Chapter 5
Airport Cargo Facilities Inventory

INTRODUCTION

Chapters three and four identified the air cargo commodities and tonnages Florida airports accommodate on a regular basis as well as cargo aircraft operating at these airports. This chapter inventories airport infrastructure and facilities which accommodate air cargo activity in the State. As part of the airport inventory analysis, airport management personnel at Florida SIS and Tier Two Airports were asked to respond to a series of questions regarding current and planned air cargo facilities. Each airport was asked to provide enplaned and deplaned cargo tons from 2000 to 2005 and the portion of the airport's 2005 cargo in terms of both domestic and international activity. This survey quantifies both air cargo and intermodal (truck) cargo activity related to airports.

This chapter first identifies the existing facilities then describes airport management plans to improve their airport's air cargo capability over the 20-year planning period. Facilities inventoried include:

- Primary Runway Length
- Aircraft Apron
- Warehouse
- Customs
- Truck Docks and Parking
- Perishables Storage
- Security Facilities
- Acreage

AIRPORT INFRASTRUCTURE AND SERVICE REQUIREMENTS

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

Beyond the basics listed above, the airports need to provide the following:

- Adequate ramp space: lighted ramp for night operations; clearly marked aircraft parking pads and taxiways; security fence to prevent loss; and secured gates that allow ease of entry for cargo vehicles
- Interlining capabilities with connecting passenger carriers, charters, and motor carriers - especially important to the non-integrators since they must rely on other modes and carriers to provide, or extend, the service they cannot provide.
- Direct access to aircraft by trucking operations
- Superior roadway network in the airport's vicinity

- Support services: cargo terminal handling; aircraft handling (maintenance, repair, fueling, etc.); and security
- On-airport regulatory authorities: U.S. Customs, FAA, U.S. Department of Agriculture, and U.S. Postal Service
- Strong presence of freight forwarders in the local market place – an airport-to-airport cargo carrier cannot exist without the presence of a strong freight forwarder network within the community

Smaller airports that support prop or turbo prop "feeder" aircraft (generally payloads of under 5,000 pounds) are exempt from a majority of the above-mentioned criteria. However, for large cargo jet aircraft (payloads of 18,000 to 200,000 pounds per aircraft) to operate efficiently at an airport, the listed facilities and services must be provided. If airports currently supporting jet aircraft service become overly constrained as air freight volumes continue to grow and become unable to provide the necessary space and facilities, alternate facilities may be sought by air cargo carriers. It is highly unlikely that a carrier would abandon its presence at a major market area airport if that airport becomes constrained. A more likely scenario would be diverting some material to a secondary or reliever airport via smaller feeder aircraft for express air carriers, or increasing truck operations in and around the market area in the case of freight forwarders utilizing all-cargo airlines.

FACILITIES INVENTORY

Runway Length

Inventory survey results indicate that the average primary runway length among SIS Airports is 11,000 feet. On average, runway length at Tier Two Airports is 9,023 feet. **Exhibit 5.1** identifies the primary runway length for the Florida SIS and Tier Two Airports.

At 13,000 feet, the primary runway at Miami International Airport is the longest of all airports included in the inventory. Nearby Ft. Lauderdale-Hollywood International Airport has the shortest primary runway of the Florida SIS Tier One Airports at 9,000 feet. The Tampa International Airport, with an 11,002 foot primary runway, represents the study average. Three airports surveyed, Orlando International (MCO), Southwest Florida International (RSW), and Okaloosa Regional/Ft. Walton-Valparaiso (VPS) each have a primary runway approximately 12,000 feet in length. Among Tier Two Airports, VPS is the leader in primary runway length. The Tier Two airport with the shortest runway is Panama City-Bay County with a primary runway length of 6,300 feet. It should be noted that a new airport in Panama City will be constructed in 2007 and will have a 6,800 foot runway on opening day. By 2008, Orlando Sanford Airport plans to extend its primary runway from 9,600 feet to 11,500 feet.

Exhibit 5.1
Primary Runway Length at Florida Airports

Airport Name	Associated City	Code	Primary Runway Length (in feet)
Florida SIS Airports			
Ft. Lauderdale-Hollywood International	Ft. Lauderdale	FLL	9,000
Jacksonville International	Jacksonville	JAX	10,000
Orlando International	Orlando	MCO	12,005
Miami International	Miami	MIA	13,000
Palm Beach International	Palm Beach	PBI	10,008
Southwest Florida International	Ft. Myers	RSW	12,000
Tampa International	Tampa	TPA	11,002
Florida Tier Two Airports			
Daytona Beach International	Daytona Beach	DAB	10,500
Gainesville Regional	Gainesville	GNV	7,503
Melbourne International	Melbourne	MLB	10,181
Panama City-Bay County	Panama City	PFN	6,300
St. Petersburg-Clearwater International	St. Petersburg	PIE	9,650
Pensacola Regional	Pensacola	PNS	7,000
Orlando Sanford	Orlando	SFB	9,600
Tallahassee Regional	Tallahassee	TLH	8,000
Okaloosa County	Valparaiso	VPS	12,005
Sarasota-Bradenton International	Sarasota	SRQ	9,500
Key West International	Key West	EYW	4,801

Source: Airport Records, FAA Form 5010, Wilbur Smith Associates

Aircraft Apron

Aircraft apron space is often dedicated strictly to air cargo operations. Air cargo apron space can also be provided as part of a multi-use ramp. Survey results indicate that the average air cargo ramp space at SIS Airports dedicated to cargo activities is 120,267 square yards. Among the Tier Two Airports, seven of the ten reporting facilities have dedicated air cargo ramps. On average, these dedicated cargo ramps provide 36,287 square yards of space.

Seven airports inventoried, three SIS and four Tier Two, have multi-use ramp space[1] available for air cargo operations. Of the airports with this capability, the average number of square yards available for air cargo operations is 130,238 at SIS Airports and 62,142 at the Tier Two Airports. **Exhibit 5.2** identifies the dedicated air cargo ramp space and multi-use ramp space available at reporting SIS and Tier Two Airports.

[1] Multi-use ramp space is used jointly for air cargo, general aviation, and commercial service activity.

