucks)
	Vehicular Volume (AADT)
	System Gap
	Change in v/c (Mainline)
	Bottleneck/Grade Separation
	Delay
Economic Competitiveness (14 measures)	Rural Areas of Critical Economic
	Workforce Size
	Educational Attainment Level
	Population Growth Rate
	Per Capita Income
	Freight Employment Intensity
	Property Taxes
	Freight Transportation Infrastructure
	Military Bases Employment
	Per Capita Sales Tax
	Number of Visitors
Livable Communities (7 measures)	Institutions of Higher Education
	Medical Centers
	Tech Centers
	Residential and Community Impacts
	Population Density
	Transit Connectivity
	Bicycle/Pedestrian Access
Environmental Stewardship (14 measures)	Managed Lanes/Special Use
	Social Investment/Justice
	Social Justice
	Personal Safety
	Farmlands
	Geology
	Archaeological/Historical Sites
	Contamination
	Conservation and Preservation
	Wildlife and Habitat
	Floodplains/Flood Control
	Coastal/Marine
	Special Designations
	Water Quality
	Wetlands
	Air Quality
	Energy and Sustainability

Source: Strategic Investment Tool Review and Alignment of SIT Measures to the 2060 FTP

Return on Investment

Another aspect of the prioritization process will be an economic analysis. MAP-21 guidance includes this text on assessing benefits and costs:

“The Department encourages States to conduct economic analysis as part of the State Freight Plan, including analyses of benefits and costs of various improvements that they are considering. If economic analysis has been conducted, the results of that analysis should be reported in this portion of the State Freight Plan. The discussion would show how the State compared alternative approaches to achieving the same goal. As specified in section 1118, the discussion must also show evidence of consideration of operational strategies (such as congestion pricing) or innovative technologies (such as use of intelligent transportation systems (ITS)) that improve the safety and efficiency of freight movement. If an economic analysis is provided, it would be particularly useful to estimate benefits and costs of each alternative considered.”

Transportation funding sustainability has become a hot topic in recent years; with that has come a rise in economic analysis. Everybody wants to get the biggest “bang for their buck” when there is not enough funding to go around.

The Investment Element of the FMTP will need to expand on the economic analyses included in the Policy Element to the level of specific proposed projects. The FDOT Office of Policy Planning is continuing to develop ROI tools for use on highway projects, and is working with the FDOT Modal Offices to score those projects as well. The narrative will likely include discussion of these tools, as well as list the outcomes of any economic analyses done on freight projects included in the plan.

Specific FDOT Policy Actions (The Implementation Plan)

The Investment Element of the FMTP will include a number of aspects that make up the Implementation Plan. This final piece describes the FMTP’s impacts and concrete actions that will come out of the process. MAP-21 states:

“Finally, the Department recommends that a State Freight Plan include a comprehensive implementation plan, showing both short-term and long-term strategies, and including an approximate time schedule for each proposed freight improvement. This implementation plan would include an analysis of which capital improvements have the potential to generate a revenue stream, and hence which projects have the potential to be funded with loans (repaid from the revenue stream) rather than solely through grants or general funds. The Plan would include a funding plan, showing how each project will be funded, including those funded by grants, loans, and public-private partnerships. The Plan would discuss the State’s proposed partnerships with private infrastructure owners, such as railroads, terminal operators, and pipeline companies. Finally, the Plan would discuss how the State proposes to work with adjacent States on projects that cross State lines, or on freight corridors that cross State lines (even if the project itself is all in one State).”

The Implementation Plan will build upon the objectives and strategies included in **Chapter 4** of the Policy Element by narrowing down specific actions associated with each item. These action items will be broken into groups by timeframe, such as short term and long term as described above.

The Implementation Plan will also consider financing associated with the list of proposed projects. Each freight project will need to show how funding is proposed, including all non-state options. The FDOT has made it clear that it is open to suggestions on alternative funding mechanisms, so the freight community may have space to be innovative.

Florida has already developed a number of key partners during the development of the Policy Element of the FMTP, such as the following entities:

- Florida Chamber of Commerce and Florida Chamber Foundation
- Enterprise Florida
- Workforce Florida
- Florida Department of Economic Opportunity
- Florida Department of Agriculture.

In addition, stakeholder outreach during the development of the Policy Element has produced relationships with private companies and other entities such as:

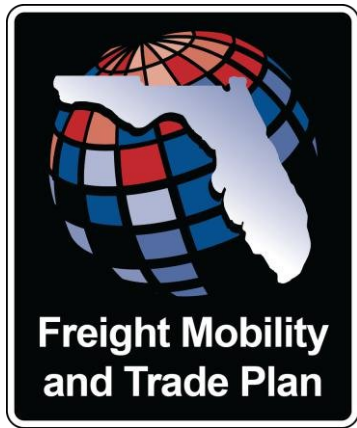
- | | |
|-------------------|----------------------|
| • Boeing | • Jaxport |
| • NASA | • Port Canaveral |
| • Bank of America | • McTyre Trucking |
| • Publix | • CSX |
| • U.S. Sugar | • FEC |
| • Coca-Cola | • CEMEX |
| • PepsiCo | • RaceTrac Petroleum |
| • Orlando Health | • Rooms-To-Go |
| • Bealls | • Office Depot |
| • Port Miami | • Southeast Milk. |

These relationships could help foster formal partnerships with private infrastructure owners, and those potential partnerships will need to be discussed in the Investment Element.

As the world economies become more linked, it is imperative all entities work together in the freight planning process. Freight does not stop at local, regional, or state boundaries, and the planning coordination should not either. States have already begun to see the benefits of working together on multi-state freight corridor studies and projects. MAP-21 requires that states continue this process and describes how they plan to collaborate with nearby states.

Florida has stepped up to the task at hand, and its freight future is bright. The collaborative development of the Policy Element of the FMTP has uncovered a culture and climate in Florida that is progressive. The leadership and desire to improve conditions to enhance freight mobility is clearly evident. The next step is to develop a collaborative and transparent project prioritization process to match funding for short-term and long-term requirements. By aligning infrastructure systems across the state, developing a freight plan forged with agency partners and private companies, and focusing on delivering projects with the greatest economic ROI, Florida is poised to propel itself forward as the nation's freight leader.

