

Chapter 3

Aviation Activity Forecast

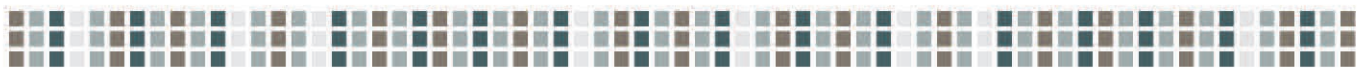


Table of Contents

3.	Aviation Activity Forecast.....	3-1
3.1	Historical Aviation Activity and Trends.....	3-3
3.1.1	PASSENGER ACTIVITY AND OPERATIONS.....	3-3
3.1.2	AIR SERVICE	3-5
3.1.3	AIRCRAFT OPERATIONS	3-15
3.2	Factors Affecting Aviation Demand at the Airport	3-19
3.2.1	NATIONAL ECONOMY	3-19
3.2.2	STATE OF THE AIRLINE INDUSTRY	3-19
3.2.3	AIRLINE MERGERS AND ACQUISITIONS.....	3-19
3.2.4	CAPACITY DISCIPLINE – A CHANGE IN THE AIRLINE BUSINESS MODEL.....	3-20
3.2.5	COST OF AVIATION FUEL.....	3-21
3.2.6	THREAT OF TERRORISM AND GEOPOLITICAL ISSUES.....	3-22
3.2.7	OPERATIONAL CAPACITY OF THE NATIONAL AIRSPACE SYSTEM	3-22
3.2.8	COMPETING AIRPORTS	3-23
3.3	Passenger Airline Forecast Methodology and Results	3-25
3.3.1	PASSENGER AIRLINE FORECAST OVERVIEW	3-25
3.3.2	PASSENGER AIRLINE FORECAST METHODOLOGY	3-26
3.3.3	ENPLANED PASSENGER AND AIRLINE OPERATIONS FORECASTS	3-33
3.3.4	CRITICAL AIRCRAFT	3-38
3.4	All-Cargo Volumes and Operations Forecast	3-39
3.5	General Aviation Forecast.....	3-41
3.5.1	PREVIOUS AVIATION ACTIVITY FORECASTS.....	3-41
3.5.2	FORECAST OF GENERAL AVIATION ACTIVITY.....	3-43
3.6	Other Air Taxi Operations Forecast.....	3-57
3.6.2	OTHER AIRCRAFT OPERATIONS FORECASTS	3-57
3.7	Summary of Total Operations Forecast.....	3-59
3.7.1	COMPARISON TO OTHER FORECASTS	3-59

List of Tables

Table 3-1: Historical Enplaned Passengers and Operations Summary	3-3
Table 3-2: Historical Airport and National Enplaned Passengers Comparison	3-6
Table 3-3: Airlines Currently Serving Key West International Airport	3-7
Table 3-4: Historical Scheduled Passenger Airline Base	3-7
Table 3-5: Historical Total Enplaned Passengers by Airline	3-9
Table 3-6: Scheduled Nonstop Service in March 2016	3-11
Table 3-7: Historical O&D and Connection Enplaned Passenger Traffic	3-12
Table 3-8: 2015 Top 25 Domestic O&D Markets at the Airport.....	3-13
Table 3-9: Airport Historical Domestic O&D Passengers and Passenger Ticket Revenue	3-14
Table 3-10: Historical Aircraft Operations	3-15
Table 3-11: Historical Operations Share by Passenger Airline	3-16
Table 3-12: Historical Mainline and Regional Passenger Airline Aircraft Operations.....	3-17
Table 3-13: Historical Cargo, Other Air Taxi, General Aviation, and Military Aircraft Operations.....	3-18
Table 3-14: Average Domestic O&D Fare at EYW, MIA, and FLL	3-23
Table 3-15 (1 of 2): Historical and Projected Socioeconomic Characteristics.....	3-30
Table 3-15 (2 of 2): Historical and Projected Socioeconomic Characteristics.....	3-31
Table 3-16: Regression Model Outputs and Forecast Growth Rates of Passengers and Passenger Revenues through 2035 Compared to Federal Aviation Administration Forecasts of U.S. Enplanement Growth.....	3-32
Table 3-17: Historical and Forecast O&D and Connection Demand.....	3-34
Table 3-18: Historical and Forecast Mainline and Regional Passenger Airline Enplaned Passengers.....	3-35
Table 3-19: Historical and Forecast Passenger Airline Operations.....	3-36
Table 3-20: Historical and Forecast Operations Fleet Mix	3-37
Table 3-21: All-Cargo Volumes and All-Cargo Operations	3-40
Table 3-22: 2003 Master Plan Forecasts	3-41
Table 3-23: FAA Terminal Area Forecast.....	3-42
Table 3-24: 2013–2033 Florida Aviation System Plan (FASP)	3-42
Table 3-25: Historical Based Aircraft (FAA TAF)	3-44
Table 3-26: Forecasts of Based Aircraft.....	3-45

Table 3-27: Adjusted Forecasts of Based Aircraft.....	3-47
Table 3-28: Current Fleet Mix.....	3-48
Table 3-29: Forecast Based Aircraft Fleet Mix.....	3-49
Table 3-30: Historical Itinerant and Local Aircraft Operations at Key West International Airport.....	3-50
Table 3-31: Selected Forecasts of General Aviation Aircraft Operations.....	3-52
Table 3-32: Forecast of Local and Itinerant Operations at Key West International Airport	3-54
Table 3-33: Forecast General Aviation Operational Fleet Mix.....	3-55
Table 3-34: Forecast Peak Activity.....	3-56
Table 3-35: Summary of Activity Forecasts—Base Scenario	3-57
Table 3-36: Historical and Forecast Aircraft Operations.....	3-58
Table 3-37: Enplaned Passenger Forecast Comparison.....	3-60
Table 3-38: Operations Forecast Comparison	3-62
Table A-1 (1 of 2): Federal Aviation Administration Forecast Summary	3-65
Table A-1 (2 of 2): Federal Aviation Administration Forecast Summary (Part 2).....	3-66

