

SOUTHEAST FLORIDA REGIONAL FREIGHT PLAN

2014 Update

Final Report



prepared for

Broward Metropolitan Planning Organization
Miami-Dade Metropolitan Planning Organization
Palm Beach Metropolitan Planning Organization
Florida Department of Transportation

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Acronyms

AADT – Average Annual Daily Traffic
AADTT – Average Annual Daily Truck Traffic
APD – Area Port Director
ASF – Alternative Site Framework
ATCET – Anti-Terrorism Contraband Enforcement Team
BTS – Bureau of Transportation Statistics
CAFÉ – Corporate Average Fuel Economy
CBP – Customs and Border Protection
CNG – Compressed Natural Gas
CSXT – CSX Transportation
CVISN – Commercial Vehicle Information Systems and Networks
CVO – Commercial Vehicle Operations
D4 – Florida Department of Transportation District 4
D6 – Florida Department of Transportation District 6
DHS – Department of Homeland Security
FAA – Federal Aviation Administration
FBO – Fixed Base Operators
FCBF – Florida Customs Brokers & Forwarders Association, Inc.
FDA – Food and Drug Administration
FDOT – Florida Department of Transportation
FEC – Florida East Coast Railway
FECI – Florida East Coast Industries
FHWA – Federal Highway Administration
FLL- Fort Lauderdale-Hollywood International Airport
FMCSA – Federal Motor Carrier Safety Administration
FP&L – Florida Power and Light
FPTC – Florida Perishables Trade Coalition
FRATIS – Freight Advanced Traveler Information System
FTA – Free Trade Agreement
FTAC – Freight Transportation Advisory Committee
FTP – Florida Transportation Plan
FTZ – Foreign Trade Zone
FWS – Fish and Wildlife Service

FXE – Fort Lauderdale Executive Airport
GA – General Aviation
GRP – Gross Regional Product
HEFT – Homestead Extension of Florida’s Turnpike
HS – Harmonized System
IATA – International Air Transport Association
ICTF – Intermodal Container Transfer Facility
IFTA – International Fuel Tax Agreement
ILC – Intermodal Logistics Center
IRP – International Registration Plan
ITS – Intelligent Transportation Systems
JPO – Joint Program Office
LNA – Palm Beach County/Lantana Airport
LNG – Liquefied Natural Gas
Lo/Lo – Lift-on/Lift-off
LRTP – Long Range Transportation Plan
MAP-21 – Moving Ahead for Progress in the 21st Century Act
MDAD – Miami-Dade Aviation Department
MDX – Miami-Dade Expressway Authority
MIA – Miami International Airport
MIG – Minnesota IMPLAN Group
MPO – Metropolitan Planning Organization
MPOAC – Metropolitan Planning Organization Advisory Council
NAICS – North American Industry Classification System
NCFRP – National Cooperative Freight Research Program
NFAC – National Freight Advisory Council
OPF – Opa-Locka Executive Airport
P3 – Public Private Partnership
PACE – Planning and Conceptual Engineering
PBI – Palm Beach International Airport
PD&E – Project Development and Environment
PFN – Primary Freight Network
Ro/Ro – Roll-on/Roll-off
RTTAC – Regional Transportation Technical Advisory Committee
RTP – Regional Transportation Plan
SAFER – Safety and Fitness Electronic Records

SAFETEA-LU – Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for users

SCFE – South Central Florida Express

SEFTC – Southeast Florida Transportation Council

SFRC – South Florida Rail Corridor

SFRFP – Southeast Florida Regional Freight Plan, 2014 Update

SFWMD – South Florida Water Management District

SHS – State Highway System

SIB – State Infrastructure Banks

SIS – Strategic Intermodal System

SR – State Route

STN – Southport Turning Notch

TAZ – Traffic Analysis Zone

TEU – Twenty Equivalent Units

TFW – Tropical Fresh Water

TIFIA – Transportation Infrastructure Finance and Innovation Act

TIGER – Transportation Investment Generating Economic Recovery

TIP – Transportation Improvement Program

TPA – Trade Promotion Agreement

TSA – Transportation Satellite Account

USACE – United States Army Corps of Engineers

USDA – United States Department of Agriculture

U.S. DOT – United States Department of Transportation

V2I – Vehicle to Infrastructure

V2V – Vehicle to Vehicle

VMT – Vehicle Miles Traveled

WRRDA – Water Resources Reform and Development Act

1.0 Background of Southeast Florida's Regional Freight Planning Program

1.1 Regional Freight Planning Program

Southeast Florida has been actively engaged in freight transportation planning since 1996. The Miami-Dade Metropolitan Planning Organization (MPO) was the first MPO in the state to complete a freight plan. The Broward and Palm Beach MPOs followed suit in 2003 and 2006 respectively. Building on these efforts, the three MPOs, in partnership with the Florida Department of Transportation (FDOT), developed and adopted their first regional freight plan for Southeast Florida in 2010. The Plan was completed in close coordination with the Southeast Florida Regional Transportation Plan (RTP) and the 2035 Long Range Transportation Plans (LRTP) for each MPO. Since 2010 the region has made significant progress in advancing key freight infrastructure projects. The Southeast Florida Regional Freight Plan, 2014 Update (SFRFP), provides an opportunity to tell Southeast Florida's freight story, highlighting the region's successes and strengths, as well as identifying the next steps and challenges as the region continues to position itself as a global logistics hub. The planning horizon for the SFRFP is 2040 and has been closely coordinated with the 2040 RTP and 2040 LRTPs.

The SFRFP provides an updated overview of the freight transportation system, presents an overview of key logistics infrastructure elements, identifies key state, national and international developments and initiatives impacting the region, documents the economic impacts of the freight industry in Southeast Florida, presents a current list of prioritized freight needs, and provides strategies and key next steps.

1.2 Overview of Southeast Florida's Freight System

Southeast Florida is home to a well-established and expanding freight transportation system. This system serves as the cornerstone of the region's economy, providing goods and services to Florida's largest consumption market as well as connecting the region to the global economy through major sea and air gateways. The region is home to a multi-ethnic and multi-cultural community with an economy dominated by tourism, international trade, agriculture and mining, and natural resources. Port Everglades and PortMiami are two of Florida's leading seaports, handling containers, petroleum products, and cruise passengers. Port of Palm Beach, as one of the country's most efficient container operations, services the Caribbean Basin. The Miami River provides key niche waterborne cargo services to smaller ports in the Caribbean Basin and supports an active industrial core along the river corridor. The region is served by three international airports: Palm Beach International Airport (PBI), Fort Lauderdale Hollywood International Airport (FLL), and Miami International Airport (MIA). MIA handles almost 80 percent of Florida's air cargo and is the 12th busiest cargo airport in world. Two railroads serve the region connecting Southeast Florida to the rest of North America, providing intermodal and carload services, supported by a shortline. Finally, a well established network of roadways provide regional mobility as well as gateways to Florida and more distant hinterland markets. These transportation facilities complement a mature

warehouse/distribution center, international banking, and brokerage infrastructure that facilitate international trade activities.

This freight infrastructure is undergoing significant improvement and expansion to position the region for future growth opportunities. This investment is associated with a number of important international trends, including the anticipated impacts of the expansion of the Panama Canal, which will create an additional shipping lane to allow larger vessels to serve the East Coast from the Far East; shifts in key global manufacturing centers in Asia, which will lead to increased use of the Suez Canal; and new and expanded trade opportunities, including the recent free-trade agreements with Colombia, Panama, and South Korea and the potential reopening of Cuba.

1.3 Accomplishments to Date

The Southeast Florida Freight Program has a significant list of accomplishments (complete, underway, and planned). Examples include, but are not limited to:

- PortMiami Tunnel – The PortMiami Tunnel was completed in 2014, providing a direct connection from the port to the Interstate network; this reduces the amount of trucks using local roads in downtown Miami to access the interstate. It represents one of the largest public-private partnerships in the state; the tunnel is operated by a concessionaire who is paid by the state for the next 30 years.
- PortMiami Dredging – PortMiami currently is deepening its harbor and channel to -50/-52 feet to accommodate the larger cargo vessels operating through the Suez and soon to be expanded Panama Canals. This project will be completed in 2015 prior to the opening of the expanded Panama Canal.
- Intermodal Container Transfer Facility (ICTF) at PortMiami – PortMiami, in partnership with Florida East Coast (FEC) Railway, developed an on-port ICTF; this allows the port to directly load containers on rail for shipment to western Miami-Dade County as well as build trains for northbound movements. This project was completed in 2014.
- NW 25th Street Viaduct – After completion of phase 1, FDOT District 6 (D6) is constructing phase 2 of a viaduct along NW 25th St as well as widening NW 25th St from the Palmetto Expressway to NW 89th Ct. This project improves the connection of airport's air cargo operation with the distribution district West of the Palmetto Expressway. This project is estimated to be complete in 2016.
- SR 826/836 Interchange Reconstruction – FDOT D6 is reconstructing the interchange of SR 826 and SR 836. This is a critical interchange for trucks moving from PortMiami to the warehouse and distribution center infrastructure in western Miami-Dade County. This project is estimated to be complete in 2015.
- Eller Drive Overpass Grade Separation– FDOT District 4 (D4), in partnership with Port Everglades, constructed a grade separated overpass providing FEC Railway with direct

access to the Port Everglades' new ICTF. The project was completed in 2015. This is a critical project as it preserves/provides direct access to the port for both truck and rail.

- ICTF at Port Everglades – Port Everglades partnered with FEC Railway to construct an on-port/near-dock ICTF to serve both international and domestic traffic. This project is located in Southport, providing direct rail service to the growing container complex. Full trains can be built at this facility for northbound movements. This project was completed in 2014.
- Southport Turning Notch – At Port Everglades, the Southport Turning Notch Extension will lengthen the existing deepwater turn-around for cargo ships from 900 feet to 2,400 feet, allowing for up to five new cargo berths. This is the critical terminal capacity project for the port to grow its container business. This project is anticipated to be complete in 2019.
- Port Everglades Dredging – Port Everglades currently is pursuing final approval to deepen its harbor and channel to accommodate the larger cargo vessels operating through the Suez and soon to be expanded Panama Canals. This project is anticipated to be complete in 2022.
- FLL Runway Extension – FLL expanded the southern runway to handle the large commercial jets as well as aircraft to simultaneously takeoff and land. This project was completed in 2014.
- Port of Palm Beach Slip Redevelopments – Slip redevelopments at the Port of Palm Beach will include the addition of two Roll-On/Roll-Off (Ro/Ro) ramps and increase in the length of Berth 17 allowing for larger vessels to use the area. This project is anticipated to be complete in 2015.
- Martin Luther King Jr. Blvd/SR 710 – The major cargo access connector for the Port of Palm Beach currently is being widened; this will significantly improve the route from I-95 to the main cargo entrance. This project was completed in 2014.
- Connection of the South Florida Rail Corridor (SFRC) and FEC Railway – South Florida's two key rail corridors will be connected in Miami-Dade County (Iris Connection) and in Palm Beach County (Northwood Connection). This is public-private partnership and funded in part by a Transportation Investment Generating Economy Recovery (TIGER) grant from the United State Department of Transportation (U.S. DOT). This project will allow the movement of freight and passenger service between the two corridors, streamlining overall operational efficiency and flexibility. These projects are anticipated to be complete in 2016 (Iris) and 2018 (Northwood).

2.0 Southeast Florida Freight Transportation System and Cargo Flows

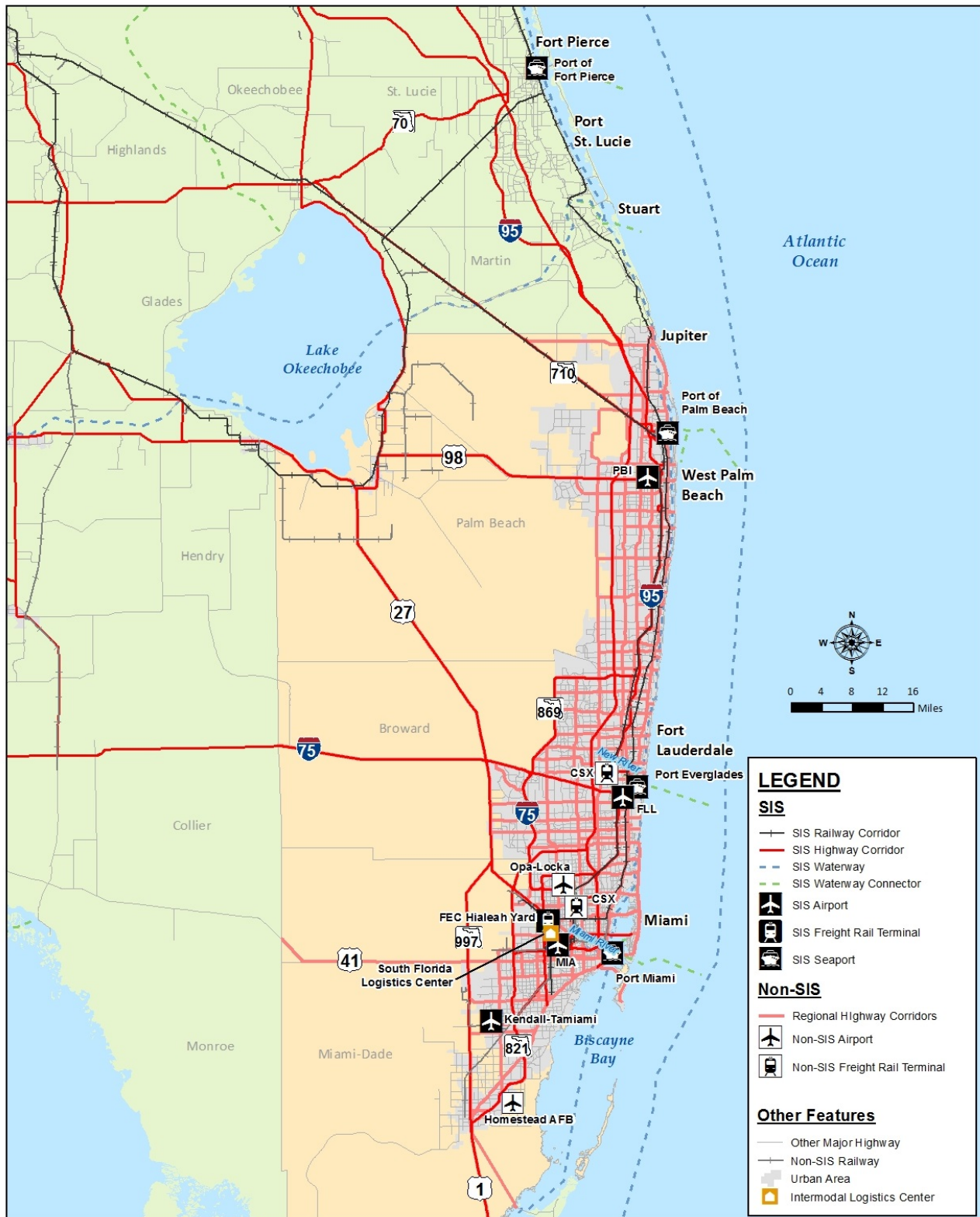
2.1 System

The Southeast Florida freight system is comprised of a complex network of roadways, railways, seaports, waterways, airports, and warehousing facilities. This network works together in order to facilitate the smooth movement of goods within the region, the state, and the country. The extent of this network is shown in Figure 2.1. To support this freight system, the Florida Strategic Intermodal System (SIS) was established to help serve mobility needs of Floridians and to ensure and expand Florida's economic competitiveness. In being designated as a SIS facility, corridors, connectors and hubs receive the highest level of priority for capacity improvement funding. The currently designated SIS incorporates all aspects of freight needs: commercial airports, deep-water seaports, rail terminals and corridors, waterways, and highways. Within the three counties comprising the Southeast Florida region, the following facilities have been designated as part of the SIS/emerging SIS:

- Airports: Palm Beach International Airport, Fort Lauderdale-Hollywood International Airport, Miami International Airport, and Kendall-Tamiami Executive Airport;
- Freight Rail Terminal: FEC Hialeah Yard and FEC Fort Lauderdale Yard;
- Seaports: Port of Palm Beach, Port Everglades, and PortMiami;
- Waterways: Miami River and Intracoastal Waterway;
- Rail corridors: FEC Railway, CSX/South Florida Rail Corridor, South Central Florida Express;
- Roadways: designated highways consist of Interstates, toll roads/expressways, and other key state highways as illustrated in Figure 2.1; and
- Connectors: each of the freight hubs has roadway, railway, or waterway connectors designated to provide access to the SIS corridors.

While the SIS network has been defined as the most important facilities from a statewide perspective, other facilities in Southeast Florida are important from a regional perspective. This includes regionally significant highway corridors (predominately state roads designated as part of the Southeast Florida RTP), other smaller airports, the New River, intermodal logistics centers, and warehouse and distribution districts. The regionally significant highways, which provide the backbone of the system, were originally designated as part of the 2035 RTP and updated as part of the 2040 RTP.

Figure 2.1 Southeast Florida Regional Freight Network



Source: FDOT and Southeast Florida Transportation Council (SEFTC).

2.2 Highways

On the part of the roadways, I-75, I-95, I-595, I-395, and Florida's Turnpike are pivotal for the quick movement of goods from the area's freight hubs to the rest of the state and the country. These high-volume roadways allow direct access from some of the major freight hubs to consumers outside of Southeast Florida. To aid these movements, recently completed highway improvements at both Port Everglades and PortMiami allow for trucks to quickly and directly get on the highway without congesting local roads or being slowed down by traffic signals.

Other major roadways, many of which are tolled and managed by the Miami-Dade Expressway Authority (MDX), include the following:

- Airport Expressway (SR 112)/I-195;
- Palmetto Expressway (SR 826);
- Dolphin Expressway (SR 836)/I-395;
- Sawgrass Expressway (SR 869);
- Don Shula Expressway (SR 874);
- Snapper Creek Expressway (SR 878);
- Gratigny Parkway (SR 924); and
- Hialeah Expressway (SR 934).

Beyond the major expressways is a complex network of roadways with varying ownership. Table 2.1 details the total centerline miles in each of the three counties by State, County, and City roadways. Within the three counties is a total of over 16,000 centerline miles, with 9 percent maintained by the state, 32 percent maintained by the counties, and 59 percent maintained by individual cities. While the percentage of roadways under state ownership is relatively similar throughout the region, greater disparities are seen in county and city ownership. Namely, Broward County has a significantly higher percentage of city roads at 85 percent compared to Miami-Dade (43 percent) and Palm Beach (55 percent).

Table 2.1 Summary of Roadway Ownership in Southeast Florida

Centerline Miles	State ¹	County ²	City	Total
Palm Beach	477	1,269	2,145	3,890
Broward	460	304	4,297	5,061
Miami-Dade	581	3,568	3,067	7,215
Total	1,518	5,141	9,508	16,166

Share of Centerline Miles	State	County	City	Total
Palm Beach	12%	33%	55%	100%
Broward	9%	6%	85%	100%
Miami-Dade	8%	49%	43%	100%
Total	9%	32%	59%	100%

Source: FDOT Reports of Highway Mileage and Travel. State Highways current as of December 31, 2014. County and City Mileage current as of September 30, 2013.

Of these roadways, some are more significant than others for the movement of people and goods. As part of the SIS, certain roadways have been identified which are significant both statewide and regionally. Throughout the state, identified SIS highways carry 55 percent of total traffic and more than 70 percent of all truck traffic on the State Highway System (SHS). Table 2.2 details the attributes of this system by county including lane miles, daily vehicle miles traveled, and facility location. Within Southeast Florida, nearly 600 centerlane miles are designated as part of the SIS. While Palm Beach contains the greatest portion of this mileage at 37 percent of the total, both Miami-Dade and Broward have more vehicle miles traveled on their portions of the SIS with 39 percent and 35 percent of overall traffic, respectively. Part of this may be due to the more rural nature of the SIS network in Palm Beach County. Rural areas, defined as a population of less than 5,000, comprise 37 percent of Palm Beach's network; this compares to the average 26 percent found in the rest of the region. With a lower population base surrounding the network, daily vehicle traffic is understandably lower.

¹ State Highways are roads under the jurisdiction of the State of Florida, and maintained by FDOT or a regional transportation commission.

² County roads are roads under the jurisdiction of one of the 67 counties of Florida and do not include roads maintained by a county for a city under a maintenance agreement.

Table 2.2 SIS Highway Miles in Southeast Florida

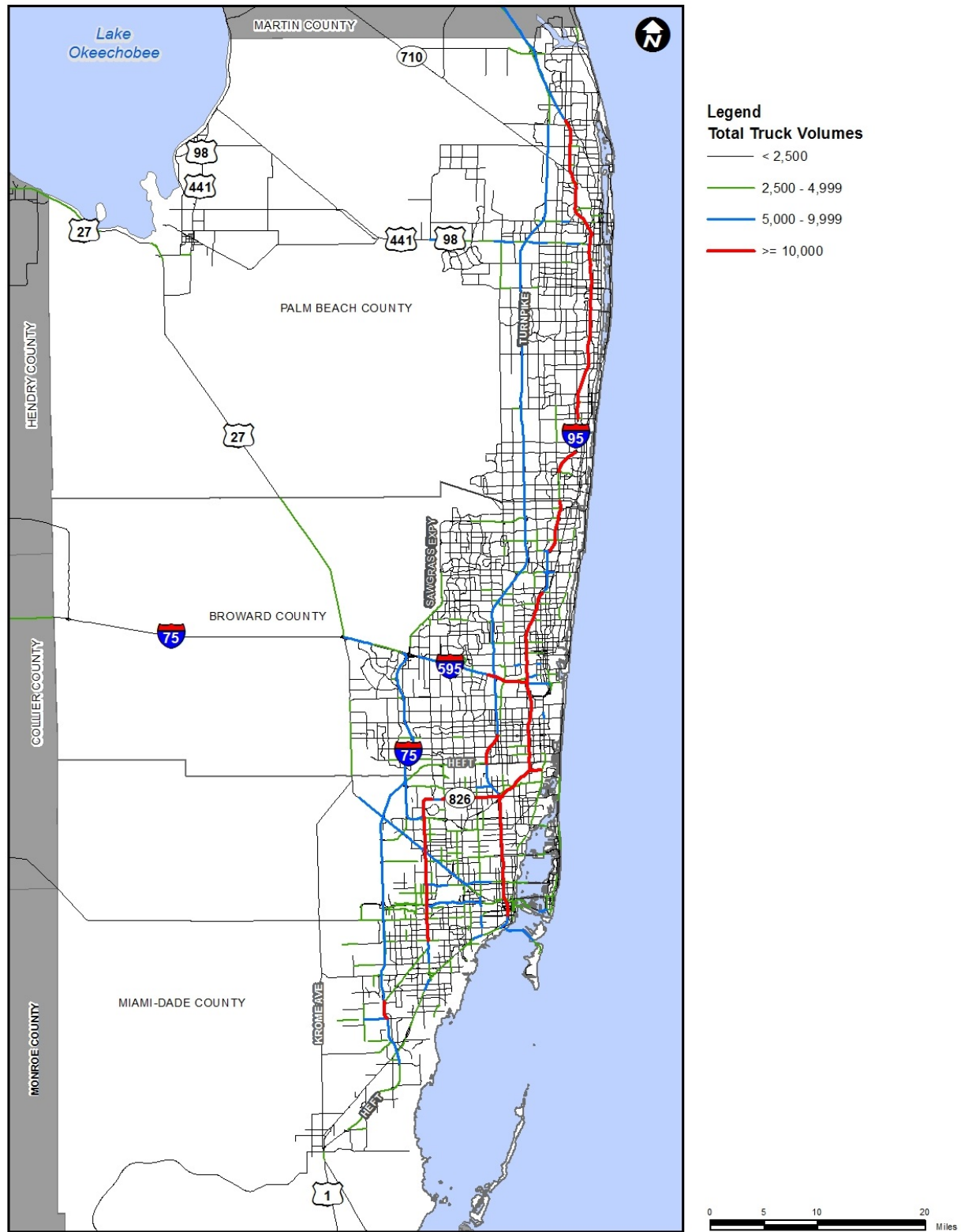
County	Centerline Miles	Lane Miles	Daily Vehicle Miles Traveled (Thousands)	Interstate	Turnpike/Toll	Other	Percent Rural
Palm Beach	214	1,127	12,136	46	45	123	37%
Broward	169	1,048	15,730	84	55	30	24%
Miami-Dade	189	1,027	17,551	28	71	90	28%
Total	571	3,202	45,416	158	171	242	30%

Source: FDOT State Highway System Report, June 2014.

With such an expansive roadway network in these three counties, it is important to know which roadways are most critical for the movement of goods. Figure displays the average annual daily truck traffic (AADTT) on the roadways of Southeast Florida in 2012. A truck in this instance is defined by the Federal Highway Administration's (FHWA) vehicle classification scheme. Any vehicle in classes 4 through 13 is grouped into this category which will generally include any truck or bus with six or more tires. For AADTT, the presence of I-95, SR 826, and I-595 in this highest category of over 15,000 trucks per day in some parts shows how vital these routes are, particularly for North-South movements of trade. Other key corridor for truck movements include Florida's Turnpike and I-75 which cater to 6,000 – 9,999 trucks per day. Not surprisingly, these limited access roadways have some of the highest capacities in the region.

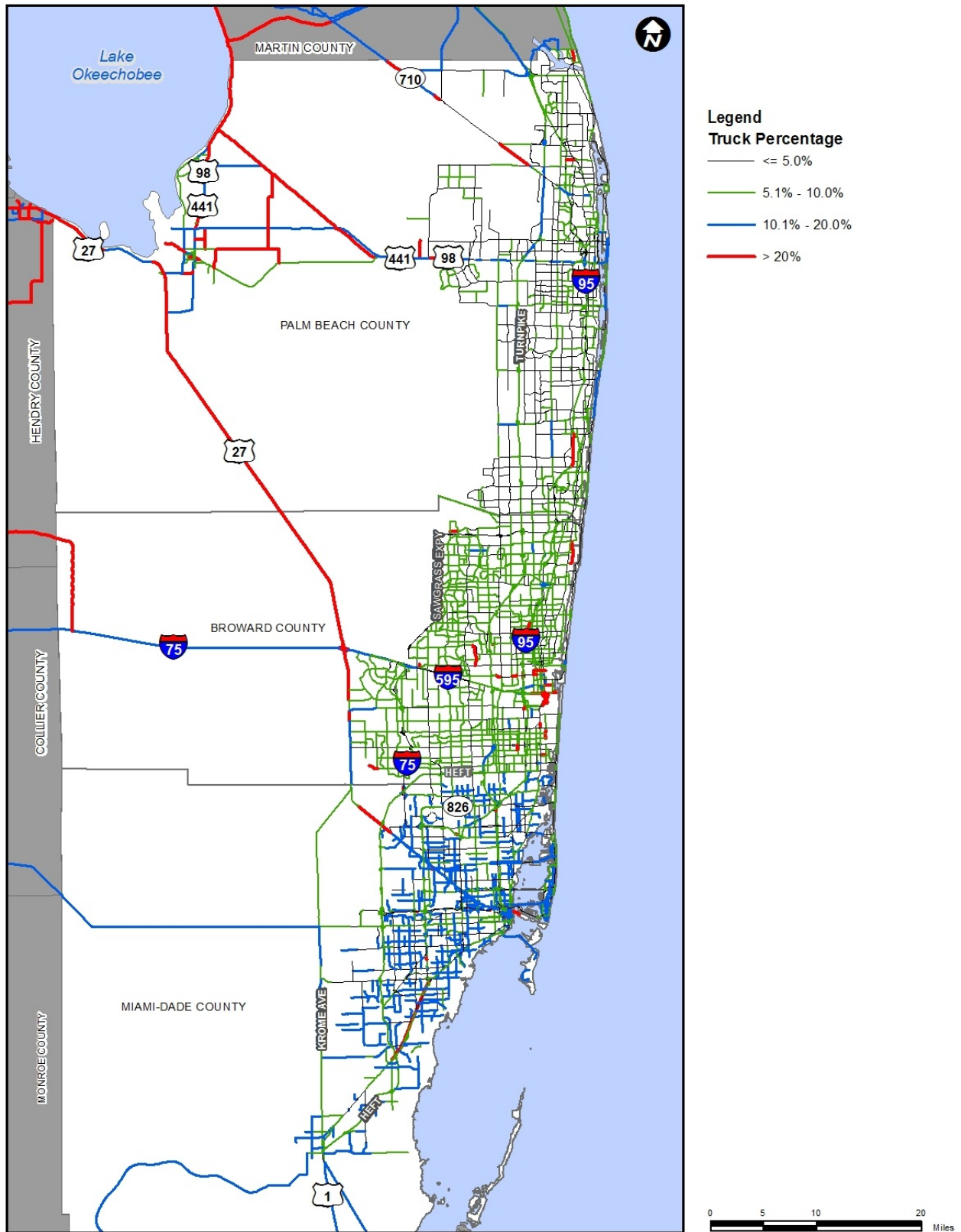
To put AADTT in perspective, it is important to understand just how significant the volume of trucks is in comparison to the total traffic. Figure shows what percentage of the total roadway volume is attributed to trucks on these same roadways. While major volumes are concentrated on a few select roadways, namely the interstate system, high truck counts are present throughout the county. Typically, a 5 percent modal share is significant yet a large proportion of roadways in the region have over a 10 percent truck presence. From this perspective, the interstates and other major SIS facilities are for the most part not in this top tier. While these roads do carry a significant number of trucks, they are counterbalanced by the sheer number of vehicles on the roadway and thus trucks account for a lower percentage of the total. Another point of observation is that the proportion of trucks on the roadway generally increases as one travels south within the region. With a higher concentration of industry, Miami-Dade roadways are fairly consistently comprised of 10 to 20 percent truck traffic while Broward roadways hover between 5 and 10 percent. One of the exceptions to this is US 27 with a traffic composition of over 20 percent truck for segments in all three counties.

Figure 2.2 Average Annual Daily Truck Traffic on Southeast Florida's Highway System, 2012



Source: FDOT.

Figure 2.3 Truck Percentage on Southeast Florida's Highway System, 2012



Source: FDOT.

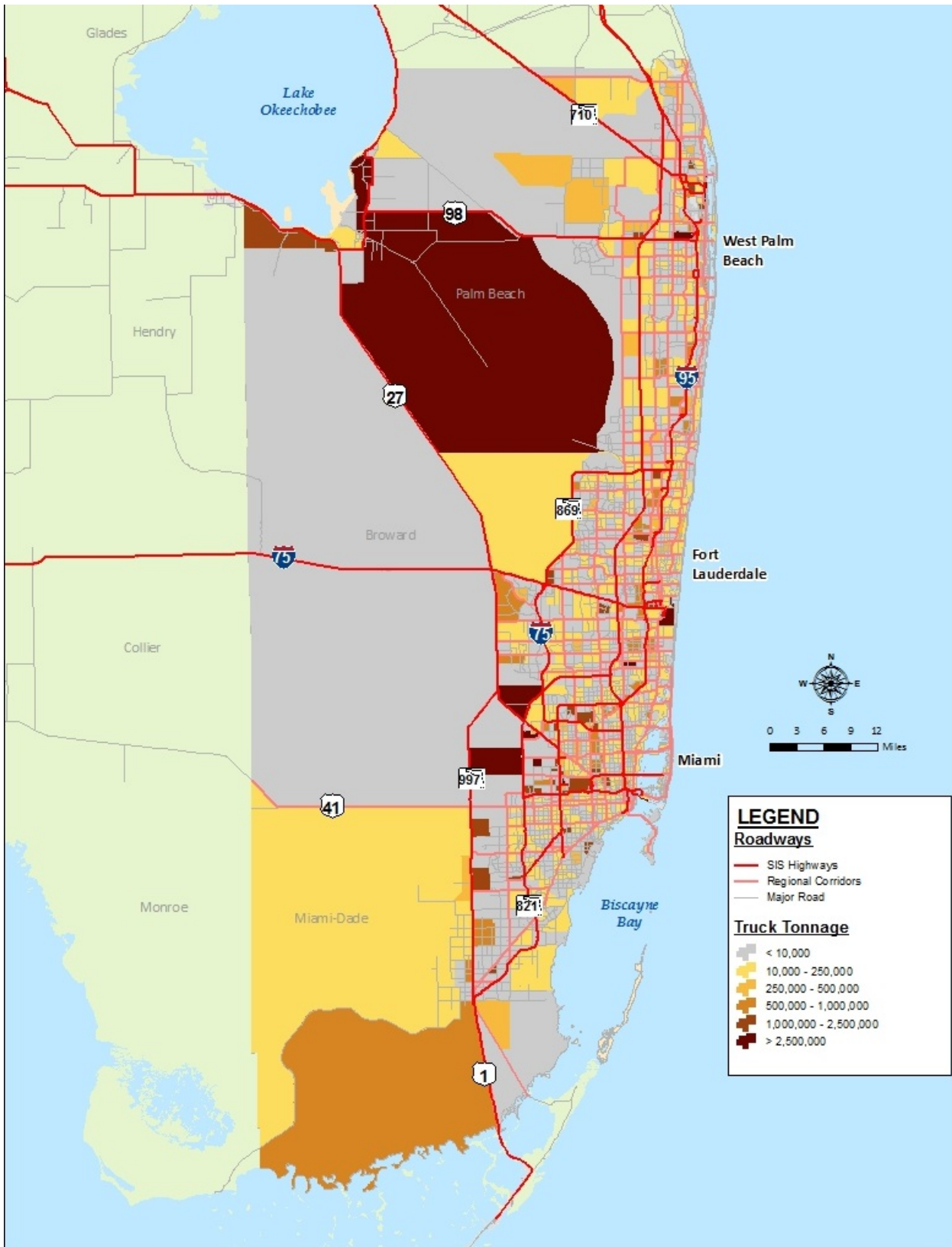
2.2.1 Truck Commodity Flows and Patterns

With such heavy roadway usage in Southeast Florida, it is important to understand what types of goods are dependent on this system as well as where they are going. In order to better assess commodity flows within the State of Florida as well as determine trade flows with other states, FDOT purchased 2011 Transearch data. Transearch provides commodity flow data with a variety of information including origin, destination, commodity type, mode, value, and tonnage. In an attempt to recognize not only county to county flows, this data was also provided at a traffic analysis zone (TAZ) level to better represent flows within a county. For purposes of this study, the Transearch data was primarily used to describe truck and rail (see below section on rail) movements throughout the region.³

Figure 2.4 shows the combined inbound and outbound flows throughout the Southeast Florida region for truck movements. Unsurprisingly, some of the most concentrated flows are around the major freight hubs of PortMiami, MIA, Port Everglades, and the Port of Palm Beach. One of the most significant areas appearing from this analysis is the agricultural region in Palm Beach County. Located in the western part of Palm Beach County, the area associated with intensive agricultural activity is attributed with over 2.5 million tons moving in and out of this area. Other areas which appear to have high tonnage include the mining locations in western Miami-Dade County. While these locations make sense based on known existing facilities in the region, others are less apparent. For instance, the areas west of the Homestead Extension of Florida's Turnpike (HEFT) and US 1 in the southern half of Miami-Dade County are predominately composed of the Everglades National Park. As such, they are not generating large amounts of freight yet they appear to account for several hundred thousand tons. There may be some freight intensive businesses along the US 1 corridor in the eastern portion of these areas which make it appear as though the entire TAZ is generating a large amount of freight activity.