Page Intentionally Left Blank



Florida Freight Mobility and Trade Plan Policy Element

Appendices

June 2013

Page Intentionally Left Blank



Table of Contents

Appendix 1: Policy Element Implementation Responsibilities.....	1
FDOT Offices	1
FDOT Secretary.....	1
FDOT Executive Team.....	1
Engineering and Operations.....	1
Intermodal Systems Development (ISD)	2
Freight, Logistics and Passenger Operations (FLP)	2
Seaports and Waterways.....	5
Rail and Motor Carrier.....	6
Aviation and Spaceports.....	7
Transit.....	8
Systems Planning (SPO)	9
Policy Planning (OPP)	10
Transportation Statistics	10
Traffic Operations.....	10
Maintenance	11
Safety.....	11
Forms and Procedures.....	11
Work Program	11
FDOT Districts	12
FDOT Partners.....	13
Enterprise Florida, Inc.(EFI)	13
Workforce Florida, Inc. (WFI)	13
Florida Department of Agriculture and Consumer Services (DOAg)	13
Metropolitan Planning Association Advisory Council (MPOAC).....	14
Institute for Trade and	14
Transportation Studies (ITTS)	14
Florida Chamber of Commerce	14
Florida Department of Economic Opportunity (DEO)	14
Figure 1: Summary of Policy Element Implementation Responsibilities.....	15
Appendix 2: Glossary	16

Page Intentionally Left Blank

Appendix 1: Policy Element Implementation Responsibilities

The Investment Element will build upon the objectives and strategies included in this Policy Element by drilling down to specific actions associated with each item. In order to begin that process, this appendix designates a Florida Department of Transportation Office or partner responsible for implementing each of these strategies. See page A-15 for a summary of responsibilities.

FDOT Offices

FDOT Office	FMTP Objectives, Strategies, and Actions
FDOT Secretary	<p>1.3 Support the branding of Florida as the Gateway to the Western Hemisphere for trade (FLP lead, Secretary, ISD support)</p> <p>6.5 Assign specific responsibility to FDOT leadership to ensure alignment of state and local freight transportation policies, plans, and programs</p>

FDOT Office	FMTP Objectives, Strategies, and Actions
FDOT Executive Team	7.2.2.1 Integrate processes and maintain modal technical competencies

FDOT Office	FMTP Objectives, Strategies, and Actions
Engineering and Operations	7.2.1 Revise FDOT policies to incorporate freight movements in planning, design, and operations

FDOT Office	FMTP Objectives, Strategies, and Actions
Intermodal Systems Development (ISD)	<p>1.3 Support the branding of Florida as the Gateway to the Western Hemisphere for trade (FLP lead, Secretary, ISD support)</p> <p>1.5.2 Proactive participation by the FDOT economic development liaison to the DEO</p> <p>3.1 Advance the use of more environmentally friendly alternative fuels (FLP lead, DOAg support)</p> <p>3.2.1 Explore alternative fuel corridors with suppliers and first-adopters (facilitation to address local issues) (FLP lead, DOAg support)</p> <p>3.2.2 Coordinate initiatives for user conversions as market evolves (via incentives to level playing field) (FLP lead, DOAg support)</p> <p>3.3.1 Assess impact of alternative tax or user fee proposals</p> <p>3.5.2 Facilitate transportation and CNG/LNG supply to support such ILCs (Seaports and Waterways lead)</p> <p>4.3 Bring business community into transportation planning process (FDOT Districts support)</p>

FDOT Office	FMTP Objectives, Strategies, and Actions
Freight, Logistics and Passenger Operations (FLP)	<p>1.1.4 Develop a comprehensive plan to support and facilitate international exports and interstate commerce (EFI lead)</p> <p>1.3 Support the branding of Florida as the Gateway to the Western Hemisphere for trade (EFI support)</p> <p>1.4.1 Host a joint website as a comprehensive portal for freight mobility and trade matters with Enterprise Florida, Workforce Florida, and the Florida Chamber of Commerce to facilitate manufacturers locating and expanding in Florida; e.g., “the freight base” (EFI, WFI, FL Chamber support)</p> <p>1.4.2 Include Enterprise Florida, Workforce Florida, and the Department of Economic Opportunity as ex officio members of the predominantly industry sector CEO Freight Leadership Group</p> <p>1.5.1 Factor logistics efficiency and sustainability into comprehensive economic development strategies (DEO lead, FDOT Districts support)</p> <p>1.5.3 Coordinate and inform transportation programs with the initiatives and policies of the Department of Economic Opportunity (DEO)</p> <p>1.5.4 Expand interagency collaboration and coordination</p> <p>1.5.5 Foster relationships with local government economic development staff (FDOT districts support)</p>

FDOT Office	FMTP Objectives, Strategies, and Actions
Freight, Logistics and Passenger Operations (FLP) (continued)	<p>1.6.3 <i>Inventory and brand beneficial transportation characteristics of the different regions to support economic development branding (FDOT districts support)</i></p> <p>1.7.1 <i>Identify needed skills, abilities, and best strategies for attracting and developing the necessary workforce (WFI lead)</i></p> <p>1.7.2 <i>Develop jointly sponsored vocational and technical training academies for maritime operations, trade and logistics staff, and other skills needed for increased manufacturing, trade, and logistics operations in Florida (WFI lead)</i></p> <p>1.8.1 <i>Participate in the update of the Latin American Transportation and Trade Study (ITTS support)</i></p> <p>1.8.2 <i>Coordinate freight planning activities with states in our region as encouraged by federal legislation (ITTS support)</i></p> <p>2.1 <i>Identify the critical freight transportation network for the state, which includes the national freight network designated by the USDOT (SPO, Transportation Statistics support)</i></p> <p>2.3.1 <i>Prioritize investments on connections (distribution hubs, ILCs, etc.)</i></p> <p>2.5.1 <i>Identify and implement projects to eliminate freight bottlenecks</i></p> <p>2.5.4 <i>Anticipate future freight facility needs</i></p> <p>2.7.1 <i>Conduct periodic strengths, weaknesses, opportunities, and threats (SWOT) analyses of the complete freight and logistics network</i></p> <p>3.1 <i>Advance the use of more environmentally friendly alternative fuels (DOAg, Doug Callaway support)</i></p> <p>3.2.1 <i>Explore alternative fuel corridors with suppliers and first-adopters (facilitation to address local issues) (DOAg, Doug Callaway support)</i></p> <p>3.2.2 <i>Coordinate initiatives for user conversions as market evolves (via incentives to level playing field) (DOAg, Doug Callaway support)</i></p> <p>5.1.3 <i>To educate and inform elected officials about freight</i></p> <p>4.1.1 <i>Establish freight policy and program input and feedback mechanisms</i></p> <p>4.1.2 <i>Convene regularly to discuss and strategize on trade and logistics issues</i></p> <p>4.2.1 <i>Focus public investment in long-term infrastructure (SPO support)</i></p> <p>4.2.2 <i>Leverage private investment in technology and operational improvements (SPO support)</i></p> <p>4.2.3 <i>Solicit public-private partnership for infrastructure investments (SPO support)</i></p> <p>5.1.1 <i>To educate the public about the importance of freight transportation</i></p>

