FLORIDA

Statewide Aviation Economic Impact Study Update



TECHNICAL REPORT

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FLORIDA
STATEWIDE AVIATION ECONOMIC IMPACT STUDY UPDATE

August 2014





Florida Department of Transportation
Aviation and Spaceports Office

This report was prepared as an effort of the Continuing Florida Aviation System Planning Process under the sponsorship of the Florida Department of Transportation. A full technical report containing information on data collection, methodologies, and approaches for estimating statewide and airport specific economic impacts is available at www.dot.state.fl.us/aviation/economicimpact.shtm. More information on the Florida's Aviation Economic Impact Study can be obtained from the Aviation and Spaceports Office by calling 850-414-4500.

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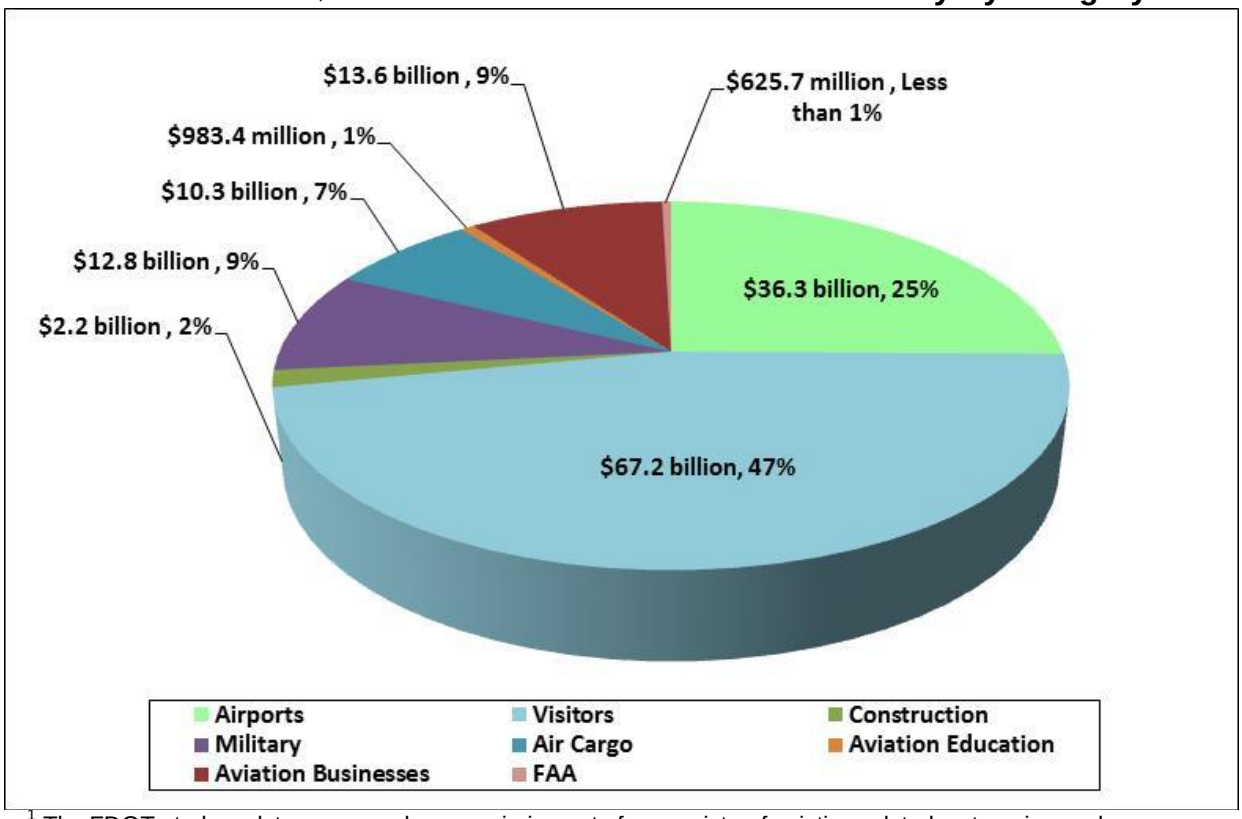
INTRODUCTION

This report summarizes the significant economic benefit that Florida receives each year from aviation. Economic benefits presented in this report were measured in a recent Florida Department of Transportation (FDOT) Aviation & Spaceports Office statewide economic impact study. The study is an update to FDOT's Florida Statewide Aviation Economic Impact Study completed in March 2010.

OVERVIEW OF AVIATION'S ECONOMIC IMPACT IN FLORIDA

The FDOT study update focused on measuring economic impacts associated with 19 commercial service and 103 general aviation airports. In addition, the impacts of 11 military airfields were estimated in the study. As illustrated in **Exhibit 1-1**, the study concluded that for all benefit categories measured, aviation in Florida is responsible for an estimated $144.0 billion in annual economic activity or output. More information on economic impacts associated with each benefit category is presented later in this summary.

Exhibit 1-1
Distribution of $144.0 Billion in Annual Economic Activity by Category[1]



[1] The FDOT study update measured economic impacts for a variety of aviation-related categories and determined that annual economic impacts from all categories are nearly $144.0 billion.
Source: CDM Smith

TYPES OF AVIATION ECONOMIC IMPACT MEASURED

Economic benefits measured in the FDOT study update focused on the following categories:

- Airports
- Visitors
- Construction
- Air Cargo
- Aviation Education
- Military Aviation
- Aviation-Related Businesses
- Federal Aviation Administration (FAA)

In most instances, economic impacts measured in this study take place on a commercial service or general aviation airport or a military airfield, or in the case of visitor-related impacts, the benefits are directly facilitated by travel supported by an airport. In some instances, aviation-related economic benefits measured in this study take place off-airport. The FDOT study update distinguishes between on-airport and off-airport related economic impacts.

For all benefit categories included in the study, economic impacts are expressed using three measures:

- Jobs
- Annual Payroll
- Annual Economic Activity or Output

APPROACH TO MEASURING AVIATION ECONOMIC IMPACT IN FLORIDA

The approach for measuring aviation-related economic impacts in Florida followed a methodology prescribed by the FAA. All aviation-related economic impacts that take place on an airport were classified in the FDOT study update as direct impacts. Within the direct impact category are activities associated with on-airport tenants (businesses and government agencies), airport construction, and airport management and operations. Off-airport impacts, such as those that are associated with visitor spending, were classified as indirect impacts.

Once all direct and indirect aviation-related economic impacts were calculated, an input-output model was used to show how initial direct and indirect economic impacts continue to re-circulate through Florida's economy. These additional impacts are referred to as multiplier or induced impacts. For the FDOT study update, multipliers specific to Florida were used to estimate all induced impacts. All economic impacts presented in this summary chapter sum direct and indirect impacts and include induced impacts stemming from the multiplier effect.

AIRPORT ECONOMIC IMPACTS

Commercial service and general aviation airports in Florida are the backbone of the economic impacts measured in the FDOT study update. Economic impacts that take place on one of the study airports fall into the direct impact category. On-airport related economic impacts presented in this section are related to the activities of some on-airport tenants. Examples of tenants in this section include: airport management, fixed base operators (FBOs), airlines, corporate flight departments, and various airport concessionaires. Other economic impacts that take place on airports in the construction, air cargo, aviation education, aviation business, and FAA categories are discussed in subsequent sections. Annual economic impacts for selected on-airport tenants at all study airports are presented in **Table 1-1**.

Table 1-1
Annual Economic Impacts of On-Airport Activities in Florida

	Employment	Annual Payroll	Annual Economic Activity
Florida Airports	170,107	$8,114,281,000	$36,277,211,000

Source: CDM Smith and IMPLAN multipliers

VISITOR ECONOMIC IMPACTS

Each year, millions of visitors arrive in Florida by air. While most visitors arrive on commercial airlines, many also arrive on general aviation aircraft at both commercial service and general aviation airports. Nearly 43.1 million visitors come to Florida each year on commercial airlines, while more than 2.9 million arrive on general aviation aircraft. Visit Florida estimates that approximately half of all visitors who come to Florida each year arrive by air. While in Florida, these visitors have expenditures for lodging, food, retail, transportation, recreation, and entertainment. In this study, spending by visitors arriving by air is equivalent to total annual visitor output; visitor output is classified as an indirect impact. Visitor spending helps to support many jobs in Florida and the annual payroll associated with these jobs. Total annual economic impact associated with visitors arriving by air is presented in **Table 1-2**.

Table 1-2
Annual Economic Impacts of Aviation Visitors in Florida

	Employment	Annual Payroll	Annual Economic Activity
Aviation Visitors	765,225	$20,692,938,000	$67,228,519,000

Source: CDM Smith and IMPLAN multipliers

CONSTRUCTION ECONOMIC IMPACTS

Annually, a variety of both large and small improvement projects are undertaken at the commercial service and general aviation airports in Florida. Investment/spending is needed to support the development of new airport facilities, as well as to renovate and/or rehabilitate existing facilities. Over the duration of each project, construction-related spending helps to support additional jobs and the annual payroll associated with these jobs. For this study, average investment for construction at all airports over a multi-period was considered to estimate average annual economic impacts from on-airport construction projects; these construction impacts are presented in **Table 1-3**.

Table 1-3
Annual Economic Impacts of Airport Construction Projects in Florida

	Employment	Annual Payroll	Annual Economic Activity
Construction	17,388	$616,977,000	$2,156,471,000

Source: CDM Smith and IMPLAN multipliers

AIR CARGO ECONOMIC IMPACTS

Many businesses in Florida rely on air cargo. As the gateway to Latin America, Florida airports handle significant volumes of air cargo. A total of 30 commercial service and general aviation airports in Florida accommodate scheduled air cargo activity; other airports support the movement of air cargo on an on-demand basis. Air cargo operators are important on-airport tenants for several airports in Florida.

In addition, there are many other off-airport businesses in Florida dedicated to the sorting, storing, and ground movement of air cargo. Off-airport air cargo-related businesses play an important role in the economic impact of aviation in Florida. While these additional air cargo impacts take place off-airport, their benefits were assigned to one of the 30 system airports accommodating scheduled air cargo activity.

First Class mail originating in Florida or destined to the state moves by air. As a result, a portion of the economic activity of the United State Postal Service (USPS) is supported by aviation. The economic impact of this activity was estimated in this study. The economic impact of all facets of air cargo activity in Florida is presented in **Table 1-4**.

Table 1-4
Annual Economic Impacts of Air Cargo Activity in Florida

	Employment	Annual Payroll	Annual Economic Activity
On-Airport	22,527	$810,694,000	$1,390,689,000
Off-Airport[1]	30,336	$1,250,109,000	$3,806,441,000
USPS Air-Supported Operations	76,724	$2,969,817,000	$5,123,127,000
Total	**129,587**	**$5,030,620,000**	**$10,320,257,000**

[1] Even though this impact is reported as being off-airport, for this study, these impacts were assigned to individual system airports.
Source: CDM Smith and IMPLAN multipliers

AVIATION EDUCATION ECONOMIC IMPACTS

Florida is a world leader in providing aviation-related education; this includes the training of pilots, mechanics, flight attendants, air traffic controllers, those in aviation management, and other aspects of the aviation industry. Some aviation-related schools are located on airports in Florida, while others are located off-airport. Economic impacts related to aviation-related schools are associated with: spending associated with the schools to support operations, maintenance, and development; employment at all levels and the payroll associated with this employment; and spending by domestic and international students who are non-residents. On and off-airport economic impacts related to aviation-related schools are presented in **Table 1-5**.

Table 1-5
Annual Economic Impacts of Aviation-Related Education in Florida

	Employment	Annual Payroll	Annual Economic Activity
On-Airport	10,700	$427,889,000	$851,357,000
Off-Airport	1,191	$59,971,000	$132,027,000
Total	**11,891**	**$487,860,000**	**$983,384,000**

Source: CDM Smith and IMPLAN multipliers

MILITARY AVIATION ECONOMIC IMPACTS

As a result of its strategic location and excellent weather and topography, the military has many active airfields in Florida. In fact, many of the state's commercial and general aviation airports were once airfields that the military used to train pilots during World War I and World War II. Similar to the civilian airports included in this study, there are 11 military airfields in Florida that provide significant aviation-related economic impacts. Economic impacts for military airfields in Florida are presented in **Table 1-6**.

Table 1-6
Annual Economic Impacts of Military Aviation in Florida

	Employment	Annual Payroll	Annual Economic Activity
Military Aviation	137,482	$6,409,021,000	$12,786,113,000

Source: CDM Smith and IMPLAN multipliers

AVIATION-RELATED BUSINESSES ECONOMIC IMPACTS

Throughout Florida, there are many businesses in Florida that are engaged in the production or the manufacture of aircraft or various aircraft components. These businesses help to supply aircraft and aircraft components to the nation and the world. Other businesses repair or perform different types of maintenance on commercial or general aviation aircraft. The economic impacts of aviation-related businesses, both on- and off-airport, are presented in **Table 1-7**.

Table 1-7
Annual Economic Impacts of Aviation-Related Businesses in Florida

	Employment	Annual Payroll	Annual Economic Activity
On-Airport	32,098	$1,383,769,000	$4,386,762,000
Off-Airport	44,119	$1,408,295,000	$9,204,893,000
Total	**76,217**	**$2,792,064,000**	**$13,591,655,000**

Source: CDM Smith and IMPLAN multipliers

FEDERAL AVIATION ADMINISTRATION (FAA) ECONOMIC IMPACTS

The FAA is the federal agency charged with developing, monitoring, and prescribing safety guidelines for our nation's public airports and airways. Because of the number of active commercial and general aviation airports, along with Florida's complex airspace system, the FAA is very active in Florida. In fact, the FAA has more activity in Florida that is off-airport than is located at system airports. Economic impacts for the FAA in Florida are presented in **Table 1-8**.

Table 1-8
Annual Economic Impacts of the FAA in Florida

	Employment	Annual Payroll	Annual Economic Activity
On-Airport	1,844	$140,650,000	$240,383,000
Off-Airport	2,690	$217,911,000	$385,336,000
Total	**4,534**	**$358,561,000**	**$625,719,000**

Source: CDM Smith and IMPLAN multipliers

FLORIDA STATEWIDE ECONOMIC IMPACTS

Table 1-9 summarizes the economic impacts in each aviation category discussed above. As shown in Table 1-9, on- and off-airport aviation activity in Florida supports more than 1.3 million total jobs that have a total annual payroll of more than $44.5 billion. Total annual economic activity (output) supported by on- and off-airport aviation activity in Florida is approximately $144.0 billion. These impacts include all direct, indirect, and induced impacts.

Table 1-9
Summary of Statewide Economic Impacts

	Employment	Annual Payroll	Annual Economic Activity
Airports	170,107	$8,114,281,000	$36,277,211,000
Visitors Arriving by Air	765,225	$20,692,938,000	$67,228,519,000
Construction at Airports	17,388	$616,977,000	$2,156,471,000
Air Cargo	129,587	$5,030,620,000	$10,320,257,000
Aviation Education	11,891	$487,860,000	$983,384,000
Military Aviation	137,482	$6,409,021,000	$12,786,113,000
Aviation-Related Businesses	76,217	$2,792,064,000	$13,591,655,000
Federal Aviation Administration	4,534	$358,561,000	$625,719,000
Total	**1,312,431**	**$44,502,322,000**	**$143,969,329,000**

Source: CDM Smith and IMPLAN multipliers

TOTAL ANNUAL ECONOMIC IMPACTS OF COMMERCIAL SERVICE AND GENERAL AVIATION AIRPORTS IN FLORIDA

The preceding sections of this summary have documented the significant economic impact that aviation has in Florida. When all on-airport activities, tenants, and visitors are considered, commercial service and general aviation airports in Florida are responsible for more than $116.3 billion in annual economic activity or output. This economic activity helps to support over one million jobs that have an annual payroll estimated at $33.4 billion. The total annual economic

impact for all commercial service and general aviation airports in Florida is presented in **Table 1-10**.

Table 1-10
Total Annual Economic Impacts of Airports in Florida

	Employment	Annual Payroll	Annual Economic Activity
Commercial Service Airports	985,713	$30,958,277,000	$108,598,670,000
General Aviation Airports	64,512	$2,479,030,000	$7,739,163,000
Total	**1,050,225**	**$33,437,307,000**	**$116,337,833,000**

Source: CDM Smith and IMPLAN multipliers

SUMMARY

The FDOT statewide economic impact study update concluded that aviation-related activities in Florida support more than 1.3 million jobs and that these jobs have an annual payroll of approximately $44.5 billion. The annual economic impact of aviation-related activities in Florida is estimated at $144.0 billion. Based on these findings, it is clear that aviation and the airports and airfields in Florida that support aviation-related activities have a significant positive impact on Florida's economy.

CHAPTER 2: INTRODUCTION

Air transportation is a key contributor to Florida's economy. Airports and aviation help to both support and stimulate economic activity throughout the state. The Florida Department of Transportation's (FDOT) Aviation & Spaceports Office completed this update to the *Florida Statewide Aviation Economic Impact Study* in March 2010 in order to document the value of aviation in Florida for 2013 conditions.

Many of the economic benefits identified in this study are associated with commercial service and general aviation airports and military airfields located throughout Florida. Beyond the boundaries of the airports and military airfields are other aviation-related activities in Florida that must be considered to fully understand the total economic impact that aviation has on the state's economy. This study update identifies the economic benefits of these off-airport aviation-related activities.

Specific aviation groups and benefits of air transportation considered in this report include:

Airports – Commercial service and general aviation airports are themselves centers of employment and generators of significant economic activity. Airports purchase goods and services and undertake capital improvement projects, broadening the impact they have on both statewide and local economies. Airports serving Florida support a variety of benefits discussed in this study.

One of the primary generators of economic impact associated with the study airports is on-airport tenants (businesses and government agencies) that are located on the airports. For this analysis, the economic impacts of many different types of on-airport tenants were measured as part of the airport-related economic impacts. Included were activities associated with: aerial applicators, air ambulance operators, air taxi and charter operators, air traffic control (when privately provided), aircraft sales, airlines, airport management, concessionaires, corporate flight departments, fixed base operators, local and state government, military units, rental car and ground transportation providers, the Transportation Security Administration (TSA), and others.

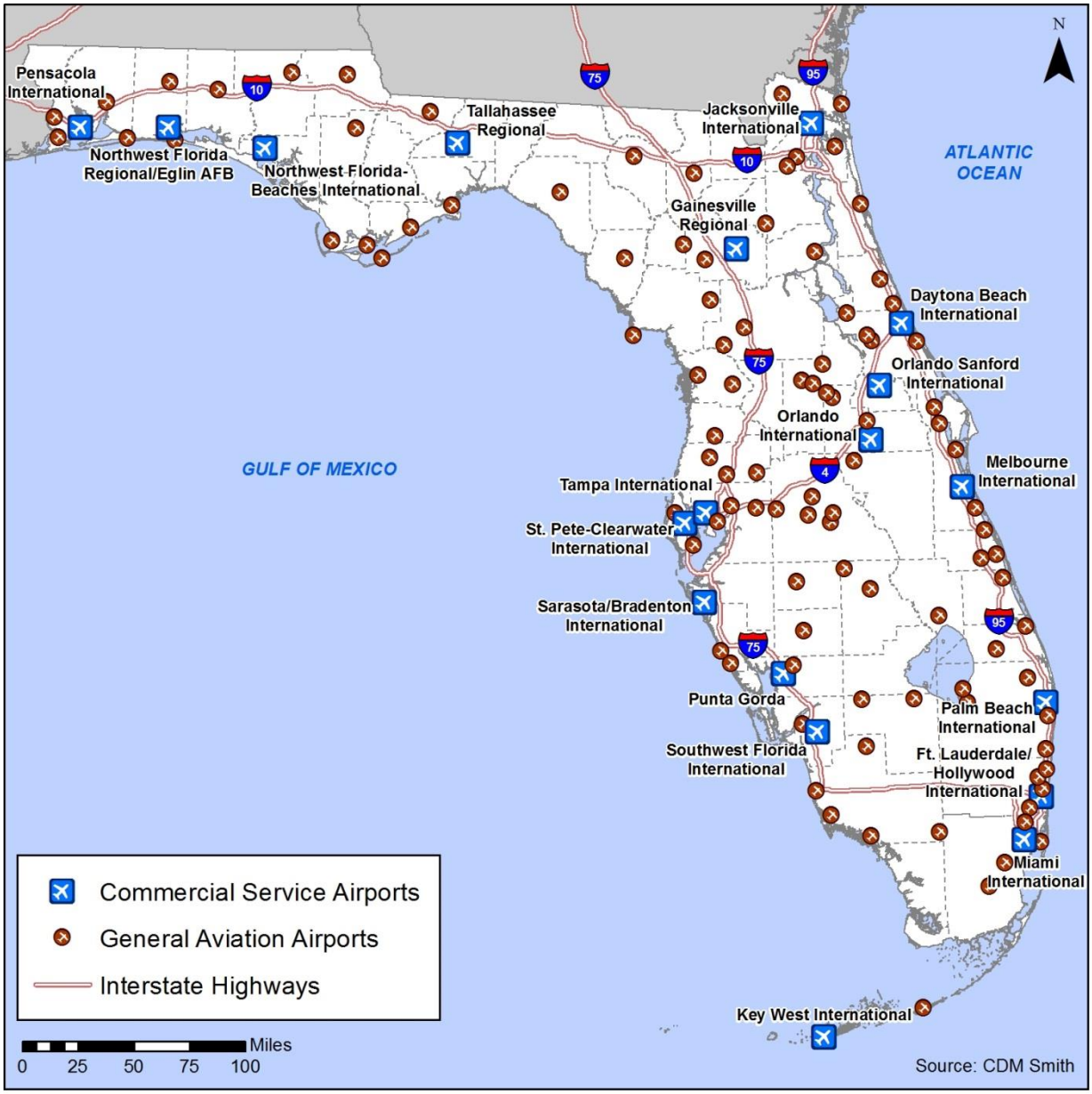
The airports also support visitor, construction, air cargo, aviation education, aviation business, and Federal Aviation Administration (FAA) impacts that are measured and discussed in separate sections of this report.

The state of Florida has a comprehensive network of 129 public-use airports to serve the needs of its citizens, businesses, and visitors. In 2013, this system of airports was comprised of 19 commercial service and 110 general aviation airports.[1]

It is important to note that seven privately-owned, public-use general aviation airports did not participate in this study. These airports include Airport Manatee, Jack Browns Seaplane Base, Massey Ranch Airpark, Mid Florida Air Service Airport, River Ranch Resort Airport, South Lakeland Airport, and Tallahassee Commercial Airport. Therefore, 19 commercial service airports and 103 general aviation airports, for a total of 122 airports, are included in this study. **Exhibit 2-1** shows the location of each of these airports.

[1] It should be noted that Northeast Florida Regional Airport, classified as a general aviation airport in this report, has commercial airline service provided by Frontier Airlines. This service began in May 2014.

Exhibit 2-1
Florida Airports Included in the
Statewide Aviation Economic Impact Study Update



Visitors - Millions of visitors arrive in Florida each year via both commercial airline flights and general aviation aircraft. Nearly 43.1 million visitors arrive each year on commercial airlines, and more than 2.9 million visitors arrive on general aviation aircraft. Once in the state, these visitors spend money for lodging, food, entertainment, retail sales, and other items. Visitor spending helps to support notable volumes of additional economic activity in the state. While most visitor-related spending takes place off-airport, the airports are essential for bringing more than 46.0 million visitors to the state each year.

The commercial service airports shown in Exhibit 2-1 were responsible for bringing visitors on scheduled airlines to Florida in 2013, the base year for this study. The economic impact associated with these commercial service visitors was measured in this study.

All study airports, including the commercial service airports, accommodate arrivals by visiting general aviation aircraft. Hence, all system airports help to bring general aviation visitors to Florida.

Construction – Each year, many airports undertake capital improvement projects, such as runway rehabilitation, ramp overlays, hangar development, or building improvements. In addition, on-airport businesses and others undertake capital improvement projects. While these projects are underway, they employ persons in jobs such as construction, architecture, engineering, and consulting. Capital improvement projects at Florida's airports provide substantial economic benefits to the state's economy. Grants from FDOT and the FAA are important contributors to airport-related capital improvement projects. This study provides estimates of average annual economic impacts that result from capital improvement projects at study airports.

Air Cargo – There are 30 airports in Florida which accommodate air cargo activity on a scheduled basis. These airports range in size from general aviation airports to major international commercial service airports. These airports support a wide range of on-airport air cargo activity on an annual basis. On-airport air cargo activity at airports in Florida includes cargo carried by passenger airlines, integrated cargo carriers such as FedEx Express, all cargo carriers such as Centurion Air Cargo, bank check haulers, and air freight forwarders. **Exhibit 2-2** shows the location of commercial service and general aviation airports in Florida that support scheduled air cargo activity.

While many air cargo activities take place on airports, a significant amount of the air cargo industry's processes and activities take place off-airport, sometimes several miles from an airport. The majority of the airports in Florida with scheduled air cargo flights also support air cargo activity that takes place off-airport; consequently, off-airport air cargo impacts estimated in this study were assigned to these system airports. Off-airport air cargo activity includes integrated express carriers ground operations, air freight forwarding trucking operations, customs brokers arranging and scheduling air cargo shipments, perishable importers, and cargo airlines with facilities located off-airport. On-airport and off-airport air cargo activity supports jobs, payroll, and annual economic output which are measured in this study.

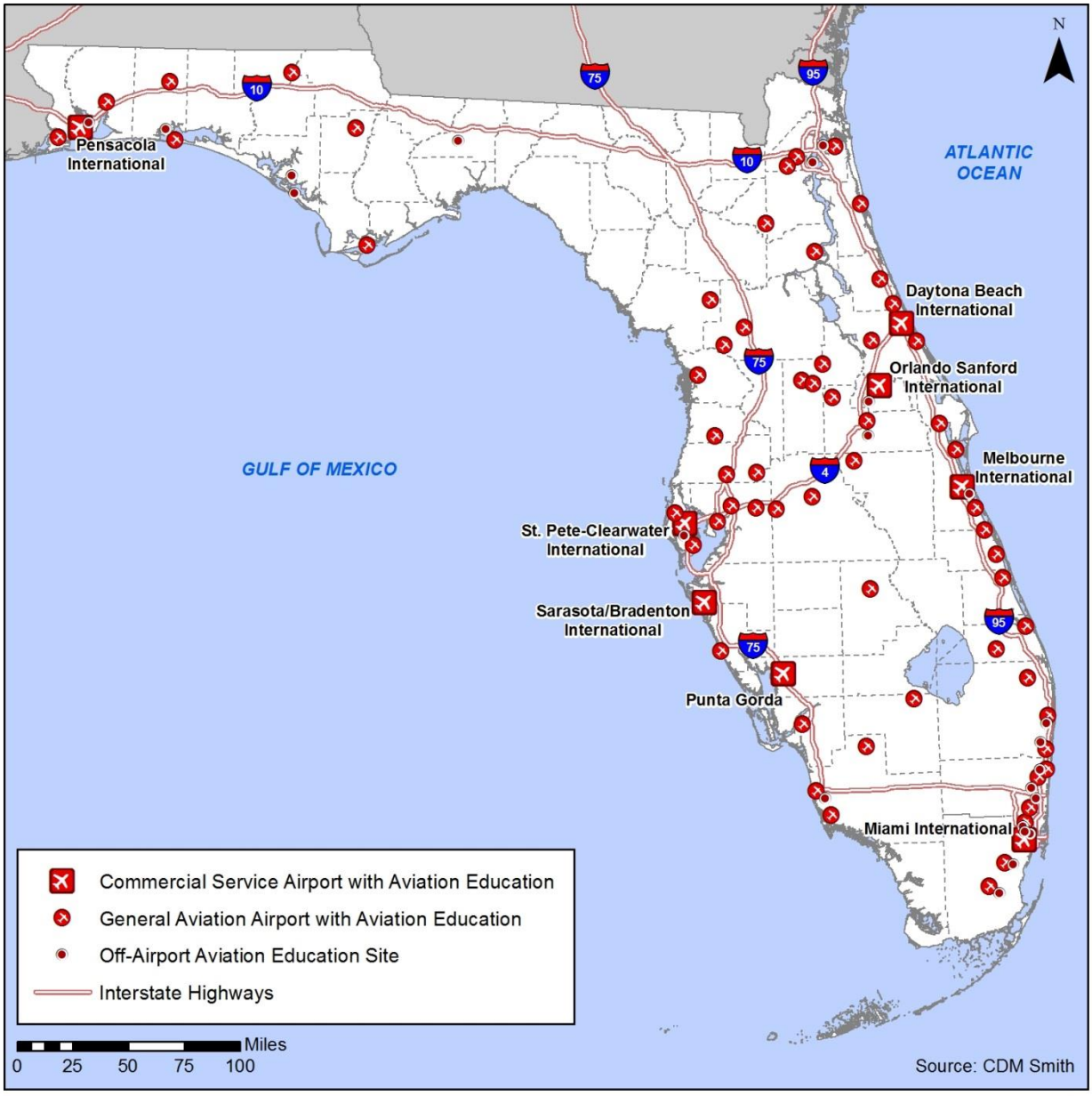
In addition to on- and off-airport air cargo impacts, Florida also realizes additional economic impacts associated with the air transport of U.S. mail. First-Class mail that is destined to Florida or that originates in Florida is transported via air. As a result, a portion of all United States Postal Service (USPS) employment in Florida is associated with and supported by air transportation. Off-airport economic impacts associated with that portion of USPS activity in Florida that is support by air transportation is estimated in this study.

Exhibit 2-2
Florida Airports with Scheduled Air Cargo Service



Aviation Education – Florida is a world leader in providing many types of aviation-related education. Schools in Florida train students to become pilots, air traffic controllers, mechanics, flight attendants, and airport managers. Many aviation-related schools in Florida are located on an airport; and these schools are actually airport tenants. There are at least 170 aviation-related schools located on airports in Florida. In addition, there are more than 20 other aviation-related educational institutions located off-airport. **Exhibit 2-3** shows the location of on- and off-airport aviation-related schools whose economic impacts were estimated in this study.

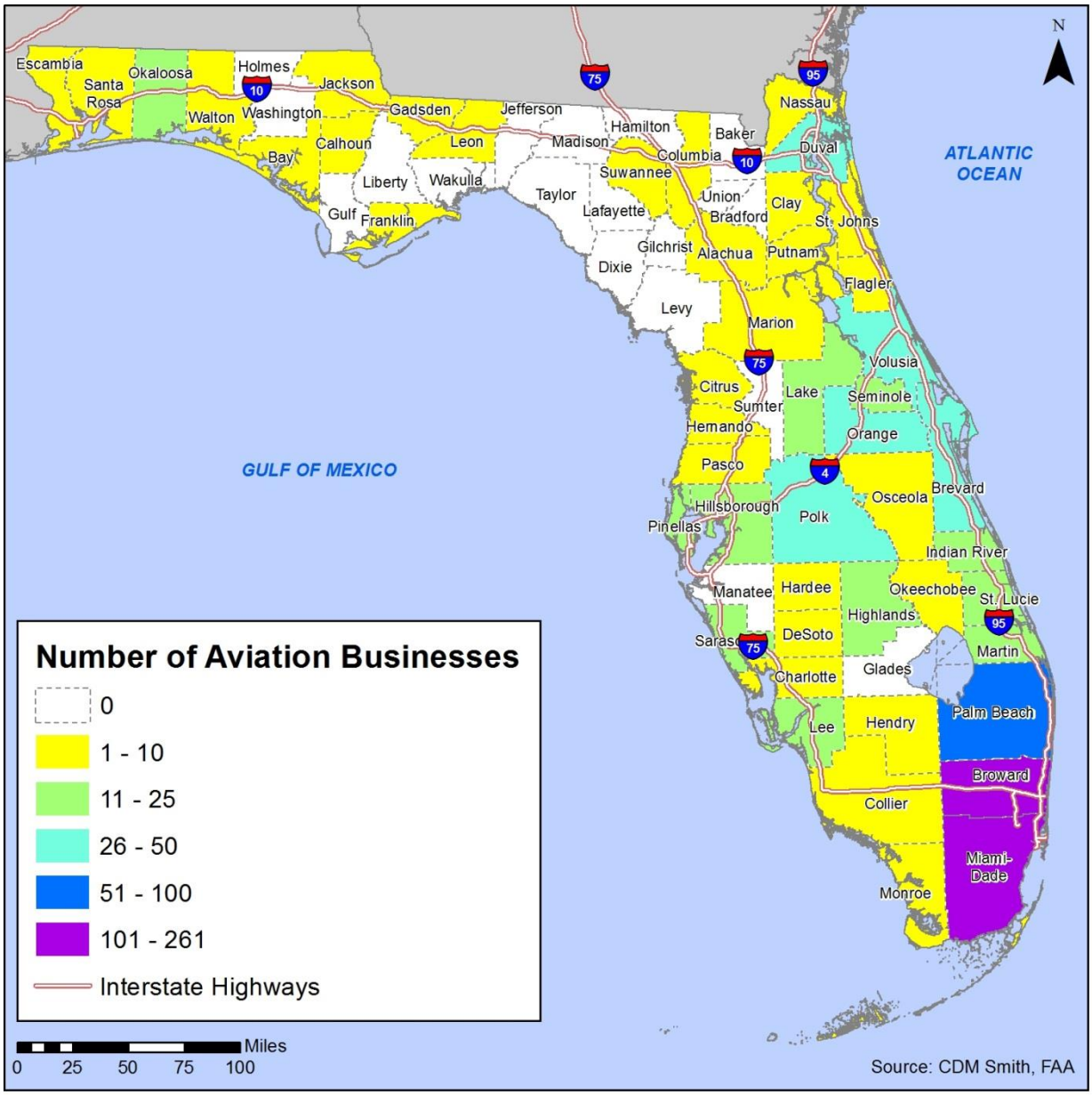
Exhibit 2-3
Aviation Education Locations



Aviation-related schools generate economic impact as they spend money for their operation, maintenance, and development. In addition, all schools have employees engaged in various teaching, administration, and maintenance positions; these jobs have associated annual payroll which is tied to aviation. Many of Florida's aviation educational programs attract students from beyond the state, and often from international locations. While attending an aviation-related school, non-local students have spending for housing, food, transportation, and entertainment. Student spending helps to generate additional aviation-related economic impact in this category. This study provides estimates for both on- and off-airport economic impact associated with aviation-related schools.

Aviation-Related Businesses – Florida has attracted many businesses that are engaged in the development, production, and manufacturing of aircraft, aviation support systems, aircraft components, and other aviation-related products. Other businesses repair or perform different types of maintenance on commercial or general aviation aircraft. In some instances, these aviation-related businesses are located on-airport; and in other instances, they are located off-airport. Aviation-related businesses throughout Florida account for notable employment, payroll, and annual economic activity. Estimates of the economic impact associated with both on- and off-airport aviation-related businesses were developed in this study. **Exhibit 2-4** shows the counties in Florida with aviation-related businesses that were considered in this study and the number of aviation-related businesses in each county.

Exhibit 2-4
Aviation-Related Businesses in Florida

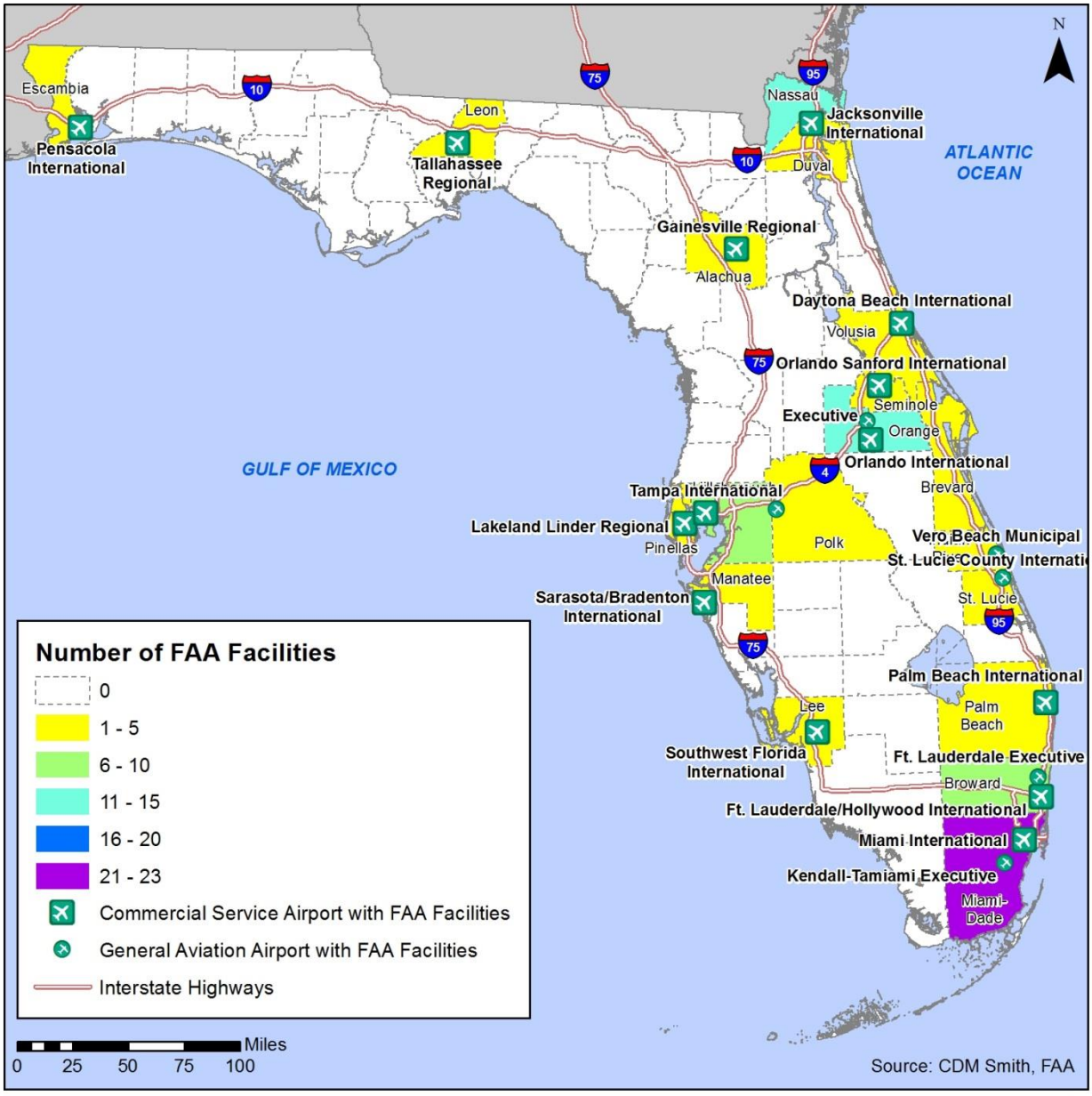


Federal Aviation Administration (FAA) – The FAA is part of the United States Department of Transportation (USDOT). The FAA is the federal agency charged with overseeing and developing the nation's public airports and airways. Nationally, the agency had approximately 46,000 employees in 2013.[2] The FAA is responsible for all facets of civil aviation, and also for managing the airways used by both civilian and military aircraft. The FAA provides regulatory guidance for all facets of commercial and general aviation. They are responsible for overseeing federal funding for projects at public airports, issuing environmental approvals for development, licensing and testing of pilots, engineering approval for airport improvement projects, and air traffic management. The FAA also oversees commercial space transport in the U.S. In addition, the agency has many research and development functions.

Florida's active civilian and military aviation environment increases FAA's presence in the state. The FAA has both on- and off-airport operations throughout Florida. **Exhibit 2-5** shows the counties in Florida with on- and off-airport locations for the FAA, the number of FAA facilities in each county, and the commercial service and general aviation airports with FAA facilities. Economic impacts associated with both on- and off-airport FAA activities in Florida were estimated in this study.

[2] http://www.faa.gov/about/plans_reports/media/2013_FAA_PAR.pdf

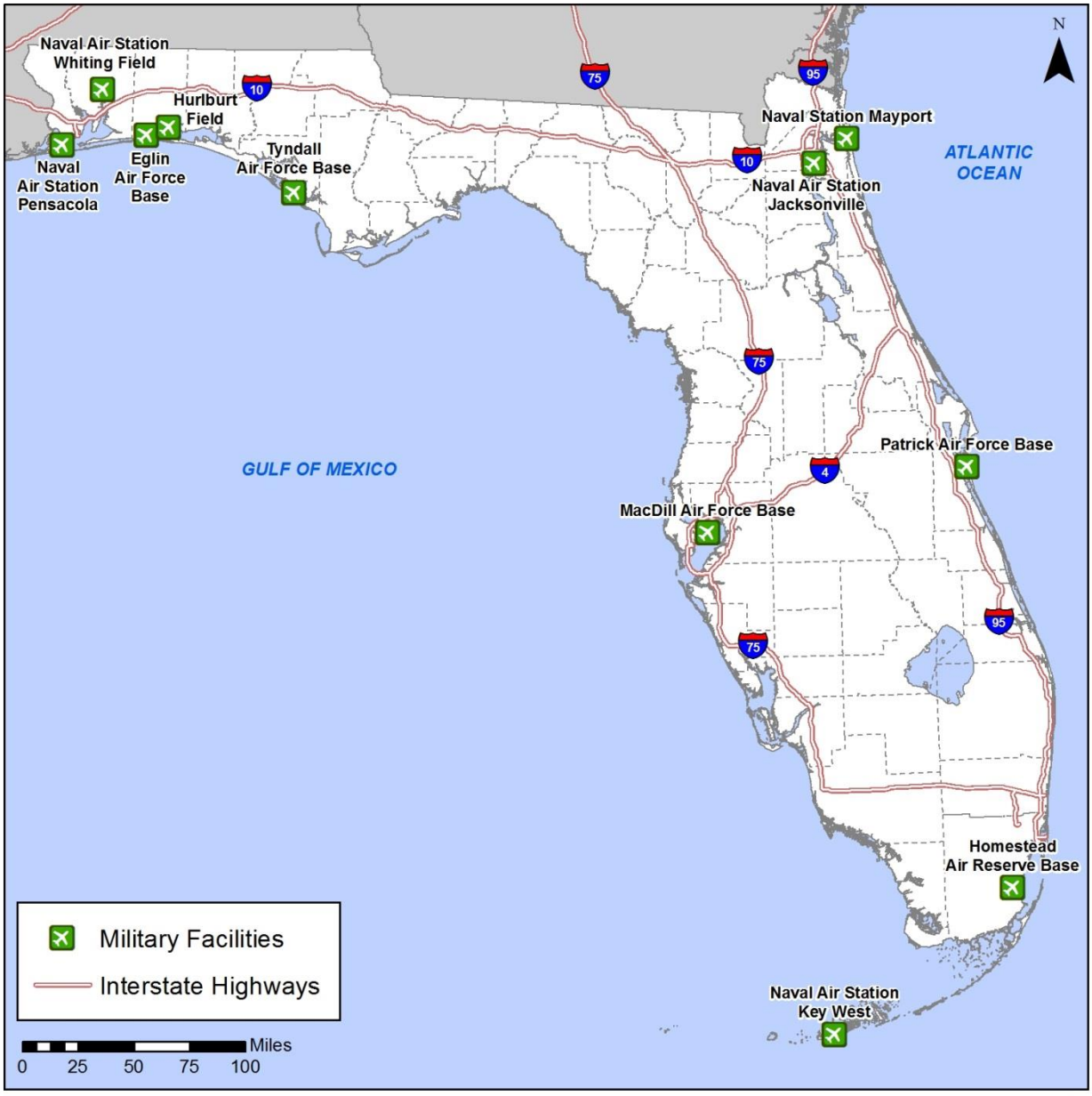
Exhibit 2-5
FAA Facilities in Florida



Military Airfields – Military activity in Florida has long been a major source of economic impact. Florida's geography, year-round good weather, and open ocean airspace have made the state attractive for numerous military aviation activities. This study estimates the economic impacts of the 11 major military airfields in Florida. These military airfields include five Air Force Bases (AFB), four Naval Air Stations (NAS), and two other facilities. The locations for these 11 military airfields included in this economic analysis are shown in **Exhibit 2-6**.

There are only five civilian airports in Florida that have on-airport Guard or Reserve units. The economic impact for these military units is measured in this study in association with on-airport economic impacts, since these military units are considered to be on-airport tenants.

Exhibit 2-6
Florida Military Airfields



The remainder of this report is devoted to identifying the economic impacts for the aviation groups and aviation benefits discussed above. The report is presented in the following chapters:

- Socioeconomic Overview of Florida
- Economic Impacts of Airports
- Economic Impacts of Visitors
- Economic Impacts of Airport Construction
- Economic Impacts of Air Cargo

- Economic Impacts of Aviation Education
- Economic Impacts of Aviation-Related Businesses
- Economic Impacts of the Federal Aviation Administration (FAA)
- Economic Impacts of Military Aviation
- Total Economic Impacts for Airport-Supported Activities
- Summary of Off-Airport Economic Impacts
- Total Economic Impacts of Aviation in Florida

CHAPTER 3: SOCIOECONOMIC OVERVIEW OF FLORIDA

INTRODUCTION

The magnitude of the economic impact of Florida's airports is linked to the demand that is generated within the state for aviation services. While some amount of air traffic is tied to the state's tourism activities, much of the growth in aviation activity in Florida is driven by its residents and businesses. As population, employment, and income levels rise in the state, so too does demand for airline travel, air cargo shipments, and other aviation-related activities. This chapter inventories Florida's general socio-economic and demographic characteristics. It is worth noting that information presented in this chapter of the report does not per say determine aviation-related economic impacts presented later in this report. Information presented in this chapter does, however, help to highlight Florida's strong demand for aviation and aviation-related services. This demand is what fuels economic impacts measured in this study update.