³ Transearch data for air and water movements is limited to domestic movements. The international movements are captured by the rail and truck movements but can not be linked to air and water gateways. As such, the air and water cargo movements were summarized based on data available from the airports and seaports to capture international and domestic movements.

Figure 2.4 Truck Commodity Flows in the Southeast Florida Region



Source: Transearch, 2011.

Commodity flow patterns for Southeast Florida can be described in several ways, including types of goods moving by direction, and key trading partners. Tables 2.3 and 2.4 detail the top 10 commodities traded into, out of and within the region by tonnage. Commodity flows based on tonnage are critical to a region as tonnage translates directly into the demand for transportation capacity. Of these commodities, Secondary Traffic represents the largest portion of overall tonnage moving both into (19 percent) and out of (31 percent) the region. Secondary Traffic predominately consists of Warehouse & Distribution Center Goods but may also include dray moves from both rail and air. The next highest commodities both inbound and outbound are Nonmetallic Minerals and Farm Products. Nonmetallic minerals (aggregate) are expected given the number of quarries located within the region as well as the use of such goods for construction. Farm Products typically consist of categories such as field crops, citrus fruits, and vegetables, all of which are produced in the agricultural lands of Southeast Florida. In total, these top three commodity groupings represented 52 percent of inbound commodities and 66 percent of outbound commodities.

Table 2.3 Top Inbound Truck Commodities by Tonnage, 2011

Commodity Group	Tonnage (1,000)	Percent of Total
Secondary Traffic	19,370	19%
Nonmetallic Minerals	17,012	17%
Farm Products	16,024	16%
Food or Kindred Products	12,519	13%
Clay, Concrete, Glass, or Stone	8,396	8%
Petroleum or Coal Products	6,189	6%
Waste or Scrap Materials	3,666	4%
Chemicals or Allied Products	3,048	3%
Lumber or Wood Products	2,205	2%
Transportation Equipment	1,355	1%
All Others	9,865	10%
Total	99,649	100%

Source: Transearch, 2011.

Table 2.4 Top Outbound Truck Commodities by Tonnage, 2011

Commodity Group	Tonnage (1,000)	Percent of Total
Secondary Traffic	25,916	31%
Nonmetallic Minerals	16,155	19%
Farm Products	13,338	16%
Clay, Concrete, Glass, or Stone	9,083	11%
Food or Kindred Products	4,953	6%
Petroleum or Coal Products	4,333	5%
Waste or Scrap Materials	2,202	3%
Mail or Contract Traffic	836	1%
Chemicals or Allied Products	804	1%
Lumber or Wood Products	778	1%
All Others	4,939	6%
Total	83,337	100%

Source: Transearch, 2011.

In regards to where these commodities are traveling to and from, the majority are staying within the region. As shown in Table 2.5 and 2.6, intra-regional flows account for almost 50 percent of inbound movements and 60 percent of outbound movements. Even when looking at individual counties, Miami-Dade, Palm Beach, and Broward are still the largest trading partners for the region. Goods originating in or destined for Miami-Dade constitutes 20 percent of all movements. Palm Beach and Broward likewise account for 15 percent and 10 percent, respectively. This is due to the major freight hubs in the region which handle a substantial volume of freight, and the large consuming population of Southeast Florida made of up of full time residents and tourists. In looking at inbound movements, trading partners are predominately located within the State of Florida. However, a substantial amount of goods are also received from Los Angeles, California and Savannah, Georgia based on the dominance of the ports in these cities in international trade with Asia. For outbound commodities, the top trading partners for the region are all counties within the state of Florida, illustrating the reach of the major freight hubs in Southeast Florida as well as the size of the Florida market place.

Table 2.5 Top Trading Partners by Truck for Inbound Goods, 2011

Region Name	Tons (1,000)	Percent of Total
Inter-Regional	50,316	50%
Miami-Dade County, FL	24,813	25%
Palm Beach County, FL	17,504	18%
Broward County, FL	7,999	8%
Hendry County, FL	2,986	3%
Polk County, FL	2,686	3%
Orange County, FL	2,483	2%
Hillsborough County, FL	2,381	2%
Los Angeles, California	2,004	2%
Savannah, Georgia	1,884	2%
St. Lucie County, FL	1,738	2%
Houston, TX	1,590	2%
Duval County, FL	1,172	1%
All Others	30,409	31%
Total	99,649	100%

Source: Transearch, 2011.

Table 2.6 Top Trading Partners by Truck for Outbound Goods, 2011

Region Name	Tons (1,000)	Percent of Total
Inter-Regional	50,316	60%
Miami-Dade County, FL	20,791	25%
Palm Beach County, FL	20,103	24%
Broward County, FL	9,422	11%
Hillsborough County, FL	2,616	3%
Orange County, FL	2,491	3%
Lee County, FL	2,249	3%
Pinellas County, FL	1,643	2%
Duval County, FL	1,555	2%
Sarasota County, FL	1,510	2%
Polk County, FL	1,419	2%
Collier County, FL	1,231	1%
Brevard County, FL	1,033	1%
All Others	17,275	21%
Total	83,337	100%

Source: Transearch, 2011.

2.3 Railroads

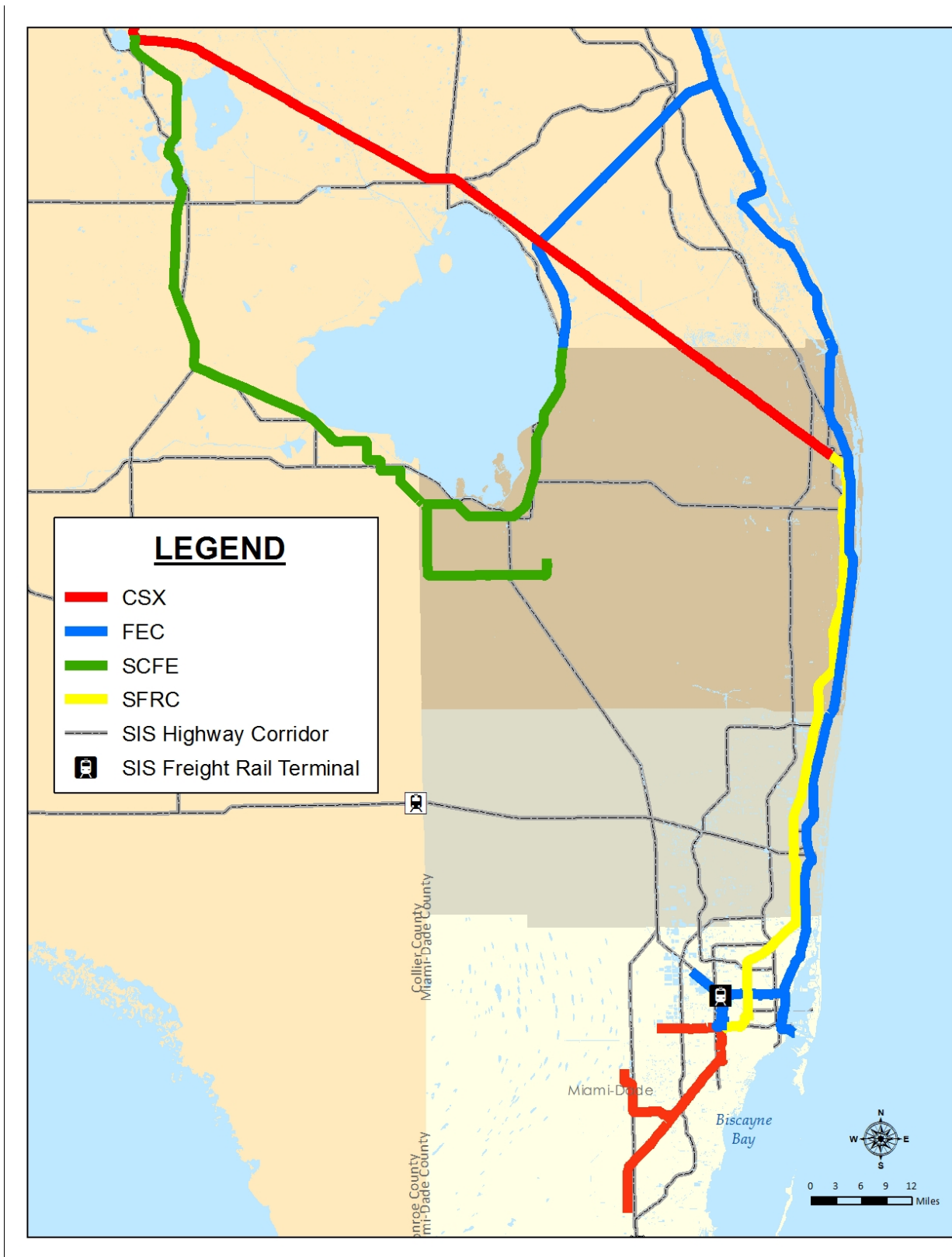
Florida's history in railroads dates back to the times of Henry Flagler and his dream to expand his network down the entire Florida peninsula. Today, Southeast Florida's freight rail network is operated by three entities: CSX Transportation (CSXT), Florida East Coast Railways (FEC), and South Central Florida Express (SCFE). The locations of the rail lines owned by these companies can be seen in Figure 2.5. The South Florida Rail Corridor (SFRC) makes up a key part of this network, running from north of West Palm Beach to Miami. CSXT operates on the SFRC, which was purchased from CSX to support the development of Tri-Rail in the 1990s. Including connectors and emerging linkages, 242 miles of railways have been designated as part of the SIS as detailed in Table 2.7. Over half of this rail network is in Palm Beach County with the remainder relatively evenly split between Broward and Miami-Dade counties at 52 miles and 58 miles, respectively. An important note is that part of the railway has been removed since the SIS was originally designated. Tracks formally operated by FEC south of MIA from SW 12th St to SW 80th St are no longer in existence.

Table 2.7 SIS Designation of Rail Lines in Southeast Florida

County	SIS	Emerging SIS	Connector	Total
Palm Beach	99	34	0	133
Broward	51	0	1	52
Miami	47	5	5	58
Total	198	38	6	242

Source: Florida DOT.

Figure 2.5 Southeast Florida Rail Infrastructure



Source: FDOT.

FEC, based in Jacksonville, Florida, is the only railroad operating along the east coast of Florida utilizing 351 miles of mainline track. Connections and track rights with other railroads allow for goods brought in through Florida ports to have ready access to the United States market. One such network is CSX, also based in Jacksonville, who operates about 21,000 route miles in 23 states, the District of Columbia, Ontario, and Quebec and has its southern terminus in Miami-Dade County. This allows ready access to nearly two-thirds of the American population with the ability to access additional markets through alliances with other railroads. On a smaller scale is SCFE. This shortline railroad is owned by U.S. Sugar. Used primarily to transport sugar cane, fertilizer and farm equipment, over 100,000 carloads are transported annually via connections to CSX to link Lake Okeechobee's agricultural communities with the rest of the country.

FEC has undertaken major expansion projects to improve its network in anticipation of increased cargo volumes at PortMiami and Port Everglades. The PortMiami project consisted of four phases: reconstruction of the FEC Port Lead, reconstruction of the bascule bridge connecting PortMiami and FEC, construction of an on-port rail facility, and modifications to FEC's Hialeah Rail Yard to accommodate an increase in traffic. Connected to these improvements is the South Florida Logistics Center, a 200-acre logistics complex adjacent to MIA, operated by FEC's sister company Florida East Coast Industries (FECI).

Similar developments are present at Port Everglades in Broward County. FEC recently completed a 43 acre ICTF. This will allow international and domestic containers to transfer between ship and rail directly on the port instead of being drayed to and from the FEC yard on Andrews Avenue. This ICTF features 18,000 linear feet of rail track allowing for two 9,000 foot trains to simultaneously be serviced. In addition, there are 508 cargo trailer parking spaces, 11 equipment imaging portals, three rubber-tired gantry cranes, and two gate complexes, one each for international and domestic.

FEC, CSXT, and SCFE move over 12 thousand tons of cargo into, out of, and within the region. Traffic is fairly balanced, with large volumes of nonmetallic minerals (aggregate moving in bulk cars) moving outbound, and miscellaneous mixed shipments (containers/trailers) moving inbound. So while there is a balance of volume, there is a mismatch of equipment resulting in many empty moves in both directions. Anticipated growth in northbound rail intermodal traffic at PortMiami and Port Everglades would help balance some of the traffic. Tables 2.8 through 2.10 present an overview of rail freight volumes.

Table 2.8 Tonnage Moved by Rail In and Out of Southeast Florida

Rail Volumes	Tonnage (000s)	Percent of Total
Inbound	5,976	49%
Outbound	5,722	47%
Intra	386	3%
Total	12,085	100%

Source: Transearch, 2011.

Table 2.9 Top Commodities Moved by Rail Out of Southeast Florida

Top Outbound	Tonnage (000s)	Percent of Total
Nonmetallic Minerals	4,091	67%
Misc Mixed Shipments	723	12%
Shipping Containers	558	9%
Waste or Scrap Materials	200	3%
Food or Kindred Products	180	3%
All Others	356	6%
Total	6,108	100%

Source: Transearch, 2011.

Table 2.10 Top Commodities Moved by Rail Into Southeast Florida

Top Inbound	Tonnage (000s)	Percent of Total
Misc Mixed Shipments	2,627	41%
Nonmetallic Minerals	896	14%
Food or Kindred Products	561	9%
Chemicals or Allied Products	445	7%
Transportation Equipment	320	5%
All Others	1,514	24%
Total	6,363	100%

Source: Transearch, 2011.

Another opportunity for major expansion of the region’s rail system is the possible US 27 Rail Corridor. A Planning and Conceptual Engineering (PACE) Study was concluded in 2012 examining the feasibility of this corridor. The potential corridor runs from the HEFT in Miami-Dade County to the Palm Beach and Hendry County line. The PACE study looked at the demand for expanded highway capacity and a new rail corridor which would provide a bypass to the west of the Miami Urbanized Area, as well as the engineering and environmental feasibility of developing such infrastructure within the existing right of way. To date, this project has been deemed technically feasible, however, the market and support for its development varies throughout the region. For example, without an east/west connection to Port Everglades, the proposed rail corridor would not directly benefit rail shipments to/from Port Everglades.

2.4 Waterways

Southeast Florida has four main waterways which are linked to the success of the freight industry: the Miami River, the New River, the Atlantic Intracoastal Waterway, and the Atlantic Shipping Lane. With the exception of the New River, all of these waterways are designated as part of the SIS.

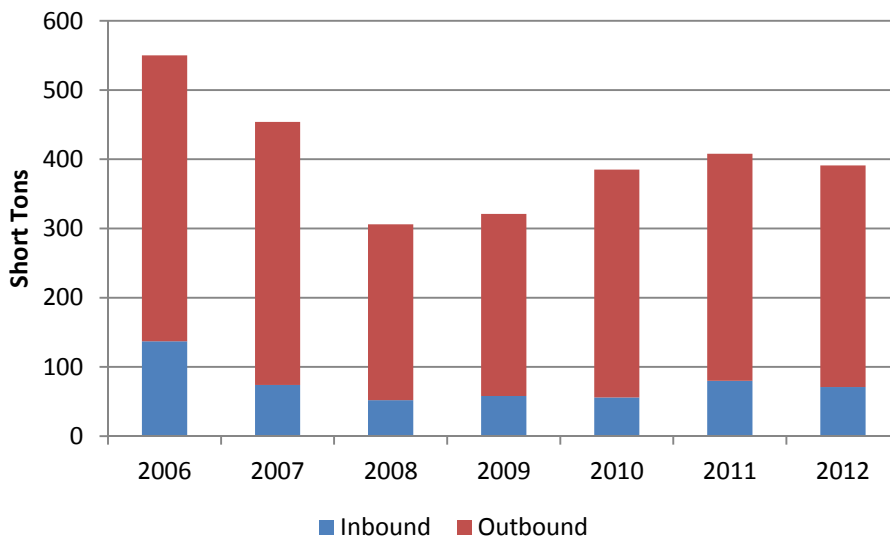
The Miami River, overseen by the Miami River Commission, is a 5.5 mile long waterway running from PortMiami to MIA where it turns into the Miami Canal. An estimated 2,000 vessels move



through this River each year. Use of this waterway has drastically reduced since the highs seen in the mid 1990's of nearly 900,000 short tons as shown in Figure 2.6. While tonnage has decreased in recent years, similar trends are also seen at other major freight hubs in the region due to the economic downturn. Today, the Miami River has maintained a steady volume of 400,000 short tons per year with a strong emphasis on exports which make up roughly 80 percent of the total volume.

Dredging completed in 2008 returned this channel to its authorized depth of 15 feet. In addition to dredging, this project also removed pollutants and World War II era munitions to improve conditions along the River. Much of the current waterway has issues with pollutants and brownfields surrounding the water. Efforts have been underway to create a 10 mile greenway as well as new residential developments in order to improve the space.

Figure 2.6 Short Tons Moved Through the Miami River



Source: U.S. Army Corps of Engineers Waterborne Commerce Statistics.

The New River, while not directly impacted by what one would think of as typical cargo, plays an important part in the Broward County economy. This river is an important attribute which helps Fort Lauderdale maintain its position as the yachting capital of the world. With so much waterborne activity, the Marine Industries Association estimates that it represents an industry which provides an economic impact of \$8.8 billion per year in Broward County. About one-third of this business comes from the New River, in particular for the repair and service of mega-yachts.⁴ This waterway has played a significant role in opposition to the proposed All Aboard Florida service between Miami and Orlando. In particular, concerns arise over the railroad bridge in Fort Lauderdale and how long it would be required to be down to accommodate an increase in rail traffic.

⁴ <http://www.sun-sentinel.com/business/tourism/fl-boats-train-solution-20141128-story.html#page=1>

The Atlantic Intracoastal Waterway stretches from Norfolk, Virginia to Key West, Florida as a 1,200 mile portion of the 3,000 mile Intracoastal Waterway. This system was originally designed to reduce the amount of open-ocean travel required. Depths are to be maintained at 12 feet from Norfolk through Fort Pierce, Florida, but only 10 feet for the continuation to and through Miami. Cargo volumes on the waterway from Jacksonville to Miami fluctuate annually, driven largely by petroleum movements. Significant reduction in volumes in recent years is likely due to conversion of Florida Power and Light (FP&L) to natural gas instead of fuel oil as many of their facilities were located along the waterway and served by barge. Table 2.11 shows traffic trends for the waterway.

**Table 2.11 Traffic on the Intracoastal Waterway
Jacksonville, FL to Miami, FL**

Year	Total Tons	Petroleum Tons	Percent Petroleum
2007	458,639	454,337	99%
2008	75,071	66,746	89%
2009	55,252	49,452	90%
2010	80,217	61,806	77%
2011	12,243	5,800	47%
2012	1,291	0	0%

Source: http://www.navigationdatacenter.us/wcsc/webpub12/Part1_WWYs_tonsbyTT_Dr_Yr_commCY2012-2008.HTM

Shipping lanes were originally established based on wind patterns to aid vessels using sails. While technology has advanced beyond this, shipping lanes are still utilized in order to prevent heeling from waves. Such lanes are often the busiest area of a body of water and the proximity of the Southeast Florida ports to such a lane offers ease of travel to cargo ships seeking to call at any of these ports.

2.5 Seaports

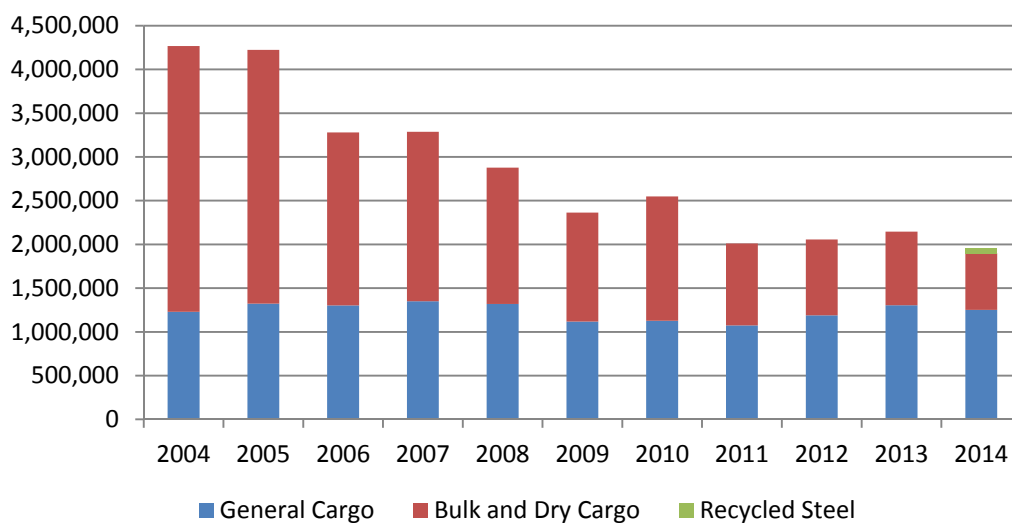
2.5.1 Port of Palm Beach

The Port of Palm Beach is located in Riviera Beach and lies within the Port of Palm Beach District. This District was established as an independent special taxing district in 1915 and covers a land area of 971 square miles, or 50 percent of the county area. However, the actual port only encompasses 156 acres of land, requiring the port to operate efficiently in order to make the best use of its space and allow for continued growth.



Beginning in 2006, volumes at the port have significantly fallen from a high of over 4 million tons down to a fairly consistent level of 2 million tons as seen in Figure 2.7. This was predominately due to the shift of FP&L to natural gas instead of fuel oil. Fuel oil volumes dropped from a high of nearly 1.8 million tons in 2001 to a low of less than 200,000 tons in 2011. At present, a large majority of traffic at the port is now related to container traffic which accounts for over 1 million tons each year. Other niche markets served by the port include break-bulk, cement, sugar, molasses, asphalt, and scrap metal. Scrap metal is one of the newest exports from the port beginning in fiscal year 2014. This commodity is anticipated to have steady growth from about 50,000 tons to 500,000 tons in 2033.

Figure 2.7 Historic Cargo Movements by Tonnage Through Port of Palm Beach

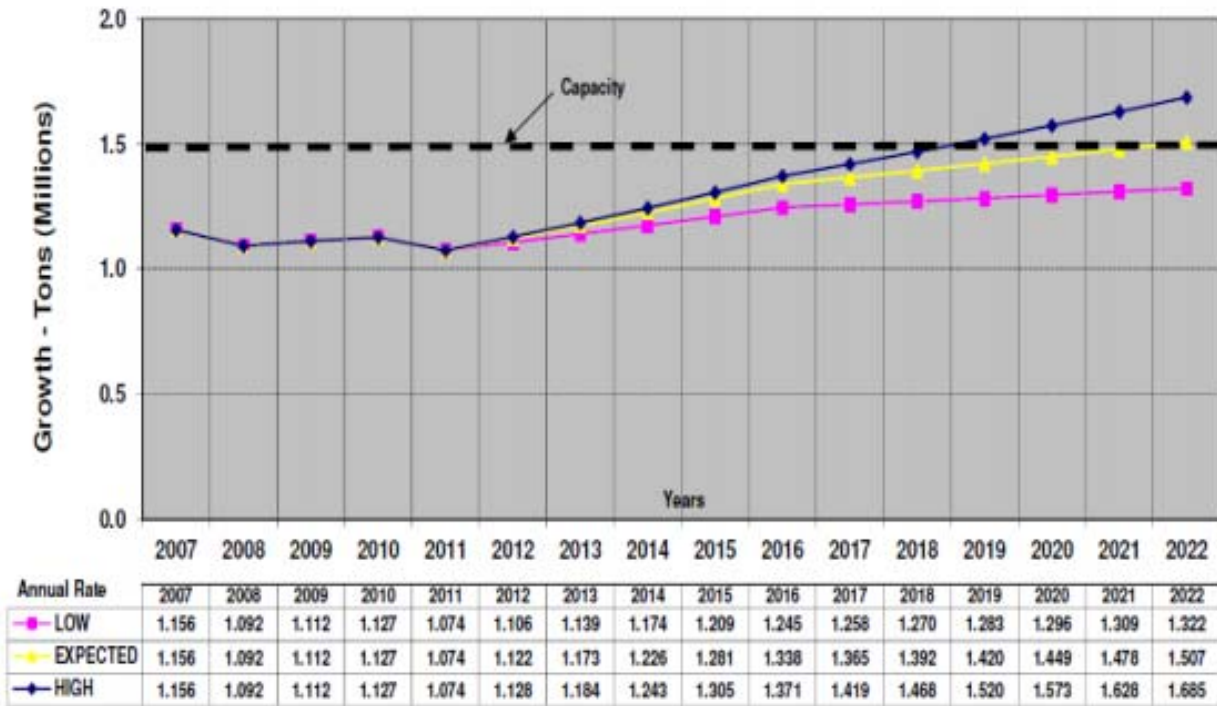


Source: Port of Palm Beach Cargo Tonnage Reports Fiscal Year 2004-2014.

Based on the most recent Master Plan completed in 2012 by the Port of Palm Beach, other commodities are anticipated to show a similar trend. While volumes have decreased over the past few years, most commodities are expected to either increase in volume or remain constant. No further drastic reductions, such as those seen due to the decrease in fuel oil, are projected. Container traffic is expected to have steady growth over the next ten years to 1.5 million tons in 2022 (see Figure 2.8). At this point, the capacity of the port for this traffic would be reached and further growth would be contingent upon significant attempts to improve operations.



Figure 2.8 Anticipated Growth in Container Traffic at the Port of Palm Beach



Source: Port of Palm Beach Master Plan.

In support of ongoing growth, the Port of Palm Beach has a defined capital improvement program. Four projects are currently underway: the expansion/widening of Slip 3 will allow larger vessels to dock at the port; the redesign of Berth 17 will allow for larger and commodity specific vessels to safely dock at the port; the expansion of Berth 1 will create additional cargo lay down area and lengthen the berth; and the expansion of on-port rail will add 2,500 feet of new rail and upgrading existing track to accommodate heavier cargo loads.

In addition to these projects, several planned future investments include: an intermodal cruise terminal transfer facility that will accommodate cruise passengers as well as break bulk cargo (cartons, crates, pallets, bags); waterside cargo terminal redevelopment including demolition

of obsolete structures and building to construct break bulk and cargo lay down area to increase capacity at the port; and harbor and channel improvements consisting of deepening and widening of the port inlet channel and port operations waterways.

2.5.2 Port Everglades

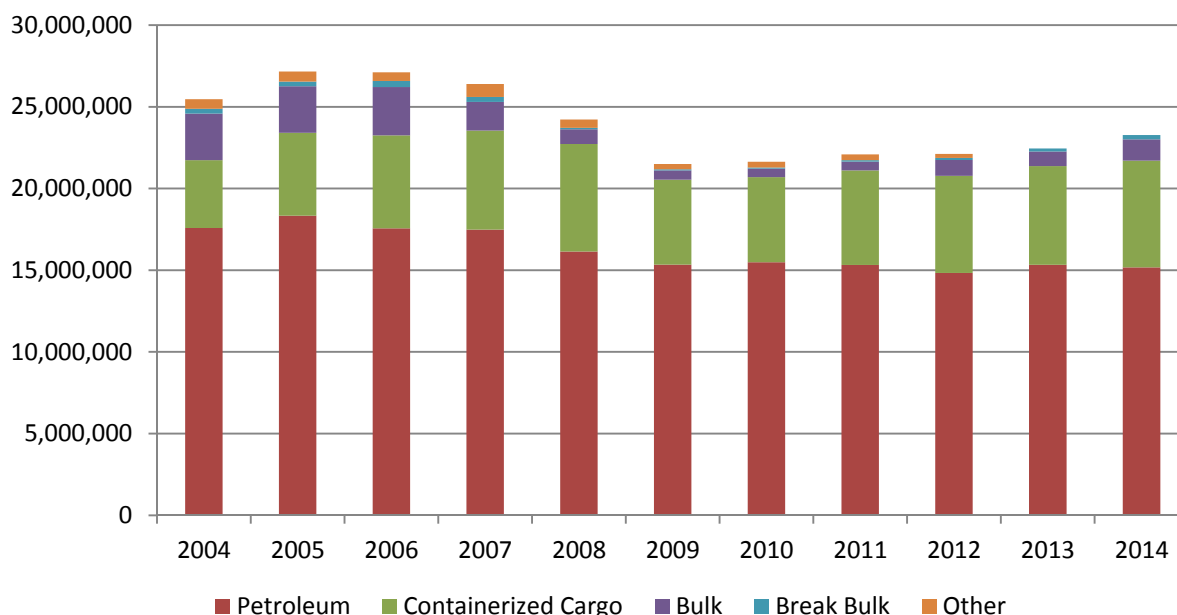
Officially dedicated in 1928, Port Everglades is located in the heart of Fort Lauderdale and is within the jurisdictional boundaries of the City of Fort Lauderdale, the City of Hollywood, and the City of Dania Beach. As a self-supporting Enterprise Fund of Broward County, Port Everglades does not rely on local taxes for operations. The port is supported through revenues collected from its diverse cargo carriers, as well as being one of the leading cruise ports in the world.



To service more than 3,000 cargo vessels each year, Port Everglades offers a wide range of facilities and services. The 324 acres of open yard storage space in Midport and Southport service the containers and trailers transiting the port. High quantities of petroleum are stored in the 200 petroleum storage tanks located on port. Other features of Port Everglades include 1.6 million cubic feet of refrigerated storage, nine gantry cranes, and 400 reefer outlets.

In particular, Port Everglades is important as it is the main seaport for receiving petroleum products not only for Southeast Florida but also other parts of the state for a total of 12 counties. As seen in Figure 2.9, petroleum accounts for 65 percent of overall movements. Volumes have remained relatively steady for the past five years with an average of 15.2 million tons per year. Overall volumes have shown a similar trend with a steady average of 22.3 million tons per year over the past five years. However, there has been some fluctuation in the types of goods serviced at the port. Prior to the recession, volumes at the port reached over 27 million tons in both 2005 and 2006. In those years, bulk cargo tonnage reached nearly 3 million per year. This volume fell to a low of only 0.5 million tons in 2010 but has seen a strong growth to 1.3 million in 2014. Similarly, break bulk fell from a high of 377,000 tons to a low of 67,000 in 2009. This commodity has seen some resurgence at the port and is now over 250,000 tons per year. Most notably, the second highest commodity behind petroleum, containerized cargo, has seen a significant rebound. Between 2008 and 2009, volumes of this commodity fell nearly 20 percent. However, 2014 saw a rebound to 6.5 million tons which nearly surpassed the historic high seen in 2008.

Figure 2.9 Historic Cargo Movements by Tonnage Through Port Everglades



Source: Port Everglades Waterborne Commerce Chart 2004-2013.

In order to better serve its existing customers as well as attract new ones, Port Everglades maintains an active planning and investment program. Over the last few years key investments have included an on-port/near-dock ICTF, the Eller Drive overpass, and the extension of McIntosh Road.

The ICTF was recently completed in July 2014 through a collaboration with FEC Railway. This \$53 million, 42.5 acre facility allows for the transfer of international and domestic containers between ship and rail. As a result of this facility opening, FEC was able to eliminate truck drayage movements between Port Everglades and its existing domestic intermodal service on Andrews Avenue. The reduction in truck traffic between these two locations will improve traffic flow at State Road (SR) 84 and Andrews Ave. Key features of this facility include 508 cargo trailer parking spaces, 12,000 feet of storage track, 9,000 feet of processing track, and 3 rubber-tired gantry cranes to service them.

Due to the new rail tracks leading into this ICTF, FDOT built the Eller Drive Overpass to carry vehicles entering and exiting the port over the trackage. This overpass was a critical component of the ICTF in order to accommodate uninterrupted, above-grade movement of vehicles entering and exiting Port Everglades whilst enabling at-grade (inbound and outbound) movement of freight from the ICTF via FEC rail tracks. This has included the reconstruction of several ramps of the I-595/US 1/ Eller Drive interchange as well as the reconstruction of Eller Drive intersections at NE 7th Ave, NE 14th Ave, and McIntosh Road.

The extension of McIntosh Road was also completed as part of the port's overall improvement program. Located in the main container cargo operation area of Port Everglades, this is the main roadway used for the inbound and outbound movement of cargo freight. Partially funded

by FDOT, this project was implemented to help alleviate congestion and allow for a more efficient movement of freight trucks using this roadway to access cargo container terminal yards in Southport.

While these projects have done much to improve operations in and around the port, Port Everglades continues to look ahead to accommodate further growth. The port's most recent master planning efforts refined market demand forecasts and highlighted additional projects necessary to handle future cargo volumes.

In regards to Port Everglades' most significant commodity of petroleum, growth is anticipated to hold fairly steady over the next 20 years, as shown in Figure 2.10. This is the result of a combination of different petroleum products. Gasoline is the largest portion of this commodity at just over 150,000 barrels per day. However, growth of this commodity is only anticipated through about the year 2026, at which point it is expected to remain at a consistent level near 200,000 barrels per day. Other commodities, such as jet fuel and kerosene, are the second largest component of petroleum movements at the port today with around 80,000 barrels per day. Jet fuel and kerosene are anticipated to have continued growth over the 20 year period to over 100,000 barrels per day.