List of Exhibits

Exhibit 3-1: Key West International Airport Air Service Area.....	3-2
Exhibit 3-2: Nonstop Destinations Served From the Airport	3-10
Exhibit 3-3: Growth Trends of U.S. Passengers and Gross Domestic Product	3-21
Exhibit 3-4: Growth Trends of U.S. Domestic Passengers, Passenger Revenue, and Gross Domestic Product.....	3-21
Exhibit 3-5: Historical Monthly Averages of Jet Fuel and Crude Oil Prices.....	3-22
Exhibit 3-6: Proportion of Historical Scheduled Seat Capacity at EYW, MIA, and FLL.....	3-24
Exhibit 3-7: Proportion of Historical Domestic O&D Passengers at EYW, MIA, and FLL.....	3-25
Exhibit 3-8: Domestic O&D Passenger Volume and Passenger Revenue Trends at EYW.....	3-26
Exhibit 3-9: Historical and Forecast Based Aircraft	3-46
Exhibit 3-10: Forecast Based Aircraft.....	3-48
Exhibit 3-11: Historical and Forecast General Aviation Aircraft Operations	3-51
Exhibit 3-12: Forecast General Aviation Aircraft Operations.....	3-53
Exhibit 3-13: Enplaned Passenger Forecast Comparison.....	3-61

Exhibit 3-14: Operations Forecast Comparison.....3-63

3. Aviation Activity Forecast

This chapter presents a discussion of historical aviation activity and trends at the Airport since 2006, and it summarizes forecasts of aviation activity at the Airport for 2020, 2025, and 2035, the end of the planning period for EYW's Master Plan Update. Forecasts were developed for enplaned passengers, as well as for passenger, cargo, air taxi, general aviation, and military operations. Projections were developed for the aircraft fleet mix serving the Airport. These forecasts and projections will provide the basis for determining facility requirements and conducting the financial and other analyses necessary for preparing the Master Plan Update.

The forecasts were prepared in 2016 using calendar year 2015 as the base year, which is the latest year for which complete passenger data were available. While 2015 serves as the forecast base year, in order to most accurately represent the current state of the Airport at the time of this Master Plan Study, airline schedule data from 2016 were considered.¹ Published airline schedules for March 2016, the peak month at the Airport in 2016, provide the basis for presenting the airlines currently serving the Airport, including the destinations currently served and the average seat capacity.

The aviation activity forecasts presented in this section are based on assumptions about aviation activity in the Air Service Area for the Airport. For the purposes of the Master Plan Study forecast, the Air Service Area for EYW (The EYW Air Service Area) is Monroe County, Florida, as illustrated on **Exhibit 3-1**. The Airport is located in Monroe County, and, while Monroe County borders other counties in Florida with large population centers, the Airport is isolated from the rest of the state of Florida, since it is separated from major population centers by both the Gulf of Mexico and Everglades National Park. However, the Airport is within about a three hours' drive from the major population centers of Miami and Fort Lauderdale via four-lane U.S. Highway 1.

Due to the Airport's geographic location, along with the high proportion of passengers at the Airport who originate outside of the region, socioeconomic conditions in Monroe County do not correlate well with aviation activity at the Airport and cannot be assumed to drive its activity. Instead, with the high proportion of passengers originating outside the region, socioeconomic conditions in markets with the highest activity to Key West, as well as nationally, correlate well with passenger activity at the Airport and are used in the forecast. Many of the factors influencing aviation demand cannot readily be quantified, and any projection is subject to uncertainties; as a result, the forecast process should not be viewed as precise. Actual airline traffic

¹ Airline schedules for 2016 are subject to change.

at the Airport may differ from the forecasts presented herein, because events and circumstances may not occur as expected, and these differences may be material.

Exhibit 3-1: Key West International Airport Air Service Area



SOURCES: ESRI, May 2010 (Streams and Rivers); Tom Tom, June 2015; U.S. Department of Commerce, June 2015; U.S. Census Bureau, June 2015 (USA Counties Map).

PREPARED BY: Ricondo & Associates, Inc., June 2016.

The remainder of Chapter 2 is organized as follows:

- Historical Aviation Activity and Trends
- Factors Affecting Aviation Demand at the Airport
- Passenger Airline Forecast Methodology and Results
- All-Cargo Volumes and Operations Forecast
- General Aviation Forecast
- Other Air Taxi Operations Forecast
- Summary of Total Operations Forecast

3.1 Historical Aviation Activity and Trends

3.1.1 PASSENGER ACTIVITY AND OPERATIONS

The Airport is classified by the FAA as a small-hub airport, accounting for between 0.05 and 0.25 percent of total nationwide enplaned passengers. As shown in **Table 3-1**, 362,802 passengers were enplaned and 53,548 aircraft operations were conducted at the Airport in 2015. The Airport experienced its greatest number of enplaned passengers—403,372—in 2013 and the greatest number of aircraft operations in 2007, with 90,486 operations.

Table 3-1: Historical Enplaned Passengers and Operations Summary

YEAR	ENPLANED PASSENGERS	PASSENGER GROWTH	PASSENGER AIRCRAFT OPERATIONS	OPERATIONS GROWTH
2006	285,804	-	87,049	-
2007	271,632	(5.0%)	90,486	3.9%
2008	232,552	(14.4%)	71,043	(21.5%)
2009	234,887	1.0%	54,904	(22.7%)
2010	287,849	22.5%	57,253	4.3%
2011	335,700	16.6%	60,371	5.4%
2012	370,959	10.5%	62,892	4.2%
2013	403,372	8.7%	57,446	(8.7%)
2014	384,663	(4.6%)	53,585	(6.7%)
2015	362,802	(5.7%)	53,548	(0.1%)
Compound Annual Growth Rate				
2006–2009	(6.3%)		(14.2%)	
2009–2012	16.5%		4.6%	
2012–2015	(0.7%)		(5.2%)	
2006–2015	2.7%		(5.3%)	

NOTE: Passenger totals do not include nonrevenue passengers.

SOURCE: U.S. Department of Transportation, Form T-100, March 2016.

PREPARED BY: Ricondo & Associates, Inc., March 2016.

Further information concerning enplaned passengers at the Airport and comparisons with national trends in enplaned passengers between 2006 and 2015 are discussed in the following paragraphs.

2006–2007: From 2006 to 2007, the Airport experienced a 3.9 percent growth in operations and a 5.0 percent decrease in enplaned passengers. The decrease in enplaned passengers was driven by the suspension of service by Florida Coastal Airlines and Cape Air, the latter of which suspended service at all Florida airports in

2007 in order to focus its operations in the Northeast United States and in the Caribbean. The increase in operations was primarily due to the commencement of service at the Airport by two new local airlines operating small aircraft: Chalk's International Airlines and Yellow Air Taxi.

2007–2008: In 2008, operations at the Airport decreased by 21.5 percent, and enplaned passengers decreased by 14.4 percent. Chalk's International Airlines ceased operations at the Airport after the United States Department of Transportation revoked its operating license in September 2007.² Delta Air Lines and American Airlines also decreased scheduled departures at the airport, by 27.1 percent and 4.9 percent, respectively.