POPULATION

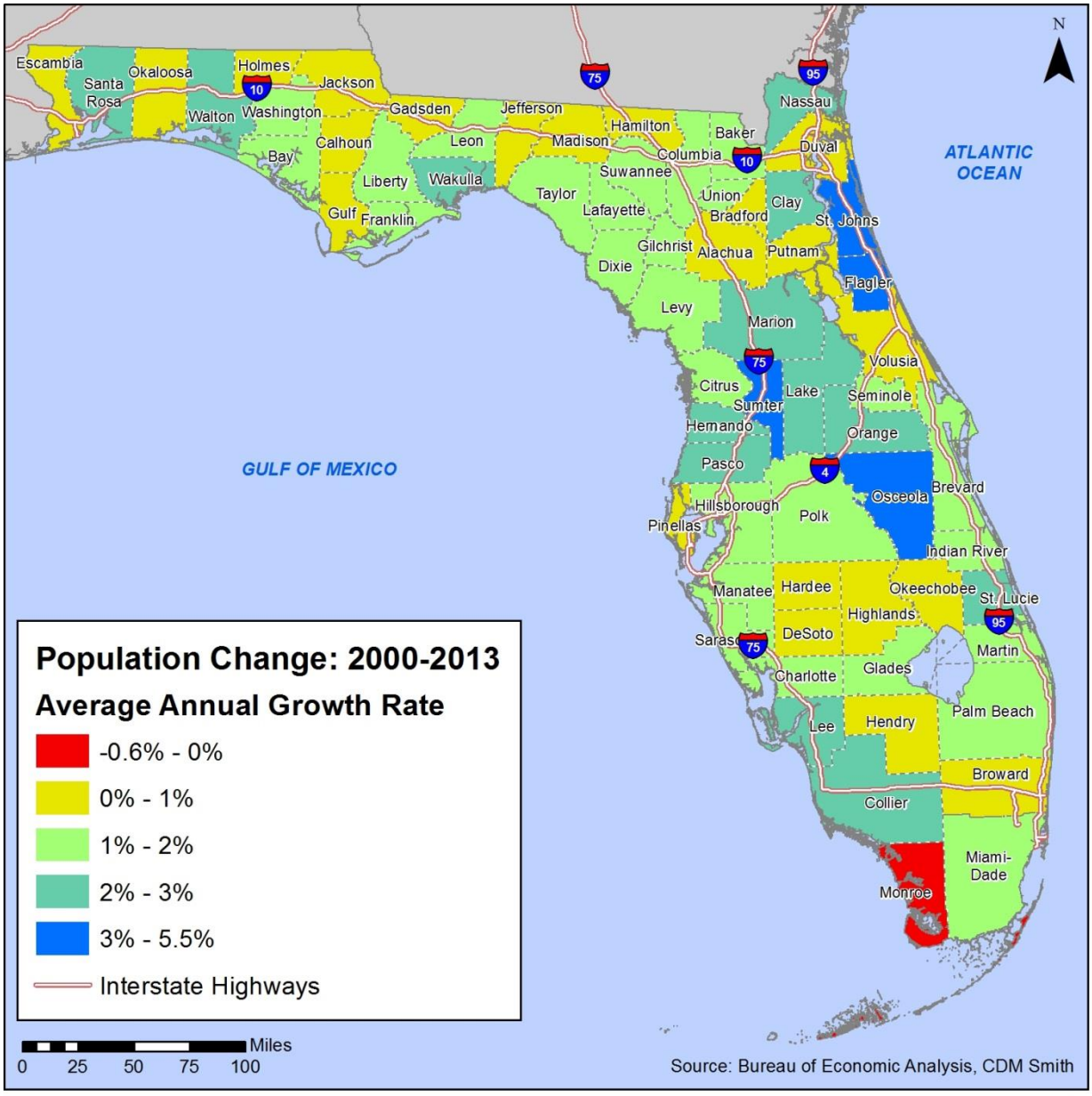
In the 2000 Census, the population of Florida consisted of 15,982,378 persons. By the 2010 Census, the population had grown to 18,801,310, representing a compounded annual growth rate (CAGR) of approximately 1.6 percent with an increased population shift of 17.6 percent. From 2010 to 2013, a CAGR of 0.8 percent took population to 19,259,543,[1] making Florida the fourth highest populated state in the nation. For the 2000 to 2013 period overall, Florida's population grew at a CAGR of 1.4 percent. By comparison, the U.S. population grew at only a 0.9 percent CAGR during the 2000 to 2013 period. Florida is one of only seven states to have a population of greater than 10.0 million people each year since 2000. The state ranked third in the U.S. in total population growth from 2000 to 2013.

Between 2000 and 2013, only one of the 67 counties in Florida experienced a loss in population. Of the remaining counties, 28 experienced a CAGR greater than or equal to the statewide rate of 1.4 percent. With a CAGR of approximately 5.4 percent, Sumter County experienced the most rapid growth over the period. Flagler, Osceola, St. Johns, St. Lucie, and Lee Counties also experienced relatively rapid annual growth in population with greater than or equal to approximately three percent each since 2000. **Exhibit 3-1** graphically depicts the population CAGR for each Florida county from 2000 to 2013.

Future population projections by the Florida Legislature Office of Economic and Demographic Research and the University of Florida's Bureau of Economic and Business Research indicate that many of the population trends from 2000 to 2013 will continue. Florida's population as a whole is expected to grow to 21,149,697 by 2020.[2] This represents a total increase of 9.8 percent and a CAGR of 1.4 percent.

[1] Florida Legislature Office of Economic and Demographic Research
[2] http://www.edr.state.fl.us/Content/population-demographics/data/Medium_Projections.pdf

Exhibit 3-1
Florida Population Growth by County, 2000 to 2013



At the county level, all of the 67 counties are expected to gain population. Twenty counties are expected to experience a CAGR greater than or equal to the 2000 to 2013 statewide rate of 1.4 percent. Sumter County is expected to have the fastest growing population, followed by Flagler, Osceola, and St. Johns Counties. Miami-Dade County is expected to reach a population of 2,788,075 by 2020, remaining the most populous county in the state. **Table 3-1** presents population growth forecasts for Florida by county from 2013 to 2020 and shows the study airports, both commercial and general aviation, in each county.

Table 3-1
Florida Population Growth Forecasts, 2013-2020

Area	Airports	2013	2020	2013-2020 Change	CAGR	Population Change
Florida		19,259,543	21,149,697	1,890,154	1.35%	9.81%
Alachua County	Flying Ten Airport, Gainesville Regional Airport, Oak Tree Landing Airport	248,002	265,676	17,674	0.99%	7.13%
Baker County		26,881	29,589	2,708	1.38%	10.07%
Bay County	Northwest Florida-Beaches International Airport	169,866	182,833	12,967	1.06%	7.63%
Bradford County		27,217	28,319	1,102	0.57%	4.05%
Brevard County	Arthur Dunn Air Park, Merritt Island Airport, Space Coast Regional Airport, Valkaria Airport	548,424	589,333	40,909	1.03%	7.46%
Broward County	Downtown Fort Lauderdale Heliport, Ft. Lauderdale Executive Airport, Ft. Lauderdale/Hollywood International Airport, North Perry Airport, Pompano Beach Airpark	1,784,715	1,855,922	71,207	0.56%	3.99%
Calhoun County	Calhoun County Airport	14,621	15,377	756	0.72%	5.17%
Charlotte County	Punta Gorda Airport, Shell Creek Airpark	163,679	174,121	10,442	0.89%	6.38%
Citrus County	Crystal River Airport, Inverness Airport	140,519	153,097	12,578	1.23%	8.95%
Clay County	Keystone Airpark	192,843	222,675	29,832	2.08%	15.47%
Collier County	Dade-Collier Training and Transition Airport, Everglades Airpark, Immokalee Regional Airport, Marco Island Airport, Naples Municipal Airport	333,663	379,059	45,396	1.84%	13.61%
Columbia County	Lake City Municipal Airport	67,489	72,872	5383	1.10%	7.98%
DeSoto County	Arcadia Municipal Airport	34,367	35,034	667	0.27%	1.94%

Table 3-1
Florida Population Growth Forecasts, 2013-2020, cont.

Area	Airports	2013	2020	2013-2020 Change	CAGR	Population Change
Dixie County	Cross City Airport	16,263	17,567	1304	1.11%	8.02%
Duval County	Cecil Airport, Jacksonville Executive At Craig Airport, Herlong Recreational Airport, Jacksonville International Airport	876,075	934,091	58,016	0.92%	6.62%
Escambia County	Coastal Airport, Ferguson Airport, Pensacola International Airport	301,120	308,235	7,115	0.33%	2.36%
Flagler County	Flagler County Airport	97,843	124,863	27,020	3.55%	27.62%
Franklin County	Apalachicola Regional - Cleve Randolph Field, Carrabelle - Thompson Airport, St. George Island Airport	11,562	11,658	96	0.12%	0.83%
Gadsden County	Quincy Municipal Airport	47,588	49,274	1,686	0.50%	3.54%
Gilchrist County		16,880	18,199	1319	1.08%	7.81%
Glades County		12,658	13,478	820	0.90%	6.48%
Gulf County	Costin Airport	16,106	16,402	296	0.26%	1.84%
Hamilton County		14,507	15,197	690	0.67%	4.76%
Hardee County	Wauchula Municipal Airport	27,682	27,962	280	0.14%	1.01%
Hendry County	Airglades Airport, La Belle Municipal Airport	37,808	39,031	1,223	0.46%	3.23%
Hernando County	Brooksville - Tampa Bay Regional Airport	173,808	198,042	24234	1.88%	13.94%
Highlands County	Avon Park Executive Airport, Sebring Regional Airport	99,092	105,945	6,853	0.96%	6.92%
Hillsborough County	Peter O. Knight Airport, Plant City Airport, Tampa Executive Airport, Tampa International Airport	1,276,410	1,445,344	168934	1.79%	13.24%
Holmes County	Tri-County Airport	20,022	20,615	593	0.42%	2.96%

Table 3-1
Florida Population Growth Forecasts, 2013-2020, cont.

Area	Airports	2013	2020	2013-2020 Change	CAGR	Population Change
Indian River County	New Hibiscus Airpark, Sebastian Municipal Airport, Vero Beach Municipal Airport	139,586	155,582	15996	1.56%	11.46%
Jackson County	Marianna Municipal Airport	50,166	50,934	768	0.22%	1.53%
Jefferson County		14,554	15,132	578	0.56%	3.97%
Lafayette County		8,618	9,198	580	0.93%	6.73%
Lake County	Leesburg International Airport, Tavares Seaplane Base, Umatilla Municipal Airport	303,317	355,935	52618	2.31%	17.35%
Lee County	Page Field, Southwest Florida International Airport	643,367	758,621	115,254	2.38%	17.91%
Leon County	Tallahassee Regional Airport	278,377	296,751	18374	0.92%	6.60%
Levy County	George T. Lewis Airport, Williston Municipal Airport	40,304	44,251	3,947	1.34%	9.79%
Liberty County		8,483	9,269	786	1.27%	9.27%
Madison County		19,395	19,800	405	0.30%	2.09%
Manatee County		333,880	375,811	41931	1.70%	12.56%
Marion County	Marion County Airport, Ocala International-Jim Taylor Field	335,008	380,302	45,294	1.83%	13.52%
Martin County	Indiantown Airport, Witham Field	148,077	159,373	11296	1.06%	7.63%
Miami-Dade County	Homestead General Aviation Airport, Kendall-Tamiami Executive Airport, Miami International Airport, Miami Seaplane Base, Opa-Locka Executive Airport	2,582,375	2,788,075	205,700	1.10%	7.97%

Table 3-1
Florida Population Growth Forecasts, 2013-2020, cont.

Area	Airports	2013	2020	2013-2020 Change	CAGR	Population Change
Monroe County	Key West International Airport, The Florida Keys Marathon Airport	73,560	72,756	-804	-0.16%	-1.09%
Nassau County	Fernandina Beach Municipal Airport, Hilliard Airpark	74,661	85,678	11,017	1.99%	14.76%
Okaloosa County	Bob Sikes Airport, Destin-Ft Walton Beach Airport, Northwest Florida Regional Airport / Eglin AFB	188,349	198,061	9712	0.72%	5.16%
Okeechobee County	Okeechobee County Airport	39,762	41,514	1,752	0.62%	4.41%
Orange County	Bob White Field, Executive Airport, Orlando Apopka Airport, Orlando International Airport	1,202,978	1,394,814	191836	2.14%	15.95%
Osceola County	Kissimmee Gateway Airport	288,361	360,478	72,117	3.24%	25.01%
Palm Beach County	Belle Glade State Municipal Airport, Boca Raton Airport, North Palm Beach County General Aviation Airport, Palm Beach County Glades Airport, Palm Beach County Park Airport, Palm Beach International Airport	1,345,652	1,459,489	113837	1.17%	8.46%
Pasco County	Pilot Country Airport, Tampa North Aero Park, Zephyrhills Municipal Airport	473,566	545,952	72,386	2.05%	15.29%
Pinellas County	Albert Whitted Airport, Clearwater Air Park, St. Petersburg-Clearwater International Airport	926,610	931,647	5037	0.08%	0.54%
Polk County	Bartow Municipal Airport, Chalet Suzanne Air Strip, Lakeland Linder Regional Airport, Lake Wales Municipal Airport, Winter Haven's Gilbert Airport	613,950	691,355	77,405	1.71%	12.61%
Putnam County	Palatka Municipal-Lt. Kay Larkin Field	72,605	73,324	719	0.14%	0.99%

Table 3-1
Florida Population Growth Forecasts, 2013-2020, cont.

Area	Airports	2013	2020	2013-2020 Change	CAGR	Population Change
Santa Rosa County	Ft. Walton Beach Airport, Peter Prince Field	157,317	178,057	20,740	1.78%	13.18%
Sarasota County	Buchan Airport, Sarasota/Bradenton International Airport, Venice Municipal Airport	385,292	417,455	32163	1.15%	8.35%
Seminole County	Orlando Sanford International Airport	431,074	465,128	34,054	1.09%	7.90%
St. Johns County	Northeast Florida Regional Airport	201,541	250,294	48753	3.14%	24.19%
St. Lucie County	St. Lucie County International Airport	281,151	330,466	49,315	2.34%	17.54%
Sumter County		105,104	138,220	33116	3.99%	31.51%
Suwannee County	Suwannee County Airport	43,873	47,520	3,647	1.15%	8.31%
Taylor County	Perry-Foley Airport	23,018	23,859	841	0.51%	3.65%
Union County		15,483	16,601	1,118	1.00%	7.22%
Volusia County	Bob Lee Flight Strip, Daytona Beach International Airport, DeLand Municipal - Sidney H. Taylor Field, New Smyrna Beach Municipal Airport, Ormond Beach Municipal Airport, Pierson Municipal Airport	498,978	529,447	30469	0.85%	6.11%
Wakulla County	Wakulla County Airport	30,869	34,113	3,244	1.44%	10.51%
Walton County	Defuniak Springs Airport	57,779	68,318	10539	2.42%	18.24%
Washington County		24,793	26,307	1,514	0.85%	6.11%

Source: Florida Legislature Office of Economic and Demographic Research and University of Florida, Bureau of Economic and Business Research

GROSS STATE PRODUCT AND INDUSTRY MIX

Florida's Gross State Product (the state equivalent of Gross Domestic Product, or GDP) in 2013 was more than $800.5 billion, ranking fourth in the United States. This was an increase of 3.1 percent annually from $728.6 billion in 2010. By comparison, the national Gross Domestic Product grew 3.9 percent annually during the same period. From 2000 to 2013, Florida's Gross State Product increased by approximately 63 percent from $491.5 billion. Historically, the dominant sector of Florida's economy has been real estate, rental, and leasing. Government, healthcare and social assistance, professional and technical services, and retail trade are other leading industries making up a significant portion of the Gross State Product in Florida, as shown in **Table 3-2**.

Table 3-2
Florida Gross State Product by Industry for 2013

Industry	Gross State Product (in millions)	Percent of Total Gross Product
Agriculture, Forestry, Fishing, and Hunting	$9,086	0.9%
Mining	$2,478	0.3%
Utilities	$15,173	1.6%
Construction	$34,705	3.6%
Durable Goods Manufacturing	$23,556	2.4%
Non-durable Goods Manufacturing	$16,060	1.6%
Wholesale Trade	$56,490	5.8%
Retail Trade	$61,580	6.3%
Transportation and Warehousing	$24,540	2.5%
Information	$30,927	3.2%
Finance and Insurance	$44,522	18.2%
Real Estate, Rental, and Leasing	$133,153	13.6%
Professional and Technical Services	$54,603	10.1%
Management of Companies	$12,568	1.3%
Administrative and Waste Services	$31,635	3.2%
Educational Services	$8,232	0.8%
Health Care and Social Assistance	$69,331	7.1%
Arts, Entertainment, and Recreation	$15,328	1.6%
Accommodation and Food Services	$35,170	3.6%
Other Services	$21,284	2.2%
Government	$100,069	10.2%
Total Gross State Product	**$800,490**	**100.0%**

Source: U.S. Bureau of Economic Analysis

EMPLOYMENT

According to data from the Florida Department of Economic Opportunity, the civilian non-farm workforce in Florida totaled 7,172,900 workers in 2010. This figure grew at a CAGR of 1.9 percent to 7,579,200 workers in 2013. Of workers in 2013, 1,572,000, or 20.7 percent of the workforce, were employed in occupations of trade, transportation, and utilities. Another 1,116,700 workers, or 14.7 percent of the workforce, were employed in professional and business services. Government; education and health services; and leisure and hospitality jobs

also make up significant portions of the Florida work force, accounting for 14.2 percent, 14.8 percent, and 13.6 percent of jobs, respectively.

Florida's positive employment growth since 2010 can be attributed in part to its increasingly diversified economy. Growth in several industry sectors has kept the state's economy moving forward. These sectors include education and health services, leisure and hospitality, trade, transportation and utilities, and professional and business services. Nearly 371,000 of the 406,300 total jobs gained in the state from 2010 to 2013 were in one of these sectors. Florida's reputation as a globally-renowned travel destination contributed to the generation of 105,400 new jobs in the leisure and hospitality sector.

High-tech, knowledge-based industries such as biotechnology; aviation and aerospace; photonics/optics and simulation; and digital media have been expanding in the state. Employment in the professional and business services sector grew by more than 110,070 since 2010, an increase of over 11 percent. With less reliance on any one industry for its prosperity, in addition to its investment in education, research, and development, Florida is well-positioned for future economic expansion. **Table 3-3** presents employment in Florida categorized by industry for 2013.

Table 3-3
Florida Employment by Industry for 2013

Industry	Employment	Percent of Total Employment
Mining and Logging	5,700	0.1%
Construction	368,300	4.9%
Manufacturing	321,900	4.3%
Trade, Transportation, and Utilities	1,572,000	20.7%
Information	133,900	1.8%
Financial Activities	512,600	6.8%
Professional and Business Services	1,116,700	14.7%
Education and Health Services	1,128,100	14.9%
Leisure and Hospitality	1,036,900	13.7%
Other Services	306,500	4.0%
Government	1,076,600	14.2%
Total Employment	**7,579,200**	**100.0%**

Source: Florida Department of Economic Opportunity

PER CAPITA PERSONAL INCOME

Personal income can be used as an indication of how much people will spend on the consumption of goods, including the use of air travel. It can be assumed that the greater the amount of income, the greater the purchasing power one has. According to data from the U.S. Bureau of Economic Analysis, per capita personal income for the State of Florida was $29,570 in 2000 and grew to $41,692 by 2013. The change represents a CAGR of 2.7 percent. By comparison, per capita personal income for the nation as a whole grew from $30,587 to $44,543 in the same period, for a CAGR of 2.9 percent. This ranks Florida's CAGR slightly below the national average, placing it 27th in terms of per capita personal income and 40th in terms of per capita personal income CAGR.

SUMMARY

Between 2000 and 2013, Florida's population grew at a CAGR faster than that for the nation; its Gross State Product has grown 63 percent since 2000; employment grew 1.9 percent annually since 2010; and Florida's rate of per capita personal income growth since 2000 has been comparable to the nation's. Growth measures such as these help to explain Florida's significant demand for aviation and air travel. This demand helps to support the economic impacts discussed in this report.

CHAPTER 4: ECONOMIC IMPACTS OF AIRPORTS

INTRODUCTION

Florida's system of airports has a significant positive impact on the state's economy. As explained in Chapter 2, a total of 122 public-use airports in Florida are included in this study update. This chapter quantifies on-airport economic impacts for these airports. The economic impacts of many different types of on-airport tenants (businesses and government agencies) were considered. Included were activities associated with: aerial applicators, air ambulance operators, air taxi and air charter operators, air traffic control (when privately provided), aircraft sales, airlines, airport management, concessionaires, corporate flight departments, fixed base operators, local and state government, military units, rental car and ground transportation providers, the Transportation Security Administration (TSA), and others. On-airport impacts specifically related to construction projects, air cargo activity, aviation-related schools, aviation-related manufacturing and maintenance businesses, and the Federal Aviation Administration (FAA) are discussed separately in subsequent chapters of this report.

APPROACH TO ESTIMATING ECONOMIC IMPACTS FOR STUDY AIRPORTS

Economic impacts for airports in this study update are quantified in terms of employment, payroll, and output. Output represents total economic activity or spending. It represents the total value of aviation-related activities supported by the airports included in this study. This chapter presents the economic impact of the airports in terms of selected on-airport tenants.

The Economic Modeling Process for On-Airport Tenant Impacts

The economic benefits produced by the Florida airport system were determined by using actual survey data and data from an input-output model that estimates purchases and sales between the various sectors of the economy. The model incorporated multipliers and data tables specific to Florida and produced impact estimates for three separate components of the economy, as follows:

- Employment – Employment is based on full-time equivalent positions. For example, two part-time employees were assumed to equal one full-time employee.
- Payroll – Payroll is the annual salary, wages, and benefits paid to employees.
- Output (Spending) – Output for an on-airport tenant is commonly assumed to be the sum of average annual capital expenditures and annual gross sales. Output can be defined as the total economic activity associated with a particular entity. For tenants that do not have gross sales (government organizations) or have difficulty in determining gross sales associated with a particular airport (e.g. airlines), this assumption must be modified. To estimate the economic impact of these entities, output is derived from the sum of average annual capital expenditures, operating expenses, and payroll. It should be noted that output is also referred to as economic activity.

It is important to note that payroll and output cannot be combined because elements of economic benefit related to payroll are also contained in the output estimate. Each of the three

impact components (employment, payroll, and output) stands alone as a measure of an airport's or the airport system's total economic impact.

All economic impacts or benefits from the 122 airports considered in this study update were calculated using an input-output model. The input-output model considers two impact categories to assess the economic benefits associated with on-airport activities. These categories are:

- Direct Impacts – Direct impacts are the benefits associated with businesses located at the airport which are directly related to the provision of aviation services. Direct impacts include the employment, payroll, and spending of businesses such as fixed base operators (FBOs), concessionaires, airlines, corporate flight departments, on-airport government entities, and others.
- Induced Impacts – Induced impacts are the benefits resulting from the recirculation of direct impacts within the economy. This recirculation is typically referred to as the multiplier effect. For example, as airport employees spend their salary for housing, food, and services, those expenditures circulate through the economy, resulting in increased spending, payroll, and employment throughout Florida.

Because induced impacts are not as easily quantified as direct impacts, a reliable method for estimating induced impacts must be applied. For this study, the Impact Analysis for Planning (IMPLAN) model was used to measure the multiplier effect and determine induced impacts. This model is considered a standard method for evaluating the economic benefits of public facilities and has been used nationwide to approximate the economic impacts associated with airports and airport systems. The model contains a detailed database of economic multipliers used to estimate induced impacts associated with the direct on-airport spending that occurs in association with each airport.

The sum of the benefits of these two categories (direct and induced) yields the total impact attributable to an airport or a system of airports.

Data Requirements for the Economic Modeling Process for On-Airport Benefits

Data collection efforts were undertaken to gather information related to economic activity at airports considered in this study. These data were inputs to the modeling process to identify total economic impact. This portion of the economic impact analysis considers impacts related to selected on-airport tenants. All on-airport tenants, with the exception of those related to construction, air cargo, aviation-related schools, aviation-related businesses, and the FAA, are addressed in this chapter.

It should be noted that the on-airport economic impacts for 14 of Florida's commercial service airports were estimated following a methodology that is different from the one described in the following sections. The on-airport economic impacts for these airports were derived from the 2010 *Florida Statewide Aviation Economic Impact Study* using a methodology that is detailed in **Appendix A**.[1] Also, the Miami-Dade Aviation Department completed a standalone economic impact study for its five airports (Miami International Airport, Dade-Collier Training and Transition Airport, Homestead General Aviation Airport, Kendall-Tamiami Executive Airport, and Opa-Locka Executive Airport) in April 2013. The results of the Miami-Dade Aviation Department's study were used for its airports in this FDOT study update.

SURVEYS AND DATA COLLECTION METHODS

Direct impacts for on-airport tenants were identified primarily through survey efforts. Airport managers were surveyed to gather data related to on-airport activities. The methods used to collect information are discussed in the following sections.

On-Airport Tenants and Businesses (Direct Impacts)

Airport sponsors/managers were contacted to provide names, mailing addresses, and telephone numbers for each airport tenant. All airport tenants having employees on Florida airports during 2013 were contacted to collect information regarding their economic activity. A survey was provided to each tenant and follow-up calls were made to ensure responses and to verify information on returned surveys. Airport tenants at each airport were grouped into 23 categories to aid in analysis.

The survey sent to each airport tenant, including airport sponsors/managers, requested the following information:

- Type of aviation activity conducted by the tenant;
- Number of full-time and part-time employees;
- Estimated total annual wages and benefits paid to employees in 2013;
- Estimated total capital improvement expenditures for each year, 2010 through 2013;
- Estimated total operating expenses (excluding payroll and capital improvements previously identified) in 2013; and
- Estimated total gross sales (where applicable) by the business on the airport in 2013.

A high response rate was desired for the airport tenant survey effort. Several rounds of follow-ups were made to non-responding entities and to airport managers, to obtain the greatest response rate possible for on-airport employment. For airport tenants who did not supply complete information on payroll and output, estimates were developed using ratios of payroll per employee and output per employee for the 23 categories of tenants in the analysis. These ratios were developed from survey data obtained from those tenants who did respond to the

[1] Four commercial service airports were analyzed using the methodology presented in this chapter. These airports include Punta Gorda Airport, Northwest Florida-Beaches International Airport, St. Pete-Clearwater International Airport, and Orlando-Sanford International Airport. At the time of FDOT's 2010 Florida Statewide Aviation Economic Impact Study, Punta Gorda Airport was considered a general aviation airport and construction of Northwest Florida-Beaches International Airport was nearing completion. Because these two airports were not evaluated as active commercial service airports in the 2010 study, it was important to conduct a more detailed data collection effort. In the case of St. Pete-Clearwater International Airport and Orlando-Sanford International Airport, airport management provided airport tenant lists and associated employment figures, which enabled the methodology described in this chapter to be used.

survey. For tenant categories that had limited data, supplemental information was used from the consultant's in-house database.

Study Multipliers and Induced Impacts

Employment, payroll, and output impacts derived from on-airport businesses and tenants and on-airport activities are part of each airport's direct economic impacts. As these impacts enter the economy, they circulate among other sectors, creating successive waves of additional spending. This phenomenon is referred to as the multiplier effect, also known as induced impacts.

Multiplier effects arise from various interdependencies within an economic system. For example, the operation of an airport requires inputs in the form of supplies, equipment, and maintenance. These inputs generate a boost in sales for those firms or businesses providing these services and products. Moreover, the goods and services themselves require inputs for their production. The process continues as a large number of impacts re-circulate through the economy. The total requirement for goods and services is the multiple of the initial needs of the airports considered in this analysis; hence it is referred to using the term "multiplier."

Multipliers for estimating induced impacts were derived from the IMPLAN model. The multipliers used in this analysis were developed specifically to measure economic impacts in Florida. Individual multipliers for each sector of the economy being modeled were used. The multipliers for the sectors of the economy used in this analysis are depicted in **Table 4-1**. In some cases these multipliers were used in this chapter, in other instances, multipliers shown in this table are used in subsequent chapters.

The multipliers presented in Table 4-1 were used to estimate induced impacts for on-airport businesses and tenants. For example, $100 in direct expenditures (output) in the aviation sector supports a total output impact equivalent to $165. In this example, induced impacts would be $65 ($165 minus $100).

The methodology discussed in the sections above was applied to each of the study airports (not including the commercial service airports and the Miami-Dade Aviation Department's airports). By following this methodology, estimates of total employment, annual payroll, and annual output/spending were developed.

Table 4-1
Florida IMPLAN Multipliers by Economy Sector

Economy Sector	Employment Multiplier	Payroll Multiplier	Output Multiplier
Government	2.01	1.66	1.75
Construction CIP[1]	2.09	2.02	1.95
Concessions[2]	1.39	1.66	1.80
Aviation[3]	2.75	1.99	1.65
Air Cargo[4]	2.59	1.87	1.61
Commercial Service Visitor Expenditures[5]	1.60	1.83	1.79
General Aviation Visitor Expenditures[5]	1.55	1.78	1.77

Source: CDM Smith and IMPLAN multipliers

Notes: 1. Construction multipliers are the weighted average of the Construction of Other New Nonresidential Structures, Maintenance & Repair of Nonresidential Structures, and Architectural-Engineering Services multipliers.

2. Concessions multipliers are the weighted average of the Food Services and Drinking Places, Miscellaneous Retail Stores, Hotels and Motels, and Business Support Services multipliers.

3. Aviation multipliers are the weighted average of the Transport by Air, Aircraft Engine and Engine Parts Manufacturing, Other Aircraft Parts and Auxiliary Equipment Manufacturing, and Aircraft Manufacturing multipliers.

4. Air cargo multipliers are the weighted average of the Transport by Air, Transport by Truck, Couriers and Messengers, and Warehousing and Storage multipliers.

5. Visitor expenditures multipliers are the weighted average of the Food Services and Drinking Places, Hotels and Motels, Automotive Equipment Rental and Leasing, and Miscellaneous Retail Store multipliers. Weightings were different for commercial service and general aviation visitor multipliers to reflect the difference in their spending habits.

EMPLOYMENT, PAYROLL, AND OUTPUT IMPACTS FOR STUDY AIRPORTS

The airports in this study are significant generators of economic activity. The airports help to support jobs, payroll, and output for Florida's economy. The following sections present economic impacts associated with employment, annual payroll, and total annual output as measured by this analysis. The impact for on-airport tenants for all of Florida's 122 airports included in this study update is shown in each section. The impacts shown include impacts associated with all categories of on-airport tenants except for those previously noted which are discussed in subsequent chapters of this report.

On-Airport Tenant Employment Impacts

The findings of this analysis indicate that airports are an important source of jobs. **Table 4-2** identifies the total number of jobs supported by on-airport tenants at the airports in this study.

Table 4-2
On-Airport Tenant Economic Impacts

	Direct Impacts	Induced Impacts	Total Impacts
Employment			
Commercial Service Airports	74,317	74,548	148,865
General Aviation Airports	8,050	13,192	21,242
Total Employment	**82,367**	**87,740**	**170,107**
Payroll			
Commercial Service Airports	$3,424,151,000	$3,737,639,000	$7,161,790,000
General Aviation Airports	$428,652,000	$523,839,000	$952,491,000
Total Payroll	**$3,852,803,000**	**$4,261,478,000**	**$8,114,281,000**
Output			
Commercial Service Airports[1]	$25,691,358,000	$7,820,748,000	$33,512,106,000
General Aviation Airports[1]	$1,906,482,000	$858,623,000	$2,765,105,000
Total Output	**$27,597,840,000**	**$8,679,371,000**	**$36,277,211,000**

[1] Induced output is influenced by the output impacts for the five airports in the Miami-Dade Aviation Department's airport system, which are based on *The Economic Impacts of Miami International Airport and the General Aviation Airports within the Miami-Dade County Airport System 2012*, prepared by Martin Associates, April 9, 2013. The Martin Associates study did not identify induced output.
Source: CDM Smith and IMPLAN multipliers

In total, there are nearly 82,400 direct jobs supported by the activities of on-airport tenants in Florida. It is important to note that this employment estimate does not include jobs associated with non-aviation businesses which, for various reasons, are located on an airport. For instance, some airports have on-site industrial parks with businesses that are not related to aviation. Employment associated with these businesses is not included in the employment estimates shown in Table 4-2.

As a result of on-airport tenant activity, additional induced employment is created. Induced impacts associated with on-airport tenants add nearly 87,800 additional jobs. When direct and induced employment is considered, Florida's on-airport tenants contributed approximately 170,100 jobs to Florida's employment base. Of this total, nearly 148,900 jobs are associated with the commercial service airports and more than 21,200 jobs are associated with the general aviation airports.

On-Airport Tenant Payroll Impacts

Table 4-2 identifies annual payroll benefits associated with on-airport tenants for all study airports.

This study update shows that direct annual payroll impacts are nearly $3.9 billion. This direct payroll impact ripples throughout the Florida economy, creating induced payroll impacts that are measured through the use of the IMPLAN model. The induced annual payroll impact related to on-airport tenants at the study airports is nearly $4.3 billion. Total payroll impacts associated with on-airport tenants, which include direct and induced annual payroll, are more than $8.1 billion annually.

On-Airport Tenant Output Impacts

Table 4-2 identifies direct, induced, and total annual output associated with on-airport tenants for all study airports. As tenants spend money, the expenditures ripple through Florida's economy. Total direct annual output associated with on-airport tenants is estimated at nearly $27.6 billion. Induced annual output is estimated at nearly $8.7 billion.[2] When direct and induced output impacts are combined, the total annual output attributed to on-airport tenants is nearly $36.3 billion.

SUMMARY FOR ON-AIRPORT TENANTS

As shown in this chapter, the 122 airports considered in this study update are major catalysts for Florida's economy. In terms of on-airport tenants considered in this chapter, the study airports account for the following total economic impacts:

- Jobs – 170,107
- Annual Payroll – $8,114,281,000
- Annual Output – $36,277,211,000

[2] Induced output is influenced by the output impacts for the five airports in the Miami-Dade Aviation Department's airport system, which are based on *The Economic Impacts of Miami International Airport and the General Aviation Airports within the Miami-Dade County Airport System 2012*, prepared by Martin Associates, April 9, 2013. The Martin Associates study did not identify induced output.

CHAPTER 5: ECONOMIC IMPACTS OF VISITORS

INTRODUCTION

Millions of visitors arrive in Florida each year via both commercial airline flights and general aviation aircraft. Approximately 43.1 million visitors arrive each year on commercial airlines, and nearly 3.0 million visitors arrive on general aviation aircraft. Once in the state, these visitors spend money for lodging, food, entertainment, retail purchases, and other items. Visitor spending helps to support notable volumes of economic activity in the state. While most visitor-related spending takes place off-airport, Florida's airports are essential for bringing millions of visitors to the state each year.

Florida's commercial service airports, previously shown on Exhibit 2-1, were responsible for bringing visitors on scheduled airlines to the state in 2013, the base year for this study update. In addition, all study airports, including the commercial service airports, accommodate arrivals by visiting general aviation aircraft. Hence, all study airports shown on Exhibit 2-1 help to bring general aviation visitors to Florida. The economic impacts associated with these commercial service and general aviation visitors were measured in this study update and are identified in this chapter.

It should be noted that spending by Florida residents departing from their local commercial service and general aviation airports also helps to support substantial benefits for Florida's economy. Residents spend money for parking, food and beverage, taxis/limousines, and miscellaneous retail purchases at their departure airport. The economic impacts associated with these expenditures were included with the economic impacts of on-airport tenants presented in Chapter 4.

APPROACH TO ESTIMATING INDIRECT ECONOMIC IMPACTS FOR VISITORS

Annually, flights to commercial service and general aviation airports in Florida bring more than 46.0 million visitors to the state. The economic impacts produced by the spending of these visitors were determined using updated data from the 2010 *Florida Statewide Aviation Economic Impact Study*, survey data from visiting pilots and passengers arriving at Florida airports on general aviation aircraft, and data from an input-output model with multipliers and data tables specific to Florida. Impact estimates for three separate components of the economy were developed, as follows:

- Employment – Employment is based on full-time equivalent positions. For example, two part-time employees equal one full-time employee.
- Payroll – Payroll is the annual salary, wages, and benefits paid to employees.
- Output (Spending) – For visitor-related economic impacts, annual activity or output is equivalent to total annual spending by all visitors arriving in Florida by air.

The sum of the benefits of these three categories yields the indirect impacts attributable to an airport or the system of airports.

It is important to note that payroll and output cannot be combined because elements of economic benefit related to payroll are also contained in the output estimate. Each of the three impact components (employment, payroll, and output) stands alone as a measure of visitor-related economic impact.

Visitor-related economic impacts were calculated using an input-output model. The input-output model considers two impact categories to assess the economic impacts associated with commercial service and general aviation visitors. These categories are:

- Indirect Impacts - Indirect impacts occur as a result of air travel (both scheduled commercial service and general aviation), but generally take place off-airport. These impacts are attributed to the expenditures of visitors who arrive in Florida by air. Visitor expenditures support employment and payroll in service-related industries such as lodging, food and beverage, retail, and entertainment. Visitor spending for aviation-related goods and services (such as aviation fuel purchases) is not accounted for in visitor spending; instead, it is included in the on-airport tenant impacts in Chapter 4.
- Induced Impacts - Induced impacts are the benefits resulting from the re-circulation of indirect impacts within the economy. This re-circulation is typically referred to as the multiplier effect. For example, as employees whose jobs are supported by visitor spending spend their salary for housing, food, and services, those expenditures circulate through the economy, resulting in increased spending, payroll, and employment throughout Florida.

Because induced impacts are not as easily quantified as indirect impacts, a reliable method for estimating induced impacts must be applied. For this study, the Impact Analysis for Planning (IMPLAN) model was used to measure the multiplier effect and determine induced impacts. This model is considered a standard method for evaluating the economic benefits of public facilities, and has been used nationwide to approximate the economic impacts associated with airports and airport systems. The model contains a detailed database of economic multipliers used to estimate the induced impacts associated with indirect visitor spending that occurs in association with the airports.

Data Requirements for the Economic Modeling Process

Data collection efforts were undertaken to gather information related to visitor spending. These data were inputs to the modeling process to identify the indirect economic impacts associated with visitor spending. The following groups were considered to obtain data to estimate indirect impacts related to air visitors to Florida:

- Commercial Service Visitors - This group consists of estimated non-local passengers (visitors) arriving via commercial airlines. Average visitor spending for this group was estimated based on updated commercial service visitor expenditure patterns from the 2010 *Florida Statewide Aviation Economic Impact Study.*
- General Aviation Visitors - Impacts from general aviation visitors are produced by non-local passengers arriving via private or business aircraft. General aviation visitors are associated with that portion of each airport's itinerant general aviation operations that are transient (or visiting) in nature. Itinerant operations are those that leave the airport's local airspace. Some itinerant operations at an airport are attributable to residents of the airport's market area who fly their planes to more distant locations. The remaining itinerant operations are attributed to visitors. Itinerant operations performed by visitors are considered true transient

operations. Impacts for this group were identified from survey data from airports across Florida.

Commercial Service Visitors

Airline flights to and from Florida's commercial service airports provide access for millions of business- and pleasure-related visitors. For this study, visitor impacts related to 19 commercial service airports were measured. Visitors using commercial service airports as a gateway to the state contribute to the economy through their expenditures for food, lodging, entertainment, transportation, retail sales, and other goods and services. Numerous service industries also benefit from the multiplier or spin-off effects stemming from visitor spending.

For each commercial service airport, the following methodology was used to estimate indirect commercial service visitor impacts.[1]

Enplanement data for 2013 for each of the commercial service airports was obtained from airport management. The percentage of visiting domestic and international passengers was estimated for each airport using a sampling of U.S. Department of Transportation (US DOT) origin and destination data from fourth quarter 2012 to third quarter 2013, as well as 2012 international travel data from the International Trade Administration's (ITA) Office of Travel and Tourism Industries (OTTI), the most recent data available. The number of enplanements and estimated visitors for each airport in 2013 is presented in **Table 5-1**. As shown in Table 5-1, there were nearly 71.8 million enplanements at Florida's commercial service airports. Of these enplanements, an estimated 43.1 million (60 percent) were visitors to Florida.

[1] Indirect commercial service visitor impacts for Miami International Airport for this study are based on *The Economic Impacts of Miami International Airport and the General Aviation Airports within the Miami-Dade County Airport System 2012*, prepared by Martin Associates, April 9, 2013.

Table 5-1
Enplanements and Visitors at Florida's Commercial Service Airports, 2013

Associated City	Airport Name	Total Enplanements	Domestic Enplanements	International Enplanements	Total Visitors	Domestic Visitors	International Visitors
Daytona Beach	Daytona Beach International Airport	305,096	291,271	13,825	176,402	168,937	7,465
Fort Lauderdale	Ft. Lauderdale/Hollywood International Airport	11,754,780	9,949,181	1,805,599	7,252,220	6,367,476	884,744
Fort Myers	Southwest Florida International Airport	3,871,118	3,754,984	116,134	2,743,849	2,666,039	77,810
Gainesville	Gainesville Regional Airport	204,924	182,689	22,235	86,116	78,556	7,560
Jacksonville	Jacksonville International Airport	2,564,581	2,399,206	165,375	1,331,114	1,271,579	59,535
Key West	Key West International Airport	401,669	391,564	10,105	323,331	317,167	6,164
Melbourne	Melbourne International Airport	223,353	214,408	8,945	117,214	113,636	3,578
Miami	Miami International Airport[1]	19,625,813	10,029,011	9,596,802	9,063,263	4,631,429	4,431,834
Orlando	Orlando International Airport	17,355,004	15,404,416	1,950,588	12,784,185	11,399,268	1,384,917
Orlando	Orlando Sanford International Airport	1,006,218	799,496	206,722	719,645	535,662	183,983
Panama City	Northwest Florida Beaches International Airport	408,037	395,327	12,710	270,207	264,869	5,338
Pensacola	Pensacola International Airport	756,553	702,623	53,930	397,213	379,416	17,797
Punta Gorda	Punta Gorda Airport	166,062	166,062	0	104,619	104,619	0
Sarasota	Sarasota/Bradenton International Airport	595,604	564,319	31,285	373,041	355,521	17,520
St. Petersburg/Clearwater	St. Petersburg-Clearwater International Airport	508,525	508,525	0	315,286	315,286	0
Tallahassee	Tallahassee Regional Airport	348,524	319,294	29,230	152,451	143,682	8,769
Tampa	Tampa International Airport	8,477,966	8,214,410	263,556	4,888,229	4,764,358	123,871
Valparaiso	Northwest Florida Regional Airport/Eglin AFB	370,261	345,081	25,180	225,281	213,950	11,331
West Palm Beach	Palm Beach International Airport	2,848,432	2,797,236	51,196	1,760,908	1,734,286	26,622
Total		**71,792,520**	**57,429,103**	**14,363,417**	**43,084,574**	**35,825,736**	**7,258,838**

[1] Enplanement and visitor data is from *The Economic Impacts of Miami International Airport and the General Aviation Airports within the Miami-Dade County Airport System 2012*, prepared by Martin Associates, April 9, 2013.
Source: CDM Smith, FDOT, Florida airport management records, and *The Economic Impacts of Miami International Airport and the General Aviation Airports within the Miami-Dade County Airport System 2012*, prepared by Martin Associates, April 9, 2013.

Average expenditures per visitor per trip from the 2010 *Florida Statewide Aviation Economic Impact Study* were adjusted using Consumer Price Index (CPI) ratios to estimate 2013 expenditure patterns for domestic visitors. For international visitors, average visitor expenditures per trip were derived from best available primary and secondary data sources. These estimates were applied to the respective number of annual visitors for each airport to determine total annual economic activity (or output) generated by spending from commercial airline visitors using each airport.

The following example using Orlando International Airport demonstrates the calculations used to estimate indirect commercial service visitor impacts for output, employment, and payroll:[2]

Example Domestic Visitor Splits Analysis

- Orlando International Airport reported 17,355,004 enplanements during 2013. Of these total enplanements, 1,950,588 were bound for international destinations and 15,404,416 were bound for domestic destinations. US DOT origin and destination data indicate that 74 percent of the domestic enplanements were visitors, or 11,399,268 visitors, traveling through Orlando International Airport.

- The average expenditure per trip for a domestic visitor at Orlando International Airport from the 2010 *Florida Statewide Aviation Economic Impact Study* was adjusted using CPI ratios. This adjusted expenditure ($850 per visitor per trip) is used to calculate annual domestic visitor spending (or output) of approximately $9.7 billion.

    - 11,399,268 domestic visitors x $850 per visitor per trip = $9.7 billion annual domestic visitor output

Example International Visitor Splits Analysis

- US DOT origin and destination data indicate that 29 percent of the 1,950,588 international enplanements at the airport, or 565,671 enplanements, were residents of Florida bound for international destinations.

- ITA OTTI data indicate that 1,004,602 overseas visitors arrived at Orlando International Airport in 2012.

- North America international visitors (Canada and Mexico) were estimated by subtracting the overseas visitors (1,004,602) and international enplanements who were Florida residents (565,671) from total international enplanements in 2013 (1,950,588). This calculation yields 380,315 international visitors from Canada and Mexico.

- Total international visitors were calculated by adding overseas visitors (1,004,602) and visitors from Canada and Mexico (380,315). This calculation yields 1,384,917 total international visitors.

[2] Rounded numbers are used in this example. Any variation in calculations is due to rounding.

- For international visitors, an average expenditure per visitor per trip of $1,160 was derived from online sources and CPI ratios.[3] This average expenditure is used to calculate annual international visitor spending (or output) of approximately $1.6 billion.

Example Visitor Impacts Calculation Analysis

- Based on these calculations, total annual international visitor output is estimated at $11.3 billion. ($9.7 billion annual domestic visitor output + $1.6 billion annual international visitor output = $11.3 billion total annual visitor output)

- In order to estimate employment associated with commercial service visitor spending, Florida specific employment ratios per $1 million of visitor output were developed using the IMPLAN model. It was estimated that approximately 12.9 persons are employed in Florida as result of every $1 million in commercial service visitor spending. In other words, every time visitors spend a total of $1 million, this spending supports 12.9 jobs. This calculation results in 145,944 visitor-related jobs associated with the spending of domestic and international visitors arriving via Orlando International Airport on commercial airlines. ($11.3 billion x 12.9 ÷ $1,000,000 = 145,944 jobs)

- In order to estimate payroll impacts associated with employment supported by commercial service visitor spending, average state wages for appropriate industry sectors were applied to the estimated number of employees supported by commercial airline visitor spending. Most visitor expenditures take place in the hotel/motel, food/beverage, entertainment, retail, and transportation sectors. Based on data obtained from the U.S. Bureau of Labor Statistics, an average payroll of $21,900 per employee in Florida was assumed for these job categories. (145,944 jobs x $21,900 = $3.2 billion annual payroll)

The same calculations were used for each airport with commercial service, using average expenditures per domestic and international visitor per trip appropriate for each airport. The indirect visitor impact data (output, employment, and payroll) for the Florida commercial service airports is presented in **Tables B-1**, **B-2**, and **B-3** in **Appendix B**. These tables show indirect, induced, and total impacts.

General Aviation Visitors

General aviation refers to all segments of aircraft activity that are not related to the commercial airlines or the military. Visitors to Florida use general aviation aircraft to enjoy both recreational opportunities available in Florida as well as to conduct business.

[3] "Orlando Tourism's Brazilian Contingent Grows Sharply with Improved Head Count," by Sara K. Clarke, *Orlando Sentinel*, October 1, 2013.

The economic activity produced by general aviation visitors at the commercial service and general aviation airports in Florida was determined by surveying transient pilots and passengers using Florida airports.[4] Surveys were provided to fixed base operator (FBO) managers throughout the state system of airports. Surveys were distributed by the FBOs to arriving transient pilots and passengers who were visitors to Florida. The survey requested the following information:

- The airport where the survey was received
- The airport where the aircraft is based
- The number of travelers in the aircraft
- The purpose of the trip
- The length of stay in the airport area
- The estimated expenditures during the trip
- The total number of people that accounted for the expenditures

This transient pilot survey effort, which lasted approximately three months, was used to estimate the average number of general aviation visitors per aircraft and average expenditures per visitor per trip. Based on survey data, the average general aviation visitor in Florida spent approximately $290 per trip on expenses, other than aircraft-related expenses. Economic impacts related to visitor expenditures for aircraft-related expenses were captured in association with on-airport tenant impacts in Chapter 4. Survey data also indicated that the average general aviation aircraft transported 3.1 persons per aircraft.

It is recognized, however, that not all airports attract the same types of visitors. For example, visitors arriving in Orlando or Fort Lauderdale have a wider variety of options for lodging and entertainment than do visitors arriving in Live Oak or Cross City. As a result, the same tiered approach to estimating general aviation visitor spending used in the 2010 *Florida Statewide Aviation Economic Impact Study* was applied to Florida's airports. These tiers allow for differentiation among average spending levels for each airport.

To determine the general aviation visitor spending level that was appropriate for each airport, Florida retail sales per capita data were obtained from the U.S. Census Bureau. It was reasoned that the amount of retail sales per capita for each county in Florida was a relative indicator of each airport's appropriate tier for visitor spending. Information received from this study's transient pilot and passenger surveys was used to develop a range of spending per trip for visitors arriving in Florida in general aviation aircraft. For this study, it was determined that it was appropriate to establish six different tiers for general aviation visitor spending.