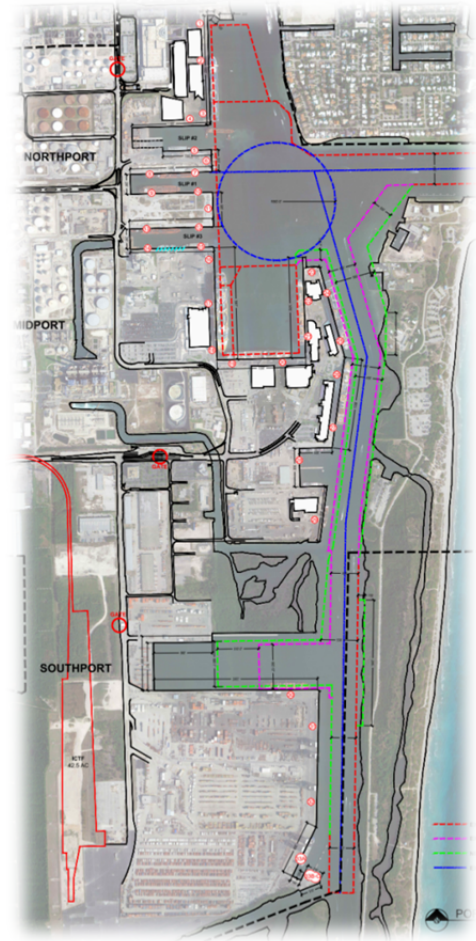
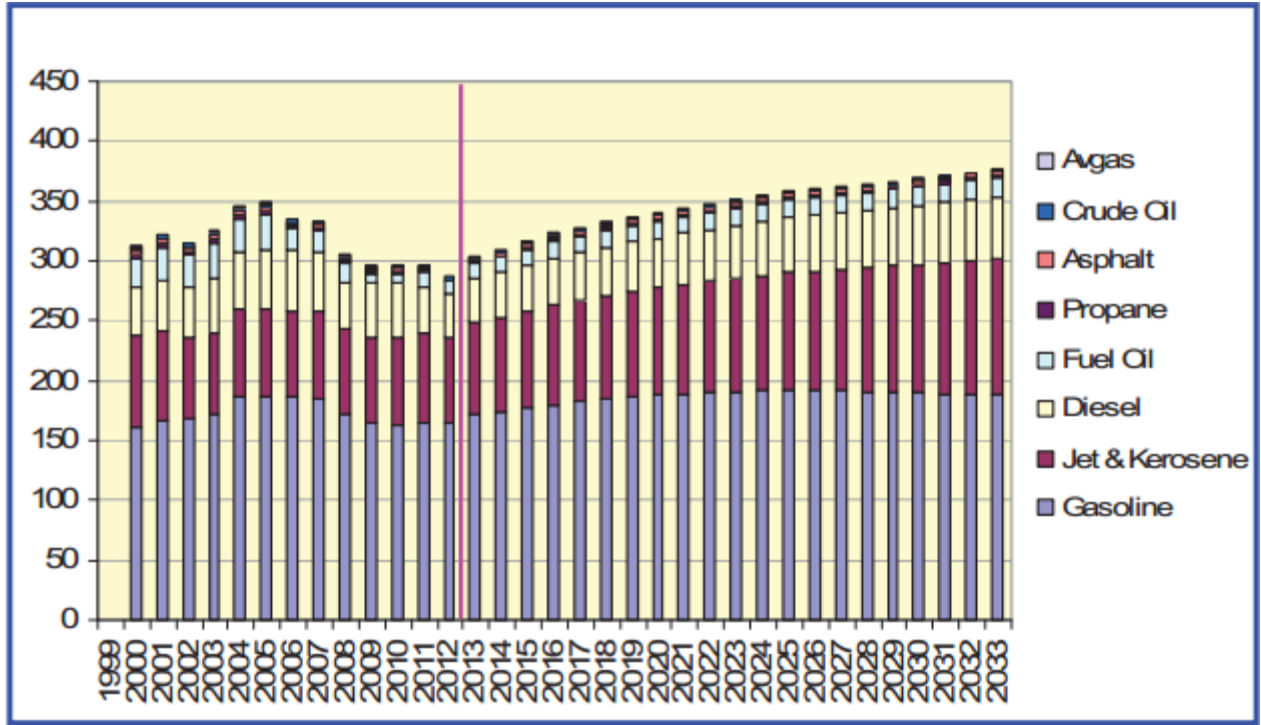


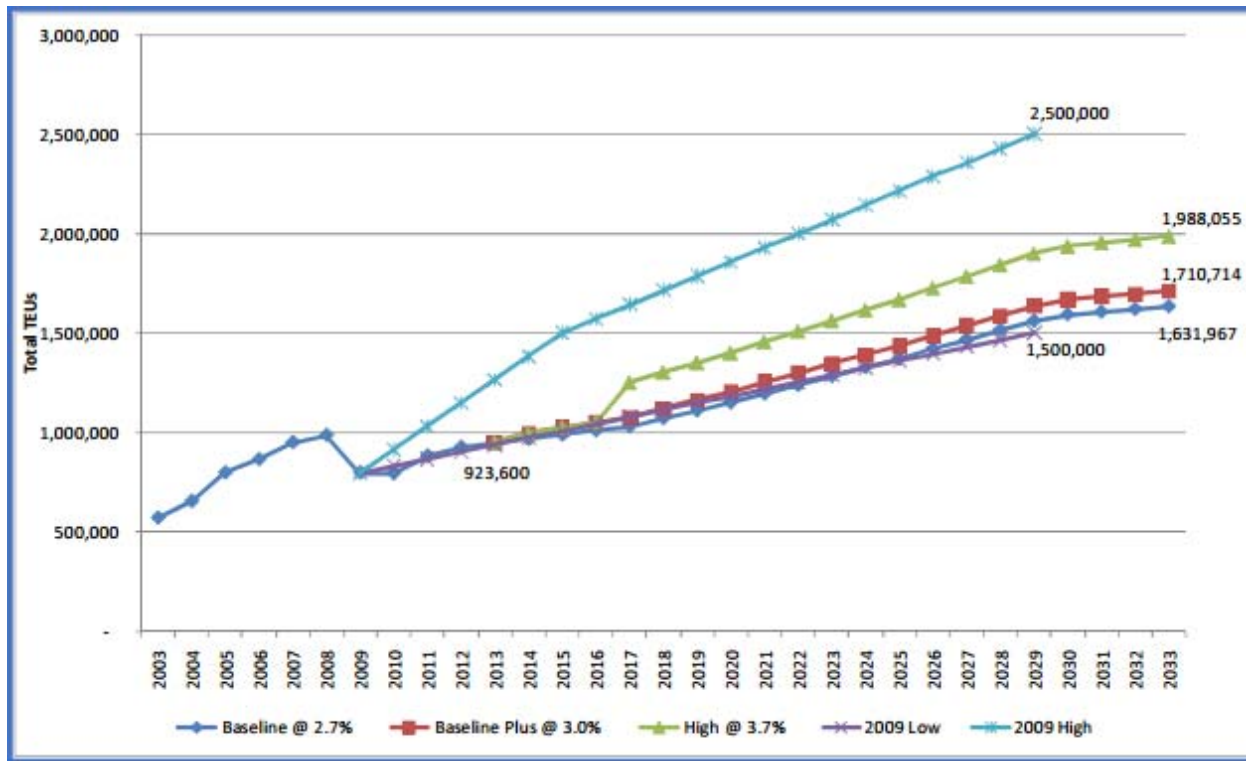
Figure 2.10 Projected Petroleum Growth at Port Everglades (thousand barrels/day)



Source: Port Everglades Master Plan, 2014.

Another large commodity examined in this study is containerized cargo. Summarized in Figure 2.11 by twenty-foot equivalent units (TEUs), current volumes at the port are just under 1 million TEUs per year. While this is significantly lower than anticipated volumes from the last Master Planning effort, it still shows significant growth over time. Looking 20 years to the future, this commodity is anticipated to nearly double to over 1.6 million TEUs. A high growth scenario would push the port to almost 2 million TEUs per year.

Figure 2.11 Projected Container Growth at Port Everglades



Source: Port Everglades Master Plan, 2014.

This anticipated growth is dependent upon key capacity expansion projects including the STN expansion and the deep dredge. The STN Expansion will lengthen the existing deep-water turn around area for cargo ships from 900 feet to 2,400 feet. This will also allow for the creation of five new cargo berths. As part of this project, 8.7 acres of existing mangrove conservation will be replaced with 16.5 acres of upland enhancement to include 70,000 new mangroves. This project is currently in the design and permitting phase with scheduled completion in 2017. Port Everglades has continued to work with the United States Army Corps of Engineers (USACE) to deepen the navigational channels of the port from 42 feet to 48 feet. This project will also involve deepening and widening the Outer Entrance Channel from a 45 foot depth to a 55 foot depth and a 500 foot width to a 800 foot width. Channels within the port would also be widened in order to increase the margin of safety for ships. The total cost of this project is estimated at \$313 million. The USACE has approved the final environmental and economic feasibility studies and the Chief’s Report (the final step) is anticipated by late May 2015.⁵

In addition to the projects discussed above, Port Everglades has several additional improvements underway, including: expansion of Slip 1 to allow for larger/ additional vessels to dock for petroleum operations; additional post Panamax Cranes to support STN operations; and a new neo-bulk storage yard for non-containerized cargo.

⁵ <http://www.porteverglades.net/expansion/construction-updates/>

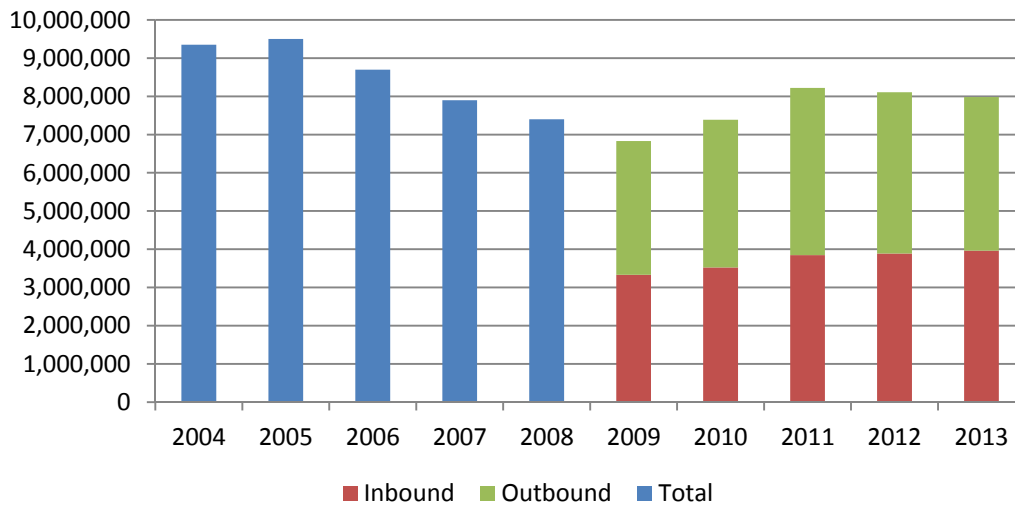
2.5.3 PortMiami

PortMiami, managed by the Miami-Dade County Seaport Department, is located just outside of Downtown Miami on a 520 acre island. Of this area, cargo operations account for 309 acres, or approximately 60 percent of the total area. This allows the port to support four types of cargo operations: roll-on/roll off (Ro/Ro) container operations, lift-on/lift-off (Lo/Lo) container operations, mixed-use bulk cargo operations, and vehicle exports. PortMiami offers 9,980 lineal feet of berthing space for container ships for these operations.

PortMiami’s main trade is with north/south flows as over 54 percent of total trade is with Latin America and the Caribbean. At present, however, China is the largest single country by trade comprising 27.5 percent of total import tonnage and 12.9 percent of exports. The top imports at PortMiami are railway stock, ceramic products, furniture, and edible fruits. Top exports are pulp of wood, base metals, cotton, vehicles, and miscellaneous edible preparations..

Figure shows historic cargo movements through PortMiami by tonnage. Operations peaked in 2005 at nearly 9.5 million tons and over a million TEUs, but declined in the following years due to the relocation of carriers such as MSC to other ports, and the economic downturn. However, the past three years have seen some growth to a fairly steady volume of 8 million tons.

Figure 2.12 Historic Cargo Movements by Tonnage Through PortMiami



Source: 2004-2008 PortMiami Master Plan, 2009-2013 PortMiami Cargo Facts

PortMiami has undergone a vast transformation in recent years. Major construction projects include the PortMiami Tunnel, dredging to accommodate post-Panamax ships, and the reintroduction of rail at the Port, all of which have or will be complete prior to completion of the Panama Canal expansion.

Nearly 16,000 vehicles makes trips to PortMiami each weekday of which 28 percent are truck movements. By going through Downtown Miami, growth at the port was limited by congestion and safety hazards. The PortMiami Tunnel has eliminated this hindrance by connecting Port traffic directly to the interstate system.



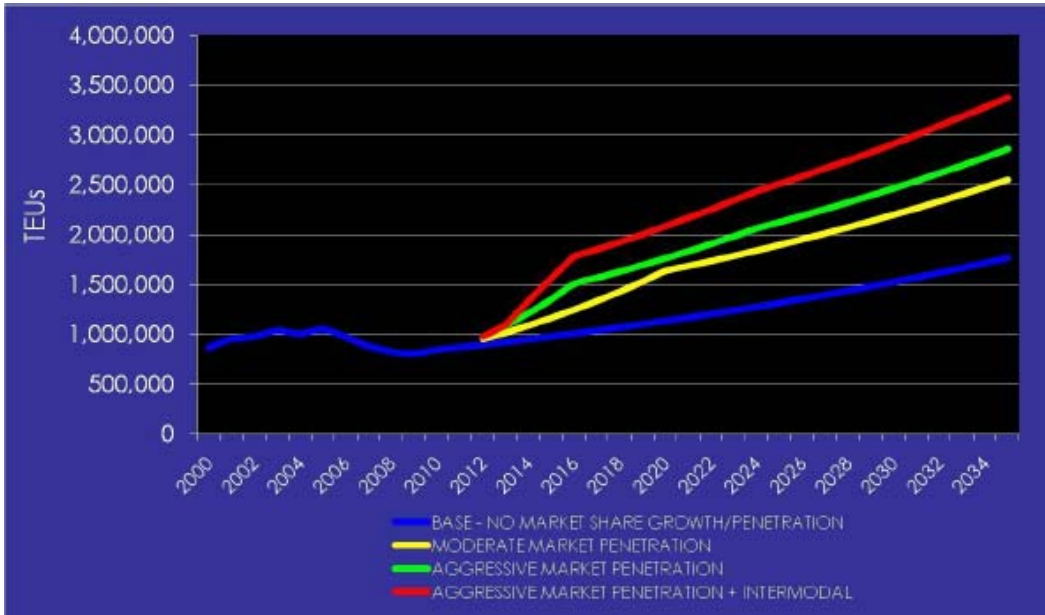
Dredging at the port from the current 42' depth to minus 50-52' will allow for the main channel to accommodate post-Panamax ships following widening of the Panama Canal. When the Panama Canal opens, this will result in the port being one of the few U.S. Atlantic ports at this depth and the closest to the canal. Through the evolution of shipping lanes and a broader market reach, cargo throughput is expected to double. This project is seen as pivotal to the ability of the port to compete for trade and all 2035 Master Plan calculations past 2014 are based on this project being completed as planned. The contract for this project was awarded in May 2013 with work beginning in November 2013 and is to be completed by the opening of the Panama Canal in the summer of 2015.

Railroad tracks at PortMiami were damaged as a result of Hurricane Wilma in 2005. The port was awarded \$22.7 million through the TIGER II grant which has helped reintroduce rail service through repairs to the tracks, the construction of an intermodal rail yard on-port, and upgrades to the railroad leading to FEC Railway's Southeast Florida Logistics Center. This has decreased traffic congestion and dependency on truck movements as well as reduced emissions. By implementing this project, containerized cargo is able to reach 70 percent of the U.S. population in four days or less.



As of a result of these major projects and the opening of the Panama Canal, Figure 2.13 shows the expected increase in growth at PortMiami by TEUs from a base year of Fiscal Year 2010. By 2035, container throughput is projected to range between 1.77 million and 3.38 million TEUs with growth rates ranging from 3 to 5.8 percent. The range of forecasts reflects the uncertainty of international trade patterns and the actions of specific steamship lines.

Figure 2.13 PortMiami Projected Growth by TEUs



Source: PortMiami 2035 Master Plan

2.6 Airports

Air cargo demand in the Southeast Florida study area is served by three commercial service airports that provide dedicated all-cargo carrier, integrated express carrier, and commercial passenger carrier (belly cargo) service. These airports are: Miami International Airport (MIA), Fort Lauderdale-Hollywood International Airport (FLL), and Palm Beach International Airport (PBI).

In addition to these three commercial service airports, there are three General Aviation (GA) airports that report occasional, non-scheduled cargo activity with varying levels of frequency (i.e., ad-hoc charter flights). These airports include: Opa-Locka Executive Airport (OPF), Fort Lauderdale Executive Airport (FXE), and Palm Beach County/Lantana Airport (LNA).

2.6.1 Air Cargo Service Providers

Air cargo service within the study area is provided by a segmented group of air carriers, both all-cargo and passenger carrier, that provide differing services based upon wide ranging customer demands. The air carrier types and service providers include: integrated express carriers, all-cargo carriers (scheduled and ad-hoc charter), and commercial service passenger carriers.

Integrated express carriers handle customer materials door-to-door, providing shipment pickup, transport (via air or truck), and delivery. They operate using a hub-and-spoke system similar to the passenger airline system. The hub is the focal point of the integrated express carrier network which provides connections to each market in the integrator's system. Traditional service focuses on the small-volume, infrequent shipper and higher volume

shippers moving product to multiple destinations. The major express carriers operating in Southeast Florida are: FedEx, UPS, and DHL. FedEx and UPS operate at all three of the major international airports in the region while DHL only operates out of MIA.

All-cargo carriers operate both scheduled and ad-hoc (i.e., charter) cargo-only aircraft from one airport to another, and are highly reliant on the freight forwarding industry to market, broker and handle freight off-airport. Due to their airport-to-airport service structure, scheduled all-cargo carriers are typically concentrated in large, high volume market airports such as MIA. Ad-hoc charter activity consists of unscheduled all-cargo carrier operations that move goods from airport-to-airport based strictly on shipper needs. All three of the region's commercial service airports report all-cargo carrier activity. Activity at FLL and PBI, is more sporadic; however, MIA has a well-developed network of scheduled all-cargo carriers.

Commercial service passenger carriers are scheduled passenger airline operators that use cargo space in the bellies of their aircraft to move cargo airport-to-airport. Airlines operating wide-body aircraft (typically on international or transcontinental routes), such as the B747, B777, and A340, have containerized lower decks (which allow speed in loading and offloading) and generally are capable of handling large, bulky shipments. Thus international routes operating wide-body aircraft tend to move the majority of commercial passenger carrier freight.

2.6.2 Southeast Florida Regional Air Cargo Airport Overview

The following section details Southeast Florida's three commercial air cargo airports, including facility summaries and air cargo activity by airport in terms of total volume by direction, market (domestic and international), and commodity type. Airport records provide the primary source of air cargo volume by airport, and are supplemented by data from the Bureau of Transportation Statistics (BTS) T-100 carrier data, USA Trade Online, Harmonized System (HS) Port-level Database, and Transearch commodity flow database.

Table 2.12 presents the region's total air cargo volume by airport and direction. As expected, MIA accounts for the vast majority of Southeast Florida's air cargo activity. Over 94 percent of the region's air cargo (domestic and international) transits MIA. In total, 2.2 million tons of cargo was handled by Southeast Florida's airports in 2011.

Table 2.12 2011 Air Cargo by Airport and Direction (Tons)

Airport	Outbound	Inbound	Total	Percent of Total
Miami International	969,352	1,061,441	2,030,793	94%
Fort Lauderdale-Hollywood Int'l	49,349	46,725	96,075	5%
Palm Beach International	12,065	14,973	27,038	1%
Total	1,030,767	1,123,139	2,153,906	100%
Percent of Total	47.9%	52.1%	100%	

Source: Airport Records, BTS T-100 Data - 2011.

International air cargo accounts for the majority of the region's air cargo volume. As illustrated in Table 2.13, nearly 83 percent of total air cargo volume is international traffic. In terms of total international volume, MIA accounts for nearly all international activity (99.9 percent).

Table 2.13 2011 Air Cargo by Airport and Market (Tons)

Airport	Domestic		International		Total	
	Tons (1,000)	Percent	Tons (1,000)	Percent	Tons (1,000)	Percent
Miami International	253	67.5%	1,778	99.9%	2,031	94%
Fort Lauderdale-Hollywood Int'l	95	25.3%	1	0.08%	96	5%
Palm Beach International	27	7.2%	0	0.003%	27,	1%
Total	375		1,779		2,154	100%
Percent of Total	17%		83%		100%	

Source: Airport Records, BTS T-100 Data - 2011.

Miami International Airport

Miami International Airport's air cargo network is provided by 76 scheduled and 20 charter air carriers, of which 39 are all-cargo carriers. MIA's airlines offer service to approximately 150 cities on four continents, with dedicated freighter service operating to 94 destinations.⁶ In 2011, these carriers moved over 2 million tons of cargo through the airport. To facilitate this volume of cargo, MIA's complex on-airport air cargo facilities/services include:

⁶ Miami International Airport, *Leading the Americas in International Air Cargo*, 2014

- 18 warehouses with 3.5 million square feet of warehouse, office and support space;
- 4.4 million square feet of ramp space with 72 aircraft parking positions;
- Centralized Customs and Border Protection (CBP), the Food and Drug Administration (FDA) and the Fish and Wildlife Service (FWS) facility;
- Animal and plant health inspection facility (United States Department of Agriculture (USDA));
- Two on-site fumigation facilities for perishable commodities; and
- Foreign Trade Zone (FTZ) designation.

Over the past 10 years, MIA has invested \$500 million in air cargo projects that include new FedEx and UPS facilities, as well as the new Centurion Air Cargo facility that opened in 2013.

The airport reports that 25 percent of all MIA revenue is derived from cargo operations. Currently, the airport does not anticipate cargo capacity issues through 2042 (as per the Airport Master Plan); it is estimated that MIA can process double the current volume with existing infrastructure.

Table 2.14 details the cargo volume by direction and market. Trade with Latin America is by far the largest volume driver of MIA air cargo, representing over three quarters of total activity.

Table 2.14 MIA 2011 Air Cargo by Market and Direction (Tons)

Cargo Market	Outbound (Tons)	Percent Outbound	Inbound (Tons)	Percent Inbound	Total	Percent of Total
Domestic	105,823	11%	147,060	14%	252,883	13%
US-Latin America	764,888	79%	780,129	74%	1,545,017	76%
US-Europe	69,797	7%	61,714	6%	131,511	7%
US-Asia	26,314	3%	72,050	7%	98,364	5%
US-Canada	2,230	< 1%	466	< 1%	2,696	< 1%
US-MENA*	299	< 1%	23	< 1%	322	< 1%
Total	969,352	48%	1,061,441	52%	2,030,793	100%

*MENA – Middle East, North Africa

Source: Airport Records, BTS T-100 Data, Airport Analytics - 2011.

The following three tables present a breakdown of the commodity types moved in and out of the study area by market (domestic and international, import versus export). Table 2.15 details MIA domestic air cargo tonnage and value by commodity. The airport handled 252,883 tons of domestic cargo valued at \$39.9 billion.

Table 2.15 MIA 2011 Domestic Air Cargo by Commodity (Tons and Value)

Commodity	Total Tons	Percent	Value (1,000)
Electrical Equipment	38,006	15%	\$8,463,879
Mail and Express Traffic	37,159	15%	\$98,641
Freight All Kinds (Fak) Shipments	24,960	10%	\$2,739,196
Misc Manufacturing Products	21,582	9%	\$13,199,881
Transportation Equipment	19,504	8%	\$4,426,615
Fresh Fish or Whale Products	16,703	7%	\$103,413
Drugs	11,336	5%	\$3,396,308
Instrum, Photo Equipment, Optical Eq	9,473	4%	\$1,935,366
Meat or Poultry, Fresh or Chilled	9,204	4%	\$53,489
Machinery	8,763	4%	\$908,928
All Others	56,193	22%	\$4,581,681
Total	252,883	100%	\$39,907,396

Source: Transearch Commodity Data, BTS T-100 Data - 2011.

MIA international air cargo tonnage and value by commodity and direction (imports and exports) are presented in Table 2.16 and Table 2.17. The total import tonnage stands at 914,381 tons, with an estimated value of nearly \$27.2 billion. MIA accounts for 99.9 percent of the region's international air cargo traffic, with nearly 80 percent of those imports, by volume, consisting of perishable commodities.

Table 2.16 MIA 2011 International Imports by Commodity (Tons and Value)

Commodity	Total Tons	Percent	Value (1,000)
Live Trees, Plants, Bulbs etc.; Cut Flowers etc.	299,997	33%	\$1,298,336
Fish, Crustaceans & Aquatic Invertebrates	188,100	21%	\$1,333,657
Edible Vegetables & Certain Roots & Tubers	159,011	17%	\$288,324
Edible Fruit & Nuts; Citrus Fruit or Melon Peel	47,196	5%	\$136,545
Nuclear Reactors, Boilers, Machinery etc.; Parts	43,285	5%	\$3,154,365
Cereals	23,528	3%	\$71,657
Electric Machinery etc.; Sound Equip; TV Equip; Pts	23,236	3%	\$7,054,489
Apparel Articles And Accessories, Knit or Crochet	18,648	2%	\$531,587
Special Classification Provisions, Nesoi	9,865	1%	\$2,714,258
Apparel Articles And Accessories, not Knit etc.	9,105	1%	\$250,206
All Others	92,413	10%	\$10,362,835
Total	914,381	100%	\$27,196,256

Source: Airport Records, BTS T-100 Data, USA Trade Database - 2011.

As illustrated in Table 2.17, MIA's export profile differs significantly from its imports. Exports from MIA tend to be higher value manufactured goods and products with limited perishable commodities. In total 863,529 tons of air cargo worth \$70 billion were exported from MIA in 2011.

Table 2.17 MIA 2011 International Exports by Commodity (Tons and Value)

Commodity	Total Tons	Percent	Value (1,000)
Nuclear Reactors, Boilers, Machinery etc.; Parts	250,462	29%	\$17,559,608
Electric Machinery etc.; Sound Equip; TV Equip; Pts	141,630	16%	\$17,809,091
Optic, Photo etc., Medic or Surgical Instruments etc.	47,596	6%	\$7,340,724
Articles of Iron or Steel	35,721	4%	\$363,834
Plastics and Articles Thereof	27,397	3%	\$577,482
Vehicles, Except Railway or Tramway, and Parts etc.	25,258	3%	\$585,084
Organic Chemicals	23,822	3%	\$694,586
Dairy Prods; Birds Eggs; Honey; Ed Animal Pr Nesoi	19,035	2%	\$67,645
Essential Oils etc.; Perfumery, Cosmetic etc. Preps	18,649	2%	\$600,438
Aircraft, Spacecraft, and Parts Thereof	18,586	2%	\$9,389,882
All Others	255,373	30%	\$15,265,152
Total	863,529	100%	\$70,253,525

Source: Airport Records, BTS T-100 Data, USA Trade Database - 2011.

Fort Lauderdale-Hollywood International Airport

Fort Lauderdale-Hollywood International Airport's air network offers flight to 60 U.S. and 36 international cities. International service destinations include Canada, Latin America, the Caribbean, and Europe. The majority of FLL's air cargo volume, nearly 82 percent, is FedEx and UPS traffic, with the remainder being accounted for by ad-hoc all-cargo carriers and passenger carrier belly cargo. FLL's on-airport air cargo facilities/services include:

- Two air cargo buildings with 225,000 square feet of warehouse space;
- One million square feet of ramp space;
- On-site CBP and USDA; and
- FTZ designation.

The airport has seen growth in Latin American markets, and is targeting cargo growth in European markets as a result of increased passenger carrier activity to this region (new service destinations include Oslo, Norway, Stockholm, Sweden, London-Gatwick, UK). FLL reports no capacity issues for handling current and projected air cargo volume.

As illustrated in Table 2.18, FLL primarily serves the domestic market. The primary driver of domestic air cargo is the local market (Fort Lauderdale and surrounding communities) that are being served by FedEx and UPS. However, international lift provided by passenger carriers is being utilized, and international volume should continue to increase as additional passenger service is added.

Table 2.18 FLL 2011 Air Cargo by Market and Direction (Tons)

Cargo Market	Outbound (Tons)	Percent Outbound	Inbound (Tons)	Percent Inbound	Total	Percent of Total
Domestic	48,799	99%	45,875	98%	94,675	99%
US-Europe	334	< 1%	297	< 1%	631	< 1%
US-Latin America	64	< 1%	466	1%	530	< 1%
US-Canada	152	< 1%	86	< 1%	238	< 1%
Total	49,349	51%	46,725	49%	96,075	100%

Source: Airport Records, BTS T-100 Data, Airport Analytics - 2011.

Table 2.19 details FLL domestic air cargo tonnage and value by commodity. The airport handles a wide variety of domestic commodities with high value cargo topping the list. The average value per ton of FLL domestic air cargo is \$184,145. Note only 2 percent of FLL's cargo is international. No breakdown of the 2 percent has been provided.

Table 2.19 FLL 2011 Domestic Air Cargo by Commodity (Tons)

Commodity	Total Tons	Percent	Value (1,000)
Electrical Equipment	18,466	20%	\$4,112,268
Transportation Equipment	10,305	11%	\$2,338,772
Fak Shipments	10,046	11%	\$1,075,037
Misc Manufacturing Products	10,009	11%	\$6,121,805
Mail and Express Traffic	9,338	10%	\$24,788
Meat or Poultry, Fresh or Chilled	6,184	7%	\$35,936
Drugs	5,532	6%	\$1,707,455
Instrum, Photo Equipment, Optical Eq	5,100	5%	\$1,041,908
Machinery	5,024	5%	\$521,148
Fabricated Metal Products	2,686	3%	\$75,204
All Others	11,987	13%	\$379,613
Total	94,675	100%	\$17,433,934

Source: Transearch Commodity Data, BTS T-100 Data - 2011.

Palm Beach International Airport

Palm Beach International Airport's commercial passenger carriers provide direct service to more than 20 domestic destinations, as well as ad-hoc charter service to Latin America and Europe. However, the majority of PBI's air cargo volume, over 92 percent, is FedEx and UPS

traffic, with the remainder being accounted for by ad-hoc all-cargo carriers and passenger carrier belly cargo. PBI's on-airport air cargo facilities/services include:

- Two air cargo buildings with 102,000 square feet of warehouse space;
- 268,000 square feet cargo ramp (3 to 6 parking positions depending on aircraft size);
- On-site CBP; and
- FTZ designation.

PBI reports that there is room to expand the existing cargo ramp if demand warrants, but as of yet, there are no plans to do so. There are no current or anticipated cargo capacity issues.

Like FLL, PBI primarily serves the domestic market. The primary driver of domestic air cargo is the local market (Palm Beach and surrounding communities) being served by FedEx and UPS. Table 2.20 highlights that 99.8 percent of all PBI cargo is domestic origin and destination traffic driven by local market demand.

Table 2.20 PBI 2011 Air Cargo by Market and Direction (Tons)

Cargo Market	Outbound (Tons)	Percent Outbound	Inbound (Tons)	Percent Inbound	Total	Percent of Total
Domestic	12,065	100%	14,928	100%	26,993	100%
US-Europe	-	0%	24	< 1%	24	< 1%
US-Latin America	-	0%	21	< 1%	21	< 1%
Total	12,065	45%	14,973	55%	27,038	100%

Source: Airport Records, BTS T-100 Data, Airport Analytics - 2011.

Table 2.21 details the airport's domestic air cargo tonnage and value by commodity. Again similar to FLL, PBI handles a wide variety of domestic commodities with high value cargo topping the list; average value per PBI domestic air cargo is \$202,883 per ton.

Table 2.21 PBI 2011 Domestic Air Cargo by Commodity (Tons)

Commodity	Total Tons	Percent	Value (1,000)
Electrical Equipment	5,792	22%	\$1,289,800
Fak Shipments	3,400	13%	\$363,868
Misc Manufacturing Products	3,202	12%	\$1,958,331
Transportation Equipment	3,129	12%	\$710,225
Meat or Poultry, Fresh or Chilled	1,818	7%	\$10,563
Drugs	1,653	6%	\$510,279
Instrum, Photo Equipment, Optical Eq	1,608	6%	\$328,515
Machinery	1,480	6%	\$153,558
Fabricated Metal Products	873	3%	\$24,440
Textile Mill Products	724	3%	\$12,772
All Others	3,313	12%	\$114,081
Total	26,993	100%	\$5,476,433

Source: Transearch Commodity Data, BTS T-100 Data - 2011.

General Aviation Airports

As previously mentioned, three general aviation airports in the study area report ad-hoc air cargo activity. This activity tends to serve niche markets, and use smaller aircraft with varied frequency. Unfortunately, these cargo operators do not report activity and volume to the airports, so exact volume numbers are not available. Discussions with airport officials and Fixed Base Operators (FBO) have highlighted that these flights are primarily used to move foodstuffs for island restaurants and resorts. The GA airports reporting activity are:

- Opa-locka Executive Airport - Sporadic flights to the Bahamas, Puerto Rico, the Keys;
- Fort Lauderdale Executive Airport - Activity from five charter carriers based at the airport; and
- Palm Beach County/Lantana Airport – One to two flights per week to the Bahamas.

Though these airports provide a key niche service, the volume of cargo moved in relation to the regional total (due to aircraft type/size and frequency), is minimal.

3.0 Southeast Florida Logistics Infrastructure

Southeast Florida's freight transportation infrastructure provides the means by which the freight moves into, out of and within the county. However, there are many other factors that impact how freight moves. These factors combine with the transportation system to form a comprehensive logistics infrastructure that provides all the necessary services, warehouse capacity, and international trade expertise. For example, freight forwarders and brokers provide a wealth of knowledge on the laws and regulations imposed on different types of commodities being imported or exported; many shippers and receivers rely on third party warehouse operators; trucking companies need full service truck parking facilities to maintain their vehicles and adhere to hours of service regulations; and developers need access to land with appropriate zoning and land use designations to allow for industrial facilities. The conditions and amenities available at such facilities have a direct impact on the types of goods which can be handled or stored. Key logistics related components and developments in Southeast Florida are described below.

3.1 U.S. Customs and Border Protection

U.S. Customs and Border Protection (CBP), as part of the Department of Homeland Security (DHS), is charged with protecting the nation's borders while facilitating legal international trade and travel. As part of this, hundreds of U.S. laws and regulations must be followed to enable such movements. Annually, CBP is responsible for the movement of over \$2 trillion in trade. While CBP is essential to both trade and tourism, federal budget cuts in early 2013 put strains on the system due to a reduction in staffing.

These cuts had profound affects on Southeast Florida's international hubs as well as other ports of entry across the country for both passenger and cargo clearance. As a result, a new CBP Reimbursable Services Authority was announced in May 2013. This program allows the Commissioner of CBP to enter into public-private partnerships to provide new or enhanced services in any of CBP's non-foreign operational environments on a reimbursable basis. Services can include all Customs and Immigration related inspection activities and may cover all costs, such as staffing, overtime, and transportation. Section 560 of the Consolidated and Further Continuing Appropriations Act of 2013 (H.R. 933) allowed CBP to enter into up to five partnerships by December 31, 2013.

In August 2013, CBP announced preliminary selections for this new program. Selected entities included: Dallas/Fort Worth International Airport, the city of El Paso, Texas, South Texas Asset Consortium, Houston Airport System, and Miami-Dade County. The inclusion of Miami-Dade County benefits both MIA and PortMiami by allowing them to



return to pre-sequestration levels of service. It also helps communicate to the international community that Southeast Florida is willing to invest in critical international services. On December 20, 2013, an agreement was finalized between the Miami-Dade Aviation Department (MDAD) and CBP for additional overtime staffing in the passport control and customs screening areas. Over five years, MDAD will reimburse CBP up to \$6 million for a maximum average of 800 additional CBP inspector hours a month. This overtime will be funded completely by MIA's operating budget which is supported by Aviation Department revenue and tenant fees. While this current effort yields benefits for reducing wait times for international passengers, this initiative paves the way to similar efforts for cargo movements.