Exhibit 5.2
Air Cargo Apron at Florida Airports

Airport Name	Associated City	Code	Dedicated Air Cargo Ramp Space (Square Yards)	Multi-use Ramp Space (Square Yards)	Total
Florida SIS Airports					
Ft. Lauderdale-Hollywood International	Ft. Lauderdale	FLL	111,111	5,556	116,667
Jacksonville International	Jacksonville	JAX	76,750	0	76,750
Orlando International	Orlando	MCO	237,446	182,495	419,941
Miami International	Miami	MIA	219,698	191,552	411,250
Palm Beach International	Palm Beach	PBI	12,850	0	12,850
Southwest Florida International	Ft. Myers	RSW	69,000	0	69,000
Tampa International	Tampa	TPA	146,600	0	146,600
Florida Tier Two Airports					
Daytona Beach International	Daytona Beach	DAB	0	0	0
Gainesville Regional	Gainesville	GNV	30,000	0	30,000
Melbourne International	Melbourne	MLB	44,500	0	44,500
Panama City-Bay County[1]	Panama City	PFN	2,230	79,900	82,130
St. Petersburg-Clearwater International	St. Petersburg	PIE	17,700	8,000	25,700
Pensacola Regional	Pensacola	PNS	2,166	0	2,166
Orlando Sanford	Orlando	SFB	34,583	66,667	101,250
Tallahassee Regional	Tallahassee	TLH	34,000	94,000	128,000
Okaloosa County	Valparaiso	VPS	0	0	0
Sarasota-Bradenton International	Sarasota	SRQ	0	0	0
Key West International	Key West	EYW	5,000	0	5,000
Total			**1,007,035**	**628,170**	**1,635,205**

Source: Airport Records, Wilbur Smith Associates
1.) At new airport, existing facility does not have dedicated air cargo ramp space.

The SIS airport with the most dedicated air cargo ramp space is Orlando International with 237,446 square yards. Palm Beach International has the smallest dedicated air cargo ramp available of the SIS Airports at 12,850 square yards. The Tier Two airport offering the most ramp space for air cargo operations is Melbourne International with 44,500 square yards of dedicated air cargo ramp space.

Warehouse

Airports with significant air cargo activity typically have on-airport warehouse facilities. These storage facilities keep cargo off of the ramp area and provide a holding area for goods awaiting air and RFS connections to final destination. These facilities also function as sortation centers for cargo carriers. All Florida SIS Airports have at least one dedicated air cargo building. The average number of dedicated air cargo buildings at Florida SIS Airports is six; offering a total of 601,206 square feet. Miami International is the leader in warehouse space offering 17 dedicated air cargo buildings with 2,795,148 total square feet of space. Cargo warehouses are responsible for accommodating only about 20 percent of the total traffic processed at Miami International. Given the size of operations at Miami International, there are several off-airport

facilities transferring cargo to-and-from the airport. In fact, 80 percent of traffic processed via Miami International is accommodated at off-airport warehouses, illustrating the need for efficient roadway networks in the airport's vicinity.

Among Florida Tier Two Airports, the largest warehouse facilities are located at Melbourne International (MLB). This airport has two dedicated air cargo buildings offering 120,000 square feet of warehouse space. **Exhibit 5.3** provides the number of dedicated air cargo buildings and associated square footage at reporting Florida SIS and Tier Two Airports.

Exhibit 5.3
Warehouse Space at Florida Airports

Airport Name	Associated City	Code	Dedicated Air Cargo Buildings	Total Air Cargo Building Square Footage	Percent Occupied	Total Air Cargo Building Square Footage Occupied
Florida SIS Airports						
Ft. Lauderdale-Hollywood International	Ft. Lauderdale	FLL	1	225,000	100%	225,000
Jacksonville International	Jacksonville	JAX	5	414,000	85%	351,900
Orlando International	Orlando	MCO	14	630,444	90%	567,400
Miami International	Miami	MIA	17	2,795,148	95%	2,655,391
Palm Beach International	Palm Beach	PBI	2	69,349	25%	17,337
Southwest Florida International	Ft. Myers	RSW	2	39,500	100%	39,500
Tampa International	Tampa	TPA	3	225,000	80%	180,000
Florida Tier Two Airports						
Daytona Beach International	Daytona Beach	DAB	1	5,300	20%	1,060
Gainesville Regional	Gainesville	GNV	1	0	N/A	N/A
Melbourne International	Melbourne	MLB	2	120,000	90%	108,000
Panama City-Bay County	Panama City	PFN	0	0	N/A	N/A
St. Petersburg-Clearwater International	St. Petersburg	PIE	1	2,500	N/A	N/A
Pensacola Regional	Pensacola	PNS	1	14,500	N/A	N/A
Orlando Sanford	Orlando	SFB	1	45,000	0%	0
Tallahassee Regional	Tallahassee	TLH	2	12,000	0%	0
Okaloosa County	Valparaiso	VPS	0	0	0%	0
Sarasota-Bradenton International	Sarasota	SRQ	1	19,200	60%	11,520
Key West International	Key West	EYW	1	4,000	100%	N/A
Total			**54**	**4,620,941**	**90%**	**4,157,108**

Source: Airport Records, Wilbur Smith Associates

Truck Bays and Parking

Truck bays and parking are used to accommodate vehicles bringing cargo to and from airports. This cargo connects with arriving and departing aircraft and surface vehicles. In terms of air cargo activity, it follows that the airports with the largest operations also support the highest number of truck docks. The category leaders are Florida SIS Airports: Miami International, Orlando International, and Jacksonville International. These three airports support more than 1,150 total air cargo building truck docks. Of these three category leaders, Miami International

represents nearly 70 percent of the total, Orlando has 22 percent, and Jacksonville accounts for eight percent.

Florida Tier Two Airport Melbourne International (MLB) is the category leader in air cargo building truck docks. Other Tier Two Airports offering truck docks are Orlando Sanford (SFB), Tallahassee Regional (TLH), Pensacola Regional (PNS), Daytona Beach International (DAB), and Sarasota Bradenton (SRQ). **Exhibit 5.4** provides the number of dedicated air cargo buildings and associated truck docks at reporting Florida SIS and Tier Two Airports.