Once the tiers were established, the transient pilot surveys received were used not only to develop estimates of average visitor spending per trip but also to establish average length of stay and average persons per aircraft estimates for the respective tiers. **Table 5-2** presents information on assumptions for average spending per visitor trip for airports in each tier. A breakdown of airports by tier is presented in Appendix B in **Table B-4**. The assignment of commercial service and general aviation airports to each tier was an important step in estimating annual spending associated with general aviation visitors.

[4] General aviation visitor impacts for Kendall-Tamiami Executive Airport, Opa-Locka Executive Airport, Homestead General Aviation Airport, and Dade-Collier Training and Transition Airport for this study update are based on *The Economic Impacts of Miami International Airport and the General Aviation Airports within the Miami-Dade County Airport System 2012*, prepared by Martin Associates, April 9, 2013.

Table 5-2
General Aviation Visitor Tiers

	Tier 1	Tier 2	Tier 3	Tier 4	Tier 5	Tier 6
Avg. Expenditure Per Trip	$610	$390	$250	$120	$80	$0
Avg. Persons/Aircraft	4.0	4.0	3.6	3.1	2.2	0.0
Number of Airports[1]	21	19	23	29	23	3

[1] Kendall-Tamiami Executive Airport, Opa-Locka Executive Airport, Homestead General Aviation Airport, and Dade-Collier Training & Transition Airport were not assigned to tiers.
Source: CDM Smith

Similar to the 2010 *Florida Statewide Aviation Economic Impact Study*, the number of itinerant operations at each Florida airport was gathered from the Federal Aviation Administration's (FAA) 2013 Terminal Area Forecast (TAF), which contains historical aircraft operations data for 2012. For some airports with airport traffic control towers, 2013 data from the Air Traffic Activity Data System (ATADS) was considered a more appropriate data source. For airports not included in the TAF or ATADS, the number of itinerant operations was collected from each airport's FAA 5010 Form. By definition, true transient operations are business or pleasure flights conducted by aircraft not based locally. Transient operations are equated with that portion of each airport's general aviation activity that brings in visitors. Itinerant operations, on the other hand, are defined as non-training flights or aircraft that enter or leave an airport's airspace. The proportion of itinerant operations that were true transient at each airport was estimated through interviews with FBO and airport managers.

Based on this data, estimates of general aviation visitor impacts for output, employment, and payroll were made for each airport as illustrated in the following example, using Vero Beach Municipal Airport:[5]

- The number of itinerant general aviation aircraft operations was obtained from the FAA's 2013 TAF. According to the TAF, there were 71,908 itinerant aircraft operations (including arrivals and departures) at Vero Beach Municipal Airport in 2012. To determine itinerant arrivals, total itinerant aircraft operations were divided in half. This calculation yields 35,954 itinerant arrivals.
    - 71,908 itinerant aircraft operations ÷ 2 = 35,954 itinerant arrivals
- The number of itinerant arrivals performed by true transients is required to calculate visitor impacts. Approximately 40 percent of itinerant arrivals at Vero Beach Municipal Airport are true transients or visiting aircraft. These true transient flights are equated with either business or pleasure visitors.
    - 35,954 itinerant arrivals x 40 percent = 14,382 true transient arrivals
- Data regarding the average number of aircraft occupants from the airport "tier" process was then applied to the estimate of true transient arrivals to determine annual general aviation visitors. Vero Beach Municipal Airport is classified as a Tier Two airport. The average aircraft occupancy for airports in Tier Two is 4.0 persons per aircraft (see Table 5-2). For Vero Beach Municipal, the 14,382 true transient arrivals yields the following number of annual general aviation visitors:

[5] Rounded numbers are used in this example. Any variation in calculations is due to rounding.

- 14,382 arrivals x 4.0 persons/aircraft = 57,528 annual general aviation visitors

- To calculate the impact these visitors have on the economy, it was necessary to estimate average expenditures per visitor per trip. For Vero Beach Municipal Airport, the average expenditure per visitor per trip is $390 (see Table 5-2). The typical visitor expenditure was then applied to the estimated number of annual general aviation visitors to produce general aviation visitor spending (output). This final general aviation visitor expenditure figure equates to visitor output.

    - 57,528 annual general aviation visitors x $390/visitor/trip = $22,436,000 annual spending (output) by general aviation visitors using Vero Beach Municipal Airport

- To determine indirect payroll and employment impacts resulting from visitor spending (output), multiplier ratios based on $1 million of output were used. Ratios developed by the input-output model indicate that for every $1 million of general aviation visitor output, approximately 14.1 full-time positions in other industries are supported. Most of these jobs are in the service and retail sectors. Visitors arriving on general aviation aircraft at Vero Beach Municipal Airport support approximately 316 full-time positions.

    - $22,436,000 x 14.1 jobs ÷ $1,000,000 = 316 jobs

- The average annual statewide salary for service/retail industries ($21,900) was then applied to the estimate of employment to calculate the payroll impact associated with general aviation visitor-supported employment. In this example, general aviation visitor-related payroll associated with the 316 full-time positions is estimated to total approximately $6,920,000 on an annual basis.

    - 316 jobs x $21,900 = $6,920,000

The same approach was used for each commercial service and general aviation airport, using the tier assignment for each airport and corresponding data from **Table B-5** in Appendix B. Table B-5 summarizes estimated 2013 general aviation operations for the Florida airport system. Estimates of total output (spending), employment, and payroll associated with general aviation visitors using each system airport are presented in **Tables B-6**, **B-7**, and **B-8**.

Study Multipliers/Induced Impacts

Employment, payroll, and output impacts derived from on-airport activities and visitors comprise each airport's direct and indirect economic impacts. As these impacts enter the economy, they circulate among other sectors, creating successive waves of additional spending. This phenomenon is referred to as the multiplier effect, also known as induced impacts. Multipliers used in this study have been previously discussed in Chapter 4, Table 4-1.

VISITOR EMPLOYMENT, PAYROLL, AND OUTPUT IMPACTS

The following sections discuss economic impacts associated with employment, annual payroll, and total annual economic activity (output) as measured by this analysis. Impacts presented are those calculated for visitors arriving in Florida on commercial airlines and general aviation aircraft.

Visitor Employment Impacts

The findings of this analysis indicate that visitors are an important source of jobs. Visitors arriving via commercial airlines spend money, thereby supporting employment throughout Florida. **Table 5-3** identifies the number of employees in Florida whose jobs are supported by the spending of visitors arriving on commercial airlines via Florida's commercial service airports. Most of the jobs are concentrated in the hotel/motel, restaurant, recreational and entertainment, and retail sectors.

Table 5-3
Florida Employment from Commercial Service Visitor Spending

	Indirect Employment	Induced Employment	Total Employment
Commercial Service Airports	**456,591**	**278,757**	**735,348**

Source: CDM Smith and IMPLAN multipliers

There are nearly 456,600 indirect jobs supported by commercial service visitor spending. Induced impacts result in nearly 278,800 additional jobs supported by the spending of commercial service visitors. When indirect and induced visitor-related employment impacts are combined, more than 735,300 jobs are supported by spending from visitors to Florida who arrive via the commercial airlines.

Similar to visitors using commercial airline service, intra-state and inter-state visitors using general aviation aircraft typically spend money while visiting, thereby helping to support additional employment. **Table 5-4** identifies the number of Florida jobs supported by spending from visitors using general aviation aircraft to travel.

Table 5-4
Florida Employment from General Aviation Visitor Spending

	Indirect Employment	Induced Employment	Total Employment
Commercial Service Airports	9,449	5,188	14,637
General Aviation Airports	9,825	5,415	15,240
Total General Aviation Visitor Employment	**19,274**	**10,603**	**29,877**

Source: CDM Smith and IMPLAN multipliers

As a result of general aviation visitor expenditures in Florida, there are nearly 19,300 indirect jobs supported in Florida. Induced impacts result in more than 10,600 additional jobs. When indirect and induced general aviation visitor-related employment impacts are combined, nearly 29,900 jobs are supported by the spending of visitors using general aviation aircraft in Florida.

Visitor Payroll Impacts

Payroll impacts relate to the previously identified employment benefits associated with commercial service visitors and general aviation visitors. **Table 5-5** identifies the annual payroll impact attributed to employees whose jobs are supported by spending from commercial service visitors using the study airports.

Table 5-5
Florida Annual Payroll from Commercial Service Visitor Spending

	Indirect Payroll	Induced Payroll	Total Payroll
Commercial Service Airports	**$10,327,597,000**	**$ 9,612,017,000**	**$19,939,614,000**

Source: CDM Smith and IMPLAN multipliers

Indirect payroll consists of wages and benefits paid to employees working at restaurants, hotels/motels, retail businesses, and other service industries that are used by commercial service visitors. Indirect annual payroll attributable to spending by commercial service visitors is estimated at more than $10.3 billion.

As employees in the service industries spend their payroll, the money continues to circulate in Florida, generating additional employment and subsequent payroll. Annual induced payroll impacts associated with commercial service visitor-supported employment are estimated at more than $9.6 billion. When indirect and induced annual payroll impacts stemming from commercial service visitor spending in Florida are combined, a total annual payroll impact of nearly $20.0 billion is produced.

Table 5-6 identifies the payroll impacts attributed to jobs supported by spending from visitors to Florida using general aviation aircraft.

Table 5-6
Florida Annual Payroll from General Aviation Visitor Spending

	Indirect Payroll	Induced Payroll	Total Payroll
Commercial Service Airports	$206,936,000	$161,040,000	$367,976,000
General Aviation Airports	$215,766,000	$169,582,000	$385,348,000
Total General Aviation Visitor Payroll	**$422,702,000**	**$330,622,000**	**$753,324,000**

Source: CDM Smith and IMPLAN multipliers

Indirect annual payroll attributable to employees whose jobs are supported by spending from general aviation visitors is estimated at more than $422.7 million. As employees in the visitor-related industries spend their payroll, this spending continues to circulate, generating additional employment and subsequent payroll. The induced annual payroll impact associated with general aviation visitor spending is estimated at more than $330.6 million. When indirect and induced payroll impacts stemming from general aviation visitor spending are combined, a total payroll impact of more than $753.3 million is produced.

Visitor Output Impacts

Output related to commercial service and general aviation visitors is defined as the total spending that takes place during their visits. Annual economic output or spending from visitors to Florida is discussed in this section.

Table 5-7 identifies total annual output attributed to commercial visitor spending.

Table 5-7
Florida Output from Commercial Service Visitor Spending

	Indirect Output	Induced Output	Total Output
Commercial Service Airports	**$43,981,474,000**	**$20,823,928,000**	**$64,805,402,000**

Source: CDM Smith and IMPLAN multipliers

Indirect output from commercial service visitor spending is estimated at nearly $44.0 billion. The spending continues to circulate resulting in induced impacts. Induced annual impacts related to commercial service visitor output are estimated at more than $20.8 billion. In total, combined annual output or visitor spending is more than $64.8 billion.

Table 5-8 identifies spending (output) attributed to general aviation visitors. Indirect annual output is comparable to all general aviation visitor spending in Florida. Total indirect annual output from general aviation visitor spending is estimated at nearly $1.4 billion. Induced impacts related to general aviation visitor output are estimated at more than $1.0 billion each year. The total annual output or spending associated with visitors arriving via general aviation is more than $2.4 billion.

Table 5-8
Florida Output from General Aviation Visitor Spending

	Indirect Output	Induced Output	Total Output
Commercial Service Airports	$670,431,000	$514,293,000	$1,184,724,000
General Aviation Airports	$713,086,000	$525,307,000	$1,238,393,000
Total General Aviation Visitor Output	**$1,383,517,000**	**$1,039,600,000**	**$2,423,117,000**

Source: CDM Smith and IMPLAN multipliers

SUMMARY FOR VISITOR IMPACTS

Table 5-9 summarizes employment, payroll, and spending (output) attributed to commercial and general aviation visitors. Indirect impacts shown in this table were calculated using the surveys, assumptions, and methodology described in this section, while induced impacts were estimated using study multipliers. As shown in Table 5-9, total employment supported by all visitor spending is estimated at more than 765,200 jobs; total annual payroll associated with these jobs is estimated at nearly $20.7 billion. Total annual output (spending) from all commercial and general aviation visitors who arrive in Florida by air is estimated at more than $67.2 billion.

Table 5-9
Visitor Economic Impact Summary

	Indirect Impacts	Induced Impacts	Total Impacts
Employment			
Commercial Service Visitor Impacts	456,591	278,757	735,348
General Aviation Visitor Impacts	19,274	10,603	29,877
Total Visitor Employment	**475,865**	**289,360**	**765,225**
Payroll			
Commercial Service Visitor Impacts	$10,327,597,000	$9,612,017,000	$19,939,614,000
General Aviation Visitor Impacts	$422,702,000	$330,622,000	$753,324,000
Total Visitor Payroll	**$10,750,299,000**	**$9,942,639,000**	**$20,692,938,000**
Output			
Commercial Service Visitor Impacts	$43,981,474,000	$20,823,928,000	$64,805,402,000
General Aviation Visitor Impacts	$1,383,517,000	$1,039,600,000	$2,423,117,000
Total Visitor Output	**$45,364,991,000**	**$21,863,528,000**	**$67,228,519,000**

Source: CDM Smith and IMPLAN multipliers

CHAPTER 6: ECONOMIC IMPACTS OF AIRPORT CONSTRUCTION

INTRODUCTION

Each year, nearly all airports undertake capital improvement projects, such as runway rehabilitations, ramp overlays, hangar development, or building improvements. In addition, on-airport tenants (businesses and government agencies) undertake capital improvement projects. While these projects are underway, they employ persons in jobs such as construction, architecture, engineering, and consulting. Capital improvement projects at Florida's airports provide economic benefits to the state's economy. Grants from FDOT and the FAA are important contributors to airport-related capital improvement projects. The economic impact associated with construction at the study airports was measured in this study update.

APPROACH TO ESTIMATING ECONOMIC IMPACTS OF AIRPORT CONSTRUCTION

As previously discussed in this report, the total economic impact in this study is quantified in terms of employment, payroll, and output. Output represents total economic activity or spending. It represents the total value of aviation-related activities supported by the airports included in this study. This chapter presents the economic impact of the airports in terms of construction activity.

The Economic Modeling Process for Airport Construction Impacts

The economic impacts produced by airport construction activity were determined by using actual survey data and data from an input-output model that estimates purchases and sales between the various sectors of the economy. The model incorporated multipliers and data tables specific to Florida and required impact estimates for three separate components of the economy, as follows:

- Employment – Employment is based on full-time equivalent positions. For example, two part-time employees were assumed to equal one full-time employee.
- Payroll – Payroll is the annual salary, wages, and benefits paid to employees.
- Output (Spending) – For airport construction-related economic impacts, output is equivalent to the average annual expenditures for capital improvement projects.

It is important to note that payroll and output cannot be combined because elements of economic benefit related to payroll are also contained in the output estimate. Each of the three impact components (employment, payroll, and output) stands alone as a measure of an airport's or the airport system's total economic impact.

Airport construction-related impacts were calculated using an input-output model. The input-output model considers two impact categories to assess the economic benefits associated with capital improvement projects. These categories are:

- Direct Impacts – Direct impacts are the benefits associated with on-airport construction activity. Direct impacts include the employment, payroll, and spending for businesses such as construction, architecture, engineering, and consulting firms involved in project design and construction.
- Induced Impacts – Induced impacts are the benefits resulting from the recirculation of direct impacts within the economy. This recirculation is typically referred to as the multiplier effect. For example, as construction employees spend their salary for housing, food, and services, those expenditures circulate through the economy, resulting in increased spending, payroll, and employment throughout Florida.

Because induced impacts are not as easily quantified as direct impacts, a reliable method of estimating the induced impacts must be applied. For this study, the Impact Analysis for Planning (IMPLAN) model was used to measure the multiplier effect and determine induced impacts. This model is considered a standard method for evaluating the economic benefits of public facilities, and has been used nationwide to approximate the economic impacts associated with airports and airport systems. The model contains a detailed database of economic multipliers used to estimate the induced impacts.

The sum of the benefits of these two categories (direct and induced) yields the total construction impact attributable to an airport or a system of airports.

Data Requirements for the Economic Modeling Process for On-Airport Construction

As previously explained, nearly all airports undertake capital improvement projects every year. Examples of these projects include parking facility improvements and taxiway rehabilitations. In addition, on-airport businesses and government agencies undertake capital improvement projects. These projects employ persons in jobs such as construction, architecture, engineering, and consulting.

Data collection efforts were undertaken to gather information related to construction activity at airports considered in this study. These data, obtained through survey efforts, were inputs to the modeling process to identify total economic impact associated with capital improvement projects at the study airports.

As explained in Chapter 4, the on-airport economic impacts for 14 of Florida's commercial service airports were derived from the 2010 *Florida Statewide Aviation Economic Impact Study* using a methodology that is detailed in Appendix A.[1] The economic impact tied to construction activity at these airports was also estimated using the methodology explained in Appendix A. Also, the Miami-Dade Aviation Department completed a standalone economic impact study for its five airports (Miami International Airport, Dade-Collier Training and Transition Airport, Homestead General Aviation Airport, Kendall-Tamiami Executive Airport, and Opa-Locka Executive Airport) in April 2013. The construction impacts estimated for Miami International Airport in the Miami-Dade Aviation Department's study were used in this FDOT study update.[2]

[1] The construction impacts for four commercial service airports were analyzed using the methodology presented in this chapter. These airports include: Punta Gorda Airport, Northwest Florida-Beaches International Airport, St. Pete-Clearwater International Airport, and Orlando-Sanford International Airport.
[2] The Miami-Dade Aviation Department's economic impact study did not estimate construction impacts for the general aviation airports.

SURVEYS AND DATA COLLECTION METHODS

Direct impacts regarding airport construction activity were identified primarily through survey efforts. Airport managers and on-airport tenants and businesses were contacted to gather data related to capital improvement projects. The methods used to collect information are discussed in the following sections.

Airport Construction (Direct Impacts)

As explained in Chapter 4, airport sponsors/managers and all airport tenants having employees on Florida airports during 2013 were contacted to collect information for this study. As part of this survey effort, information regarding annual capital improvement project expenditures for 2010, 2011, 2012, and 2013 was collected.

For airport tenants/businesses who did not supply complete information on capital improvement project expenditures, estimates were developed using ratios of capital improvement project expenditures per employee for businesses category groupings used in this analysis. These ratios were developed from survey data obtained from those tenants and businesses who did respond to the survey. For business categories that had limited data, supplemental information was used from other recent economic impact studies conducted in other states.

The following methodology was used to estimate direct construction impacts:

- Capital improvement project data for 2010, 2011, 2012, and 2013 was used to determine average annual capital improvement expenditures. This approach was taken to avoid showing peaks or troughs in construction spending.
- The IMPLAN input-output model indicates that every $1 million spent annually on construction supports 7.0 construction-related jobs in Florida. These jobs include construction workers, equipment operators, foremen, engineers, and managers.
- Data from the Bureau of Labor Statistics was used to determine average pay for construction-related workers in Florida, and this average salary was applied to each construction-related employee to determine payroll associated with capital improvement project activity.

Study Multipliers and Induced Impacts

Employment, payroll, and output impacts associated with construction activity is part of each study airport's direct economic impact. As these direct construction-related impacts enter the economy, they circulate among other sectors, creating successive waves of additional spending. This phenomenon is referred to as the multiplier effect, also known as induced impacts. Multipliers used in this study have been previously discussed in Chapter 4. The multipliers for capital improvement project impacts were shown in Table 4-1.

CONSTRUCTION-RELATED EMPLOYMENT, PAYROLL, AND OUTPUT IMPACTS

The following sections discuss economic impacts associated with employment, annual payroll, and total annual economic activity (output) as measured by this analysis. Impacts presented are those calculated for airport construction-related activity. Total construction-related impacts are presented for commercial service and general aviation airports. Airport construction impact data (employment, payroll, and output) for each study airport is presented in **Tables C-1**, **C-2**, and **C-3** in **Appendix C** to this report.

Construction Employment Impacts

The findings of this analysis indicate that airport construction activity is an important source of employment. **Table 6-1** identifies the total number of jobs supported by construction activity at the airports included in this study.

Table 6-1
Airport Construction Employment

	Direct Employment	Induced Employment	Total Employment
Commercial Service Airports	6,111	7,879	13,990
General Aviation Airports	1,626	1,772	3,398
Total Construction Employment	**7,737**	**9,651**	**17,388**

Source: CDM Smith and IMPLAN multipliers

In total, on an average annual basis there are more than 7,700 direct jobs supported by construction activity at the study airports. As a result of construction activity on the airports, additional induced employment is created. Induced impacts associated with construction activity add nearly 9,700 jobs to the economy. When direct and induced employment is considered, construction activity on Florida's airports contributed nearly 17,400 jobs to the state's employment base. Of this total, approximately 14,000 jobs are associated with the commercial service airports and nearly 3,400 jobs are associated with the general aviation airports.

Construction Payroll Impacts

Table 6-2 identifies annual payroll benefits associated with construction activity at each of the study airports.

Table 6-2
Airport Construction Payroll

	Direct Payroll	Induced Payroll	Total Payroll
Commercial Service Airports	$220,694,000	$292,236,000	$512,930,000
General Aviation Airports	$51,495,000	$52,552,000	$104,047,000
Total Construction Payroll	**$272,189,000**	**$344,788,000**	**$616,977,000**

Source: CDM Smith and IMPLAN multipliers

This study update shows that direct annual construction payroll impacts are nearly $272.2 million. This direct payroll impact ripples throughout the Florida economy, creating induced payroll impacts that can be measured through the use of the IMPLAN model. The induced annual payroll impact related to construction activity at the study airports is nearly $344.8 million. Total payroll impacts associated with construction activity, which include direct and induced annual payroll, are nearly $617.0 million annually. Of this total, approximately $513.0 million is associated with the commercial service airports and approximately $104.0 million is associated with the general aviation airports.

Construction Output Impacts

Table 6-3 identifies direct, induced, and total annual output associated with construction activity at the study airports. As expenditures are made on airport capital improvement projects, the expenditures ripple through Florida's economy. Total direct annual output associated with

construction activity is estimated at more than $1.2 billion. Induced annual output is estimated at nearly $948.7 million. When direct and induced impacts are combined, the total annual output attributed to airport construction is nearly $2.2 billion. Of this total, approximately $1.7 billion is associated with commercial service airports and approximately $467.1 million is associated with general aviation airports.

Table 6-3
Airport Construction Output

	Direct Output	Induced Output	Total Output
Commercial Service Airports	$968,504,000	$720,896,000	$1,689,400,000
General Aviation Airports	$239,302,000	$227,769,000	$467,071,000
Total Construction Output	**$1,207,806,000**	**$948,665,000**	**$2,156,471,000**

Source: CDM Smith and IMPLAN multipliers

SUMMARY FOR AIRPORT CONSTRUCTION IMPACTS

Table 6-4 summarizes the employment, payroll, and output impacts associated with airport construction activity. Direct impacts shown in this table were calculated using the surveys, assumptions, and methodology described in this chapter, while induced impacts were estimated using IMPLAN multipliers. As shown in Table 6-4, total employment supported by airport construction activity is estimated at nearly 17,400 jobs; total annual payroll associated with these jobs is estimated at nearly $617.0 million. Total annual output from all airport construction activity is estimated at nearly $2.2 billion.

Table 6-4
Airport Construction Impact Summary

	Direct Impacts	Induced Impacts	Total Impacts
Employment			
Commercial Service Airports	6,111	7,879	13,990
General Aviation Airports	1,626	1,772	3,398
Total Employment	**7,737**	**9,651**	**17,388**
Payroll			
Commercial Service Airports	$220,694,000	$292,236,000	$512,930,000
General Aviation Airports	$51,495,000	$52,552,000	$104,047,000
Total Payroll	**$272,189,000**	**$344,788,000**	**$616,977,000**
Output			
Commercial Service Airports	$968,504,000	$720,896,000	$1,689,400,000
General Aviation Airports	$239,302,000	$227,769,000	$467,071,000
Total Output	**$1,207,806,000**	**$948,665,000**	**$2,156,471,000**

Source: CDM Smith and IMPLAN multipliers

CHAPTER 7: ECONOMIC IMPACTS OF AIR CARGO

INTRODUCTION

The Federal Aviation Administration (FAA) acknowledges the regional economic importance of airports by providing detailed guidance on estimating the economic impact of airports.[1] The FAA's methodology measures the direct benefits of airports which include activities associated with on-airport businesses and government agencies. On-airport impacts include the more obvious activities, such as passenger airlines, but also activities that the public is less aware of, such as air cargo. The FAA methodology also considers indirect off-airport impacts that visitors who use airports create when they spend money during their stay. The re-spending of on- and off-airport impacts, induced impacts are measured using an econometric input-output model which incorporates Florida-specific multipliers. When direct, indirect, and induced impacts are combined in aggregate, the total economic impact is measured.

Since the FAA methodology was developed, the industry, particularly the integrated express industry, has evolved into a major component of the aviation industry. Off-airport impacts related to cargo activity, however, were commonly overlooked in economic studies. The air cargo analysis in the Florida Department of Transportation's (FDOT) 2010 *Florida Statewide Aviation Economic Impact Study* remedied that by including impacts of cargo carriers located at off-airport facilities. This update to FDOT's 2010 study collected data for on- and off-airport air cargo carriers, passenger airlines, integrated cargo carriers such as FedEx Express, customs brokers and air freight forwarders. Trends affecting the industry were taken into account. Results from this analysis presented in this chapter illustrate that the air cargo industry in Florida is a major contributor to the Florida economy.

TRENDS AFFECTING AIR CARGO ACTIVITY IN FLORIDA

Since air cargo activity at airports in Florida include cargo carried by passenger airlines, it is important to note that since 2010, several airline mergers have occurred. The merger of United Airlines and Continental Airlines in 2012 and Northwest Airlines to Delta Airlines in 2010 are taken into consideration in the analysis. When airlines merge, the acquiring airline's air cargo staff and facilities typically absorb the other carrier's cargo activity. This affects labor and facility usage on airports. For the purpose of this study, it has been assumed that 100 percent of cargo- related employees for Northwest Airlines and United Airlines within Florida were either laid-off or offered other positions within the carrier's network. It is assumed also that the acquiring company's staff and facilities were adequate to handle the additional cargo operations and volume due to economies of scale.

Other recent changes to air cargo activity in Florida include gains in efficiency by integrated express carriers, which translates to less labor. In late 2012, FedEx Express announced a series of cost reduction activities on a nationwide basis aimed at improving efficiency and service re-positioning. The company stated that three percent cost reductions would take place in the form of closures and layoffs firm wide.[2] This three percent reduction has been applied to

[1] Estimating the Regional Economic Significance of Airports, Butler and Kiernan, FAA, 1992 and Measuring Regional Economic Significance of Airports, FAA 1986.
[2] Closures & Layoffs: FedEx Outlines Broad Cost-Cutting Plans, CoStar Group, October 2012.

all Florida-based FedEx Express facilities and is reflected at airports with known FedEx Express facilities and activity, as well as off-airport FedEx Express facilities.[3] FedEx is seeing additional growth in deferred (second and third day delivery) than in overnight services and acknowledges that their customers want value, not immediacy. FedEx's route structures were also taken into consideration. For example, in 2010, FedEx Express operated a C208 aircraft at Vero Beach Municipal Airport but has eliminated that service from its network. FedEx Express now trucks from that market to West Palm Beach where cargo is loaded onto a FedEx Express jet at Palm Beach International Airport. In addition, data collection indicated two off-airport FedEx stations were closed since the last study. These were in Bradenton and Plant City. UPS also closed a station which was located adjacent to Punta Gorda Airport on airport property.

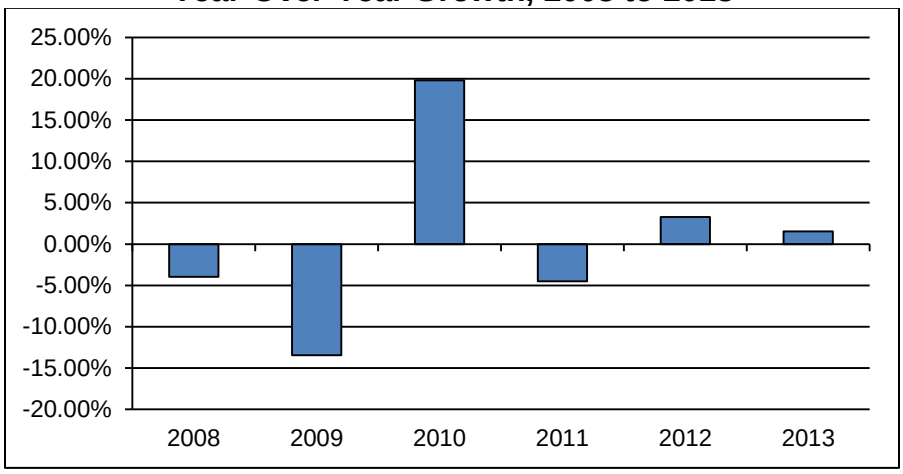
Anecdotal data indicates that some international air cargo is being trucked out of Florida as a result of increased security screening mandates. Research found that at Orlando International Airport, air cargo to be carried on British Airways passenger flights is being trucked from Orlando to Atlanta, Georgia to be screened before loaded onto an outbound flight at Hartsfield-Jackson Atlanta International Airport. The air carrier found that it is more cost effective to truck their cargo originating in Orlando up to Atlanta for security screening processing. British Airways realized that it is more cost effective to truck it to Atlanta rather than purchase a screening apparatus for their Orlando station. It is noteworthy to point out that trucking operations for this activity also supports air forwarding jobs.

Trends impacting air cargo around the world also impact airports in Florida. Within the last few years, major foreign flag airlines boosted the size of their passenger fleets in aircraft number and capacity. This has increased the amount of so-called "belly space" - room in the holds of planes - in the market. For example, Boeing 777 passenger jets, which can carry approximately 20 tons of cargo in their belly holds, have almost twice the cargo capacity of a Boeing 747 passenger aircraft. Airline schedule data indicates B777 aircraft increased from seven average daily departures at Miami International Airport (MIA) in 2009 to 13 in 2014. In 2014, approximately 60 percent of the flights were to South America, while 30 percent were transatlantic flights. The remainder was within North America. MIA has not seen significant cuts in Latin America freighters due to the floral industry's heavy reliance on them, but could see reductions in transatlantic freighters in coming years as a result of increased B777 passenger routes and the large cargo capacities they provide.

MIA has the greatest amount of air cargo traffic in Florida. In 2012, MIA handled 2,092,254 tons of total airfreight, of which 1,821,821 tons, or 87 percent was international freight, and 270,433 tons, or 13 percent, was domestic. Year 2012 rankings show MIA as the leading airport in the United States for international freight, and among world airports, MIA ranked 9th in international freight. Air cargo growth between 2012 and 2013 was just over 1.5 percent, which is slightly higher than worldwide air cargo, which was up 1.4 percent from the prior year. **Exhibit 7-1** identifies growth trends at MIA. The airport experienced the greatest decline in air cargo in 2009 followed by a corresponding rebound the following year. Air cargo volume from 2011 to 2013 has remained relatively stable.

[3] FedEx Express chose not to participate in this study's data gathering process.

Exhibit 7-1
Miami International Airport Air Cargo
Year-Over-Year Growth, 2008 to 2013



Source: Miami-Dade Aviation Department

MIA's new generation cargo facilities comprise 18 warehouses amounting to over 3.4 million square feet of warehouse, office and support space. The newest air cargo facility is Centurions' new state-of-the-art 550,000 square-foot cargo center, which is the largest private facility of its kind in North America. It will also support the Miami economy through the creation of up to 200 new jobs by the time the facility is running at full capacity within a few years. With the creation of the $123.0 million facility, Centurion Cargo is consolidating its current dispersed facilities on MIA as well as nearby off-site facilities, resulting in increased efficiencies in labor and time savings.

A total of 30 airports in Florida currently have scheduled air cargo and/or passenger flights carrying cargo; 12 of these airports are general aviation airports. These general aviation airports support small single- and twin-engine general aviation aircraft which transport specialized products such as medical samples and equipment and banking materials. A complex network of logistics staff on the ground supports these aircraft operations with package delivery and collection routes.

ECONOMIC IMPACT OF AIR CARGO METHODOLOGY

The methodology used to measure air cargo economic impacts is based on proven economic theory and follows the protocols for an input-output model as presented in more detail in Chapter 4. This is the most frequently used methodology for measuring airport economic impacts. Base data for calculating the economic impacts for air cargo were obtained from the airport tenant survey effort discussed in Chapter 4. The model for air cargo builds upon the traditional FAA methodology for measuring economic impact, but targets air cargo-specific activity, both on- and off-airport.

Data Requirements and Collection

This section identifies the data requirements and data collection methods for both the direct/on-airport and indirect/off-airport impacts related to air cargo.

Direct Impacts

Airport sponsors/managers were contacted to provide contact information for each on-airport air cargo-related tenant. All on-airport air cargo-related tenants/businesses having employees on Florida airports were contacted to collect information regarding their economic activity.

If air cargo tenants located at the airports did not respond to the survey, follow-ups were made to collect data. The goal was to measure current employment, annual payroll, and total annual economic activity (output) for on-airport air cargo-related tenants. Passenger airline impacts, related specifically to air cargo, were also gathered as part of this process.

The survey sent to each airport tenant, including airport sponsors/managers, requested the following information:

- Type of aviation activity conducted by the business/tenant;
- Number of full-time and part-time employees in 2013;
- Estimated total annual wages and benefits paid to employees in 2013;
- Estimated total capital improvement expenditures for each year, 2010 through 2013;
- Estimated total operating expenses (excluding payroll and capital improvements) in 2013; and
- Estimated total gross sales (where applicable) by the business on the airport in 2013.

Air cargo-related tenants were categorized based on the type of activity they are engaged in. These activities include:

- Freight Forwarder
- Customs Broker
- Trucking Perishables
- Air Freight/Cargo Carrier
- Integrated Express Cargo Carrier
- Passenger Airline
- Postal Contractor
- U.S. Postal Service
- Government (Customs, Security, etc.)

Indirect Impacts

Many air cargo tenants located at the airports have stations and affiliates located off-airport who rely on the airport for airlift requirements. Integrated express carriers, such as FedEx Express, often have stations, which act as consolidation points, located off-airport. From these stations, the integrated express operator trucks their cargo to an airport where it is loaded onto an aircraft. Additional off-airport cargo-related businesses include air freight forwarders, customs brokers, perishable importers, trucking companies, and the U.S. Postal Service. Data related to off-airport cargo businesses were gathered with the goal of measuring current employment, annual payroll, and total annual economic activity (output) for off-airport air cargo-related entities.

A wide variety of data sources were utilized to determine the indirect economic impact of air cargo activity in Florida that takes place off-airport. Data were gathered via mailed business

surveys, industry executive interviews, field observations, online databases, and aerial photography. This section identifies key indirect data for off-airport air cargo operators.

Off-airport integrated express stations – There are over 70 integrated express stations located off-airport throughout Florida. Although these stations are off-airport, they rely on aircraft for the transport of express parcels and packages. A list of staffed integrated express stations was developed by accessing each integrator's web page.[4] Data for these facilities were gathered via interviews with integrator staff and through station facility analysis. Employment and output ratios were developed based on facility type and square footage. These ratios were applied when actual employment and output data were not available.

Air freight forwarders – There are over 300 freight forwarder businesses with air cargo services located off-airport in Florida. Data related to these businesses were gathered from surveys and interviews of the staff at the Florida Customs Broker and Freight Forwarders Association (FCBFA). FCBFA also provided a list of air freight forwarders and customs brokers in Florida. When data were unavailable for these businesses, Dun and Bradstreet employment and sales data were utilized.

Customs brokers – There are over 200 customs brokers located off-airport in Florida. Data related to these businesses were gathered from surveys and interviews of the staff at the FCBFA. When data were unavailable for these businesses, Dun and Bradstreet employment and sales data were utilized.

Perishable importers – Perishable importers were sent a survey to ascertain their use of air cargo in their day-to-day operations. Surveys gathered information on employment, annual payroll, and operating expenses. Information regarding which airports are utilized to support their operations was also gathered. The lists for perishable importers were provided by the Association of Floral Importers of Florida (AFIF) and Florida Research and Economic Information Database Application (FREIDA). There are approximately 260 perishables importers in Florida. When data were unavailable for these businesses, Dun and Bradstreet employment and sales data were utilized.

Key Assumptions for Calculating Economic Impacts

The sections below discuss on- and off-airport related assumptions that were made for this air cargo economic impact analysis.

On-Airport Related Assumptions

Two key assumptions were made in this analysis related to on-airport government expenditures and airline activity, as they both relate to air cargo. These assumptions were necessary to account for missing or incomplete data. These two key assumptions follow:

- When data were not available, it was assumed that one percent of airport sponsor and other government agency expenditures and employment on airports are related to air cargo activity at the airport. Government agencies include USDA, U.S. Customs, TSA, FAA, and airport management. This assumption was based on estimated air cargo aircraft operational splits which show that approximately one percent of all aircraft

[4] Only FedEx Express, DHL and UPS staffed facilities were included. Facilities such as FedEx Kinkos and The UPS Store were not included in this analysis.

operations at the 30 airports in Florida that have air cargo activity are related to air cargo aircraft. This assumption was supported by actual budget estimates from the Hillsborough County Aviation Authority.

- Based on the 2010 *Florida Statewide Aviation Economic Impact Study*, it is assumed that five percent of airline employment, payroll, and annual output for all commercial airports with air cargo activity is related to supporting this activity.[5] The core air cargo employment areas for the commercial airlines relate to baggage handlers and ramp workers whose labor is divided between freight and passenger baggage handling.

Off-Airport Related Assumptions

Assumptions were also made related to off-airport cargo activity to account for missing or unavailable proprietary data. These assumptions were discussed with air cargo carriers and integrated express executives to ensure their validity. Important assumptions used in this analysis follow:

- UPS Centers are sort and distribution facilities which accommodate packages and parcels transported by interstate truck and aircraft. These centers were analyzed in this study. UPS indicated that 13.5 percent of total domestic volumes of cargo in the U.S. carried by UPS are transported on aircraft. This ratio was utilized to estimate the level of employment at UPS Centers that is related to air cargo transport. For example, if a UPS Center, located off-airport, has 100 employees, 13.5 employees at this center are considered air cargo-related employees.

- FedEx Express facilities in Florida were the only FedEx brand considered in this analysis. FedEx Ground, FedEx Freight, FedEx Custom Critical, and FedEx National LTL do not utilize air transport in their operations and are not included. All FedEx Express employees and operations are air-transport dependent.

- Only off-airport air cargo activity that actually takes place in Florida was considered in this analysis. For example, UPS related employment and output in Brunswick, Georgia was not included in the analysis, even though express packages arrive in this Georgia market via Jacksonville International Airport.

- Integrated express cargo destined for markets in Florida, that is transported via airports in Mobile, Alabama or Albany, Georgia, is included in this analysis. For example, UPS employment and output related to off-airport air cargo in Tallahassee is included in the analysis even though this cargo is transported to and from UPS aircraft in Albany, Georgia.

- Airport markets without integrated express flights on their airport are assumed to be served by the nearest airport with integrated express flights. For example, Melbourne International Airport does not have UPS, DHL or FedEx Express aircraft operations. It was assumed that the Melbourne market is served by these carriers via Orlando International Airport, which is 62 miles away.

[5] This assumption does not apply to AirTran, since they do not transport mail or freight.

STUDY RESULTS

The sections below present on- and off-airport air cargo-related economic impacts estimated using the methodology and assumptions explained above. The combined impact of all of Florida's 30 airports with on- and off-airport air cargo activity is shown in each section.

Results Related to On-Airport Air Cargo Activity

Florida airports support a wide range of cargo activity on an annual basis. Findings derived from this analysis indicate that roughly 8,700 full-time equivalent employees work in the air cargo sector on-airport in Florida. These employees earn more than $433.8 million in annual wages. On-airport air cargo activity generates more than $862.6 million in annual economic output. These benefits do not include the multiplier or induced impacts, nor do they include impacts related to air cargo businesses located off-airport which are presented in another section of this chapter. **Table 7-1** identifies direct on-airport air cargo benefits related to airports in Florida with scheduled air cargo service and general aviation traffic.

Table 7-1
Direct Economic Impacts Related to Air Cargo Activity

Associated City	Airport Name	Direct Employment	Direct Payroll	Direct Output
Commercial Service Airports				
Daytona Beach	Daytona Beach International Airport	5	$249,000	$764,000
Fort Lauderdale	Ft. Lauderdale/Hollywood International Airport	861	$42,934,000	$111,715,000
Fort Myers	Southwest Florida International Airport	154	$7,679,000	$16,970,000
Gainesville	Gainesville Regional Airport	15	$748,000	$1,931,000
Jacksonville	Jacksonville International Airport	240	$11,968,000	$26,564,000
Key West	Key West International Airport	17	$848,000	$2,266,000
Melbourne	Melbourne International Airport	38	$1,895,000	$5,172,000
Miami	Miami International Airport	5,882	$293,306,000	$486,809,000
Orlando	Orlando International Airport	751	$37,449,000	$107,257,000
Orlando	Orlando Sanford International Airport	25	$1,247,000	$3,568,000
Panama City	Northwest Florida-Beaches International Airport	10	$499,000	$1,269,000
Pensacola	Pensacola International Airport	14	$698,000	$1,988,000
Punta Gorda	Punta Gorda Airport	24	$1,197,000	$3,219,000
Sarasota	Sarasota/Bradenton International Airport	9	$449,000	$1,206,000
St. Petersburg/Clearwater	St. Pete-Clearwater International Airport	44	$2,194,000	$5,298,000
Tallahassee	Tallahassee Regional Airport	55	$2,743,000	$6,996,000
Tampa	Tampa International Airport	335	$16,705,000	$49,749,000
Valparaiso	Northwest Florida Regional Airport/Eglin AFB	5	$249,000	$811,000
West Palm Beach	Palm Beach International Airport	152	$7,580,000	$20,387,000
Commercial Service Airports Total		**8,636**	**$430,637,000**	**$853,939,000**
General Aviation Airports				
Fort Lauderdale	Ft. Lauderdale Executive Airport	9	$449,000	$1,477,000
Fort Myers	Page Field	2	$100,000	$257,000
Jacksonville	Cecil Airport	2	$100,000	$267,000
Jacksonville	Herlong Recreational Airport	2	$100,000	$267,000
Jacksonville	Jacksonville Executive At Craig Airport	5	$249,000	$627,000
Marathon	The Florida Keys Marathon Airport	9	$449,000	$1,137,000
Miami	Opa-Locka Executive Airport	13	$648,000	$1,737,000

Table 7-1
Direct Economic Impacts Related to Air Cargo Activity, cont.

Associated City	Airport Name	Direct Employment	Direct Payroll	Direct Output
General Aviation Airports				
Orlando	Executive Airport	15	$748,000	$2,004,000
Orlando	Kissimmee Gateway Airport	1	$50,000	$134,000
Tampa	Tampa Executive Airport	4	$200,000	$535,000
Vero Beach	Vero Beach Municipal Airport	2	$100,000	$246,000
General Aviation Airports Total		**64**	**$3,193,000**	**$8,688,000**
All Airports Total		**8,700**	**$433,830,000**	**$862,627,000**

Source: CDM Smith

Direct economic impacts related to MIA provides an annual output of $486.8 million with nearly 5,900 full-time equivalent jobs on-airport in the air cargo sector. MIA is followed by Fort Lauderdale-Hollywood International Airport (FLL) with 861 direct air cargo related positions and more than $111.7 million in total annual output. Orlando International Airport (MCO) ranks third in direct annual economic output related to on-airport air cargo with over 750 full-time equivalent positions related to air cargo.

Direct economic impacts related to air cargo activity at general aviation airports provides a total of nearly $8.7 million in output with over 60 full-time equivalent jobs in the air cargo sector. Orlando Executive Airport leads the general aviation airports with a total of $2.0 million in output with 15 full-time jobs. Orlando Executive is followed by Opa-Locka Executive Airport with 13 direct air cargo related positions and over $1.7 million in total annual output. All of the 30 airports with scheduled air cargo activity have measurable direct on-airport air cargo impacts.

When combining direct economic impacts related to on-airport cargo activity along with multiplier benefits, a substantial impact occurs on an annual basis. The entire air cargo economic impact including multiplier impacts indicate that more than 22,500 full-time equivalent employees derive their employment from the on-airport air cargo sector or in government agencies that support air cargo on a regular basis at 30 airports in Florida. Total economic impact related to on-airport air cargo activity generates nearly $1.4 billion in annual economic output. Major airports contributing to the total economic impact include MIA, FLL, and MCO with total outputs of $784.8 million, $180.1 million, and $172.9 million, respectively. **Table 7-2** identifies these benefits.

Table 7-2
Total Economic Impacts Related to Air Cargo Activity

Associated City	Airport Name	Total Employment	Total Payroll	Total Output
Commercial Service Airports				
Daytona Beach	Daytona Beach International Airport	13	$466,000	$1,232,000
Fort Lauderdale	Ft. Lauderdale/Hollywood International Airport	2,230	$80,231,000	$180,099,000
Fort Myers	Southwest Florida International Airport	399	$14,350,000	$27,358,000
Gainesville	Gainesville Regional Airport	39	$1,398,000	$3,112,000
Jacksonville	Jacksonville International Airport	621	$22,364,000	$42,825,000
Key West	Key West International Airport	44	$1,584,000	$3,654,000
Melbourne	Melbourne International Airport	98	$3,541,000	$8,338,000
Miami	Miami International Airport	15,230	$548,076,000	$784,757,000
Orlando	Orlando International Airport	1,945	$69,981,000	$172,912,000
Orlando	Orlando Sanford International Airport	65	$2,330,000	$5,752,000
Panama City	Northwest Florida-Beaches International Airport	26	$932,000	$2,045,000
Pensacola	Pensacola International Airport	36	$1,305,000	$3,206,000
Punta Gorda	Punta Gorda Airport	63	$2,263,000	$5,251,000
Sarasota	Sarasota/Bradenton International Airport	23	$839,000	$1,944,000
St. Petersburg/Clearwater	St. Pete-Clearwater International Airport	114	$4,100,000	$8,542,000
Tallahassee	Tallahassee Regional Airport	142	$5,125,000	$11,279,000
Tampa	Tampa International Airport	867	$31,216,000	$80,201,000
Valparaiso	Northwest Florida Regional Airport/Eglin AFB	13	$466,000	$1,308,000
West Palm Beach	Palm Beach International Airport	394	$14,164,000	$32,867,000
Commercial Service Airports Total		**22,362**	**$804,731,000**	**$1,376,682,000**
General Aviation Airports				
Fort Lauderdale	Ft. Lauderdale Executive Airport	23	$839,000	$2,381,000
Fort Myers	Page Field	5	$186,000	$414,000
Jacksonville	Cecil Airport	5	$186,000	$431,000
Jacksonville	Herlong Recreational Airport	5	$186,000	$431,000
Jacksonville	Jacksonville Executive At Craig Airport	13	$466,000	$1,011,000
Marathon	The Florida Keys Marathon Airport	23	$839,000	$1,834,000
Miami	Opa-Locka Executive Airport	34	$1,211,000	$2,800,000
Orlando	Executive Airport	39	$1,398,000	$3,231,000
Orlando	Kissimmee Gateway Airport	3	$93,000	$215,000
Tampa	Tampa Executive Airport	10	$373,000	$862,000
Vero Beach	Vero Beach Municipal Airport	5	$186,000	$397,000
General Aviation Airports Total		**165**	**$5,963,000**	**$14,007,000**
All Airports Total		**22,527**	**$810,694,000**	**$1,390,689,000**

Source: CDM Smith and IMPLAN multipliers

Results Related to Off-Airport Air Cargo Activity

Florida airports support numerous off- airport (indirect) air cargo businesses on an annual basis. Findings derived from this analysis indicate that more than 11,700 full-time equivalent employees work off-airport in the air cargo sector in Florida. These employees earn approximately $584.2 million in annual wages. Off-airport air cargo activity generates nearly $2.0 billion in annual economic output. These benefits do not include the multiplier or induced impacts, nor do they include impacts related to air cargo businesses located on-airport. **Table**

7-3 identifies indirect, or off-airport, air cargo benefits related to airports in Florida with scheduled air cargo service.