FDOT Office	FMTP Objectives, Strategies, and Actions
Freight, Logistics and Passenger Operations (FLP) (continued)	<p>5.1.2 <i>To educate young people about the job opportunities in the freight and logistics field (WFI support)</i></p> <p>5.2 <i>Develop a common lexicon of freight terms for transportation and business partners to use to minimize confusion over terms</i></p> <p>6.1 <i>Provide transportation and land use planning guidance and direction to local and regional agencies for enhanced economic development and freight efficiencies that support community goals (OPP, MPOAC support)</i></p> <p>6.2 <i>Coordinate across state agencies to ensure consistency of regulations that impact freight operations and mobility</i></p> <p>6.3 <i>Coordinate and integrate freight-related plans and programs of freight facility owners, local jurisdictions, Metropolitan Planning Organizations (MPOs) and the FDOT (Central Office & Districts) for expedited and informed decision-making (FDOT Districts, MPOAC support)</i></p> <p>7.2.3 <i>Provide freight policy guidance to Districts and local agencies</i></p> <p>7.3.1 <i>Establish procedures to identify critical freight infrastructure investments that reflect private sector and local goals and needs</i></p>

FDOT Office	FMTP Objectives, Strategies, and Actions
Seaports and Waterways	<p>1.1.1 Characterize and highlight the unique strengths of each seaport</p> <p>1.1.2 Develop criteria for strategic port investments in tandem with private investments to respond to market needs nimbly and transparently</p> <p>1.2.4 Implement the ILC infrastructure support program</p> <p>1.6.1 Identify and address transportation issues and challenges for each of the targeted industries (Modal Offices, SPO support)</p> <p>1.6.2 Match trade and transportation needs of the targeted industries with the characteristics of the ports, airports, and ILCs as branding enhancements (Modal Offices, SPO support)</p> <p>2.2.1 Improve hub connections (last mile and beyond) (SPO lead, Modal Offices support)</p> <p>2.4.2 Foster uniform information technology among all Florida seaport for trucking and rail operators (Rail and Motor Carrier support)</p> <p>2.5.2 Examine dedicated freight facilities or freight shuttles when existing capacity has been maximized (OPP lead, Modal Offices support)</p> <p>2.5.3 Explore the appropriate role of marine highways or short-sea shipping</p> <p>2.5.5 Examine dedicated facilities for “non-freight” activity that serves to restore capacity for freight movement (OPP lead, Modal Offices support)</p> <p>3.5.1 Expand FTZ benefits to ILCs with potential for manufacturing capacity</p> <p>3.5.2 Facilitate transportation and CNG/LNG supply to support such ILCs (Doug Callaway support)</p> <p>3.5.3 Strategize with freight forwarders on how to maximize freight forwarding opportunities for goods manufactured in other states for export through Florida ports and airports (Seaports and Waterways and Aviation and Spaceports both lead)</p> <p>7.1.3 Add criteria for inclusion of ILCs in the SIS (OPP lead)</p> <p>7.1.4 Position and support emerging freight facilities: spaceports, marine highways, etc.(Modal Offices support)</p> <p>7.3.2 Leverage freight infrastructure investments to amplify private sector investments (OPP lead, Modal Offices, SPO support)</p> <p>7.3.4.1 Focus on intermodal benefits (supply chain efficiencies) (OPP lead, Modal Offices, SPO support)</p> <p>7.3.4.2 Balance qualitative societal goals with quantitative goals like ROI (OPP lead, Modal Offices, SPO support)</p>

FDOT Office	FMTP Objectives, Strategies, and Actions
Rail and Motor Carrier	<p>1.5.1 Factor logistics efficiency and sustainability into comprehensive economic development strategies (FLP, FDOT districts support)</p> <p>1.6.1 Identify and address transportation issues and challenges for each of the targeted industries (Modal Offices, SPO support)</p> <p>1.6.2 Match trade and transportation needs of the targeted industries with the characteristics of the ports, airports, and ILCs as branding enhancements (Modal Offices, SPO support)</p> <p>2.2.1 Improve hub connections (last mile and beyond) (SPO lead, Modal Offices support)</p> <p>2.4.1 Establish appropriate role to promote and support the use of best practice information technology among all Florida trucking companies (in coordination with transportation systems management and operations [TSM&O]) (Traffic Operations support)</p> <p>2.4.2 Foster uniform information technology among all Florida seaport for trucking and rail operators (Seaports and Waterways lead)</p> <p>2.4.3 Expedite the implementation of recommendations and lessons from the Freight Advanced Traveler Information System (FRATIS) pilot (SPO lead)</p> <p>2.5.2 Examine dedicated freight facilities or freight shuttles when existing capacity has been maximized (OPP lead, Modal Offices support)</p> <p>2.5.5 Examine dedicated facilities for “non-freight” activity that serves to restore capacity for freight movement (OPP lead, Modal Offices support)</p> <p>2.6.1 Information technology cargo and truck, truck parking, dedicated truck lanes</p> <p>3.4 Advocate for regulatory reform and federal inspection agencies staffing to reduce impediments to goods movement (e.g., weight limits) (Maintenance support)</p> <p>7.1.4 Position and support emerging freight facilities: spaceports, marine highways, etc.(Modal Offices support)</p> <p>7.3.2 Leverage freight infrastructure investments to amplify private sector investments (OPP lead, Modal Offices, SPO support)</p> <p>7.3.4.1 Focus on intermodal benefits (supply chain efficiencies) (OPP lead, Modal Offices, SPO support)</p> <p>7.3.4.2 Balance qualitative societal goals with quantitative goals like ROI (OPP lead, Modal Offices, SPO support)</p>

FDOT Office	FMTP Objectives, Strategies, and Actions
Aviation and Spaceports	<p>1.6.1 Identify and address transportation issues and challenges for each of the targeted industries (Modal Offices, SPO support)</p> <p>1.6.2 Match trade and transportation needs of the targeted industries with the characteristics of the ports, airports, and ILCs as branding enhancements (Modal Offices, SPO support)</p> <p>2.2.1 Improve hub connections (last mile and beyond) (SPO lead, Modal Offices support)</p> <p>2.5.2 Examine dedicated freight facilities or freight shuttles when existing capacity has been maximized (OPP lead, Modal Offices support)</p> <p>2.5.5 Examine dedicated facilities for “non-freight” activity that serves to restore capacity for freight movement (OPP lead, Modal Offices support)</p> <p>2.6.3 Facilitate the safe implementation of autonomous vehicles (driverless vehicles and unmanned space vehicles) (Aviation and Spaceports, Traffic Operations, Safety all leads)</p> <p>3.5.3 Strategize with freight forwarders on how to maximize freight forwarding opportunities for goods manufactured in other states for export through Florida ports and airports (Seaports and Waterways and Aviation and Spaceports both lead)</p> <p>7.1.4 Position and support emerging freight facilities: spaceports, marine highways, etc.(Modal Offices support)</p> <p>7.3.2 Leverage freight infrastructure investments to amplify private sector investments (OPP lead, Modal Offices, SPO support)</p> <p>7.3.4.1 Focus on intermodal benefits (supply chain efficiencies) (OPP lead, Modal Offices, SPO support)</p> <p>7.3.4.2 Balance qualitative societal goals with quantitative goals like ROI (OPP lead, Modal Offices, SPO support)</p>