Exhibit 5.4
Truck Bays and Parking at Florida Airports

Airport Name	Associated City	Code	Air Cargo Building Truck Docks
Florida SIS Airports			
Ft. Lauderdale-Hollywood International	Ft. Lauderdale	FLL	7
Jacksonville International	Jacksonville	JAX	105
Orlando International	Orlando	MCO	253
Miami International	Miami	MIA	794
Palm Beach International	Palm Beach	PBI	30
Southwest Florida International	Ft. Myers	RSW	17
Tampa International	Tampa	TPA	51
Florida Tier Two Airports			
Daytona Beach International	Daytona Beach	DAB	1
Gainesville Regional	Gainesville	GNV	0
Melbourne International	Melbourne	MLB	19
Panama City-Bay County	Panama City	PFN	0
St. Petersburg-Clearwater International	St. Petersburg	PIE	0
Pensacola Regional	Pensacola	PNS	5
Orlando Sanford	Orlando	SFB	9
Tallahassee Regional	Tallahassee	TLH	7
Okaloosa County	Valparaiso	VPS	0
Sarasota-Bradenton International	Sarasota	SRQ	10
Key West International	Key West	EYW	0
Total			**1,308**

Source: Airport Records, Wilbur Smith Associates

Perishables Storage

Of the seven Florida SIS Airports included in the inventory, three of these facilities offer storage space for perishables. The leader in this category is Miami International with over 253,000 total square feet available. Major tenants with perishable cargo operations at Miami International include American Airlines and Lan Chile. These two firms use over 170,000 square feet of refrigerated storage space. The most popular perishables imported at Miami International are fish, flowers, and fruit. These goods are stored in refrigerated warehouse space until they clear required Customs inspections or await arriving trucks.

The air cargo facilities at Miami International and Orlando International offer centralized Customs and Agriculture clearance facilities to minimize the amount of time required to clear cargo. In addition to its Cargo Clearance Center, Miami International also maintains a dedicated facility for processing flowers. This airport processes more cut flowers than any other airport in the U.S. and uses a dedicated Plant Protection and Quarantine Station (PPQ) to do so.[2] The extensive truck dock facilities offered at Miami International are also useful in quickly moving perishables from aircraft to surface transport. Integrated express carrier UPS does not store perishables at Miami International. Rather, this carrier circumnavigates a storage requirement by moving time-sensitive goods directly from airplanes and onto trucks within one hour of aircraft arrival. Orlando International Airport also has a perishables facility. However, it is not used in that capacity. The current tenant, Continental Airlines, uses the facility for aircraft parts storage.

The extensive perishables operation at Miami International affects the facility's warehouse utilization. Perishables have unique product characteristics. Unlike small packages that can be processed through automated sortation equipment, perishables are non-conveyable. These goods are moved within the cargo warehouses via forklift. On average, Miami International warehouse facilities accommodate one ton of cargo for each square foot of space. Density within warehouses with slides and conveyors is better. Under this setup, a warehouse can store one ton of cargo on each one-half foot of floor space.

Among the Tier Two Airports, there is one facility with dedicated perishables storage space. This airport, Orlando Sanford, offers 6,000 square feet. **Exhibit 5.5** provides the number of square feet available for perishables storage at reporting Florida SIS and Tier Two Airports.

[2] Miami International Airport

Exhibit 5.5
Perishable Storage Facilities at Florida Airports

Airport Name	Associated City	Code	Total Refrigerated Square Footage
Florida SIS Airports			
Ft. Lauderdale-Hollywood International	Ft. Lauderdale	FLL	1,000
Jacksonville International	Jacksonville	JAX	0
Orlando International	Orlando	MCO	7,070
Miami International	Miami	MIA	253,051
Palm Beach International	Palm Beach	PBI	0
Southwest Florida International	Ft. Myers	RSW	0
Tampa International	Tampa	TPA	0
Florida Tier Two Airports			
Daytona Beach International	Daytona Beach	DAB	0
Gainesville Regional	Gainesville	GNV	0
Melbourne International	Melbourne	MLB	0
Panama City-Bay County	Panama City	PFN	0
St. Petersburg-Clearwater International	St. Petersburg	PIE	0
Pensacola Regional	Pensacola	PNS	0
Orlando Sanford	Orlando	SFB	6,000
Tallahassee Regional	Tallahassee	TLH	0
Okaloosa County	Valparaiso	VPS	0
Sarasota-Bradenton International	Sarasota	SRQ	0
Key West International	Key West	EYW	0
Total			**267,121**

Source: Airport Records, Wilbur Smith Associates

Customs

Florida's importance as an international trading partner in the global economy fosters a need for customs clearance capabilities at the State's airports. All cargo entering the U.S. or leaving the U.S. via Florida must be inspected by US Customs personnel. Hence, locating Customs facilities on-airport assists in timely and efficient international cargo transfers. Without this capability, cargo must be moved to off-airport facilities and inspected.

All Florida SIS Airports have U.S. Customs capabilities on-site. Each of these seven airports is also located in areas classified as Foreign Trade Zones (FTZs). The U.S. Department of Agriculture maintains operations at six of the seven Florida SIS Airports. One Florida SIS Airport, Palm Beach International, does not have a USDA inspection station.

Among the Florida Emerging SIS and Other airports, six facilities are classified as Foreign Trade Zones. U.S. Customs operations are in place at eight of the eleven Emerging SIS and Other Florida airports. One Florida Tier Two Airport, Sarasota-Bradenton International,offers USDA inspection facilities on-site. **Exhibit 5.6** provides the full-range of customs clearance capabilities offered at Florida airports.