Table 7-3
Indirect (Off-Airport) Economic Impacts Related to Air Cargo Activity

Associated City	Airport Name	Indirect Employment	Indirect Payroll	Indirect Output
Commercial Service Airports				
Daytona Beach	Daytona Beach International Airport	0	$0	$0
Fort Lauderdale	Ft. Lauderdale/Hollywood International Airport	357	$17,802,000	$62,324,000
Fort Myers	Southwest Florida International Airport	126	$6,283,000	$21,992,000
Gainesville	Gainesville Regional Airport	61	$3,042,000	$10,565,000
Jacksonville	Jacksonville International Airport	320	$15,957,000	$48,983,000
Key West	Key West International Airport	3	$150,000	$524,000
Melbourne	Melbourne International Airport	0	$0	$0
Miami	Miami International Airport	8,525	$425,099,000	$1,489,705,000
Orlando	Orlando International Airport	1,015	$50,613,000	$148,470,000
Orlando	Orlando Sanford International Airport	0	$0	$0
Panama City	Northwest Florida-Beaches International Airport	25	$1,247,000	$4,433,000
Pensacola	Pensacola International Airport	42	$2,094,000	$7,330,000
Punta Gorda	Punta Gorda Airport	0	$0	$0
Sarasota	Sarasota/Bradenton International Airport	0	$0	$0
St. Petersburg/Clearwater	St. Pete-Clearwater International Airport	107	$5,336,000	$8,749,000
Tallahassee	Tallahassee Regional Airport	65	$3,241,000	$10,227,000
Tampa	Tampa International Airport	695	$34,656,000	$106,787,000
Valparaiso	Northwest Florida Regional Airport/Eglin AFB	0	$0	$0
West Palm Beach	Palm Beach International Airport	313	$15,608,000	$54,627,000
Commercial Service Airports Total		**11,654**	**$581,128,000**	**$1,974,716,000**
General Aviation Airports				
Fort Lauderdale	Ft. Lauderdale Executive Airport	22	$1,097,000	$3,306,000
Fort Myers	Page Field	0	$0	$0
Jacksonville	Cecil Airport	2	$100,000	$350,000
Jacksonville	Herlong Recreational Airport	2	$100,000	$350,000
Jacksonville	Jacksonville Executive At Craig Airport	2	$100,000	$350,000
Marathon	The Florida Keys Marathon Airport	2	$100,000	$350,000
Miami	Opa-Locka Executive Airport	13	$648,000	$2,269,000
Orlando	Executive Airport	15	$748,000	$2,618,000
Orlando	Kissimmee Gateway Airport	0	$0	$0
Tampa	Tampa Executive Airport	4	$200,000	$698,000
Vero Beach	Vero Beach Municipal Airport[1]	0	$0	$0
General Aviation Airports Total		**62**	**$3,093,000**	**$10,291,000**
All Airports Total		**11,716**	**$584,221,000**	**$1,985,007,000**

[1] Vero Beach Municipal Airport currently trucks to Palm Beach International Airport for cargo handling. Palm Beach International calculations include Vero Beach Municipal employee counts to reflect these changes.
Source: CDM Smith

Indirect economic impacts related to MIA provides an annual output of nearly $1.5 billion with approximately 8,525 full-time equivalent jobs off-airport in the air cargo sector. MIA is followed by MCO with 1,015 indirect air cargo-related positions and nearly $148.5 million in annual output. Tampa International Airport ranks third in indirect annual economic output related to off-airport air cargo with nearly 700 full-time equivalent positions related to air cargo and nearly

$106.8 million in annual output. Nine of the 30 airports with scheduled air cargo activity do not have any measurable indirect off-airport air cargo impacts. The market areas for these nine airports overlap with other airport market areas and are served by indirect air cargo activity at other airports.

Indirect economic impacts related to air cargo activity at general aviation airports provide a total of nearly $10.3 million in output with over 60 full-time equivalent jobs in the off-airport air cargo sector. Fort Lauderdale Executive Airport leads the general aviation airports with 22 indirect air cargo-related positions and more than $3.3 million in total annual output. Fort Lauderdale Executive Airport is followed by Orlando Executive Airport with 15 indirect air cargo-related positions and more than $2.6 million in annual output.

Total air cargo economic impacts, including multiplier impacts, indicate that more than 30,300 full-time equivalent employees derive their employment from the air cargo sector or in government agencies that support air cargo at the 30 airports with scheduled air cargo activity in Florida. Off-airport air cargo activity generates a total of more than $3.8 billion in annual economic output. In the case of off-airport air cargo activity, MIA has a significant economic role within the state, with a total economic output of nearly $2.9 billion and nearly 22,100 employees. **Table 7-4** identifies these benefits.

Table 7-4
Total Economic Impacts Related to Off-Airport Air Cargo Activity

Associated City	Airport Name	Total Employment	Total Payroll	Total Output
Commercial Service Airports				
Daytona Beach	Daytona Beach International Airport	0	$0	$0
Fort Lauderdale	Ft. Lauderdale/Hollywood International Airport	924	$38,092,000	$119,513,000
Fort Myers	Southwest Florida International Airport	326	$13,444,000	$42,171,000
Gainesville	Gainesville Regional Airport	158	$6,509,000	$20,260,000
Jacksonville	Jacksonville International Airport	829	$34,144,000	$93,929,000
Key West	Key West International Airport	8	$320,000	$1,005,000
Melbourne	Melbourne International Airport	0	$0	$0
Miami	Miami International Airport	22,075	$909,627,000	$2,856,657,000
Orlando	Orlando International Airport	2,628	$108,302,000	$284,705,000
Orlando	Orlando Sanford International Airport	0	$0	$0
Panama City	Northwest Florida-Beaches International Airport	65	$2,668,000	$8,501,000
Pensacola	Pensacola International Airport	109	$4,481,000	$14,057,000
Punta Gorda	Punta Gorda Airport	0	$0	$0
Sarasota	Sarasota/Bradenton International Airport	0	$0	$0
St. Petersburg/Clearwater	St. Pete-Clearwater International Airport	277	$11,417,000	$16,776,000
Tallahassee	Tallahassee Regional Airport	168	$6,936,000	$19,610,000
Tampa	Tampa International Airport	1,800	$74,157,000	$204,775,000
Valparaiso	Northwest Florida Regional Airport/Eglin AFB	0	$0	$0
West Palm Beach	Palm Beach International Airport	811	$33,398,000	$104,753,000
Commercial Service Airports Total		**30,178**	**$1,243,495,000**	**$3,786,712,000**
General Aviation Airports				
Fort Lauderdale	Ft. Lauderdale Executive Airport	57	$2,347,000	$6,339,000
Fort Myers	Page Field	0	$0	$0
Jacksonville	Cecil Airport	5	$213,000	$670,000
Jacksonville	Herlong Recreational Airport	5	$213,000	$670,000

Table 7-4
Total Economic Impacts Related to Off-Airport Air Cargo Activity, cont.

Associated City	Airport Name	Total Employment	Total Payroll	Total Output
General Aviation Airports				
Jacksonville	Jacksonville Executive At Craig Airport	3	$213,000	$670,000
Marathon	The Florida Keys Marathon Airport	5	$213,000	$670,000
Miami	Opa-Locka Executive Airport	34	$1,387,000	$4,351,000
Orlando	Executive Airport	39	$1,601,000	$5,020,000
Orlando	Kissimmee Gateway Airport	0	$0	$0
Tampa	Tampa Executive Airport	10	$427,000	$1,339,000
Vero Beach	Vero Beach Municipal Airport	0	$0	$0
General Aviation Airports Total		**158**	**$6,614,000**	**$19,729,000**
All Airports Total		**30,336**	**$1,250,109,000**	**$3,806,441,000**

Source: CDM Smith and IMPLAN multipliers

The Economic Impact of USPS Mail in Florida

In recent years, the United States Postal Service (USPS) has seen a steady decline in the overall volume of mail pieces through Florida facilities and nationwide. First-Class Mail, the USPS' most profitable type, has fallen by a stunning one-third since its year 2000 peak.[6] Much of this decrease can be attributed to technology advances and the internet, which changes how businesses and consumers use the mail system. Much of the USPS system now relies on packages and advertising mail revenue, which comprise much of the current USPS mail volume.

Everyday First-Class Mail arrives in Florida on integrated express carriers, UPS and FedEx Express aircraft, as well as on passenger airlines.[7] First-Class Mail in the U.S. includes personal and business correspondence, bills, statements and payments. First-Class Mail can also incorporate envelopes (flats) and small packages, providing each piece weighs 13 ounces or less. Delivery is given priority over Second-Class (newspapers and magazines), Third-Class (bulk advertisements), and Fourth-Class Mail (books and media packages). First-Class Mail prices are based on both the shape and weight of the item being mailed. Pieces over 13 ounces can be sent as Priority Mail. Only First-Class Mail is transported in aircraft; the remainder is transported on trucks.

Florida postal workers, on a daily basis, process or deliver mail that will be or has been transported on aircraft. USPS management estimates 35 percent of all mail pieces delivered to residences and business is First-Class Mail that has arrived on aircraft in Florida. USPS statistics indicate that approximately 41.1 percent of all mail weight carried in the U.S. by the USPS is First-Class Mail.[8]

When First-Class Mail arrives at a Florida airport, it is sorted into assigned three-digit zip code areas by staff in Air Mail Centers (AMC) on or near by the airport. Soon afterward, the USPS picks up the mail (via contracted trucks), and trucks it to an off-airport mail processing plant. The mail is sorted there by zip code and station and is then trucked to these stations for

[6] USPS 2011 Annual Report
[7] Formerly referred to as Air Mail
[8] USPS Facts and Figures

distribution to a final destination. Clerks and mail carriers sort, distribute, and collect the First-Class Mail along with Priority Mail and packages. [9]

The annual budget for the USPS in 2013 totaled $70.0 billion, a decrease from the 2011 budget of $76.0 billion. [10] In the U.S., there were over 645,950 USPS workers in 2012, down from 765,000 in 2008. [11] These employees earn $48.3 billion annually. Annual transportation costs for the USPS came to $8.8 billion in 2012 and comprised 12 percent of their annual budget, which is indicative of how labor intensive the USPS is. If it were a private sector company, the USPS would rank 45th in the 2013 Fortune 500 and 140th in the 2013 Global Fortune 500 list.

According to FREIDA, there are nearly 88,500 USPS employees in Florida. These workers comprise a wide range of occupations, but the majority are administrative staff, scheduling/dispatching workers, and mail carriers (See **Table 7-5**).

Table 7-5
USPS Employment in Florida by Occupation, 2013

Occupation Title	Number of Employees
Office and Administrative Support	28,840
Material Recording. Scheduling, Dispatching, and Distribution Workers	27,634
Postal Service Mail Carriers	16,808
Postal Service Mail Sorters, Processors, and Processing Machine Operations	6,721
Postal Service Clerks	3,642
Installation, Maintenance, and Repair Occupations	1,121
Building and Grounds Cleaning and Maintenance Occupations	947
Supervisors, Office Administrative Support Workers	927
First-Line Supervisors/ Managers of Office and Administrative Support	927
Building Cleaning and Pest Control Workers	925
Total	**88,492**

Source: Florida Research and Economic Information Database Application (FREIDA)

USPS management estimates that 35 percent of all mail arriving in the state of Florida arrives on passenger and air cargo aircraft. By assuming 35 percent of the USPS workforce in Florida is attributed to First-Class Mail, it is estimated that over 30,900 postal employees are supported by First-Class Mail activity in Florida (See **Table 7-6**). These employees earn more than $1.5 billion annually. Annual output attributed to First-Class Mail activity in Florida is estimated at nearly $3.1 billion. Total impacts presented in Table 7-6 include both indirect and induced impacts generated by the multiplier effect.

[9] Priority Mail is transported on trucks and seldom on aircraft. Priority Mail contains includes letters greater than 13 ounces parcels and packages.
[10] USPS 2011 Annual Report
[11] Includes contract workers

Table 7-6
Indirect Off-Airport USPS Economic Impacts in Florida
Related to Mail Transported on Aircraft

	Indirect Impacts	Total Impacts
Employment	30,972	76,724
Payroll	$1,544,419,000	$2,969,817,000
Output	$3,061,821,000	$5,123,127,000

Source: CDM Smith and IMPLAN multipliers

AIR CARGO SUMMARY

Many businesses in Florida rely on air cargo. As the gateway to Latin America, Florida airports are responsible for significant volumes of air cargo. A total of 30 commercial service and general aviation airports in Florida accommodate scheduled air cargo activity; other airports support the movement of air cargo on an on-demand basis. Air cargo operators are important on-airport tenants for several key airports in Florida.

In addition, there are many other off-airport businesses in Florida dedicated to the sorting, storing, and ground movement of air cargo. Off-airport air cargo-related businesses play an important role in the economic impact of aviation in Florida. While these additional air cargo impacts take place off-airport, their benefits were assigned to one of the system airports accommodating scheduled air cargo activity.

First-Class Mail originating in Florida or destined to the state moves by air. As a result, a portion of the economic activity of the USPS is supported by aviation. The economic impacts of this activity were estimated in this study. The USPS economic impacts are impressive and are the result of a very labor intensive business model.

The economic impacts of all facets of air cargo activity in Florida are presented in **Table 7-7**. As shown in Table 7-7, when total on-airport (direct), total off-airport (indirect), and total off-airport USPS air-supported operations impacts are considered, statewide air cargo activity in Florida accounts for the following economic impacts:

- Jobs – 129,587
- Annual Payroll – $5,030,620,000
- Annual Economic Activity (Output) – $10,320,257,000

Table 7-7
Florida Air Cargo Economic Impacts

	Direct and Indirect Impacts	Induced Impacts	Total Impacts
Employment			
On-Airport (Direct)	8,700	13,827	22,527
Off-Airport (Indirect)	11,716	18,620	30,336
Off-Airport USPS Air-Supported Operations	30,972	45,752	76,724
Total Employment	**51,388**	**78,199**	**129,587**
Payroll			
On-Airport (Direct)	$433,830,000	$376,864,000	$810,694,000
Off-Airport (Indirect)	$584,221,000	$665,888,000	$1,250,109,000
Off-Airport USPS Air-Supported Operations	$1,544,419,000	$1,425,398,000	$2,969,817,000
Total Payroll	**$2,562,470,000**	**$2,468,150,000**	**$5,030,620,000**
Output			
On-Airport (Direct)	$862,627,000	$528,062,000	$1,390,689,000
Off-Airport (Indirect)	$1,985,007,000	$1,821,434,000	$3,806,441,000
Off-Airport USPS Air-Supported Operations	$3,061,821,000	$2,061,306,000	$5,123,127,000
Total Output	**$5,909,455,000**	**$4,410,802,000**	**$10,320,257,000**

Source: CDM Smith and IMPLAN multipliers

CHAPTER 8: ECONOMIC IMPACTS OF AVIATION EDUCATION

INTRODUCTION

Florida is a world leader in providing many types of aviation-related education. Schools in Florida train students to become pilots, air traffic controllers, mechanics, flight attendants, and airport managers. Florida particularly appeals to students seeking this type of education due to the state's favorable weather, the diversity of the state's population, the availability of numerous training providers at airports around the state, and international accessibility through several commercial airports.

Many aviation-related schools in Florida are located on an airport; and these schools are actually airport tenants. There are at least 170 aviation-related schools located on airports in Florida. In addition, there are more than 20 other aviation-related educational institutions located off-airport. The locations for on- and off-airport aviation-related schools considered in this study update were previously depicted in Exhibit 2-3 in Chapter 2.

Aviation-related schools generate economic impact as they spend money for their operation, maintenance, and development. In addition, all aviation-related schools have employees engaged in various teaching, administration, and maintenance positions; these jobs have associated annual payroll which is tied to aviation. Many of Florida's aviation educational programs attract students from beyond the state, and often from international locations. While attending an aviation-related educational institution in Florida, non-local students have spending for housing, food, transportation, and entertainment. Student spending helps to generate additional aviation-related economic impact in Florida.

For this FDOT study update, impacts were measured related to output (spending), employment, and payroll for each aviation-related school. In addition, economic impacts from student spending (output), and the employment and payroll student spending supports were estimated. Economic impacts related to aviation schools are direct impacts and economic impacts related to student spending are indirect impacts. Total economic impacts for aviation-related schools in Florida include direct and indirect impacts noted here, in addition to induced impacts that stem from the multiplier effect.

APPROACH TO ESTIMATING ECONOMIC IMPACTS FOR AVIATION EDUCATION

As with other economic impacts previously discussed in this report, total economic impacts associated with aviation-related education are quantified in terms of employment, payroll, and output. This chapter presents the economic impact for on- and off-airport aviation-related schools. On-airport aviation-related schools are airport tenants, and the economic impacts of these schools are additive to the on-airport economic impacts presented in Chapter 4 of this report. Off-airport aviation-related schools are not airport tenants; therefore, the economic impacts of these schools are not tied to a specific airport.

The Economic Modeling Process for Economic Impacts Related to Aviation Education

Florida's world-renowned aviation-related educational facilities attract students not only from across the U.S., but also from around the world. The economic impacts associated with spending by aviation-related educational facilities and spending by non-local students attending these schools were determined by using actual survey data and data from an input-output model with multipliers and data tables specific to Florida. Impact estimates for three separate components of the economy were developed, as follows:

- Employment – Employment is based on full-time equivalent positions. For example, two part-time employees were assumed to equal one full-time employee.
- Payroll – Payroll is the annual salary, wages, and benefits paid to employees.
- Output (Spending) – Output associated with aviation-related schools is equivalent to annual expenditures to support the school's operation, maintenance, and development. For non-local students attending aviation-related schools, output is equivalent to annual student spending for housing, food, transportation, and entertainment.

It is important to note that payroll and output cannot be combined because elements of economic benefit related to payroll are also contained in the output estimate. Each of the three impact components (employment, payroll, and output) stands alone as a measure of aviation-related education's total economic impact.

Aviation-related educational impacts were calculated using an input-output model. The input-output model considers three impact categories to assess the economic benefits associated with aviation-related education. These categories are:

- Direct Impacts – Direct impacts are the benefits associated with on- and off-airport schools that provide aviation-related education. Direct impacts include employment, payroll, and spending of facilities such as flight schools, aviation management schools, and technical/vocational schools with aviation curricula.
- Induced Impacts – Induced impacts are the benefits resulting from the recirculation of direct and indirect impacts within the economy. This recirculation is typically referred to as the multiplier effect. For example, as employees at on- and off-airport aviation-related schools spend their salary for housing, food, and services, those expenditures circulate through the economy, resulting in increased (induced) spending, payroll, and employment throughout Florida.

Because induced impacts are not as easily quantified as direct and indirect impacts, a reliable method of estimating the induced impacts must be applied. For this analysis, the Impact Analysis for Planning (IMPLAN) model was used to measure the multiplier effect and determine induced impacts.

Data Requirements for the Economic Modeling Process for Aviation Education Economic Impacts

Data collection efforts were undertaken to gather information related to on- and off-airport aviation-related schools and living expenditures by non-local students attending these schools. These data were inputs to the modeling process to identify the total economic impact associated

with aviation-related education. The following groups were considered to obtain data to estimate direct and indirect impacts:

- Aviation-Related Schools – This group includes on- and off-airport aviation-related educational providers. Surveys were conducted to gather information on annual operating expenses, employment, and payroll from these schools.
- Student Spending – This group consists of non-local students attending Florida's on- and off-airport aviation-related schools. Annual student spending for this group was estimated from surveys conducted for this study.

Direct and indirect impacts regarding aviation-related education were identified primarily through survey efforts. Aviation-related schools were contacted to gather data related to their operations, employment, and student enrollment. The methods used to collect information are discussed in the following sections.

Aviation-Related Schools (Direct Impacts)

As explained in Chapter 4, all airport tenants having employees on Florida airports during 2013 were contacted via surveys, visits, or phone calls to collect information for this study. Since on-airport aviation-related schools are airport tenants, these schools were surveyed as part of this effort. The following information was collected to estimate direct impacts for each on-airport aviation-related school:

- Number of full-time and part-time employees;
- Estimated total annual wages and benefits paid to employees in 2013;
- Estimated total capital improvement expenditures for 2010, 2011, 2012, and 2013;
- Estimated total operating expenses (excluding payroll and capital improvements previously identified) in 2013; and
- Estimated total gross sales (where applicable) by the school in 2013.

Similar data were also collected for each off-airport school during a supplemental survey effort. Several rounds of follow-ups were made to non-responding schools to obtain the greatest response rate possible. For schools that did not supply complete information on inputs for the modeling process, estimates were developed using various ratios per employee or student. These ratios were developed from survey data obtained from those schools that did respond to the survey or from other economic impact studies for colleges and universities.

Student Spending (Indirect Impacts)

Surveys conducted for this study collected information on student enrollment at aviation-related schools. Also collected was information on the portion of each school's enrollment that is non-local or international in nature. Estimates of annual student spending, in addition to school tuition, was also obtained via study surveys. Spending associated with students who come to Florida to attend an aviation-related school is similar to visitor spending (discussed in Chapter 5). As with the analysis of visitor-related economic impacts, student spending in this analysis is reflective of student-related output. Students attending aviation-related schools in Florida have expenditures for housing, transportation, entertainment, food, and retail. These expenditures help to support jobs and the payroll associated with these jobs.

It should be noted that for both on- and off-airport aviation-related educational facilities, survey information showed that in some instances, all enrollment at an aviation-school is local in nature. As a result, some schools have no associated student spending impacts.

Study Multipliers (Induced Impacts)

Employment, payroll, and output impacts associated with aviation-related schools and student spending comprise direct and indirect economic impact. As these direct and indirect impacts enter the economy, they circulate among other sectors, creating successive waves of additional spending. This phenomenon is referred to as the multiplier effect, classified in this study as induced impacts. Multipliers used in this study have been previously discussed in other chapters of this report.

AVIATION EDUCATION EMPLOYMENT, PAYROLL, AND OUTPUT IMPACTS

The following sections discuss economic impacts associated with employment, annual payroll, and total annual economic activity (output) as measured by this analysis. Impacts presented are those calculated for on- and off-airport aviation-related schools and non-local students attending these schools.

Aviation Education Employment Impacts

The findings of this analysis indicate that aviation-related education is an important source of jobs. **Table 8-1** identifies the total number of jobs supported by aviation-related education in Florida.

Table 8-1
Aviation-Related Education Employment

	Direct and Indirect Employment	Induced Employment	Total Employment
On-Airport Schools			
Schools (Direct)	3,166	5,515	8,681
Student Spending (Indirect)	1,288	731	2,019
Total On-Airport Employment	**4,454**	**6,246**	**10,700**
Off-Airport Schools			
Schools (Direct)	642	332	974
Student Spending (Indirect)	140	77	217
Total Off-Airport Employment	**782**	**409**	**1,191**
Total Aviation Education Employment	**5,236**	**6,655**	**11,891**

Source: CDM Smith and IMPLAN multipliers

There are more than 5,200 direct and indirect jobs supported by aviation-related education; this employment relates to both the schools themselves and to employment that is supported by student spending at both on- and off-airport schools. Induced impacts result in nearly 6,700 additional jobs supported by on- and off-airport aviation-related schools and non-local students. When direct, indirect, and induced employment is considered, aviation-related education (schools and students) help to support nearly 11,900 jobs in Florida. Of this total, 10,700 jobs are associated with on-airport schools and student-related spending, and nearly 1,200 jobs are associated with off-airport aviation-related schools and student-related spending.

Aviation Education Payroll Impacts

Table 8-2 identifies annual payroll benefits associated with aviation-related education in Florida.

Table 8-2
Aviation-Related Education Payroll

	Direct and Indirect Payroll	Induced Payroll	Total Payroll
On-Airport Schools			
Schools (Direct)	$190,068,000	$187,644,000	$377,712,000
Student Spending (Indirect)	$28,226,000	$21,951,000	$50,177,000
Total On-Airport Payroll	**$218,294,000**	**$209,595,000**	**$427,889,000**
Off-Airport Schools			
Schools (Direct)	$27,435,000	$27,084,000	$54,519,000
Student Spending (Indirect)	$3,066,000	$2,386,000	$5,452,000
Total Off-Airport Payroll	**$30,501,000**	**$29,470,000**	**$59,971,000**
Total Aviation Education Payroll	**$248,795,000**	**$239,065,000**	**$487,860,000**

Source: CDM Smith and IMPLAN multipliers

This study shows that direct and indirect annual aviation-related educational payroll impacts are nearly $248.8 million. These payroll impacts are associated with all levels of staff at aviation-related schools and the payroll earned by employees whose jobs are supported by student spending. These direct and indirect payroll impacts ripple throughout the Florida economy, creating induced payroll impacts that can be measured through the use of the IMPLAN model. The induced annual payroll impact supported by aviation-related schools and non-local students is nearly $239.1 million. Total payroll impacts associated with aviation-related education, which include direct, indirect, and induced annual payroll, are nearly $487.9 million annually. Of this total, approximately $427.9 million is associated with on-airport schools and approximately $60.0 million is associated with off-airport schools.

Aviation Education Output Impacts

Table 8-3 identifies direct, indirect, induced, and total annual output associated with aviation-related education. As expenditures are made by schools and non-local students, the expenditures ripple through Florida's economy. Total direct and indirect annual output associated with aviation-related education is estimated at more than $589.6 million. Induced annual output is estimated at nearly $393.8 million. When direct, indirect, and induced output impacts are combined, the total annual output attributed to aviation-related education is nearly $983.4 million. Of this total, approximately $851.4 million is associated with on-airport schools and approximately $132.0 million is associated with off-airport schools.

Table 8-3
Aviation-Related Education Output

	Direct and Indirect Output	Induced Output	Total Output
On-Airport Schools			
Schools (Direct)	$418,880,000	$271,084,000	$689,964,000
Student Spending (Indirect)	$91,324,000	$70,069,000	$161,393,000
Total On-Airport Output	**$510,204,000**	**$341,153,000**	**$851,357,000**
Off-Airport Schools			
Schools (Direct)	$69,496,000	$44,976,000	$114,472,000
Student Spending (Indirect)	$9,934,000	$7,621,000	$17,555,000
Total Off-Airport Output	**$79,430,000**	**$52,597,000**	**$132,027,000**
Total Aviation Education Output	**$589,634,000**	**$393,750,000**	**$983,384,000**

Source: CDM Smith and IMPLAN multipliers

SUMMARY FOR AVIATION-RELATED EDUCATION IMPACTS

Table 8-4 summarizes the employment, payroll, and output impacts associated with aviation-related education. Direct and indirect impacts shown in this table were calculated using the surveys, assumptions, and methodology described in this chapter, while induced impacts were estimated using IMPLAN multipliers. As shown in Table 8-4, total employment in Florida supported by aviation-related education is estimated at nearly 11,900 jobs; total annual payroll associated with these jobs is estimated at nearly $487.9 million. Total annual output from all aviation-related education is estimated at nearly $983.4 million. Of the total annual output for aviation-related education in Florida, approximately 13 percent is associated with schools and students that are off-airport. Aviation-related schools account for 82 percent of the total estimated annual output, while students and their spending account for the remaining 18 percent.

Table 8-4
Aviation-Related Education Impact Summary

	Direct and Indirect Impacts	Induced Impacts	Total Impacts
Employment			
On-Airport Schools	4,454	6,246	10,700
Off-Airport Schools	782	409	1,191
Total Employment	**5,236**	**6,655**	**11,891**
Payroll			
On-Airport Schools	$218,294,000	$209,595,000	$427,889,000
Off-Airport Schools	$30,501,000	$29,470,000	$59,971,000
Total Payroll	**$248,795,000**	**$239,065,000**	**$487,860,000**
Output			
On-Airport Schools	$510,204,000	$341,153,000	$851,357,000
Off-Airport Schools	$79,430,000	$52,597,000	$132,027,000
Total Output	**$589,634,000**	**$393,750,000**	**$983,384,000**

Source: CDM Smith and IMPLAN multipliers

CHAPTER 9: ECONOMIC IMPACTS OF AVIATION-RELATED BUSINESSES

INTRODUCTION

Florida has attracted many businesses that are engaged in the development, production, and manufacturing of aircraft, aviation support systems, aircraft components, and other aviation or aircraft-related products. Other businesses repair or perform different types of maintenance on commercial or general aviation aircraft. In some instances, these aviation-related businesses are located on one of the state's system airports; and in other instances, they are located off-airport. Aviation-related businesses throughout Florida account for notable employment, payroll, and annual economic activity. Estimates of the economic impact associated with both on- and off-airport aviation-related businesses were developed in this study.

APPROACH TO ESTIMATING ECONOMIC IMPACTS FOR AVIATION-RELATED BUSINESSES

As with other economic impacts discussed elsewhere in this report, total economic impacts associated with aviation-related businesses are quantified in terms of employment, payroll, and output. The following sections present the economic impact of on- and off-airport aviation-related businesses. On-airport aviation-related businesses are airport tenants; off-airport aviation-related businesses are not airport tenants.

The Economic Modeling Process

In addition to on-airport tenant businesses, there are more than 450 aviation businesses in Florida not located at an airport. For the most part, aviation-related businesses are engaged in aircraft maintenance, aircraft manufacturing, or the manufacturing, sales, and service of aircraft parts and components. An example of on-airport aviation-related businesses whose impacts were measured as part of the study includes Embraer Executive Jet Services at Fort Lauderdale-Hollywood International Airport. An example of off-airport aviation-related businesses includes AAR Aircraft Services, located in Miami.

Economic impacts associated with aviation-related businesses were determined by using actual survey data, data from the FAA, and data from an input-output model with multipliers and data tables specific to Florida. Impact estimates for three separate components of the economy were developed, as follows:

- Employment – Employment is based on full-time equivalent positions. For example, two part-time employees were assumed to equal one full-time employee.
- Payroll – Payroll is the annual salary, wages, and benefits paid to employees.
- Output (Spending) – Output associated with aviation-related businesses is equivalent to annual expenditures for goods and services, supplies, and other services needed to support the manufacturing process.

It is important to note that payroll and output cannot be combined because elements of economic benefit related to payroll are also contained in the output estimate. Each of the three

impact components (employment, payroll, and output) stands alone as a measure of the total economic impact for aviation-related businesses in Florida.

Economic impacts for aviation-related businesses were calculated using an input-output model. The input-output model considers two impact categories to assess the economic benefits associated with aviation-related businesses. These categories are:

- Direct Impacts – Direct impacts are the benefits associated with on- and off-airport aviation-related businesses. Direct impacts include employment, payroll, and spending tied to businesses that are engaged in aviation-related manufacturing.
- Induced Impacts – Induced impacts are the benefits resulting from the recirculation of direct and indirect impacts within the economy. This recirculation is typically referred to as the multiplier effect. For example, as employees at on- and off-airport aviation-related businesses spend their salary for housing, food, and services, those expenditures circulate through the economy, resulting in increased (induced) spending, payroll, and employment throughout Florida.

Because induced impacts are not as easily quantified as direct and indirect impacts, a reliable method of estimating the induced impacts must be applied. For this analysis, the Impact Analysis for Planning (IMPLAN) model was used to measure the multiplier effect and determine induced impacts. More information on the modeling process and actual multipliers used in this study are presented in Chapter 4.

Data Requirements for the Economic Modeling Process for Aviation-Related Businesses

Data collection efforts were undertaken to gather information related to on- and off-airport aviation-related businesses. This information served as an input to the modeling process to identify total economic impact associated with aviation-related businesses. Direct impacts regarding aviation-related businesses were identified primarily through survey efforts and online data collection through a database of FAA-registered repair stations. Aviation-related businesses, both on- and off-airport, were contacted to gather data related to their employment, payroll, and annual spending.

As explained in Chapter 4, all airport tenants having employees on Florida airports during 2013 were contacted via surveys, visits, or phone calls to collect information for this study. Since on-airport aviation-related businesses are airport tenants, they were surveyed as part of this effort. The following information was collected to estimate direct impacts for each on-airport aviation-related business:

- Number of full-time and part-time employees in 2013;
- Estimated total annual wages and benefits paid to employees in 2013;
- Estimated total capital improvement expenditures for 2010, 2011, 2012, and 2013;
- Estimated total operating expenses (excluding payroll and capital improvements previously identified) in 2013; and
- Estimated total gross sales (where applicable) in 2013.

Similar data were also collected from each off-airport aviation-related business during a supplemental survey effort. For businesses who did not supply complete information on inputs for the modeling process, estimates were developed using various ratios per employee. These ratios were developed from survey data obtained from those businesses who did respond to the

survey. In addition, information from secondary data sources such as the Florida Research and Economic Information Database Application (FREIDA), Manta.com, Dun and Bradstreet, and the FAA directory of certified repair stations were used to obtain supplemental information on employment, payroll, and sales for aviation-related businesses in Florida.

AVIATION-RELATED BUSINESS EMPLOYMENT, PAYROLL, AND OUTPUT IMPACTS

On-Airport Aviation-Related Business Economic Impacts

According to information compiled for this study, there are approximately 300 aviation-related businesses located at commercial service and general aviation airports throughout Florida. **Table 9-1** presents the on- and off-airport economic impacts associated with aviation-related businesses in Florida. As shown in Table 9-1, total annual economic impacts associated with aviation-related businesses on airports in Florida are as follows:

- Jobs – 32,098
- Annual Payroll – $1,383,769,000
- Annual Economic Activity (Output) – $4,386,762,000

Table 9-1
On- and Off-Airport Aviation-Related Business Economic Impacts

	Direct Impacts	Induced Impacts	Total Impacts
Employment			
On-Airport	11,908	20,190	32,098
Off-Airport	16,138	27,981	44,119
Total	**28,046**	**48,171**	**76,217**
Payroll			
On-Airport	$695,841,000	$687,928,000	$1,383,769,000
Off-Airport	$708,503,000	$699,792,000	$1,408,295,000
Total	**$1,404,344,000**	**$1,387,720,000**	**$2,792,064,000**
Output			
On-Airport	$2,651,100,000	$1,735,662,000	$4,386,762,000
Off-Airport	$5,584,125,000	$3,620,768,000	$9,204,893,000
Total	**$8,235,225,000**	**$5,356,430,000**	**$13,591,655,000**

Source: CDM Smith and IMPLAN multipliers

Off-Airport Aviation-Related Business Economic Impacts

In addition to aviation-related businesses located on commercial service and general aviation airports in Florida, there are at least another 450 aviation-related businesses located off-airport. These aviation-related businesses are primarily engaged in aircraft manufacturing and the manufacturing, sales, and service of aircraft parts and components.

These off-airport businesses were surveyed as part of this study. The results of these surveys were used to estimate economic impacts for these businesses. For businesses that did not provide survey data, impacts were calculated using the methodology detailed above. The economic impacts for off-airport aviation-related businesses are in addition to those for on-

airport businesses. Total statewide economic impacts for off-airport aviation-related businesses are as follows:

- Jobs – 44,119
- Annual Payroll – $1,408,295,000
- Annual Economic Activity (Output) – $9,204,893,000

SUMMARY OF ECONOMIC IMPACTS FOR AVIATION-RELATED BUSINESSES

Given Florida's prominence as one of the leading aviation states in the country, it is not surprising that there are many aviation-related businesses located around the state. Altogether, this study identified at least 750 businesses in Florida, both on- and off-airport, engaged in the manufacture and maintenance of aircraft and aircraft components. As shown in Table 9-1, total economic impacts for aviation-related businesses in Florida, both on- and off-airport, are as follows:

- Jobs – 76,217
- Annual Payroll – $2,792,064,000
- Annual Economic Activity (Output) – $13,591,655,000

Approximately 68 percent of the total output stemming from these aviation-related businesses in Florida is generated off-airport.

CHAPTER 10: ECONOMIC IMPACTS OF THE FEDERAL AVIATION ADMINISTRATION (FAA)

INTRODUCTION

With locations throughout the United States, the Federal Aviation Administration (FAA) is the federal agency charged with overseeing the nation's airports, aircraft, pilots, airways, and aviation activity. Some of the responsibilities of the FAA related to airports in Florida include safety, engineering, environmental review, planning, and funding. Both on- and off-airport, the FAA has many locations in Florida from which they monitor aircraft approaches and departures, as well as traffic traversing the national airways system. With many active commercial service and general aviation airports and the state's geography, Florida has a very busy and complex airspace system that requires extensive coordination and monitoring. With Florida's busy military airfields, the state's airspace system and interaction between military and civilian aircraft is even more complex, and the FAA in Florida is responsible for coordinating civilian and military airspace and air routes.

APPROACH TO ESTIMATING FAA ECONOMIC IMPACTS

Total economic impacts for the FAA are quantified in terms of employment, payroll, and output. Output represents total economic activity or spending, and in the case of government agencies such as the FAA, payroll is included in total output. This chapter presents the economic impact of FAA installations throughout Florida. Commercial service and some general aviation airports in Florida host the FAA as a tenant. In Florida, the FAA reports 37 on-airport installations. In addition, the FAA reports 49 off-airport locations in Florida. Chapter 2 of this report provided a map that identifies the counties in Florida with on- and off-airport locations for the FAA, the number of FAA facilities in each county, and the commercial service and general aviation airports with FAA facilities.

The economic benefits produced by the FAA in Florida were determined by using actual survey data, data provided by the FAA's Southern Region Regional Office, and data from an input-output model that estimates purchases and sales between the various sectors of the economy. Economic impacts for the FAA were estimated in three categories:

- Employment – Employment is based on full-time equivalent positions. For example, two part-time employees were assumed to equal one full-time employee.
- Payroll – Payroll is the annual salary, wages, and benefits paid to employees.
- Output (Spending) – For businesses that do not have gross sales (government organizations such as the FAA) output is derived from the sum of average annual capital expenditures, operating expenses, and payroll.

It is important to note that payroll and output cannot be combined because elements of economic benefit related to payroll are also contained in the output estimate. Each of the three impact components (employment, payroll, and output) stands alone as a measure of total economic impact for the FAA.

Total economic impacts for the FAA were estimated using an input-output model. The input-output model considers two impact categories to assess the economic benefits associated with the FAA; these categories are:

- Direct Impacts – Direct impacts are associated with on- and off-airport FAA installations in Florida. Direct impacts include the employment, payroll, and spending of the FAA.
- Induced Impacts – Induced impacts are the benefits resulting from the recirculation of direct impacts within the economy. This recirculation is typically referred to as the multiplier effect.

Because induced impacts are not as easy to calculate as direct impacts, a reliable method for estimating induced impacts must be applied. For this study, the Impact Analysis for Planning (IMPLAN) model was used to measure the multiplier effect and determine induced impacts. The sum of direct and induced impacts yields the total impacts.

From the airport tenant survey effort discussed in Chapter 4, information concerning on-airport FAA installations was gathered and analyzed. In addition, information was obtained from the FAA's Southern Region Regional Office in College Park, Georgia regarding on- and off-airport activities, employment, and payroll throughout Florida. By analyzing survey results and information supplied by the FAA, economic impacts for FAA activities in Florida were estimated.

FAA EMPLOYMENT, PAYROLL, AND OUTPUT IMPACTS

On-Airport FAA Economic Impacts

Most commercial service and some general aviation airports in Florida have on-site FAA employment. In many instances, FAA on-airport employment is related to the staffing of air traffic control towers, but there are other types of FAA activities accommodated on-airport in Florida. Aside from air traffic control (ATC) tower on-airport employment, most other on-airport FAA employees are attached to system support centers (SSC) of some type. In either case, when FAA has on-airport operations, they are considered an airport tenant.

Table 10-1 presents both on- and off-airport economic impacts for the FAA in Florida.

Table 10-1
Statewide Economic Impacts for the FAA

	Direct Impacts	Induced Impacts	Total Impacts
Employment			
On-Airport Facilities	982	862	1,844
Off-Airport Facilities	1,434	1,256	2,690
Total Employment	**2,416**	**2,118**	**4,534**
Payroll			
On-Airport Facilities	$106,943,000	$33,707,000	$140,650,000
Off-Airport Facilities	$165,688,000	$52,223,000	$217,911,000
Total Payroll	**$272,631,000**	**$85,930,000**	**$358,561,000**
Output			
On-Airport Facilities	$144,105,000	$96,278,000	$240,383,000
Off-Airport Facilities	$230,886,000	$154,450,000	$385,336,000
Total Output	**$374,991,000**	**$250,728,000**	**$625,719,000**

Source: CDM Smith and IMPLAN multipliers

Survey data, as well as information obtained directly from the FAA, shows the following total on-airport economic impacts for the FAA in Florida:

- Jobs – 1,844
- Annual Payroll – $140,650,000
- Annual Economic Activity (Output) – $240,383,000

Off-Airport FAA Economic Impacts

Information provided by the FAA's Southern Region Regional Office in College Park, Georgia shows 49 FAA off-airport employment centers throughout Florida. Employment and payroll for these off-airport FAA installations were obtained directly from the FAA Southern Region Regional Office in support of this economic impact study. The responsibilities and the functions of off-airport FAA locations in Florida are wide and varied. Some of the more notable off-airport FAA functions that are responsible for supporting higher levels of FAA employment in Florida are discussed below.

Many of FAA's off-airport locations in Florida are system support centers (SSC) that are field offices supporting various functions of the FAA. There are also several flight standards district offices (FSDO) in the state. FSDOs have many responsibilities and functions. These include activities such as accident investigation, safety alerts, and airfield inspections and approvals. Staff from these FAA locations is also involved in the airworthiness certification process, registration of aircraft and pilots, and mechanic certifications.

To support planning, engineering, environmental, funding, and other responsibilities related to commercial service and general aviation airports in Florida, the FAA maintains an airports district office (ADO) in Orlando.

In addition, there are a number of FAA installations that support airspace, radar control, and airways monitoring. These FAA facilities include terminal radar approach control (TRACON) and air route traffic control centers (ARTCC); there are approximately 20 of these types of FAA facilities in Florida. FAA staff assigned to a TRACON monitor airspace and

approach/departures in the terminal area around busy airports in Florida. FAA staff assigned to an ARTCC monitor en route airspace at higher altitudes.

The off-airport FAA economic impacts calculated in this study are in addition to those estimated for the on-airport economic impacts noted previously. Table 10-1 shows the following off-airport economic impacts for the FAA:

- Jobs – 2,690
- Annual Payroll – $217,911,000
- Annual Economic Activity (Output) – $385,336,000

SUMMARY OF TOTAL STATEWIDE FAA ECONOMIC IMPACTS

As reflected in Table 10-1, on- and off-airport FAA activities in Florida have a notable positive impact on the state's economy. These economic impacts are as follows:

- Jobs – 4,534
- Annual Payroll – $358,561,000
- Annual Economic Activity (Output) – $625,719,000

While on-airport FAA activities make substantial contributions to the economic impacts of individual airports in Florida, more than 60 percent of the total statewide economic impact related to the FAA takes place off-airport.

CHAPTER 11: ECONOMIC IMPACTS OF MILITARY AVIATION

INTRODUCTION

Military aviation in Florida has long been a major source of economic activity. Florida's geography and climate, strategic location, year-round good weather, and open ocean airspace, have made the state attractive for numerous military airfields.

This chapter quantifies the economic impacts for 11 military airfields in Florida[1]. Economic impacts presented in this chapter are based on the collection and evaluation of existing studies, reports, and information for the airfields. These 11 military airfields include five Air Force Bases (AFB), four Naval Air Stations (NAS), and two other facilities as follows:

- Eglin Air Force Base
- Hurlburt Field
- Homestead Air Reserve Base
- MacDill Air Force Base
- Patrick Air Force Base
- Tyndall Air Force Base
- Naval Air Station Whiting Field
- Naval Air Station Jacksonville
- Naval Station Mayport
- Naval Air Station Key West
- Naval Air Station Pensacola

The locations for these 11 military installations were previously mapped in Chapter 2 of this report.

This analysis was aimed at measuring the statewide impact of military facilities that are aviation-related or that have a strong aviation component. The underlying objective of the analysis was to quantify the economic impacts of Florida's military airfields using a methodology consistent with the methodology used to quantify the economic impacts for other aviation groups considered in this statewide study update. This allows all economic impacts in the study to be summed, which provides a picture of the total economic benefit that Florida receives from aviation. To do so required the following:

- Total employment, payroll, and expenditures for the 11 military airfields.
- Calendar year 2013 data to be comparable with other data collected for the statewide study update.
- Military airfield impacts exclusive of non-aviation-related military impacts; not every job is aviation-related at the 11 military installations included in this analysis (e.g., the Naval School Explosive Ordinance Disposal and the Defense Threat Reduction Agency at Eglin AFB).

[1] Naval Support Activity Panama City, which houses the Naval Surface Warfare Center Panama City Division and the Navy Experimental Diving Unit, is not included in the study. Aviation activity at the base is minimal.

BASE BACKGROUND INFORMATION

To provide context for the economic impacts quantified in this chapter, it is helpful to first provide background information on the 11 military airfields included in this study update. An overview of each airfield is provided in this section.

Eglin Air Force Base (AFB)

Eglin AFB is located in Okaloosa County, Florida adjacent to the City of Valparaiso. The host wing at Eglin is the 96th Air Base Wing (96 ABW), the mission of which is to facilitate the weapon-system life cycle from concept through development, acquisition, experimental testing, procurement, operational testing, and employment in combat and to support other key tenants. In addition, the wing commander supports Team Eglin with military services including engineering, personnel, communications, medical, security, and many other services. Eglin AFB supports several non-aviation related units and tenants including the 6th Army Ranger Training Battalion, Naval School Explosive Ordinance Disposal, and 7th Special Forces.

Eglin AFB has two runways, 01/19 and 12/30, which are 10,012 and 12,005 feet long, respectively. Including the airfield and testing grounds, the base's total size is over 455,000 acres. Two-thirds of all jobs and activity are attributed to aviation; and as shown in **Table 11-1**, total aviation-related base employment is over 12,800 personnel.

Table 11-1
Eglin Air Force Base
Direct Aviation Impacts

Personnel		Spending	
Military	5,415	Payroll	$662,371,000
Civilian	4,441	Expenditures	$568,197,000
Contractor	2,948		
Direct Employment	**12,804**		

Source: Okaloosa Economic Development Council, Eglin AFB 96 FSS/FSMM
Note: Only the direct employment, payroll, and expenditures related to aviation activity at Eglin AFB are presented in this table.

Eglin AFB grew from its start as a small bombing and gunnery range in 1933 to a major site for training and testing during WWII. Following acquisition of Choctawhatchee National Forest, the Air Corps Proving Ground was activated in 1941, making Eglin the site for gunnery training for Army Air Force fighter pilots. Due to its role during WWII, Eglin continued to maintain a major role in research, development, and testing during both the Korean War and the conflict in Southeast Asia. The latter conflict emphasized use of conventional weapons, and responsibilities at Eglin grew. The Air Corps Proving Ground, after several changes and re-designations, eventually became the AAC in 1998, responsible for the development, testing, and deployment of all air-delivered weapons of the USAF. The AAC also evaluated U.S. and allied air armament, navigation/guidance systems, and command and control systems. As a result of the Base Realignment and Closure (BRAC) process, the 33rd Fighter Wing at Eglin AFB gained about 2,000 personnel in 2011. This wing now trains the new F-35 Joint Strike Fighter pilots, maintainers, air battle managers, and intelligence personnel.