FDOT Office	FMTP Objectives, Strategies, and Actions
Transit	<p><i>1.6.1 Identify and address transportation issues and challenges for each of the targeted industries (Modal Offices, SPO support)</i></p> <p><i>1.6.2 Match trade and transportation needs of the targeted industries with the characteristics of the ports, airports, and ILCs as branding enhancements (Modal Offices, SPO support)</i></p> <p><i>2.2.1 Improve hub connections (last mile and beyond) (SPO lead, Modal Offices support)</i></p> <p><i>2.5.2 Examine dedicated freight facilities or freight shuttles when existing capacity has been maximized (OPP lead, Modal Offices support)</i></p> <p><i>2.5.5 Examine dedicated facilities for “non-freight” activity that serves to restore capacity for freight movement (OPP lead, Modal Offices support)</i></p> <p><i>7.1.4 Position and support emerging freight facilities: spaceports, marine highways, etc.(Modal Offices support)</i></p> <p><i>7.3.2 Leverage freight infrastructure investments to amplify private sector investments (OPP lead, Modal Offices, SPO support)</i></p> <p><i>7.3.4.1 Focus on intermodal benefits (supply chain efficiencies) (OPP lead, Modal Offices, SPO support)</i></p> <p><i>7.3.4.2 Balance qualitative societal goals with quantitative goals like ROI (OPP lead, Modal Offices, SPO support)</i></p>

FDOT Office	FMTP Objectives, Strategies, and Actions
Systems Planning (SPO)	<p>1.1.3 Determine the operating characteristics of transportation hubs and improve the connecting distribution/transportation system (spokes) to match their particular logistic needs and opportunities</p> <p>1.6.1 Identify and address transportation issues and challenges for each of the targeted industries (Modal Offices support)</p> <p>1.6.2 Match trade and transportation needs of the targeted industries with the characteristics of the ports, airports, and ILCs as branding enhancements (Modal Offices support)</p> <p>2.1 Identify the critical freight transportation network for the state, which includes the national freight network designated by the USDOT (FLP lead, Transportation Statistics support)</p> <p>2.2.1 Improve hub connections (last mile and beyond) (Modal Offices support)</p> <p>2.4.3 Expedite the implementation of recommendations and lessons from the Freight Advanced Traveler Information System (FRATIS) pilot (Rail and Motor Carrier support)</p> <p>4.2.1 Focus public investment in long-term infrastructure (FLP lead)</p> <p>4.2.2 Leverage private investment in technology and operational improvements (FLP lead)</p> <p>4.2.3 Solicit public-private partnership for infrastructure investments (FLP lead)</p> <p>7.1.1 Add freight factors to Strategic Investment Tool (SIT) prioritization process</p>

FDOT Office	FMTP Objectives, Strategies, and Actions
Policy Planning (OPP)	<p>1.2.1 Include ILCs in the SIS and roadways and railways serving ILCs</p> <p>2.5.2 Examine dedicated freight facilities or freight shuttles when existing capacity has been maximized (Modal Offices support)</p> <p>2.5.5 Examine dedicated facilities for “non-freight” activity that serves to restore capacity for freight movement (Modal Offices support)</p> <p>6.1 Provide transportation and land use planning guidance and direction to local and regional agencies for enhanced economic development and freight efficiencies that support community goals (FLP lead, MPOAC support)</p> <p>7.1.3 Add criteria for inclusion of ILCs in the SIS (Seaports and Waterways support)</p> <p>7.3.2 Leverage freight infrastructure investments to amplify private sector investments (Modal Offices, SPO support)</p> <p>7.3.3 Establish ROI or value criteria to focus investments</p> <p>7.3.4.1 Focus on intermodal benefits (supply chain efficiencies) (Modal Offices, SPO support)</p> <p>7.3.4.2 Balance qualitative societal goals with quantitative goals like ROI (Modal Offices, SPO support)</p>

FDOT Office	FMTP Objectives, Strategies, and Actions
Transportation Statistics	<p>2.1 Identify the critical freight transportation network for the state, which includes the national freight network designated by the USDOT (FLP lead, SPO support)</p> <p>7.1.2 Add freight movement metrics to the FDOT performance measures</p>

FDOT Office	FMTP Objectives, Strategies, and Actions
Traffic Operations	<p>2.4.1 Establish appropriate role to promote and support the use of best practice information technology among all Florida trucking companies (in coordination with transportation systems management and operations [TSM&O]) (Rail and Motor Carrier lead)</p> <p>2.6.3 Facilitate the safe implementation of autonomous vehicles (driverless vehicles and unmanned space vehicles) (Aviation and Spaceports, Traffic Operations, Safety all leads)</p>

FDOT Office	FMTP Objectives, Strategies, and Actions
Maintenance	<p>2.6.2 <i>Employ alternative delivery mechanisms for rest-stops/lay-over areas and other safety-enhancing facilities (FDOT Districts lead)</i></p> <p>3.4 <i>Advocate for regulatory reform and federal inspection agencies staffing to reduce impediments to goods movement (e.g., weight limits) (Rail and Motor Carrier lead)</i></p>

FDOT Office	FMTP Objectives, Strategies, and Actions
Safety	<p>2.6.3 <i>Facilitate the safe implementation of autonomous vehicles (driverless vehicles and unmanned space vehicles) (Aviation and Spaceports, Traffic Operations, Safety all leads)</i></p>

FDOT Office	FMTP Objectives, Strategies, and Actions
Forms and Procedures	<p>7.2.4 <i>Streamline FDOT procedures to respond nimbly to market changes</i></p>

FDOT Office	FMTP Objectives, Strategies, and Actions
Work Program	<p>7.3.5 <i>Support freight infrastructure investments from the SIS, State Infrastructure Bank (SIB), Transportation Infrastructure Finance and Innovation Act (TIFIA), etc.</i></p>