3.2 Foreign Trade Zones

In the United States, foreign trade zones (FTZ) are areas located near Ports of Entry. The idea behind them is that goods receive the same customs treatment as if they were still outside the United States but may be reconfigured or manufactured on U.S. soil. Duties are only paid when goods are transferred to the U.S. consumption market. This lowers the amount of tariffs and taxes paid by companies engaging in international trade in order to promote employment and investments resulting from such operations. At present there are seven foreign trade zones in Southeast Florida. The defined zones are as follows:

- FTZ No. 25: Broward County (Port Everglades) - 22.7 acre site at Port Everglades with 388,600 square feet of warehousing space; also designates and manages Special Purpose Subzones throughout Broward County;
- FTZ No. 32: Miami Free Zone – 47 acre site with more than 850,000 square feet of facilities;
- FTZ No. 135: Palm Beach county – 623 acres in Martin and Palm Beach counties, including the Port of Palm Beach;
- FTZ No. 166: Homestead (Miami-Dade county)– 1,000 acre site roughly 30 miles from both the airport and seaport;
- FTZ No. 180: Wynwood (Miami-Dade County) –Inactive zone that was never fully established;
- FTZ No. 241: Fort Lauderdale – 200-acre site at the Fort Lauderdale Executive Airport; existing or new businesses can be designated throughout Broward County (as part of the Alternative Site Framework (ASF) process); and
- FTZ No. 281: Managed by PortMiami for Miami-Dade County- Encompasses 2,000 acres (90 acres designated) and within the two years since its establishment, this zone accounts for

Port Everglades' FTZ Highlighted as National Zone of the Month. Port Everglades' Foreign-Trade Zone No. 25 (FTZ) received national attention as July's Zone of the Month in the National Association of Foreign-Trade Zones' (NAFTZ) *Zones Report*. The *Zones Report* cited FTZ No. 25 as a noteworthy example of successful economic development through the national FTZ program.

<http://www.fedc.net/newsroom/port-everglades-ftz-highlighted-as-national-zone-of-the-month/>

over 3 million square feet of operating warehouse space. The limits of this zone extend from SW 8th Street in the south to the county border with Broward in the north; existing or new businesses can be designated throughout this area as part of ASF process.

One of the more recent developments has been the creation of the ASF streamlined process. Under ASF, two types of sites are designated: Magnet and Usage-Driven. Magnet sites are similar to the way FTZs work today by designating an area in advance in order to attract multiple users to the area. These are not the main goal of the ASF and six or fewer are to be created per grantee. For example, the South Florida Logistics Center was designated as a magnet site within FTZ No. 281. On the other hand, Usage-Driven sites are for companies seeking to pursue FTZ activities. In this case, the FTZ designation is tied to the particular company and is limited to the space needed by that company. In the event of a company relocating, the facility will no longer be designated as a Usage-Driven site and a new occupant would need to reapply.

In switching from the traditional FTZ designations to the Alternative Site Framework, unused FTZs will be removed in the process. Currently, FTZs are designated based on speculation about where industries will locate. However, there is little correlation between these sites and actual use. The ASF will allow for companies to designate their pre-existing site provided that it is located within the boundaries of the FTZ. In addition, all sites (both Usage-Driven and Magnet) will be given “sunset” limits of three to five years in order to remove excess designations which no longer fit the needs of the FTZ.

Southeast Florida is home to different types of FTZs as described above. However, what is critical is the fact that all of the freight activity centers in the region are already part of or can easily take advantage of existing FTZs. That fact, in addition to the flexibility provided by the ASF process, allows Southeast Florida to offer state of the practice benefits to the international trade industry.

3.3 Freight Forwarders and Brokers

While they serve different functions, registered forwarders and brokers have a thorough understanding of the laws and regulations associated with domestic and international shipping. Companies can hire forwarders and brokers to ensure that their goods arrive safely to the markets they wish to serve and within the constraints of the law.

The legal definition of a freight forwarder, according to 49 USC § 13102, is “a person holding itself out to the general public (other than as a pipeline, rail, motor, or water carrier) to provide transportation of property for compensation and in the ordinary course of its business A) assembles and consolidates, or provides for assembling and consolidating, shipments and performs or provides for break-bulk and distribution operations of the shipments; B) assumes responsibility for the transportation from the place of receipt to the place of destination; and C) uses for any part of the transportation a carrier subject to jurisdiction under this subtitle.” In short, a freight forwarder accepts freight for transport and is liable for delivery under their own bill of lading. Domestic freight forwarders must be registered with the U.S. DOT’s Federal Motor Carrier Safety Administration (FMCSA). Those handling international freight, depending

on the mode, also require certification from the Federal Maritime Commission, the International Air Transport Association (IATA), and/or the Department of Homeland Security.

Unlike freight forwarders, a freight broker never actually touches the cargo. A freight broker serves as a liaison between a company which needs shipping services and an authorized motor carrier. A broker works with the needs of a shipper and connects them with a carrier willing to transport their cargo at an acceptable price. Freight brokers must also obtain a license from the FMCSA and are required to carry insurance to protect both clients and customers. Previously, the surety bond coverage to maintain a broker's license was \$10,000. However, with the passage of MAP-21, this requirement was raised to \$75,000 starting in October 2013.

For Florida specifically there exists the Florida Customs Brokers & Forwarders Association, Inc. (FCBF) based in Doral to join these various groups together to facilitate discussion among them. In addition to providing industry related information, FCBF also provides training workshops and works to advocate on behalf of its members. Key members consist of Customs Brokers, Freight Forwarders, and Air Carriers. However, several other types of industry members are also involved including cruise lines, warehouses, trucking services, and seaports. Florida, and specifically Southeast Florida is home to one of the highest concentrations of brokers in the United States.



3.4 Land Use Implications

Available land for development of industrial capacity is a key factor impacting future growth in trade and logistics activities in Southeast Florida. With a finite amount of land available, the designated land uses and the ability to change those designations, become a key component in freight planning activities. Further, land use decisions are largely local government decisions, making a larger more regional approach to land use strategies more complicated. With limited vacant lands, and older more obsolete existing industrial lands, a gap does exist between what Southeast Florida has today and what industry will demand in the coming years – particularly with the investments being undertaken by the region's seaports, airports, and railroads. The SFRFP begins to address the importance of land use by evaluating existing and future plans. An analysis of existing and future land use data was conducted to identify plans to remove or add lands into transportation/industrial friendly designations, which supports ongoing development plans.

Land use data was acquired from each of the three counties in Southeast Florida. For Palm Beach and Miami-Dade, both existing and future land use data were examined. Only future land use was utilized for Broward County as the county does not maintain an existing land use layer. Similar approaches were taken towards each set of data. However, each county uses different land use designations. As such, the land uses were not always directly comparable.

Table 3.1 summarizes the existing land use for each county. The list of categories is inclusive of all three counties; blank cells indicate a given county does not use that category.⁷

Table 3.1 Summary of Existing Land Use Types by County

	Palm Beach	Percent of Total	Broward* ⁸	Percent of Total	Miami	Percent of Total
Agriculture	410,388	30%	14,736	2%	63,563	4%
Mining, Excavation	477	< 1%			16,504	1%
Industrial	14,381	1%	12,214	2%	12,260	1%
Marine Commercial	261	< 1%			118	< 1%
Government Land/ Military Facilities	59,820	4%			1,500	< 1%
Transportation & Utilities	10,490	1%	48,440	6%	83,971	5%
Water	157,458	12%	30,396	4%	307,294	20%
Conservation	379,442	28%	513,063	63%	833,284	54%
Residential	183,147	14%	136,366	17%	111,995	7%
Districts	81,172	6%				
Vacant	3,376	< 1%			87,029	6%
Other	54,187	4%	53,620	7%	26,277	2%
Total	1,354,598		808,836		1,543,795	

Source: Broward, Miami-Dade, and Palm Beach counties.

⁷ Acreages are given as a representation of the volume of freight activities in each county, however they may not be all inclusive. For instance, Palm Beach County categorizes each type of "Vacant" land, allowing for "Vacant Industrial" to be grouped in with the developed industrial land. Miami-Dade, on the other hand, only has vacancy categorized as "Vacant, Non-Protected, Privately-Owned", "Vacant, Protected, Government-Owned or Controlled" and the like, which do not give an indication of the potential developments which can be in that area. Many vacant parcels are located in areas which already have industrial development, suggesting that they too may be readily capable of such development.

⁸ Note: Broward County data is based of the provided Future Land Use data, whereas Palm Beach and Miami-Dade represent current numbers.

Table 3.2 shows the difference in agricultural and transportation land uses anticipated in the future. No comparison is possible for Broward County given no existing land use data is available. As illustrated, agricultural and industrial lands are anticipated to increase in the future with Palm Beach remaining the leader in agriculture by a significant margin and Miami-Dade remaining the leader in industrial capacity, albeit by a much smaller margin.

Overwhelmingly, Palm Beach County accounts for most of the agricultural land within the region. The growth of Palm Beach’s agricultural land by nearly 90,000 acres is mainly attributed to lands which are currently government property or South Florida Water Management District (SFWMD) land. Much of Palm Beach’s industrial land is scattered across the county along major corridors such as I-95. The two largest developments are located along Beeline Highway, a relatively undeveloped 8,000 acre industrial preserve, and the 850 acre intermodal logistics center proposed by Florida Crystals in the western part of the county. Figures 3.1 and 3.2 show existing and future land use in Palm Beach County. The bold colors on the existing maps indicate freight related land uses. The bold colors on the future maps indicate new freight related land uses anticipated to come online in the future.⁹

Table 3.2 Future Land Use Acreage and Difference From Existing

	Palm Beach	Broward ¹⁰	Miami
Agriculture			
Existing	410,388		63,563
Remaining	382,063		53,575
Additional*	118,158	14,736	25,645
Total Future	500,221	14,736	79,221
Industrial			
Existing	14,381		12,260
Remaining	12,769		11,058
Additional	8,229	12,214	17,183
Total Future	20,998	12,214	28,241

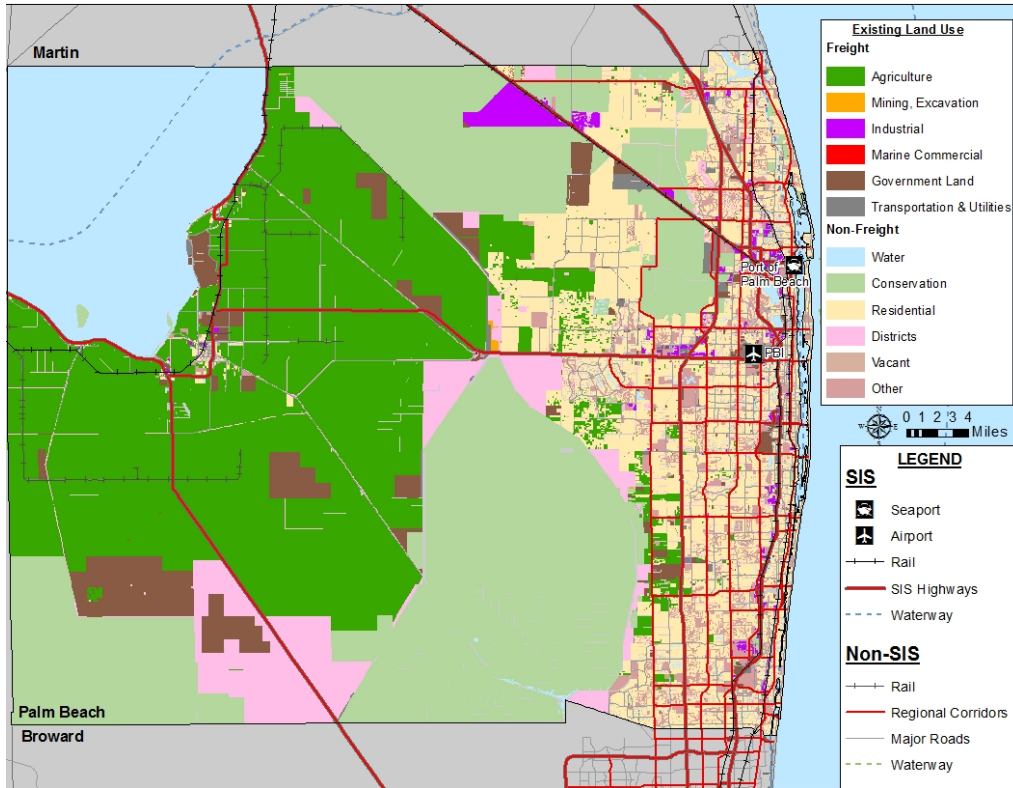
* Palm Beach County’s future land use indicates transition of existing government lands (SFWMD) to agricultural production.

Source: Broward, Miami-Dade, and Palm Beach counties.

⁹ Future freight land use was identified by selecting land which is presently “Vacant government owned or controlled” or “Vacant, non-protected, privately owned” but will have either an “Agriculture,” “Industrial and Office,” “Restricted Industrial and Office,” “Terminals,” or “Transportation (ROW, Rail, Metrorail, Etc.)” land use category in the future.

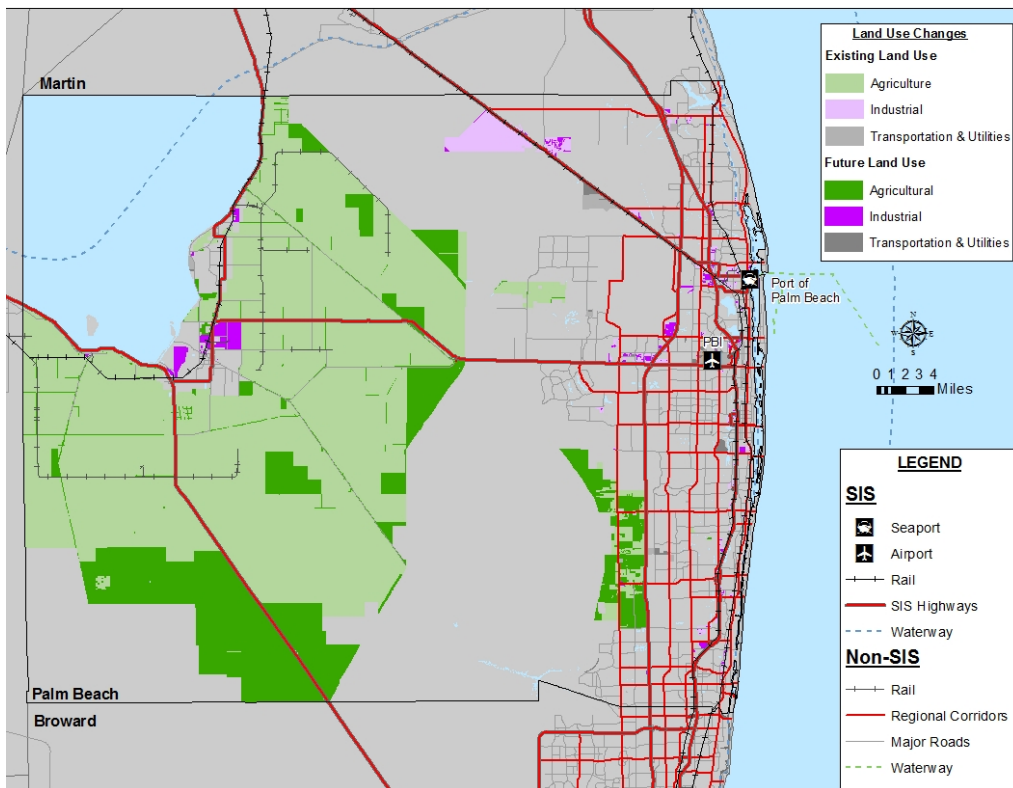
¹⁰ Differences between existing and future land use data for Broward County are not available as the county does not maintain an existing land use layer.

Figure 3.1 Existing Freight Related Land Uses, Palm Beach County



Source: Palm Beach County.

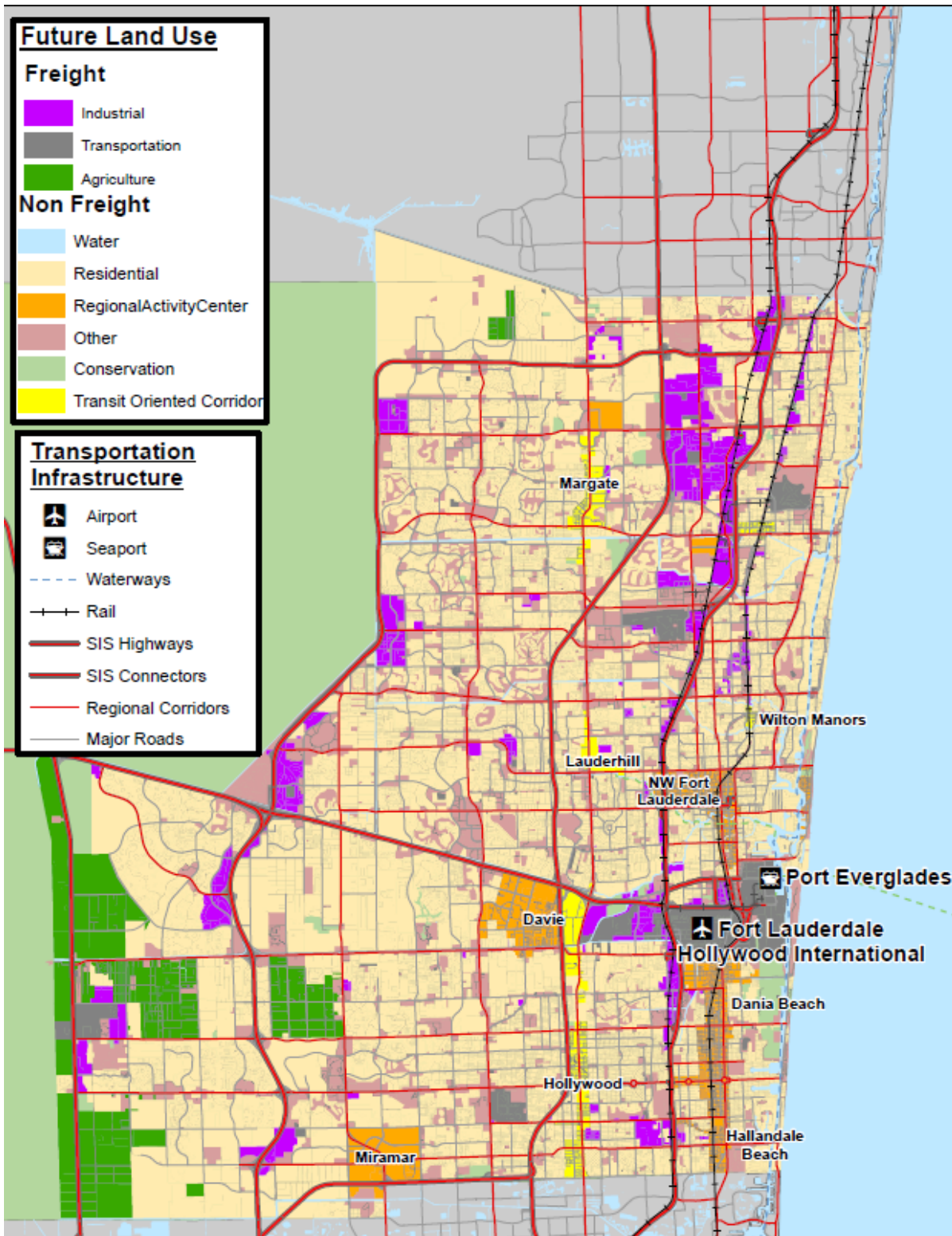
Figure 3.2 Future Freight Related Land Uses, Palm Beach County



Source: Palm Beach County.

Broward County is by far the smallest of the three counties with just over 800 thousand acres (Palm Beach has 1.3 million and Miami-Dade has 1.5 million) of which 54 percent is made up of conservation land. The majority of Broward's industrial land is located along or in close proximity to I-95, I-595, and the Sawgrass Expressway. Key areas include properties near Fort Lauderdale-Hollywood International Airport and Port Everglades, and the industrial complex in Pompano containing the Farmers Market. Figures 3.3 shows future land use in Broward county. Broward also creates mixed-use areas in its land use plan called Regional Activity Centers and Transit Oriented Corridors. Regional Activity Centers consist of at least 160 gross contiguous acres and are intended to encourage development or redevelopment of areas that are of regional significance. Several of these areas include significant acreage for industrial development. Tables 3.3 and 3.4 display all of the indicated Regional Activity Centers and Transit Oriented Corridors, along with the potential industrial land located in each area. There is over 31 million square feet of industrial space contained within these areas, along with 261 acres of land. Key locations such as Davie and Dania Beach are in close proximity to the major transportation hubs of Fort Lauderdale Hollywood International Airport and Port Everglades, making these areas prime for development. Note the available data does not identify the industrial parcels within these categories. Further, it is critical to recognize that there are many challenges associated with mixed use areas or facilities that work to integrate industrial activities with transit and bike/pedestrian access and overall community walkability and quality of life. This becomes further complicated when trying to re-designate or redevelop areas.

Figure 3.3 Future Freight Related Land Uses Broward County



Source: Broward County.

Table 3.3 Broward County Transit Oriented Corridors

Name	Acreage	Boundaries	Industrial Land
Davie	904	South side of I-595 between SR 7/US 441 and Florida's Turnpike	3,600,000 sq. ft.
Downtown Pompano	273	NW 6 th St/NW 6 th Court on the north, Atlantic Blvd/SW 2 nd St on the South, East by NW 5 th Ave, and West by NW 10 th Ave	0 sq. ft.
Hollywood	980	Along SR7/US 441 between northern and southern City of Hollywood boundaries	1,000,000 sq. ft.
Lauderhill	484	W of SR7/US 441 between NW 29 th Ave and Sunrise Blvd and E of SR 7/US 441 between NW 19 th St and Sunrise Blvd	1,491,908 sq. ft.
Margate	1,184	S of Sample Rd and ½ mile north of Cypress Creek Rd, bisected by SR 7/US 441	1,830,884 sq. ft.
Miramar	440	E of SW 66 th Ave and bounded on the north by Pembroke Rd, on the E by SR 7/US 441 and on the south by County Line Rd	0 sq. ft.
West Park	88	E of SR 7/US 441 between Pembroke Rd and SW 41 st St (County Line Rd)	0 sq. ft.
Wilton Manors	114	Between NE 11 th Ave and NE 15 th /16 th Ave and between South Fork of the Middle River and the North Fork of the Middle River	71,600 sq. ft.

Source: Broward County.

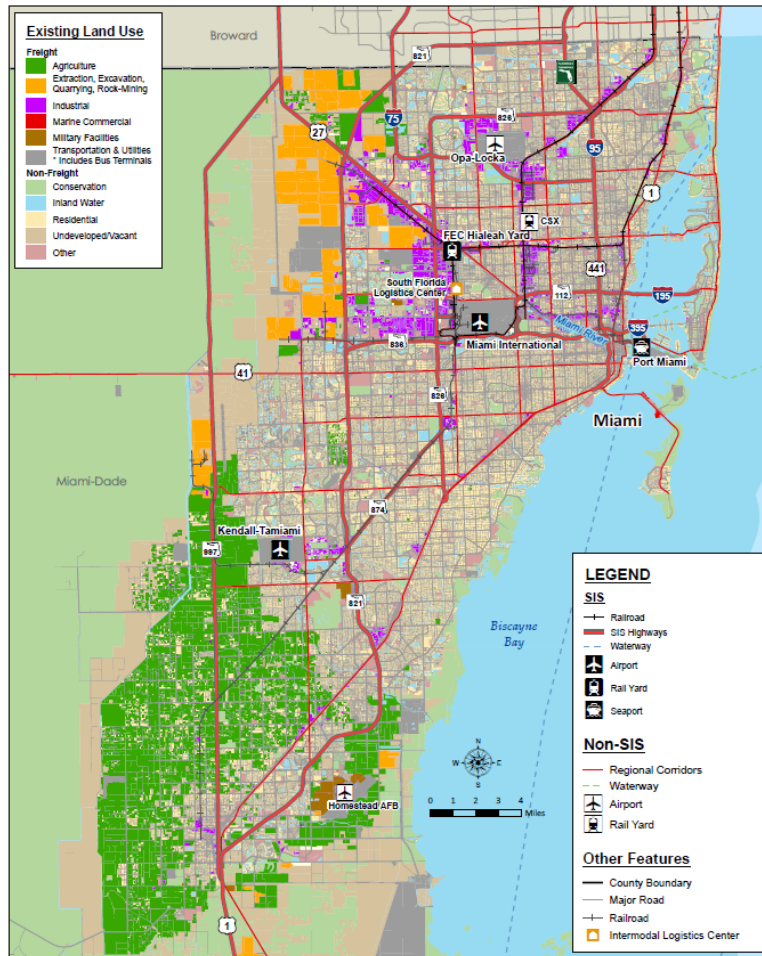
Table 3.4 Broward County Regional Activity Centers

Name	Acreage	Boundaries	Industrial Land
Coconut Creek	500	N by Wiles Rd, S by Sample Rd, E by Lyons Rd, W by SR 7/US 441	0 sq. ft.
Dania Beach	1,344	E of I-95 between Griffin Rd and Sheridan St	248 acres
Town of Davie	2,244	Between University Dr and Florida's Turnpike, S of SR 84 and N of Griffin Rd	7,629,000 sq. ft.
Fort Lauderdale Central Beach	220	S of Sunrise Blvd, N of Holiday Dr, between Atlantic Ocean and Intracoastal Waterway	0 sq. ft.
Downtown Fort Lauderdale	710	S of Sunrise Blvd, N of Davie Blvd, between US 1/Federal Hwy and NW 7 th Ave	0 sq. ft.
Northwest Fort Lauderdale	1,093	Between NW 27 th Ave and US1/Federal Hwy, S of Sunrise Blvd and N of Broward Blvd	4,500,000 sq. ft.
South Fort Lauderdale	270	Between SW 4 th Ave and US1/Federal Hwy, S of SW/SE 10 th St and N of SR 84	0 sq. ft.
Hallandale Beach	638	E of I-95 between Pembroke Rd and SW 11 th St (County Line)	13 acres
Downtown Hollywood	1,486	S of Sheridan St, E of I-95, W of S 17 th Ave and N of Pembroke Rd	0 sq. ft.
Miramar	2,205	N of Bass Creek Rd between Palm Ave and Flamingo Rd	11,500,000 sq. ft.
Arvida/Pompano Park	239	S of Atlantic Blvd between Powerline Rd and Seaboard Coastline Railroad	0 sq. ft.

Source: Broward County.

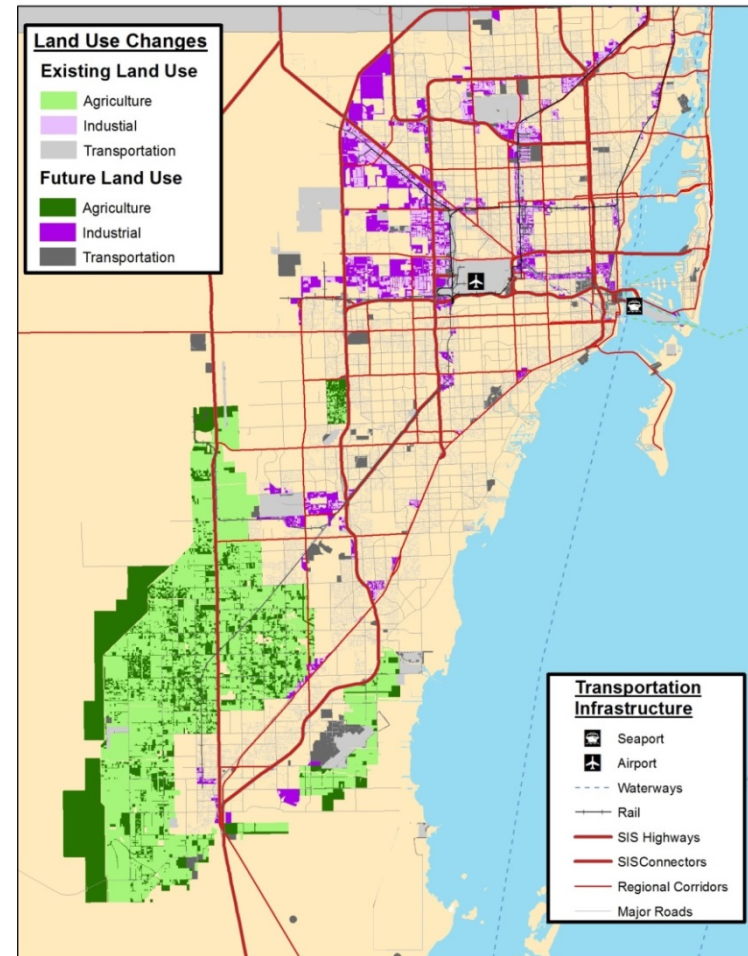
Miami-Dade County is the largest of the three counties. It is unique in that it has the largest percent of conservation lands (63 percent), provides the largest amount of industrial land, and has the potential to bring almost another 16,000 acres of industrial land on line in the future. In addition, the county is home to a significant and growing agricultural industry. While this land use data extends beyond the urban area, much of the freight development is still contained within that area with only some agricultural land outside. The majority of Miami-Dade's industrial land is located west and northwest of Miami International Airport. There are some smaller areas around Kendall-Tamiami Airport and Opa-locka Airport. The most significant growth is anticipated in the northwest region near the intersection of US 27, the HEFT, and I-75. Figures 3.4 and 3.5 show existing and future land use in Miami-Dade County.

Figure 3.4 Existing Freight Related Land Uses
Miami-Dade County



Source: Quest Corporation of America.

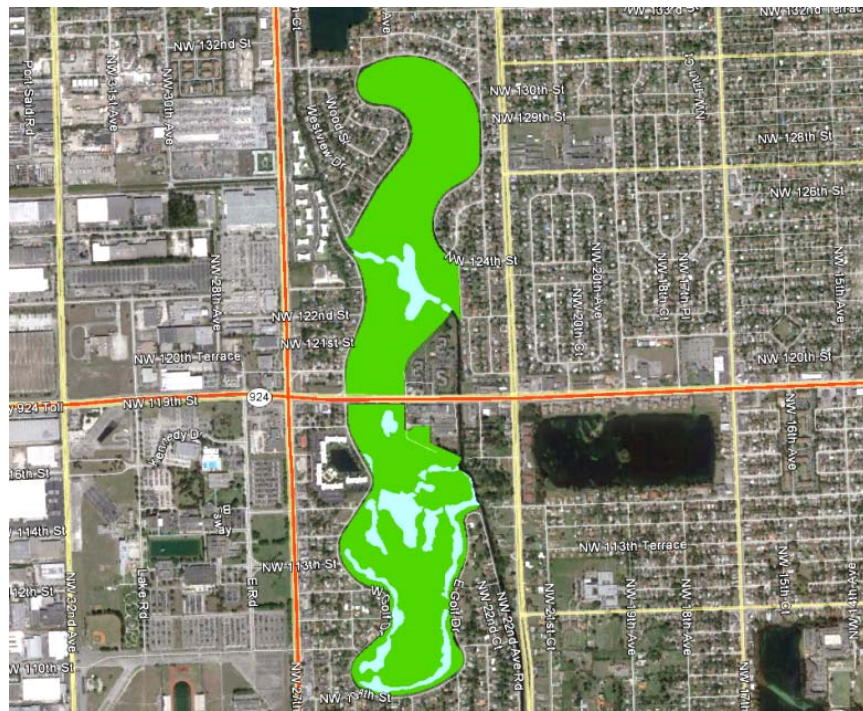
Figure 3.5 Future Freight Related Land Uses
Miami-Dade County



Source: Miami-Dade MPO.

While many of these land use layers are up to date and reflect recent changes in the region, day to day changes are not immediately captured. One of the most recent changes affecting industrial development is in Miami-Dade. The Westview Country Club, located to the southeast of Opa-locka airport and at the crossroads of two regionally significant corridors, had been in operation since 1959. When its doors closed in 2011, a group of developers purchased the property in hopes to convert it to a golf-only destination. However, when this idea fell through, the land was purchased by Rosal Westview, LLC with plans for a \$300 million development of the 196 acres site. Original plans for the area called for the development of 2 million square feet of industrial space. However, this clashed with the surrounding residential community, the extent of which can be seen in the figure below. In order to advance the project, the original development plans had to be revised. Industrial and warehousing space is now limited to 1.6 million square feet of light industrial, warehouse, and flex space. Furthermore, warehouse and distribution space may be no more than 700,000 square feet of that and business and office development is capped at 400,000 square feet of retail and service uses. Other caveats for this property include limits on residential development, vehicle access, and height limitations. The developer is also committed to make improvements along NW 119th St. Such improvements should be mindful of a potential eastern expansion of the Gratigny Parkway from NW 32nd Ave to I-95.

Figure 3.6 Westview Country Club Development Site

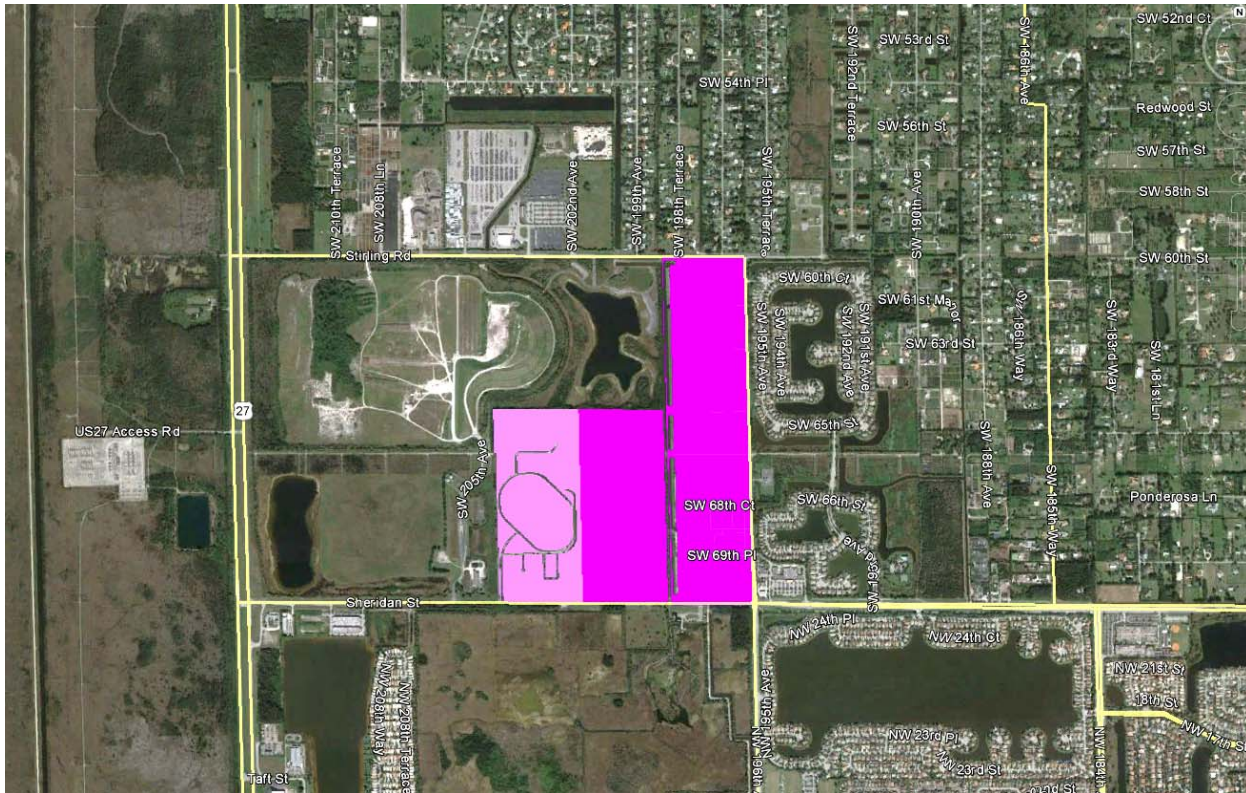


Source: Google Earth and Miami-Dade MPO.