In July 2012, Eglin underwent major organizational changes. The AAC was deactivated and its missions were split into two newly formed Air Force Material Command centers. The 96th Test

Wing continues to be the test and evaluation center for the Air Force delivered weapons, navigation, and guidance systems, Command and Control Systems, and the Air Force Special Operations Command systems.

Eglin is unique in that it is a joint-use facility. The base hosts Northwest Florida Regional Airport (VPS), a commercial service airport serving this part of Florida.

Homestead Air Reserve Base (ARB)

Homestead Air Reserve Base (ARB) is located in Miami-Dade County, Florida, adjacent to the City of Homestead. Homestead ARB is the largest military airfield in southern Florida and is home to the 482nd Fighter Wing, Air Force Reserve Command, which maintains and operates the base. The mission of the 482nd Fighter Wing is to provide ready, trained, and equipped combat air power (F-16s) and agile combat support forces to the joint warfighter as well as on-call humanitarian support. Homestead ARB is a departure point for Caribbean and South American missions or support.

All activity and jobs are attributed to aviation, and as shown in **Table 11-2**, total base employment is over 3,200 personnel. Homestead ARB covers an area of approximately 2,940 acres and has one runway, Runway 05/23, with a length of 11,200 feet.

Table 11-2
Homestead Air Reserve Base
Direct Aviation Impacts

Personnel		Spending	
Military	2,444	Payroll	$102,469,000
Civilian	692	Expenditures	$147,805,000
Contractor	107		
Direct Employment	**3,243**		

Source: Homestead ARB Public Affairs Office

In 1942, a public airstrip in south Dade County was turned over to the government to be used as a maintenance stopover point for aircraft being ferried to the Caribbean and North Africa during WWII, thereby establishing Homestead Army Air Field. During the war, the base also took on pilot training responsibilities. Following devastating hurricane damage in 1945, Homestead Army Air Field was shut down.

In 1955, after the base had been cleaned up and rebuilt, it was re-established as Homestead Air Force Base, which had over 6,000 permanently assigned personnel by 1960. During the Cuban Missile Crisis in 1962, the need for Homestead increased to unprecedented levels, swelling the population to a tent city of more than 10,000 Army soldiers. In 1992, hurricane damage once again devastated the base, but this time rebuilding began almost immediately, with initial Department of Defense expenses topping $100 million in new construction. In 1994, the base was officially re-designated as the Homestead Air Reserve Base. In 2013, the 482nd Fighter Wing was equipped with 24 primary assigned aircraft (F-16C/D).

Hurlburt Field

Hurlburt Field is located in Okaloosa County, Florida, directly east of the City of Mary Esther; the field is part of the greater Eglin AFB reservation. Hurlburt houses the 1st Special Operations

Wing (1st SOW) and is headquarters to the Air Force Special Operations Command (AFSOC). The 1st SOW is the Air Force's only active duty special operations wing. The mission of the wing is to organize, train, and equip Air Force special operations forces for global employment and assist foreign countries in the establishment of internal air defense abilities. In addition, Hurlburt Field is home to the USAF Special Operations School and the Air Combat Command's 505th Command and Control Wing. Hurlburt Field is nearly 6,700 acres in total size with one runway (18/36, 9,600 feet long) and one helipad.

All activity and jobs are attributed to aviation; and as shown in **Table 11-3**, total base employment exceeds 12,000 personnel.

Table 11-3
Hurlburt Field
Direct Aviation Impacts

Personnel		Spending	
Military	8,543	Payroll	$937,000,000
Civilian	1,968	Expenditures	$147,898,000
Contractor	1,529		
Direct Employment	**12,040**		

Source: Hurlburt Field Fact Sheet, Public Affairs Office

In the 1940s, Hurlburt Field was built on the sprawling Eglin AFB. Originally designated as Eglin Auxiliary Field No. 9, before being separated administratively in 1955, when the base was re-opened after falling into disrepair. Special operations at Hurlburt were dedicated to the war in Southeast Asia due to the war's expanding scope and also due to the "flexible response" policy of the Kennedy Administration. In 1991, Hurlburt Field played a significant role in Operation Desert Storm. Since the war on terrorism began in October 2001, 1st SOW aircraft have flown more than 25,000 combat sorties, amassing more than 75,000 combat hours. Today, the wing manages a fleet of 75 aircraft.

MacDill Air Force Base (AFB)

MacDill AFB is located within the city limits of Tampa, Florida, at the tip of the Interbay Peninsula. The base is home to the Air Mobility Command's 6th Air Mobility Wing (6th AMW). The mission of the AMW is to provide global air mobility and to provide a crucial role in humanitarian support at home and worldwide. AMW airmen provide airlift and aerial refueling for all of America's armed forces. MacDill AFB is also home to numerous mission partners, including the headquarters of two Combatant Commands: The US Central Command and the US Special Operations Command. These commands played critical roles in the wars in Iraq and Afghanistan. MacDill AFB has seen more than $1 billion in new construction since the 2001 terrorist attacks.

MacDill AFB encompasses an area of approximately 5,900 acres on the Interbay Peninsula and has one runway, Runway 05/23, with a length of 8,000 feet. About one quarter of activity and jobs on MacDill AFB can be attributed to aviation. As shown in **Table 11-4**, total aviation-related base employment is nearly 3,900 personnel.

Table 11-4
MacDill Air Force Base
Direct Aviation Impacts

Personnel		Spending	
Military	2,961	Payroll	$183,065,000
Civilian	454	Expenditures	$270,619,000
Contractor	450		
Direct Employment	**3,865**		

Source: MacDill AFB Office of Public Affairs; MacDill AFB Economic Impact Analysis
Note: Only the direct employment, payroll, and expenditures related to aviation activity at MacDill AFB are presented in this table.

MacDill AFB has its origins on Interbay Peninsula during the Spanish-American War in 1898. During WWII, the base's mission switched from B-17 training to B-26 training and back; transitioned to B-29 training through 1953; and continued to transition to newer tanker and bomber aircraft. In 1960, plans to close MacDill surfaced, but the Cuban Missile Crisis emphasized the base's importance due to its strategic location. Between 1979 and 1993, approximately half of all F-16 pilots received their training at MacDill. During Operation Desert Shield and Desert Storm, many pilots were placed into accelerated training programs at MacDill. In 1995, due to its strategic position and flightline capabilities, MacDill received its major KC-135 refueling mission, which expanded in 1997 with the addition of EC-135 and CT-43 aircraft.

The Air Force Reserve's 927th Air Refueling Wing, including 840 Airmen, relocated to MacDill as part of the BRAC realignment and began joint operations with the 6th Air Mobility Wing in 2008. Both wings contributed significantly to the Air Force relief operations in Haiti in January 2010, evacuating those critically injured and delivering supplies.

Naval Air Station Jacksonville (NAS)

NAS Jacksonville is a major naval base comprised of 460 buildings on three sites and three ranges encompassing almost 25,000 acres. The headquarters of the base is located four miles south of downtown Jacksonville, Florida on the St. Johns River and occupies 3,896 acres. The base is home to the Navy's largest aviation squadron, Patrol Squadron Thirty (VP-30), and many other operational squadrons. NAS Jacksonville also supports flight training and an aviation maintenance training facility. The mission of NAS Jacksonville is to enable naval aviation war-fighting readiness by supporting the fleet, fighter, and family.

While total base employment is around 20,000 personnel, aviation-related employment is over 13,200 personnel, as shown in **Table 11-5**. There are two runways at NAS Jacksonville. Runway 10/28 is 8,000 feet long and 14/32 is 5,980 feet long.

Table 11-5
Naval Air Station Jacksonville
Direct Aviation Impacts

Personnel		Spending	
Military	7,297	Payroll	$896,000,000
Civilian	5,083	Expenditures	$700,000,000
Contractor	862		
Direct Employment	**13,242**		

Source: NAS Jacksonville Office of Public Affairs
Note: Only the direct employment, payroll, and expenditures related to aviation activity at NAS Jacksonville are presented in this table.

Set on the site of the former Camp Johnston, NAS Jacksonville was officially commissioned in 1940. During WWI, the base had continuing increases in activity and construction, including the development of three operating runways over 6,000 feet each in length and the construction of over 700 buildings. By the end of the decade, NAS Jacksonville was the center of all air striking on the East Coast, with more based aircraft than any military base from Nova Scotia to the Caribbean. An air traffic control center was added in the mid-1950s; and by this time, the base had begun to have a tremendous impact on the economy of the Jacksonville area. In 1973, the base took on a new antisubmarine mission.

NAS Jacksonville gained 575 military personnel in 2010 as a result of the BRAC process. To accommodate the realignment and the newly established Helicopter Maritime Strike 70 squadron, new hangar construction totaling $200 million was completed. These hangars accommodate five P-3 squadrons, the P-8 Poseidon Multi-Mission Aircraft, and five MH-60 Romeo squadrons.

Naval Air Station Key West (NAS)

NAS Key West is located east of the City of Key West, Florida, primarily on Boca Chica Key, and is the southernmost air station in the United States. The mission of NAS Key West is to support operational and readiness requirements for the Department of Defense (DOD), the Department of Homeland Security (DHS), the Air National Guard (ANG), federal agencies and allied forces. The base is the Navy's primary East Coast transient pilot training facility for tactical aviation squadrons, and it hosts squadrons from around the country in order to fulfill this responsibility.

All activity and jobs at NAS Key West are attributed to aviation; and as shown in **Table 11-6**, total base employment is nearly 2,700 personnel. NAS Key West has three operational runways: 03/21 at 7,002 feet, 07/25 at 10,001 feet, and 13/31 at 7,001 feet. The base encompasses over 5,600 acres in the Lower Keys, mostly on Boca Chica, but also on Key West itself.

Table 11-6
Naval Air Station Key West
Direct Aviation Impacts

Personnel		Spending	
Military	1,404	Payroll	$159,200,000
Civilian	935	Expenditures	$69,800,000
Contractor	327		
Direct Employment	**2,666**		

Source: NAS Key West Public Affairs Office; University of West Florida, Haas Center, *Florida Defense Industry Economic Impact Study*.

Naval presence in the Lower Keys dates back to 1823 when the base was established to combat piracy. The base was expanded during both the Mexican-American and Spanish-American wars, and again during World War I, when seaplanes, submarines, and blimps were added. In 1918, the first class of naval seaplane students arrived, beginning the base's tradition as a major training site for naval aviation. After the war, the base was decommissioned and remained inactive until 1939. In 1940, the seaplane base was designated as a Naval Air Station. In 1943, German submarines torpedoed 49 allied ships off the coast of Florida, many within sight of Key West. During the Cuban Missile Crisis, NAS Key West supported the blockade of Cuba with operational flights.

As in the past, NAS Key West continues to be frequently utilized for detachments by active and reserve Navy strike fighter squadrons, Marine attack and fighter/attack squadrons, and Air Force, Air Force Reserve and Air National Guard fighter and rescue squadrons for exercises, and unit level training/continuation training. Navy P-3C and E-2C aircraft also routinely conduct detachment operations at NAS Key West, primarily conducting counter narcotics (CN) reconnaissance missions in the Gulf of Mexico and the Caribbean basin in support of both the U.S. Coast Guard and Joint Interagency Task Force South.

Naval Air Station Pensacola (NAS)

NAS Pensacola, "The Cradle of Naval Aviation", is located in Warrington, Florida, southwest of Pensacola. It is the starting point of flight training for every Naval Aviator, Naval Flight Officer, and Enlisted Aircrewman. The base is also the headquarters to the United States Navy Flight Demonstration Squadron (the Blue Angels), the Naval Aviation Schools Command, and the Naval Air and Operational Medical Institute (NAOMI). The Air Force and Marines also have units located at NAS Pensacola that focus on pilot training.

The base consists of three operating runways: 01/19 at 7,137 feet, 07L/25R at 8,002 feet, and 07R/25L at 8,001 feet. Aviation-related employment is estimated at 14,100 personnel, as shown in **Table 11-7,** while total NAS Pensacola employment (excluding nearby Corry Station and Saufley Field) exceeds 16,300 personnel.

Table 11-7
Naval Air Station Pensacola
Direct Aviation Impacts

Personnel		Spending	
Military	12,027	Payroll	$696,509,000
Civilian	1,683	Expenditures	$624,955,000
Contractor	373		
Direct Employment	**14,083**		

Source: NAS Pensacola Public Affairs Office
Note: Only the direct employment, payroll, and expenditures related to aviation activity at NAS Pensacola are presented in this table.

In 1826, Warrington Navy Yard was constructed on the site where the NAS currently sits. During the Civil War, the base was largely destroyed, but re-built and much remains on the original base site to this day. During WWI, aviation grew at the base, including seaplanes, balloons, and dirigibles. In the years leading up to WWII, the NAS grew in activity once again. The Korean War forced the base to revise its course to adapt to jet technology. NAS Pensacola became the headquarters of the Chief of Naval Education and Training (CNET) in 1971, replaced by the Naval Education and Training Command (NETC) in 2003. The Air Force 479th Flying Training Group, located at NAS Pensacola, was reactivated in 2009 following the 2005 BRAC and continues to train combat systems officers.

Naval Air Station Whiting Field (NAS)

NAS Whiting Field is located in Milton, Florida, in Santa Rosa County. The base is one of the Navy's two primary pilot training facilities. The base actually consists of two separate airfields: North Whiting Field (for primary flight training) and South Whiting Field (for advanced helicopter training). The mission of the base is to train student naval aviators in the primary and intermediate phases of fixed-wing aviation and in the advanced phases of helicopter training. NAS Whiting Field also provides training for the Marines, Coast Guard, and Air Force. NAS Whiting Field is one of the busiest air stations in the world, accounting for nearly 1.5 million annual flight operations including primary flight training of nearly 1,100 students.

All activity and jobs are attributed to aviation; and as shown in **Table 11-8**, total base employment is over 3,100 personnel. Whiting Field North has two runways: 05/23 at 6,002 feet and14/32 at 6,002 feet. Whiting Field South has two runways, 05/23 at 5,997 feet and 14/32 at 6,001 feet, in addition to 12 helipads.

Table 11-8
Naval Air Station Whiting Field
Direct Aviation Impacts

Personnel		Spending	
Military	1,955	Payroll	$128,473,000
Civilian	466	Expenditures	$139,298,000
Contractor	718		
Direct Employment	**3,139**		

Source: NAS Whiting Field Public Affairs Office, University of West Florida, Haas Center, *Florida Defense Industry Economic Impact Study*.

Naval Auxiliary Air Station Whiting Field was commissioned in 1943 and was used to train aviators throughout WWII. It continued this role long after the war. In 1965, Whiting Field underwent major overhauls, and an estimated $10 million was spent on construction. The field was subsequently re-designated as a NAS. Flight training continued to expand; helicopter training began at Whiting in 1973. In 1980, a new simulator building was completed.

NAS Whiting Field completed its transition of training aircraft from the T-34 to the new T-6B in April 2012. The installation currently hosts six Training Squadrons and two Instructor Squadrons, which is comprised of 141 T-6B aircraft and 124 TH-57 helicopters.

Naval Station (NS) Mayport

Naval Station Mayport is located in northern Duval County, Florida. It is unique in being both a busy military airfield and seaport. It has the third largest naval fleet concentration in the United States. The base provides support to the naval fleet and sailors and serves units of the Army, Navy, Air Force, Marines, and Coast Guard, totaling 83 tenant commands on-site. Commands include 16 ships, four helicopter squadrons, and the Navy's Fourth Fleet. The base is home of the Helicopter Maritime Strike Wing, U.S. Atlantic Fleet. The mission of NS Mayport is to sustain and enhance Warfighter readiness by providing support to the Fleet and Sailors. While total base employment is nearly 6,500 personnel, aviation-related employment is 2,150 personnel, as shown in **Table 11-9**. Naval Station Mayport has one 8,001-foot long runway, Runway 05/23, as well as a major ship harbor capable of accommodating 34 ships, including aircraft carriers. NS Mayport covers a total area of 3,230 acres.

Table 11-9
Naval Station Mayport
Direct Aviation Impacts

Personnel		Spending	
Military	2,000	Payroll	$87,287,000
Civilian	150	Expenditures	$95,410,000
Direct Employment	**2,150**		

Source: Naval Station Mayport, Public Affairs Office, University of West Florida, Haas Center, *Florida Defense Industry Economic Impact Study*.
Note: Only the direct employment, payroll, and expenditures related to aviation activity at NS Mayport are presented in this table.

Naval Station Mayport was originally commissioned in 1942 as a Naval Section Base and in 1944 as a Naval Auxiliary Air Station. During WWII, the base provided support in the form of personnel and logistics, but was de-commissioned following the war. The base was re-activated in 1948, and throughout the 1950s continued to grow to accommodate new forms of aircraft and ships.

In 2007, NS Mayport's last carrier ship, the conventionally powered USS John F. Kennedy, was decommissioned. However, in 2013 and 2014, several new ships that are part of the amphibious ready group have moved to NS Mayport including the USS New York, USS Iwo Jima, and USS Fort McHenry. It is estimated that the Mayport area will gain about 1,900 service members and their families with the amphibious group's arrival. The Navy is also considering basing as many as 14 littoral combat ships at NS Mayport in the next few years. The Navy has also stated that a nuclear aircraft carrier will be homeported at NS Mayport in the next five years to help protect the fleet against a potential terror attack, accident or natural disaster, since currently all east coast carriers are located at Naval Station Norfolk.

Patrick Air Force Base (AFB)

Patrick AFB is located in Brevard County, Florida on the coast between Satellite Beach and Cocoa Beach. The base is home to the 45th Space Wing, the mission of which is to assure access to the high frontier, support global operations, and to oversee all unmanned rocket launches at nearby Cape Canaveral Air Force Station (CCAFS). These rockets include satellites for the military, NSA, NASA, and various other agencies. Patrick AFB is also headquarters to the 920th Rescue Wing, the only rescue wing in the Air Force Reserve, the Air Force Technical Applications Center, the Department of the State/Office of Aviation, 114th Range Operations Squadron, and the Naval Ordinance Test Unit.

The base has two runways, 02/20 at 9,023 feet and 11/29 at 4,000 feet. All activity and jobs are attributed to aviation; and as shown in **Table 11-10**, total base employment is just over 10,000.

Table 11-10
Patrick Air Force Base
Direct Aviation Impacts

Personnel		Spending	
Military	3,921	Payroll	$365,407,000
Civilian	2,610	Expenditures	$604,721,000
Contractor	3,483		
Direct Employment	**10,014**		

Source: Patrick AFB Economic Impact Analysis

The facility opened in 1940 as Naval Air Station Banana River, supporting seaplane patrol operations during WWII and continuing under the Navy until being deactivated in 1947. The base was transferred to the Air Force in 1948, becoming Patrick AFB in 1950. Patrick AFB, along with CCAFS, was a major focus during the Space Race, particularly in the 1960s during the Apollo manned space program. By the mid-1970s, many of these activities had ceased; but in 1979, the Air Force's rocket programs returned to Patrick Air Force Space Command as the Air Force Systems Command. These programs transferred to the 45th Space Wing in 1991 after the Space Command was deactivated. Patrick AFB continues to support one-of-a-kind units that operate and maintain the Air Force Facilities at Cape Canaveral and the Eastern Test Range.

Tyndall Air Force Base (AFB)

Tyndall AFB is located in the Florida Panhandle, 12 miles east of Panama City. The host wing and operating unit is the 325th Fighter Wing, a unit of the Air Education and Training Command. The primary mission of the 325th is to provide air dominance training for F-22 Raptor pilots, maintenance personnel, and air battle managers to support the combat Air Force. The 325th is comprised of operations, medical, maintenance, and mission support groups, and the base hosts eight other tenant groups.

Tyndall AFB has two operating runways, 13L/31R, with a length of 9,075 feet and 13R/31L, at 10,004 feet. All activity and jobs are attributed to aviation; and as shown in **Table 11-11**, total base employment is over 5,000.

Table 11-11
Tyndall Air Force Base
Direct Aviation Impacts

Personnel		Spending	
Military	3,395	Payroll	$299,469,000
Civilian	1,504	Expenditures	$259,032,000
Contractor	161		
Direct Employment	**5,060**		

Source: Tyndall AFB Economic Impact Analysis

Flexible Gunnery School No. 9 was founded at the base's current site in 1940, named Tyndall Field in 1941. Thousands of students passed through Tyndall's gates during WWII, both U.S. and allied. The base officially came under the control of the newly created Air Force in 1947. Throughout the Cold War, Tyndall continued as a training facility, upgrading for the needs of new aircraft. During the Cuban Missile Crisis, the base acted as a stopover and refueling point for Air Defense Command aircraft deployed to Florida. The base was reorganized in 1991 in response to DOD efforts to streamline defense management.

The 325th Fighter Wing was the sole F-15 training wing until 2010. In 2004, Tyndall AFB became the training headquarters for the Air Force's F-22 Raptor. In 2012, with the addition of a squadron of combat-coded F-22 and T-38 aircraft, Tyndall AFB returned to Air Combat Command, after 19 years as an Air Education and Training Command.

APPROACH TO ESTIMATING ECONOMIC IMPACTS

As with airport impacts discussed in Chapter 4, the total economic impact of each military airfield in this analysis was quantified in terms of employment, payroll, and output. Output represents total economic activity or spending. It represents the total value of aviation-related activities supported by the military airfields included in this analysis; for government entities, output is the sum of spending and payroll. The methodology used to estimate the economic impacts for the military airfields is described in this section.

The Economic Modeling Process

The economic benefits produced by Florida's military airfields were identified by using various primary and secondary data sources and data from an input-output model that estimates purchases and sales between various sectors of the economy. The model incorporates multipliers and data tables specific to Florida and requires impact estimates for four separate components of the economy as follows:

- Employment – Employment is divided into military and civilian categories and is based on full-time equivalent positions. For example, two part-time employees were assumed to equal one full-time job. Reservists are equal to one full-time job.
- Payroll – Payroll is the annual salary, wages, and benefits paid to all aviation-related employees, both military and civilian.
- Expenditures – Expenditures include general operating costs associated with each base, such as construction costs, service contracts, materials, equipment, supplies, and procurement.

- Output (Spending) – Output is the sum of total annual payroll and expenditures per base.

All economic impacts or benefits from the 11 military airfields included in this study were calculated using an input-output model. The input-output model considers two impact categories to assess the economic benefits associated with each military airfield. These categories are:

- Direct Impacts – Direct impacts are the benefits associated with the day-to-day operation of each military airfield. Direct impacts include the employment, payroll, expenditures, and output of each military airfield.
- Induced Impacts – Induced impacts are the benefits resulting from the re-circulation of direct impacts within the economy, or the multiplier effect (see Chapter 4 for a discussion of the multiplier effect).

Because induced impacts are not as easily quantified as direct impacts, a reliable method of estimating the induced impacts must be applied. For this analysis, the Impact Analysis for Planning (IMPLAN) model was used to measure the multiplier effect and determine induced impacts. The sum of the benefits of these two categories yields the total impacts attributable to each military airfield or the system of 11 military airfields included in this FDOT economic impact analysis.

Data Collection

Data regarding economic activity (employment, payroll, and spending) for the military airfields were collected from a variety of sources. The bulk of the primary data was acquired from the public affairs offices for each respective military airfield, as well as local economic development councils. Data were obtained either by phone, through base websites and fact sheets, or through existing base-specific economic impact studies.

Where primary sources of data were lacking, information regarding a military airfield was collected through secondary sources such as the *Department of Defense (DOD) Atlas/Data Abstract for the United States and Selected Areas*, and the *Florida Defense Industry Economic Impact Analysis*. The latter study was conducted by the University of West Florida (UWF). The objective of the UWF defense industry analysis was to outline the economic impact of defense spending within Florida, which consists of procurement spending and personnel costs associated with all military bases. The UWF study was utilized extensively as a resource for base background information for this report.

Study Multipliers/Induced Impacts

Employment, payroll, expenditure, and output impacts derived from aviation-related activities comprise each military airfield's direct economic impact. As these impacts enter the economy, they circulate among other sectors, creating successive waves of additional spending. This phenomenon is referred to as the multiplier effect (see Chapter 4), also known as induced impacts.

Multipliers for estimating induced impacts for military aviation were derived from the IMPLAN model. The multipliers used in this analysis were developed specifically to measure economic impacts in Florida.

The multipliers presented in **Table 11-12** were used to estimate induced military impacts for this analysis. For example, $100 in direct expenditures (output) in the federal military sector supports a total output impact equivalent to $147. In this example, induced impacts would be $47 ($147 minus $100). It should be noted that no payroll multipliers were used in the analysis. Instead, an average payroll per employee for the county in which each military airfield is located was applied to each facility's induced employment estimate. For example, if a military base were located in a county where the average salary per employee is $25,000 and that base supports 100 induced jobs, those 100 jobs off the base would have an aggregate salary value of $2.5 million (100 x $25,000 average salary).

Table 11-12
Florida IMPLAN Military Multipliers

Economy Sector	Employment Multiplier	Payroll Multiplier*	Output Multiplier
Federal Civilian	1.88	N/A	1.67
Federal Military	1.55	N/A	1.47

*No payroll multipliers were used; instead, average payroll per employee per county was applied to induced employment
Source: CDM Smith and IMPLAN multipliers

The methodology discussed in this section was applied to each of the military airfields included in this study. By following this methodology, estimates of total employment, annual payroll, and annual output/spending associated with each facility were developed.

EMPLOYMENT, PAYROLL, AND OUTPUT IMPACTS FOR MILITARY AVIATION

The military airfields in this study are vital in protecting U.S. national security. The facilities themselves are also significant generators of economic activity, supporting jobs, payroll, and output for Florida's economy. This section discusses economic impacts associated with employment, annual payroll, and annual economic activity (output) as measured by this analysis.

Military Aviation Employment Impacts

The findings of this analysis indicate that military aviation in Florida is an important source of jobs. Employment, as defined in this analysis, is based on estimates where part-time jobs are treated as half of a full-time job. Reservist positions are treated as a full time job. On-base activity reliant on aviation is considered aviation-related. Spending for operating expenses and construction projects also contributes to on-base employment.

Table 11-13 identifies the total number of jobs supported by aviation-related activity at the 11 military airfields in Florida. In total, there are over 82,000 direct jobs supported by aviation-related activity at these facilities. As shown in Table 11-13, direct employment, supported by aviation-related activity, ranges from 2,150 jobs at NS Mayport to more than 14,000 jobs at NAS Pensacola.

Table 11-13
Florida Military Airfield Employment

Military Airfield	Direct Employment	Induced Employment	Total Employment
Eglin AFB	12,804	9,439	22,243
Homestead ARB	3,243	2,034	5,277
Hurlburt Field	12,040	7,729	19,769
MacDill AFB	3,865	2,409	6,274
NAS Jacksonville	13,242	9,198	22,440
NAS Key West	2,666	1,873	4,539
NAS Pensacola	14,083	8,365	22,448
NAS Whiting Field	3,139	2,106	5,245
NS Mayport	2,150	1,223	3,373
Patrick AFB	10,014	7,486	17,500
Tyndall AFB	5,060	3,313	8,373
Total	**82,306**	**55,176**	**137,482**

Source: CDM Smith, IMPLAN multipliers, and primary and secondary military base data sources

As a result of on-base activity, additional induced employment is created. Induced employment impacts associated with the day-to-day operation of Florida's military airfields add nearly 55,200 jobs to the economy. When direct and induced employment is considered, the military airfields contributed approximately 137,500 jobs to Florida's employment base.

Military Aviation Payroll Impacts

Employment linked to the military airfields included in this study results in a significant annual payroll benefit in Florida. Payroll impacts relate to the previously identified (see Table 11-13) employment benefits associated with military aviation activities.

Table 11-14 identifies annual payroll benefits associated with aviation-related activity at the military airfields.

Table 11-14
Florida Military Airfield Payroll

Military Airfield	Direct Payroll	Induced Payroll	Total Payroll
Eglin AFB	$662,371,000	$308,042,000	$970,412,000
Homestead ARB	$102,469,000	$75,411,000	$177,879,000
Hurlburt Field	$937,000,000	$287,185,000	$1,224,185,000
MacDill AFB	$183,065,000	$80,550,000	$263,614,000
NAS Jacksonville	$896,000,000	$345,312,000	$1,241,312,000
NAS Key West	$159,200,000	$90,025,000	$249,225,000
NAS Pensacola	$696,509,000	$302,891,000	$999,400,000
NAS Whiting Field	$128,473,000	$54,982,000	$183,455,000
NS Mayport	$87,287,000	$50,015,000	$137,301,000
Patrick AFB	$365,407,000	$176,163,000	$541,571,000
Tyndall AFB	$299,469,000	$121,198,000	$420,667,000
Total	**$4,517,248,000**	**$1,891,773,000**	**$6,409,022,000**

Source: CDM Smith, IMPLAN multipliers, and primary and secondary military base data sources

This analysis shows direct annual payroll impacts are over $4.5 billion and range from nearly $87.3 million at NS Mayport to $937.0 million at Hurlburt Field. This direct payroll impact ripples throughout the Florida economy, creating induced payroll impacts that are estimated by applying average payroll per employee for the county in which each military airfield is located to each facility's induced employment estimate shown in Table 11-13.

The induced annual payroll impact related to aviation-related activity at the military airfields is nearly $1.9 billion. Total payroll impacts supported by the facilities, which include direct and induced annual payroll, are more than $6.4 billion annually.

Military Aviation Output Impacts

Output or economic activity for government entities, such as the military, is defined as the sum of payroll and expenditures. Annual economic output from military airfields benefiting Florida's economy is discussed below.

Annual expenditures at Florida's military airfields serve as an input to the input-output model used in this analysis. Expenditures are identified as operating costs and capital improvement costs associated with each military airfield. These costs can consist of construction projects; operations and maintenance; services contracts; and procurement of materials, equipment, and supplies. Military airfield expenditures have a significant impact on the state's and local economies, as most services are provided by private businesses. For a military airfield where no expenditure data were available, a statewide ratio of average annual expenditures per employee was calculated and then applied to that facility.

Total annual expenditures for the 11 military airfields in Florida are over $3.6 billion and range from more than $69.8 million at NAS Key West to $700 million at NAS Jacksonville. When annual expenditures are combined with direct payroll, direct output associated with on-base activity is identified. The Florida-specific IMPLAN multipliers were applied to the direct output to estimate induced and total output impacts.

Table 11-15 identifies direct, induced, and total annual output for all on-base activities. As the military units located at each military airfield spend money, these expenditures ripple through Florida's economy. For example, if a military airfield were to rehabilitate one of its runways, money would be spent on construction materials, labor, and other services.

Table 11-15
Florida Military Airfield Output

Military Airfield	Direct Output	Induced Output	Total Output
Eglin AFB	$1,230,568,000	$701,196,000	$1,931,764,000
Homestead ARB	$250,274,000	$142,610,000	$392,884,000
Hurlburt Field	$1,084,898,000	$618,191,000	$1,703,089,000
MacDill AFB	$453,683,000	$258,515,000	$712,198,000
NAS Jacksonville	$1,596,000,000	$909,424,000	$2,505,424,000
NAS Key West	$229,000,000	$130,488,000	$359,488,000
NAS Pensacola	$1,321,464,000	$752,989,000	$2,074,453,000
NAS Whiting Field	$267,771,000	$152,580,000	$420,350,000
NS Mayport	$182,696,000	$104,103,000	$286,799,000
Patrick AFB	$970,128,000	$552,793,000	$1,522,921,000
Tyndall AFB	$558,502,000	$318,242,000	$876,744,000
Total	**$8,144,983,000**	**$4,641,130,000**	**$12,786,113,000**

Source: CDM Smith, IMPLAN multipliers, and primary and secondary military base data sources

Total direct annual output from aviation-related activity at the military airfields is estimated at over $8.1 billion and ranges from nearly $182.7 million at NS Mayport to nearly $1.6 billion at NAS Jacksonville. Induced annual output is estimated at more than $4.6 billion. When direct and induced impacts are combined, the total annual output for the military airfields is nearly $12.8 billion.

ECONOMIC IMPACT SUMMARY FOR MILITARY AVIATION

This chapter quantified the economic impact of Florida's 11 military airfields, including five Air Force Bases, four Naval Air Stations, and two other facilities. As shown in this chapter, the economic impacts supported by these airfields are significant. In 2013, the annual economic output for the 11 military airfields was estimated at nearly $12.8 billion. This estimate includes induced impacts measured using study multipliers.

Table 11-16 provides a summary of economic impacts for the 11 military airfields. As shown, military aviation helps to support a total of nearly 137,500 jobs that have an annual payroll of more than $6.4 billion. The military airfields in Florida account for nearly $12.8 billion in total annual economic activity or output.

Table 11-16
Economic Impact Summary for Florida Military Airfields

	Direct Impacts	Induced Impacts	Total Impacts
Employment	82,306	55,176	137,482
Payroll	$4,517,248,000	$1,891,773,000	$6,409,022,000
Output	$8,144,983,000	$4,641,130,000	$12,786,113,000

Source: CDM Smith, IMPLAN multipliers, and primary and secondary military base data sources

CHAPTER 12: TOTAL ECONOMIC IMPACTS FOR AIRPORT-SUPPORTED ACTIVITIES

INTRODUCTION

The previous chapters of this report quantified the economic impacts of on- and off-airport aviation activities in Florida. Specific aviation groups considered in this study are as follows:

- On-airport tenants;
- Visitors arriving in Florida via commercial airlines and general aviation aircraft;
- On-airport construction projects;
- On- and off-airport activities related to air cargo;
- On- and off-airport aviation-related schools;
- On- and off-airport aviation-related businesses;
- On- and off-airport Federal Aviation Administration activity; and
- Military airfields.

This chapter aggregates all economic impacts that are supported by the airports. This includes all economic impacts that take place on an airport, visitor impacts, and off-airport air cargo impacts associated with one of the study airports. All aviation categories considered in this study, except for military airfields, have some component of their economic impact that is tied to Florida's commercial service and general aviation airports. This chapter provides a summary of the economic impacts that Florida's commercial service and general aviation airports support.

TOTAL EMPLOYMENT, PAYROLL, AND OUTPUT IMPACTS FOR AIRPORT-SUPPORTED ACTIVITIES

Airport-supported activities are significant generators of economic activity in Florida. These activities help to support jobs, payroll, and output for Florida's economy. The following sections summarize total economic impacts associated with airport-supported activities. This summary provides a roll-up for tenants, construction, air cargo, aviation-related schools, aviation-related businesses, and FAA economic impacts documented in prior chapters of this report that take place on-airport. In addition, visitor-related impacts and off-airport air cargo economic impacts supported by study airports are included in this roll-up. Total impacts are presented in terms of employment, annual payroll, and annual economic activity (output). Total airport-supported economic impacts for all individual study airports are contained in **Appendix D**.

Total Airport-Supported Employment Impacts

The findings of this study indicate that airport-supported activities in Florida are an important source of jobs. Employment, as defined in this study, is based on estimates where part-time jobs are treated as half of a full-time job. Total employment impacts are presented for all on-airport aviation tenants/activities, all visitors, and off-airport air cargo activities, not including the USPS. On-airport aviation tenants/activities include on-airport businesses and government agencies, construction at airports, air cargo, aviation-related schools, aviation-related businesses, and the FAA.

Table 12-1 identifies the total number of jobs supported by study airports. These jobs comprise those people who are engaged in the provision of aviation-related services on an airport, and in the case of off-airport air cargo activities, those people who are engaged in the provision of air cargo-related services associated with an airport. Table 12-1 does not include visitor-related employment.

Table 12-1
On- and Off-Airport Aviation Activity Employment

	Direct and Indirect Employment	Induced Employment	Total Employment
Commercial Service Airports	108,849	126,879	235,728
General Aviation Airports	19,015	30,257	49,272
Total Employment	**127,864**	**157,136**	**285,000**

Source: CDM Smith and IMPLAN multipliers

In total, there are nearly 127,900 direct and indirect jobs supported by the operation of Florida's airports. It is important to note that this employment estimate does not include jobs associated with non-aviation businesses which, for various reasons, are located on an airport.

As a result of on-airport aviation tenants/activities and off-airport airport-supported air cargo activities, additional induced employment is created. Induced impacts associated with the day-to-day operation of Florida's airports add more than 157,100 jobs. When direct, indirect, and induced employment are considered, Florida's on-airport aviation tenants/activities and off-airport air cargo activities contribute an estimated 285,000 jobs to Florida's employment base. Of this total, approximately 235,700 jobs are associated with the commercial service airports, and approximately 49,300 jobs are associated with the general aviation airports.

Visitors arriving via commercial airlines spend money, thereby supporting additional employment. Table **12-2** identifies the number of employees in Florida whose jobs are supported by the spending of visitors arriving on commercial airlines. Study airports are essential for bringing these visitors to Florida.

Table 12-2
Employment from Commercial Service Visitor Spending

	Indirect Employment	Induced Employment	Total Employment
Commercial Service Airports	**456,591**	**278,757**	**735,348**

Source: CDM Smith and IMPLAN multipliers

As discussed in Chapter 5, it is possible to calculate visitor spending, and subsequently, the number of jobs supported by visitors. Indirect jobs supported by visitor spending are attributed to a variety of sectors; however, most of the jobs are concentrated in the hotel/motel, restaurant, recreational, entertainment, and retail sectors.

There are nearly 456,600 indirect jobs supported by commercial service visitor spending. Induced impacts result in nearly 278,800 additional jobs supported by the spending of commercial service visitors. When indirect and induced visitor-related employment impacts are combined, more than 735,300 jobs are supported by spending from visitors to Florida who arrive via the commercial airlines.

Similar to visitors using commercial airline service, intra-state and inter-state visitors using general aviation aircraft typically spend money while visiting, thereby helping to support additional employment. **Table 12-3** identifies the number of Florida jobs supported by spending from visitors using general aviation aircraft to travel to and within the state. As reflected in this table, general aviation visitors use both commercial service and general aviation airports.

Table 12-3
Employment from General Aviation Visitor Spending

	Indirect Employment	Induced Employment	Total Employment
Commercial Service Airports	9,449	5,188	14,637
General Aviation Airports	9,825	5,415	15,240
Total Employment	**19,274**	**10,603**	**29,877**

Source: CDM Smith and IMPLAN multipliers

As discussed in Chapter 5, it is possible to calculate annual general aviation spending; and subsequently, the number of jobs supported by this spending. Indirect jobs associated with general aviation visitor spending are attributed to a variety of sectors; however, most of these jobs are concentrated in the hotel/motel, restaurant, recreational and entertainment, and retail sectors. As a result of general aviation visitor expenditures in Florida, there are nearly 19,300 indirect jobs supported in Florida. Induced impacts result in approximately 10,600 additional jobs. When indirect and induced general aviation visitor-related employment impacts are combined, nearly 29,900 jobs are supported by the spending of visitors using general aviation aircraft in Florida.

Table 12-4 identifies the total number of jobs supported by on-airport aviation tenants/activities, off-airport air cargo activities, and visitors using the study airports. The study airports support more than 603,700 direct and indirect jobs. Induced impacts add nearly 446,500 additional jobs. In total, nearly 1.1 million jobs are supported in Florida by on-airport aviation tenants/activities, by off-airport air cargo activities, and by visitors using study airports.

Table 12-4
Total Airport-Supported Employment

	Total Direct and Indirect Employment	Total Induced Employment	Total Employment
Commercial Service Airports	574,889	410,824	985,713
General Aviation Airports	28,840	35,672	64,512
Total Employment	**603,729**	**446,496**	**1,050,225**

Source: CDM Smith and IMPLAN multipliers

Total Airport-Supported Payroll Impacts

Employment linked to on-airport aviation tenants/activities, off-airport air cargo activities, and visitors results in a significant annual payroll benefit.

Table 12-5 identifies annual payroll benefits associated with on-airport aviation tenants/activities and off-airport air cargo activities. This table includes payroll for employees related to on-airport businesses, government agencies, construction at airports, air cargo, aviation-related schools, aviation-related businesses, and the FAA.

Table 12-5
On- and Off-Airport Aviation Activity Payroll

	Direct and Indirect Payroll	Induced Payroll	Total Payroll
Commercial Service Airports	$5,158,336,000	$5,492,351,000	$10,650,687,000
General Aviation Airports	$1,005,785,000	$1,087,897,000	$2,093,682,000
Total Payroll	**$6,164,121,000**	**$6,580,248,000**	**$12,744,369,000**

Source: CDM Smith and IMPLAN multipliers

This study shows direct and indirect annual payroll impacts are nearly $6.2 billion for both the commercial service and the general aviation airports. This direct and indirect payroll impact ripples throughout the Florida economy, creating induced payroll impacts, measured through the use of the IMPLAN model. Induced annual payroll impacts related to on-airport aviation tenants/activities at the study airports and off-airport air cargo activities is nearly $6.6 billion. Total payroll impacts supported by on-airport aviation tenants/activities and off-airport air cargo activities, which include direct, indirect, and induced annual payroll, are more than $12.7 billion annually. Table 12-5 also provides information on the distribution of this payroll impact between commercial service and general aviation airports included in this FDOT study.

Table 12-6 identifies the annual payroll impact attributed to employees whose jobs are supported by spending from commercial service visitors using the study airports that support airline service.

Table 12-6
Annual Payroll from Commercial Service Visitor Spending

	Indirect Payroll	Induced Payroll	Total Payroll
Commercial Service Airports	**$10,327,597,000**	**$9,612,017,000**	**$19,939,614,000**

Source: CDM Smith and IMPLAN multipliers

Indirect payroll consists of wages and benefits paid to employees working at restaurants, hotels/motels, retail businesses, and other service businesses that are used by commercial service visitors. Indirect annual payroll attributable to spending by commercial service visitors is estimated at more than $10.3 billion.

As employees in service-related businesses spend their payroll, the money continues to circulate in Florida, generating additional employment and subsequent payroll. Annual induced payroll impacts associated with commercial service visitor-supported payroll are estimated at more than $9.6 billion. When indirect and induced annual payroll impacts stemming from commercial service visitor spending in Florida are combined, a total annual payroll impact of nearly $20.0 billion is produced.

Table 12-7 identifies the payroll impacts attributed to spending by visitors using general aviation to travel to/within Florida. As reflected in Table 12-7, payroll supported by general aviation visitor spending is associated with both commercial service and general aviation airports considered in this study.

Table 12-7
Annual Payroll from General Aviation Visitor Spending

	Indirect Payroll	Induced Payroll	Total Payroll
Commercial Service Airports	$206,936,000	$161,040,000	$367,976,000
General Aviation Airports	$215,766,000	$169,582,000	$385,348,000
Total Payroll	**$422,702,000**	**$330,622,000**	**$753,324,000**

Source: CDM Smith and IMPLAN multipliers

Indirect payroll includes salaries paid to employees working in visitor-related businesses and other service industries that are utilized by general aviation visitors. Indirect annual payroll attributable to spending by general aviation visitors in Florida is estimated at approximately $422.7 million.

As employees in the visitor-related industries spend their payroll, this spending continues to circulate, generating additional employment and subsequent payroll. The induced annual payroll impact associated with general aviation visitor spending is estimated at more than $330.6 million. When indirect and induced payroll impacts stemming from general aviation visitor spending are combined, a total payroll impact for general aviation visitor spending in Florida of more than $753.3 million is produced.

Total payroll benefits from on-airport aviation tenants/activities, off-airport air cargo activities, and all visitors using study airports in Florida are identified in **Table 12-8**.

Table 12-8
Total Airport-Supported Payroll

	Total Direct and Indirect Payroll	Total Induced Payroll	Total Payroll
Commercial Service Airports	$15,692,869,000	$15,265,408,000	$30,958,277,000
General Aviation Airports	$1,221,551,000	$1,257,479,000	$2,479,030,000
Total Payroll	**$16,914,420,000**	**$16,522,887,000**	**$33,437,307,000**

Source: CDM Smith and IMPLAN multipliers

The collective direct and indirect annual payroll impact supported by study airports is more than $16.9 billion. With more than $16.5 billion in induced annual payroll benefits, more than $33.4 billion in total annual payroll is realized in Florida as a result of visitor spending, on-airport aviation activities, and off-airport air cargo activities.

Total Airport-Supported Output Impacts

Output or economic activity is defined as annual gross sales and average annual capital expenditures for on-airport aviation tenants and activities. The exceptions are organizations such as corporate flight departments and government agencies that do not generate revenue and airlines located on the airports (because of the difficulty in allocating airline revenues to specific airports). Output for these types of entities is defined as the sum of annual capital expenditures, payroll, and operating expenses. Output related to commercial service and general aviation visitors is defined by their total spending. Total annual economic output is discussed in this section.

Table 12-9 identifies direct, indirect, induced, and total output for all on-airport aviation tenants/activities and off-airport air cargo activities. As expenditures are made by on-airport aviation tenants/activities and off-airport air cargo businesses, these expenditures ripple through Florida's economy. For example, if an airport were to improve or expand its terminal to provide additional services, money would be spent on construction materials, labor, and other services.

Table 12-9
On- and Off-Airport Aviation Activity Output

	Direct and Indirect Output	Induced Output[1]	Total Output
Commercial Service Airports	$30,839,608,000	$11,768,936,000	$42,608,544,000
General Aviation Airports	$4,119,081,000	$2,381,689,000	$6,500,770,000
Total Output	**$34,958,689,000**	**$14,150,625,000**	**$49,109,314,000**

[1] Induced output is influenced by the output impacts for the five airports in the Miami-Dade Aviation Department's airport system, which are based on *The Economic Impacts of Miami International Airport and the General Aviation Airports within the Miami-Dade County Airport System 2012*, prepared by Martin Associates, April 9, 2013. The Martin Associates study did not identify induced output.
Source: CDM Smith and IMPLAN multipliers

Total direct and indirect annual output from on-airport aviation tenants/activities and off-airport air cargo activities is estimated at nearly $35.0 billion. This output estimate is for both commercial service and general aviation airports as shown in Table 12-9. Total induced annual output for all study airports is estimated at nearly $14.2 billion.[1] When direct, indirect, and induced impacts are combined, the total annual output attributed to on-airport aviation tenants/activities and off-airport air cargo activities is more than $49.1 billion.

Table 12-10 identifies output attributed to commercial service visitor spending as it relates to study airports that support commercial airline flights.

Table 12-10
Output from Commercial Service Visitor Spending

	Indirect Output	Induced Output	Total Output
Commercial Service Airports	**$43,981,474,000**	**$20,823,928,000**	**$64,805,402,000**

Source: CDM Smith and IMPLAN multipliers

Commercial service visitor spending (indirect output) is estimated at nearly $44.0 billion. As various industries re-spend this output, the spending continues to circulate resulting in induced output impacts. Induced annual impacts related to commercial service visitor output (spending) are estimated at more than $20.8 billion. In total, the combined annual output from commercial service visitor spending in Florida is more than $64.8 billion.

Table 12-11 identifies the output (spending) attributed to general aviation visitors using both commercial service and general aviation airports in Florida. Indirect annual output is comparable to all general aviation visitor expenditures. Total indirect annual output from general aviation visitor spending is estimated at nearly $1.4 billion. General aviation visitor

[1] Induced output is influenced by the output impacts for the five airports in the Miami-Dade Aviation Department's airport system, which are taken from the Miami-Dade Aviation Department's standalone economic impact study completed in April 2013. That study did not identify induced output.

output or spending is attributable to both commercial service and general aviation airports, as reflected in Table 12-11.