2008–2009: From 2008 to 2009, enplaned passengers at the Airport increased 1.0 percent, while passenger operations decreased 22.7 percent. The decrease in operations was driven by a 37.6 percent reduction in scheduled departures by United Airlines, operated by its regional partner Silver Airways, and the near-withdrawal of Yellow Air Taxi from the Airport, as it reduced scheduled departures by 89.4 percent. American Airlines and Delta Air Lines also both reduced scheduled departures from the Airport, by 8.9 percent and 15.0 percent, respectively, but their reduction in departures came with an increase in average seats per departure. American Airlines increased its average seats per departure by nearly four seats, and Delta Air Lines increased its average seats per departure by approximately six seats.

2009–2010: In December 2009, AirTran Airways commenced service at the Airport, and 2010 marked the first full year of service at the Airport for Cape Air since its return in June 2009. This new service, combined with an increase in scheduled departures of 6.4 percent for American Airlines and 6.0 percent for Delta Air Lines, contributed to a 4.3 percent increase in passenger operations, despite Yellow Air Taxi discontinuing service at the Airport. The service changes by AirTran Airways, Cape Air, and Delta Air Lines, along with continued upgauging by Delta Air Lines, which increased its average scheduled seats per departure from 71 in 2009 to 87 in 2010, contributed to a 22.5 percent increase in enplaned passengers from 2009 to 2010.

2010–2011: From 2010 to 2011, enplaned passengers at EYW increased 16.6 percent, while operations increased 5.4 percent as AirTran Airways continued to expand its service at the Airport and Delta Air Lines continued to upgauge its aircraft. AirTran Airways operated its 137-seat Boeing 737-700 aircraft at the Airport, and Delta Air Lines increased its average seats per departure from approximately 87 to approximately 105. With Delta Air Lines and AirTran Airways offering service on large aircraft, fewer operations were needed to serve the same number of passengers, resulting in a slower increase in aircraft operations.

2011–2012: After its merger with Continental Airlines in 2010, United Airlines began integration of the two airlines' networks, resulting in an increase in operations (served by Continental Airlines' regional partner Silver Airways) by 56.2 percent from 2011 to 2012. After its acquisition of AirTran Airways in 2011, Southwest Airlines also increased service at the Airport, increasing scheduled departures by 20.1 percent. Delta Air Lines

² Stieghorst, Tom, "Chalk's Airlines Loses Flight License," *Sun Sentinel*, October 19, 2007, http://articles.sun-sentinel.com/2007-10-19/news/0710180726_1_chalk-s-seaplanes-airport-international-airlines (accessed February 17, 2016).

continued to increase both its scheduled departures and seats, by 10.0 percent and 11.6 percent, respectively. The increased service by Delta Air Lines, United Airlines, and Southwest Airlines contributed to a 10.5 percent increase in enplaned passengers and a 4.2 percent increase in operations at the Airport.

2012–2013: In 2013, the Airport experienced an 8.7 percent growth in enplaned passengers as Southwest Airlines (including AirTran Airways) increased its scheduled departures by 40.0 percent. However, overall operations at the Airport decreased by 8.7 percent as Delta Air Lines continued to use more Boeing 737-700 aircraft at the Airport in lieu of Bombardier CRJ 700 aircraft, allowing it to serve more passengers with fewer operations. Additionally, United Airlines changed its relationship with Silver Airways from a regional affiliate to a codeshare partner, leading to Silver Airways' 15.8 percent reduction in departures as it began to operate as an independent regional airline. A 14.1 percent reduction in general aviation and other air taxi operations also contributed to the decline in operations at the Airport.

2013–2014: From 2013 to 2014, operations at the Airport decreased 6.7 percent, and enplaned passengers decreased 4.6 percent as Southwest Airlines ceased service to the Airport in July 2014. In addition, a 9.8 percent reduction in general aviation and other air taxi operations contributed to the decrease in operations at the Airport.

2014–2015: From 2014 to 2015, enplaned passengers decreased 5.7 percent, while operations decreased 0.1 percent. The decrease in enplaned passengers was largely driven by the full-year effect of Southwest Airlines' cessation of operations in July 2014. However, operations did not decline as much as enplaned passengers as Silver Airways continued to grow at the Airport, increasing its operations by 21.4 percent.

Between 2006 and 2015, compound annual growth rate (CAGR) at the Airport was 2.3 percent, which was faster than the 0.3 percent CAGR for total national enplaned passengers. Due to this, the Airport's share of U.S. total enplaned passengers increased from 0.04 percent to 0.05 percent, and the Airport was reclassified from a non-hub primary airport to a small-hub airport,³ as illustrated in **Table 3-2**.

3.1.2 AIR SERVICE

Table 3-3 presents the Airport's base of airlines, which comprises one mainline airline, three regional airlines operating as regional partners of mainline airlines, and one independent regional airline.⁴ In addition, two all-cargo airlines operate at the Airport. As shown in **Table 3-4**, American Airlines and Delta Air Lines and their

³ According to the FAA, a Non-hub Primary Airport has more than 10,000 annual enplanements but less than 0.05 percent of total national enplanements, and a Small-Hub Airport has at least 0.05 percent, but less than 0.25 percent, of total national enplanements.

⁴ For the purposes of this report, mainline airlines are defined to be large national or international airlines. Regional airlines are defined to be airlines operating on behalf of a mainline airline using their own operating certificate or smaller, regional airlines operating on their own behalf.

regional partners have served the Airport since 2006, while Silver Airways began operating independently in 2013.⁵

Table 3-2: Historical Airport and National Enplaned Passengers Comparison

YEAR	AIRPORT ENPLANED PASSENGERS	AIRPORT GROWTH	U.S. TOTAL ENPLANED PASSENGERS	U.S. GROWTH	MARKET SHARE
2006	285,804		750,791,000		0.04%
2007	271,632	(5.0%)	775,989,000	3.4%	0.04%
2008	232,552	(14.4%)	749,242,000	(3.4%)	0.03%
2009	234,887	1.0%	709,290,000	(5.3%)	0.03%
2010	287,849	22.5%	726,545,000	2.4%	0.04%
2011	335,700	16.6%	737,393,000	1.5%	0.05%
2012	370,959	10.5%	742,822,000	0.7%	0.05%
2013	403,372	8.7%	748,537,000	0.8%	0.05%
2014	384,663	(4.6%)	768,119,000	2.6%	0.05%
2015	362,802	(5.7%)	804,471,000	4.7%	0.05%
Compound Annual Growth Rate					
2006–2009	(6.3%)		1.9%		
2009–2012	16.5%		1.6%		
2012–2015	(0.7%)		2.7%		
2006–2015	2.7%		0.8%		

NOTE: Passenger totals do not include nonrevenue passengers.