A similar situation is found in Broward County. The Broward Correctional Facility closed its doors in 2012 after 35 years of operation. As part of statewide efforts to raise money to buy

lands for conservation, this property was auctioned in May 2014. With a winning bid of \$13 million, the city of Pembroke Pines now owns this 66-acre property.¹¹ As seen in Figure 3.7, this site is located just west of an area already identified as industrial land in the future land use data provided by Broward County. This property, however, was designated as a “Community Facility”. Located on Sheridan Street in the western portion of the county, the proximity of this property to existing industrial land as well as US 27 makes this a prime location for industrial development.

Figure 3.7 Former Broward Correctional Facility Site



Source: Google Earth and Broward County.

In summary, existing and future land use designations will impact future opportunities for the freight and logistics industry. In order for Southeast Florida to achieve its goal as a global logistics hub, new warehouse and distribution center capacity must come on line within the region or in nearby, adjacent communities. This analysis shows that there are opportunities for new capacities here in Southeast Florida. It is important that these opportunities are preserved and protected for industrial use.

¹¹ http://articles.sun-sentinel.com/2014-05-30/news/fl-pembroke-pines-buys-womens-prison-20140530_1_southwest-ranches-town-attorney-keith-poliakoff-pembroke-pines

3.5 Intermodal Logistics Centers (ILCs), Warehouses and Distribution Centers

In order to handle the trade passing through the major freight hubs of Southeast Florida, the region must have an extensive network of warehouses and distribution centers. Given the region's long history in international trade, the existing facilities represent a mix of old and new, from the most basic to the technologically advanced. While vacant land is limited for future development, some opportunities still exist for new facilities as well as the potential for the redevelopment of the more obsolete properties. In addition, larger logistics campuses, or intermodal logistics centers, (ILCs) are under development within the region as well as in adjacent communities. These investments, combined with growth in light manufacturing and other related services will help drive growth and compliment other transportation related investments.

3.5.1 Warehousing and Wholesale Industries

Warehousing and wholesale trade establishments provide a key element to the freight and logistics industry of Southeast Florida. Adequate facilities allow for a well-rounded system to meet all needs of a customer.

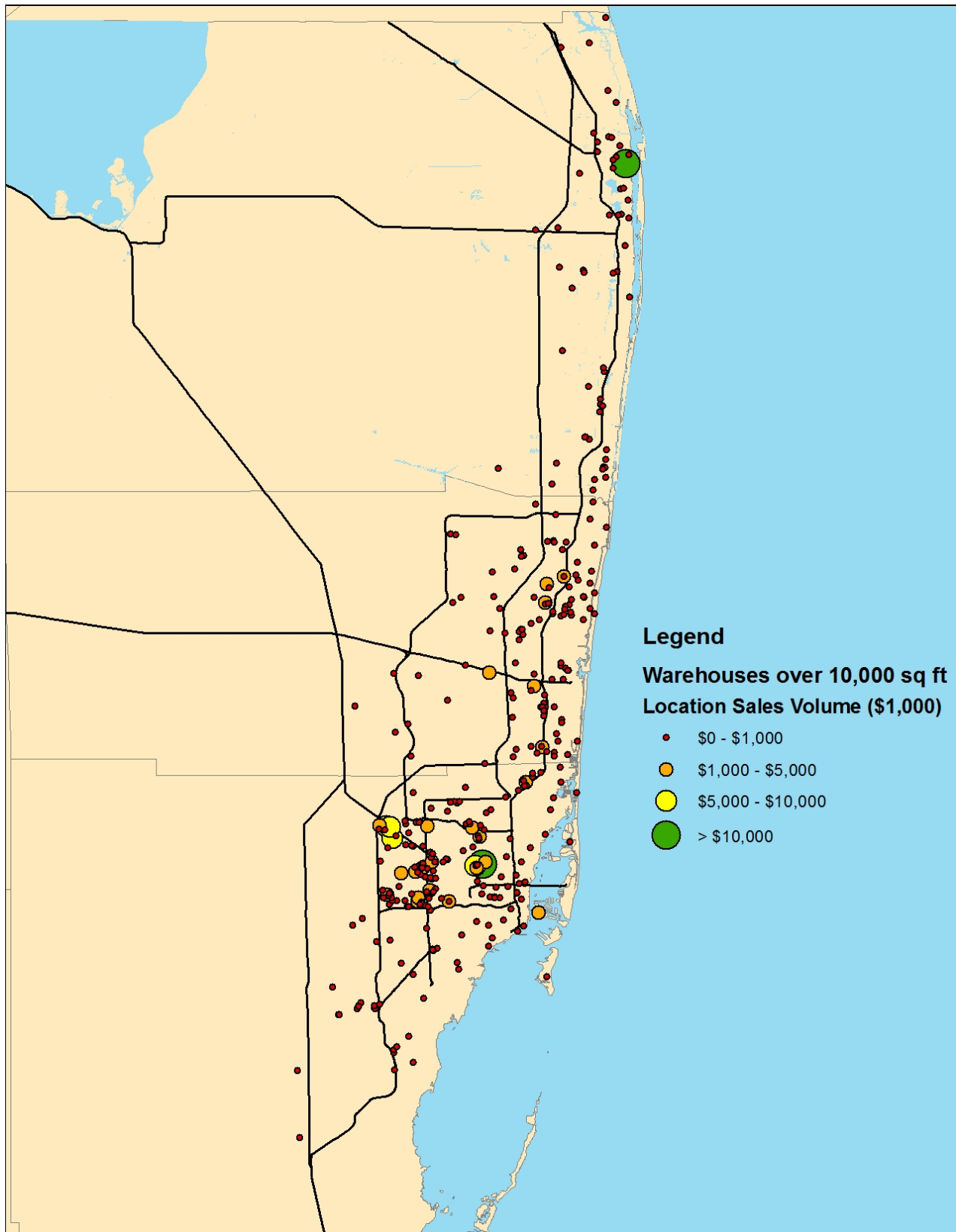
Warehousing Industry

To determine the extent of the warehousing industry, 2013 InfoUSA data was used. Four industries were identified which represent businesses operating as freight warehouses. Businesses classified by the North American Industry Classification System (NAICS) as one of the following were included as part of this warehousing profile:

- 493110: General Warehousing and Storage
- 493120: Refrigerated Warehousing and Storage
- 493130: Farm Product Warehousing and Storage
- 493190: Other Warehousing and Storage

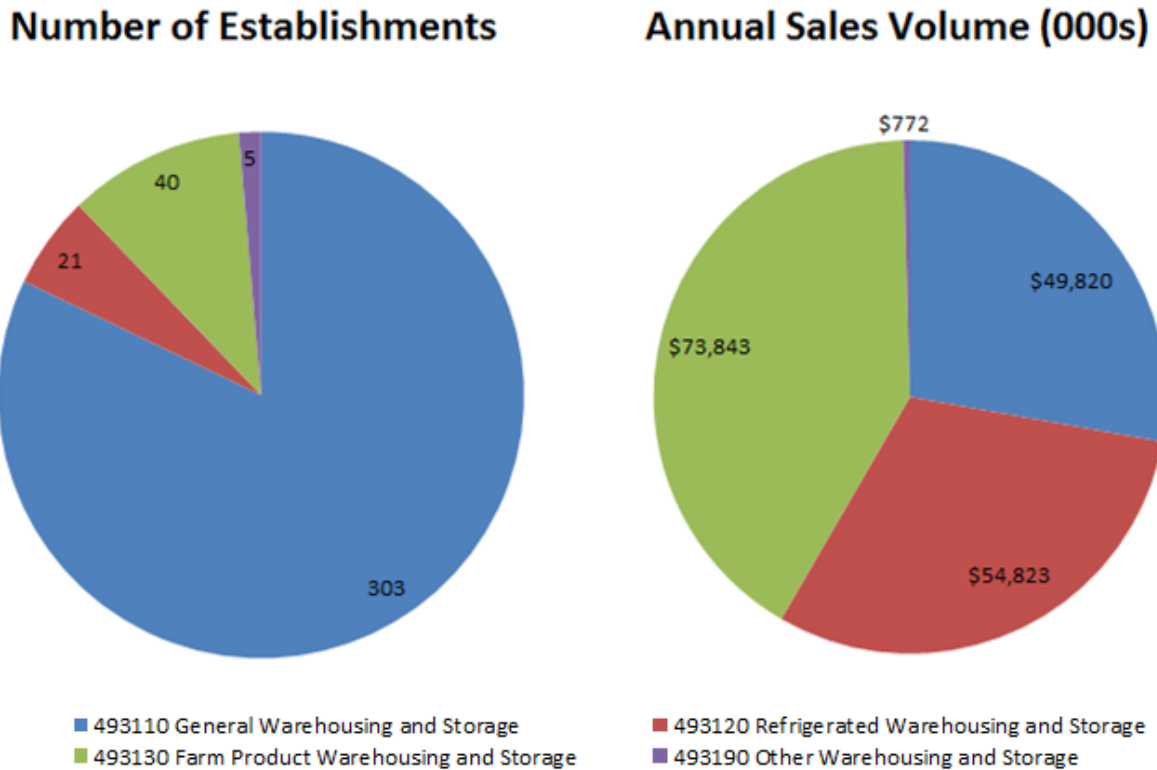
Due to the expansive size of the three county region and the ability to handle containerized freight, only warehouses listed as greater than 10,000 square feet are included in this analysis. In total, there are 369 warehouses meeting this criteria with an annual sales volume close to \$180 million as illustrated in Figure 3.8. This represents 93 percent of all such establishments and 96 percent of the annual sales volume when warehouses of all sizes are included. Figure 3.9 shows the breakdown by NAICS by both number of establishments and sales volume. While General Warehousing and Storage is overwhelmingly the largest by number of establishments, the annual sales volume of Farm Product Warehousing and Storage is significantly higher than any of the other categories. Most likely this is due to the perishable nature of farm products and the need to have efficient turnaround rates resulting in more product passing through these facilities.

Figure 3.8 Warehouses Over 10,000 Square Feet Based on Sales Volume



Source: InfoUSA 2013.

Figure 3.9 South Florida Regional Warehouse Profile



Source: InfoUSA 2013.

More interesting is a look at where these facilities are located within the region. Table 3.5 shows the breakdown by county for these facilities. In looking from north to south, the number of establishments greatly increases, with 54 percent of such warehouses located in Miami-Dade County. Broward County contains 30 percent and the remaining 15 percent are located in Palm Beach County. The annual sales volume highlights this even further. Annual sales volumes in Miami-Dade represent 69 percent of the regional total with Broward and Palm Beach making up the remainder with 18 percent and 13 percent, respectively.

Table 3.5 County Warehousing Profiles

NAICS	Establishments			Annual Sales Volume (000s)		
	Palm Beach	Broward	Miami-Dade	Palm Beach	Broward	Miami-Dade
493110	49	92	159	\$6,800	\$12,104	\$30,542
493120	2	5	14	\$12,873	\$4,206	\$37,744
493130	5	10	25	\$3,276	\$14,652	\$55,915
493190	1	4	0	\$182	\$590	\$0
Total	57	111	198	\$23,131	\$31,552	\$124,201

Source: InfoUSA 2013.

Part of why Miami-Dade has a much larger proportion of annual sales is due to the location of high producing warehouses. Within the region, there are six warehouses which have annual sales volumes over \$5 million as listed in Table 3.6. Five of these six are located in Miami-Dade, with the one remainder located in Palm Beach County at the Port of Palm Beach.

Table 3.6 Warehouses with Over \$5 Million in Sales Volume

Warehouse Type	Company	City	Sales Volume (Millions)
Farm Product	Integrated Distribution System	Miami	\$19.28
Refrigerated	Port of Palm Beach Cold	Riviera Beach	\$12.38
Refrigerated	Preferred Freezer Svc	Medley	\$9.90
Refrigerated	United States Cold Storage	Medley	\$9.28
Farm Product	Keuhne & Nagel	Medley	\$7.71
Refrigerated	United States Cold Storage	Miami	\$6.56

Source: InfoUSA 2013.

Wholesale Industry

To represent the wholesale industry in the region, establishments classified with NAICS 42 (Wholesale Trade) were selected. Unlike the warehouse facilities, many wholesale trade locations do not identify annual sales volume. As such, total employment was used to classify these facilities. Selecting only establishments with at least 25 employees, there are 716 wholesale trade establishments in the three counties employing over 60,000 persons total as illustrated in Figure 3.10. This represents a small portion of the total number of establishments when all employment sizes are considered. Only 4 percent of the total number of establishments are detailed in Table 3.7 but they represent 46 percent of the total wholesale employment.

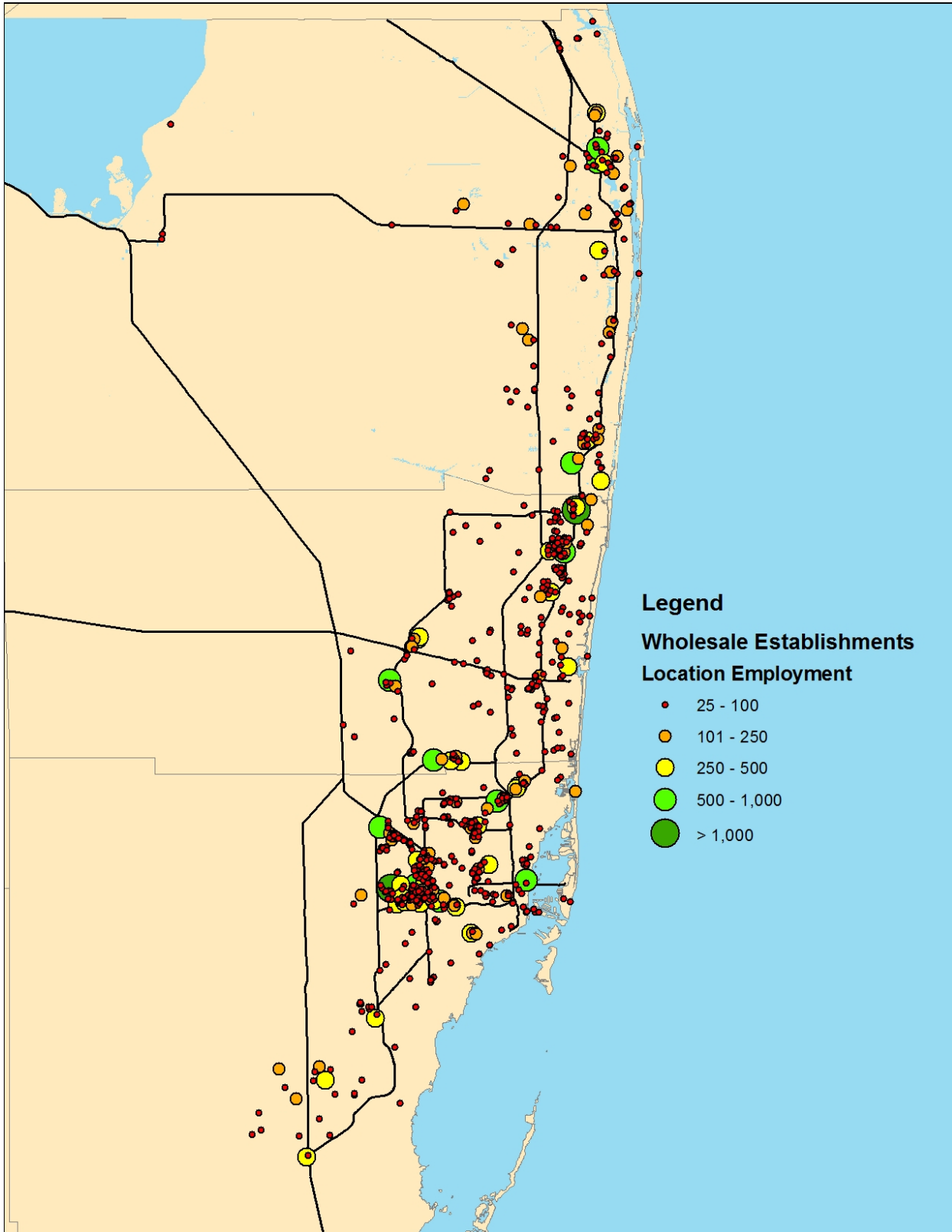
Similar to the warehouse facilities, there is a greater concentration in the southern portion of the region. Miami-Dade County contains 51 percent of all employers of this type and 52 percent of all employees. Broward County contains 32 percent of employers with 29 percent of the employees. The remaining 17 percent of employers and 19 percent of employees are located in Palm Beach County.

Table 3.7 County Wholesale Establishments and Employment

County	Establishments		Total Employment	
	Count	Percent of Total	Count	Percent of Total
Palm Beach	123	17%	11,502	19%
Broward	228	32%	17,597	29%
Miami-Dade	365	51%	31,230	52%
Total	716	100%	60,329	100%

Source: InfoUSA 2013.

Figure 3.10 Wholesale Establishments Based on Employment



Source: InfoUSA 2013.

Of these employers, some of them stand out in particular as they employ a large number of people. There are seven wholesale trade establishments in Southeast Florida with over 750 employees as listed in Table 3.8. Four are located in Miami-Dade, two in Broward, and one in Palm Beach. While the magnitude of employment does not always indicate a similar level of annual sales, these employers represent six of the top seven¹² wholesale trade establishments by annual sales where data was available. Applica Consumer Products Inc is the sole establishment not included as annual sales volume is not available. The other six represent over \$2.3 billion in total annual sales volume.

Table 3.8 Wholesale Establishments with Over 750 Employees

Company	City	Employees	NAICS Description
Intcomex Inc	Doral	1,971	Computer & Peripheral Equip/ Software
Publix Distribution Ctr	Deerfield Beach	1,500	Other Miscellaneous Durable Goods
Ivax Laboratories Inc	Miami	1,000	Drugs & Druggists' Sundries
Applica Consumer Products Inc	Miramar	905	Home Furnishing
Cheney Brothers Inc	Riviera Beach	865	Other Miscellaneous Durable Goods
Boston Scientific Corp	Doral	800	Medical, Dental/Hospital Equip/Supls
Tampa Cargo	Miami	791	Other Miscellaneous Durable Goods

Source: InfoUSA 2013.

3.5.2 Intermodal Logistics Centers

ILCs provide a home for warehouse and distribution centers and often include other components like light industrial manufacturing, rail spurs, truck services, workforce training, foreign trade zone benefits, and more. Over the last several years there have been a variety of proposals here in Southeast Florida, both within the urban area and in the surrounding rural communities. These facilities come in all shapes and sizes and typically represent private sector investments. Over the last two years, the state has taken two critical actions to help facilitate the development of ILCs as part of Florida's global logistics network. First, in 2013 a new grant program was created to support ILC development. The Intermodal Logistics Centers Infrastructure Support Program allows at least \$5 million per year to be available from the State Transportation Trust Fund for ILC development. A 50 percent match is required of all applicants. The first year of funding yielded investments for four ILCs across the state. Second, in 2014 the state defined SIS designation criteria for ILCs, creating the opportunity for ILCs to be designated as part of the SIS. Those that qualify will be able to compete for SIS funding. This is significant development because the SIS is the state's primary new capacity funding program.

¹² Gold Coast Beverage Distr is the seventh establishment with 700 employees.

Southeast Florida is home to a variety of ILC projects. A project has been funded and partially built in Miami-Dade County; a project is under development in Palm Beach County, and a project is under study in Broward County. Each is described below.

South Florida Logistics Center. This project received \$2.5 million from the first year of the ILC Grant Support Program for site access roads, truck loading ramps, and internal traffic circulation roads. This \$40 million logistics complex will create and support 1,015 jobs. Plans for the 200 acre site include the development of nearly 2 million square feet of industrial space. The first building at this complex, a 170,000 square foot facility, is open and fully operational. Included in this space is 30,000 square feet of refrigerated space. Building 2 provides 274,000 square feet of new Class A Cross-Dock Distribution-Warehouse space, and Building 3 provides a Class A Rear-Load Distribution Warehouse with 111,000 square feet. Figure 3.11 provides an illustration of the site.

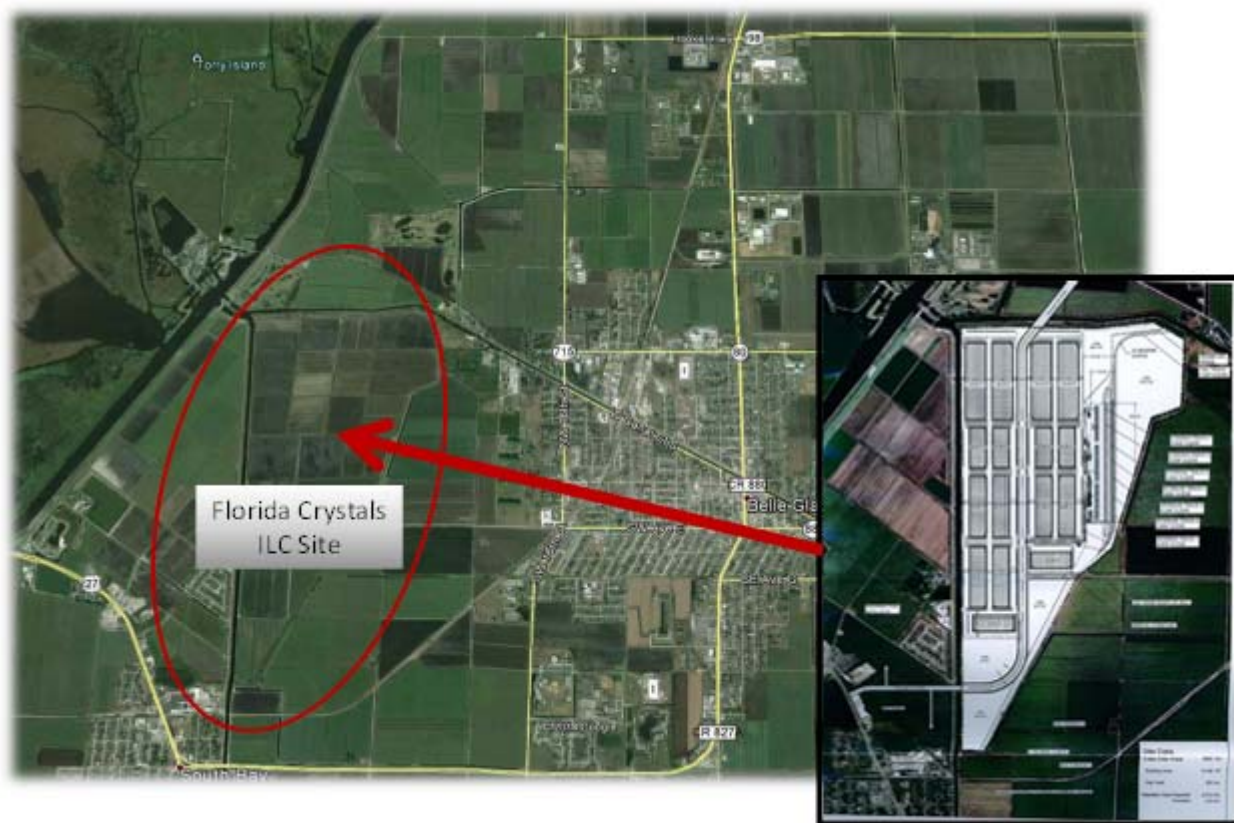
Figure 3.11 Illustration of South Florida Logistics Center Site



Source: Google Earth and Cambridge Systematics, Inc.

Florida Crystals ILC. Palm Beach County is home to one of the state’s original ILC projects. This project, led by Florida Crystals, consists of an 850 acre industrial development in western Palm Beach County. Florida Crystals has received county approval for up to 10 million square feet of distribution and warehouse space as well as a rail yard. Due to the location of this development, the proposed US 27 rail link would be an important component of the ability to effectively serve Southeast Florida ports over the longer term. This development is anticipated to create up to 4,000 new jobs in the tri-city area of Belle Glade, Pahokee, and South Bay, severely reducing the high unemployment rate in the area. While the site was anticipated to break ground in 2014, delays in the expansion of the Panama Canal have pushed the project out, possibly to 2017. The project site is illustrated in Figure 3.12.

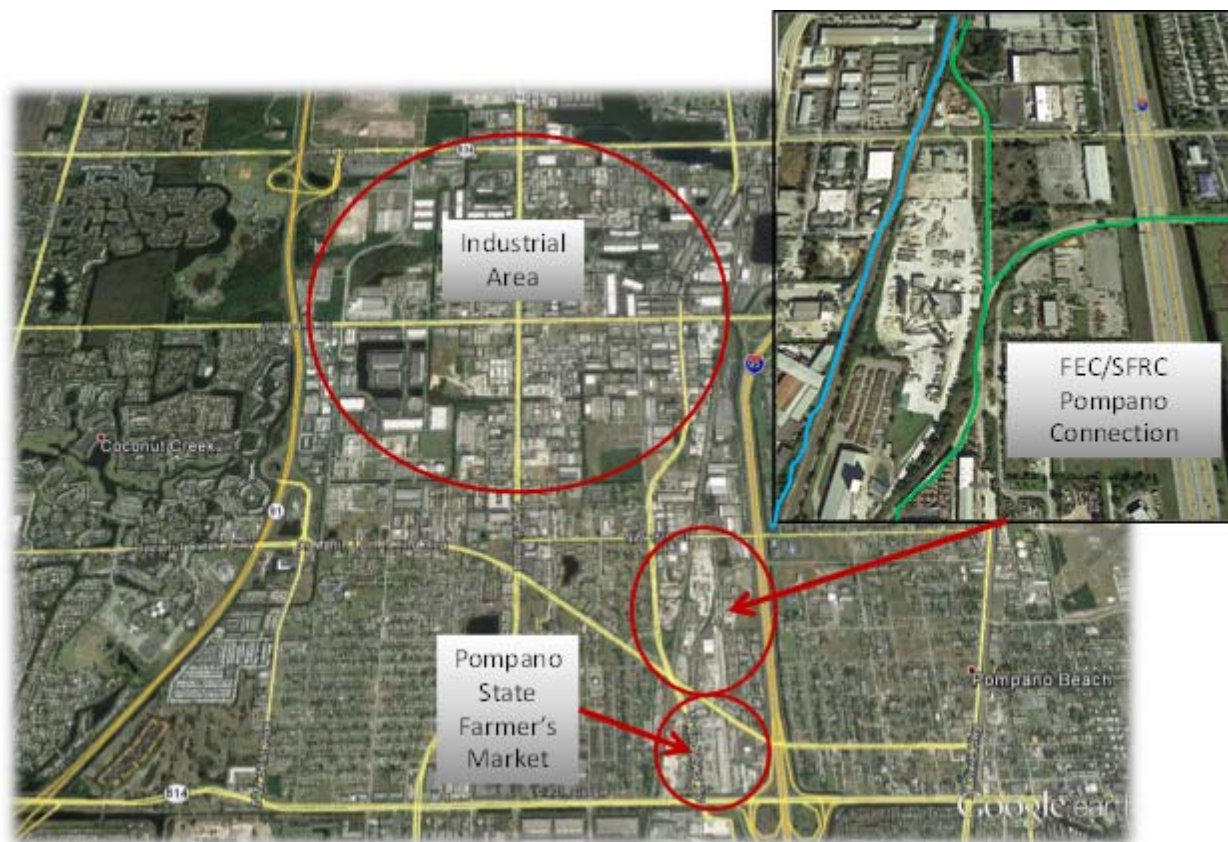
Figure 3.12 Illustration of Florida Crystals ILC Site



Source: Google Earth and Florida Crystals, Inc.

Farmers Market/Pompano Redevelopment. Aside from internal expansion at Port Everglades and the previously mentioned Pines Correction Facility Site, Broward County has limited opportunities to develop new logistics related capacities. Those opportunities that do exist are focused on redevelopment projects. One location well suited for redevelopment is the Farmers Market in Pompano. This area is largely industrial today. It is served by both CSX and FEC Railway and the top rail priority (see Section 6) consists of linking these two railroads at this site. Figure 3.13 illustrates the property and the existing rail trackage.

Figure 3.13 Illustration of Farmers Market/Pompano Site



Source: Google Earth and Cambridge Systematics, Inc.

In addition to ongoing and possible developments in Southeast Florida, there are other possible developments in Florida that have the potential to impact our freight and logistics operations. Specifically, proposed ILCs in Hendry (Airglades International Cargo Airport and Sugar Hill¹³), Glades (Americas Gateway Logistics Center) and St. Lucie (Florida Inland Port) counties will provide the region with access to new capacities in modern state of art facilities. Each is briefly described below:

- **Airglades International Cargo Airport and Sugar Hill.** This site, located in Hendry County along the US 27 corridor, is focused on air cargo opportunities, specifically serving as a reliever to Miami International Airport. Developers are working with the Federal Aviation Administration (FAA) as part of its Airport Privatization Pilot Program, which allows private companies to own, manage, lease, and/or develop public airports. To complement this development, U.S. Sugar is looking to develop 43,366 acres in Hendry and Glades counties (Sugar Hill Sector Plan) which surrounds the Airglades Airport into mixed use including residential, retail, office, and warehousing/industrial. These plans are dependent on South Florida Water Management District's option to purchase some or all of U.S.

¹³ Sugar Hill also spans into Glades County.

Sugar's remaining 153,200 acres as part of the Florida Forever land acquisition program. A full build out of these combined proposals would significantly alter transportation patterns in South Florida's interior, and likely significantly impact US 27 and SR 80 truck volumes.

- **America Gateway Logistics Center.**¹⁴ This master planned facility is located in Glades County along US 27 and SCFE. This 6,700 acre site has plans for a mixed use development, including workforce training, manufacturing, warehouses and distribution centers and a rail intermodal yard. Developers are actively promoting this site, with all necessary land use and zoning in place. The site envisions serving Central, Southeast and Southwest Florida markets. A full build out could significantly impact Southeast Florida by shifting truck patterns and providing new industrial capacity.
- **Florida Inland Port.** Based in southwest St. Lucie County, this site was originally envisioned as a 4,000 acre master planned site providing an intermodal rail yard and industrial infrastructure. Over the last few years it has gone through significant efforts to build community support. Currently, the site being considered is closer to 2,000 acres and project feasibility is being evaluated by developers. If developed, it would provide new industrial capacity to the North along the FEC and I-95 corridors.

Each of these projects continues to advance although none have yet broken ground. These projects must be monitored and partnerships developed and maintained to ensure they directly benefit Southeast Florida as they come on line.

3.6 Truck Parking

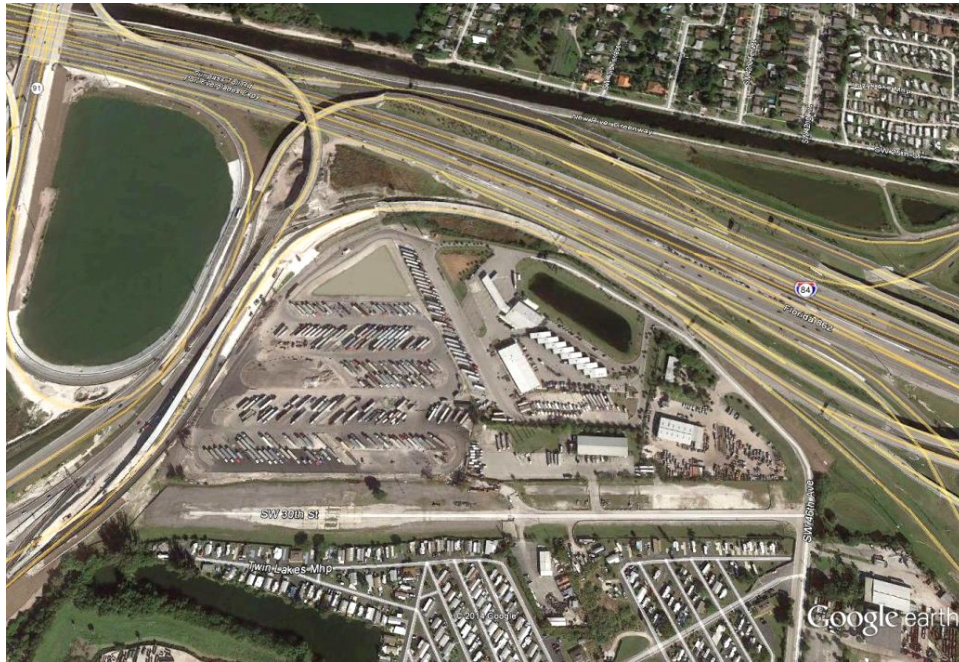
Truck parking remains a significant concern in Southeast Florida, particularly as Port Everglades, PortMiami, and Miami International Airport undertake aggressive growth programs. Each of these facilities has developed recent master plans with market forecasts calling for a more than doubling of cargo over the next 20 years. While some of this growth will be driven by local consumption markets, a greater proportion will be driven by the expanded market reach of these global hubs. For example, as the seaports deepen and compete for first port of call status with the larger vessels, the trucking community will be called upon to deliver a larger volume of cargo to a larger market area. This will further strain the limited truck parking locations existing today as there will be more long haul truckers needing a place to service their vehicles and park and rest to meet their federal hours of service requirements.

Over the last several years, conditions have gotten better with the construction of the 595 Truck Stop at the intersection of I-595 and Florida's Turnpike (see Figure 3.14). The 595 Truck Stop advertises itself as the only full service truck stop and travel center south of Ft. Pierce. With a parking capacity of over 300 tractor/trailers, this facility also provides a certified scale, truck service and repairs, tire sales, and other amenities. Frequent feedback from

¹⁴ <http://www.gladescountyledc.com/index.php/target-industries/global-logistics>

stakeholders is that this facility is always at capacity, signifying the greater need within the region for more parking facilities.

Figure 3.14 Florida 595 Truck Stop



Florida 595 Truck Stop, the only full service Truck Stop and Travel Center south of Ft. Pierce, is conveniently located at the Intersection of I-95 and 441 (State Rd.7) near the Florida Turnpike. 38,000 Sq. Ft. fueling and retail plaza to accommodate South Florida's Trucking Industry and the Traveling Public:

- Ambest Truck Service and Repairs
- Ambest Tire Sales & Service
- 4,000 sq. ft. Chrome Shop
- 90 Seat Home-style Diner
- Full Sports Bar / Vegas-Style Arcade
- C.B. / Radio Shop
- Pizza & Sub shop
- Certified Scale
- Parking for over 300 Tractor / Trailer(s)
- Drive-Thru Truck, Trailer, Bus & RV Wash Center and much more!