Table 12-11
Output from General Aviation Visitor Spending

	Indirect Output	Induced Output	Total Output
Commercial Service Airports	$670,431,000	$514,293,000	$1,184,724,000
General Aviation Airports	$713,086,000	$525,307,000	$1,238,393,000
Total Output	**$1,383,517,000**	**$1,039,600,000**	**$2,423,117,000**

Source: CDM Smith and IMPLAN multipliers

As the service industries re-spend indirect output, money continues to circulate, resulting in induced impacts. The induced impacts related to general aviation visitor spending (output) are estimated at more than $1.0 billion each year. The total annual output from visitors arriving via general aviation aircraft at study airports is more than $2.4 billion.

The total combined annual output related to on-airport aviation tenants/activities, off-airport air cargo activities, and all visitors is presented in **Table 12-12**. Direct and indirect annual output is more than $80.3 billion. Total annual induced output is estimated at more than $36.0 billion. Combined output from on-airport aviation tenants/activities, off-airport air cargo activities, visitors, and the multiplier effect produces a total annual output estimate of more than $116.3 billion for the study airports.

Table 12-12
Total Airport-Supported Output

	Total Direct and Indirect Output	Total Induced Output[1]	Total Output
Commercial Service Airports	$75,491,513,000	$33,107,157,000	$108,598,670,000
General Aviation Airports	$4,832,167,000	$2,906,996,000	$7,739,163,000
Total Output	**$80,323,680,000**	**$36,014,153,000**	**$116,337,833,000**

[1] Induced output is influenced by the output impacts for the five airports in the Miami-Dade Aviation Department's airport system, which are based on *The Economic Impacts of Miami International Airport and the General Aviation Airports within the Miami-Dade County Airport System 2012*, prepared by Martin Associates, April 9, 2013. The Martin Associates study did not identify induced output.
Source: CDM Smith and IMPLAN mult4ipliers

SUMMARY OF TOTAL ECONOMIC IMPACTS FOR AIRPORT-SUPPORTED ACTIVITIES

On-airport aviation tenants/activities, off-airport air cargo activities, and commercial service and general aviation visitors using the 122 airports considered in this study update are major contributors to Florida's economy. In 2013, the annual output associated with study airports was estimated at more than $116.3 billion. This estimate includes induced impacts measured using the study multipliers.

Table 12-13 provides a summary of economic impacts associated with study airports. As shown, the study airports support a total of nearly 1.1 million jobs that have an annual payroll of more than $33.4 billion; and as noted, the study airports account for a total of more than $116.3 billion in total annual economic activity or output.

Table 12-13
Total Airport-Supported Economic Impacts

	Direct and Indirect Impacts	Induced Impacts[1]	Total Impacts
Employment			
On- and Off-Airport Aviation Activity	127,864	157,136	285,000
Commercial Service Visitors	456,591	278,757	735,348
General Aviation Visitors	19,274	10,603	29,877
Total Employment	**603,729**	**446,496**	**1,050,225**
Payroll			
On- and Off-Airport Aviation Activity	$6,164,121,000	$6,580,248,000	$12,744,369,000
Commercial Service Visitors	$10,327,597,000	$9,612,017,000	$19,939,614,000
General Aviation Visitors	$422,702,000	$330,622,000	$753,324,000
Total Payroll	**$16,914,420,000**	**$16,522,887,000**	**$33,437,307,000**
Output			
On- and Off-Airport Aviation Activity	$34,958,689,000	$14,150,625,000	$49,109,314,000
Commercial Service Visitors	$43,981,474,000	$20,823,928,000	$64,805,402,000
General Aviation Visitors	$1,383,517,000	$1,039,600,000	$2,423,117,000
Total Output	**$80,323,680,000**	**$36,014,153,000**	**$116,337,833,000**

[1] Induced output is influenced by the output impacts for the five airports in the Miami-Dade Aviation Department's airport system, which are based on *The Economic Impacts of Miami International Airport and the General Aviation Airports within the Miami-Dade County Airport System 2012*, prepared by Martin Associates, April 9, 2013. The Martin Associates study did not identify induced output.
Source: CDM Smith and IMPLAN mult4ipliers

Table 12-14 shows the distribution of these total airport-supported impacts between Florida's commercial service and general aviation airports. Total annual economic impacts for the commercial service airports are as follows:

- Jobs – 985,713
- Annual Payroll – $30,958,277,000
- Annual Economic Activity (Output) – $108,598,670,000

Total annual economic impacts for general aviation airports are as follows:

- Jobs – 64,512
- Annual Payroll - $2,479,030,000
- Annual Economic Activity (Output) – $7,739,163,000

Table 12-14
Total Airport-Supported Economic Impacts for Commercial Service and General Aviation Airports

	Direct and Indirect Impacts	Induced Impacts[1]	Total Impacts
Employment			
Commercial Service Airports	574,889	410,824	985,713
General Aviation Airports	28,840	35,672	64,512
Total Employment	**603,729**	**446,496**	**1,050,225**
Payroll			
Commercial Service Airports	$15,692,869,000	$15,265,408,000	$30,958,277,000
General Aviation Airports	$1,221,551,000	$1,257,479,000	$2,479,030,000
Total Payroll	**$16,914,420,000**	**$16,522,887,000**	**$33,437,307,000**
Output			
Commercial Service Airports	$75,491,513,000	$33,107,157,000	$108,598,670,000
General Aviation Airports	$4,832,167,000	$2,906,996,000	$7,739,163,000
Total Output	**$80,323,680,000**	**$36,014,153,000**	**$116,337,833,000**

[1] Induced output is influenced by the output impacts for the five airports in the Miami-Dade Aviation Department's airport system, which are based on *The Economic Impacts of Miami International Airport and the General Aviation Airports within the Miami-Dade County Airport System 2012*, prepared by Martin Associates, April 9, 2013. The Martin Associates study did not identify induced output.
Source: CDM Smith and IMPLAN mult4ipliers

CHAPTER 13: SUMMARY OF OFF-AIRPORT ECONOMIC IMPACTS

INTRODUCTION

Economic impacts presented in Chapter 12 provided a roll-up of all economic impacts associated with the daily operation of Florida's commercial service and general aviation airports. As other chapters of the report have documented, aviation-related economic impacts can and do often extend beyond the airports themselves and the visitors the airports help bring to Florida.

This chapter summarizes aviation-related off-airport economic benefits that extend beyond the airports in the following categories:

- Air Cargo
- Aviation-Related Schools
- Aviation-Related Businesses
- The Federal Aviation Administration (FAA)

OFF-AIRPORT AIR CARGO (AIR MAIL) ECONOMIC IMPACTS

There is a notable amount of air cargo activity and associated economic impact that takes place on 30 different commercial service and general aviation airports in Florida. There is also a significant amount of economic impact related to various types of businesses that support air cargo, and this activity takes place off-airport. Because almost all off-airport air cargo activity is supported by a particular study airport, many of the off-airport air cargo economic impacts in this study update were assigned to a specific airport. Chapter 7 of this report provided a more detailed discussion of both on- and off-airport air cargo-related economic impacts and the methods used to estimate these impacts.

Economic impacts associated with the air transport of U.S. mail and the United States Postal Service (USPS) take place off-airport. These impacts are statewide in nature rather than airport specific. Much of the First-Class Mail that is destined to Florida or that originates in Florida is transported via air. As a result, a portion of the employment of the USPS in Florida is associated with and supported by air transportation.

Table 13-1 presents off-airport economic impacts associated with USPS operations in Florida; more detailed information on these impacts was presented in Chapter 7 of this report. Since these impacts are statewide and not airport specific in nature, they were not accounted for in the individual airport economic impacts discussed in Chapter 12. The statewide off-airport economic impacts associated with the USPS are in addition to those reported in the individual airport and statewide airport totals.

Table 13-1
Off-Airport Air Cargo (Air Mail) Economic Impacts

	Indirect Impacts	Induced Impacts	Total Impacts
Employment			
Off-Airport USPS	30,972	45,752	76,724
Payroll			
Off-Airport USPS	$1,544,419,000	$1,425,398,000	$2,969,817,000
Output			
Off-Airport USPS	$3,061,821,000	$2,061,306,000	$5,123,127,000

Source: CDM Smith and IMPLAN multipliers

Total off-airport air cargo (air mail) economic impacts for the USPS in Florida are as follows:

- Jobs – 76,724
- Annual Payroll – $2,969,817,000
- Annual Economic Activity (Output) – $5,123,127,000

OFF-AIRPORT AVIATION-RELATED EDUCATION ECONOMIC IMPACTS

Florida is a world leader in providing all facets of aviation-related education. Many of the providers of aviation-related education in Florida are actually located on an airport. Statewide, there are at least 170 aviation-related educational facilities located on both commercial service and general aviation airports.

In addition to the many aviation-related schools that are located on airports throughout Florida, there are also more than 20 other aviation-related schools in Florida not located on an airport. Economic impacts of aviation-related educational providers have been previously discussed in Chapter 8 of this report, and their locations mapped in Chapter 2. The economic impact of aviation-related schools located on-airport are reflected in the roll-up of total airport-related economic impacts for all system airports presented in Chapter 12.

The economic impacts of the off-airport aviation-related schools in Florida are non-airport specific, and their impacts are in addition to those summarized in Chapter 12. Off-airport aviation-related schools in Florida have spending to support their activities, employment to train/educate their students, and payroll for their employees. Off-airport aviation-related schools also have the added economic impact of student spending.

Chapter 8 of this report provides a more detailed discussion of on- and off-airport economic impacts that are related to aviation-related schools. This chapter also details how economic impacts associated with this aviation activity in Florida were estimated. **Table 13-2** summarizes the off-airport economic impacts for aviation-related education in Florida.

Table 13-2
Off-Airport Aviation-Related Education Economic Impacts

	Indirect Impacts	Induced Impacts	Total Impacts
Employment			
Schools	642	332	974
Student Spending	140	77	217
Total Employment	**782**	**409**	**1,191**
Payroll			
Schools	$27,435,000	$27,084,000	$54,519,000
Student Spending	$3,066,000	$2,386,000	$5,452,000
Total Payroll	**$30,501,000**	**$29,470,000**	**$59,971,000**
Output			
Schools	$69,496,000	$44,976,000	$114,472,000
Student Spending	$9,934,000	$7,621,000	$17,555,000
Total Output	**$79,430,000**	**$52,597,000**	**$132,027,000**

Source: CDM Smith and IMPLAN multipliers

When all off-airport educational related activities (indirect and induced) are considered, including both the impact of the schools themselves and their students, the following economic impacts are generated:

- Jobs – 1,191
- Annual Payroll – $59,971,000
- Annual Economic Activity (Output) – $132,027,000

OFF-AIRPORT AVIATION-RELATED BUSINESS ECONOMIC IMPACTS

Throughout Florida, there are many businesses engaged in the manufacturing or the production of products or services that support the civilian aviation industry. Some of these businesses manufacture aircraft, while others produce parts or other durable goods that are used within the industry. Other businesses repair or perform different types of maintenance on commercial or general aviation aircraft. Some of these aviation-related businesses are located off-airport, and their locations, along with on-airport businesses, were previously mapped in Chapter 2. Chapter 9 of this report provides more information on economic impacts associated with aviation-related businesses, both on- and off-airport, and discusses the approach used to estimate annual economic impacts for these businesses in Florida.

There are more than 450 aviation-related businesses located throughout Florida that are not located on an airport. These aviation-related businesses are primarily engaged in manufacturing that supports the civilian aviation industry. **Table 13-3** presents economic impacts for off-airport aviation-related businesses as estimated in this study.

Table 13-3
Off-Airport Aviation-Related Business Economic Impacts

	Indirect Impacts	Induced Impacts	Total Impacts
Employment			
Off-Airport Businesses	16,138	27,981	44,119
Payroll			
Off-Airport Businesses	$708,503,000	$699,792,000	$1,408,295,000
Output			
Off-Airport Businesses	$5,584,125,000	$3,620,768,000	$9,204,893,000

Source: CDM Smith and IMPLAN multipliers

Economic impacts for off-airport aviation-related businesses are in addition to those previously presented for the study airports in Chapter 12. Approximately 68 percent of the total output stemming from aviation-related businesses in Florida is generated off-airport. Total economic impacts for off-airport aviation-related businesses are as follows:

- Jobs – 44,119
- Annual Payroll – $1,408,295,000
- Annual Economic Activity (Output) – $9,204,893,000

OFF-AIRPORT FEDERAL AVIATION ADMINISTRATION (FAA) ECONOMIC IMPACTS

The FAA is the federal agency charged with overseeing the nation's airports, airways, and aviation activity. The responsibilities of the FAA related to airports in Florida include engineering; environmental review; planning; funding; and monitoring aircraft approaches, departures, and the national airways system. Throughout Florida, FAA has a series of both on- and off-airport locations. Chapter 10 of this report provided more information for on- and off-airport economic impacts for the FAA; this prior chapter also discussed how these impacts were estimated. Locations of FAA installations in Florida were mapped in Chapter 2.

Table 13-4 presents off-airport economic impacts for the FAA in Florida.

Table 13-4
Off-Airport FAA Economic Impacts

	Indirect Impacts	Induced Impacts	Total Impacts
Employment			
Off-Airport FAA	1,434	1,256	2,690
Payroll			
Off-Airport FAA	$165,688,000	$52,223,000	$217,911,000
Output			
Off-Airport FAA	$230,886,000	$154,450,000	$385,336,000

Source: CDM Smith and IMPLAN multipliers

Employment and other information for off-airport FAA installations were obtained directly from the FAA's Southern Region Regional Office in College Park, Georgia in support of this economic impact study. The off-airport FAA economic impacts calculated in this study are in addition to those estimated for the on-airport economic impacts summarized in Chapter 12.

More than 60 percent of the total statewide economic impact related to the FAA occurs off-airport. Total off-airport economic impacts for the FAA follow:

- Jobs – 2,690
- Annual Payroll – $217,911,000
- Annual Economic Activity (Output) – $385,336,000

SUMMARY OF OFF-AIRPORT ECONOMIC IMPACTS

Table 13-5 provides an overview of all off-airport economic impacts estimated in the statewide FDOT economic impact study update. Total off-airport economic impacts estimated in the study follow:

- Jobs – 124,724
- Annual Payroll – $4,655,994,000
- Annual Economic Activity (Output) – $14,845,383,000

Table 13-5
Summary of Total Off-Airport Economic Impacts

	Indirect Impacts	Induced Impacts	Total Impacts
Employment			
USPS	30,972	45,752	76,724
Aviation-Related Education	782	409	1,191
Aviation-Related Businesses	16,138	27,981	44,119
FAA	1,434	1,256	2,690
Total Employment	**49,326**	**75,398**	**124,724**
Payroll			
USPS	$1,544,419,000	$1,425,398,000	$2,969,817,000
Aviation-Related Education	$30,501,000	$29,470,000	$59,971,000
Aviation-Related Businesses	$708,503,000	$699,792,000	$1,408,295,000
FAA	$165,688,000	$52,223,000	$217,911,000
Total Payroll	**$2,449,111,000**	**$2,206,883,000**	**$4,655,994,000**
Output			
USPS	$3,061,821,000	$2,061,306,000	$5,123,127,000
Aviation-Related Education	$79,430,000	$52,597,000	$132,027,000
Aviation-Related Businesses	$5,584,125,000	$3,620,768,000	$9,204,893,000
FAA	$230,886,000	$154,450,000	$385,336,000
Total Output	**$8,956,262,000**	**$5,889,121,000**	**$14,845,383,000**

Source: CDM Smith and IMPLAN multipliers

Since the economic impacts for off-airport aviation-related activities noted above are not tied to a specific airport, these impacts have not been previously accounted for in the economic impacts presented for individual system airports in Chapter 12. These off-airport aviation-related economic impacts are in addition to those presented in Chapter 12.

CHAPTER 14: TOTAL ECONOMIC IMPACTS OF AVIATION IN FLORIDA

INTRODUCTION

The previous chapters of this report have identified and summarized the economic benefits associated with on- and off-airport aviation activities in Florida. Specific aviation groups and benefits of air transportation were considered in this report and include the following:

- Airports
- Visitors
- Airport construction
- Air cargo
- Aviation education
- Aviation-related businesses
- Federal Aviation Administration (FAA)
- Military airfields

This chapter combines economic impacts associated with these aviation groups to provide a complete picture of the statewide economic impacts of all aviation activities in Florida.

STATEWIDE ECONOMIC IMPACTS

Table 14-1 summarizes Florida's total annual economic impacts from aviation activities examined in this study update. Total economic impacts include on-airport tenants (businesses and government agencies), visitor spending, construction activity, on- and off-airport air cargo activity (including the USPS), on- and off-airport aviation-related schools, on- and off-airport aviation-related businesses, on- and off-airport FAA facilities, and military airfields.

Table 14-1
Florida's Total Economic Impacts from Aviation

	Direct and Indirect Impacts	Induced Impacts[1]	Total Impacts
Employment			
Airports	82,367	87,740	170,107
Visitors	475,865	289,360	765,225
Construction at Airports	7,737	9,651	17,388
Air Cargo	20,416	32,447	52,863
Aviation Education	4,454	6,246	10,700
Aviation Businesses	11,908	20,190	32,098
FAA	982	862	1,844
Airport-Supported Activities Total	**603,729**	**446,496**	**1,050,225**
Military Airfields Total	**82,306**	**55,176**	**137,482**
Off-Airport Activities Total	**49,326**	**75,398**	**124,724**
All Activities Total Employment	**735,361**	**577,070**	**1,312,431**
Payroll			
Airports	$3,852,803,000	$4,261,478,000	$8,114,281,000
Visitors	$10,750,299,000	$9,942,639,000	$20,692,938,000
Construction at Airports	$272,189,000	$344,788,000	$616,977,000
Air Cargo	$1,018,051,000	$1,042,752,000	$2,060,803,000
Aviation Education	$218,294,000	$209,595,000	$427,889,000
Aviation Businesses	$695,841,000	$687,928,000	$1,383,769,000
FAA	$106,943,000	$33,707,000	$140,650,000
Airport-Supported Activities Total	**$16,914,420,000**	**$16,522,887,000**	**$33,437,307,000**
Military Airfields Total	**$4,517,250,000**	**$1,891,771,000**	**$6,409,021,000**
Off-Airport Activities Total	**$2,449,111,000**	**$2,206,883,000**	**$4,655,994,000**
All Activities Total Payroll	**$23,880,781,000**	**$20,621,541,000**	**$44,502,322,000**
Output			
Airports	$27,597,840,000	$8,679,371,000	$36,277,211,000
Visitors	$45,364,991,000	$21,863,528,000	$67,228,519,000
Construction at Airports	$1,207,806,000	$948,665,000	$2,156,471,000
Air Cargo	$2,847,634,000	$2,349,496,000	$5,197,130,000
Aviation Education	$510,204,000	$341,153,000	$851,357,000
Aviation Businesses	$2,651,100,000	$1,735,662,000	$4,386,762,000
FAA	$144,105,000	$96,278,000	$240,383,000
Airport-Supported Activities Total	**$80,323,680,000**	**$36,014,153,000**	**$116,337,833,000**
Military Airfields Total	**$8,144,983,000**	**$4,641,130,000**	**$12,786,113,000**
Off-Airport Activities Total	**$8,956,262,000**	**$5,889,121,000**	**$14,845,383,000**
All Activities Total Output	**$97,424,925,000**	**$46,544,404,000**	**$143,969,329,000**

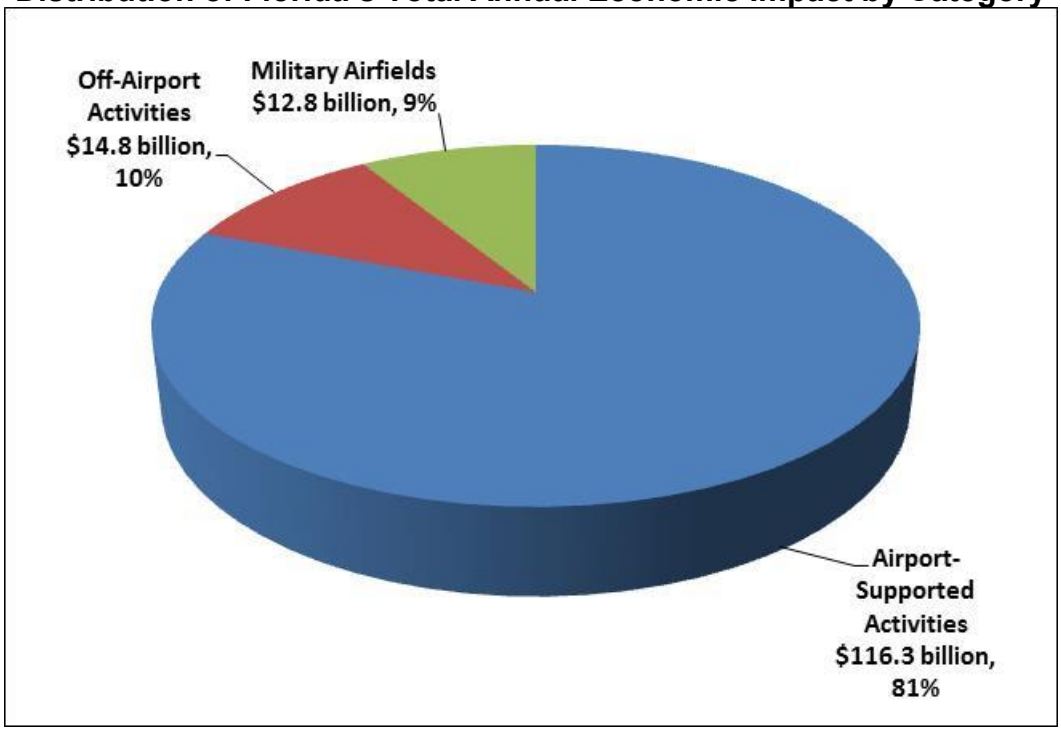
[1] Induced output is influenced by the output impacts for the five airports in the Miami-Dade Aviation Department's airport system, which are based on *The Economic Impacts of Miami International Airport and the General Aviation Airports within the Miami-Dade County Airport System 2012*, prepared by Martin Associates, April 9, 2013. The Martin Associates study did not identify induced output.
Source: CDM Smith and IMPLAN multipliers

As shown in this table:

- Airport-supported activities are responsible for nearly 1.1 million jobs, more than $33.4 billion in annual payroll, and more than $116.3 billion in annual economic activity or output.
- Military airfields support nearly 137,500 jobs, more than $6.4 billion in annual payroll, and nearly $12.8 billion in annual output.
- Off-airport aviation activities support more than 124,700 jobs, nearly $4.7 billion in annual payroll, and more than $14.8 billion in annual economic activity or output.
- All aviation activities in Florida combined support more than 1.3 million jobs, more than $44.5 billion in annual payroll, and nearly $144.0 billion in annual output.

Exhibit 14-1 summarizes the distribution of the total annual economic impact that Florida realizes from aviation by category. As shown in Exhibit 14-1, on-airport aviation activities are responsible for the majority (81 percent) of the total annual economic activity or output associated with aviation in Florida.

Exhibit 14-1
Distribution of Florida's Total Annual Economic Impact by Category



Source: CDM Smith

SUMMARY OF TOTAL ECONOMIC IMPACTS OF AVIATION IN FLORIDA

As shown in this chapter, aviation in Florida clearly has a significant impact on the state's economy. Aviation activities in Florida account for the following total economic impacts:

- Jobs – 1,312,431
- Annual Payroll – $44.5 billion
- Annual Output – $144.0 billion

Clearly, when aviation is contributing $144.0 billion in annual economic activity or output, aviation has a significant positive impact on Florida's economy each year.

APPENDIX A
APPROACH TO ESTIMATING ON-AIRPORT TENANT AND CONSTRUCTION ECONOMIC IMPACTS FOR THE COMMERCIAL SERVICE AIRPORTS

APPENDIX A

INTRODUCTION

As explained in Chapters 4 and 6, the economic impacts tied to on-airport tenants and construction activity for 14 of Florida's commercial service airports were estimated following a methodology that is different from the one explained in that chapter. The on-airport tenant and construction economic impacts for these commercial service airports were derived from the 2010 *Florida Statewide Aviation Economic Impact Study* using a methodology that is described in this appendix.[1] As also explained in Chapters 4 and 6, the Miami-Dade Aviation Department completed a standalone economic impact study for Miami International Airport in 2013. All on-airport economic impacts for Miami International Airport in the Florida Department of Transportation (FDOT) study update are based on the Miami-Dade Aviation Department's 2013 study. The 14 commercial service airports that are the focus of this appendix include the following:

- Daytona Beach International Airport
- Ft. Lauderdale/Hollywood International Airport
- Southwest Florida International Airport
- Gainesville Regional Airport
- Jacksonville International Airport
- Key West International Airport
- Melbourne International Airport
- Orlando International Airport
- Pensacola International Airport
- Sarasota/Bradenton International Airport
- Tallahassee Regional Airport
- Tampa International Airport
- Northwest Florida Regional Airport/Eglin AFB
- Palm Beach International Airport

It is important to note that this appendix does not discuss the methodology for estimating visitor impacts for these airports. Commercial service and general aviation visitor impacts for all 19 of Florida's commercial service airports were estimated using the methodologies explained in Chapter 5. This appendix also does not present any visitor impacts in the tables presented below.

[1] Four commercial service airports were analyzed using the methodologies presented in Chapters 4 and 6. These airports include: Punta Gorda Airport, Northwest Florida-Beaches International Airport, St. Pete-Clearwater International Airport, and Orlando-Sanford International Airport. At the time of FDOT's 2010 *Florida Statewide Aviation Economic Impact Study*, Punta Gorda Airport was considered a general aviation airport and construction of Northwest Florida-Beaches International Airport was nearing completion. Because these two airports were not evaluated as active commercial service airports in the 2010 study, it was important to conduct a more detailed data collection effort. In the case of St. Pete-Clearwater International Airport and Orlando-Sanford International Airport, airport management provided airport tenant lists and associated employment figures, which enabled the methodologies described in Chapters 4 and 6 to be used.

APPROACH TO ESTIMATING ECONOMIC IMPACTS FOR THE COMMERCIAL SERVICE AIRPORTS

Economic impacts for the 14 commercial service airports in this appendix are quantified in terms of employment, payroll, and output. Output represents total economic activity or spending. It represents the total value of aviation-related activities supported by the commercial service airports.

The Economic Modeling Process

The on-airport economic benefits produced by the commercial service airports were estimated based on the 2010 *Florida Statewide Aviation Economic Impact Study* and data from an input-output model that estimates purchases and sales between the various sectors of the economy. The model incorporated multipliers and data tables specific to Florida and produced impact estimates for three separate components of the economy, as follows:

- Employment – Employment is based on full-time equivalent positions. For example, two part-time employees were assumed to equal one full-time employee.
- Payroll – Payroll is the annual salary, wages, and benefits paid to employees.
- Output (Spending) – Output for an on-airport tenant is commonly assumed to be the sum of average annual capital expenditures and annual gross sales. For tenants that do not have gross sales (government organizations) or have difficulty in determining gross sales associated with a particular airport (e.g. airlines), this assumption must be modified. For these entities, output is assumed to be the sum of average annual capital expenditures, operating expenses, and payroll.

It is important to note that payroll and output cannot be combined because elements of economic benefit related to payroll are also contained in the output estimate. Each of the three impact components (employment, payroll, and output) stands alone as a measure of a commercial service airport's tenant- and construction-related economic impact.

All economic impacts or benefits from the 14 commercial service airports considered in this appendix were calculated using an input-output model. The input-output model considers two impact categories to assess the economic benefits associated with on-airport activities. These categories are:

- Direct Impacts – Direct impacts are the benefits associated with tenants (businesses and government agencies) located at the airport which are directly related to the provision of aviation services. Direct impacts include the employment, payroll, and spending of businesses and government agencies such as fixed base operators (FBOs), concessionaires, airlines, corporate flight departments, airport sponsors/managers, Federal Aviation Administration (FAA), Transportation Security Administration (TSA), and others.

  Direct impacts also include the employment, payroll, and spending tied to on-airport construction activity. Each year, nearly all airports undertake capital improvement projects (CIPs), such as runway rehabilitation or terminal improvements. In addition, on-airport businesses and government agencies undertake CIPs. These projects employ persons in jobs, such as construction, architecture, engineering, and consulting.

To aid in the analysis, the following subcategories of direct impacts were developed:

- Airport Management
- Aviation Tenants (e.g., airlines, air cargo operators, fixed base operators, corporate flight departments, aircraft maintenance businesses, etc.)
- Concessions Tenants (e.g., rental car companies, terminal concessionaires, parking operators, etc.)
- Government Tenants (e.g., FAA, TSA, state/local agencies, etc.)
- Construction Impacts for Airport Management
- Construction Impacts for Tenants

- Induced Impacts – Induced impacts are the benefits resulting from the recirculation of direct impacts within the economy. This recirculation is typically referred to as the multiplier effect. For example, as airport employees spend their salary for housing, food, and services, those expenditures circulate through the economy, resulting in increased spending, payroll, and employment throughout Florida.

Because induced impacts are not as easily quantified as direct impacts, a reliable method for estimating induced impacts must be applied. For this study, the Impact Analysis for Planning (IMPLAN) model was used to measure the multiplier effect and determine induced impacts. This model is considered a standard method for evaluating the economic benefits of public facilities and has been used nationwide to approximate the economic impacts associated with airports and airport systems. The model contains a detailed database of economic multipliers used to estimate induced impacts associated with the direct on-airport spending that occurs in association with each airport.

The sum of the benefits of these two categories (direct and induced) yields the total on-airport impact attributable to a commercial service airport.

DATA COLLECTION

The 2010 *Florida Statewide Aviation Economic Impact Study* was used to update the direct impacts for the 14 commercial service airports. In addition, an Airport Management Survey was sent to each airport sponsor/manager that requested the following airport management-specific information:

- Number of full-time and part-time airport management employees in 2013;
- Estimated total annual wages and benefits paid to these employees in 2013;
- Estimated total capital improvement expenditures for each year, 2010 through 2013; and
- Estimated total operating expenses (excluding payroll and capital improvements previously identified) in 2013.

STUDY MULTIPLIERS/INDUCED IMPACTS

Employment, payroll, and output impacts associated with on-airport tenants and construction activity comprise direct economic impacts. As these direct impacts enter the economy, they circulate among other sectors, creating successive waves of additional spending. This phenomenon is referred to as the multiplier effect, classified in this study as induced impacts. Multipliers used in this study have been previously discussed in previous chapters of this report.

METHODOLOGY FOR ESTIMATING DIRECT ECONOMIC IMPACTS

The discussion below details the methodology used to estimate the direct employment, payroll, and output impacts for the commercial service airports.

Direct Employment

Direct employment impacts for each of these categories were updated as follows:

- Airport Management – Input employment data provided by airport management.
- Aviation Tenants – Ratios of enplanements per aviation tenant employee based on each airport's 2008 and 2013 enplanements as well as 2008 direct aviation tenant employment were used.[2]
- Concessions Tenants – Ratios of enplanements per concessions tenant employee based on each airport's 2008 and 2013 enplanements as well as 2008 direct concessions tenant employment were used.
- Government Tenants – It was assumed government employment (not associated with airport management) has not changed significantly since FDOT's 2010 study. Therefore, direct government employment for each airport from the 2010 study was not changed.
- Construction Impacts for Airport Management – CIP data for 2010-2013 provided by airport management was used. An annual average for the period was determined to avoid showing peaks and troughs in construction spending. Based on Florida-specific IMPLAN multipliers, every $1.0 million spent annually on construction activity supports approximately 7.0 construction-related jobs in Florida. These jobs include construction workers, equipment operators, foremen, engineers, and managers.
- Construction Impacts for Tenants – The direct construction output for on-airport tenants in the 2010 FDOT study was adjusted using the Consumer Price Index (CPI). The same ratio from the IMPLAN multipliers used to estimate construction employment generated by airport management was applied to tenants.

Direct Payroll

The following steps were used to update direct payroll impacts:

- Airport Management – Input payroll data provided by airport management.
- Aviation Tenants – The average salary for aviation tenant employees from FDOT's 2010 study was determined for each airport. This average salary was adjusted using the CPI and was then applied to the 2013 direct aviation tenant employment.
- Concessions Tenants – The same process used for aviation tenants payroll was used for concessions tenants.
- Government Tenants – The same process used for aviation and concessions tenants payroll was used for government tenants.
- Construction Impacts for Airport Management – Data from the Bureau of Labor Statistics were used to determine average pay for construction-related workers in Florida in 2013, and this average was applied to each construction-related employee to determine payroll associated with CIP activity.

[2] The base year for the 2010 *Florida Statewide Aviation Economic Impact Study* was 2008.

- Construction Impacts for Tenants – The same process used to estimate construction–related payroll for airport management was used for tenants.

Direct Output

Direct output impacts were updated as follows:

- Airport Management – Input payroll and operating expenses data provided by airport management.
- Aviation Tenants – Direct output generated by aviation tenants in FDOT's 2010 study was adjusted based on the CPI and the increase in the price of jet fuel between 2008 and 2013.
- Concessions Tenants – Airport concessionaires' 2013 gross sales data provided by airport management was used. For those airports where this data was not provided, estimates were made using ratios based on concessions sales per enplanement from FDOT's 2010 study or from Airport Revenue News' *Fact Book 2013*.
- Government Tenants – Direct output generated by government tenants in FDOT's 2010 study was adjusted based on the CPI.
- Construction Impacts for Airport Management – Data provided by airport management was used.
- Construction Impacts for Tenants – Direct construction expenditures by tenants in FDOT's 2010 study were adjusted based on the CPI.

DIRECT ECONOMIC IMPACTS

The direct economic impacts that were updated for the 14 commercial service airports using the methodology detailed above are presented in **Table A-1**. Direct employment, payroll, and output are shown for each airport. Combined, the airports support nearly 51,600 direct jobs in Florida with a direct payroll of nearly $2.5 billion. Direct output is estimated at nearly $12.6 billion.

TOTAL ECONOMIC IMPACTS

When the induced impacts generated as a result of the multiplier effect are added to the direct economic impacts in Table A-1, each airport's total economic impacts are revealed. The total on-airport economic impacts for the commercial service airports are identified in **Table A-2**. As shown in Table A-2, the 14 commercial service airports support more than 110,800 total jobs with a total annual payroll of more than $4.5 billion. Total annual output is estimated at nearly $21.4 billion.

Table A-1
Direct On-Airport Economic Impacts for Commercial Service Airports

Associated City	Airport Name	Direct Employment	Direct Payroll	Direct Output
Commercial Service Airports				
Daytona Beach	Daytona Beach International Airport	1,960	$80,157,000	$340,881,000
Fort Lauderdale	Ft. Lauderdale/Hollywood International Airport	10,839	$498,280,000	$1,772,258,000
Fort Myers	Southwest Florida International Airport	2,974	$133,571,000	$531,662,000
Gainesville	Gainesville Regional Airport	522	$24,806,000	$81,352,000
Jacksonville	Jacksonville International Airport	2,875	$151,967,000	$469,741,000
Key West	Key West International Airport	403	$17,675,000	$47,222,000
Melbourne	Melbourne International Airport	5,864	$306,602,000	$834,634,000
Orlando	Orlando International Airport	15,945	$793,744,000	$6,541,278,000
Pensacola	Pensacola International Airport	655	$28,014,000	$155,362,000
Sarasota	Sarasota/Bradenton International Airport	777	$35,040,000	$138,442,000
Tallahassee	Tallahassee Regional Airport	608	$30,000,000	$111,645,000
Tampa	Tampa International Airport	5,317	237,111,000	$958,494,000
Valparaiso	Northwest Florida Regional Airport/Eglin AFB	309	$12,824,000	$52,519,000
West Palm Beach	Palm Beach International Airport	2,502	120,985,000	$538,617,000
Commercial Service Airports Total		**51,550**	**$2,470,776,000**	**$12,574,107,000**

Source: CDM Smith and IMPLAN multipliers

Table A-2
Total On-Airport Economic Impacts for Commercial Service Airports

Associated City	Airport Name	Total Employment	Total Payroll	Total Output
Commercial Service Airports				
Daytona Beach	Daytona Beach International Airport	4,969	$154,622,000	$579,408,000
Fort Lauderdale	Ft. Lauderdale/Hollywood International Airport	22,929	$910,756,000	$3,064,289,000
Fort Myers	Southwest Florida International Airport	6,321	$238,743,000	$934,848,000
Gainesville	Gainesville Regional Airport	1,271	$46,797,000	$138,434,000
Jacksonville	Jacksonville International Airport	5,861	$265,048,000	$820,864,000
Key West	Key West International Airport	876	$32,055,000	$81,767,000
Melbourne	Melbourne International Airport	15,584	$604,593,000	$1,389,820,000
Orlando	Orlando International Airport	31,399	$1,430,259,000	$10,979,218,000
Pensacola	Pensacola International Airport	1,466	$51,806,000	$268,492,000
Sarasota	Sarasota/Bradenton International Airport	1,675	$63,038,000	$239,211,000
Tallahassee	Tallahassee Regional Airport	1,339	$53,829,000	$194,075,000
Tampa	Tampa International Airport	11,026	$423,843,000	$1,684,920,000
Valparaiso	Northwest Florida Regional Airport/Eglin AFB	623	$22,770,000	$92,534,000
West Palm Beach	Palm Beach International Airport	5,484	$222,517,000	$929,993,000
Commercial Service Airports Total		**110,823**	**$4,520,676,000**	**$21,397,873,000**

Source: CDM Smith and IMPLAN multipliers

SUMMARY

This appendix described the methodology used to update the economic impacts tied to on-airport tenants and construction activity for 14 commercial service airports. Combined, these airports generate the following direct economic impacts:

- Jobs – 51,550
- Payroll – $2,470,776,000
- Output – $12,574,107,000

When induced impacts are added to the direct impacts, the following total economic impacts are generated:

- Jobs – 110,823
- Payroll – $4,520,676,000
- Output – $21,397,873,000

Based on these findings, these airports clearly are significant economic engines for the state of Florida.

APPENDIX B
VISITOR ECONOMIC IMPACTS

APPENDIX B

Table B-1
Commercial Service Visitor-Related Output

Associated City	Airport Name	Indirect Output	Induced Output	Total Output
Commercial Service Airports				
Daytona Beach	Daytona Beach International Airport	$105,896,000	$83,238,000	$189,134,000
Fort Lauderdale	Ft. Lauderdale/Hollywood International Airport	$5,564,772,000	$4,374,121,000	$9,938,893,000
Fort Myers	Southwest Florida International Airport	$1,868,725,000	$1,468,889,000	$3,337,614,000
Gainesville	Gainesville Regional Airport	$48,078,000	$37,791,000	$85,869,000
Jacksonville	Jacksonville International Airport	$698,897,000	$549,359,000	$1,248,256,000
Key West	Key West International Airport	$369,001,000	$290,049,000	$659,050,000
Melbourne	Melbourne International Airport	$90,156,000	$70,866,000	$161,022,000
Miami	Miami International Airport[1]	$17,489,200,000	$0	$17,489,200,000
Orlando	Orlando International Airport	$11,295,882,000	$8,878,990,000	$20,174,872,000
Orlando	Orlando Sanford International Airport	$572,314,000	$449,860,000	$1,022,174,000
Panama City	Northwest Florida-Beaches International Airport	$236,094,000	$185,579,000	$421,673,000
Pensacola	Pensacola International Airport	$200,985,000	$157,982,000	$358,967,000
Punta Gorda	Punta Gorda Airport	$44,986,000	$35,361,000	$80,347,000
Sarasota	Sarasota/Bradenton International Airport	$327,874,000	$257,721,000	$585,595,000
St. Petersburg/Clearwater	St. Pete-Clearwater International Airport	$204,936,000	$161,087,000	$366,023,000
Tallahassee	Tallahassee Regional Airport	$71,078,000	$55,870,000	$126,948,000
Tampa	Tampa International Airport	$3,287,594,000	$2,584,173,000	$5,871,767,000
Valparaiso	Northwest Florida Regional Airport/Eglin AFB	$228,101,000	$179,296,000	$407,397,000
West Palm Beach	Palm Beach International Airport	$1,276,905,000	$1,003,696,000	$2,280,601,000
Commercial Service Airports Total		**$43,981,474,000**	**$20,823,928,000**	**$64,805,402,000**

[1] Impacts are based on *The Economic Impacts of Miami International Airport and the General Aviation Airports within the Miami-Dade County Airport System 2012*, prepared by Martin Associates, April 9, 2013. The Martin Associates study did not identify induced output impacts.
Source: CDM Smith and IMPLAN multipliers

Table B-2
Commercial Service Visitor-Related Employment

Associated City	Airport Name	Indirect Employment	Induced Employment	Total Employment
Commercial Service Airports				
Daytona Beach	Daytona Beach International Airport	1,368	821	2,189
Fort Lauderdale	Ft. Lauderdale/Hollywood International Airport	71,898	43,145	115,043
Fort Myers	Southwest Florida International Airport	24,144	14,489	38,633
Gainesville	Gainesville Regional Airport	621	373	994
Jacksonville	Jacksonville International Airport	9,030	5,419	14,449
Key West	Key West International Airport	4,768	2,861	7,629
Melbourne	Melbourne International Airport	1,165	699	1,864
Miami	Miami International Airport[1]	114,308	73,357	187,665
Orlando	Orlando International Airport	145,944	87,580	233,524
Orlando	Orlando Sanford International Airport	7,394	4,437	11,831
Panama City	Northwest Florida-Beaches International Airport	3,050	1,830	4,880
Pensacola	Pensacola International Airport	2,597	1,558	4,155
Punta Gorda	Punta Gorda Airport	581	349	930
Sarasota	Sarasota/Bradenton International Airport	4,236	2,542	6,778
St. Petersburg/Clearwater	St. Pete-Clearwater International Airport	2,648	1,589	4,237
Tallahassee	Tallahassee Regional Airport	918	551	1,469
Tampa	Tampa International Airport	42,476	25,489	67,965
Valparaiso	Northwest Florida Regional Airport/Eglin AFB	2,947	1,768	4,715
West Palm Beach	Palm Beach International Airport	16,498	9,900	26,398
Commercial Service Airports Total		**456,591**	**278,757**	**735,348**

[1] Impacts are based on *The Economic Impacts of Miami International Airport and the General Aviation Airports within the Miami-Dade County Airport System 2012*, prepared by Martin Associates, April 9, 2013.
Source: CDM Smith and IMPLAN multipliers

Table B-3
Commercial Service Visitor-Related Payroll

Associated City	Airport Name	Indirect Payroll	Induced Payroll	Total Payroll
Commercial Service Airports				
Daytona Beach	Daytona Beach International Airport	$29,959,000	$24,875,000	$54,834,000
Fort Lauderdale	Ft. Lauderdale/Hollywood International Airport	$1,574,566,000	$1,307,381,000	$2,881,947,000
Fort Myers	Southwest Florida International Airport	$528,754,000	$439,031,000	$967,785,000
Gainesville	Gainesville Regional Airport	$13,600,000	$11,292,000	$24,892,000
Jacksonville	Jacksonville International Airport	$197,757,000	$164,200,000	$361,957,000
Key West	Key West International Airport	$104,419,000	$86,700,000	$191,119,000
Melbourne	Melbourne International Airport	$25,514,000	$21,185,000	$46,699,000
Miami	Miami International Airport[1]	$2,831,600,000	$3,388,000,000	$6,219,600,000
Orlando	Orlando International Airport	$3,196,174,000	$2,653,821,000	$5,849,995,000
Orlando	Orlando Sanford International Airport	$161,929,000	$134,452,000	$296,381,000
Panama City	Northwest Florida-Beaches International Airport	$66,795,000	$55,461,000	$122,256,000
Pensacola	Pensacola International Airport	$56,874,000	$47,223,000	$104,097,000
Punta Gorda	Punta Gorda Airport	$12,724,000	$10,565,000	$23,289,000
Sarasota	Sarasota/Bradenton International Airport	$92,768,000	$77,026,000	$169,794,000
St. Petersburg/Clearwater	St. Pete-Clearwater International Airport	$57,991,000	$48,151,000	$106,142,000
Tallahassee	Tallahassee Regional Airport	$20,104,000	$16,693,000	$36,797,000
Tampa	Tampa International Airport	$930,224,000	$772,376,000	$1,702,600,000
Valparaiso	Northwest Florida Regional Airport/Eglin AFB	$64,539,000	$53,588,000	$118,127,000
West Palm Beach	Palm Beach International Airport	$361,306,000	$299,997,000	$661,303,000
Commercial Service Airports Total		**$10,327,597,000**	**$9,612,017,000**	**$19,939,614,000**

[1] Impacts are based on *The Economic Impacts of Miami International Airport and the General Aviation Airports within the Miami-Dade County Airport System 2012*, prepared by Martin Associates, April 9, 2013.
Source: CDM Smith and IMPLAN multipliers

Table B-4
Airports within General Aviation Visitor Tiers[1]

Associated City	Airport Name
Tier One	
Boca Raton	Boca Raton Airport
Daytona Beach	Daytona Beach International Airport
Fort Lauderdale	Ft. Lauderdale Executive Airport
Fort Lauderdale	Ft. Lauderdale/Hollywood International Airport
Fort Myers	Page Field
Fort Myers	Southwest Florida International Airport
Gainesville	Gainesville Regional Airport
Jacksonville	Jacksonville International Airport
Key West	Key West International Airport
Marco Island	Marco Island Airport
Miami	Miami International Airport
Naples	Naples Municipal Airport
Orlando	Executive Airport
Orlando	Orlando International Airport
Orlando	Orlando Sanford International Airport
Panama City	Northwest Florida-Beaches International Airport
Sarasota	Sarasota/Bradenton International Airport
Tallahassee	Tallahassee Regional Airport
Tampa	Tampa International Airport
West Palm Beach	North Palm Beach County General Aviation Airport
West Palm Beach	Palm Beach International Airport
Tier Two	
Destin	Destin - Ft. Walton Beach Airport
Fernandina Beach	Fernandina Beach Municipal Airport
Fort Pierce	St. Lucie County International Airport
Hollywood	North Perry Airport
Jacksonville	Jacksonville Executive At Craig Airport
Marathon	The Florida Keys Marathon Airport
Melbourne	Melbourne International Airport
New Smyrna Beach	New Smyrna Beach Municipal Airport

Table B-4
Airports within General Aviation Visitor Tiers, cont.

Associated City	Airport Name
Tier Two	
Ocala	Ocala International-Jim Taylor Field
Orlando	Kissimmee Gateway Airport
Palm Coast	Flagler County Airport
Pompano Beach	Pompano Beach Airpark
Punta Gorda	Punta Gorda Airport
St. Augustine	Northeast Florida Regional Airport
Tampa	Peter O. Knight Airport
Tampa	Tampa Executive Airport
Titusville	Space Coast Regional Airport
Venice	Venice Municipal Airport
Vero Beach	Vero Beach Municipal Airport
Tier Three	
Apalachicola	Apalachicola Regional - Cleve Randolph Field
Apalachicola	St. George Island Airport
Avon Park	Avon Park Executive Airport
Bartow	Bartow Municipal Airport
Clearwater	Clearwater Air Park
Crystal River	Crystal River Airport
DeLand	DeLand Municipal - Sidney H. Taylor Field
Jacksonville	Cecil Airport
Jacksonville	Herlong Recreational Airport
Lake Wales	Chalet Suzanne Air Strip
Leesburg	Leesburg International Airport
Merritt Island	Merritt Island Airport
Navarre	Ft. Walton Beach Airport
Ormond Beach	Ormond Beach Municipal Airport
Pensacola	Pensacola International Airport
Plant City	Plant City Airport
Sebastian	Sebastian Municipal Airport
St. Petersburg	Albert Whitted Airport

Table B-4
Airports within General Aviation Visitor Tiers, cont.