SOURCES: U.S. Department of Transportation, Form T-100, March 2016; Bureau of Transportation Statistics, May 2016 (U.S. total enplanements).

PREPARED BY: Ricondo & Associates, Inc., May 2016.

⁵ Prior to 2013, Silver Airways operated on behalf of United Airlines.

Table 3-3: Airlines Currently Serving Key West International Airport

SCHEDULED U.S. PASSENGER AIRLINES (5)	MARKETED AS:
Delta Air Lines	Delta Air Lines
Envoy Air Incorporated	American Airlines ^{1/}
ExpressJet Airlines	Delta Air Lines
Republic Airlines	American Airlines ^{1/}
Silver Airways Corporation	Silver Airways
ALL-CARGO AIRLINES (2)	
Mountain Air Cargo ^{2/}	
Martinaire ^{3/}	

NOTES:

1/ American Airlines and US Airways merged on December 9, 2013. A Single Operating Certificate was issued on April 8, 2015. For the purposes of this Master Plan Study, the airlines are combined.

2/ Mountain Air Cargo subcontracts to FedEx; the aircraft are owned by FedEx.

3/ Martinaire flies strictly for UPS, but the aircraft are owned by Martinaire.

SOURCES: Key West International Airport, March 2016; Innovata, March 2016.

PREPARED BY: Ricondo & Associates, Inc., March 2016.

Table 3-4: Historical Scheduled Passenger Airline Base

AIRLINE^{1/}	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Chalk's International Airlines		•								
American Airlines ^{2/}	•	•	•	•	•	•	•	•	•	•
Cape Air	•			•	•	•	•	•		
Delta Air Lines	•	•	•	•	•	•	•	•	•	•
Florida Coastal Airlines	•									
Silver Airways								•	•	•
Southwest Airlines ^{3/}				•	•	•	•	•	•	
United Airlines ^{4/}	•	•	•	•	•	•	•	•		
Yellow Air Taxi		•	•	•						

NOTES:

1/ Includes regional partner airlines, as applicable.

2/ American Airlines and US Airways merged on December 9, 2013; for the purposes of this Master Plan Study, the two airlines are combined.

3/ Southwest Airlines and AirTran Airways merged in 2011; for the purposes of this Master Plan Study, the two airlines are combined.

4/ United Airlines and Continental Airlines merged in 2010; for the purposes of this Master Plan Study, the two airlines are combined.

SOURCES: Key West International Airport, February 2016; Innovata, March 2016.

PREPARED BY: Ricondo & Associates, Inc., March 2016.

The scheduled airline enplaned passengers and market share data in **Table 3-5** indicate that service at the Airport is mostly provided by American Airlines and Delta Air Lines. For these airlines, the Airport serves as a spoke within their route networks, flying passengers from the Airport to connecting hubs or focus cities and enabling them to reach many destinations with one stop.

Enplaned passenger market shares have fluctuated between 2011 and 2015. American Airlines (including US Airways) enplaned the most passengers at the Airport in 2011 and 2012, but Delta Air Lines has enplaned the most passengers since 2013 after upgauging its fleet at the Airport. Delta Air Lines' share of enplaned passengers at the Airport has increased from 30.1 percent in 2011 to 38.4 percent in 2015. American Airlines' share of enplaned passengers has fluctuated with the entry and exit of other airlines at the Airport, varying from a high of 40.9 percent in 2011 to a low of 25.2 percent in 2013, when its share of enplaned passengers was third-highest at the Airport, behind both Delta Air Lines and Southwest Airlines. American Airlines' share of enplaned passengers recovered to 28.3 percent in 2014 and 38.0 percent in 2015 as United Airlines and Southwest Airlines discontinued service at the Airport.⁶

⁶ United Airlines ceased operations with its regional affiliate, Silver Airways, but the two airlines continue to have a codeshare agreement, as discussed in Section 2.1.1.

Table 3-5: Historical Total Enplaned Passengers by Airline

AIRLINE ^{1/}	2011		2012		2013		2014		2015	
	ENPLANED PASSENGERS	SHARE	ENPLANED PASSENGERS	SHARE	ENPLANED PASSENGERS	SHARE	ENPLANED PASSENGERS	SHARE	ENPLANED PASSENGERS	SHARE
Delta Air Lines	101,021	30.1%	112,482	30.3%	124,186	30.8%	136,537	35.5%	139,225	38.4%
American Airlines ^{2/}	137,286	40.9%	124,086	33.5%	101,686	25.2%	109,042	28.3%	138,040	38.0%
Silver Airways					28,526	7.1%	69,162	18.0%	73,296	20.2%
Other Airlines ^{3/}	67	0.0%	4,651	1.3%	9,418	2.3%	14,104	3.7%	12,241	3.4%
Cape Air	10,740	3.2%	10,533	2.8%	8,292	2.1%				
United Airlines ^{4/}	26,845	8.0%	52,842	14.2%	27,186	6.7%				
Southwest Airlines ^{5/}	59,741	17.8%	66,365	17.9%	104,078	25.8%	55,818	14.5%		
Total^{6/}	335,700	100.0%	370,959	100.0%	403,372	100.0%	384,663	100.0%	362,802	100.0%

NOTES:

1/ Includes regional partner airlines, as applicable.

2/ American Airlines and US Airways merged on December 9, 2013; for the purposes of this Master Plan Study, the two airlines are combined.

3/ Includes nonscheduled service.

4/ United Airlines and Continental Airlines merged in 2010; for the purposes of this Master Plan Study, the two airlines are combined.

5/ Southwest Airlines and AirTran Airways merged in 2011; for the purposes of this Master Plan Study, the two airlines are combined.

6/ Figures may not add to totals shown due to rounding.

SOURCE: U.S. Department of Transportation, Form T-100, March 2016.

PREPARED BY: Ricondo & Associates, Inc., March 2016.

Exhibit 3-2 displays the destinations served nonstop from the Airport. As of March 2016, regularly scheduled service is provided to eight domestic destinations: five in Florida and the other three in Atlanta (ATL), Washington-National (DCA), and Charlotte (CLT), which is served seasonally.

Exhibit 3-2: Nonstop Destinations Served From the Airport



SOURCE: Innovata, March 2016.