FDOT Office	FMTP Objectives, Strategies, and Actions
FDOT Districts	<p>1.2.2 Expedite the resolution of local issues for ILC development (EFI support)</p> <p>1.2.3 Include onsite capacity to facilitate international exports (EFI support)</p> <p>1.5.1 Factor logistics efficiency and sustainability into comprehensive economic development strategies (DEO lead, FLP support)</p> <p>1.5.5 Foster relationships with local government economic development staff (FLP lead)</p> <p>1.6.3 Inventory and brand beneficial transportation characteristics of the different regions to support economic development branding (FLP lead)</p> <p>2.2.2 Work with local governments to support and back-up efforts to maintain and improve freight movement access and reduce negative local impacts</p> <p>2.6.2 Employ alternative delivery mechanisms for rest-stops/lay-over areas and other safety-enhancing facilities (Maintenance support)</p> <p>4.3 Bring business community into transportation planning process (ISD lead)</p> <p>6.3 Coordinate and integrate freight-related plans and programs of freight facility owners, local jurisdictions, Metropolitan Planning Organizations (MPOs) and the FDOT (Central Office & Districts) for expedited and informed decision-making (FLP lead, MPOAC support)</p> <p>6.4 Facilitate and maintain regional partnerships for multi-jurisdictional consensus and collaboration</p>

FDOT Partners

FDOT Partner	FMTP Objectives, Strategies, and Actions
Enterprise Florida, Inc.(EFI)	<p>1.1.4 <i>Develop a comprehensive plan to support and facilitate international exports and interstate commerce (FLP Office support)</i></p> <p>1.2.2 <i>Expedite the resolution of local issues for ILC development (FDOT Districts lead)</i></p> <p>1.2.3 <i>Include onsite capacity to facilitate international exports (FDOT Districts lead)</i></p> <p>1.3 <i>Support the branding of Florida as the Gateway to the Western Hemisphere for trade (FLP lead, Secretary, ISD support)</i></p> <p>1.4.1 <i>Host a joint website as a comprehensive portal for freight mobility and trade matters with Enterprise Florida, Workforce Florida, and the Florida Chamber of Commerce to facilitate manufacturers locating and expanding in Florida; e.g., “the freight base” (FLP lead, EFI, FL Chamber support)</i></p>

FDOT Partner	FMTP Objectives, Strategies, and Actions
Workforce Florida, Inc. (WFI)	<p>1.4.1 <i>Host a joint website as a comprehensive portal for freight mobility and trade matters with Enterprise Florida, Workforce Florida, and the Florida Chamber of Commerce to facilitate manufacturers locating and expanding in Florida; e.g., “the freight base” (FLP lead, WFI, FL Chamber support)</i></p> <p>1.7.1 <i>Identify needed skills, abilities, and best strategies for attracting and developing the necessary workforce (FLP support)</i></p> <p>1.7.2 <i>Develop jointly sponsored vocational and technical training academies for maritime operations, trade and logistics staff, and other skills needed for increased manufacturing, trade, and logistics operations in Florida (FLP support)</i></p> <p>5.1.2 <i>To educate young people about the job opportunities in the freight and logistics field (FLP lead)</i></p>

FDOT Partner	FMTP Objectives, Strategies, and Actions
Florida Department of Agriculture and Consumer Services (DOAg)	<p>3.1 <i>Advance the use of more environmentally friendly alternative fuels (FLP lead, Doug Callaway support)</i></p> <p>3.2.1 <i>Explore alternative fuel corridors with suppliers and first-adopters (facilitation to address local issues) (FLP lead, Doug Callaway support)</i></p> <p>3.2.2 <i>Coordinate initiatives for user conversions as market evolves (via incentives to level playing field) (FLP lead, Doug Callaway support)</i></p>

FDOT Partner	FMTP Objectives, Strategies, and Actions
Metropolitan Planning Association Advisory Council (MPOAC)	<p>6.1 <i>Provide transportation and land use planning guidance and direction to local and regional agencies for enhanced economic development and freight efficiencies that support community goals (FLP lead, OPP support)</i></p> <p>6.3 <i>Coordinate and integrate freight-related plans and programs of freight facility owners, local jurisdictions, Metropolitan Planning Organizations (MPOs) and the FDOT (Central Office & Districts) for expedited and informed decision-making (FLP lead, FDOT Districts support)</i></p>

FDOT Partner	FMTP Objectives, Strategies, and Actions
Institute for Trade and Transportation Studies (ITTS)	<p>1.8.1 <i>Participate in the update of the Latin American Transportation and Trade Study (FLP lead)</i></p> <p>1.8.2 <i>Coordinate freight planning activities with states in our region as encouraged by federal legislation (FLP lead)</i></p>

FDOT Partner	FMTP Objectives, Strategies, and Actions
Florida Chamber of Commerce	<p>1.4.1 <i>Host a joint website as a comprehensive portal for freight mobility and trade matters with Enterprise Florida, Workforce Florida, and the Florida Chamber of Commerce to facilitate manufacturers locating and expanding in Florida; e.g., “the freight base” (FLP lead, EFI, WFI support)</i></p>

FDOT Partner	FMTP Objectives, Strategies, and Actions
Florida Department of Economic Opportunity (DEO)	<p>1.5.1 <i>Factor logistics efficiency and sustainability into comprehensive economic development strategies (FDOT Districts support)</i></p>

Figure 1: Summary of Policy Element Implementation Responsibilities

[illegible]

Page Intentionally Left Blank

Appendix 2: Glossary

Many of the terms and acronyms used in this Policy Element are not intended for a non-technical audience, and therefore require some description. Rather than taking up too much space in the document, this terminology is presented here. Also included is a list of the key acronyms used in the document for quick reference¹.

2060 Florida Transportation Plan (FTP) - the state's long-range transportation plan and provides guidance for transportation in Florida for the next 50 years. The 2060 FTP establishes six goals, with long-range objectives associated with each of the goals. The FTP provides guidance for the SIS and the FDOT modal programs, each of which has improvement plans.

American Association of State Highway and Transportation Officials (AASHTO) - a nonprofit, nonpartisan association representing highway and transportation departments in the 50 states, the District of Columbia, and Puerto Rico. It represents all five transportation modes: air, highways, public transportation, rail, and water. Its primary goal is to foster the development, operation, and maintenance of an integrated national transportation system. <http://www.transportation.org/Pages/default.aspx>

Annual Average Daily Traffic (AADT) - The total volume of traffic on a highway segment for one year, divided by the number of days in the year.

Average Annual Daily Truck Traffic (AADTT) - The total volume of truck traffic on a highway segment for one year, divided by the number of days in the year.

Backhaul - The process of a transportation vehicle (typically a truck) returning from the original destination point to the point of origin. A backhaul can be with a full or partially loaded trailer.

Barge - The cargo-carrying vehicle that inland water carriers primarily use. Basic barges have open tops, but there are covered barges for both dry and liquid cargoes.

Bottleneck - A section of a highway or rail network that experiences operational problems such as congestion. Bottlenecks may result from factors such as reduced roadway width or steep freeway grades that can slow trucks.

Breakbulk Cargo - Cargo of non-uniform sizes, often transported on pallets, sacks, drums, or bags. These cargoes require labor-intensive loading and unloading processes. Examples of breakbulk cargo include coffee beans, logs, or pulp.