Exhibit 5.6
Customs Clearance Capabilities at Florida Airports

Airport Name	Associated City	Code	Foreign Trade Zone	U.S. Customs	USDA
Florida SIS Airports					
Ft. Lauderdale-Hollywood International	Ft. Lauderdale	FLL	Yes	Yes	Yes
Jacksonville International	Jacksonville	JAX	Yes	Yes	Yes
Orlando International	Orlando	MCO	Yes	Yes	Yes
Miami International	Miami	MIA	Yes	Yes	Yes
Palm Beach International	Palm Beach	PBI	Yes	Yes	No
Southwest Florida International	Ft. Myers	RSW	Yes	Yes	Yes
Tampa International	Tampa	TPA	Yes	Yes	Yes
Florida Tier Two Airports					
Daytona Beach International	Daytona Beach	DAB	Yes	Yes	No
Gainesville Regional	Gainesville	GNV	No	No	No
Melbourne International	Melbourne	MLB	Yes	Yes	No
Panama City-Bay County	Panama City	PFN	Yes	Yes	No
St. Petersburg-Clearwater International	St. Petersburg	PIE	Yes	Yes	No
Pensacola Regional	Pensacola	PNS	No	Yes	No
Orlando Sanford	Orlando	SFB	Yes	Yes	No
Tallahassee Regional	Tallahassee	TLH	Yes	No	No
Okaloosa County	Valparaiso	VPS	No	No	No
Sarasota-Bradenton International	Sarasota	SRQ	No	Yes	Yes
Key West International	Key West	EYW	No	Yes	No

Source: Airport Records, Wilbur Smith Associates

Air Cargo Facility Roadway Access

Access to airside cargo facilities is a key component in the efficient operation of an airport's air cargo operations. Air drayage (the truck component of air cargo operations that brings freight to and from an airport) is an integral part of every air cargo movement. Air drayage can either be local (to and from warehouses and distribution centers immediately surrounding an airport) or long distance involving interstate truck movements of air cargo. Airports serving the respective surrounding market area (referred to as a local market station) require drayage of 100 percent of the airport's air cargo volume. However, even at hub and gateway airports where a significant amount of aircraft-to-aircraft transloading occurs, there is a heavy requirement for drayage operations. Multiple air cargo network factors at hub and gateway airports require heavy use of drayage operations. These factors include off-airport consolidation/sortation facilities due to airside congestion (e.g., Miami International Airport), increased use of trucks traveling from greater distances to feed air cargo operations and the local drayage requirements driven by a hub or gateway airport's local market area.

It is typically at or near airport access points where air cargo traffic moving via surface transport that bottlenecks occur. This trucking of cargo is commonly referred to as drayage. The congestion problem is compounded when passenger traffic is commingled with truck traffic at the same access points. Airports having air cargo facilities that are accessed by routes

separate from passenger terminal traffic are often able to increase truck access efficiency to the extent that bottlenecks and delays are reduced (particularly during daily peak travel-demand times). This is not to say that there are not congestion issues or bottlenecks, but an Airport's layout (separation of cargo and passenger facilities) can eliminate a key problem of commingled traffic. In addition, the extent to which truck traffic can avoid residential and commercial district roads (typically congested and constrained) will reduce congestion and delay.

Exhibit 5.7 details the air cargo facility access traits of Florida's airports based upon the primary access routes to each airport's cargo facilities. This data was gathered from the airport management survey in conjunction with observations garnered from airport site visits.

Exhibit 5.7
Airport Access Roads – Air Cargo Facilities

Airport Name	Code	Direct or Dedicated Access Routes	Shared Access with PAX Traffic	Access via Residential Roads	Access via Commercial District Roads
Florida SIS Airports					
Ft. Lauderdale-Hollywood International	FLL	No	No	No	Yes
Jacksonville International	JAX	Partial	Yes	No	Yes
Orlando International	MCO	Yes	Yes	No	No
Miami International	MIA	No	No	No	Yes
Palm Beach International	PBI	Yes	No	No	No
Southwest Florida International	RSW	Yes	No	No	Partial
Tampa International	TPA	Yes	No	No	Yes
Florida Tier Two Airports					
Daytona Beach International	DAB	No	Yes	No	No
Gainesville Regional	GNV	No	No	No	Yes
Melbourne International	MLB	Partial	No	No	Yes
Panama City-Bay County	PFN	No	Yes	Yes	Yes
St. Petersburg-Clearwater International	PIE	No	Yes	No	No
Pensacola Regional	PNS	No	No	No	Yes
Orlando Sanford	SFB	No	Yes	Yes	Yes
Tallahassee Regional	TLH	No	No	No	Yes
Okaloosa County	VPS	No	Yes	No	No
Sarasota-Bradenton International	SRQ	Yes	No	No	Yes
Key West International	EYW	N/A	N/A	N/A	N/A

Source: Airport Records, Wilbur Smith Associates
N/A = Information Not Available

Through the airport management and freight forwarder/carrier survey effort coupled with airport management and site visits, specific access routes to Florida SIS airport cargo facilities (Tier One and Tier Two) were identified along with specific access issues and congestion points. Detailed maps of each airport's primary air cargo access roads and designated SIS connectors are provided in **Appendix D**. If applicable, the location of identified access issues and congestion points are highlighted. In addition, a freight forwarder/cargo carrier (truck i.e. drayage and air) survey was conducted in order to assist in the identification of access issues and bottlenecks surrounding Florida airports. Survey results are found in **Appendix E**.

A summary of each Florida Tier Two airport's air cargo access infrastructure, identified issues, and planned/proposed improvements is presented in **Appendix D**. These metrics along with forward-looking plans for Florida SIS Airports are discussed in detail later in this chapter.

FLORIDA SIS AIRPORT CARGO FACILITY PLANS

In order to support continued economic expansion throughout the State of Florida, it is imperative that the seven SIS Airports provide the required infrastructure to support air cargo operations. This section focuses on the plans in place to accommodate future levels of air cargo demand. The categories for discussion are outlined below:

- Runway Length
- Apron
- Warehouse
- Perishables
- Truck Bays and Parking
- Acreage Availability

Runway Length

Based on the Airport Management Inventory Survey, none of the Florida Tier One SIS Airports have plans for a primary runway extension project underway or on the horizon. Ft. Lauderdale International, however, is developing plans to construct an 8,600 foot parallel runway. Three Florida Tier Two Airports are planning runway extensions: Orlando Sanford, Melbourne International, and Panama City-Bay County International. One airport, St. Petersburg-Clearwater International, recently completed construction of its primary runway now measuring 9,650 feet in length. Panama City-Bay County International Airport will actually develop a new airport offering a primary runway length of 6,800 feet by opening day. Construction on this new airport is expected to start in 2007. **Exhibit 5.8** provides the current primary runway lengths and the ultimate planned runway lengths for the Florida SIS and Tier Two Airports.