PREPARED BY: Ricondo & Associates, Inc., March 2016.

Table 3-6 presents the markets served nonstop from the Airport in March 2016. In March 2016, there were an average of 27 daily departures scheduled from the Airport and an average daily departing seat capacity of 1,755 seats. All of the eight destinations served in the month were served by a single airline or its regional partner airlines.

Table 3-6: Scheduled Nonstop Service in March 2016

DESTINATION	AVERAGE DAILY DEPARTURES	AVERAGE DAILY SEATS	NUMBER OF AIRLINES ^{1/}
Atlanta	6	624	1
Fort Lauderdale	5	168	1
Miami	5	370	1
Charlotte	3	237	1
Tampa	3	100	1
Orlando-MCO	2	72	1
Washington-Reagan	2	149	1
Fort Myers	1	34	1
Total Daily Average	27	1,754	

NOTES: Average is calculated as the number of departures in the month of March divided by the number of days in the month.

1/ Includes regional partner airlines, as applicable.

SOURCE: Innovata, March 2016.

PREPARED BY: Ricondo & Associates, Inc., March 2016.

Traffic at the Airport primarily comprises origination and destination (O&D) passengers, those who begin or end their journeys at EYW. As provided in **Table 3-7**, the number of O&D passengers enplaned at the Airport grew from 2009 to 2012, from 234,398 to 368,104, a CAGR of 16.2 percent. The number of O&D passengers grew an additional 8.4 percent from 2012 to 2013 before decreasing to 380,126 in 2014 and 360,664 in 2015. The CAGR of O&D enplaned passengers at the Airport was 2.7 percent over the entire period from 2006 to 2015.

From 2006 to 2015, connecting traffic has accounted for no more than 1.2 percent of enplaned passengers, such as what occurred in 2014. Given the Airport's use as a spoke in route networks, or for point-to-point service, along with the Airport's non-central location, it is not expected that the ratio of O&D to connecting passengers will differ significantly throughout the forecast period.

Table 3-8 presents the domestic O&D demand at the Airport in 2015, measured as passengers per day, each way (PDEW). Approximately 20 percent, or 188 PDEW, travelled between EYW and one of the top five domestic destinations in 2015. The top 25 markets comprised approximately 62 percent, or 579 PDEW, of the Airport's domestic O&D market. Four of the top five markets are scheduled to be served nonstop from the Airport in 2016.

Table 3-7: Historical O&D and Connection Enplaned Passenger Traffic

YEAR	O&D PASSENGERS	O&D PERCENT OF TOTAL	CONNECTION PASSENGERS	CONNECTION PERCENT OF TOTAL	TOTAL AIRPORT ENPLANED PASSENGERS
2006	283,965	99.4%	1,839	0.6%	285,804
2007	270,418	99.6%	1,214	0.4%	271,632
2008	231,466	99.5%	1,086	0.5%	232,552
2009	234,398	99.8%	489	0.2%	234,887
2010	286,437	99.5%	1,412	0.5%	287,849
2011	333,841	99.4%	1,859	0.6%	335,700
2012	368,104	99.2%	2,855	0.8%	370,959
2013	399,131	98.9%	4,241	1.1%	403,372
2014	380,126	98.8%	4,537	1.2%	384,663
2015	360,664	99.4%	2,138	0.6%	362,802
Compound Annual Growth Rate					
2006–2009	(6.2%)		(35.7%)		(6.3%)
2009–2012	16.2%		80.1%		16.5%
2012–2015	(0.7%)		(9.2%)		(0.7%)
2006–2015	2.7%		1.7%		2.7%

NOTE: Passenger totals do not include nonrevenue passengers.

SOURCES: U.S. Department of Transportation, Form T-100, March 2016; U.S. Department of Transportation, DB1B Survey, March 2016.

PREPARED BY: Ricondo & Associates, Inc., March 2016.

Table 3-8: 2015 Top 25 Domestic O&D Markets at the Airport

RANK	DESTINATION	O&D PASSENGERS PDEW ^{1/}	AVERAGE FARE	NONSTOP SERVICE ^{2/}
1	PHL	42	\$225	
2	TPA	38	\$125	●
3	ATL	38	\$189	●
4	MCO	35	\$137	●
5	DCA	34	\$223	●
6	BOS	34	\$256	
7	EWR	34	\$229	
8	FLL	33	\$82	●
9	CLT	31	\$185	●
10	LGA	29	\$222	
11	ORD	29	\$234	
12	BWI	20	\$250	
13	DTW	19	\$264	
14	JFK	16	\$232	
15	MSP	15	\$249	
16	IAH	15	\$234	
17	DFW	15	\$242	
18	JAX	14	\$181	
19	PIT	14	\$226	
20	IND	13	\$243	
21	CVG	12	\$201	
22	CLE	12	\$248	
23	MIA	12	\$124	●
24	ORF	12	\$297	
25	CMH	11	\$256	
Top 5 Markets		187	\$181	
Top 25 Markets		577	\$206	
Other O&D Markets		362	\$266	
Total O&D		939	\$229	
Total U.S. Domestic		2,585,285	\$180	

NOTES:

1/ Passengers per day, each way (PDEW).

2/ Based on nonstop service in 2016, not 2015.

SOURCES: U.S. Department of Transportation, DB1B Survey, May 2016; Innovata, May 2016.

PREPARED BY: Ricondo & Associates, Inc., May 2016.

In addition to passenger volume, O&D demand at the Airport can be measured by passenger revenue generated by the O&D passenger base. **Table 3-9** presents domestic O&D passenger revenue generated at the Airport (excluding taxes and fees).⁷ While O&D passengers have grown at a CAGR of 1.6 percent from 2006 to 2015, revenue growth has been more pronounced, increasing at a CAGR of 5.7 percent during the same period.

Table 3-9: Airport Historical Domestic O&D Passengers and Passenger Ticket Revenue

YEAR	O&D ENPLANED PASSENGERS	O&D PASSENGER GROWTH	O&D PASSENGER TICKET REVENUE (\$)	REVENUE GROWTH PERCENT OF TOTAL
2006	303,881		47,590,266	
2007	277,733	(8.6%)	48,766,379	2.5%
2008	228,816	(17.6%)	45,515,804	(6.7%)
2009	224,726	(1.8%)	42,006,938	(7.7%)
2010	276,373	23.0%	50,647,507	20.6%
2011	329,858	19.4%	60,648,808	19.7%
2012	364,037	10.4%	68,550,852	13.0%
2013	380,733	4.6%	73,371,536	7.0%
2014	361,691	(5.0%)	75,250,422	2.6%
2015	349,271	(3.4%)	78,575,071	4.4%
Compound Annual Growth Rate				
2006–2009	(9.6%)		(4.1%)	
2009–2012	17.4%		17.7%	
2012–2015	(1.4%)		4.7%	
2006–2015	1.6%		5.7%	

NOTE: Excludes ancillary fees.