Broker - A person whose business it is to prepare shipping and customs documents for international shipments. Brokers often have offices at major freight gateways, including border crossings, seaports, and airports.

Bulk Cargo - Cargo that is unbound as loaded; it is without count in a loose unpackaged form. Examples of bulk cargo include coal, grain, and petroleum products.

¹ Sources of definitions include the FDOT Modal Offices, FHWA, FAA, and websites of various individual companies and organizations referenced.

Capacity - The physical facilities, personnel and process available to meet the product of service needs of the customers. Capacity generally refers to the maximum output or producing ability of a machine, a person, a process, a factory, a product, or a service.

Carrier - A firm which transports goods or people via land, sea or air.

Centerline Miles - The length of a road, in miles.

CFS - Commodity Flow Survey

Class 1 Railroads - those that exceed a certain revenue level that is adjusted yearly by the Surface Transportation Board. For 2011, the level was \$433.2 million; Class 2, \$34.7 to \$433.2 million; and Class 3, less than \$34.7 million.

Commercial service airports - Publicly owned airports that have at least 2,500 passenger boardings each calendar year and receive scheduled passenger service

Commodity - An Item that is traded in commerce. The term usually implies an undifferentiated product competing primarily on price and availability.

Compressed Natural Gas (CNG) – a natural gas under pressure which remains clear, odorless, and non-corrosive. Although vehicles can use natural gas as either a liquid or a gas, most vehicles use the gaseous form compressed to pressures above 3,100 pounds per square inch.

Container on Flatcar (COFC) - Containers resting on railway flatcars without a chassis underneath.

Containerization - A shipment method in which commodities are placed in containers, and after initial loading, the commodities per se are not re-handled in shipment until they are unloaded at destination.

Containerized Cargo - Cargo that is transported in containers that can be transferred easily from one transportation mode to another.

Distribution Center (DC) - The warehouse facility which holds inventory from manufacturing pending distribution to the appropriate stores.

Double-stack - Railcar movement of containers stacked two high.

Drayage - Transporting of rail or ocean freight by truck to an intermediate or final destination; typically a charge for pickup/delivery of goods moving short distances (e.g., from marine terminal to warehouse).

Emerging SIS – These generally carry lower volumes of people and freight, but are located in fast growing areas or rural areas and therefore may grow in importance in the future. Emerging SIS facilities are fully eligible for FDOT SIS funding sources, but are labeled separately to encourage proactive planning.

Enterprise Florida - the official economic development organization for the State of Florida with the mission to help innovative, high-growth businesses start up, locate, or expand in Florida. For more information: <http://www.eflorida.com>

Federal Highway Administration (FHWA) - The Federal Highway Administration (FHWA) provides stewardship over the construction, maintenance and preservation of the Nation's highways, bridges and tunnels. FHWA also conducts research and provides technical assistance to state and local agencies in an effort to improve safety, mobility, and livability, and to encourage innovation. <http://www.fhwa.dot.gov/>

Flatbed - A trailer without sides used for hauling machinery or other bulky items.

Florida Chamber of Commerce - Through research, advocacy and leadership, the Florida Chamber Foundation, the Florida Chamber of Commerce and the Florida Chamber Political Operations work together to help make our vision of Florida's future a reality. <http://www.flchamber.com/>

Florida Department of Transportation (FDOT) - An executive agency, which means it reports directly to the Governor. FDOT's primary statutory responsibility is to coordinate the planning and development of a safe, viable, and balanced state transportation system serving all regions of the state, and to assure the compatibility of all components, including multimodal facilities. A multimodal transportation system combines two or more modes of movement of people or goods. Florida's transportation system includes roadway, air, rail, sea, spaceports, bus transit, and bicycle and pedestrian facilities. <http://www.dot.state.fl.us/>

Florida Seaport Transportation and Economic Development (FSTED) - A public entity created by statute and charged with implementing the state's economic development mission by facilitating the implementation of seaport capital improvement projects at the local level. The Council was created within the Department of Transportation and consists of the port directors of the 15 publicly owned seaports and a representative from the Department of Transportation and the Department of Economic Opportunity. <http://www.flaports.org/>

Florida Trade and Logistics Study – Research completed by the Florida Chamber Foundation that began many of the discussions on freight in Florida (2010, technical report 2011) http://www.flchamber.com/wp-content/uploads/FloridaTradeandLogisticsStudy_December20102.pdf

Florida Transportation Vision for the 21st Century - Florida Department of Transportation Secretary Ananth Prasad has unveiled the Florida Transportation Vision for the 21st Century. The Plan implements Governor Scott's goals to spur private sector job creation and to get our economy growing by having the best transportation and infrastructure system in the nation. <http://www.dot.state.fl.us/planning/vision/default.shtm>

Florida's Strategic Intermodal System (SIS) - Transportation system created by the Florida Legislature in 2003 to include statewide and regionally significant facilities and services, containing all forms of transportation for moving both people and goods, including linkages that provide for smooth and efficient transfers between modes and major facilities. <http://www.dot.state.fl.us/planning/sis/>

Foreign Trade Zone (FTZ) - a geographical area where commercial merchandise, both domestic and foreign, receives the same U.S. Customs treatment it would as if it were outside the U.S.. Commodities may be held, assembled, repackaged, sorted, labeled, etc. in the FTZ without being subject to Customs duties, tariffs, or other ad valorem taxes.

For-hire Carrier - Carrier that provides transportation service to the public on a fee basis.

Federal Railroad Administration (FRA) - The Federal Railroad Administration (FRA) was created by the Department of Transportation Act of 1966. It is one of ten agencies within the U.S. Department of Transportation concerned with intermodal transportation. <http://www.fra.dot.gov/>

Freight – Any commodity being transported.

Freight Mobility and Trade Plan - Approved on April 27, 2012 by signature of Governor Richard L. Scott, Florida House Bill 599 requires the Florida Department of Transportation to develop the Freight Mobility and Trade Plan.

General Aviation (GA) airports - While not specifically defined in Title 49 USC, are commonly described as General Aviation Airports. This airport type is the largest single group of airports in the U.S. system. The category also includes privately owned, public use airports that enplane 2500 or more passengers annually and receive scheduled airline service.

GPS - Global Positioning System

Highway Trust Fund - The Highway Trust Fund is the source of funds for the Federal-Aid Highway Program

Hours of Service - Ruling that stipulates the amount of time a driver is allotted to work.

Hub - A common connection point for devices in a network. Referenced for a transportation network as in "hub and spoke" which is common in the airline and trucking industry.

Intermodal– Carriage by more than a single mode with a transfer(s) between modes

Intermodal Logistics Center (ILC) - “ a facility or group of facilities serving as a point of intermodal transfer of freight in a specific area physically separated from a seaport where activities relating to transport, logistics, goods distribution, consolidation, or value-added activities are carried out and whose activities and services are designed to support or be supported by conveyance or shipping through one or more seaports.” Section 311.101(2), F.S.