Exhibit 5.8
Runway Length at Florida Airports

Airport Name	Associated City	Code	Primary Runway Length (in feet)	Ultimate Planned Runway Length	By Year
Florida SIS Airports					
Ft. Lauderdale-Hollywood International	Ft. Lauderdale	FLL	9,000	TBD	---
Jacksonville International	Jacksonville	JAX	10,000	---	---
Orlando International	Orlando	MCO	12,000	---	---
Miami International	Miami	MIA	13,000	---	---
Palm Beach International	Palm Beach	PBI	10,000	---	---
Southwest Florida International	Ft. Myers	RSW	12,000	---	---
Tampa International	Tampa	TPA	11,000	---	---
Florida Tier Two Airports					
Daytona Beach International	Daytona Beach	DAB	10,500	---	---
Gainesville Regional	Gainesville	GNV	7,503	---	---
Melbourne International	Melbourne	MLB	10,181	11,600	2011
Panama City-Bay County	Panama City	PFN	6,300	12,000	2028
St. Petersburg-Clearwater International	St. Petersburg	PIE	9,650	9,650	---
Pensacola Regional	Pensacola	PNS	7,000	8,000	---
Orlando Sanford	Orlando	SFB	9,600	11,500	2008
Tallahassee Regional	Tallahassee	TLH	8,000	8,000	---
Okaloosa County	Valparaiso	VPS	12,000	---	---
Sarasota-Bradenton International	Sarasota	SRQ	9,500	---	---
Key West International	Key West	EYW	4,801	---	---

Source: Airport Records, Wilbur Smith Associates

Acreage Availability

Airports planning to expand air cargo operations in the coming years may require additional acreage. Based on the number of acres dedicated for on-airport cargo use, Orlando International offers the most land available for expansion. **Exhibit 5.9** provides the number of acres of land dedicated for on-airport cargo use at Florida SIS and Tier Two Airports.

Exhibit 5.9
Acres Dedicated For On Airport Cargo Use at Florida Airports

Airport Name	Associated City	Code	Acres Dedicated For On-Airport Cargo Use[1]
Florida SIS Airports			
Ft. Lauderdale-Hollywood International	Ft. Lauderdale	FLL	50
Jacksonville International	Jacksonville	JAX	19
Orlando International	Orlando	MCO	1,400
Miami International	Miami	MIA	149
Palm Beach International	Palm Beach	PBI	3
Southwest Florida International	Ft. Myers	RSW	22
Tampa International	Tampa	TPA	35
Florida Tier Two Airports			
Daytona Beach International	Daytona Beach	DAB	5
Gainesville Regional	Gainesville	GNV	1
Melbourne International	Melbourne	MLB	12
Panama City-Bay County	Panama City	PFN	1
St. Petersburg-Clearwater International	St. Petersburg	PIE	1
Pensacola Regional	Pensacola	PNS	1
Orlando Sanford	Orlando	SFB	8
Tallahassee Regional	Tallahassee	TLH	9
Okaloosa County	Valparaiso	VPS	0
Sarasota-Bradenton International	Sarasota	SRQ	1
Key West International	Key West	EYW	1

Source: Airport Records, Wilbur Smith Associates
1.) Values for Jacksonville International, Palm Beach International, and Tampa International, Melbourne International, Panama City-Bay County, St. Petersburg-Clearwater International, Okaloosa County, and Sarasota-Bradenton International represent estimates.

FLORIDA SIS AIRPORT CARGO FACILITY PLAN SUMMARIES

As part of the airport inventory, management personnel at each of the seven Florida SIS Airports were asked to provide a synopsis of future plans to accommodate air cargo growth. This chapter concludes with summaries of information gathered during airport site visits to each of the Florida SIS Airports. Full content from these site visits is provided in **Appendix F**.

Ft. Lauderdale-Hollywood International Airport (FLL)

FLL is located adjacent to the junction of I-95 and I-595. I-95 is the main interstate highway running the length of the east coast from Florida to Maine. I-595 is an east–west interstate bypass connecting I-75 to I-95 as well as the Airport to I-75. I-75/I-595 junction is 12 miles west of the airport. The airport is bounded on the east by US Highway 1 and Griffin Road to the south. Traffic in the immediate environs of the airport is accommodated on Airport Perimeter

Road, a “beltway” of sorts surrounding the airport and providing access to the general aviation and air cargo areas of the Airport.

The passenger carrier air cargo building is located on East Service Road while the remaining all-cargo carriers' facilities are located on SW 34th Street which parallels and at some places is beneath the I-595 via duct. Airport management indicates air cargo access has no immediate issues and carriers such as FedEx have not complained to the airport regarding access issues.

The major cargo carriers operating at Ft. Lauderdale International Airport are FedEx and DHL. In terms of market share, these two integrated express providers transported more than 70 percent of the Airport's cargo in 2005. The other major U.S. integrated express carrier, UPS, does not maintain operations on-site at Ft. Lauderdale-Hollywood International. The UPS aircraft serving the Ft. Lauderdale market are actually based at nearby Palm Beach International, another Florida SIS airport. Passenger airlines Delta and Southwest also transport cargo to and from Ft. Lauderdale International. In 2005, Delta's market share was seven percent. There are no all-cargo international carriers based at Ft. Lauderdale-Hollywood International.

Regarding location, the majority of the air cargo facilities located at Ft. Lauderdale-Hollywood International are on the north side of the airfield. The air cargo warehouses on-site are located parallel to I-595. Both passenger airlines and integrated express carriers occupy this warehouse space. Cargo carriers DHL and BAX Global lease space from the Airport and are co-located inside a 70,000 square foot warehouse. Passenger airlines moving air cargo, such as Delta and Southwest, conduct their operations in a 35,000 square foot warehouse.

In addition to on-airport operations, integrated express carrier FedEx also maintains an off-airport sortation facility located one-half mile west of the Ft. Lauderdale-Hollywood International Airport cargo area. This facility offers 156,000 square feet of space. FedEx's on-airport sortation facility measures 60,000 square feet in size. Menlo, (now part of UPS), operates a 60,000 square foot facility 200 yards west of the FedEx on-airport operation.