SOURCES: U.S. Department of Transportation, Form T-100, May 2016; U.S. Department of Transportation, DB1B Survey, May 2016.

PREPARED BY: Ricondo & Associates, Inc., May 2016.

After declining by 7.7 percent in 2009 from 2008 levels, domestic O&D passenger revenue increased at a CAGR of 17.7 percent from 2009 to 2012, as domestic O&D enplaned passengers increased at a CAGR of 17.4 percent. This period corresponds to the post-recession period, during which airlines began practicing more capacity discipline, limiting the capacity made available to only those passengers willing to pay fares high enough to meet their fiscal goals (see Section 2.2.4). From 2012 to 2015, domestic O&D passenger revenue grew at a CAGR of 4.7 percent, while domestic O&D enplaned passengers declined at a CAGR of 1.4 percent.

⁷ Fees are non-ticket charges including: security charges, facility charges, checked luggage, seat assignments, etc.

While the higher growth of revenue relative to passengers is primarily due to the capacity discipline exhibited throughout the industry, it also presents a possible indication of latent demand. As the economy continues to grow, a larger portion of the travelling public will have the ability to pay the higher fares demanded by the market. This will provide an opportunity for airlines to profitably introduce additional capacity into the marketplace.

3.1.3 AIRCRAFT OPERATIONS

Table 3-10 presents historical aircraft operations at the Airport for 2006 through 2015. Operations in each category of activity (passenger airline, cargo, general aviation/other air taxi, and military) have fluctuated from year to year. Overall, the number of aircraft operations at the Airport decreased at a CAGR of 5.3 percent between 2006 and 2015. During this period, passenger airline operations decreased at a CAGR of 3.5 percent, with the majority of the decline occurring during the period from 2008 to 2011, coinciding with airline bankruptcies and service reductions during the economic recession. Cargo operations decreased at a CAGR of 1.9 percent between 2006 and 2015, reaching a low in 2011 due in part to the economic recession. Since the low in 2011, cargo operations have consistently grown, increasing at a CAGR of 2.8 percent from 2012 to 2015. General aviation/other air taxi operations declined at a CAGR of 4.3 percent between 2006 and 2015, compared to a 2.0 percent compound annual decline of general aviation traffic nationally. The decline in general aviation/other air taxi operations has been more pronounced in recent years, declining at a CAGR of 7.5 percent between 2012 and 2015, compared to a 0.6 percent average annual rate of decline nationally. One possible reason for this decline is a shift in general aviation activity to nearby Florida Keys Marathon Airport, which is a general aviation airport where general aviation/other air taxi operations increased at a CAGR of 0.9 percent between 2012 and 2015.

Table 3-10: Historical Aircraft Operations

YEAR	PASSENGER		GENERAL AVIATION/OTHER			Total
	AIRLINE	ALL CARGO	AIR TAXI	MILITARY		
2006	25,715	866	49,870	10,598	87,049	
2007	23,698	858	50,477	15,453	90,486	
2008	21,043	818	44,028	5,154	71,043	
2009	16,279	706	37,459	460	54,904	
2010	18,087	711	37,974	481	57,253	
2011	15,965	660	43,223	523	60,371	
2012	19,566	672	42,260	394	62,892	
2013	19,718	726	36,313	689	57,446	
2014	18,267	743	33,913	662	53,585	
2015	18,651	729	33,492	676	53,548	
Compound Annual Growth Rate						
2006–2009	(14.1%)	(6.6%)	(9.1%)	(64.9%)	(14.2%)	
2009–2012	6.3%	(1.6%)	4.1%	(5.0%)	4.6%	
2012–2015	(1.6%)	2.8%	(7.5%)	19.7%	(5.2%)	
2006–2015	(3.5%)	(1.9%)	(4.3%)	(26.3%)	(5.3%)	

SOURCES: Federal Aviation Administration, March 2016; U.S. Department of Transportation, Form T-100, March 2016.

PREPARED BY: Ricondo & Associates, Inc., March 2016.

Table 3-11 presents passenger airline aircraft operations at the Airport. Silver Airways operated the most flights at EYW in 2015, accounting for 39.5 percent of all passenger airline operations at the Airport. American Airlines had the highest share of passenger airline operations in 2011 at 31.0 percent, which was before United Airlines increased operations on its regional partner Silver Airways after its merger with Continental Airlines in 2010; United Airlines experienced the highest share of passenger airline operations at the Airport in 2012. In 2015, American Airlines' share of passenger airline operations was 27.1 percent. Delta Air Lines' share of passenger airline operations has grown from 13.6 percent in 2011 to 16.6 percent in 2015, with a slight decrease in market share in 2012 due to the increased United Airlines operations. Nonscheduled, charter, passenger airlines accounted for 16.8 percent of passenger airline operations at the Airport in 2015.

Table 3-11: Historical Operations Share by Passenger Airline

AIRLINE ^{1/}	2011 SHARE	2012 SHARE	2013 SHARE	2014 SHARE	2015 SHARE
Silver Airways	0.0%	0.0%	15.5%	33.5%	39.5%
American Airlines ^{2/}	31.0%	24.6%	25.1%	27.5%	27.1%
Other Airlines ^{3/}	0.1%	5.9%	12.1%	18.8%	16.8%
Delta Air Lines	13.6%	12.3%	12.6%	15.0%	16.6%
Cape Air	23.0%	18.2%	13.6%	0.0%	0.0%
Southwest Airlines ^{4/}	7.6%	7.5%	10.4%	5.2%	0.0%
United Airlines ^{5/}	24.7%	31.5%	10.7%	0.0%	0.0%
Airport Total^{6/}	100.0%	100.0%	100.0%	100.0%	100.0%

NOTES:

1/ Includes regional partner airlines.

2/ American Airlines and US Airways merged on December 9, 2013; for the purposes of this Master Plan Study, the two airlines are combined.

3/ Includes nonscheduled service.

4/ Southwest Airlines and AirTran Airways merged in 2011; for the purposes of this Master Plan Study, the two airlines are combined.

5/ United Airlines and Continental Airlines merged in 2010; for the purposes of this Master Plan Study, the two airlines are combined.