Associated City	Airport Name
Tier Three	
St. Petersburg/Clearwater	St. Pete-Clearwater International Airport
Stuart	Witham Field
Tampa	Tampa North Aero Park
Valkaria	Valkaria Airport
Zephyrhills	Zephyrhills Municipal Airport
Tier Four	
Apopka	Orlando Apopka Airport
Brooksville	Brooksville - Tampa Bay Regional Airport
Brooksville	Pilot Country Airport
Carrabelle	Carrabelle - Thompson Airport
Cedar Key	George T. Lewis Airport
Crestview	Bob Sikes Airport
DeFuniak Springs	Defuniak Springs Airport
Dunnellon	Marion County Airport
Everglades	Everglades Airpark
Inverness	Inverness Airport
Lake City	Lake City Gateway Airport
Lake Wales	Lake Wales Municipal Airport
Lakeland	Lakeland Linder Regional Airport
Milton	Peter Prince Field
Okeechobee	Okeechobee County Airport
Palatka	Palatka Municipal-Lt. Kay Larkin Field
Pensacola	Coastal Airport
Pensacola	Ferguson Airport
Perry	Perry-Foley Airport
Port St. Joe	Costin Airport
Quincy	Quincy Municipal Airport
Sebring	Sebring Regional Airport
Tavares	Tavares Seaplane Base
Titusville	Arthur Dunn Air Park

Table B-4
Airports within General Aviation Visitor Tiers, cont.

Associated City	Airport Name
Tier Four	
Umatilla	Umatilla Municipal Airport
Wauchula	Wauchula Municipal Airport
West Palm Beach	Palm Beach County Park Airport
Williston	Williston Municipal Airport
Winter Haven	Winter Haven's Gilbert Airport
Tier Five	
Arcadia	Arcadia Municipal Airport
Archer	Flying Ten Airport
Belle Glade	Belle Glade State Municipal Airport
Blountstown	Calhoun County Airport
Bonifay	Tri-County Airport
Clewiston	Airglades Airport
Cross City	Cross City Airport
DeLand	Bob Lee Flight Strip
Englewood	Buchan Airport
High Springs	Oak Tree Landing Airport
Hilliard	Hilliard Airpark
Immokalee	Immokalee Regional Airport
Indiantown	Indiantown Airport
Keystone Heights	Keystone Airpark
La Belle	La Belle Municipal Airport
Live Oak	Suwannee County Airport
Marianna	Marianna Municipal Airport
Pahokee	Palm Beach County Glades Airport
Panacea	Wakulla County Airport
Pierson	Pierson Municipal Airport
Punta Gorda	Shell Creek Airpark
Vero Beach	New Hibiscus Airpark
Zellwood	Bob White Field

Table B-4
Airports within General Aviation Visitor Tiers, cont.

Associated City	Airport Name
Tier Six	
Fort Lauderdale	Downtown Fort Lauderdale Heliport
Miami	Miami Seaplane Base
Valparaiso	Northwest Florida Regional Airport/Eglin AFB

[1] Kendall-Tamiami Executive Airport, Opa-Locka Executive Airport, Homestead General Aviation Airport, and Dade-Collier Training & Transition Airport were not assigned to tiers. Instead, general aviation visitor impacts for these airports were based on *The Economic Impacts of Miami International Airport and the General Aviation Airports within the Miami-Dade County Airport System 2012*, prepared by Martin Associates, April 9, 2013.
Source: CDM Smith

Table B-5
General Aviation Operations for 2013

Associated City	Airport Name	Itinerant General Aviation Operations	Estimated True Transient Arrivals
Commercial Service Airports			
Daytona Beach	Daytona Beach International Airport	204,080	61,224
Fort Lauderdale	Ft. Lauderdale/Hollywood International Airport	64,069	19,221
Fort Myers	Southwest Florida International Airport	17,670	5,301
Gainesville	Gainesville Regional Airport	45,708	13,712
Jacksonville	Jacksonville International Airport	24,376	7,313
Key West	Key West International Airport	36,072	10,822
Melbourne	Melbourne International Airport	76,519	15,304
Miami	Miami International Airport	80,708	24,212
Orlando	Orlando International Airport	16,740	5,022
Orlando	Orlando Sanford International Airport	101,541	30,462
Panama City	Northwest Florida-Beaches International Airport	25,171	7,551
Pensacola	Pensacola International Airport	38,322	7,664
Punta Gorda	Punta Gorda Airport	32,342	6,468

Table B-5
General Aviation Operations for 2013, cont.

Associated City	Airport Name	Itinerant General Aviation Operations	Estimated True Transient Arrivals
Commercial Service Airports			
Sarasota	Sarasota/Bradenton International Airport	58,235	17,471
St. Petersburg/Clearwater	St. Pete-Clearwater International Airport	53,630	10,726
Tallahassee	Tallahassee Regional Airport	45,157	13,547
Tampa	Tampa International Airport	42,524	12,757
Valparaiso	Northwest Florida Regional Airport/Eglin AFB	44,805	0
West Palm Beach	Palm Beach International Airport	84,823	25,447
Commercial Service Airports Total		**1,092,492**	**294,225**
General Aviation Airports			
Apalachicola	Apalachicola Regional - Cleve Randolph Field	9,375	1,875
Apalachicola	St. George Island Airport	500	250
Apopka	Orlando Apopka Airport	5,400	810
Arcadia	Arcadia Municipal Airport	6,870	687
Archer	Flying Ten Airport	10,000	1,000
Avon Park	Avon Park Executive Airport	17,300	3,460
Bartow	Bartow Municipal Airport	14,386	2,877
Belle Glade	Belle Glade State Municipal Airport	600	60
Blountstown	Calhoun County Airport	510	51
Boca Raton	Boca Raton Airport	42,688	12,806
Bonifay	Tri-County Airport	27,176	2,718
Brooksville	Brooksville - Tampa Bay Regional Airport	20,426	3,064
Brooksville	Pilot Country Airport	3,076	461
Carrabelle	Carrabelle - Thompson Airport	524	79
Cedar Key	George T. Lewis Airport	3,000	450
Clearwater	Clearwater Air Park	5,095	1,019
Clewiston	Airglades Airport	4,627	463
Crestview	Bob Sikes Airport	33,200	4,980
Cross City	Cross City Airport	14,400	1,440

Table B-5
General Aviation Operations for 2013, cont.

Associated City	Airport Name	Itinerant General Aviation Operations	Estimated True Transient Arrivals
General Aviation Airports			
Crystal River	Crystal River Airport	4,952	990
DeFuniak Springs	Defuniak Springs Airport	6,200	930
DeLand	Bob Lee Flight Strip	1,000	100
DeLand	DeLand Municipal - Sidney H. Taylor Field	82,222	16,444
Destin	Destin - Ft. Walton Beach Airport	47,600	9,520
Dunnellon	Marion County Airport	3,000	450
Englewood	Buchan Airport	811	81
Eustis	Mid Florida Air Service Airport	11,024	1,654
Everglades	Everglades Airpark	4,200	630
Fernandina Beach	Fernandina Beach Municipal Airport	37,000	7,400
Fort Lauderdale	Downtown Fort Lauderdale Heliport	0	0
Fort Lauderdale	Ft. Lauderdale Executive Airport	127,924	38,377
Fort Myers	Page Field	47,822	14,347
Fort Pierce	St. Lucie County International Airport	68,024	13,605
High Springs	Oak Tree Landing Airport	100	10
Hilliard	Hilliard Airpark	1,880	188
Hollywood	North Perry Airport	47,511	9,502
Homestead	Homestead General Aviation Airport	50,084	1,329
Immokalee	Immokalee Regional Airport	7,000	700
Indiantown	Indiantown Airport	1,000	100
Inverness	Inverness Airport	7,500	1,125
Jacksonville	Cecil Airport	14,908	2,982
Jacksonville	Herlong Recreational Airport	37,700	7,540
Jacksonville	Jacksonville Executive At Craig Airport	64,724	12,945
Keystone Heights	Keystone Airpark	17,400	1,740
La Belle	La Belle Municipal Airport	7,120	712
Lake City	Lake City Gateway Airport	17,600	2,640
Lake Wales	Chalet Suzanne Air Strip	2,072	414

Table B-5
General Aviation Operations for 2013, cont.

Associated City	Airport Name	Itinerant General Aviation Operations	Estimated True Transient Arrivals
General Aviation Airports			
Lake Wales	Lake Wales Municipal Airport	6,014	902
Lakeland	Lakeland Linder Regional Airport	26,739	4,011
Lakeland	South Lakeland Airport	2,000	300
Leesburg	Leesburg International Airport	29,123	5,825
Live Oak	Suwannee County Airport	6,700	670
Marathon	The Florida Keys Marathon Airport	31,722	6,344
Marco Island	Marco Island Airport	15,000	4,500
Marianna	Marianna Municipal Airport	17,200	1,720
Merritt Island	Merritt Island Airport	49,500	9,900
Miami	Dade-Collier Training and Transition Airport	14,468	0
Miami	Kendall-Tamiami Executive Airport	117,825	3,068
Miami	Miami Seaplane Base	1,950	0
Miami	Opa-Locka Executive Airport	62,877	12,341
Milton	Peter Prince Field	7,550	1,133
Naples	Naples Municipal Airport	71,383	21,415
Navarre	Ft. Walton Beach Airport	750	150
New Smyrna Beach	Massey Ranch Airpark	4,000	800
New Smyrna Beach	New Smyrna Beach Municipal Airport	48,653	9,731
Ocala	Ocala International-Jim Taylor Field	39,724	7,945
Okeechobee	Okeechobee County Airport	45,000	6,750
Orlando	Executive Airport	60,259	18,078
Orlando	Kissimmee Gateway Airport	71,052	14,210
Ormond Beach	Ormond Beach Municipal Airport	66,615	13,323
Pahokee	Palm Beach County Glades Airport	29,450	2,945
Palatka	Palatka Municipal-Lt. Kay Larkin Field	30,410	4,562
Palm Coast	Flagler County Airport	42,944	8,589
Palmetto	Airport Manatee	2,100	315
Panacea	Wakulla County Airport	1,710	171

Table B-5
General Aviation Operations for 2013, cont.

Associated City	Airport Name	Itinerant General Aviation Operations	Estimated True Transient Arrivals
General Aviation Airports			
Pensacola	Coastal Airport	520	78
Pensacola	Ferguson Airport	17,500	2,625
Perry	Perry-Foley Airport	7,400	1,110
Pierson	Pierson Municipal Airport	10,000	1,000
Plant City	Plant City Airport	11,225	2,245
Pompano Beach	Pompano Beach Airpark	42,404	8,481
Port St. Joe	Costin Airport	7,250	1,088
Punta Gorda	Shell Creek Airpark	1,095	110
Quincy	Quincy Municipal Airport	2,184	328
River Ranch	River Ranch Resort Airport	3,000	300
Sebastian	Sebastian Municipal Airport	25,000	5,000
Sebring	Sebring Regional Airport	58,950	8,843
St. Augustine	Northeast Florida Regional Airport	63,574	12,715
St. Petersburg	Albert Whitted Airport	44,477	8,895
Stuart	Witham Field	42,640	8,528
Tampa	Peter O. Knight Airport	30,000	6,000
Tampa	Tampa Executive Airport	44,550	8,910
Tampa	Tampa North Aero Park	1,000	200
Tavares	Tavares Seaplane Base	796	119
Titusville	Arthur Dunn Air Park	10,450	1,568
Titusville	Space Coast Regional Airport	53,201	10,640
Umatilla	Umatilla Municipal Airport	2,000	300
Valkaria	Valkaria Airport	9,110	1,822
Venice	Venice Municipal Airport	26,108	5,222
Vero Beach	New Hibiscus Airpark	2,000	200
Vero Beach	Vero Beach Municipal Airport	71,908	14,382
Wauchula	Wauchula Municipal Airport	4,840	726
West Palm Beach	North Palm Beach County General Aviation Airport	19,250	5,775

Table B-5
General Aviation Operations for 2013, cont.

Associated City	Airport Name	Itinerant General Aviation Operations	Estimated True Transient Arrivals
General Aviation Airports			
West Palm Beach	Palm Beach County Park Airport	22,950	3,443
Williston	Williston Municipal Airport	11,300	1,695
Winter Haven	Jack Browns Seaplane Base	500	75
Winter Haven	Winter Haven's Gilbert Airport	25,000	3,750
Zellwood	Bob White Field	8,000	800
Zephyrhills	Zephyrhills Municipal Airport	14,750	2,950
General Aviation Airports Total		**2,535,181**	**474,621**
All Airports Total		**3,627,673**	**768,846**

Source: CDM Smith, 2012 FAA Terminal Area Forecast, Air Traffic Activity Data System (ATADS), and FAA 5010 Forms

Table B-6
General Aviation Visitor-Related Output

Associated City	Airport Name	Indirect Output	Induced Output	Total Output
Commercial Service Airports				
Daytona Beach	Daytona Beach International Airport	$149,387,000	$114,596,000	$263,983,000
Fort Lauderdale	Ft. Lauderdale/Hollywood International Airport	$46,899,000	$35,977,000	$82,876,000
Fort Myers	Southwest Florida International Airport	$12,934,000	$9,922,000	$22,856,000
Gainesville	Gainesville Regional Airport	$33,459,000	$25,667,000	$59,126,000
Jacksonville	Jacksonville International Airport	$17,843,000	$13,687,000	$31,530,000
Key West	Key West International Airport	$26,404,000	$20,255,000	$46,659,000
Melbourne	Melbourne International Airport	$23,874,000	$18,314,000	$42,188,000
Miami	Miami International Airport	$59,079,000	$45,320,000	$104,399,000
Orlando	Orlando International Airport	$12,254,000	$9,400,000	$21,654,000
Orlando	Orlando Sanford International Airport	$74,328,000	$57,017,000	$131,345,000
Panama City	Northwest Florida-Beaches International Airport	$18,425,000	$14,134,000	$32,559,000
Pensacola	Pensacola International Airport	$6,898,000	$5,292,000	$12,190,000

Table B-6
General Aviation Visitor-Related Output, cont.

Associated City	Airport Name	Indirect Output	Induced Output	Total Output
Commercial Service Airports				
Punta Gorda	Punta Gorda Airport	$10,091,000	$7,741,000	$17,832,000
Sarasota	Sarasota/Bradenton International Airport	$42,628,000	$32,700,000	$75,328,000
St. Petersburg/Clearwater	St. Pete-Clearwater International Airport	$9,654,000	$7,406,000	$17,060,000
Tallahassee	Tallahassee Regional Airport	$33,055,000	$25,357,000	$58,412,000
Tampa	Tampa International Airport	$31,128,000	$23,878,000	$55,006,000
Valparaiso	Northwest Florida Regional Airport/Eglin AFB	$0	$0	$0
West Palm Beach	Palm Beach International Airport	$62,091,000	$47,630,000	$109,721,000
Commercial Service Airports Total		**$670,431,000**	**$514,293,000**	**$1,184,724,000**
General Aviation Airports				
Apalachicola	Apalachicola Regional - Cleve Randolph Field	$1,688,000	$1,295,000	$2,983,000
Apalachicola	St. George Island Airport	$225,000	$173,000	$398,000
Apopka	Orlando Apopka Airport	$301,000	$231,000	$532,000
Arcadia	Arcadia Municipal Airport	$121,000	$93,000	$214,000
Archer	Flying Ten Airport	$176,000	$135,000	$311,000
Avon Park	Avon Park Executive Airport	$3,114,000	$2,389,000	$5,503,000
Bartow	Bartow Municipal Airport	$2,590,000	$1,987,000	$4,577,000
Belle Glade	Belle Glade State Municipal Airport	$11,000	$8,000	$19,000
Blountstown	Calhoun County Airport	$9,000	$7,000	$16,000
Boca Raton	Boca Raton Airport	$31,248,000	$23,971,000	$55,219,000
Bonifay	Tri-County Airport	$478,000	$367,000	$845,000
Brooksville	Brooksville - Tampa Bay Regional Airport	$1,140,000	$875,000	$2,015,000
Brooksville	Pilot Country Airport	$172,000	$132,000	$304,000
Carrabelle	Carrabelle - Thompson Airport	$29,000	$22,000	$51,000
Cedar Key	George T. Lewis Airport	$167,000	$128,000	$295,000
Clearwater	Clearwater Air Park	$917,000	$703,000	$1,620,000
Clewiston	Airglades Airport	$81,000	$62,000	$143,000
Crestview	Bob Sikes Airport	$1,853,000	$1,421,000	$3,274,000
Cross City	Cross City Airport	$253,000	$194,000	$447,000
Crystal River	Crystal River Airport	$891,000	$683,000	$1,574,000
DeFuniak Springs	Defuniak Springs Airport	$346,000	$265,000	$611,000

Table B-6
General Aviation Visitor-Related Output, cont.

Associated City	Airport Name	Indirect Output	Induced Output	Total Output
General Aviation Airports				
DeLand	Bob Lee Flight Strip	$18,000	$14,000	$32,000
DeLand	DeLand Municipal - Sidney H. Taylor Field	$14,800,000	$11,353,000	$26,153,000
Destin	Destin - Ft. Walton Beach Airport	$15,183,000	$11,647,000	$26,830,000
Dunnellon	Marion County Airport	$167,000	$128,000	$295,000
Englewood	Buchan Airport	$14,000	$11,000	$25,000
Everglades	Everglades Airpark	$234,000	$180,000	$414,000
Fernandina Beach	Fernandina Beach Municipal Airport	$11,544,000	$8,855,000	$20,399,000
Fort Lauderdale	Downtown Fort Lauderdale Heliport	$0	$0	$0
Fort Lauderdale	Ft. Lauderdale Executive Airport	$93,640,000	$71,832,000	$165,472,000
Fort Myers	Page Field	$35,005,000	$26,853,000	$61,858,000
Fort Pierce	St. Lucie County International Airport	$21,223,000	$16,280,000	$37,503,000
High Springs	Oak Tree Landing Airport	$2,000	$2,000	$4,000
Hilliard	Hilliard Airpark	$33,000	$25,000	$58,000
Hollywood	North Perry Airport	$14,824,000	$11,372,000	$26,196,000
Homestead	Homestead General Aviation Airport[1]	$1,800,000	$0	$1,800,000
Immokalee	Immokalee Regional Airport	$123,000	$94,000	$217,000
Indiantown	Indiantown Airport	$18,000	$14,000	$32,000
Inverness	Inverness Airport	$419,000	$321,000	$740,000
Jacksonville	Cecil Airport	$2,684,000	$2,059,000	$4,743,000
Jacksonville	Herlong Recreational Airport	$6,786,000	$5,206,000	$11,992,000
Jacksonville	Jacksonville Executive At Craig Airport	$20,194,000	$15,491,000	$35,685,000
Keystone Heights	Keystone Airpark	$306,000	$235,000	$541,000
La Belle	La Belle Municipal Airport	$125,000	$96,000	$221,000
Lake City	Lake City Gateway Airport	$982,000	$753,000	$1,735,000
Lake Wales	Chalet Suzanne Air Strip	$373,000	$286,000	$659,000
Lake Wales	Lake Wales Municipal Airport	$336,000	$258,000	$594,000
Lakeland	Lakeland Linder Regional Airport	$33,492,000	$25,692,000	$59,184,000
Leesburg	Leesburg International Airport	$5,242,000	$4,021,000	$9,263,000
Live Oak	Suwannee County Airport	$118,000	$91,000	$209,000
Marathon	The Florida Keys Marathon Airport	$9,897,000	$7,592,000	$17,489,000
Marco Island	Marco Island Airport	$10,980,000	$8,423,000	$19,403,000

Table B-6
General Aviation Visitor-Related Output, cont.

Associated City	Airport Name	Indirect Output	Induced Output	Total Output
General Aviation Airports				
Marianna	Marianna Municipal Airport	$303,000	$232,000	$535,000
Merritt Island	Merritt Island Airport	$8,910,000	$6,835,000	$15,745,000
Miami	Dade-Collier Training and Transition Airport[1]	$0	$0	$0
Miami	Kendall-Tamiami Executive Airport[1]	$5,200,000	$0	$5,200,000
Miami	Miami Seaplane Base	$0	$0	$0
Miami	Opa-Locka Executive Airport[1]	$21,300,000	$0	$21,300,000
Milton	Peter Prince Field	$421,000	$323,000	$744,000
Naples	Naples Municipal Airport	$52,253,000	$40,084,000	$92,337,000
Navarre	Ft. Walton Beach Airport	$135,000	$104,000	$239,000
New Smyrna Beach	New Smyrna Beach Municipal Airport	$15,180,000	$11,645,000	$26,825,000
Ocala	Ocala International-Jim Taylor Field	$12,394,000	$9,508,000	$21,902,000
Okeechobee	Okeechobee County Airport	$2,511,000	$1,926,000	$4,437,000
Orlando	Executive Airport	$44,110,000	$33,837,000	$77,947,000
Orlando	Kissimmee Gateway Airport	$22,168,000	$17,005,000	$39,173,000
Ormond Beach	Ormond Beach Municipal Airport	$11,991,000	$9,198,000	$21,189,000
Pahokee	Palm Beach County Glades Airport	$518,000	$397,000	$915,000
Palatka	Palatka Municipal-Lt. Kay Larkin Field	$1,697,000	$1,302,000	$2,999,000
Palm Coast	Flagler County Airport	$13,398,000	$10,278,000	$23,676,000
Panacea	Wakulla County Airport	$30,000	$23,000	$53,000
Pensacola	Coastal Airport	$29,000	$22,000	$51,000
Pensacola	Ferguson Airport	$977,000	$749,000	$1,726,000
Perry	Perry-Foley Airport	$413,000	$317,000	$730,000
Pierson	Pierson Municipal Airport	$176,000	$135,000	$311,000
Plant City	Plant City Airport	$2,021,000	$1,550,000	$3,571,000
Pompano Beach	Pompano Beach Airpark	$13,230,000	$10,149,000	$23,379,000
Port St. Joe	Costin Airport	$405,000	$311,000	$716,000
Punta Gorda	Shell Creek Airpark	$19,000	$15,000	$34,000
Quincy	Quincy Municipal Airport	$122,000	$94,000	$216,000
Sebastian	Sebastian Municipal Airport	$4,500,000	$3,452,000	$7,952,000
Sebring	Sebring Regional Airport	$3,289,000	$2,523,000	$5,812,000
St. Augustine	Northeast Florida Regional Airport	$19,835,000	$15,216,000	$35,051,000

Table B-6
General Aviation Visitor-Related Output, cont.

Associated City	Airport Name	Indirect Output	Induced Output	Total Output
General Aviation Airports				
St. Petersburg	Albert Whitted Airport	$8,006,000	$6,141,000	$14,147,000
Stuart	Witham Field	$7,675,000	$5,888,000	$13,563,000
Tampa	Peter O. Knight Airport	$9,360,000	$7,180,000	$16,540,000
Tampa	Tampa Executive Airport	$13,900,000	$10,663,000	$24,563,000
Tampa	Tampa North Aero Park	$180,000	$138,000	$318,000
Tavares	Tavares Seaplane Base	$44,000	$34,000	$78,000
Titusville	Arthur Dunn Air Park	$583,000	$447,000	$1,030,000
Titusville	Space Coast Regional Airport	$16,599,000	$12,733,000	$29,332,000
Umatilla	Umatilla Municipal Airport	$112,000	$86,000	$198,000
Valkaria	Valkaria Airport	$1,640,000	$1,258,000	$2,898,000
Venice	Venice Municipal Airport	$8,146,000	$6,249,000	$14,395,000
Vero Beach	New Hibiscus Airpark	$35,000	$27,000	$62,000
Vero Beach	Vero Beach Municipal Airport	$22,435,000	$17,210,000	$39,645,000
Wauchula	Wauchula Municipal Airport	$270,000	$207,000	$477,000
West Palm Beach	North Palm Beach County General Aviation Airport	$14,091,000	$10,809,000	$24,900,000
West Palm Beach	Palm Beach County Park Airport	$1,281,000	$983,000	$2,264,000
Williston	Williston Municipal Airport	$631,000	$484,000	$1,115,000
Winter Haven	Winter Haven's Gilbert Airport	$1,395,000	$1,070,000	$2,465,000
Zellwood	Bob White Field	$141,000	$108,000	$249,000
Zephyrhills	Zephyrhills Municipal Airport	$2,655,000	$2,037,000	$4,692,000
General Aviation Airports Total		**$713,086,000**	**$525,307,000**	**$1,238,393,000**
All Airports Total		**$1,383,517,000**	**$1,039,600,000**	**$2,423,117,000**

[1] Impacts are based on *The Economic Impacts of Miami International Airport and the General Aviation Airports within the Miami-Dade County Airport System 2012*, prepared by Martin Associates, April 9, 2013. The Martin Associates study did not identify induced output impacts.
Source: CDM Smith and IMPLAN multipliers

Table B-7
General Aviation Visitor-Related Employment

Associated City	Airport Name	Indirect Employment	Induced Employment	Total Employment
Commercial Service Airports				
Daytona Beach	Daytona Beach International Airport	2,105	1,156	3,261
Fort Lauderdale	Ft. Lauderdale/Hollywood International Airport	661	363	1,024
Fort Myers	Southwest Florida International Airport	182	100	282
Gainesville	Gainesville Regional Airport	472	258	730
Jacksonville	Jacksonville International Airport	251	139	390
Key West	Key West International Airport	372	204	576
Melbourne	Melbourne International Airport	336	185	521
Miami	Miami International Airport	833	457	1,290
Orlando	Orlando International Airport	173	95	268
Orlando	Orlando Sanford International Airport	1,048	575	1,623
Panama City	Northwest Florida-Beaches International Airport	260	142	402
Pensacola	Pensacola International Airport	97	54	151
Punta Gorda	Punta Gorda Airport	142	78	220
Sarasota	Sarasota/Bradenton International Airport	601	330	931
St. Petersburg/Clearwater	St. Pete-Clearwater International Airport	136	75	211
Tallahassee	Tallahassee Regional Airport	466	256	722
Tampa	Tampa International Airport	439	241	680
Valparaiso	Northwest Florida Regional Airport/Eglin AFB	0	0	0
West Palm Beach	Palm Beach International Airport	875	480	1,355
Commercial Service Airports Total		**9,449**	**5,188**	**14,637**
General Aviation Airports				
Apalachicola	Apalachicola Regional - Cleve Randolph Field	24	13	37
Apalachicola	St. George Island Airport	3	2	5
Apopka	Orlando Apopka Airport	4	3	7
Arcadia	Arcadia Municipal Airport	2	1	3
Archer	Flying Ten Airport	2	2	4
Avon Park	Avon Park Executive Airport	44	24	68
Bartow	Bartow Municipal Airport	37	20	57
Belle Glade	Belle Glade State Municipal Airport	0	0	0
Blountstown	Calhoun County Airport	0	0	0

Table B-7
General Aviation Visitor-Related Employment, cont.

Associated City	Airport Name	Indirect Employment	Induced Employment	Total Employment
General Aviation Airports				
Boca Raton	Boca Raton Airport	440	242	682
Bonifay	Tri-County Airport	7	3	10
Brooksville	Brooksville - Tampa Bay Regional Airport	16	9	25
Brooksville	Pilot Country Airport	2	2	4
Carrabelle	Carrabelle - Thompson Airport	Less than 1	1	1
Cedar Key	George T. Lewis Airport	2	2	4
Clearwater	Clearwater Air Park	13	7	20
Clewiston	Airglades Airport	1	1	2
Crestview	Bob Sikes Airport	26	14	40
Cross City	Cross City Airport	4	2	6
Crystal River	Crystal River Airport	13	6	19
DeFuniak Springs	Defuniak Springs Airport	5	3	8
DeLand	Bob Lee Flight Strip	0	0	0
DeLand	DeLand Municipal - Sidney H. Taylor Field	209	114	323
Destin	Destin - Ft. Walton Beach Airport	214	117	331
Dunnellon	Marion County Airport	2	2	4
Englewood	Buchan Airport	0	0	0
Everglades	Everglades Airpark	3	2	5
Fernandina Beach	Fernandina Beach Municipal Airport	163	89	252
Fort Lauderdale	Downtown Fort Lauderdale Heliport	0	0	0
Fort Lauderdale	Ft. Lauderdale Executive Airport	1,320	724	2,044
Fort Myers	Page Field	493	271	764
Fort Pierce	St. Lucie County International Airport	299	164	463
High Springs	Oak Tree Landing Airport	0	0	0
Hilliard	Hilliard Airpark	Less than 1	1	1
Hollywood	North Perry Airport	209	115	324
Homestead	Homestead General Aviation Airport[1]	11	7	18
Immokalee	Immokalee Regional Airport	2	1	3
Indiantown	Indiantown Airport	0	0	0
Inverness	Inverness Airport	6	3	9
Jacksonville	Cecil Airport	38	21	59

Table B-7
General Aviation Visitor-Related Employment, cont.

Associated City	Airport Name	Indirect Employment	Induced Employment	Total Employment
General Aviation Airports				
Jacksonville	Herlong Recreational Airport	96	52	148
Jacksonville	Jacksonville Executive At Craig Airport	285	156	441
Keystone Heights	Keystone Airpark	4	3	7
La Belle	La Belle Municipal Airport	2	1	3
Lake City	Lake City Gateway Airport	14	7	21
Lake Wales	Chalet Suzanne Air Strip	5	3	8
Lake Wales	Lake Wales Municipal Airport	5	2	7
Lakeland	Lakeland Linder Regional Airport	472	259	731
Leesburg	Leesburg International Airport	74	40	114
Live Oak	Suwannee County Airport	2	1	3
Marathon	The Florida Keys Marathon Airport	139	77	216
Marco Island	Marco Island Airport	155	85	240
Marianna	Marianna Municipal Airport	4	3	7
Merritt Island	Merritt Island Airport	126	69	195
Miami	Dade-Collier Training and Transition Airport[1]	0	0	0
Miami	Kendall-Tamiami Executive Airport[1]	32	21	53
Miami	Miami Seaplane Base	0	0	0
Miami	Opa-Locka Executive Airport[1]	132	85	217
Milton	Peter Prince Field	6	3	9
Naples	Naples Municipal Airport	736	405	1,141
Navarre	Ft. Walton Beach Airport	2	1	3
New Smyrna Beach	New Smyrna Beach Municipal Airport	214	117	331
Ocala	Ocala International-Jim Taylor Field	175	96	271
Okeechobee	Okeechobee County Airport	35	20	55
Orlando	Executive Airport	622	341	963
Orlando	Kissimmee Gateway Airport	312	172	484
Ormond Beach	Ormond Beach Municipal Airport	169	93	262
Pahokee	Palm Beach County Glades Airport	7	4	11
Palatka	Palatka Municipal-Lt. Kay Larkin Field	24	13	37
Palm Coast	Flagler County Airport	189	103	292
Panacea	Wakulla County Airport	Less than 1	1	1

Table B-7
General Aviation Visitor-Related Employment, cont.

Associated City	Airport Name	Indirect Employment	Induced Employment	Total Employment
General Aviation Airports				
Pensacola	Coastal Airport	Less than 1	1	1
Pensacola	Ferguson Airport	14	7	21
Perry	Perry-Foley Airport	6	3	9
Pierson	Pierson Municipal Airport	2	2	4
Plant City	Plant City Airport	28	16	44
Pompano Beach	Pompano Beach Airpark	186	103	289
Port St. Joe	Costin Airport	6	3	9
Punta Gorda	Shell Creek Airpark	0	0	0
Quincy	Quincy Municipal Airport	2	1	3
Sebastian	Sebastian Municipal Airport	63	35	98
Sebring	Sebring Regional Airport	46	26	72
St. Augustine	Northeast Florida Regional Airport	280	153	433
St. Petersburg	Albert Whitted Airport	113	62	175
Stuart	Witham Field	108	60	168
Tampa	Peter O. Knight Airport	132	72	204
Tampa	Tampa Executive Airport	196	107	303
Tampa	Tampa North Aero Park	3	1	4
Tavares	Tavares Seaplane Base	1	0	1
Titusville	Arthur Dunn Air Park	8	5	13
Titusville	Space Coast Regional Airport	234	128	362
Umatilla	Umatilla Municipal Airport	2	0	2
Valkaria	Valkaria Airport	23	13	36
Venice	Venice Municipal Airport	115	63	178
Vero Beach	New Hibiscus Airpark	Less than 1	1	1
Vero Beach	Vero Beach Municipal Airport	316	174	490
Wauchula	Wauchula Municipal Airport	4	2	6
West Palm Beach	North Palm Beach County General Aviation Airport	199	109	308
West Palm Beach	Palm Beach County Park Airport	18	10	28

Table B-7
General Aviation Visitor-Related Employment, cont.

Associated City	Airport Name	Indirect Employment	Induced Employment	Total Employment
General Aviation Airports				
Williston	Williston Municipal Airport	9	5	14
Winter Haven	Winter Haven's Gilbert Airport	20	10	30
Zellwood	Bob White Field	2	1	3
Zephyrhills	Zephyrhills Municipal Airport	37	21	58
General Aviation Airports Total		**9,825**	**5,415**	**15,240**
All Airports Total		**19,274**	**10,603**	**29,877**

[1] Impacts are based on *The Economic Impacts of Miami International Airport and the General Aviation Airports within the Miami-Dade County Airport System 2012*, prepared by Martin Associates, April 9, 2013.
Source: CDM Smith and IMPLAN multipliers

Table B-8
General Aviation Visitor-Related Payroll

Associated City	Airport Name	Indirect Payroll	Induced Payroll	Total Payroll
Commercial Service Airports				
Daytona Beach	Daytona Beach International Airport	$46,110,000	$35,883,000	$81,993,000
Fort Lauderdale	Ft. Lauderdale/Hollywood International Airport	$14,476,000	$11,265,000	$25,741,000
Fort Myers	Southwest Florida International Airport	$3,992,000	$3,107,000	$7,099,000
Gainesville	Gainesville Regional Airport	$10,328,000	$8,037,000	$18,365,000
Jacksonville	Jacksonville International Airport	$5,507,000	$4,286,000	$9,793,000
Key West	Key West International Airport	$8,150,000	$6,342,000	$14,492,000
Melbourne	Melbourne International Airport	$7,369,000	$5,735,000	$13,104,000
Miami	Miami International Airport	$18,235,000	$14,191,000	$32,426,000
Orlando	Orlando International Airport	$3,782,000	$2,943,000	$6,725,000
Orlando	Orlando Sanford International Airport	$22,942,000	$17,854,000	$40,796,000
Panama City	Northwest Florida-Beaches International Airport	$5,687,000	$4,426,000	$10,113,000
Pensacola	Pensacola International Airport	$2,129,000	$1,657,000	$3,786,000
Punta Gorda	Punta Gorda Airport	$3,115,000	$2,424,000	$5,539,000
Sarasota	Sarasota/Bradenton International Airport	$13,158,000	$10,240,000	$23,398,000

Table B-8
General Aviation Visitor-Related Payroll, cont.

Associated City	Airport Name	Indirect Payroll	Induced Payroll	Total Payroll
Commercial Service Airports				
St. Petersburg/Clearwater	St. Pete-Clearwater International Airport	$2,980,000	$2,319,000	$5,299,000
Tallahassee	Tallahassee Regional Airport	$10,203,000	$7,940,000	$18,143,000
Tampa	Tampa International Airport	$9,608,000	$7,477,000	$17,085,000
Valparaiso	Northwest Florida Regional Airport/Eglin AFB	$0	$0	$0
West Palm Beach	Palm Beach International Airport	$19,165,000	$14,914,000	$34,079,000
Commercial Service Airports Total		**$206,936,000**	**$161,040,000**	**$367,976,000**
General Aviation Airports				
Apalachicola	Apalachicola Regional - Cleve Randolph Field	$521,000	$405,000	$926,000
Apalachicola	St. George Island Airport	$69,000	$54,000	$123,000
Apopka	Orlando Apopka Airport	$93,000	$72,000	$165,000
Arcadia	Arcadia Municipal Airport	$37,000	$29,000	$66,000
Archer	Flying Ten Airport	$54,000	$42,000	$96,000
Avon Park	Avon Park Executive Airport	$961,000	$748,000	$1,709,000
Bartow	Bartow Municipal Airport	$799,000	$622,000	$1,421,000
Belle Glade	Belle Glade State Municipal Airport	$3,000	$2,000	$5,000
Blountstown	Calhoun County Airport	$3,000	$2,000	$5,000
Boca Raton	Boca Raton Airport	$9,645,000	$7,506,000	$17,151,000
Bonifay	Tri-County Airport	$148,000	$115,000	$263,000
Brooksville	Brooksville - Tampa Bay Regional Airport	$352,000	$274,000	$626,000
Brooksville	Pilot Country Airport	$53,000	$41,000	$94,000
Carrabelle	Carrabelle - Thompson Airport	$9,000	$7,000	$16,000
Cedar Key	George T. Lewis Airport	$52,000	$40,000	$92,000
Clearwater	Clearwater Air Park	$283,000	$220,000	$503,000
Clewiston	Airglades Airport	$25,000	$19,000	$44,000
Crestview	Bob Sikes Airport	$572,000	$445,000	$1,017,000
Cross City	Cross City Airport	$78,000	$61,000	$139,000
Crystal River	Crystal River Airport	$275,000	$214,000	$489,000
DeFuniak Springs	Defuniak Springs Airport	$107,000	$83,000	$190,000
DeLand	Bob Lee Flight Strip	$6,000	$5,000	$11,000
DeLand	DeLand Municipal - Sidney H. Taylor Field	$4,568,000	$3,555,000	$8,123,000
Destin	Destin - Ft. Walton Beach Airport	$4,686,000	$3,647,000	$8,333,000

Table B-8
General Aviation Visitor-Related Payroll, cont.

Associated City	Airport Name	Indirect Payroll	Induced Payroll	Total Payroll
General Aviation Airports				
Dunnellon	Marion County Airport	$52,000	$40,000	$92,000
Englewood	Buchan Airport	$4,000	$3,000	$7,000
Everglades	Everglades Airpark	$72,000	$56,000	$128,000
Fernandina Beach	Fernandina Beach Municipal Airport	$3,563,000	$2,773,000	$6,336,000
Fort Lauderdale	Downtown Fort Lauderdale Heliport	$0	$0	$0
Fort Lauderdale	Ft. Lauderdale Executive Airport	$28,903,000	$22,492,000	$51,395,000
Fort Myers	Page Field	$10,805,000	$8,408,000	$19,213,000
Fort Pierce	St. Lucie County International Airport	$6,551,000	$5,098,000	$11,649,000
High Springs	Oak Tree Landing Airport	$1,000	$1,000	$2,000
Hilliard	Hilliard Airpark	$10,000	$8,000	$18,000
Hollywood	North Perry Airport	$4,576,000	$3,561,000	$8,137,000
Homestead	Homestead General Aviation Airport[1]	$300,000	$300,000	$600,000
Immokalee	Immokalee Regional Airport	$38,000	$30,000	$68,000
Indiantown	Indiantown Airport	$6,000	$5,000	$11,000
Inverness	Inverness Airport	$129,000	$100,000	$229,000
Jacksonville	Cecil Airport	$828,000	$644,000	$1,472,000
Jacksonville	Herlong Recreational Airport	$2,095,000	$1,630,000	$3,725,000
Jacksonville	Jacksonville Executive At Craig Airport	$6,233,000	$4,851,000	$11,084,000
Keystone Heights	Keystone Airpark	$94,000	$73,000	$167,000
La Belle	La Belle Municipal Airport	$39,000	$30,000	$69,000
Lake City	Lake City Gateway Airport	$303,000	$236,000	$539,000
Lake Wales	Chalet Suzanne Air Strip	$115,000	$89,000	$204,000
Lake Wales	Lake Wales Municipal Airport	$104,000	$81,000	$185,000
Lakeland	Lakeland Linder Regional Airport	$10,338,000	$8,045,000	$18,383,000
Leesburg	Leesburg International Airport	$1,618,000	$1,259,000	$2,877,000
Live Oak	Suwannee County Airport	$36,000	$28,000	$64,000
Marathon	The Florida Keys Marathon Airport	$3,055,000	$2,377,000	$5,432,000
Marco Island	Marco Island Airport	$3,389,000	$2,637,000	$6,026,000
Marianna	Marianna Municipal Airport	$94,000	$73,000	$167,000
Merritt Island	Merritt Island Airport	$2,750,000	$2,140,000	$4,890,000
Miami	Dade-Collier Training and Transition Airport[1]	$0	$0	$0
Miami	Kendall-Tamiami Executive Airport[1]	$800,000	$900,000	$1,700,000

Table B-8
General Aviation Visitor-Related Payroll, cont.

Associated City	Airport Name	Indirect Payroll	Induced Payroll	Total Payroll
General Aviation Airports				
Miami	Miami Seaplane Base	$0	$0	$0
Miami	Opa-Locka Executive Airport[1]	$3,300,000	$3,900,000	$7,200,000
Milton	Peter Prince Field	$130,000	$101,000	$231,000
Naples	Naples Municipal Airport	$16,128,000	$12,551,000	$28,679,000
Navarre	Ft. Walton Beach Airport	$42,000	$33,000	$75,000
New Smyrna Beach	New Smyrna Beach Municipal Airport	$4,685,000	$3,646,000	$8,331,000
Ocala	Ocala International-Jim Taylor Field	$3,826,000	$2,977,000	$6,803,000
Okeechobee	Okeechobee County Airport	$775,000	$603,000	$1,378,000
Orlando	Executive Airport	$13,615,000	$10,595,000	$24,210,000
Orlando	Kissimmee Gateway Airport	$6,842,000	$5,324,000	$12,166,000
Ormond Beach	Ormond Beach Municipal Airport	$3,701,000	$2,880,000	$6,581,000
Pahokee	Palm Beach County Glades Airport	$160,000	$125,000	$285,000
Palatka	Palatka Municipal-Lt. Kay Larkin Field	$524,000	$408,000	$932,000
Palm Coast	Flagler County Airport	$4,135,000	$3,218,000	$7,353,000
Panacea	Wakulla County Airport	$9,000	$7,000	$16,000
Pensacola	Coastal Airport	$9,000	$7,000	$16,000
Pensacola	Ferguson Airport	$302,000	$235,000	$537,000
Perry	Perry-Foley Airport	$127,000	$99,000	$226,000
Pierson	Pierson Municipal Airport	$54,000	$42,000	$96,000
Plant City	Plant City Airport	$624,000	$486,000	$1,110,000
Pompano Beach	Pompano Beach Airpark	$4,084,000	$3,178,000	$7,262,000
Port St. Joe	Costin Airport	$125,000	$97,000	$222,000
Punta Gorda	Shell Creek Airpark	$6,000	$5,000	$11,000
Quincy	Quincy Municipal Airport	$38,000	$30,000	$68,000
Sebastian	Sebastian Municipal Airport	$1,389,000	$1,081,000	$2,470,000
Sebring	Sebring Regional Airport	$1,015,000	$790,000	$1,805,000
St. Augustine	Northeast Florida Regional Airport	$6,122,000	$4,764,000	$10,886,000
St. Petersburg	Albert Whitted Airport	$2,471,000	$1,923,000	$4,394,000
Stuart	Witham Field	$2,369,000	$1,844,000	$4,213,000
Tampa	Peter O. Knight Airport	$2,889,000	$2,248,000	$5,137,000
Tampa	Tampa Executive Airport	$4,290,000	$3,338,000	$7,628,000
Tampa	Tampa North Aero Park	$56,000	$44,000	$100,000

Table B-8
General Aviation Visitor-Related Payroll, cont.

Associated City	Airport Name	Indirect Payroll	Induced Payroll	Total Payroll
General Aviation Airports				
Tavares	Tavares Seaplane Base	$14,000	$11,000	$25,000
Titusville	Arthur Dunn Air Park	$180,000	$140,000	$320,000
Titusville	Space Coast Regional Airport	$5,123,000	$3,987,000	$9,110,000
Umatilla	Umatilla Municipal Airport	$35,000	$27,000	$62,000
Valkaria	Valkaria Airport	$506,000	$394,000	$900,000
Venice	Venice Municipal Airport	$2,514,000	$1,956,000	$4,470,000
Vero Beach	New Hibiscus Airpark	$11,000	$9,000	$20,000
Vero Beach	Vero Beach Municipal Airport	$6,925,000	$5,389,000	$12,314,000
Wauchula	Wauchula Municipal Airport	$83,000	$65,000	$148,000
West Palm Beach	North Palm Beach County General Aviation Airport	$4,349,000	$3,384,000	$7,733,000
West Palm Beach	Palm Beach County Park Airport	$395,000	$307,000	$702,000
Williston	Williston Municipal Airport	$195,000	$152,000	$347,000
Winter Haven	Winter Haven's Gilbert Airport	$431,000	$335,000	$766,000
Zellwood	Bob White Field	$44,000	$34,000	$78,000
Zephyrhills	Zephyrhills Municipal Airport	$819,000	$637,000	$1,456,000
General Aviation Airports Total		**$215,766,000**	**$169,582,000**	**$385,348,000**
All Airports Total		**$422,702,000**	**$330,622,000**	**$753,324,000**

[1] Impacts are based on *The Economic Impacts of Miami International Airport and the General Aviation Airports within the Miami-Dade County Airport System 2012*, prepared by Martin Associates, April 9, 2013.
Source: CDM Smith and IMPLAN multipliers

APPENDIX C
AIRPORT CONSTRUCTION ECONOMIC IMPACTS

APPENDIX C

Table C-1
Airport Construction-Related Output

Associated City	Airport Name	Direct Output	Induced Output	Total Output
Commercial Service Airports				
Daytona Beach	Daytona Beach International Airport	$44,003,000	$41,882,000	$85,885,000
Fort Lauderdale	Ft. Lauderdale/Hollywood International Airport	$169,770,000	$161,587,000	$331,357,000
Fort Myers	Southwest Florida International Airport	$41,158,000	$39,175,000	$80,333,000
Gainesville	Gainesville Regional Airport	$6,452,000	$6,141,000	$12,593,000
Jacksonville	Jacksonville International Airport	$37,649,000	$35,834,000	$73,483,000
Key West	Key West International Airport	$5,113,000	$4,867,000	$9,980,000
Melbourne	Melbourne International Airport	$36,697,000	$34,929,000	$71,626,000
Miami	Miami International Airport[1]	$211,100,000	$0	$211,100,000
Orlando	Orlando International Airport	$65,968,000	$62,788,000	$128,756,000
Orlando	Orlando Sanford International Airport	$118,195,000	$112,498,000	$230,693,000
Panama City	Northwest Florida-Beaches International Airport	$31,922,000	$30,383,000	$62,305,000
Pensacola	Pensacola International Airport	$17,125,000	$16,299,000	$33,424,000
Punta Gorda	Punta Gorda Airport	$4,143,000	$3,943,000	$8,086,000
Sarasota	Sarasota/Bradenton International Airport	$6,999,000	$6,662,000	$13,661,000
St. Petersburg/Clearwater	St. Pete-Clearwater International Airport	$13,604,000	$12,948,000	$26,552,000
Tallahassee	Tallahassee Regional Airport	$13,918,000	$13,247,000	$27,165,000
Tampa	Tampa International Airport	$90,218,000	$85,869,000	$176,087,000
Valparaiso	Northwest Florida Regional Airport/Eglin AFB	$6,441,000	$6,130,000	$12,571,000
West Palm Beach	Palm Beach International Airport	$48,029,000	$45,714,000	$93,743,000
Commercial Service Airports Total		**$968,504,000**	**$720,896,000**	**$1,689,400,000**
General Aviation Airports				
Apalachicola	Apalachicola Regional - Cleve Randolph Field	$612,000	$583,000	$1,195,000
Apalachicola	St. George Island Airport	$0	$0	$0
Apopka	Orlando Apopka Airport	$2,293,000	$2,183,000	$4,476,000
Arcadia	Arcadia Municipal Airport	$4,000	$4,000	$8,000
Archer	Flying Ten Airport	$0	$0	$0
Avon Park	Avon Park Executive Airport	$509,000	$485,000	$994,000

Table C-1
Airport Construction-Related Output, cont.