Cargo related airport improvement plans:

The West Side of the Airport is currently underutilized. About 130 acres of land are currently available for development and provide opportunities for the flexible use of land based on the County's long-term development goals. A proposed land use plan calls for (1) consolidation of general aviation facilities on the West Side, (2) reservation of land for future general aviation, air cargo, and Airport support facilities on the West Side, and (3) a flexible long-term plan capable of accommodating the possible relocation of existing North Side facilities.

A preferred West Side plan was developed to consolidate air cargo, maintenance, and GA facilities on the West Side. As part of this plan, GA facilities would be relocated from the North Side to the West Side adjoining the South Runway and the future cross taxiways to facilitate airfield access and use of the South Runway. Approximately 110 acres of GA facilities could be developed.

Air cargo and maintenance facilities would eventually be relocated to the northern part of the West Side with easy apron/airfield access and access to Runway 9L-27R. Multiple air cargo ramps and a maintenance ramp would also be provided.

Jacksonville International Airport (JAX)

JAX air cargo facilities are located to the south of the passenger terminal and Dixie Clipper Drive. Direct access is provided via Pecan Park Road and Cole Flyer Road. I-95 is approximately 1.5 miles to the east via Airport Road (primary passenger terminal access road). I-295 is approximately 1.7 miles to the south via Pecan Park Road or International Airport Boulevard. Access from points south segregate truck and passenger traffic, however truck traffic from the north must use Airport Road to access the air cargo facilities. This leads to congestion at the I-95/Airport Road interchange, particularly for trucks trying to turn left (south) at Duval Road This is the first intersection to the west of I-95 and requires trucks to cut across 3 lanes of traffic immediately after exiting I-95 to get into the left turn lane. A proposed extension of International Airport Boulevard north from Airport Road to I-95 will allow trucks to exit I-95 prior to the congested Airport Road interchange while giving them access (segregated from passenger traffic on Airport Road) to air cargo facilities and industrial park areas to the east of the Airport. The design has been funded (FDOT Grant 2093996), however project construction has not received funding.

In 2005, the Jacksonville International Airport handled nearly 84,000 tons of cargo. Each of the three primary U.S. integrated express carriers, DHL, FedEx, and UPS, operate scheduled flights to-and-from the Airport. In terms of market share, these three carriers transported 48 percent of all cargo traffic related to the Jacksonville International Airport. FedEx is the leading integrated express carrier by market share with 35 percent. UPS ranks second in market share with 11 percent and DHL is third moving 3 percent of all traffic. Passenger airlines accommodating cargo traffic include Delta, Southwest, US Airways, Air Tran, Continental, and American. In addition, Federal Reserve check-hauling flights operate daily. All of the cargo at Jacksonville International supports domestic activity. Scheduled international cargo service is not offered at Jacksonville International.

In terms of infrastructure, Jacksonville International offers three air cargo buildings with direct airside ramp access. These three buildings offer a combined 164,400 square feet of warehouse space and 57 truck docks. Leading tenants for these warehouses include DHL, FedEx, and UPS. A total of 76,750 square yards of dedicated air cargo ramp surround these three buildings. Two additional buildings located near the air cargo ramps offer 103,700 square feet of warehouse space and 54 truck docks. In the future, Jacksonville International does have space available to expand its air cargo operations. There are three buildings in the air cargo area that can be demolished and provide additional space for air cargo warehouses when demand warrants.

Cargo related airport improvement plans:

A proposed extension of International Airport Boulevard north from Airport Road to I-95 will allow trucks to exit I-95 prior to the congested Airport Road interchange while giving them access (segregated from passenger traffic on Airport Road) to air cargo facilities and industrial park areas to the east of the Airport. The design has been funded (FDOT Grant 2093996), however construction has not received funding to date.

Three buildings (Maintenance Hangars, Sign Shop) available for conversion to cargo would effectively double ramp and building space.

Miami International Airport (MIA)

Roadway access to the air cargo portion of the Airport is currently a serious issue and will remain so for the next four years until FDOT completes a roadway improvement project. The main artery road to the air cargo area is 25th Street which connects the area to FL Highway 826 (Palmetto Expressway). This road is constantly congested with trucks and vehicles entering the cargo area 24 hours per day.

An additional issue related to truck traffic is the intersection of NW 67th Avenue and NW 36th Street. Expansion and improvements of this intersection has not been possible and as a result only a single lane of traffic in each direction on NW 67th Avenue is available for traffic flow. A private business located at the intersection on the southwest corner has refused to sell and as a result prohibited improvements of the intersection. If the city of Miami or Dade County were able to obtain this property, intersection improvements could be made and truck traffic flow would improve.

The Miami International Airport supports more non-stop cargo flights to Latin America and the Caribbean than Orlando, Houston, New Orleans, Atlanta, Tampa, and New York's Kennedy airports combined. This Airport supports South Florida's diverse economy with extensive infrastructure dedicated to cargo operations. The surrounding area is home to more than 1,000 freight forwarders and nearly 300 customs brokers. The Miami International Airport has an all-inclusive Cargo Clearance Center on-site housing 300 inspectors from Customs and Border Protection, the Department of Agriculture, the U.S. Fish and Wildlife Service, and the U.S. Food and Drug Administration. This Cargo Clearance Center is open for business 24-hours a day.

Miami International Airport recently completed several major improvements to support cargo activities. These modifications were covered under a $500 million Cargo Development Program. Fifteen new cargo buildings were constructed increasing total cargo warehouse space on-site from 1.4 million square feet to 2.7 million square feet. This Cargo Development Program also provides for the creation of 65 widebody DC-10/B747 cargo parking positions. A new roadway system from the cargo areas to other major highways around the airport is also included under the Cargo Development Plan. Miami International now offers a Cargo Access Tunnel connecting the east and west sides of the airport. This Tunnel has reduced the total transit time required to move cargo between the passenger and cargo sides of the airport from 45 minutes to 15 minutes.

In order to conserve space, Miami International has implemented creative land conservation measures. Employee parking is now offered on the rooftops of air cargo warehouses. Hence, land that would otherwise be used for surface parking lots can be reallocated to support other cargo related operations. Warehouse space is the constraining factor to further air cargo development at the airport. By 2014, all building space will be fully utilized. Miami International's high volume of perishables affects its warehouse utilization. These products cannot be moved on slides or conveyors. Hence, perishables require more warehouse square

footage since they must be handled with forklifts. On average, Miami International's air cargo warehouses accommodate 1 ton of cargo per foot of space. Facilities with conveyors and slides have higher density ratios, averaging one ton of cargo for each half square foot of warehouse space. Currently, 80 percent of all cargo related to the Miami International Airport is handled in off-airport facilities.