6/ Figures may not add to totals shown because of rounding.

SOURCES: U.S. Department of Transportation, Form T-100, March 2016; Innovata, March 2016.

PREPARED BY: Ricondo & Associates, Inc., March 2016.

Table 3-12 presents the passenger airline aircraft operations by mainline and regional operations. Mainline operations accounted for 12.7 percent of total passenger airline aircraft operations, and total mainline and regional passenger airline operations combined accounted for 34.8 percent of total Airport operations in 2015. Mainline operations at the Airport have increased at a compound annual growth rate of 27.1 percent from 2006 to 2015, while regional operations have decreased at a compound annual rate of 4.7 percent, primarily due to the increased use of larger aircraft by Delta Air Lines to serve its hub in Atlanta. All-cargo, other air taxi, general aviation, and military aircraft operations are shown in **Table 3-13**.

Table 3-12: Historical Mainline and Regional Passenger Airline Aircraft Operations

YEAR	MAINLINE OPERATIONS	SHARE OF PASSENGER AIRLINES	REGIONAL OPERATIONS	SHARE OF PASSENGER AIRLINES	TOTAL AIRLINE OPERATIONS	SHARE OF AIRPORT TOTAL	TOTAL AIRPORT OPERATIONS
2006	242	0.9%	25,473	99.1%	25,715	29.5%	87,049
2007	0	0.0%	23,698	100.0%	23,698	26.2%	90,486
2008	0	0.0%	21,043	100.0%	21,043	29.6%	71,043
2009	62	0.4%	16,217	99.6%	16,279	29.6%	54,904
2010	1,261	7.0%	16,826	93.0%	18,087	31.6%	57,253
2011	2,660	16.7%	13,305	83.3%	15,965	26.4%	60,371
2012	3,139	16.0%	16,427	84.0%	19,566	31.1%	62,892
2013	4,031	20.4%	15,687	79.6%	19,718	34.3%	57,446
2014	3,118	17.1%	15,149	82.9%	18,267	34.1%	53,585
2015	2,099	12.7%	16,552	88.7%	18,651	34.8%	53,548
Compound Annual Growth Rate							
2006–2009	(36.5%)		(14.0%)		(14.1%)		(14.2%)
2009–2012	269.9%		0.4%		6.3%		4.6%
2012–2015	(12.6%)		0.3%		(1.6%)		(5.2%)
2006–2015	27.1%		(4.7%)		(3.5%)		(5.3%)

SOURCES: U.S. Department of Transportation, Form T-100, March 2016; Federal Aviation Administration, February 2016.

PREPARED BY: Ricondo & Associates, Inc., March 2016.

Table 3-13: Historical Cargo, Other Air Taxi, General Aviation, and Military Aircraft Operations

YEAR	CARGO		OTHER AIR TAXI		GENERAL AVIATION		MILITARY		TOTAL AIRPORT OPERATIONS
	OPERATIONS	SHARE OF AIRPORT TOTAL	OPERATIONS	SHARE OF AIRPORT TOTAL	OPERATIONS	SHARE OF AIRPORT TOTAL	OPERATIONS	SHARE OF AIRPORT TOTAL	
2006	866	1.0%	2,825	3.2%	47,045	54.0%	10,598	12.2%	87,049
2007	858	0.9%	6,489	7.2%	43,988	48.6%	15,453	17.1%	90,486
2008	818	1.2%	4,819	6.8%	39,209	55.2%	5,154	7.3%	71,043
2009	706	1.3%	1,436	2.6%	36,023	65.6%	460	0.8%	54,904
2010	711	1.2%	857	1.5%	37,117	64.8%	481	0.8%	57,253
2011	660	1.1%	1,857	3.1%	41,366	68.5%	523	0.9%	60,371
2012	672	1.1%	622	1.0%	41,638	66.2%	394	0.6%	62,892
2013	726	1.3%	2,538	4.4%	33,775	58.8%	689	1.2%	57,446
2014	743	1.4%	5,099	9.5%	28,814	53.8%	662	1.2%	53,585
2015	729	1.4%	4,880	9.1%	28,612	53.4%	676	1.3%	53,548
Compound Annual Growth Rate									
2006-2009	(6.6%)		(20.2%)		(8.5%)		(64.9%)		(14.2%)
2009-2012	(1.6%)		(24.3%)		4.9%		(5.0%)		4.6%
2013-2015	2.8%		98.7%		(11.8%)		19.7%		(5.2%)
2006-2015	(1.9%)		6.3%		(5.4%)		(26.3%)		(5.3%)

SOURCES: U.S. Department of Transportation, Form T-100, March 2016; Federal Aviation Administration, March 2016.

PREPARED BY: Ricondo & Associates, Inc., March 2016.

3.2 Factors Affecting Aviation Demand at the Airport

This section discusses qualitative factors that could influence future aviation activity at the Airport. Data and information related to these factors have been either directly or indirectly incorporated into the development of activity forecasts for the Airport. Each of the eight qualitative factors considered in forecasting aviation activity at EYW are discussed below. These factors include broad economic and industry influences that are recognized to have a potential to inhibit or induce growth in aviation activity. Each factor is unique and not dependent on any other. Therefore, each factor is discussed individually; however, multiple factors may influence future activity at the Airport at any point in time.

3.2.1 NATIONAL ECONOMY

Nationally, trends in airline travel demand, measured by either passenger volumes or passenger revenue, have been closely correlated with national economic trends, most notably changes in gross domestic product (GDP). Section 2.3.2.4 presents an analysis of general economic trends, both national and local, that may influence demand for air service over time. Airport activity forecasts are based on forecasts of socioeconomic variables. If actual socioeconomic conditions vary from those forecast, then Airport activity will also likely vary.

3.2.2 STATE OF THE AIRLINE INDUSTRY

In the aftermath of the terrorist attacks on September 11, 2001, the U.S. airline industry experienced a reduction in the demand for airline travel, which exacerbated problems for a U.S. airline industry already weakened by the slowing economy and rising labor and fuel costs. This resulted in operating losses between 2001 and 2004 that totaled more than \$22 billion (excluding extraordinary charges and gains). From 2005 through 2007, the airline industry recovered, posting combined operating profits.⁸ However, in 2008 and through the first half of 2009, the combination of record-high fuel prices, weakening economic conditions, and a weak dollar resulted in the worst financial environment for the U.S. network and low-cost airlines since September 11, 2001. Since 2009, the industry has improved with industry consolidation, capacity realignment, and a recovering economy, which resulted in record industry profits in 2013 and 2014. North American airline members of the International Air Transport Association generated estimated profits of \$21.5 billion in 2015 and are forecast to generate \$22.9 billion in profits in 2016, after producing \$11.2 billion in profits in 2014.⁹

3.2.3 AIRLINE MERGERS AND ACQUISITIONS

Since 2009, airlines have merged or acquired competitors in an attempt to become more competitive and cost efficient. In 2009, Delta Air Lines completed its merger with Northwest Airlines, initiating a wave of airline mergers and acquisitions. That same year, Republic Airways Holdings, a regional airline holding corporation,

⁸ Airlines for America, *2009 Economic Report*, July 2009.