ITS - Intelligent Transportation System

Lane Miles - The product of centerline miles and number of lanes. A four-lane road, two miles long has eight lane miles.

Leased – A railroad may lease from another company and pay a yearly rate to have control of the railroad line

Less-Than-Containerload/Less-Than-Truckload (LCL/LTL) - A container or trailer loaded with cargo from more than one shipper; loads that do not by themselves meet the container load or truckload requirements.

Level of Service (LOS) - a quantitative stratification of quality of service into six letter grade levels.

Lift-on/Lift-off (lo/lo) Cargo - Containerized cargo that must be lifted on and off vessels and other vehicles using handling equipment.

Liquid Bulk Cargo - A type of bulk cargo that consists of liquid items, such as petroleum, water, or liquid natural gas.

Liquid Natural Gas (LNG) - Cooling natural gas to about -260°F at normal pressure results in the condensation of the gas into liquid form

Logistics - All activities involved in the management of product movement; delivering the right product from the right origin to the right destination, with the right quality and quantity, at the right schedule and price.

Metropolitan Planning Organization (MPO) - Responsible for planning, programming and coordination of federal highway and transit investments in urbanized areas.

Mobility – The degree to which the demand for the movement of people and goods can be satisfied. Mobility is measured in Florida by the quantity, quality, accessibility, and utilization of transportation facilities and services.

Modal Share – The percentage of freight or passengers moved by a particular type (mode) of transportation.

Mode – Any one of the following means of moving people or goods: aviation, bicycle, highway, paratransit, pedestrian, pipeline, rail (commuter, intercity passenger, and freight), transit, space, and water.

Moving Ahead for Progress in the 21st Century Act (MAP-21) - On July 6, 2012, President Obama signed into law a new two year transportation reauthorization bill

National Highway System (NHS) – Established by Congress, the National Highway System consists of roadways important to the nation's economy, defense, and mobility.

National Network - The Surface Transportation Assistance Act of 1982 authorized the establishment of a national network of highways designated for use by large trucks.

Need – A demand for a mobility improvement which has been identified based on accepted and adopted standards and other assumptions (e.g., land use) and documented in a formal long-range or master plan.

NHS - Nation Highway System

Office of Freight, Logistics and Passenger Operations (FLP) - In recognition of the significant role that freight mobility plays as an economic driver for the state, an Office of Freight, Logistics, and Passenger Operations has been created at FDOT. The office will act as a tool to better connect, develop, and implement a freight planning process that will maximize the use of the existing facilities and integrate and coordinate the various modes of transportation, including the combined utilization of both government-owned and privately-owned resources.

Office of Policy Planning - The functions of the Office of Policy Planning (OPP) are to develop, document, and monitor a statewide and metropolitan planning process; develop, publish, and distribute the Florida Transportation Plan, including necessary support documents; develop transportation policy alternatives and recommendations; provide necessary coordination on transportation policy issues with other agencies and the public; and identify, analyze, and document long range trends and conditions, perform various economic and demographic analyses, and evaluate and report on transportation system performance.

Port Authority - State or local government that owns, operates, or otherwise provides wharf, dock, and other terminal investments at ports.

Private Fleet - Carrier that provides transportation service for a private company.

Rail Siding - A very short branch off a main railway line with only one point leading onto it. Sidings are used to allow faster trains to pass slower ones or to conduct maintenance.

Return on Investment (ROI) - A performance measure used to evaluate the efficiency of an investment or to compare the efficiency of a number of different investments.

Reverse Logistics - A specialized segment of logistics focusing on the movement and management of products and resources after the sale and after delivery to the customer. Includes product returns and repair for credit.

Roll-on/Roll-off (ro/ro) Cargo - Wheeled cargo, such as automobiles, or cargo carried on chassis that can be rolled on or off vehicles without using cargo handling equipment.

Shipper - Party that tenders goods for transportation.

Short-sea Shipping - Also known as coastal or coastwise shipping, describes marine shipping operations between ports along a single coast or involving a short sea crossing.

Strategic Intermodal System (SIS) -. The transportation system comprised of facilities and services of statewide and interregional significance, including appropriate components of all modes. Established in 2003 by the Florida Legislature, the SIS is a statewide network of high-priority transportation facilities, including the State's largest and most significant commercial service airports, spaceport, deepwater seaports, freight rail terminals, passenger rail and intercity bus terminals, rail corridors, waterways, and highways.

Stakeholders – Individuals and groups with an interest in the outcomes of policy decisions and actions.

State Highway System – A network of approximately 12,000 miles of highways owned and maintained by the State or state-created authorities. Major elements include the Interstate, Florida's Turnpike, and other toll facilities operated by transportation authorities and arterial highways.

Supply Chain - Starting with unprocessed raw materials and ending with final customer using the finished goods.

Systems Planning Office - The major responsibilities of the Systems Planning Office are to implement the Strategic Intermodal System (SIS) through the development of the SIS Needs, Cost Feasible and Ten Year Project Plans and Work Program; provide policies, procedures, tools, training and technical assistance for Statewide Programs in transportation systems computer modeling, growth management analyses and impact, highway interchange justification and modification analyses, highway access management, and transportation level of service analyses.

The Florida Chamber Six Pillars – The framework developed by the Florida Chamber Foundation to accomplish the goals of the Florida Chamber

The Florida Department of Agriculture and Consumer Services- The mission of the Department of Agriculture and Consumer Services is to safeguard the public and support Florida's agricultural economy <http://www.freshfromflorida.com/>

The Florida Department of Economic Opportunity (DEO) - The Florida Department of Economic Opportunity promotes economic opportunities for all Floridians through successful workforce, community, and economic development strategies. <http://www.floridajobs.org/>

The Florida Department of Economic Opportunity's Strategic Plan for Economic Development - DEO's Division of Strategic Business Development, as outlined in Florida Statutes, 20.60, is required to create a five year statewide strategic plan designed to help guide the future of Florida's economy.

Third-party Logistics (3PL) Provider - A specialist in logistics who may provide a variety of transportation, warehousing, and logistics-related services to buyers or sellers. These tasks were previously performed in-house by the customer.

Ton-mile - A measure of output for freight transportation; reflects weight of shipment and the distance it is hauled; a multiplication of tons hauled by the distance traveled.

Trackage Rights – A railroad that own the line rights, but allows another company to operate over certain sections of its track

Trailer on Flatcar (TOFC) - Transport of trailers with their loads on specially designed rail cars.

Transloading - Transferring bulk shipments from the vehicle/container of one mode to that of another at a terminal interchange point.

Transportation Research Board (TRB) - Transportation practitioners, researchers, public officials, and other professionals need credible, high-quality information and research results to address the transportation challenges of the 21st century.