Cargo related airport improvement plans:

FDOT District 4 plans call for an elevated truck viaduct atop 25th Street which will connect the air cargo area to the Highway 826 as well as extending westward to 82nd Avenue. This viaduct will allow air cargo truck traffic to bypass numerous signalized intersections as well as at-grade railroad crossings.

Airport management has also indicated they are currently contemplating an air cargo related development at the northeast corner of the airport. The development will consist of cargo warehouse space and offices.

Orlando International Airport (MCO)

In terms of infrastructure, Orlando International is home to Orlando Tradeport, a 1,400 acre fully integrated cargo center. This facility was master planned with high-quality design criteria, intermodal transportation capacity, and direct airside access. Two 12,000-foot runways are located adjacent to the Orlando Tradeport and the facility is located at the crossroads of Central Florida's major highway, rail, and sea networks.

MCO is essentially surrounded by the Bee Line Expressway to the north, FL 417 to the east and south, and the Florida Turnpike to the west. There are several roadways providing access to the airport's air cargo areas from these thoroughfares. Florida Tradeport Drive is a north–south road owned by the city of Orlando, on the western most portion of airport property. Airport Boulevard is the main loop road to the passenger terminals and connects to FL 436 at the junction of the Bee Line. Bear Road connects Airport Boulevard with Tradeport Drive and parallels the Bee Line Expressway. The Bee Line Expressway has a toll both near the junction of FL 436 and contributes to a significant amount of traffic congestion at peak times. On the south side of the airport FL 527A intersects with FL 417. FL 527A provides access to Tradeport Drive. UPS is located on Bear Road as are numerous cargo warehouses for passenger airlines. FedEx, DHL, Kitty Hawk and BAX Global are all located on Tradeport Drive. Several of these carriers access the Florida Turnpike via Taft Vineland Road a two lane east–west road connecting Tradeport Drive and FL 527S, US 17 and the Florida Turnpike.

Officials at the FedEx sort facility have identified two traffic congestion issues impacting their operations at the airport. Trucks departing their facility must turn left onto Post Office Boulevard, a non-signalized intersection. The airport has no jurisdiction over this intersection but is willing to coordinate meetings with the city and FedEx to find a solution. Taft Vineland Road is the other point of traffic congestion impacting FedEx operations. Tradeport Drive "dumps" into Taft Vineland which narrows from a four lane thoroughfare to a two lane roadway. In addition, an at grade railroad crossing hinders traffic flow on this crucial artery.

Each of the three primary U.S. integrated express carriers, DHL, FedEx, and UPS, operate at the Orlando International Airport. In total, these carriers move more than 75 percent of all cargo traffic related to the Orlando International Airport. In terms of market share, FedEx is the

category leader with 45 percent. UPS (including Menlo) has just over 22 percent of the market, and DHL serves 10 percent. Passenger airlines Delta and Southwest also accommodate cargo traffic. Together, these two carriers served nearly seven percent of all Orlando International cargo activity in 2005. Air cargo activity occurs at four different areas on the airfield. Integrated express carriers FedEx and UPS both intend to expand their on-airport cargo facilities. The FedEx expansion will occur at its current site. UPS is building an entirely new facility.

Products known to move through the Orlando International Airport include perishables, pharmaceuticals, and aerospace and automotive parts. There is a perishables facility on-site at Orlando International. However, in terms of volume, the Orlando International Airport does not support high levels of perishable traffic. The dedicated perishables facility is currently used by Continental Airlines as place to store aircraft parts. On occasion, heavy lift aircraft carrying items for the nuclear power industry use the Orlando International Airport. Traffic moved through the Airport is overwhelming origin and destination specific. In 2005, only two percent of all Orlando International cargo traffic was transferred between airplanes at the Airport.

Cargo related airport improvement plans:

Roadway improvements slated for the near future include widening Bear Road from two lanes to four, which is why the old passenger terminal is being demolished as of this writing. The terminal demolition impacts UPS operations given that the carrier was using the terminal as warehouse space. UPS, in turn, is in the midst of overhauling its air cargo infrastructure at MCO and is developing new warehouse and ramp space at its current site.

The airport's MP calls for the eventual relocation of Tradeport drive to the western most boundary of airport property. This will allow for the expansion of the cargo ramp and air cargo warehouse areas. In addition, airport management indicates there are plans for widening FL 527 on the south side of the airport near the junction of FL 417.

Palm Beach International Airport (PBI)

The Palm Beach International Airport has two dedicated cargo buildings offering 69,349 square feet of space. Building 1300 is located directly off Belvedere Road with a dedicated exit to Congress. Belvedere Road is three lanes in each direction but there is no turning lane west bound on Belvedere Road and the entrance width makes it difficult for large trucks entering west bound. Additionally, the parking lot is narrow, making it difficult for trucks to turnaround and back up is limited.

Building 1475 is located directly off Perimeter Road. This single lane road and can be accessed several ways from two different directions. The two primary directions are through the airport from Belvedere Road to Perimeter Road from the west or from the south by accessing off of Australia Road to Perimeter Road. There is also an additional entrance off of Southern Boulevard to Perimeter Road. There is a turning lane off of Australia Road to Perimeter Road, however, there is no traffic light and this contributes to traffic delays late in the day. Additionally, the entrance off of Australia Road could be widened to accommodate large turning trucks.

Officials at PBI noted that the holding bay at the north side cargo area could constrain traffic on Belvedere Road as trucks back up. Turning westbound out of the airport on Belvedere Road may be difficult for large trucks crossing the three lane highway. The space allotted for this turn is not sufficient to accommodate large trucks. The entrance at Florida Mango becomes congested at busy times of the day which limits turning movements for large trucks entering Florida Mango.

Cargo related airport improvement plans:

Airport management indicated they would like to eventually consolidate air cargo, belly cargo, and freight forwarding into one area of the airport.