Member of **NATSO, Inc.**

Source: Google Earth and <http://www.595truckstop.com/>

Other regional efforts have been implemented to address truck parking needs. FDOT has been working on remodeling the service plazas on Florida's Turnpike to be more accommodating to truck drivers. The Pompano Beach Service Plaza was recently renovated which included increasing the number of parking spaces from 18 to 44. Work has also been undertaken by the Miami-Dade MPO to quantify the truck parking shortage. In a two-phase study conducted by the Miami-Dade MPO, only 293 truck parking spaces were identified for local, independent operators and long haul interstate drivers in the county. In contrast, estimates put demand at

12,000 spaces for both over-the-road and local operators. Possible sites were identified and screened. In October 2013, the Miami-Dade MPO contacted the parcel owners of the final list of sites to inform them that their properties had been identified as potential sites for truck parking development. Several of the final sites represent property owned by FDOT. A feasibility study currently is underway by FDOT to investigate the development of a full service truck parking facility on the preferred site located at the northwest corner of Florida's Turnpike and NW 12th St. The site is illustrated in Figure 3.15.

Figure 3.15 FDOT Owned Property for Potential Truck Parking Development



Source: Google Earth and Cambridge Systematics, Inc.

As the region continues to grow and benefit from its freight and logistics investments, truck parking will remain an issue. Needs have been identified and quantified; there has been private and public sector interest in developing new sites; many of the ILC plans include truck parking and services. Truck parking must become a focal point within the region's identity as a global logistics hub; without effective and efficient drayage operators and long haul carriers, the region will not succeed and this cannot happen without parking and service facilities.

4.0 Global, National, and State Initiatives

4.1 Shifts in Global Trade

4.1.1 Trade Lane Shifts

One of the largest anticipated shifts in international trade is expected to come from the opening of the Panama Canal Expansion. Currently, ships are limited in size based on the existing locks completed in 1914. While there is some variation based on ship type (passenger, container, tug-barge, etc.), the maximum length allowed is 965 feet, with a maximum beam of 106 feet and maximum draft of 39.5 feet. These so called Panamax vessels equate to a container vessel of roughly no more than 5,000 TEU. Recognizing the limitations of the canal and the opportunities to be had, the people of the Republic of Panama voted to expand the canal in 2006. Construction was soon underway with the formal start of the project in September 2007. This expansion project will add a third shipping lane through the construction of lock complexes at each end of the canal. As defined by the Panama Canal Authority in 2009, these new locks will be 1,400 feet long, 180 feet wide, and 60 feet deep. This corresponds to a ship no larger than 1,200 feet long and 160 feet wide with a tropical freshwater (TFW) draft of 50 feet. These ships will have over twice the capacity of the current Panamax ships with the ability of handling upwards of 12,000 TEUs.

What this means for global trade, and the United States in particular, is a shift in trade routes. Rather than trade from Asia entering the United States through the West Coast and either railed or trucked east, it is anticipated that some portion of Asian cargo will traverse the Panama Canal to the East Coast. While this will increase transit time, the all-water route will be potentially cheaper than the current method, and likely more reliable given continued delays at West Coast ports. In preparation for this expansion, seaports along the Eastern Seaboard of the United States have been transforming themselves in anticipation of these larger ships. In addition to PortMiami and Port Everglades, other ports such as Baltimore, Jacksonville, Savannah, and Charleston have made significant investments in their infrastructure to prepare for the canal opening in early 2016. Such investments have included channel dredging to at least 50 feet, larger berths, bigger cranes, and new and improved intermodal connections.

Nicaragua has also been in serious discussions to build their own canal through the country which would directly compete with the Panama Canal. Backed by HKND, a Hong Kong based company, the official groundbreaking ceremony on this \$50 billion, 173 mile waterway was held in December 2014.¹⁵ More than 100 years in the



¹⁵ <http://www.newyorker.com/news/news-desk/breaking-ground-nicaragua-canal>

works, construction of this project would serve as a major economic boom to the people of Nicaragua yet it faces significant opposition. Concerns arise due to the relocation of thousands of people, impacts on drinking water, and biodiversity in Lake Nicaragua. Construction has thus far focused on an access road to let through heavy equipment.

Another major shift in global trade comes from the potential lifting of the trade embargo with Cuba. This embargo has been in place since 1960 and has limited relations between the United States and Cuba. While some interaction between these two countries occurs presently, this is predominately related to humanitarian aid. In December 2014, President Obama announced a change in these policies to take steps towards more normalized relations. The significant ties between Cuba and South Florida position the region well increased trade when this occurs. However, this trade embargo is anticipated to be lifted in a piece-meal fashion with normal relations not expected for several years to come.

4.1.2 International Manufacturing Centers and Nearshoring

While China has been one of the largest trading partners with the United States, rising costs are driving manufacturers out of the country. Over the last decade, wages have increased 20 percent annually in some parts of China. As costs have risen, manufacturers have taken to Southeast Asia and India. In Vietnam, wages may be half of those in China. Popular leather goods company Coach, Inc. has stated that its Chinese production will decrease from upwards of 80 percent of total production in 2011 to 40-50 percent in 2015.¹⁶ New factories are anticipated to be opened in India, Vietnam, and the Philippines. In addition, manufacturers are looking at Latin America (Mexico, Central America, Caribbean, and South America). Nearshoring to Latin America will likely cause a modest shift in international trade patterns, and subsequently, impact use of Gulf and East Coast seaports, creating new opportunities for Southeast Florida seaports.

This shift to other countries is not found in one company alone. With the desire to find lower labor costs and afford wider profit margins, there has become a significant shift in the major manufacturing centers. In doing so, the typical shipment from China to the United States via the Pacific Ocean is no longer the most lucrative option. Alternatively, vessels are traversing the Suez Canal which is less restrictive than the current Panama Canal in terms of vessel size. As there are no locks along this canal, the only limitations are in depth (allowable 66 foot draft) and height (223 foot air draft) due to the Suez Canal Bridge. Unlike the Panama Canal, however, one major concern for vessels traveling this waterway is the threat of attacks from terrorist groups who target this important waterway.

While most ports on the Eastern Seaboard of the United States are not planning to dredge to the 66 foot maximum depth of these Suezmax ships, some ships are already making calls to Florida ports, albeit lightly loaded. As early as 2010, the *Suez Canal Bridge* arrived at JAXPORT after visiting other East Coast ports. January 2012 also saw the largest vessel to ever call at

¹⁶ http://www.leverstyle.com/press/press_details_wsj_05_13.htm

JAXPORT with the arrival of the *Yang Ming Milestone*. At over 1,000 feet in length and a width of 131 feet, this vessel would have been too large to fit through the current Panama Canal. Future vessel calls such as these can have a major impact on cargo volumes at Florida's seaports, with some sources believing the Suez Canal will have a greater impact than the increases attributed to the Panama Canal Expansion.

4.1.3 Free Trade Agreements

Free trade agreements also make increasing exports from the United States a more attractive option for manufacturers. A free trade agreement (FTA) is an agreement between two or more countries in which the involved parties agree on certain commitments related to the trade of goods and services. The main goal of FTAs is to reduce barriers to U.S. exports, protect U.S. interests abroad, and enhance the rule of law in the partner country. For example, the United States-Columbia Trade Promotion Agreement (TPA) resulted in over 80 percent of U.S. industrial goods exports becoming duty free when the TPA was implemented on May 15, 2012. Other benefits of this particular TPA were that more than half of U.S. exports of agricultural commodities became duty free and there was stronger protection and enforcement of intellectual property rights within Columbia. At present, the U.S. has 14 FTAs with 20 countries. Negotiations have also been ongoing for the Trans-Pacific Partnership involving the cooperation of 12 countries total. Of the existing FTAs, there is a heavy focus on nearby trading partners such as Canada and Mexico. Particularly important for Southeast Florida are the agreements in place with several South American countries. Since the region is a strong international hub for North-South trade movements, these FTAs yield an advantage for increased exports to these countries.



4.1.4 Perishables Imports

While Southeast Florida is a major leader for perishable imports such as fish and fresh cut flowers, many fresh fruits and vegetables bypass the state's ports and are instead taken up to Philadelphia and trucked down to the Southeast Florida market. Historically, this move was made due to concerns over pest control, most specifically the medfly, as the introduction of such pests would harm Florida's agricultural industry. However, with advances in technology, the probability of such a threat has been greatly diminished.

In January 2012, the Florida Perishables Trade Coalition (FPTC) was formed to help increase trade of perishable products through both airports and seaports. The efforts of this association and other members of the industry have led to the creation of a pilot program to meet this goal. The strict rules of the pilot program regarding the



process of cold treatment will help to ensure every effort is made to minimize the risk to Florida's agricultural industry. This pilot program began October 1, 2013 and allows for grapes and blueberries from Peru and Uruguay to enter both PortMiami and Port Everglades. By doing so, shipping time will be reduced by roughly six days at a savings of approximately \$4,000 per container, or 10 percent of the cost of delivery to Southeast Florida. This pilot program will not only provide gains to the growers and shippers, but will also provide jobs in Southeast Florida, reduce truck miles on the state's highway system, increase sales of fresher produce at grocery stores, and savings for consumers. Port Everglades received its first shipment of Peruvian grapes on November 29, 2013, followed by PortMiami on December 2, 2013. Pending the continued success of this first stage of the pilot program, the Coalition seeks to expand the program to include other cold-treated products and other countries. Already, discussions are underway to expand this program to six more countries and encompass 15 additional commodities. Other ports on the Eastern seaboard are also seeking to make use of similar programs. The Port of Savannah started on a similar program on September 1, 2014.

4.1.5 Transshipment Committee

Prior to the events of 9/11, transshipment made up nearly 22 percent of total cargo movements at PortMiami. After these tragic events, CBP inspected nearly all transshipped goods, resulting in significant delays and added expenses. As a result, this transshipment opportunity has left the region and gone to other ports, namely Panama, Freeport, and Kingston, who can offer a greater competitive advantage primarily due to the lack of cargo inspections.

In an effort to bring back this cargo, PortMiami contacted CBP in July 2013 to encourage the development of a pilot program. This effort has led way to the creation of a Transshipment Committee which first met on November 15, 2013, and will continue to meet on a quarterly basis. While PortMiami has led this initiative, terminal operators and all other stakeholders are welcome to participate, thus opening up the possibility of other regional hubs, such as Port Everglades, to participate. In addition to this committee, three other actions were taken as part of this initiative:

- Assignment of a "Customer Service Manager" who terminal operators can contact directly to discuss delays and help facilitate the flow of cargo. Currently, Robert Martin, the Chief of the Anti-Terrorism Contraband Enforcement Team (ATCET), has taken on this role.
- Creation of an "Outreach" role to work with FCBF. This collaboration seeks to create an "In-Bond" class to ensure that transshippers understand in-bond requirements. Kenneth Haeffner, the Area Port Director (APD) of trade for CBP, has filled this position.
- Terminals will provide CBP an advanced list of merchandise. In return, CBP will coordinate the expedited review of in transit merchandise (similar to methods for perishable goods).

4.2 National Freight Program

4.2.1 MAP-21 & National Freight System

The Moving Ahead for Progress in the 21st Century Act (MAP-21) has set the stage for performance-based program management at all levels from planning, to tool development, to reporting requirements. MAP-21 is a “clean bill” free of earmarks and with very little in terms of discretionary programs. Perceived shortcomings of the program include the loss of some valuable initiatives from the Safe, Accountable, Flexible, Efficient, Transportation Equity Act: A Legacy for Users (SAFETEA-LU) such as the Vehicle Miles Traveled (VMT) Pilot Program and the National Cooperative Freight Research Program (NCFRP), and the failure to consider Corporate Average Fuel Economy (CAFÉ) changes in fuel economy when projecting future revenues. While the elimination of the earmarking system is generally considered a positive development, the lack of discrete nuggets of funding has meant that the fiscal impact of the bill has been less immediate. As its various provisions play out, MAP-21 is intended to act as a slow moving train that gradually gathers momentum behind core initiatives that are worked out through consultations with the industry and stakeholders, rather than by explicit legislative directive. It is possible that certain states and MPO’s may be lulled by the lack of short term deadlines in the bill and discover too late that they have fallen behind with respect to key initiatives described in the bill’s text.

The passage of legislation was only the first step in the process. Equally important is a series of rulemakings that MAP-21 generated that are only now beginning to come into effect. These rulemakings have the capability of slowly but steadily shifting the priorities and approach of the US DOT with respect to freight funding and prioritization. In addition, the legislation set up major initiatives such as the establishment of a national freight network and a national freight advisory committee, the makeup of which will have near term impacts on the way future freight policy is defined and developed. The National Freight Advisory Council (NFAC) consists of 47 voting members from outside of DOT, representing various transportation modes, geographic regions, policy areas, and associations. Members will serve two year terms and will meet at least three times per year. Current membership was announced in May 2013 which includes Carlos Gimenez, Mayor of Miami-Dade County, as the only representation for the State of Florida.

The deadlines for action by states and MPO’s are often set from an interval of time after the final rules are published in the federal register, yet MPO’s should assume an active approach prior to the issuance of the rules. There are several examples of activities in which the MPOs should already be monitoring and discussing. The earlier the MPOs get involved in the process while the major instrumentalities are still being formed, the greater their impact on the eventual outcome is likely to be.

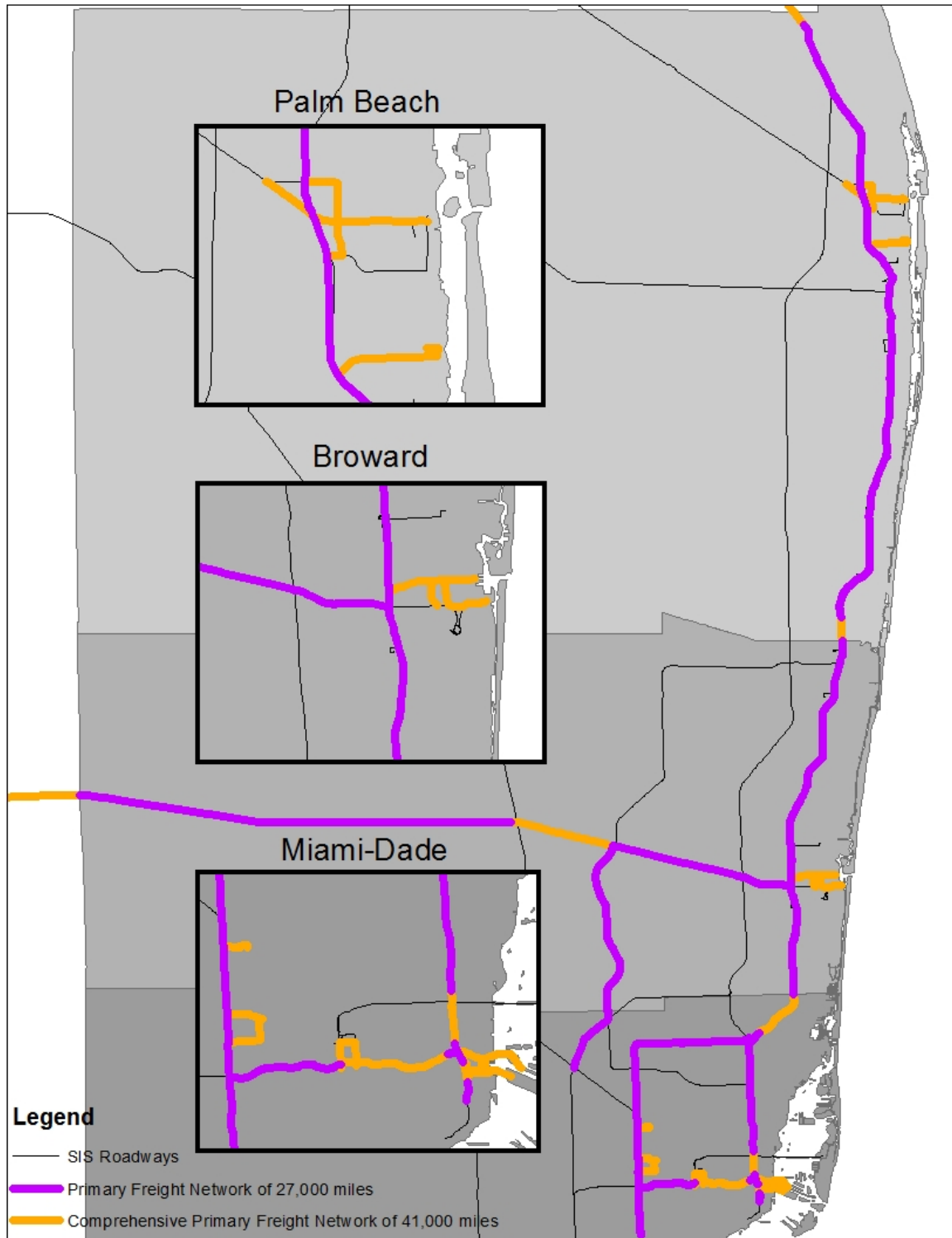
For instance, as part of MAP-21, DOT is required to establish a national freight network to assist the States in directing resources for the improvement of freight movements on highways. This Primary Freight Network (PFN) must be designated within one year of the enactment of MAP-21. The initial designation may contain no more than 27,000 centerline

miles of existing roadways. An additional 3,000 centerline miles may be added which are deemed critical to the future efficient movement of goods. On November 19, 2013, the draft initial designation of the PFN was released, with final comments submitted on February 15, 2014.

With this release, several challenges have already been identified. The limitation to 27,000 centerline miles results in an unconnected network, hindered by necessary connections to Mexico and Canada which required several thousand of these limited miles. Other key challenges include the lack of a stated application for the highway network, data limitations, and the centerline requirement versus a corridor approach.

In the face of these challenges, Figure 4.1 shows how this draft designation affects Southeast Florida. As the 27,000 centerline mile designation did not create a connected effort, a 41,000 centerline mile designation is also displayed. Within both of these networks, key roadways are missing. For example, I-395 is designated for the purpose of connecting the Watson Island Seaplane Base, not for its connection to the new PortMiami tunnel which will give trucks direct access to the highway system from the port. Instead, the roadways in Downtown Miami which trucks previously had to traverse are still under consideration. Other missing roadways include Florida's Turnpike, the Sawgrass Expressway, I-595 east of I-95 which provides direct access to Port Everglades, and US 27. Even more critical is that the initial 27,000 centerline mile designation assigns no connection for Southeast Florida's key freight hubs to the rest of the country due to missing pieces of I-95 in all three counties.

Figure 4.1 MAP 21 Preliminary Freight Network Designation in Southeast Florida



Source: U.S. DOT, 2013.

4.2.2 Water Resources Reform and Development Act of 2014

The Water Resources Reform and Development Act (H.R. 3080) of 2014, or WRRDA, reauthorized the U.S. Army Corps of Engineers to develop and maintain the United States' port and waterway infrastructure needs as well as targeted flood protection and environmental restoration. This bill has profound affects across the nation based on the projects included for funding with each cycle. For Florida, this bill includes improvements to the ports of Jacksonville and Canaveral in addition to the Everglades Restoration Plan. It also advances the study of a dredging project at the Port of Palm Beach. The next version of this bill will also be essential for the efforts at Port Everglades to deepen and widen the navigational channels. While PortMiami has already secured funding and is moving forward with dredging, WRRDA is seen as an important factor in increasing cargo traffic. Without additional East Coast deep dredge capacity, it is believed that the U.S. will lose jobs to seaports in other countries who can meet the needs of the larger ships. WRRDA passed both houses of Congress with an overwhelming majority and was signed into law by President Obama in June 2014.

4.2.3 Commercial Vehicle Operations, Regulation and Enforcement

The Commercial Vehicle Information Systems and Networks (CVISN) program is a key part of FMCSA's goal to improve commercial motor vehicle safety. Goals include improved safety, simplification of operations, and improved security. CVISN manages this by focusing on high-risk operators, improving the accuracy of credentials, electronic screening, and enabling the online application and issuance of credentials. As of November 2014, Florida was one of 33 states to be Core CVISN Compliant. Florida also participates in the nationwide e-screening enrollment program PrePass, exchanges credential data by uploading to the Safety and Fitness Electronic Records (SAFER) system, and deploys automatic electronic processing of both the International Registration Plan (IRP) and the International Fuel Tax Agreement (IFTA) credentials. FDOT currently is developing a Commercial Vehicle Operations (CVO) Strategic Plan to help ensure trucking interests remain an integrated component in the state's overall freight program.

4.2.4 Freight Advanced Traveler Information System

The Freight Advanced Traveler Information System (FRATIS), as part of US DOT's Intelligent Transportation Systems (ITS) Research Program, is designed to improve truck routing and dispatcher decision making in order to reduce unproductive moves. This drayage optimization focuses on integrated load matching and freight information exchange, including appointment scheduling and equipment availability. The daily work plan developed seeks to complete the required movements in the most time efficient manner possible given traffic, driver availability, and required time constraints. Performance of this system will be determined based on improvement in travel time and reductions in fuel consumption and emissions.



Southeast Florida was selected as one of three test sites due to high and growing freight volumes, the existing ITS program, and emergency management activity. Unique to Southeast Florida from the other testing sites is the emergency management aspect of this program. As Florida is vulnerable to severe weather events, most notably hurricanes, FRATIS seeks to increase emergency preparedness and response efficiency by providing real-time information to aid in post-event delivery coordination and critical infrastructure status reports. This will allow the freight industry to contribute to disaster recovery efforts as well as return to normal service in a shorter time frame. This aspect is being addressed through the development of a smart phone application so that emergency responders can report on infrastructure conditions in a more time efficient manner.

4.2.5 Smart Roadside

The Smart Roadside program is a joint modal initiative of FHWA and FMCSA. The overall vision for Smart Roadside is for vehicles, motor carriers, enforcement, highway facilities, and the like which collect data for their own purposes to share that data with other interested parties. This sharing will improve safety, security, efficiency, and mobility. Efforts by FHWA and FMCSA include funding tests and demonstrations, developing guiding principles, maintaining a Smart Roadside roadmap and projects database, and collaborating with other entities such as the Department of Homeland Security, the Environmental Protection Agency, and State and industry representatives. Figure 4.1 displays a variety of programs and activities which may plug in to this program in order to facilitate the overall goals.

Figure 4.1 Smart Roadside Concept



Source: U.S. DOT Research and Innovation Technology Administration.

4.2.6 Connected Vehicle Research

Connected vehicle applications focus on safety, mobility, and environmental applications. Safety applications are expected to increase situational awareness and reduce or eliminate crashes through either vehicle-to-vehicle (V2V) or vehicle-to-infrastructure (V2I) data transmissions. Such technologies are anticipated to reduce crash scenarios by up to 82 percent. Mobility applications seek to capture real-time data from equipment on vehicles and within infrastructure. Environmental applications help to capture environmentally relevant real-time transportation data to enable “green” transportation choices. In doing so, trips will become more fuel-efficient and eco-friendly. Connected Vehicle Technology will focus on a successful platform allowing for growth, expandability, and incorporation of new technologies. This platform must be based upon the range of human behaviors which will interact with the system. The Joint Program Office (JPO) seeks to ensure that such policies are based on a real-world application of this evolving technology. FDOT is actively pursuing an automated vehicle agenda, bring folks together in statewide summits and demonstrating technology in a research setting.



4.3 Florida’s Freight Program

Florida’s freight program is driven by FDOT’s Freight Mobility and Trade Plan described below. This Plan is under the umbrella of the Florida Transportation Plan (FTP) and the Strategic Intermodal System Plan. The FTP sets the state’s transportation policy and the SIS prioritizes capacity investments across all modes. In fact, the statewide freight system consists of a subset of the SIS. In addition to these FDOT initiatives, other partners have undertaken initiatives to specifically address the global trade and logistics opportunities for the state. The Department of Economic Opportunity’s Strategic Plan in part addressed the freight and logistics opportunities as related to economic prosperity and the Florida Chamber Foundation’s Trade and Logistics Study has helped identify strategies to enhance the state’s opportunities.

4.3.1 Freight Mobility and Trade Plan

As required by legislature in 2012, FDOT released the Freight Mobility and Trade Plan. This plan is intended to guide the programs, decisions, and actions of FDOT and to help inform the freight community of the state’s direction in such planning. The main goals of this plan are:

- Increase the flow of domestic and international trade through the state’s seaports and airports
- Increase the development of intermodal logistics centers in the state

- Increase the development of manufacturing industries in the state
- Increase the implementation of compressed natural gas (CNG), liquefied natural gas (LNG), and propane energy policy to reduce transportation costs

The first phase, the Policy Element, laid out the policy framework, identified responsibilities for implementation, and met the requirements of the Florida legislature. The second phase, the Investment Element, focused on identifying and prioritizing freight needs and investments as well as addressing MAP-21 requirements.

4.3.2 Florida Trade & Logistics Study 2.0

In 2010, the Florida Trade and Logistics Study was released by the Florida Chamber Foundation in partnership with FDOT. This study focused on trade flows and related logistics activity within the state of Florida and recommended actions to prepare for the widening of the Panama Canal. As a follow-up, the Florida Trade & Logistics Study 2.0 was released in 2013 to further build upon the foundation of the first study. The objectives for this second study were to identify opportunities for Florida to become a global trade hub, develop an implementation plan to accomplish this vision, and continue to build consensus among public and private partners in support of the vision and its implementation. Greater emphasis was put on increasing Florida-origin exports and expanding value-added services to support trading businesses and partners. The recommendations from the 2010 study were also expanded upon with greater stress on workforce growth, economic development, and business climate strategies.

5.0 Economic Impacts of the Regions Freight Industry

5.1 Description of the Freight and Freight Related Industry Sectors

In 2011, the Miami-Dade MPO released a report detailing the economic impacts of freight activity in Miami-Dade County. The methodology of this report was used as a basis for determining the economic impacts of the Southeast Florida region. The focus for Southeast Florida is on direct, indirect, and induced impacts of jobs, gross regional product (GRP), and economic output. While there are some other impacts, such as congestion, fatalities, construction, and taxes, these are not detailed here. Based on the Miami-Dade study, the GRP resulting from jobs in the region far outweighs these impacts, and, in fact they nearly negate one another out. Table 5.1 shows the overall impact of the freight industry in Miami-Dade County as determined by this prior study. The GRP accounts for over 98 percent of the overall impacts. As such, the focus of this study is on the impacts of various freight-related jobs in the region, rather than the impacts of congestion, maintenance, and the like.

Table 5.1 Net Economic Impact of Freight Activity in Miami-Dade County, 2008

Impact Type	Metric	2008 Impact (millions)
Positive	Gross Regional Product	\$25,106
	Tax Revenue	\$542
	Freight-Related Construction Projects	\$310
Negative	Maintenance, Congestion, Delay	\$401
Net	Combined Impact	\$25,557
	Gross Regional Product Impact	98%

Source: Miami-Dade MPO.

In order to measure the total impact of the freight industry on the Southeast Florida region, the 2012 IMPLAN models for Palm Beach, Broward, and Miami-Dade counties were purchased from the Minnesota IMPLAN Group (MIG). IMPLAN is an economic impact modeling system developed to determine regional economic impacts. This data is collected from a variety of public sources, such as the County Business Patterns.

Direct impacts are the results of immediate activity in the freight industry. This includes jobs, wages, and revenue from businesses and employees in freight related establishments such as wholesale trade, warehousing, and brokerage as well as in-house transportation services in other sectors. Across the three counties, the freight industry was directly responsible for over 278,000 jobs in 2012 as shown in Table 5.2. This is inclusive of in-house transportation jobs as determined from the Transportation Satellite Accounts and described in detail below. In total, these employees received a combined compensation of over \$19 billion. This translates to an

average salary of approximately \$69,000 annually, inclusive of wages and benefits, with employees related to in-house transportation receiving significantly less on average than their for-hire counterparts. This activity results in a total economic output (gross revenue) of \$55 billion corresponding to an equivalent GRP of nearly \$32 billion.

Table 5.2 Direct Impacts of Freight Industry in Southeast Florida, 2012

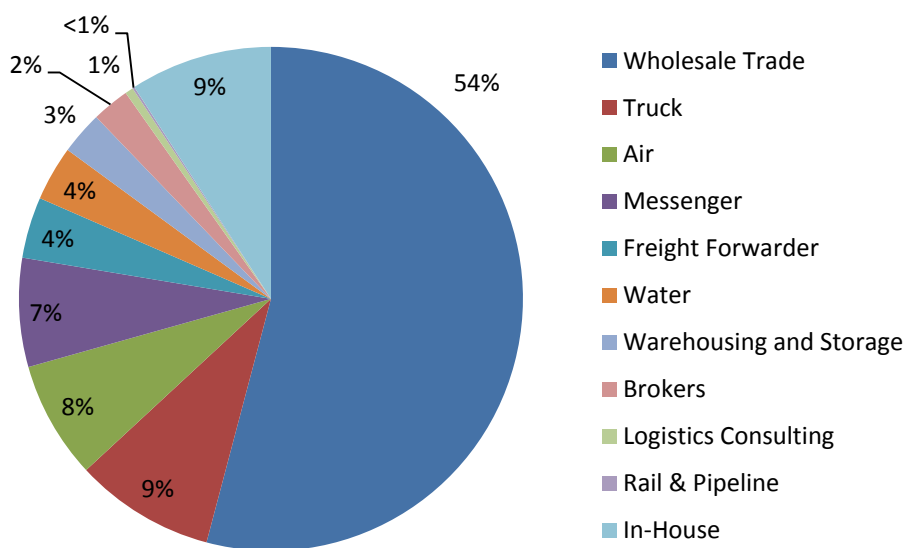
Metric	For-Hire	In-House	Total Direct
Jobs	253,418	25,410	278,828
Labor Income (millions)	\$18,264	\$1,050	\$19,314
Average Compensation	\$72,070	\$41,327	\$69,268
GRP (millions)	\$30,244	\$1,404	\$31,648
Economic Output (millions)	\$51,746	\$3,503	\$55,250

Source: U.S. Census County Business Patterns, IMPLAN, Cambridge Systematics.

As displayed in Figure 5.1 and detailed in Table 5.3 below, the wholesale trade industry represents the single largest employer of freight related businesses at 54 percent of the total employment. Wholesale trade is defined as “a form of trade in which goods are purchased and stored in large quantities and sold...to resellers...but not to final consumers.”¹⁷ The 151,000 jobs represented by this industry are predominately located in Miami-Dade County, which accounts for 52 percent. Moving northward through the region, the concentration of such jobs decreases with 32 percent of all wholesale trade jobs in Broward County and 16 percent in Palm Beach. Truckers and air-related employment represent the second and third largest industry sectors directly related to freight activity at 9 percent and 8 percent, respectively. The air-related employment may include some employment associated with passenger movements; however, as a large portion of air freight is moved through belly cargo, some of these jobs may still be considered dependent on cargo movements.

¹⁷ <https://stats.oecd.org/glossary/detail.asp?ID=2927>

Figure 5.1 Freight Jobs by Industry Sector in Southeast Florida, 2012



Source: U.S. Census County Business Patterns, IMPLAN, Cambridge Systematics.

Table 5.3 Freight Transportation Impacts by Industry Sector in Southeast Florida, 2012

Industry Sector	Jobs	Output (millions)	Labor Income (millions)	GRP (millions)
Wholesale Trade	150,885	\$31,801	\$12,058	\$21,479
Truck	25,060	\$2,974	\$880	\$1,142
Air	21,004	\$6,494	\$1,749	\$2,874
Messenger	19,457	\$1,978	\$825	\$1,116
Freight Forwarder	10,945	\$1,170	\$655	\$657
Water	9,831	\$4,942	\$1,029	\$1,439
Warehousing and Storage	7,665	\$614	\$354	\$374
Brokers	6,727	\$1,427	\$550	\$970
Logistics Consulting	1,455	\$167	\$109	\$101
Rail & Pipeline	389	\$180	\$54	\$91
In-House	25,410	\$3,503	\$1,050	\$1,404
Total	278,828	\$55,250	\$19,314	\$31,648

Source: U.S. Census County Business Patterns, IMPLAN, Cambridge Systematics.

In-house freight transportation jobs are related to establishments which handle their own shipments in-house, such as Wal-Mart owning and operating their own fleet. This impact is not included in either the Census' County Business Patterns or IMPLAN. Therefore, these jobs were determined using the Transportation Satellite Accounts (TSAs). TSAs provide a methodology

for determining the contribution of transportation services to the economy. This contribution is calculated based on the direct requirements per dollar of industry output. As seen in Table 5.4, some industries are more dependent on in-house transportation services than others. Retail trade is most dependent on these services with 4.02 percent of output spent while information is the least dependent at only 0.14 percent. While in total these industries represent nearly 3 million jobs and \$368 billion in economic output, in-house transportation only accounts for roughly \$3.5 billion of this economic output and 25,410 of these jobs.

Table 5.4 In-House Freight Transportation Impact in Southeast Florida, 2012

Industry Sector	Total Industry		% of Output Spent on In-House Transportation	In-House Transportation	
	Output (millions)	Employment		Output Spent (millions)	Employment
Retail Trade	\$26,046	359,139	4.02%	\$1,047	8,610
Professional Services	\$31,332	246,250	1.01%	\$316	2,239
Manufacturing	\$33,633	86,008	0.77%	\$259	1,725
Construction	\$17,255	134,799	1.18%	\$204	1,597
Miscellaneous Business Services	\$22,209	299,026	1.01%	\$224	1,577
Health Care	\$32,648	343,868	1.09%	\$356	1,344
Leisure & Hospitality	\$23,401	331,745	0.80%	\$187	838
Other Services	\$12,687	247,266	0.54%	\$69	567
Information	\$18,969	51,690	0.14%	\$27	218
Farming	\$2,023	23,280	0.90%	\$18	96
All Other	\$147,567	848,079	0.54%	\$797	6,599
Total	\$367,770	2,971,149		\$3,504	25,410

Source: U.S. Census County Business Patterns, IMPLAN, BTS Transportation Satellite Accounts.

Of these 25,410 jobs, the largest portion come from the retail trade industry with 34 percent of total in-house employment. Professional Services and Manufacturing represent the next largest employers at 9 percent and 7 percent of the total. Overall, these employees receive over \$1 billion in labor income for an average annual compensation of \$41,000 per person.

While direct jobs may represent the employment of persons in freight related industries, they do not represent all jobs dependent on freight and goods movements. These direct impacts have a multiplying effect on the region as a result of business spending on supplies and services as well as direct employees' personal spending. This multiplier effect results in two types of secondary impacts: Indirect and Induced. Indirect impacts are jobs and output generated as a result of business to business transactions. This includes activities such as fuel purchases, real estate transactions, and banking. Induced impacts are jobs and output generated due to spending by those working in the freight industry directly. This includes purchases such as groceries, clothing, medical needs, and housing costs.

Based on IMPLAN, the 279,000 jobs in Southeast Florida directly related to freight and goods movement generate an additional 267,000 jobs in the region for a total employment of 546,000 jobs dependent upon freight related activities. As shown in Table 5.5, with a total labor income of nearly \$32 billion, the average compensation for these jobs is roughly \$58,000 annually. This employment and related business expenditures results in an overall economic output of \$87 billion throughout the region and a total GRP of \$52 billion.