Truckload (TL) - Quantity of freight required to fill a truck, or at a minimum, the amount required to qualify for a truckload rate.

Twenty-foot Equivalent Unit (TEU) - The 8-foot by 8-foot by 20-foot intermodal container is used as a basic measure in many statistics and is the standard measure used for containerized cargo.

Vehicle Miles of Travel (VMT) - A unit to measure vehicle travel made by a private vehicle, such as an automobile, van, pickup truck, or motorcycle.

Work Program – The five-year listing of all transportation projects planned for each fiscal year by the Florida Department of Transportation (FDOT), as adjusted for the legislatively approved budget for the first year of the program.

Workforce Florida - the statewide, business-led workforce policy board. Charged with overseeing the state's workforce system, Workforce Florida develops strategies to help Floridians enter and advance in the workforce while supporting economic development priorities and strengthening the state's business climate. For more information: <http://www.workforceflorida.com>

Page Intentionally Left Blank

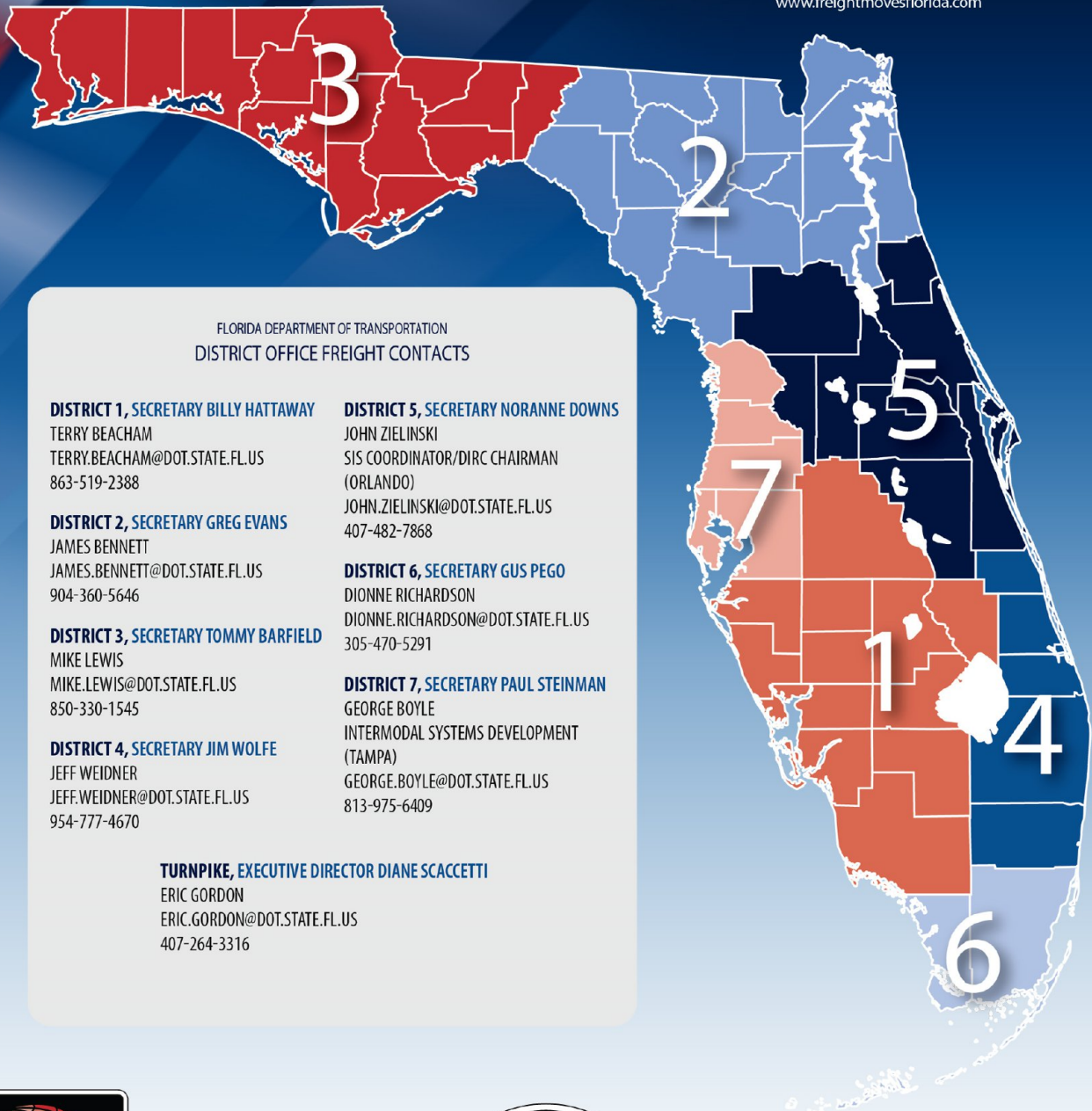
For more information on Florida's Freight Mobility and Trade Plan, please contact:

Juan Flores
State Freight and Logistics Administrator
Office of Freight, Logistics and Passenger Operations
Florida Department of Transportation
Juan.Flores@dot.state.fl.us
850-414-5244

Or scan the QR code below:



www.freightmovesflorida.com



FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT OFFICE FREIGHT CONTACTS

DISTRICT 1, SECRETARY BILLY HATTAWAY

TERRY BEACHAM
TERRY.BEACHAM@DOT.STATE.FL.US
863-519-2388

DISTRICT 2, SECRETARY GREG EVANS

JAMES BENNETT
JAMES.BENNETT@DOT.STATE.FL.US
904-360-5646

DISTRICT 3, SECRETARY TOMMY BARFIELD

MIKE LEWIS
MIKE.LEWIS@DOT.STATE.FL.US
850-330-1545

DISTRICT 4, SECRETARY JIM WOLFE

JEFF WEIDNER
JEFF.WEIDNER@DOT.STATE.FL.US
954-777-4670

DISTRICT 5, SECRETARY NORANNE DOWNS

JOHN ZIELINSKI
SIS COORDINATOR/DIRC CHAIRMAN
(ORLANDO)
JOHN.ZIELINSKI@DOT.STATE.FL.US
407-482-7868

DISTRICT 6, SECRETARY GUS PEGO

DIONNE RICHARDSON
DIONNE.RICHARDSON@DOT.STATE.FL.US
305-470-5291

DISTRICT 7, SECRETARY PAUL STEINMAN

GEORGE BOYLE
INTERMODAL SYSTEMS DEVELOPMENT
(TAMPA)
GEORGE.BOYLE@DOT.STATE.FL.US
813-975-6409

TURNPIKE, EXECUTIVE DIRECTOR DIANE SCACCETTI

ERIC GORDON
ERIC.GORDON@DOT.STATE.FL.US
407-264-3316