Associated City	Airport Name	Direct Output	Induced Output	Total Output
General Aviation Airports				
Bartow	Bartow Municipal Airport	$2,463,000	$2,345,000	$4,808,000
Belle Glade	Belle Glade State Municipal Airport	$199,000	$190,000	$389,000
Blountstown	Calhoun County Airport	$1,121,000	$1,066,000	$2,187,000
Boca Raton	Boca Raton Airport	$2,821,000	$2,685,000	$5,506,000
Bonifay	Tri-County Airport	$201,000	$191,000	$392,000
Brooksville	Brooksville - Tampa Bay Regional Airport	$3,330,000	$3,170,000	$6,500,000
Brooksville	Pilot Country Airport	$13,000	$12,000	$25,000
Carrabelle	Carrabelle - Thompson Airport	$7,000	$6,000	$13,000
Cedar Key	George T. Lewis Airport	$297,000	$284,000	$581,000
Clearwater	Clearwater Air Park	$823,000	$783,000	$1,606,000
Clewiston	Airglades Airport	$1,689,000	$1,607,000	$3,296,000
Crestview	Bob Sikes Airport	$10,032,000	$9,548,000	$19,580,000
Cross City	Cross City Airport	$466,000	$443,000	$909,000
Crystal River	Crystal River Airport	$539,000	$514,000	$1,053,000
DeFuniak Springs	Defuniak Springs Airport	$568,000	$540,000	$1,108,000
DeLand	Bob Lee Flight Strip	$0	$0	$0
DeLand	DeLand Municipal - Sidney H. Taylor Field	$7,268,000	$6,918,000	$14,186,000
Destin	Destin - Ft. Walton Beach Airport	$1,514,000	$1,442,000	$2,956,000
Dunnellon	Marion County Airport	$1,139,000	$1,084,000	$2,223,000
Englewood	Buchan Airport	$0	$0	$0
Everglades	Everglades Airpark	$9,000	$9,000	$18,000
Fernandina Beach	Fernandina Beach Municipal Airport	$1,446,000	$1,376,000	$2,822,000
Fort Lauderdale	Downtown Fort Lauderdale Heliport	$71,000	$68,000	$139,000
Fort Lauderdale	Ft. Lauderdale Executive Airport	$12,202,000	$11,613,000	$23,815,000
Fort Myers	Page Field	$4,886,000	$4,650,000	$9,536,000
Fort Pierce	St. Lucie County International Airport	$7,209,000	$6,861,000	$14,070,000
High Springs	Oak Tree Landing Airport	$0	$0	$0
Hilliard	Hilliard Airpark	$175,000	$167,000	$342,000
Hollywood	North Perry Airport	$3,578,000	$3,405,000	$6,983,000
Homestead	Homestead General Aviation Airport[1]	$0	$0	$0
Immokalee	Immokalee Regional Airport	$2,817,000	$2,682,000	$5,499,000
Indiantown	Indiantown Airport	$103,000	$98,000	$201,000

Table C-1
Airport Construction-Related Output, cont.

Associated City	Airport Name	Direct Output	Induced Output	Total Output
General Aviation Airports				
Inverness	Inverness Airport	$2,627,000	$2,501,000	$5,128,000
Jacksonville	Cecil Airport	$24,432,000	$23,254,000	$47,686,000
Jacksonville	Herlong Recreational Airport	$784,000	$746,000	$1,530,000
Jacksonville	Jacksonville Executive At Craig Airport	$2,366,000	$2,253,000	$4,619,000
Keystone Heights	Keystone Airpark	$811,000	$772,000	$1,583,000
La Belle	La Belle Municipal Airport	$375,000	$356,000	$731,000
Lake City	Lake City Gateway Airport	$6,673,000	$6,352,000	$13,025,000
Lake Wales	Chalet Suzanne Air Strip	$124,000	$119,000	$243,000
Lake Wales	Lake Wales Municipal Airport	$139,000	$131,000	$270,000
Lakeland	Lakeland Linder Regional Airport	$16,407,000	$15,617,000	$32,024,000
Leesburg	Leesburg International Airport	$4,240,000	$4,036,000	$8,276,000
Live Oak	Suwannee County Airport	$162,000	$155,000	$317,000
Marathon	The Florida Keys Marathon Airport	$1,734,000	$1,650,000	$3,384,000
Marco Island	Marco Island Airport	$1,856,000	$1,766,000	$3,622,000
Marianna	Marianna Municipal Airport	$1,074,000	$1,022,000	$2,096,000
Merritt Island	Merritt Island Airport	$1,790,000	$1,703,000	$3,493,000
Miami	Dade-Collier Training and Transition Airport[1]	$0	$0	$0
Miami	Kendall-Tamiami Executive Airport[1]	$0	$0	$0
Miami	Miami Seaplane Base	$0	$0	$0
Miami	Opa-Locka Executive Airport[1]	$0	$0	$0
Milton	Peter Prince Field	$326,000	$310,000	$636,000
Naples	Naples Municipal Airport	$15,463,000	$14,717,000	$30,180,000
Navarre	Ft. Walton Beach Airport	$7,000	$6,000	$13,000
New Smyrna Beach	New Smyrna Beach Municipal Airport	$2,412,000	$2,296,000	$4,708,000
Ocala	Ocala International-Jim Taylor Field	$3,897,000	$3,709,000	$7,606,000
Okeechobee	Okeechobee County Airport	$775,000	$737,000	$1,512,000
Orlando	Executive Airport	$4,032,000	$3,838,000	$7,870,000
Orlando	Kissimmee Gateway Airport	$5,280,000	$5,025,000	$10,305,000
Ormond Beach	Ormond Beach Municipal Airport	$2,542,000	$2,419,000	$4,961,000
Pahokee	Palm Beach County Glades Airport	$247,000	$235,000	$482,000
Palatka	Palatka Municipal-Lt. Kay Larkin Field	$1,420,000	$1,352,000	$2,772,000
Palm Coast	Flagler County Airport	$2,430,000	$2,313,000	$4,743,000

Table C-1
Airport Construction-Related Output, cont.

Associated City	Airport Name	Direct Output	Induced Output	Total Output
General Aviation Airports				
Panacea	Wakulla County Airport	$0	$0	$0
Pensacola	Coastal Airport	$24,000	$22,000	$46,000
Pensacola	Ferguson Airport	$68,000	$65,000	$133,000
Perry	Perry-Foley Airport	$725,000	$690,000	$1,415,000
Pierson	Pierson Municipal Airport	$0	$0	$0
Plant City	Plant City Airport	$1,171,000	$1,114,000	$2,285,000
Pompano Beach	Pompano Beach Airpark	$6,062,000	$5,769,000	$11,831,000
Port St. Joe	Costin Airport	$27,000	$26,000	$53,000
Punta Gorda	Shell Creek Airpark	$76,000	$72,000	$148,000
Quincy	Quincy Municipal Airport	$399,000	$380,000	$779,000
Sebastian	Sebastian Municipal Airport	$2,298,000	$2,187,000	$4,485,000
Sebring	Sebring Regional Airport	$2,257,000	$2,148,000	$4,405,000
St. Augustine	Northeast Florida Regional Airport	$10,137,000	$9,648,000	$19,785,000
St. Petersburg	Albert Whitted Airport	$2,243,000	$2,135,000	$4,378,000
Stuart	Witham Field	$5,186,000	$4,937,000	$10,123,000
Tampa	Peter O. Knight Airport	$1,504,000	$1,432,000	$2,936,000
Tampa	Tampa Executive Airport	$1,145,000	$1,089,000	$2,234,000
Tampa	Tampa North Aero Park	$58,000	$56,000	$114,000
Tavares	Tavares Seaplane Base	$1,062,000	$1,012,000	$2,074,000
Titusville	Arthur Dunn Air Park	$992,000	$944,000	$1,936,000
Titusville	Space Coast Regional Airport	$5,677,000	$5,403,000	$11,080,000
Umatilla	Umatilla Municipal Airport	$257,000	$244,000	$501,000
Valkaria	Valkaria Airport	$2,179,000	$2,075,000	$4,254,000
Venice	Venice Municipal Airport	$3,870,000	$3,684,000	$7,554,000
Vero Beach	New Hibiscus Airpark	$14,000	$13,000	$27,000
Vero Beach	Vero Beach Municipal Airport	$9,736,000	$9,266,000	$19,002,000
Wauchula	Wauchula Municipal Airport	$205,000	$196,000	$401,000
West Palm Beach	North Palm Beach County General Aviation Airport	$1,295,000	$1,233,000	$2,528,000
West Palm Beach	Palm Beach County Park Airport	$1,868,000	$1,777,000	$3,645,000

Table C-1
Airport Construction-Related Output, cont.

Associated City	Airport Name	Direct Output	Induced Output	Total Output
General Aviation Airports				
Williston	Williston Municipal Airport	$1,388,000	$1,322,000	$2,710,000
Winter Haven	Winter Haven's Gilbert Airport	$1,046,000	$996,000	$2,042,000
Zellwood	Bob White Field	$24,000	$24,000	$48,000
Zephyrhills	Zephyrhills Municipal Airport	$1,480,000	$1,408,000	$2,888,000
General Aviation Airports Total		**$239,302,000**	**$227,769,000**	**$467,071,000**
All Airports Total		**$1,207,806,000**	**$948,665,000**	**$2,156,471,000**

[1] Impacts are based on *The Economic Impacts of Miami International Airport and the General Aviation Airports within the Miami-Dade County Airport System 2012*, prepared by Martin Associates, April 9, 2013. The Martin Associates study did not identify construction impacts for the general aviation airports in the Miami-Dade Aviation Department's airport system and did not identify induced output impacts for Miami International Airport.
Source: CDM Smith and IMPLAN multipliers

Table C-2
Airport Construction-Related Employment

Associated City	Airport Name	Direct Employment	Induced Employment	Total Employment
Commercial Service Airports				
Daytona Beach	Daytona Beach International Airport	300	325	625
Fort Lauderdale	Ft. Lauderdale/Hollywood International Airport	1,156	1,254	2,410
Fort Myers	Southwest Florida International Airport	280	304	584
Gainesville	Gainesville Regional Airport	44	47	91
Jacksonville	Jacksonville International Airport	256	278	534
Key West	Key West International Airport	35	38	73
Melbourne	Melbourne International Airport	250	271	521
Miami	Miami International Airport[1]	953	2,284	3,237
Orlando	Orlando International Airport	449	487	936
Orlando	Orlando Sanford International Airport	805	873	1,678
Panama City	Northwest Florida-Beaches International Airport	217	235	452
Pensacola	Pensacola International Airport	117	127	244
Punta Gorda	Punta Gorda Airport	29	32	61
Sarasota	Sarasota/Bradenton International Airport	47	51	98
St. Petersburg/Clearwater	St. Pete-Clearwater International Airport	93	101	194

Table C-2
Airport Construction-Related Employment, cont.

Associated City	Airport Name	Direct Employment	Induced Employment	Total Employment
Commercial Service Airports				
Tallahassee	Tallahassee Regional Airport	95	103	198
Tampa	Tampa International Airport	614	666	1,280
Valparaiso	Northwest Florida Regional Airport/Eglin AFB	44	48	92
West Palm Beach	Palm Beach International Airport	327	355	682
Commercial Service Airports Total		**6,111**	**7,879**	**13,990**
General Aviation Airports				
Apalachicola	Apalachicola Regional - Cleve Randolph Field	4	5	9
Apalachicola	St. George Island Airport	0	0	0
Apopka	Orlando Apopka Airport	16	17	33
Arcadia	Arcadia Municipal Airport	0	0	0
Archer	Flying Ten Airport	0	0	0
Avon Park	Avon Park Executive Airport	3	4	7
Bartow	Bartow Municipal Airport	17	18	35
Belle Glade	Belle Glade State Municipal Airport	1	2	3
Blountstown	Calhoun County Airport	8	8	16
Boca Raton	Boca Raton Airport	19	21	40
Bonifay	Tri-County Airport	1	2	3
Brooksville	Brooksville - Tampa Bay Regional Airport	23	24	47
Brooksville	Pilot Country Airport	0	0	0
Carrabelle	Carrabelle - Thompson Airport	0	0	0
Cedar Key	George T. Lewis Airport	2	2	4
Clearwater	Clearwater Air Park	6	6	12
Clewiston	Airglades Airport	12	12	24
Crestview	Bob Sikes Airport	68	74	142
Cross City	Cross City Airport	3	4	7
Crystal River	Crystal River Airport	4	4	8
DeFuniak Springs	Defuniak Springs Airport	4	4	8
DeLand	Bob Lee Flight Strip	0	0	0
DeLand	DeLand Municipal - Sidney H. Taylor Field	49	54	103
Destin	Destin - Ft. Walton Beach Airport	10	12	22
Dunnellon	Marion County Airport	8	8	16

Table C-2
Airport Construction-Related Employment, cont.

Associated City	Airport Name	Direct Employment	Induced Employment	Total Employment
General Aviation Airports				
Englewood	Buchan Airport	0	0	0
Everglades	Everglades Airpark	0	0	0
Fernandina Beach	Fernandina Beach Municipal Airport	10	11	21
Fort Lauderdale	Downtown Fort Lauderdale Heliport	Less than 1	1	1
Fort Lauderdale	Ft. Lauderdale Executive Airport	83	90	173
Fort Myers	Page Field	33	36	69
Fort Pierce	St. Lucie County International Airport	49	53	102
High Springs	Oak Tree Landing Airport	0	0	0
Hilliard	Hilliard Airpark	1	1	2
Hollywood	North Perry Airport	24	27	51
Homestead	Homestead General Aviation Airport[1]	0	0	0
Immokalee	Immokalee Regional Airport	19	21	40
Indiantown	Indiantown Airport	1	0	1
Inverness	Inverness Airport	18	19	37
Jacksonville	Cecil Airport	166	181	347
Jacksonville	Herlong Recreational Airport	5	6	11
Jacksonville	Jacksonville Executive At Craig Airport	16	18	34
Keystone Heights	Keystone Airpark	6	6	12
La Belle	La Belle Municipal Airport	3	2	5
Lake City	Lake City Gateway Airport	45	50	95
Lake Wales	Chalet Suzanne Air Strip	1	1	2
Lake Wales	Lake Wales Municipal Airport	1	1	2
Lakeland	Lakeland Linder Regional Airport	112	121	233
Leesburg	Leesburg International Airport	29	31	60
Live Oak	Suwannee County Airport	1	1	2
Marathon	The Florida Keys Marathon Airport	12	13	25
Marco Island	Marco Island Airport	13	13	26
Marianna	Marianna Municipal Airport	7	8	15
Merritt Island	Merritt Island Airport	12	13	25
Miami	Dade-Collier Training and Transition Airport[1]	0	0	0
Miami	Kendall-Tamiami Executive Airport[1]	0	0	0
Miami	Miami Seaplane Base	0	0	0

Table C-2
Airport Construction-Related Employment, cont.

Associated City	Airport Name	Direct Employment	Induced Employment	Total Employment
General Aviation Airports				
Miami	Opa-Locka Executive Airport[1]	0	0	0
Milton	Peter Prince Field	2	3	5
Naples	Naples Municipal Airport	105	115	220
Navarre	Ft. Walton Beach Airport	0	0	0
New Smyrna Beach	New Smyrna Beach Municipal Airport	16	18	34
Ocala	Ocala International-Jim Taylor Field	27	28	55
Okeechobee	Okeechobee County Airport	5	6	11
Orlando	Executive Airport	27	30	57
Orlando	Kissimmee Gateway Airport	36	39	75
Ormond Beach	Ormond Beach Municipal Airport	17	19	36
Pahokee	Palm Beach County Glades Airport	2	2	4
Palatka	Palatka Municipal-Lt. Kay Larkin Field	10	10	20
Palm Coast	Flagler County Airport	17	18	35
Panacea	Wakulla County Airport	0	0	0
Pensacola	Coastal Airport	0	0	0
Pensacola	Ferguson Airport	Less than 1	1	1
Perry	Perry-Foley Airport	5	5	10
Pierson	Pierson Municipal Airport	0	0	0
Plant City	Plant City Airport	8	9	17
Pompano Beach	Pompano Beach Airpark	41	45	86
Port St. Joe	Costin Airport	0	0	0
Punta Gorda	Shell Creek Airpark	1	0	1
Quincy	Quincy Municipal Airport	3	3	6
Sebastian	Sebastian Municipal Airport	16	17	33
Sebring	Sebring Regional Airport	15	17	32
St. Augustine	Northeast Florida Regional Airport	69	75	144
St. Petersburg	Albert Whitted Airport	15	17	32
Stuart	Witham Field	35	39	74
Tampa	Peter O. Knight Airport	10	11	21
Tampa	Tampa Executive Airport	8	8	16
Tampa	Tampa North Aero Park	Less than 1	1	1
Tavares	Tavares Seaplane Base	7	8	15

Table C-2
Airport Construction-Related Employment, cont.

Associated City	Airport Name	Direct Employment	Induced Employment	Total Employment
General Aviation Airports				
Titusville	Arthur Dunn Air Park	7	7	14
Titusville	Space Coast Regional Airport	39	42	81
Umatilla	Umatilla Municipal Airport	2	2	4
Valkaria	Valkaria Airport	15	16	31
Venice	Venice Municipal Airport	26	29	55
Vero Beach	New Hibiscus Airpark	0	0	0
Vero Beach	Vero Beach Municipal Airport	66	72	138
Wauchula	Wauchula Municipal Airport	1	2	3
West Palm Beach	North Palm Beach County General Aviation Airport	9	9	18
West Palm Beach	Palm Beach County Park Airport	13	14	27
Williston	Williston Municipal Airport	9	11	20
Winter Haven	Winter Haven's Gilbert Airport	7	8	15
Zellwood	Bob White Field	0	0	0
Zephyrhills	Zephyrhills Municipal Airport	10	11	21
General Aviation Airports Total		**1,626**	**1,772**	**3,398**
All Airports Total		**7,737**	**9,651**	**17,388**

[1] Impacts are based on *The Economic Impacts of Miami International Airport and the General Aviation Airports within the Miami-Dade County Airport System 2012*, prepared by Martin Associates, April 9, 2013. The Martin Associates study did not identify construction impacts for the general aviation airports in the Miami-Dade Aviation Department's airport system.
Source: CDM Smith and IMPLAN multipliers

Table C-3
Airport Construction-Related Payroll

Associated City	Airport Name	Direct Payroll	Induced Payroll	Total Payroll
Commercial Service Airports				
Daytona Beach	Daytona Beach International Airport	$9,480,000	$9,675,000	$19,155,000
Fort Lauderdale	Ft. Lauderdale/Hollywood International Airport	$36,530,000	$37,279,000	$73,809,000
Fort Myers	Southwest Florida International Airport	$8,848,000	$9,029,000	$17,877,000
Gainesville	Gainesville Regional Airport	$1,390,000	$1,419,000	$2,809,000
Jacksonville	Jacksonville International Airport	$8,090,000	$8,256,000	$16,346,000
Key West	Key West International Airport	$1,106,000	$1,128,000	$2,234,000
Melbourne	Melbourne International Airport	$7,900,000	$8,062,000	$15,962,000
Miami	Miami International Airport[1]	$57,700,000	$125,900,000	$183,600,000
Orlando	Orlando International Airport	$14,188,000	$14,479,000	$28,667,000
Orlando	Orlando Sanford International Airport	$25,438,000	$25,960,000	$51,398,000
Panama City	Northwest Florida-Beaches International Airport	$6,857,000	$6,998,000	$13,855,000
Pensacola	Pensacola International Airport	$3,697,000	$3,773,000	$7,470,000
Punta Gorda	Punta Gorda Airport	$916,000	$934,000	$1,850,000
Sarasota	Sarasota/Bradenton International Airport	$1,485,000	$1,515,000	$3,000,000
St. Petersburg/Clearwater	St. Pete-Clearwater International Airport	$2,939,000	$2,999,000	$5,938,000
Tallahassee	Tallahassee Regional Airport	$3,002,000	$3,064,000	$6,066,000
Tampa	Tampa International Airport	$19,403,000	$19,801,000	$39,204,000
Valparaiso	Northwest Florida Regional Airport/Eglin AFB	$1,391,000	$1,419,000	$2,810,000
West Palm Beach	Palm Beach International Airport	$10,334,000	$10,546,000	$20,880,000
Commercial Service Airports Total		**$220,694,000**	**$292,236,000**	**$512,930,000**
General Aviation Airports				
Apalachicola	Apalachicola Regional - Cleve Randolph Field	$132,000	$134,000	$266,000
Apalachicola	St. George Island Airport	$0	$0	$0
Apopka	Orlando Apopka Airport	$493,000	$504,000	$997,000
Arcadia	Arcadia Municipal Airport	$1,000	$1,000	$2,000
Archer	Flying Ten Airport	$0	$0	$0
Avon Park	Avon Park Executive Airport	$110,000	$111,000	$221,000
Bartow	Bartow Municipal Airport	$530,000	$541,000	$1,071,000
Belle Glade	Belle Glade State Municipal Airport	$43,000	$44,000	$87,000
Blountstown	Calhoun County Airport	$241,000	$246,000	$487,000
Boca Raton	Boca Raton Airport	$607,000	$620,000	$1,227,000

Table C-3
Airport Construction-Related Payroll, cont.

Associated City	Airport Name	Direct Payroll	Induced Payroll	Total Payroll
General Aviation Airports				
Bonifay	Tri-County Airport	$43,000	$44,000	$87,000
Brooksville	Brooksville - Tampa Bay Regional Airport	$717,000	$731,000	$1,448,000
Brooksville	Pilot Country Airport	$3,000	$3,000	$6,000
Carrabelle	Carrabelle - Thompson Airport	$1,000	$2,000	$3,000
Cedar Key	George T. Lewis Airport	$64,000	$65,000	$129,000
Clearwater	Clearwater Air Park	$177,000	$181,000	$358,000
Clewiston	Airglades Airport	$363,000	$371,000	$734,000
Crestview	Bob Sikes Airport	$2,159,000	$2,203,000	$4,362,000
Cross City	Cross City Airport	$100,000	$102,000	$202,000
Crystal River	Crystal River Airport	$116,000	$119,000	$235,000
DeFuniak Springs	Defuniak Springs Airport	$122,000	$125,000	$247,000
DeLand	Bob Lee Flight Strip	$0	$0	$0
DeLand	DeLand Municipal - Sidney H. Taylor Field	$1,564,000	$1,596,000	$3,160,000
Destin	Destin - Ft. Walton Beach Airport	$326,000	$332,000	$658,000
Dunnellon	Marion County Airport	$245,000	$250,000	$495,000
Englewood	Buchan Airport	$0	$0	$0
Everglades	Everglades Airpark	$2,000	$2,000	$4,000
Fernandina Beach	Fernandina Beach Municipal Airport	$311,000	$318,000	$629,000
Fort Lauderdale	Downtown Fort Lauderdale Heliport	$15,000	$16,000	$31,000
Fort Lauderdale	Ft. Lauderdale Executive Airport	$2,626,000	$2,679,000	$5,305,000
Fort Myers	Page Field	$1,051,000	$1,073,000	$2,124,000
Fort Pierce	St. Lucie County International Airport	$1,551,000	$1,583,000	$3,134,000
High Springs	Oak Tree Landing Airport	$0	$0	$0
Hilliard	Hilliard Airpark	$38,000	$38,000	$76,000
Hollywood	North Perry Airport	$770,000	$786,000	$1,556,000
Homestead	Homestead General Aviation Airport[1]	$0	$0	$0
Immokalee	Immokalee Regional Airport	$606,000	$619,000	$1,225,000
Indiantown	Indiantown Airport	$22,000	$23,000	$45,000
Inverness	Inverness Airport	$565,000	$577,000	$1,142,000
Jacksonville	Cecil Airport	$5,258,000	$5,365,000	$10,623,000
Jacksonville	Herlong Recreational Airport	$169,000	$172,000	$341,000
Jacksonville	Jacksonville Executive At Craig Airport	$509,000	$520,000	$1,029,000

Table C-3
Airport Construction-Related Payroll, cont.

Associated City	Airport Name	Direct Payroll	Induced Payroll	Total Payroll
General Aviation Airports				
Keystone Heights	Keystone Airpark	$175,000	$178,000	$353,000
La Belle	La Belle Municipal Airport	$81,000	$82,000	$163,000
Lake City	Lake City Gateway Airport	$1,436,000	$1,465,000	$2,901,000
Lake Wales	Chalet Suzanne Air Strip	$27,000	$27,000	$54,000
Lake Wales	Lake Wales Municipal Airport	$30,000	$30,000	$60,000
Lakeland	Lakeland Linder Regional Airport	$3,531,000	$3,603,000	$7,134,000
Leesburg	Leesburg International Airport	$912,000	$932,000	$1,844,000
Live Oak	Suwannee County Airport	$35,000	$36,000	$71,000
Marathon	The Florida Keys Marathon Airport	$373,000	$381,000	$754,000
Marco Island	Marco Island Airport	$399,000	$408,000	$807,000
Marianna	Marianna Municipal Airport	$231,000	$236,000	$467,000
Merritt Island	Merritt Island Airport	$385,000	$393,000	$778,000
Miami	Dade-Collier Training and Transition Airport[1]	$0	$0	$0
Miami	Kendall-Tamiami Executive Airport[1]	$0	$0	$0
Miami	Miami Seaplane Base	$0	$0	$0
Miami	Opa-Locka Executive Airport[1]	$0	$0	$0
Milton	Peter Prince Field	$70,000	$72,000	$142,000
Naples	Naples Municipal Airport	$3,327,000	$3,396,000	$6,723,000
Navarre	Ft. Walton Beach Airport	$1,000	$2,000	$3,000
New Smyrna Beach	New Smyrna Beach Municipal Airport	$519,000	$530,000	$1,049,000
Ocala	Ocala International-Jim Taylor Field	$839,000	$855,000	$1,694,000
Okeechobee	Okeechobee County Airport	$167,000	$170,000	$337,000
Orlando	Executive Airport	$868,000	$885,000	$1,753,000
Orlando	Kissimmee Gateway Airport	$1,136,000	$1,160,000	$2,296,000
Ormond Beach	Ormond Beach Municipal Airport	$547,000	$558,000	$1,105,000
Pahokee	Palm Beach County Glades Airport	$53,000	$54,000	$107,000
Palatka	Palatka Municipal-Lt. Kay Larkin Field	$306,000	$311,000	$617,000
Palm Coast	Flagler County Airport	$523,000	$534,000	$1,057,000
Panacea	Wakulla County Airport	$0	$0	$0

Table C-3
Airport Construction-Related Payroll, cont.

Associated City	Airport Name	Direct Payroll	Induced Payroll	Total Payroll
General Aviation Airports				
Pensacola	Coastal Airport	$5,000	$5,000	$10,000
Pensacola	Ferguson Airport	$15,000	$15,000	$30,000
Perry	Perry-Foley Airport	$156,000	$159,000	$315,000
Pierson	Pierson Municipal Airport	$0	$0	$0
Plant City	Plant City Airport	$252,000	$257,000	$509,000
Pompano Beach	Pompano Beach Airpark	$1,304,000	$1,332,000	$2,636,000
Port St. Joe	Costin Airport	$6,000	$6,000	$12,000
Punta Gorda	Shell Creek Airpark	$16,000	$17,000	$33,000
Quincy	Quincy Municipal Airport	$86,000	$87,000	$173,000
Sebastian	Sebastian Municipal Airport	$494,000	$505,000	$999,000
Sebring	Sebring Regional Airport	$486,000	$495,000	$981,000
St. Augustine	Northeast Florida Regional Airport	$2,181,000	$2,226,000	$4,407,000
St. Petersburg	Albert Whitted Airport	$483,000	$492,000	$975,000
Stuart	Witham Field	$1,116,000	$1,139,000	$2,255,000
Tampa	Peter O. Knight Airport	$324,000	$330,000	$654,000
Tampa	Tampa Executive Airport	$246,000	$252,000	$498,000
Tampa	Tampa North Aero Park	$13,000	$12,000	$25,000
Tavares	Tavares Seaplane Base	$229,000	$233,000	$462,000
Titusville	Arthur Dunn Air Park	$213,000	$218,000	$431,000
Titusville	Space Coast Regional Airport	$1,222,000	$1,246,000	$2,468,000
Umatilla	Umatilla Municipal Airport	$55,000	$57,000	$112,000
Valkaria	Valkaria Airport	$469,000	$479,000	$948,000
Venice	Venice Municipal Airport	$833,000	$850,000	$1,683,000
Vero Beach	New Hibiscus Airpark	$3,000	$3,000	$6,000
Vero Beach	Vero Beach Municipal Airport	$2,095,000	$2,138,000	$4,233,000
Wauchula	Wauchula Municipal Airport	$44,000	$45,000	$89,000
West Palm Beach	North Palm Beach County General Aviation Airport	$279,000	$284,000	$563,000
West Palm Beach	Palm Beach County Park Airport	$402,000	$410,000	$812,000
Williston	Williston Municipal Airport	$299,000	$305,000	$604,000

Table C-3
Airport Construction-Related Payroll, cont.

Associated City	Airport Name	Direct Payroll	Induced Payroll	Total Payroll
General Aviation Airports				
Winter Haven	Winter Haven's Gilbert Airport	$225,000	$230,000	$455,000
Zellwood	Bob White Field	$5,000	$6,000	$11,000
Zephyrhills	Zephyrhills Municipal Airport	$318,000	$325,000	$643,000
General Aviation Airports Total		**$51,495,000**	**$52,552,000**	**$104,047,000**
All Airports Total		**$272,189,000**	**$344,788,000**	**$616,977,000**

[1] Impacts are based on *The Economic Impacts of Miami International Airport and the General Aviation Airports within the Miami-Dade County Airport System 2012*, prepared by Martin Associates, April 9, 2013. The Martin Associates study did not identify construction impacts for the general aviation airports in the Miami-Dade Aviation Department's airport system.
Source: CDM Smith and IMPLAN multipliers

APPENDIX D
TOTAL AIRPORT-SPECIFIC ECONOMIC IMPACTS

APPENDIX D

Table D-1
Total Airport-Specific Economic Impacts

Associated City	Airport Name	Total Employment	Total Payroll	Total Output
Commercial Service Airports				
Daytona Beach	Daytona Beach International Airport	11,316	$313,999,000	$1,105,118,000
Fort Lauderdale	Ft. Lauderdale/Hollywood International Airport	139,920	$3,856,536,000	$13,205,571,000
Fort Myers	Southwest Florida International Airport	45,562	$1,227,071,000	$4,337,489,000
Gainesville	Gainesville Regional Airport	3,153	$96,563,000	$303,689,000
Jacksonville	Jacksonville International Airport	21,529	$670,942,000	$2,194,579,000
Key West	Key West International Airport	9,089	$237,986,000	$788,481,000
Melbourne	Melbourne International Airport	17,989	$664,903,000	$1,594,693,000
Miami	Miami International Airport[1]	289,085	$11,412,009,000	$35,149,403,000
Orlando	Orlando International Airport	267,819	$7,395,281,000	$31,460,449,000
Orlando	Orlando Sanford International Airport	23,494	$726,858,000	$3,161,745,000
Panama City	Northwest Florida-Beaches International Airport	6,735	$183,971,000	$629,337,000
Pensacola	Pensacola International Airport	5,883	$164,209,000	$653,787,000
Punta Gorda	Punta Gorda Airport	1,971	$59,038,000	$219,975,000
Sarasota	Sarasota/Bradenton International Airport	9,399	$256,619,000	$901,395,000
St. Petersburg/Clearwater	St. Pete-Clearwater International Airport	8,214	$266,708,000	$752,447,000
Tallahassee	Tallahassee Regional Airport	3,698	$115,705,000	$399,045,000
Tampa	Tampa International Airport	81,471	$2,217,685,000	$7,816,468,000
Valparaiso	Northwest Florida Regional Airport/Eglin AFB	5,338	$140,897,000	$499,931,000
West Palm Beach	Palm Beach International Airport	34,048	$951,297,000	$3,425,068,000
Commercial Service Airports Total		**985,713**	**$30,958,277,000**	**$108,598,670,000**
General Aviation Airports				
Apalachicola	Apalachicola Regional - Cleve Randolph Field	57	$1,437,000	$5,484,000
Apalachicola	St. George Island Airport	5	$123,000	$402,000
Apopka	Orlando Apopka Airport	172	$5,102,000	$18,166,000
Arcadia	Arcadia Municipal Airport	3	$68,000	$272,000
Archer	Flying Ten Airport	4	$96,000	$329,000
Avon Park	Avon Park Executive Airport	190	$6,186,000	$19,026,000

Table D-1
Total Airport-Specific Economic Impacts, cont.

Associated City	Airport Name	Total Employment	Total Payroll	Total Output
General Aviation Airports				
Bartow	Bartow Municipal Airport	308	$11,490,000	$39,328,000
Belle Glade	Belle Glade State Municipal Airport	64	$1,874,000	$10,428,000
Blountstown	Calhoun County Airport	46	$1,395,000	$4,686,000
Boca Raton	Boca Raton Airport	1,426	$49,757,000	$173,825,000
Bonifay	Tri-County Airport	33	$883,000	$3,056,000
Brooksville	Brooksville - Tampa Bay Regional Airport	738	$29,374,000	$102,642,000
Brooksville	Pilot Country Airport	4	$100,000	$335,000
Carrabelle	Carrabelle - Thompson Airport	7	$257,000	$666,000
Cedar Key	George T. Lewis Airport	8	$221,000	$881,000
Clearwater	Clearwater Air Park	88	$2,356,000	$11,804,000
Clewiston	Airglades Airport	84	$2,514,000	$12,243,000
Crestview	Bob Sikes Airport	2,791	$108,208,000	$293,693,000
Cross City	Cross City Airport	32	$690,000	$2,798,000
Crystal River	Crystal River Airport	60	$1,705,000	$5,376,000
DeFuniak Springs	Defuniak Springs Airport	46	$1,631,000	$4,950,000
DeLand	Bob Lee Flight Strip	Less than 1	$11,000	$49,000
DeLand	DeLand Municipal - Sidney H. Taylor Field	2,613	$68,482,000	$243,097,000
Destin	Destin - Ft. Walton Beach Airport	525	$12,922,000	$47,786,000
Dunnellon	Marion County Airport	97	$2,933,000	$10,165,000
Englewood	Buchan Airport	4	$448,000	$575,000
Everglades	Everglades Airpark	11	$354,000	$1,148,000
Fernandina Beach	Fernandina Beach Municipal Airport	337	$8,806,000	$30,674,000
Fort Lauderdale	Downtown Fort Lauderdale Heliport	2	$50,000	$250,000
Fort Lauderdale	Ft. Lauderdale Executive Airport	5,178	$203,238,000	$839,137,000
Fort Myers	Page Field	1,101	$34,521,000	$109,284,000
Fort Pierce	St. Lucie County International Airport	1,282	$50,216,000	$155,820,000
High Springs	Oak Tree Landing Airport	Less than 1	$2,000	$5,000
Hilliard	Hilliard Airpark	3	$94,000	$444,000
Hollywood	North Perry Airport	908	$33,526,000	$83,082,000
Homestead	Homestead General Aviation Airport[1]	55	$2,700,000	$3,941,000

Table D-1
Total Airport-Specific Economic Impacts, cont.

Associated City	Airport Name	Total Employment	Total Payroll	Total Output
General Aviation Airports				
Immokalee	Immokalee Regional Airport	130	$4,922,000	$27,696,000
Indiantown	Indiantown Airport	60	$2,034,000	$7,040,000
Inverness	Inverness Airport	53	$1,553,000	$6,553,000
Jacksonville	Cecil Airport	6,974	$353,581,000	$720,506,000
Jacksonville	Herlong Recreational Airport	235	$6,697,000	$22,219,000
Jacksonville	Jacksonville Executive At Craig Airport	1,123	$42,225,000	$131,920,000
Keystone Heights	Keystone Airpark	39	$873,000	$3,796,000
La Belle	La Belle Municipal Airport	20	$711,000	$2,936,000
Lake City	Lake City Gateway Airport	2,189	$116,276,000	$316,551,000
Lake Wales	Chalet Suzanne Air Strip	54	$1,622,000	$6,830,000
Lake Wales	Lake Wales Municipal Airport	9	$245,000	$1,058,000
Lakeland	Lakeland Linder Regional Airport	2,422	$91,455,000	$284,709,000
Leesburg	Leesburg International Airport	582	$23,169,000	$75,375,000
Live Oak	Suwannee County Airport	21	$809,000	$3,194,000
Marathon	The Florida Keys Marathon Airport	418	$13,535,000	$47,489,000
Marco Island	Marco Island Airport	297	$8,153,000	$27,622,000
Marianna	Marianna Municipal Airport	77	$2,907,000	$13,351,000
Merritt Island	Merritt Island Airport	393	$11,997,000	$41,877,000
Miami	Dade-Collier Training and Transition Airport[1]	6	$300,000	$0
Miami	Kendall-Tamiami Executive Airport[1]	1,016	$45,553,000	$61,195,000
Miami	Miami Seaplane Base	11	$266,000	$491,000
Miami	Opa-Locka Executive Airport[1]	5,732	$313,594,000	$597,396,000
Milton	Peter Prince Field	30	$892,000	$4,739,000
Naples	Naples Municipal Airport	2,191	$75,614,000	$283,505,000
Navarre	Ft. Walton Beach Airport	28	$423,000	$894,000
New Smyrna Beach	New Smyrna Beach Municipal Airport	887	$26,942,000	$100,426,000
Ocala	Ocala International-Jim Taylor Field	634	$23,171,000	$73,556,000
Okeechobee	Okeechobee County Airport	97	$2,736,000	$10,022,000
Orlando	Executive Airport	1,559	$49,324,000	$158,000,000

Table D-1
Total Airport-Specific Economic Impacts, cont.

Associated City	Airport Name	Total Employment	Total Payroll	Total Output
General Aviation Airports				
Orlando	Kissimmee Gateway Airport	1,121	$32,359,000	$116,752,000
Ormond Beach	Ormond Beach Municipal Airport	518	$17,830,000	$51,929,000
Pahokee	Palm Beach County Glades Airport	19	$488,000	$1,973,000
Palatka	Palatka Municipal-Lt. Kay Larkin Field	86	$2,609,000	$9,432,000
Palm Coast	Flagler County Airport	613	$17,766,000	$61,125,000
Panacea	Wakulla County Airport	1	$16,000	$62,000
Pensacola	Coastal Airport	5	$162,000	$610,000
Pensacola	Ferguson Airport	50	$1,388,000	$4,767,000
Perry	Perry-Foley Airport	21	$566,000	$2,250,000
Pierson	Pierson Municipal Airport	4	$96,000	$324,000
Plant City	Plant City Airport	85	$2,457,000	$10,610,000
Pompano Beach	Pompano Beach Airpark	893	$29,400,000	$101,022,000
Port St. Joe	Costin Airport	9	$234,000	$773,000
Punta Gorda	Shell Creek Airpark	26	$725,000	$2,641,000
Quincy	Quincy Municipal Airport	24	$740,000	$2,584,000
Sebastian	Sebastian Municipal Airport	364	$12,234,000	$45,165,000
Sebring	Sebring Regional Airport	335	$10,915,000	$41,492,000
St. Augustine	Northeast Florida Regional Airport	4,007	$125,951,000	$409,573,000
St. Petersburg	Albert Whitted Airport	465	$14,410,000	$52,009,000
Stuart	Witham Field	2,310	$66,044,000	$616,397,000
Tampa	Peter O. Knight Airport	297	$8,062,000	$31,559,000
Tampa	Tampa Executive Airport	470	$14,187,000	$44,236,000
Tampa	Tampa North Aero Park	31	$591,000	$1,691,000
Tavares	Tavares Seaplane Base	36	$1,106,000	$3,912,000
Titusville	Arthur Dunn Air Park	53	$1,553,000	$7,040,000
Titusville	Space Coast Regional Airport	1,639	$67,554,000	$179,932,000
Umatilla	Umatilla Municipal Airport	8	$222,000	$1,012,000
Valkaria	Valkaria Airport	196	$8,268,000	$20,624,000
Venice	Venice Municipal Airport	426	$10,857,000	$43,219,000
Vero Beach	New Hibiscus Airpark	12	$424,000	$2,210,000
Vero Beach	Vero Beach Municipal Airport	3,515	$124,166,000	$468,541,000

Table D-1
Total Airport-Specific Economic Impacts, cont.

Associated City	Airport Name	Total Employment	Total Payroll	Total Output
General Aviation Airports				
Wauchula	Wauchula Municipal Airport	25	$679,000	$2,081,000
West Palm Beach	North Palm Beach County General Aviation Airport	549	$15,582,000	$52,938,000
West Palm Beach	Palm Beach County Park Airport	242	$8,617,000	$26,996,000
Williston	Williston Municipal Airport	65	$2,238,000	$7,737,000
Winter Haven	Winter Haven's Gilbert Airport	182	$5,437,000	$20,808,000
Zellwood	Bob White Field	18	$539,000	$1,615,000
Zephyrhills	Zephyrhills Municipal Airport	223	$7,209,000	$24,729,000
General Aviation Airports Total		**64,512**	**$2,479,030,000**	**$7,739,163,000**
All Airports Total		**1,050,225**	**$33,437,307,000**	**$116,337,833,000**

[1] Impacts are based on *The Economic Impacts of Miami International Airport and the General Aviation Airports within the Miami-Dade County Airport System 2012*, prepared by Martin Associates, April 9, 2013.
Source: CDM Smith and IMPLAN multipliers

APPENDIX E
FLORIDA AIR CARGO:
VALUE OF COMMODITIES

APPENDIX E

Florida's commercial service airports accommodate significant amounts of air cargo traffic on an annual basis, but Miami International Airport accounts for the vast majority of the activity, with nearly 80 percent of Florida's annual tonnage. Orlando International Airport provides approximately seven percent of Florida's air cargo activity, followed by Ft. Lauderdale/Hollywood International Airport with 3.7 percent. The air cargo industry supports not only direct jobs and output but also numerous businesses and industries based both locally and globally as air cargo is imported and exported via Florida's airports to numerous international markets. The goods that businesses and individuals choose to ship on aircraft are typically high-value, lightweight, and time-sensitive commodities. In 2012, over 2.6 million tons of air cargo was transported through Florida's commercial service airports with an aggregated value of $187.8 billion. **Table E-1** identifies the value of air cargo transported through Florida's commercial service airports. The U.S. Economic Census indicates that in 2012, the average value of air cargo shipments in the U.S. was approximately $42.50 per pound. Available records indicate that imports and exports at Miami International Airport have a lower value of $32.76 per pound. This is reflective of Miami International's high volumes of cut flower shipments, which have a lower per pound value.

Table E-1
Air Cargo Value for Florida Commercial Service Airports Based on 2012 Tonnage

Associated City	Airport Name	2012 Total Tonnage	Market Share	Value
Commercial Service Airports				
Daytona Beach	Daytona Beach International Airport	139	0.01%	$11,842,000
Fort Lauderdale	Ft. Lauderdale/Hollywood International Airport	96,935	3.69%	$8,239,168,000
Fort Myers	Southwest Florida International Airport	17,590	0.67%	$1,495,052,000
Gainesville	Gainesville Regional Airport	2	0.00%	$207,000
Jacksonville	Jacksonville International Airport	74,897	2.85%	$6,365,985,000
Key West	Key West International Airport[1]	536	0.02%	$45,516,000
Melbourne	Melbourne International Airport	783	0.03%	$66,522,000
Miami	Miami International Airport	2,092,254	79.61%	$142,254,379,000
Orlando	Orlando International Airport	190,647	7.25%	$16,204,379,000
Orlando	Orlando Sanford International Airport	3,504	0.13%	$297,850,000
Panama City	Northwest Florida-Beaches International Airport	748	0.03%	$63,570,000
Pensacola	Pensacola International Airport	6,444	0.25%	$547,729,000
Sarasota	Sarasota/Bradenton International Airport	208	0.01%	$17,638,000
St. Petersburg/Clearwater	St. Pete-Clearwater International Airport	18,779	0.71%	$1,596,138,000
Tallahassee	Tallahassee Regional Airport	9,930	0.38%	$843,977,000
Tampa	Tampa International Airport	94,253	3.59%	$8,011,214,000
Valparaiso	Northwest Florida Regional Airport/Eglin AFB[2]	0	0.00%	$0
West Palm Beach	Palm Beach International Airport	20,613	0.78%	$1,752,039,000
Commercial Service Airports Total		**2,628,262**	**100.00%**	**$187,813,205,000**

[1] Tonnage estimated by CDM Smith; [2] No air cargo activity reported at the airport.
Source: Airports Council International-North America

In 2012, Miami International Airport handled 2,092,254 tons of total air freight. Of this, 1,821,821 tons, or 87 percent, were identified as international freight valued at $119.3 billion, while 270,433 tons, or 13 percent, were identified as domestic cargo valued at approximately $23.0 billion. The total combined commodity value for all air cargo at Miami International was $142.3 billion. A total of 1,066,297 tons, or 59 percent, of Miami International's total international export and import tonnage that actually originated or cleared at the airport is valued at $69.9 billion. The remaining 41 percent of all international goods handled at Miami International were shipped in-transit from one country to another and were valued at $49.4 billion. Miami International's total air trade in 2012 is equivalent to 97 percent of the total dollar value of all of Florida's air imports and exports, or 44 percent of the state's total (air and sea) trade with the world. **Table E-2** identifies the value of air cargo in Florida by type with a focus on Miami International's air cargo traffic.

Table E-2
International vs. Domestic Air Cargo Value for Florida Airports

Value by Type	Annual Tons	Estimated Value
Miami International Airport Imports/Exports Air Cargo	1,066,297	$69,866,674,000
Miami International Airport In-Transit Cargo	755,524	$49,401,767,000
Miami International Airport Local Air Cargo	270,433	$22,985,937,000
Miami International Airport Subtotal	**2,092,254**	**$142,254,378,000**
Florida Imports/Exports Air Cargo	28,944	$2,460,177,000
Florida Local Air Cargo	507,062	$43,098,649,000
Florida Subtotal	**536,006**	**$45,558,826,000**
Total	**2,628,260**	**$187,813,204,000**

Source: Airports Council International-North America; U.S. Economic Census; Miami-Dade Aviation Department

Total air cargo at Florida airports, excluding Miami International Airport, is valued at $45.6 billion, nearly $2.5 billion of which is related to international imports or exports. It is estimated that $43.1 billion in air cargo commodities were produced or consumed in Florida in 2012, which is an increase over the $33.4 billion estimated in 2006. An analysis of a typical UPS air cargo flight revealed that the average weight per package on the aircraft was approximately nine pounds. Applying the U.S. Economic Census value per pound to the average weight per package yields an average value of $383 per air cargo package.



Florida Department of Transportation
Aviation and Spaceports Office
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This report was prepared as an effort of the Continuing Florida Aviation System Planning Process under the sponsorship of the Florida Department of Transportation. A full technical report containing information on data collection, methodologies, and approaches for estimating statewide and airport specific economic impacts is available at www.dot.state.fl.us/aviation/economicimpact.shtm. More information on the Florida's Aviation Economic Impact Study can be obtained from the Aviation Office by calling 850-414-4500.