Table 5.5 Combined Economic Impacts from Freight Activity in Southeast Florida, 2012

Metric	Direct	Indirect	Induced	Total	Multiplier
Jobs	278,828	127,456	139,532	545,816	1.96
Labor Income (millions)	\$19,314	\$6,463	\$6,128	\$31,904	1.65
Average Compensation	\$69,268	\$50,706	\$43,916	\$58,453	
GRP (millions)	\$31,648	\$9,518	\$10,648	\$51,814	1.64
Economic Output (millions)	\$55,250	\$15,251	\$16,684	\$87,185	1.58

Source: U.S. Census County Business Patterns, IMPLAN, Cambridge Systematics.

In looking at the breakdown of these figures at a county level, Palm Beach has a total direct employment of 38,266 which generates additional jobs as shown in Table 5.6. While Palm Beach has one of the lowest multipliers generating secondary impacts, the combined effects of direct, indirect, and induced impacts still account for nearly 67,000 jobs with an average compensation of \$65,000 annually. This average compensation is the highest in the region, which is consistent with other industries' compensation based on U.S. Census County Business Patterns. Overall, freight and goods movement result in a total economic output of nearly \$11 billion in Palm Beach County for a GRP of \$6.9 billion.

Table 5.6 Combined Economic Impacts from Freight Activity in Palm Beach, 2012

Metric	Direct	Indirect	Induced	Total	Multiplier
Jobs	38,266	13,864	14,829	66,958	1.75
Labor Income (millions)	\$2,925	\$777	\$675	\$4,377	1.50
Average Compensation	\$76,440	\$56,026	\$45,553	\$65,374	
GRP (millions)	\$4,657	\$1,086	\$1,158	\$6,900	1.48
Economic Output (millions)	\$7,366	\$1,638	\$1,760	\$10,764	1.46

Source: U.S. Census County Business Patterns, IMPLAN, Cambridge Systematics.

Moving south to Broward County, the effects of this industry are more pronounced. The number of jobs directly related to the freight industry is more than double that of Palm Beach at over 80,000 as shown in Table 5.7. This employment has a multiplier effect of nearly double, resulting in a total of 156,000 jobs dependent upon the freight industry. While direct jobs in Broward have a higher average compensation than their equivalents in Palm Beach, the overall average compensation in Broward County is lower at \$63,000 annually. This

employment and related business spending contributes nearly \$25 billion in economic output and over \$15 billion to the GRP.

Table 5.7 Combined Economic Impacts from Freight Activity in Broward, 2012

Metric	Direct	Indirect	Induced	Total	Multiplier
Jobs	80,046	34,502	41,410	155,958	1.95
Labor Income (millions)	\$5,981	\$1,742	\$1,732	\$9,455	1.58
Average Compensation	\$77,684	\$52,405	\$43,456	\$63,004	
GRP (millions)	\$9,754	\$2,528	\$3,027	\$15,309	1.57
Economic Output (millions)	\$15,938	\$4,034	\$4,741	\$24,712	1.55

Source: U.S. Census County Business Patterns, IMPLAN, Cambridge Systematics.

Lastly, the effects of the freight industry in Miami-Dade are far and above those of the other two counties. With a total direct employment of nearly 161,000 jobs, this is more than both Palm Beach and Broward combined as shown in Table 5.8. This can be accounted for due to the presence in the county of PortMiami, Miami International Airport, and the significant warehousing and distribution facilities located in Doral and Medley which serve these major hubs. The multiplier effect of this direct employment results in a total of 323,000 jobs in Miami-Dade dependent upon freight activities, with an average compensation of \$56,000 annually. The economic output of this activity is nearly \$52 billion with a total impact on GRP of almost \$30 billion.

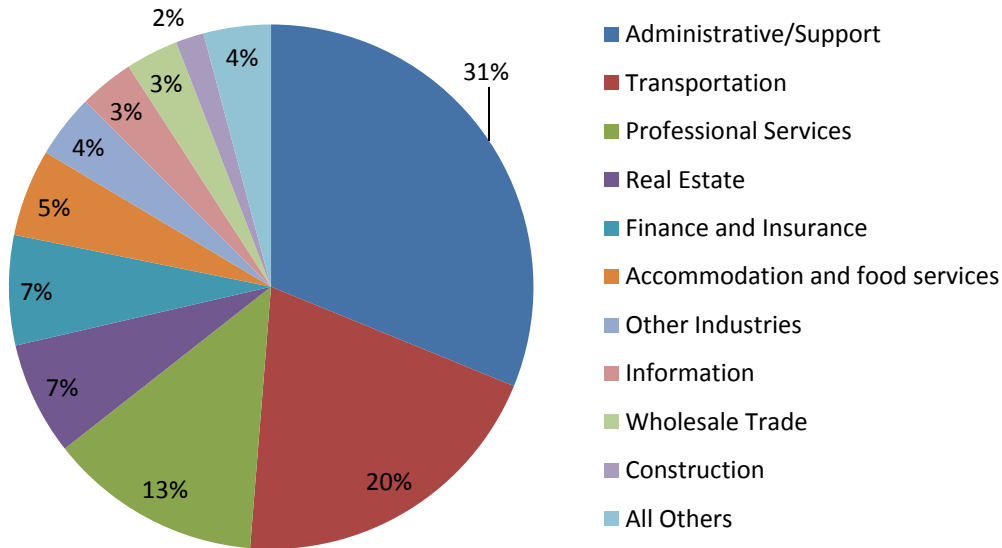
Table 5.8 Combined Economic Impacts from Freight Activity in Miami-Dade, 2012

Metric	Direct	Indirect	Induced	Total	Multiplier
Jobs	160,516	79,091	83,293	322,899	2.01
Labor Income (millions)	\$10,408	\$3,944	\$3,721	\$18,072	1.74
Average Compensation	\$64,838	\$49,866	\$44,669	\$55,968	
GRP (millions)	\$17,238	\$5,905	\$6,463	\$29,605	1.72
Economic Output (millions)	\$31,946	\$9,579	\$10,184	\$51,708	1.62

Source: U.S. Census County Business Patterns, IMPLAN, Cambridge Systematics.

As mentioned, indirect jobs are a result of business to business transactions. With nearly 128,000 indirect jobs supporting freight-related activities, the types of industries representing this employment is widespread. Figure 5.2 details the types of industry sectors which are the most impacted by spending from the freight industry. The top three industries of Administrative/Support, Transportation, and Professional Services account for 64 percent of the total indirect jobs. Other major industries include Real Estate, Finance and Insurance, and Accommodation and Food Services.

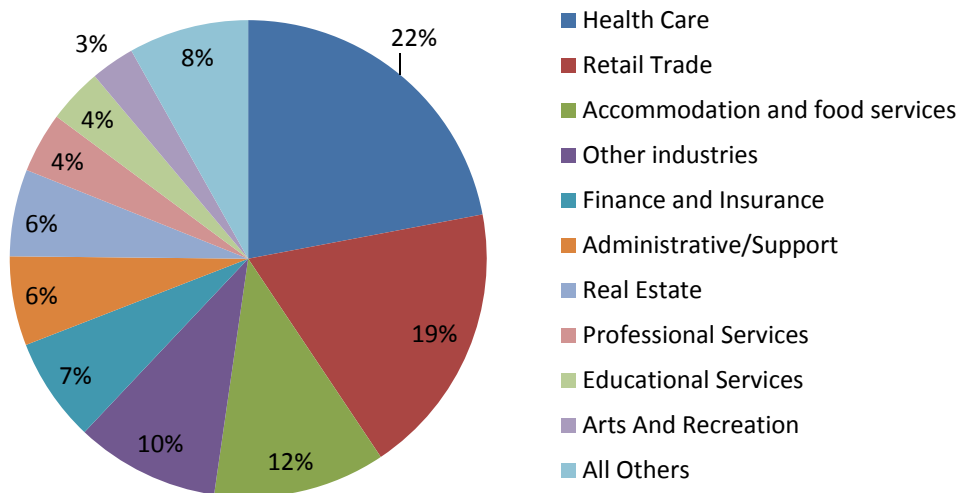
Figure 5.2 Breakdown of Indirect Jobs by Industry Sector in Southeast Florida, 2012



Source: U.S. Census County Business Patterns, IMPLAN, Cambridge Systematics.

Unlike indirect jobs, induced jobs are a result of spending by those working in the freight industry directly. This includes housing, groceries, and retail purchases, etc. As seen in Figure 5.3, this results in a greater spread across multiple industries than indirect employment. The top three industries impacted by these induced jobs are Health Care, Retail Trade, and Accommodation and Food Services accounting for 53 percent of total induced jobs. Other major industries include Finance and Insurance, Administrative/Support, and Real Estate.

Figure 5.3 Breakdown of Induced Jobs by Industry Sector in Southeast Florida, 2012



Source: U.S. Census County Business Patterns, IMPLAN, Cambridge Systematics.

5.2 Existing Seaport and Airport Economic Impacts

The airports and seaports of Southeast Florida serve as major economic engines to the region. In order to assess their impact, as well as justify their spending on large improvement projects, they frequently undertake studies to determine the scale of their economic impact on the region. This information is provided as a supplement to the economic impact determined from IMPLAN and is not additive to those impacts.

5.2.1 Seaport Economic Impacts

All three of the seaports in Southeast Florida have a fairly recent analysis of their economic impacts. For the Port of Palm Beach, this was conducted in 2011 in conjunction with Master Planning efforts. As shown in Table 5.9, nearly 2,500 direct, induced, and indirect jobs are dependent upon cargo operations at the port, in addition to another 6,082 jobs from related user impacts.¹⁸

The economic impacts of Port Everglades were determined through an intensive interview process with 265 firms presenting 99 percent of those in the Port Everglades seaport community. The data collected from these interviews was used to develop a baseline model of the port's economic impact, which has since been updated to reflect Fiscal Year 2013 operations.¹⁹ The economic impacts of Port Everglades are significantly higher than those of the Port of Palm Beach. Nearly 6,400 direct jobs are attributed to this port with a total employment of over 191,000 persons. These jobs translate to a total personal income of \$7.3 billion and a total economic output of \$24 billion. This port also contributes \$426 million to local purchases as well as \$682 million in state and local taxes.

The economic impact of PortMiami was most recently determined based off of cargo activity in calendar year 2012. These impacts are relatively comparable to those of Port Everglades due to a similar scale of operations. Compared to Port Everglades, PortMiami accounts for more direct jobs at 6,739 but fewer overall jobs at 182,428 due to indirect and related user employment. As there are fewer total jobs attributed to PortMiami, total personal income is also lower at \$7 billion as well as total economic activity of \$23.5 billion. Local purchases at this port account for an impact of \$265 million in the region while state and local taxes receive \$642 million as a result of port operations.

¹⁸ Note that related users are not confined to the Southeast Florida region. These users are typically manufacturing, wholesale, and retail distribution firms which use the seaports for the shipment and receipt of cargo. These are not as dependent upon the marine terminals to the same degree as the direct, induced, and indirect jobs are.

¹⁹ Port Everglades conducts an update to the Local and Regional Economic Impact of Port Everglades on an annual basis based on the prior year's performance. Fiscal Year 2013 was the last completed report, however, the updated analysis for Fiscal Year 2014 is underway.

Table 5.9 Economic Impacts of the Individual Southeast Florida Seaports

Category	Port of Palm Beach (2011)	Port Everglades (2013)	Port Miami (2012)
Jobs			
Direct	1,284	6,359	6,739
Induced	994	5,232	6,006
Indirect	170	4,503	1,927
Related User	6,082	175,180	167,757
Total Jobs	8,530	191,274	182,428
Personal Income (1,000)			
Direct	\$54,582	\$288,052	\$286,487
Re-Spending	\$103,701	\$647,023	\$643,506
Indirect	\$8,456	\$210,692	\$109,814
Related User	\$258,803	\$6,188,218	\$5,933,013
Total	\$425,542	\$7,333,984	\$6,972,820
Business Revenue (1,000)			
Business Revenue	\$154,132	\$1,047,948	\$957,626
Related User Output	\$1,568,197	\$23,025,497	\$22,547,237
Total Value of Economic Activity	\$1,722,329	\$24,073,445	\$23,504,863
Local Purchases (1,000)			
Local Purchases	\$21,116	\$426,488	\$265,015
State and Local Taxes (1,000)			
State and Local Taxes	\$15,340	\$106,556	\$95,662
Related User Taxes	\$23,810	\$575,504	\$545,837
Total State and Local Taxes	\$39,150	\$682,061	\$641,499

Source: Port of Palm Beach 2012 Master Plan, Port Everglades, The Local and Regional Economic Impacts of PortMiami, 2013.

The combined impacts of these ports, detailed in Table 5.10, show how significant of a role these facilities play in the economic vitality of Southeast Florida. In total, these seaports account for over 14,000 direct jobs and a total of nearly 400,000 jobs when all indirect, induced, and related user jobs are considered. These jobs account for a total compensation of nearly \$15 billion and a total economic output of nearly \$50 billion. These ports also contribute \$713 million in local purchases as well as \$1.4 billion in local and state taxes.

Table 5.10 Combined Economic Impacts of the Southeast Florida Seaports

Category	Total Impact
Jobs	
Direct	14,382
Induced	12,232
Indirect	6,600
Related User	349,019
Total Jobs	382,232
Personal Income (1,000)	
Direct	\$629,121
Re-Spending	\$1,394,230
Indirect	\$328,962
Related User	\$12,380,034
Total	\$14,732,346
Business Revenue (1,000)	
Business Revenue	\$2,159,706
Related User Output	\$47,140,931
Total Value of Economic Activity	\$49,300,637
Local Purchases (1,000)	
Local Purchases	\$712,619
State and Local Taxes (1,000)	
State and Local Taxes	\$217,558
Related User Taxes	\$1,145,151
Total State and Local Taxes	\$1,362,710

Source: Port of Palm Beach 2012 Master Plan, Port Everglades, The Local and Regional Economic Impacts of PortMiami, 2013.

5.2.2 Airport Economic Impacts

In 2014, the Florida Department of Transportation – Aviation & Spaceports Office released the *Florida Statewide Aviation Economic Impact Study* as an update to the 2010 study. This examined in detail the individual and cumulative economic impacts of Florida’s commercial service and general aviation airports in terms of jobs, annual payroll, and annual economic activity (or output). Of particular interest, the economic impact of air cargo activity is presented by airport which allows for a summary of air cargo’s economic impact on the Southeast Florida region.

Direct impacts are related to activities associated with on-airport tenants (businesses and government agencies) and operations. Off-airport impacts, such as those that support and are reliant on the on-airport activities, are classified as indirect impacts. Once all direct and indirect aviation-related economic impacts are calculated, an input-output model is used to show how initial direct and indirect economic impacts continue to re-circulate through the region’s economy. These additional impacts are referred to as multiplier or induced impacts.²⁰

Direct on-airport economic impacts include all activity and employment that takes place on airport grounds and are in support of air cargo activity. These include:

- Air carriers
- Freight handlers
- Aircraft support services
- On-airport sort operations
- US Customs and USDA
- Freight forwarders
- Customs Brokers
- Security

Table 5.11 details the direct economic impact of on-airport employers that support air cargo activity at the region’s airports. Miami International represents the largest portion of airport employment with 85 percent of total direct employment. This is expected due to MIA’s prominent position in international air cargo. Lower cargo related employment impacts are seen at Fort Lauderdale-Hollywood International and Palm Beach International with 12 percent and 2 percent of total employment, respectively. Overall, the three major airports in the region, as well as two general aviation airports, account for 6,917 direct jobs in the region with a payroll of \$345 million and a total output of \$622 million.

²⁰ FDOT, *Statewide Aviation Economic Impact Study*, August 2014, p. 1-2

Table 5.11 Direct On-Airport Economic Impacts

Airport	Direct Employment	Direct Payroll (\$1,000)	Direct Output (\$1,000)
Miami International	5,882	\$293,306	\$486,809
Fort Lauderdale-Hollywood Int'l	861	\$42,934	\$111,715
Palm Beach International	152	\$7,580	\$20,387
Opa-Locka Executive	13	\$648	\$1,737
Fort Lauderdale Executive	9	\$449	\$1,477
Total	6,917	\$344,917	\$622,125

Source: FDOT, Statewide Aviation Economic Impact Study, 2014.

Table 5.12 provides the total economic impact that direct on-airport air cargo employment creates. These numbers represent the direct economic impacts plus the impact of the multiplier. Similar to the direct impacts alone, MIA continues to account for 85 percent of air cargo related jobs in the region. Total output for this one airport is almost \$785 million. By combining the additional impacts from the other four airports detailed here, the total employment of the region's airports is almost 18,000 representing a payroll of nearly \$645 million and a total output of over \$1 billion.

Table 5.12 Total On-Airport Economic Impacts

Airport	Total Employment	Total Payroll (\$1,000)	Total Output (\$1,000)
Miami International	15,230	\$548,076	\$784,757
Fort Lauderdale-Hollywood Int'l	2,230	\$80,231	\$180,099
Palm Beach International	394	\$14,164	\$32,867
Opa-Locka Executive	34	\$1,211	\$2,800
Fort Lauderdale Executive	23	\$839	\$2,381
Total	17,911	\$644,521	\$1,002,904

Source: FDOT, Statewide Aviation Economic Impact Study, 2014.

In addition to air cargo employment that takes place directly on-airport, there are many other off-airport businesses dedicated to the processing and movement of air cargo. These businesses include:

- Drayage carriers
- Off-airport sort facilities
- Warehousing
- Freight forwarders

- Perishable importers
- Customs brokers

These functions and associated spending are characterized as indirect economic impacts; the economic activity does not take place directly on-airport, but is completely reliant on the cargo operations that do. The total economic impact of the region's air cargo activity (both on-airport and off-airport) is presented in Table 5.13. Air cargo activity in Southeast Florida is responsible for creating nearly 42,000 jobs, with Miami International Airport accounting for over 37,000 of those. In total, annual payroll attributed to these jobs stands at nearly \$1.63 billion. Total economic output attributed to air cargo operations in the region reaches nearly \$4.1 billion annually.

Table 5.13 Total On-Airport and Off-Airport Economic Impacts

Airport	Total Employment	Total Payroll (\$1,000)	Total Output (\$1,000)
Miami International	37,305	1,457,703	3,641,414
Fort Lauderdale- Hollywood Int'l	3,154	118,323	299,612
Palm Beach International	1,205	47,562	137,620
Opa-Locka Executive	68	2,598	7,151
Fort Lauderdale Executive	80	3,186	8,720
Total	41,812	\$1,629,372	\$4,094,517

Source: FDOT, Statewide Aviation Economic Impact Study, 2014.

6.0 Freight System Needs and Priorities

Southeast Florida has invested heavily in key infrastructure projects over the last several years, transforming how freight moves throughout the region. As these major projects, in the planning stages for years, have started to come online they signal to the world that Southeast Florida is open for business. In addition, these projects create the need for additional investments in highway and rail corridors and connectors, warehouse and distribution center infrastructure, truck parking and service facilities, work force development, and maintenance and enhancements to existing facilities.

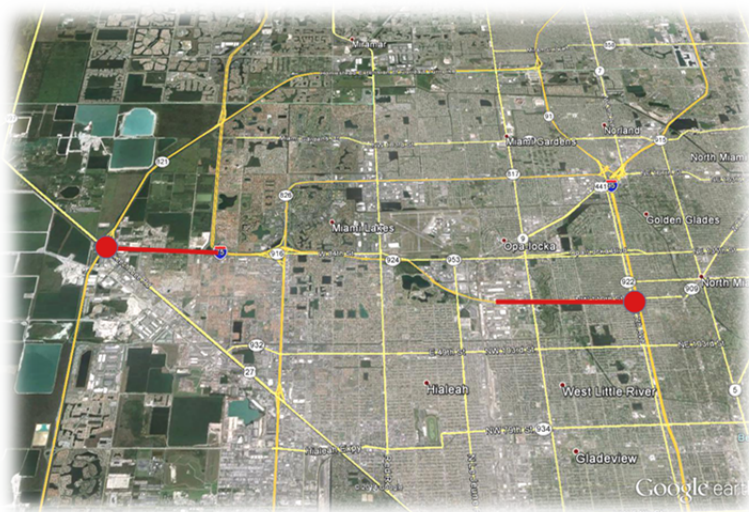
The key freight hubs (e.g., PortMiami, Port Everglades, Port of Palm Beach, Miami International Airport, FEC Railway) are forecasting significant growth over the next twenty years, driven largely by projected shifts in international trade patterns, continued growth in Southeast Florida's population, and an increased level of competitiveness on a global stage for the logistics industry. In order to meet the goal of becoming a global international trade and logistics hub, it is critical to identify and fund the next generation of freight improvements.

6.1 Major Missing Links

There are a several major projects in Southeast Florida that have been discussed over the years that reflect significant investments necessary to help complete the continuity of the freight network. Some have advanced while others remain unfunded proposals, in some cases with significant community opposition. Key examples of these types of projects are summarized below.

6.1.1 Gratigny Parkway

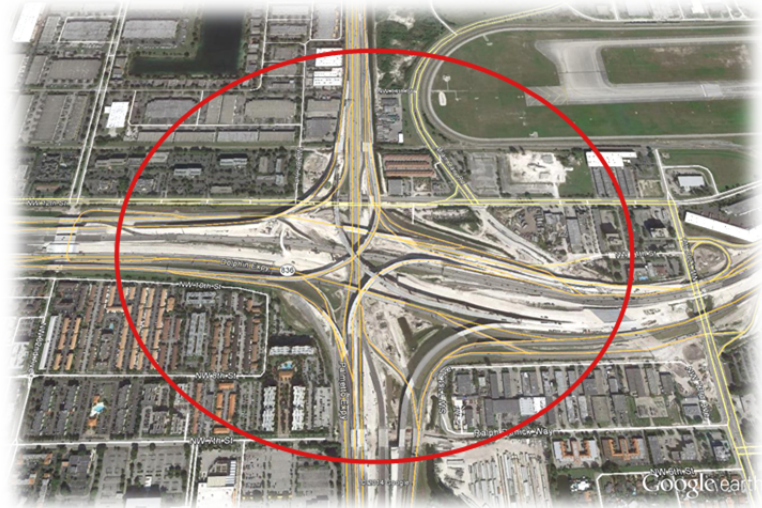
The Gratigny Parkway is an existing 5.4 mile long toll road connecting I-75, SR 826/Palmetto Expressway, and other major roadways before transitioning into NW 119th St just two miles short of I-95. The Miami-Dade Expressway Authority has long considered extending the Gratigny as it is one of the most heavily used expressways in Miami-Dade County despite its short span. Two possible extensions for the Gratigny are under consideration by MDX. The first consideration is an extension to I-95 in the east at an estimated cost of \$400 million. The second possible extension would align along NW 138th St and link up with Okeechobee Road and Florida's Turnpike. Completion of both phases would result in a third east-west expressway after SR 836/Dolphin Expressway and SR 826/Palmetto Expressway.



Historically, this project has not moved forward due to the large capital costs needed to fund this extension as well as local opposition. While many in the community believe it will create jobs and bring new businesses to the community, some fear a similar fate as Overtown from the I-95 construction in the 1960's.

6.1.2 SR 826/SR 836 Interchange

Initially built in the late 1950's, SR 826 started as a four lane expressway with a 40-foot unpaved median. Over the years, this has evolved and the intersection of this roadway with SR 836 has resulted in an interchange used by over 430,000 motorists daily. Significant investments have been made to reconstruct this intersection in order to enhance safety and reduce congestion. Initial improvements to the Palmetto Expressway began in the late 1990's with construction completed on various interchanges



between 1999 and 2012. Beginning in 2009, the reconstruction of the 826/836 Interchange has included new connector ramps, frontage roads, reconstruction of other roadways such as NW 12th Street and Milam Dairy Road, as well as new bridges. This project is estimated to be complete in the Fall of 2015 at a total project cost of \$560 million.

6.1.3 Golden Glades Interchange

The Golden Glades Interchange is the convergence of five major roadways serving Miami-Dade County. With over 400,000 drivers passing through this Interchange on either US 441, Florida's Turnpike, the Palmetto Expressway (SR 826), SR 9, or I-95, safe and effective movement through this interchange is critical. Discussions for improving this interchange have long been in the works. However with

such critical facilities dependent on this interchange, modifications are a costly and timely endeavor. In May 2011, a project was begun by FDOT to evaluate connecting a potential managed lane system for SR 826/Palmetto Expressway to the existing I-95 Express managed lanes system. This project was in conjunction with the SR 826 Project Development and Environmental (PD&E) study from I-75 to the Golden



Glades Interchange as well as an Ultimate Master Plan.

Moving forward, the process of implementing improvements to Florida's Turnpike Southbound to I-95 Southbound started in May 2014. Alternatives for these improvements are being studied as part of the PD&E for the interchange from SR 826/Palmetto Expressway Eastbound to I-95 Northbound. This \$174 million project will procure a design consultant in 2015 with construction anticipated to begin in Winter 2019. Based on the timeframe for this improvement of one direction on two facilities, continued improvements for the other facilities in this interchange will be an ongoing effort by FDOT.

6.1.4 NW 25th St Extension to HEFT

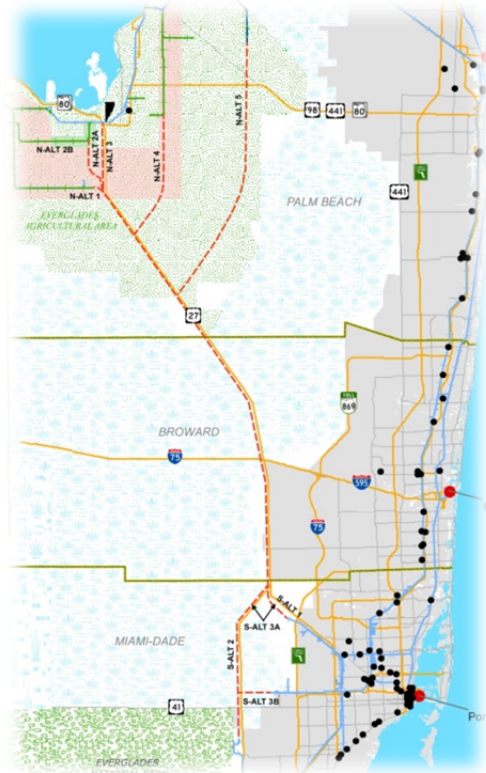
Construction of the second phase of the NW 25th St Viaduct began in June 2012 to connect to the existing eastern viaduct. This phase includes both the widening and reconstruction of NW 25th St as well as the construction of a viaduct. When complete, the full length of the viaduct will run from Miami International Airport and touch down just east of NW 82nd Ave. As built, the viaduct will not connect to the HEFT and cargo moved from Miami International Airport will not have direct access to this facility. The City of Doral has put forth a resolution (No. 14-53) in support of construction of Alternative No. 6 of a potential extension of this viaduct to the HEFT. This alignment would consist of a flyover bridge as a way to connect NW 25th St to the northbound HEFT ramp via NW 117th Ave, routing traffic over NW 41st St. Furthermore, the City Council requests that the MPO prioritize the construction of Alternative No. 6 to be constructed prior to the completion of the overall NW 25th Street Viaduct Project.



6.1.5 US 27 Corridor

The US 27 corridor has long been in the spotlight of key freight projects. This roadway runs the entire length of the state, beginning in Miami-Dade County and providing direct access to the heartland of South Florida. Widened to a four lane divided highway in the 1990's, this roadway offers a controlled access facility to northern portions of the state. This provides a critical future link for goods traveling to and from the area, specifically between PortMiami and Port Everglades and planned ILC developments in western Palm Beach County and Hendry/Glades Counties. FDOT projects a significant increase in truck traffic along this corridor, a result of increased traffic at PortMiami and Port Everglades as well as the 50 million square feet of warehousing space anticipated as part of three planned ILCs around Lake Okeechobee.

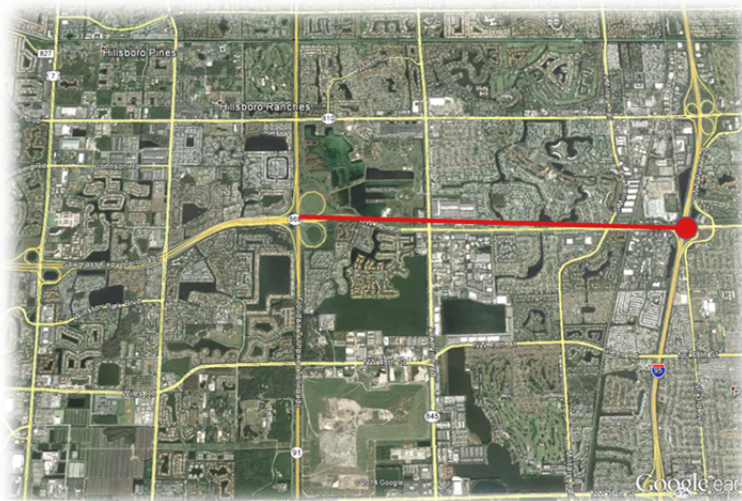
To alleviate some of this truck traffic, one proposed alternative is to build a rail link along the length of this corridor. The proposed rail link would run from the HEFT in Miami-Dade County to a connection with the SCFE in Palm Beach County. This service would allow for the transfer of goods to and from PortMiami to the Lake Okeechobee region without ever putting a vehicle on the roadway. In addition, this rail line would relieve anticipated congestion along the FEC corridor not only for traffic at railroad crossings but also for additional passenger trains. With the proposed All Aboard service running between Miami and Orlando, an increase of 32 trains per day is anticipated. Even with the rail line, FDOT projects that US 27 will need to be widened.



To date, the corridor is not consistently referenced in county or regional planning documents. The Palm Beach MPO included a new rail link project while excluding the highway widening project. The Broward MPO incorporated FDOT's SIS needs plan by reference, which includes highway widening but does not include the new rail link. The MPO Board also has expressed an interest in studying a possible I-595 rail connector to a new US 27 rail corridor. This is driven by the fact that Port Everglades will not directly benefit from a new US 27 rail corridor, and in fact would potentially be put at a competitive disadvantage, without such a connection. The Miami-Dade MPO did not include the new rail corridor project. Its Freight Transportation Advisory Committee (FTAC) specifically called for short term highway improvements, and highway and rail capacity to be considered when demand warrants. At the state level, the Freight Mobility and Trade Plan needs database contains the highway expansion and the new rail corridor based on stakeholder input. Looking forward, the region must monitor the planned developments around Lake Okeechobee, as well as East Coast corridor performance. As demand grows and existing system performance worsens, the US 27 corridor should continue to be studied as an alternative solution. In addition, the US 27 corridor is one of state's "future corridors" being considered. While not active at this time, when the state is ready to begin its redevelopment analysis, Southeast Florida will be in a position to provide significant input.

6.1.6 Sawgrass Expressway Connection to I-95

Originally constructed in 1986, the Sawgrass Expressway terminates at Florida's Turnpike, three miles west of I-95. SW 10th Street, a 4-lane arterial, connects the Turnpike and I-95 but experiences heavy traffic and significant delays, particularly during peak hours. This has long been a topic of discussion for expansion arising in 1993, 2008, and once again in 2014. The 2008 effort led to FDOT recommendations for easing this traffic including signal retiming, overpass construction, and frontage roads however no action was taken on this study.²¹ The latest effort will seek input from the adjacent community and from regional commuters and stakeholders to develop a consensus on how a concept could move forward.



6.2 Freight Needs and Priorities

While the missing links provide a big picture overview of the region's freight system connectivity, not all are well positioned to advance at this time. As such, not all of the "missing links" are addressed in the prioritized lists of projects discussed below. Needs were identified for seaports, railroads, airports, and highways based on available master plans, capital improvement programs, work programs, long range transportation plans, a hotspot analysis (described in detail in Appendix A), and stakeholder interviews. Once the needs were identified, they were prioritized within each mode for the region. The methodology used is the same methodology developed as part of the Southeast Florida Regional Freight Plan completed in 2010. This process was vetted and approved by the Regional Transportation Technical Advisory Council (RTTAC) and SEFTC as part of the original plan development. Minor updates/enhancements were undertaken to improve the ranking process for the 2014 Update. These enhancements were focused on a greater level of disaggregation on some of the highway ranking criteria and the addition of an overall project impact score for the other modes. The freight needs identified and prioritized as part of this effort have not been constrained to "cost feasible" projects; rather they reflect all regional freight needs at this point in time. Prioritized needs for each mode are presented below.

²¹ http://cached.newslookup.com/cached.php?ref_id=316&siteid=2257&id=5099366&t=1394341200

6.2.1 Seaport Needs

Needs for three seaports (Port Everglades, PortMiami, and the Port of Palm Beach) were identified and prioritized. The list reflects current priorities for each seaport. With dredging underway and the tunnel complete and open, PortMiami has had high capital cost projects over the course of the last few years to prepare for the expansion of the Panama Canal. As such, with nearly all of the high profile projects underway or complete, there are not many significant projects planned at the seaport. For the most part, improvements at PortMiami focus on the operations and maintenance of existing facilities to enhance the benefits of these large investments, and the continued purchase of new cranes capable of serving the larger vessels. Port Everglades has made significant progress on its priority needs, however, it has several significant projects unfunded or partially unfunded, such as the Southport Turning Notch Expansion, harbor deepening, container yard expansion and more that help it prepare for the next generation of container vessels. As such, Port Everglades represents many of the top ten priorities for the region. With a much smaller capital improvement program, the Port of Palm Beach's needs are characterized by terminal capacity expansion projects, improved rail connections, and slip improvements.

The list of needs was prioritized based on the following criteria (see Figure 6.1 for an example of a scored project and Appendix B for a detailed description of the methodology and results):

- Project Type (20 points);
- Type of Traffic (15 points);
- Project in an Established Plan (10 points);
- Level of Impact (15 points);
- Intermodal Connectivity (20 points); and
- Timeframe (20 points).

Figure 6.1 Example of Scored Seaport Project

Ports		Port Everglades
	Projects	Turning Notch Extension
	Project Category	Dredging Harbor
Project Type	Capacity	X
	Maintenance/ Other	
	Operations	
Type of Traffic	Freight	X
	Both	
In Established Plan	Yes	X
	No	
Intermodal Connectivity	Rail	
	Water	X
	Truck	
Timeframe	Plan Year?	S
Level of Impact	ROI > 5?	X
	Significant Traffic Volumes?	X
Ranking Criteria	Project Type	20
	Type of Traffic	15
	In Established Plan	10
	Intermodal Connectivity	10
	Level of Impact	15
	Timeframe	20
	Total	90
Rank	1	

The top 25 seaport projects are presented in Table 6.1.