Southwest Florida International Airport (RSW)

From the north, access to the Airport's air cargo facilities is segregated from passenger traffic once traffic exits I-75 at the Daniels Parkway exit. Passenger Traffic will turn south onto Treeline Avenue while cargo traffic will continue on Daniels Parkway to Chamberlin Parkway. From the south, traffic exits I-75 at Alico Road and turns north on Ben Hill Griffen Parkway (both passenger and cargo). Passenger traffic will turn left onto Terminal Access Road while cargo traffic continues north to Daniels Parkway, turns right (east) at then turns onto Chamberlin Parkway to the cargo facilities. It is assumed, however, that cargo traffic arriving from the south will continue north and exit directly onto Daniels Parkway; this route provides a more direct route to the cargo facilities.

The Southwest Florida International Airport supports scheduled aircraft operations from integrated express carriers DHL, FedEx, and UPS. Several passenger carriers including Delta, Southwest, Northwest, US Airways, and American also provide air cargo service at the Southwest Florida International Airport. There are two air cargo buildings located on-site providing a total of 39,500 square feet of warehouse space. A dedicated cargo ramp on the Airport's north side provides 69,000 square yards of space. Adjacent to this ramp is the AeroTerm building. This facility houses the integrated express tenants. Each of the three integrated express carriers operate off-site facilities for consolidation and sort functions; the airport facility is only used for loading and unloading aircraft.

In terms of infrastructure, the section of the airport handling cargo from passenger aircraft is not connected to an airside ramp. Hence, cargo unloaded from these aircraft must be transported by truck or tug to the commercial passenger terminal. The Southwest Florida International Airport does have sufficient room to expand its air cargo facilities should demand warrant. In 2005, the new passenger terminal opened on the Airport's south side and the old north side terminal was demolished. However, the ramp remains along with abundant space and access to develop additional air cargo facilities. Airport management is committed to reserving this space for aviation use.

Cargo related airport improvement plans:

The Airport has ample room to expand its air cargo facilities should demand warrant. In 2005 the Airport's new passenger terminal opened on the Airport's south side and the old north side terminal was demolished. However, the ramp remains along with abundant space and access to develop additional air cargo facilities. The area totals 280 acres and has zoning for aviation-related land uses, including air cargo. It is being marketed as a "Skyplex" development. Airport management is committed to reserving this space for aviation use (either air cargo or MRO facilities) and does not foresee breaking up this land into smaller parcels for GA (private hangars) or non-aviation related activity.

Future plans call for an extension of Terminal Access Road directly to I-75 (with associated interchange). Once this connector is complete, passenger and cargo traffic will each have segregated direct access to their respective facilities from I-75, totally eliminating the co-mingling of Airport traffic. Construction of this connector is programmed for 2010 to 2012.

Tampa International Airport (TPA)

Primary access to the Airport is provided by SR-60 which connects to I-275 to the south and continues west to Clearwater. The SR-60 and I-275 interchange is cited as a constant area of congestion, and a point where both passenger and freight traffic are co-mingled. SR-60 continues north from I-275 where passenger traffic will continue north on George J. Beam Parkway to the terminal and freight traffic will turn west on the Veterans Expressway or the parallel Eisenhower Parkway to the North Cargo complex (turning east on Hillsborough Avenue and south on Hoover). Freight traffic heading to the FedEx facility from SR-60 will turn east on Spruce Street to Dale Mabry Highway, turn north then turn west onto Tampa Bay Boulevard. This is a very congested area, particularly the heavily signalized Dale Mabry Highway. The interchange at SR-60, Veterans Expressway and Spruce Street, is a particularly congested area often cited as causing problems for Airport traffic. The interchange is currently under construction, adding lanes and simplifying land/road changes in an effort to ease the flow of traffic. The new cargo facility will have a dedicated cargo road; however, access to it will still be from the same congested roadways (Dale Mabry to the east and Hillsborough Avenue to the north).

In 2005, the Tampa International Airport processed 100,228 tons of air cargo. Ninety-six percent of this cargo traffic was domestic with international commerce accounting for only four percent of the total. Passenger airline British Airways is the primary carrier for the Airport's international traffic. Two integrated express operators, DHL and FedEx, carry 85 percent of the total traffic for Tampa International. In terms of market share, FedEx is the leading integrated express carrier, transporting 80 percent of all cargo traffic moved in the market. DHL carries the remaining 5 percent of the integrated express share. UPS does not maintain scheduled flight rotations at Tampa International. Rather, the carrier serves the Tampa market via the St. Petersburg-Clearwater International Airport, another Florida SIS facility.

In addition to passenger carrier British Airways, Delta and Southwest also provide air cargo service at the Tampa International Airport. In terms of products transported, fresh fish and human remains are frequently moved through the Tampa International Airport. Two specific companies frequently use the Tampa International Airport for air cargo transport. One firm, CAE USA, is a manufacturer of military and civilian flight simulators. The other company, Eurovision, uses the Airport to transport optics products. There are currently no all cargo carriers with scheduled operations at the Tampa International Airport. In terms of volume, the Tampa International Airport has actually lost international cargo traffic to Orlando International Airport. Much of this lost traffic is destined for European markets.

Air cargo facilities at the Tampa International Airport include 146,000 square yards of dedicated air cargo ramp and three warehouse buildings offering a total of 225,000 square feet of space and 51 accompanying truck docks. The air cargo building located on the north side of the airfield is a multi-tenant facility housing DHL and the cargo operations for several passenger carriers.

Cargo related airport improvement plans:

Future plans call for the relocation of the North Air Cargo Building and ramp to newly acquired land on the east side of the Airport (to the north of the existing FedEx facility). The new facility will include new access roadways in addition to expanded airside facilities. The proposed timeline for the facilities development is as follows:

- January 2006: North-South Cargo Road property acquired.
- January 2008: All existing roads into area are closed and/or diverted.
- October 2008: All property is acquired.
- July 2009: Cargo Road construction begins.
- January 2010: Cargo complex construction begins.
- April 2011: Cargo complex completed, North Cargo facility shut down.

The new cargo facility will have a dedicated cargo road; however access to it will still be from the same congested roadways (Dale Mabry to the east and Hillsborough Ave. to the north).