Table 6.1 Top 25 Seaport Needs

Seaport	Projects	Total Score	Rank
PEV	ACOE Deepening and Widening-Design	90	1
PEV	Turning Notch Extension	90	1
PM	Purchase 4 Additional Gantry Container Cranes	80	3
PEV	Slip 1 New Bulkheads and Reconfiguration - (Berths 9 & 10)	80	3
PEV	ACOE Deepening and Widening-Construction	80	3
PEV	Neo-Bulk Storage Yard	80	3
PEV	Phase IX-A Container Yard	80	3
PEV	Phase IX-B Container Yard	80	3
PEV	Super Post Panamax Cranes (2)	80	3
PPB	Intermodal Cargo Transfer/Passenger Service Facility	75	10
PEV	Slip 1 New Bulkheads and Reconfiguration - (Berths 7 & 8)	70	11
PEV	Super Post Panamax Crane (3)	70	11
PEV	Slip 3 New Bulkheads and Widening	65	13
PEV	Westlake Mitigation	65	13
PEV	McIntosh Road Gate Lane Addition	60	15
PPB	Off Port Intermodal Rail Improvements	60	15
PPB	On Port Intermodal Rail Improvements	60	15
PM	Runway/Rails for Future RTG/RMG in Cargo Yards	55	18
PEV	Demolish RORO Berths and Lengthen Berth 33	55	18
PEV	Upland Enhancement	55	18
PEV	Slip 2 New Bulkheads and Widening	55	18
PPB	Harbor & Channel Improvements	55	18
PPB	Waterside Cargo Terminal Redevelopment	55	18
PM	Seaboard Parking Relocation (due to rail)	50	24
PM	Trailer Relocation (Seaboard)	50	24

Source: Cambridge Systematics, Inc., Port Everglades, PortMiami, and the Port of Palm Beach.

6.2.2 Airport Needs

Needs for six commercial airports in Southeast Florida (Fort Lauderdale-Hollywood International, Fort Lauderdale Executive, Lantana Airport, Miami International, Opa-locka Executive, Palm Beach International) were identified and prioritized. The list reflects current priorities for each airport. The majority of the identified needs reflect improvement that will benefit overall airport capacity, airport access, or airport operations. Few of the projects are exclusively cargo related. Miami International Airport, one of the top cargo airports in the United States, has recently made extensive investments in its cargo infrastructure. The \$500 million Cargo Development Program included 17 new cargo buildings with over 3.5 million square feet. As such, many of their recent endeavors have been completed and extensive capital improvement projects are not planned. Fort Lauderdale-Hollywood International has focused on its new runway and passenger terminal improvements and expansion. Palm Beach International also has focused more on general improvements and capacity expansion. The other smaller facilities have limited cargo operations serving specific niches. Given the lack of

cargo specific projects, the needs are all closely scored with the only cargo specific project solidly scored first.

The list of needs was prioritized based on the following criteria (see Figure 6.2 for an example of a scored project and Appendix B for a detailed description of the methodology and results):

- Type of Project (20 points).
- Type of Traffic (25 points).
- Project in Established Plan (20 points).
- Level of Impact (15 points)
- Timeframe (20 points).

Figure 6.2 Example of Scored Airport Project

Airport	MIA	
	Projects	Additional Air Cargo Apron
	Project Category	Cargo Capacity
Project Type	Capacity	X
	Maintenance/ Other Operations	
Type of Traffic	Freight	X
	Both	
In Established Plan	Yes	X
	No	
Timeframe	Plan Year?	S
Level of Impact	FDOT BCR?	
	Significant Traffic Volumes?	X
Ranking Criteria	Project Type	20
	Type of Traffic	25
	In Established Plan	20
	Level of Impact	15
	Timeframe	20
	Total	100
	Rank	1

The prioritized airport projects are presented in Table 6.2.

Table 6.2 Prioritized Airport Needs

Airport	Project	Total Score	Rank
MIA	Additional Air Cargo Apron	100	1
PBI	Palm Beach International Cargo Facilities Access	75	2
FLL	Runway 9R/27L Extension (8,000' x 150')	65	3
MIA	Fuel Tanker Parking Facility	55	4
MIA	Perimeter Road Widening & Realignment	55	4
MIA	Miami-Dade Aviation GPS Landing System	55	4
FLL	ILS for Runway 9R-27L	55	4
FLL	Cross-field taxiways from 9R-27L	55	4
FXE	Construct Customs Building And Apron	55	4
FXE	Construct Eastern Perimeter Road	55	4
MIA	Northeast Apron And Drainage Improvements	50	11
MIA	Acquisition Of FOD Equipment	50	11
MIA	Taxiway S Rehabilitation	50	11
MIA	Taxiway T Rehabilitation	50	11
OPF	Rehab Aprons	50	11
OPF	OPF Taxiway Repair	50	11
FXE	Taxiway C, E, F, S Rehab	50	11
FXE	Runway 8/26 & 13/31 Pavement Rehab	50	11
FXE	Rehab Airfield Lighting	50	11
PBI	Taxiway C Rehab	50	11
LNA	Rehab Itinerant Apron	50	11

Source: Cambridge Systematics, Inc., Airport Analytics, Inc., MIA, FLL, PBI, FXE, OPF, LNA.

6.2.3 Rail Needs

Needs were identified for four components of Southeast Florida's rail system (CSX, FEC Railway, South Central Florida Express, and South Florida Rail Corridor). These needs are focused on improved connectivity between FEC and CSX, mainline capacity, key track upgrades, and yard improvements. Several key rail projects have been on the regional needs list for some time have recently been completed (PortMiami's ICTF, bascule bridge repair, and upgrades to the port lead; Port Everglades' ICTF and port lead; and the TIGER funded connections at IRIS and Northwood).

The list of needs was prioritized based on the following criteria (see Figure 6.3 for an example of a scored project and Appendix B for a detailed description of the methodology and results):

- Project Type (20 points);
- Type of Traffic (15 points);

- Project in an Established Plan (15 points);
- Level of Impact (15 points);
- Intermodal Connectivity (15 points); and
- Timeframe (20 points).

Figure 6.3 Example of Scored Rail Project

Rail		CSX/FEC
	Projects	CSX TO FEC Pompano Connection
	Project Category	Freight Capacity- Access
Project Type	Capacity	X
	Maintenance	
	Operations	
Type of Traffic	Freight	
	Both	X
In Established Plan	Yes	X
	No	
Intermodal Connectivity	Port	
	Truck	
Timeframe	Plan Year?	S
Level of Impact	FDOT BCR?	
	Significant Traffic Volumes?	X
Ranking Criteria	Project Type	20
	Type of Traffic	5
	In Established Plan	15
	Intermodal Connectivity	0
	Level of Impact	15
	Timeframe	20
	Total	75
	Rank	1

The prioritized rail projects are presented in Table 6.3.

Table 6.3 Prioritized Rail Needs

Rail	Projects	Total	Rank
CSX/FEC	CSX TO FEC Pompano Connection	75	1
CSX/FEC	IRIS Connection from CSX Mainline to FEC Mainline (FECR movement south from Tri-Rail's rail yard to FECR Hialeah yard)	75	1
FEC	FEC Miami Freight Forwarding Yard	70	3
FEC	FEC N. Miami to Ojus Double Track	70	3
FEC	NE 203rd St & NE 215th St Intersection Improvements between US-1 & W Dixie Hwy	60	5
SFRC	MR MIC Double Track Last Mile of SFRC	60	5
FEC	FEC N. Miami to Little River Track Upgrade	55	7
SCFE	South Central FL Express Cane Block	55	7
FEC	C-15 Hidden Valley Canal Rail Bridge (between Yamato and Linton)	55	7
CSX	CSXT Positive Train Control	50	10
CSX	SFRC R/R Bridge over S Fork New River Replace Existing Bridge BR#869924	45	11

Source: Cambridge Systematics, Inc., CSX, FEC Railway, SCFE, and FDOT.

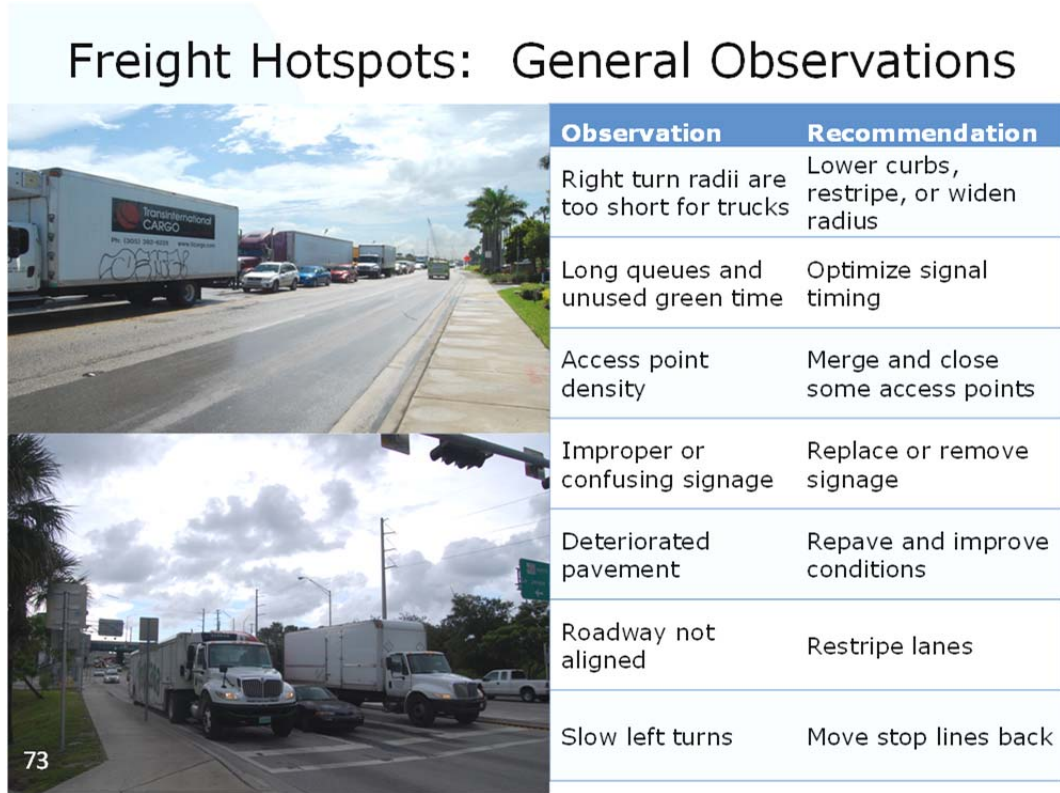
6.2.4 Roadway Needs

Roadway needs include corridors and connectors and major and minor facilities. Given the role trucks play in the region's freight system, the extent of the list is much greater than the other modes. The highway freight needs for Southeast Florida are based on the existing mechanisms in place for identification and development of improvement programs. This ensures the projects are consistent with local plans and programs. Freight needs for trucks have been identified using the following sources:

- Broward, Miami-Dade, and Palm Beach MPO's 2035 Long Range Transportation Plan Needs Plans (also received more recent input by coordinating with local agencies during the development the 2040 LRTP Needs Plans);
- Broward, Miami-Dade, and Palm Beach Transportation Improvement Program (TIP) 2014/2018;
- Freight Plans of Broward, Miami-Dade, and Palm Beach MPOs;
- Florida Freight Mobility and Trade Plan; and
- Florida: Made for Trade, Florida Trade and Logistics Study 2.0.

In addition, a hotspot analysis (discussed in detail in Appendix A) was completed. This analysis screened the regional roadway network as defined in the 2040 RTP to identify freight hotspots based on: employment and sales; volume/capacity; Average Annual Daily Traffic (AADT); AADTT; and truck percent. Types of observations and recommendations developed from this analysis are illustrated in Figure 6.4.

Figure 6.4 General Observations and Recommendations from Hotspot Analysis



Roadway needs projects were identified based on these sources. The freight roadway needs for each county are presented in Appendix C.

Once the freight roadway needs were identified, they were prioritized to ensure that the limited resources are invested in the projects that provide the greatest public benefit. Current practices by each MPO were reviewed to help insure consistency and compatibility, as appropriate. The freight roadway needs prioritization methodology was developed based on five elements. The five elements include truck traffic, truck activity center, type of project, facility type, and intermodal connectivity. The criteria and its resulting total point allocation are summarized below (Appendix D provides the freight roadway needs prioritization worksheet template, which includes the range of points assigned to projects for the individual prioritization elements):

- Truck Traffic (40 total points);
- Truck Activity Centers (25 total points);
- Type of Project (15 total points);
- Facility Type (10 total points); and
- Intermodal Connectivity (10 total points).

The top 25 ranked roadway projects are listed in Table 6.4. These project priorities were provided to the 2040 RTP as input to the overall regional roadway priorities. In addition, they were incorporated as appropriate into the three 2040 L RTPs. The top 10 ranked roadway projects in each county are listed in Tables 6.5, 6.6, and 6.7. Appendix E provides a comprehensive list of prioritized freight roadway projects. Appendix F presents a list of prioritized freight roadway projects by county.

Table 6.4 Top 25 Roadway Freight Needs Projects in Southeast Florida

Rank	Name of Project	Description	Score
1	SR 826/Palmetto Expressway	Add managed lanes between NW 87 th Avenue on I-75 and SR 836	86
2	I-95 Managed Lanes System	Four Managed Lanes/widening I-95 between South Palm Beach County Line and Linton Blvd	85
3	SR 886/Port Bridge	Repairs to bascule rail and vehicle bridge between Biscayne Boulevard and PortMiami	84
4	I-95 Managed Lanes	Four Managed Lanes/widening I-95 between I-595 and Palm Beach County line	82
5	SR 826/Palmetto Expressway	Interchange improvements between US 27/Okeechobee Road and SR 874	81
6	NW 12 th Street	Widen from 4 lanes to 6 lanes, improve signal coordination from NW 107 th Avenue to SR 826	79
7	NW 20 th Street	Roadway infrastructure improvements between NW 27 th Avenue and I-95	79
8	SR 826/Palmetto Expressway	Create barrier separated truck lane with manageable entry/exit from Golden Glades to Dadeland	79
9	Florida's Turnpike	Widen from 6 to 8 lanes from HEFT to Griffin Road	79
10	Medley Bridge/Canal Improvement Program	Improve the connections between Okeechobee Rd and Medley through a combination of bridge widening and canal improvements (NW 121 st Way, NW 116 th Way, NW 105 th Way, NW 79 th Avenue)	78
11	NW 25 th Street	Widen from 4 to 6 lanes from NW 89 th Court to SR 826	78
12	NW South River Drive	Widen North River Drive to include shoulders and improved access management from NW 107 th Avenue to NW 74 th Avenue	78
13	SR 25/Okeechobee Road/US 27	Expressway Conversion - Construct Grade Separated Overpasses at Major Intersections. New Interchange at NW 79 th Avenue, Krome Avenue/SR 997, NW 103 rd Street/NW 87 th Avenue	78
14	SR 25/Okeechobee Road/US 27	Conversion to limited access toll facility from Krome Avenue to SR 826	78
15	SR 821/HEFT	Widen from 6/8 lanes to 10 lanes from Kendall Drive to I-75	78
16	SR 821/HEFT	Widen to 8-, 10-, 12-lanes plus auxiliary lanes from Eureka Drive to Kendall Drive	78
17	SR 821/HEFT	Widen from 6 to 10 lanes from SW 216 th Street to Eureka Drive	78
18	Florida's Turnpike	Implement Open Road Tolling between Griffin Road to Palm Beach County Line	78
19	I-95	ITS - Freeway Management from South Broward County line to North Broward County line	77
20	I-95	Interchange Improvements as recommended in I-95	77

Broward County IMP			
21	I-95	ITS - Freeway Management from South Palm Beach County to North Palm Beach County Line	77
22	I-95	ITS - Severe Incident Response Vehicle from South Palm Beach County line to North Palm Beach County line	77
23	NW 25 th Street Viaduct	Phase 2 - construction of viaduct from SR 826 to NW 87 th Court	76
24	SR 826/Palmetto Expressway (NB)	Add 1 NB auxiliary lane between Okeechobee Road and NW 103 rd Street	76
25	NW 21 st Street/NW 32 nd Avenue	Construct high level bridge from NW 37 th Avenue to NW 28 th Street	75

Table 6.5 Top 10 Roadway Freight Needs Projects in Miami-Dade County

Name of Project	Description	Score	Rank (Regional)
SR 826/Palmetto Expressway	Add managed lanes from NW 87 th Avenue on I-75 to SR 836	86	1
SR 886/Port Bridge	Repairs to bascule rail and vehicle bridge between Biscayne Boulevard and PortMiami	84	4
SR 826/Palmetto Expressway	Interchange improvements between US 27/Okeechobee Road and SR 874	81	6
NW 12 th Street	Widen from 4 lanes to 6 lanes, improve signal coordination from NW 107 th Avenue to SR 826	79	7
NW 20 th Street	Roadway infrastructure improvements from NW 27 th Avenue I-95	79	8
SR 826/Palmetto Expressway	Create barrier separated truck lane with manageable entry/exit between Golden Glades and Dadeland	79	9
Medley Bridge/Canal Improvement Program	Improve the connections between Okeechobee Rd and Medley through a combination of bridge widening and canal improvements (NW 121 st Way, NW 116 th Way, NW 105 th Way, NW 79 th Avenue)	78	11
NW 25 th Street	Widen from 4 to 6 lanes from NW 89 th Court to SR 826	78	12
NW South River Drive	Widen North River Drive to include shoulders and improved access management from NW 107 th Avenue to NW 74 th Avenue	78	13
SR 25/Okeechobee Road/US 27	Expressway Conversion - Construct Grade Separated Overpasses at Major Intersections. New Interchange at NW 79 th Avenue, Krome Avenue / SR-997, NW 103 rd Street / NW 87 th Avenue	78	13

Table 6.6 Top 10 Roadway Freight Needs Projects in Broward County

Name of Project	Description	Score	Rank (Regional)
I-95 Managed Lanes	Four Managed Lanes/widening I-95 between I-595 and Palm Beach county line	82	5
Florida's Turnpike	Widen from 6 to 8 lanes between HEFT and Griffin Road	79	10
Florida's Turnpike	Implement Open Road Tolling from Griffin Road to Palm Beach County Line	78	19
I-95	ITS - Freeway Management between South Broward County line and North Broward County line	77	20
I-95	Interchange Improvements as recommended in I-95 Broward County IMP	77	21
Andrews Avenue	Roadway improvements from SE 28 th Street and South of SW 33 rd Street	75	29
I-95 Managed Lanes	I-95 improvements and express lanes from Golden Glades Interchange and I-595	75	30
I-75 Managed Lanes	Implement 75 Express managed lanes from SR 826 and I-595	67	59
SR 821/HEFT	Widen from 4 to 8 lanes between Miami-Dade County line and Florida's Turnpike	66	62
US 27	Traffic operational improvements including wider shoulders and lighting from Krome Avenue to South Bay	65	71

Table 6.7 Top 10 Roadway Freight Needs Projects in Palm Beach County

Name of Project	Description	Score	Rank (Regional)
I-95 Managed Lanes System	Four Managed Lanes/widening I-95 between South Palm Beach County line and Linton Boulevard	85	3
I-95	ITS - Freeway Management from South Palm Beach County Line to North Palm Beach County Line	77	22
I-95	ITS - Severe Incident Response Vehicle from South Palm Beach County line to North Palm Beach County line	77	23
SR 708 / Blue Heron Boulevard	Add turn lanes to I-95 NB and SB off-ramps in Palm Beach County	70	46
SR 80 / Southern Boulevard	ITS freeway management from Royal Palm Beach Boulevard to Dixie Highway	67	60
SR 708 / Blue Heron Boulevard	Install new DMS sign in Palm Beach County on I-95	65	72
US 27	Traffic operational improvements including wider shoulders and lighting from Krome Avenue to South Bay	65	73
Belvedere Road	Interchange Improvements in Palm Beach County on I-95	64	81
SR 710	Modify Highway Connector from Military Trail to Congress Avenue	60	99
SR 710	Segment Improvements - add lanes and reconstruct between Congress Avenue and Old Dixie Highway	60	100

6.3 Freight Funding Allocations

Although the SFRFP does not have a dedicated funding source, it does help identify and prioritize projects for consideration by the MPO's LRTPs and the RTP. The needs list also was used to help populate the state's Freight Mobility and Trade Plan needs database. In addition, inclusion of projects in a regional freight plan helps the region compete for other funding sources, including state and federal loan and grant programs (e.g., TIFIA, SIB, TIGER).

As part of the development and adoption of the 2040 LRTPs, the three MPOs have taken the next step to formally incorporate freight projects into their plans. The Broward MPO has a freight commitment of \$338 million in its 2040 LRTP Update for highway projects that benefit freight mobility (excluding major state investments). The list of projects identified for this \$338 million are consistent with the freight highway needs identified in Broward County by the SFRFP. The Miami-Dade MPO has a freight set aside of \$127 million in its 2040 LRTP Update specifically for freight only projects (quick fix, low cost) and over \$3 billion in highway capacity projects that benefit both freight and passenger mobility. The Miami-Dade MPO updated its county freight plan in coordination with the SFRFP and worked off of the same needs identification process. The projects funded as part of the set aside, as well as other large capital projects, are consistent with the freight highway needs identified in Miami-Dade County

as part of the SFRFP. The Palm Beach MPO has a freight commitment of \$1.3 billion in its 2040 LRTP Update for highway projects that benefit freight mobility (including major state investments). Like the other two MPOs, Palm Beach MPO used the freight highway needs identified by the SFRFP as input to its 2040 LRTP.

As these numbers illustrate, each MPO is measuring their “freight” investments differently, but the observation is that they are all specifically calling out freight projects as priority investments for their county transportation programs. This positions each MPO and the region well for continued freight investments.

7.0 Strategies and Recommendations

With an established and mature logistics infrastructure, and critical investments in place or under construction to modernize and advance the region, Southeast Florida is well positioned for continued growth in freight related industries. With the next wave of priorities identified, an effective investment strategy is critical.

Each of the MPOs has called out freight investments as critical as part of their recently adopted 2040 L RTPs. These freight set asides will help promote critical freight investments and the investment element of the state's Freight Mobility and Trade Plan should further advance needs of statewide significance. Formal adoption of the national freight network should also promote freight investments as Congress works to reauthorize the Federal transportation bill.

External game changer projects have slipped. The Panama Canal expansion has been delayed. Regionally, development of ILCs has been limited. Proposed sites in St. Lucie, Palm Beach, Hendry, and Glades counties have advanced slowly, and while in some cases the necessary land use and zoning changes have been made, construction has not begun at any of them. These delays and slow downs helps ensure that Southeast Florida has time to bring critical projects online.

7.1 Key Strategies

As global shifts continue, and Florida advances its global logistics competitiveness, Southeast Florida needs to continue to develop and implement strategies that ensure it remains competitive and positioned for growth. The following highlights key short term and ongoing strategies to advance Southeast Florida's freight program:

- **Promote economic contributions of freight and logistics industry.** Transportation and economic development investments take place within a competitive environment. The ability to quantify the economic impacts associated with freight project investments will be critical in the successful solicitation of local, state, and Federal funds. Impact tools and marketing materials should be developed and used to educate key decision-makers.
- **Maximize use of available funding programs.** Although the level of overall dedicated transportation funding available has diminished in recent years, there are a significant number of programs available to help advance freight projects. Programs like Transportation Investment Generating Economic Recovery Grants, State Infrastructure Banks (SIB), FDOT Strategic Intermodal System, and FDOT District Intermodal Funds have been used to advance critical projects in Southeast Florida. Applications, as appropriate, should be routinely submitted to these and other programs to ensure the region and its partners are competing for all available funding.
- **Improve monitoring capabilities of the advancement of key freight projects.** The SFRFP identifies and prioritizes freight projects for the region but does not have a funding source to implement these projects. Projects identified through this process must compete

for funding as part of other plans such as MPO LRTPs and FDOT's SIS program. The ability to track SFRFP's unfunded and funded projects as they move forward through established funding programs can be difficult without a consistent reference system. A process should be developed to streamline the monitoring of these projects.

- **Leverage investments through public private partnerships (P3s).** Southeast Florida is home to some of the largest public private partnerships, including the PortMiami Tunnel and I-595 reversible lanes and expansion. Regardless of the scale of the project, P3s can help accelerate critical investments through shared risk. Opportunities for additional P3s should be identified and pursued as appropriate to help advance remaining freight system needs. In addition, these types of partnerships can help put together local funding matches when pursuing available funding grants from state and Federal partners.
- **Establish guiding freight policy language to evaluate the effectiveness of the freight system.** The SFRFP, RTP, county freight plans, and LRTPs all have defined freight specific or freight supportive goals and objectives. This policy language drives the definition of performance measures, which are a focus area for Florida and the U.S. DOT. MAP-21, as likely will the next federal transportation bill, promotes the importance of identification and implementation of a performance monitoring program to help track the performance of the freight system and effectiveness of the freight program. Florida is a leader in performance measures with a statewide program that exceeds federal requirements. In fact, FDOT is engaging in an effort to develop logistics and supply chain specific performance measures in 2015. Southeast Florida should participate in this statewide effort to ensure it has a comprehensive freight performance monitoring program in place that tracks the region's ability to achieve defined goals and objectives. This will provide an additional tools to support future freight investments in Southeast Florida.
- **Engage the freight community in the identification of freight bottlenecks.** Regional and local freight committees and other key partners (PortMiami, Port Everglades, Port of Palm Beach, MIA, FLL, PBIA, FEC, CSX, and other private companies) must remain engaged and drive investment decisions. The Miami-Dade FTAC provides the county with freight industry input, drives the freight research agenda for the MPO, and identifies and advances critical needs. As part of the SFRFP the SEFTC created a project-specific FTAC. Moving forward, the region should consider the creation of an ongoing FTAC to ensure the freight community is engaged in ongoing planning and implementation activities. The MPOs and FDOT Districts should work together to define the structure and role of this committee.
- **Engage local governments in freight related activities.** In large part, the freight planning work completed in Southeast Florida to date has been led by MPOs and FDOT Districts with support from the freight community. With an increased focus on land use implications and accessibility to industrial activity centers off the state highway system, it becomes increasingly important for local governments to further engage in the region's freight program. This will help ensure quality of life and sustainability while providing mobility and accessibility to the business community.

- **Ensure trade and logistics remains a targeted industry.** Significant work has been undertaken over the last several years by the Florida Chamber Foundation and the Beacon Council, along with many others, to elevate trade and logistics to the list of targeted industries. As a result, different types of economic incentives are available to these industries to drive growth. It is critical that these industries remain designated and that economic development professionals use available incentives to attract and grow businesses in Southeast Florida.
- **Support work force development programs.** The trade and logistics industry is aging and the availability of a trained workforce has become one of the most critical concerns for many companies. Workforce Florida, FDOT, and the Florida Chamber have all identified the need for more training programs; in fact FDOT recently conducted a study designed to explore the development of an Intermodal and Logistics Academy. Southeast Florida should take an active role in workforce development activities to ensure local businesses have access to a highly trained and competitive workforce.
- **Continue to develop, test and expand pilot programs.** Southeast Florida, and Miami-Dade County in particular, is home to several innovative and cutting edge pilot programs developed to address critical bottlenecks in our international trade regulations and operations. The Perishables Coalition, the Transshipment Committee, and CBP's Reimbursable Services Authority all represent exceptions to Federal trade regulations or new ways to manage the programs. Local leaders should continue to expand these pilots and identify new innovative ways to streamline operations to drive the competitiveness of the trade and logistics industry.
- **Monitor ILC developments and partner as appropriate.** The larger master planned ILC proposals in the heartland of South Florida have the potential to significantly expand the logistics capacity of the region and the state as they come online. These developments are taking longer than expected to break ground, but when they do it will be important for Southeast Florida businesses and government leadership to engage with these developers to develop business relationships. In the longer term, this will be even more critical as additional warehouse capacity will be increasingly difficult to accommodate in the Miami Urbanized Area.
- **Support advancement of solutions for missing freight links.** Several missing freight links have been described in this document. While some are being addressed as part of ongoing projects, others are not currently advancing. As the region continues to grow its cargo operations, finding a way to advance some of these remaining projects will help communicate to the world that Southeast Florida is open for business and committed to being a global logistics hub.
- **Promote regional freight mobility.** Finally, it is important to recognize that the Miami Urbanized Area covers parts of four counties in Southeast Florida. This integrated region is home to over 5.5 million residents and millions of annual tourists. The freight companies serving this market do not recognize county lines; they only care about overall access and mobility. The continued partnership by the Broward, Miami-Dade, Palm Beach MPOs and

the FDOT Districts will be critical to ensure the freight community is provided the best transportation and logistics system possible.

7.2 New Ways of Investing in Freight and Logistics

Over the last few years the State of Florida has made significant strides to redefine itself as a global logistics hub. The Governor, Legislature and FDOT have promoted a renewed emphasis of the importance of goods movement to the State. Major freight projects have been funded and constructed, new funding programs have been created to ensure we continue to invest in our seaports and ILCs.

Even with these advancements, many of the private sector investments necessary to support industrial development on private lands are not eligible for public funding, or may only be eligible for the transportation connection. In response to these conditions, the **Rapid Advancement of Freight Initiatives** concept was developed by the Broward MPO to explore new ways for the public sector to partner with private industry to accelerate Southeast Florida's development of state of the art logistics infrastructure to support the state's goal of becoming a leading global logistics hub.

In order for Florida to compete with states like Alabama and Georgia for new trade and manufacturing-related businesses, additional flexibility for state and federal investment options should be considered to help promote specific types of developments.

Putting the necessary mechanisms in place to ensure the shortest possible timeframe for these investment decisions also will be critical to help realize the full economic impact of the State's investments, and make sure that local communities receive the benefits both in jobs and economic impacts on a schedule consistent with the needs of the private sector.

The goals of this project are to:

- Identify available state and local transportation and land assets that could be used to meet existing and future goods movement needs and supply chain strategies;
- Identify underutilized rail assets that are located in, or access, underutilized property appropriate for targeted industry development;

Rapid Advancement Of Freight Initiatives
A PROPOSAL FOR SOUTHEAST FLORIDA

CARGO2040

Southeast Florida is one of the primary goods movement hubs of the United States. It is uniquely situated between the Latin American and large North American markets both physically and culturally. In addition, it is well positioned for East/West trade lanes as the Panama Canal expansion nears completion and the Suez Canal traffic continues to grow. As trade between the U.S. and its trading partners to the south increases, and the Atlantic and Gulf Coast ports prepare for growth in East/West trade with Europe and the Far East, the relationship between transportation and land-side infrastructure is critical to position Florida for an increased share of global trade. Florida's jobs and economic health depend on maximizing return on the state's assets in a competitive worldwide marketplace.

The Governor, Legislature and FDOT have promoted a renewed emphasis on the importance of goods movement to the State. At the planning level, FDOT recently completed the Florida Freight Mobility and Trade Plan Policy Element and is moving forward with development of the Investment Element over the next year. At the programmatic and project level, significant investments in Intermodal Logistics Centers (ILCs), port infrastructure and dredging, and rail infrastructure projects have been prioritized and are underway to help strengthen Florida's position in the global marketplace. While many of these elements are or have recently become eligible for state funding, many of the private sector investments necessary to support industrial development on private lands are not eligible, or may only be eligible for the transportation connection. In order for Florida to compete with states like Alabama and Georgia for new trade and manufacturing related businesses, additional flexibility for state investment options should be considered to help promote specific types of developments.

Putting the necessary mechanisms in place to ensure the shortest possible timeframe for these investment decisions also will be critical to help realize the full economic impact of the State's investments, and make sure that local communities receive the benefits both in jobs and economic impacts on a schedule consistent with the needs of the private sector goods shippers. Re-use of state and local transportation and land assets should be part of a first tier screening of industrial development opportunities.

Photo courtesy of www.seaforidag.com

The goals of this proposal are straightforward:

- Identify available state and local transportation and land assets that could be used to meet existing and future goods movement needs and supply chain strategies
- Identify regulatory and land use policy barriers that impede southeast Florida's ability to respond to private-sector trade and industrial opportunities
- Identify strategies to mitigate these barriers and promote investments in projects that support Florida's goals of doubling Florida-origin exports and becoming a global logistics hub

- Identify key private sector assets that are under utilized and/or constrained by existing transportation system access;
- Identify regulatory and land use policy barriers that slow down or impede Southeast Florida's ability to respond to private-sector trade and industrial opportunities;
- Identify strategies to mitigate these barriers and promote investments in projects that support Florida's goals of doubling Florida-origin exports and becoming a global logistics hub;
- Identify and implement demonstration projects that show how the barriers between the investment in assets and the needs of the marketplace can be better integrated to create jobs and positive economic impacts quickly through a coordinated effort of state decision making and local land use policies; and
- Identify key lessons learned that can be applied throughout Florida to promote timely investments in transportation and industrial/trade related infrastructure.

The Freight Subcommittee of the Metropolitan Planning Organization Advisory Council (MPOAC) will provide technical guidance and advocacy for this project with the intent being the sharing of lessons learned statewide to support the larger state objective of making Florida a competitive global logistics hub.

7.3 Key Implementation Activities

Our ability to incorporate freight priorities into our local, regional, and state plans is critical to our future. Southeast Florida is home to a well established, globally competitive logistics industry. Billions of dollars have been invested over last several years to ensure the region remains competitive and well positioned for significant growth as global trade patterns continue to shift. The economic prosperity and the sustainability of the community will be strengthened and driven by the region's success as a global logistics hub.

With the completion of this update, it is important to lay out key implementation activities, or next steps, to ensure the SFRFP affects change. A structure needs to be established to ensure that the key strategies defined above are implemented. To do that, it is necessary to build consensus with the freight community on appropriate strategies, define roles and responsibilities of public and private partners, and agree upon key next steps or actions. The following are recommended immediate next steps to help the region implement the key strategies and advance the demonstration project designed to change how we partner with the private freight industry:

- **Identify regional freight team.** As part of the SFRFP an advisory committee was formed. This committee included agencies and key modal partners. The funding partners (three MPOs and two FDOT districts) should engage the committee members in a discussion of the best way to establish a regional freight team. This team could be similar to the advisory committee or it could evolve to be more of a formal regional Freight

Transportation Advisory Committee. The goal of the team or committee should be to ensure the SFRFP is implemented and that the region is well equipped to advocate for itself at the state, national, and international level.

- **Define roles and responsibilities.** In order to implement the key strategies defined in this Plan, roles and responsibilities must be clearly defined and owned. The summit and creation of the freight team will provide avenues for partners to step up and agree to take on certain roles. Additional recruitment will be required as part of a comprehensive outreach program. This outreach program will need to be owned by agency staff. Developing this matrix of roles will be the single most important action step.
- **Organize and conduct regional freight summit.** It has been a few years since the last Southeast Florida Regional Freight Summit was held. Over the last fifteen years, these summits have been held every year or two to bring the freight community together to discuss needs, establish priorities, and facilitate collaboration. Public and private leaders have participated on panels, sharing insights on key topics. The unveiling of the Southeast Florida Regional Freight Plan, 2014 Update, tied to the state's Freight Mobility and Trade Plan and the Florida Chamber's Trade and Logistics Plan, provides a perfect opportunity to engage the freight community in a discussion of what has been accomplished, what freight system needs still exist, and how we can partner to implement the strategies defined in the Plan. A key outcome could be volunteers to serve on committees or task forces to pursue identified strategies as part of a larger action plan.
- **Develop action plan.** Once the freight team has been formed and the partner roles defined, an action plan should be developed. These actions should address the key strategies and other actions as necessary. These actions can be organized by quarter/year. Expected outcomes should be defined for each strategy/action. The action plan should be a living document updated as necessary but at least annually. It should include performance metrics related to the successful implementation of the strategy as well as the impact the strategy has on Southeast Florida.