⁹ International Air Transport Association, *Economic Performance of the Industry*, June 2016.

acquired Frontier Airlines of Denver and Midwest Airlines of Milwaukee. In 2010, United Airlines and Continental Airlines merged. In 2011, Southwest Airlines acquired AirTran Holdings, Inc., the former parent company of low-cost competitor AirTran Airways. In 2013, American Airlines and US Airways merged, creating what was the largest airline in terms of operating revenue and revenue passenger miles. And, most recently, on April 4, 2016, Alaska Airlines announced its acquisition of Virgin America, which is pending regulatory approval. These mergers and acquisitions have enabled airlines to reduce capacity and gain higher profitability. Additional consolidation in the U.S. airline industry could affect the amount of capacity offered to passengers industry-wide and at EYW.

3.2.4 CAPACITY DISCIPLINE – A CHANGE IN THE AIRLINE BUSINESS MODEL

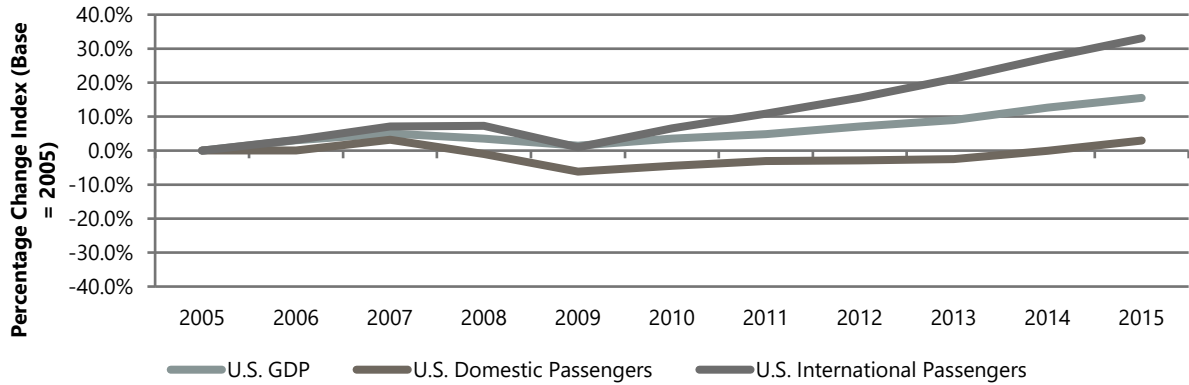
In 2008, North American airline members of the International Air Transport Association recorded a 16.8 billion dollar loss. Shortly thereafter, many domestic airlines announced significant capacity reductions; increases in fuel surcharges, airfares, and fees; and other measures to address their financial challenges. These changes dramatically improved the financial conditions for the airlines. In contrast to earlier losses, North American International Air Transport Association airlines generated estimated profits of \$21.5 billion in 2015, after producing \$11.2 billion in profit in 2014.¹⁰ Strict control on capacity, primarily in the domestic market, referred to as capacity discipline, is the principal driver behind the financial turnaround experienced by the airline industry.¹¹

Capacity discipline reflects a shift in the airline business model, from an environment where market-share targets were pursued to one where financial targets are pursued. The new business model resulted in a 10 percent decrease in U.S. domestic seat capacity between 2008 and 2014 as airlines shed less profitable capacity and passenger volumes not contributing toward the achievement of financial targets. **Exhibit 3-3** illustrates the change in U.S. airline industry passenger volumes since 2005 relative to the change in U.S. GDP, a driver of demand for air travel. Both domestic and international passenger volumes followed GDP trends until 2009, after which domestic passenger volumes remained largely unchanged, while GDP and international passenger volume growth resumed. More-profitable international passengers have continued to be accommodated by airlines. **Exhibit 3-4** illustrates the change in U.S. domestic passenger volume, passenger revenues, and U.S. GDP since 2005. While domestic passenger volumes have not followed GDP trends since 2008, another measure of passenger demand—passenger revenues—has increased as U.S. airlines have focused on achieving financial targets through lower domestic passenger volumes and higher passenger fares.

¹⁰ International Air Transport Association, *Economic Performance of the Industry*, June 2016.

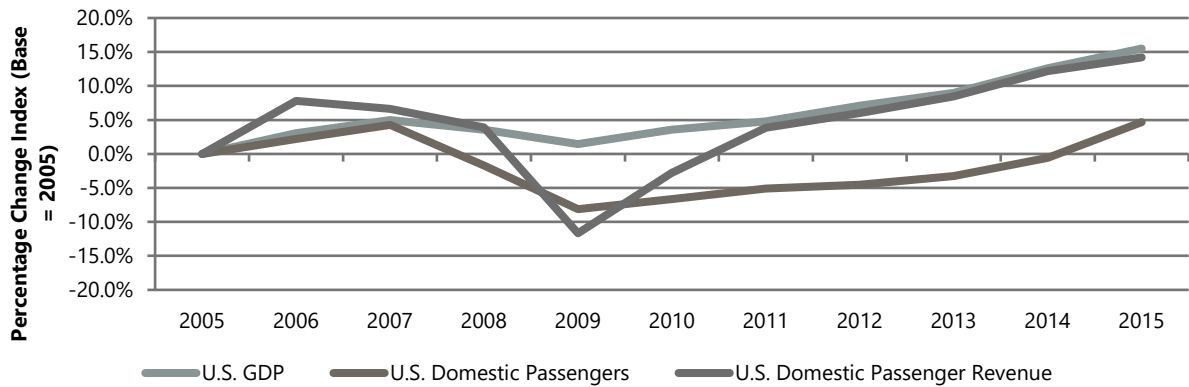
¹¹ With fuel prices at their lowest levels since 2007, capacity discipline is starting to erode as airlines add capacity that may not have been profitable in previous years, leading to some downward pressure on fares and revenue.

Exhibit 3-3: Growth Trends of U.S. Passengers and Gross Domestic Product



NOTES: U.S. GDP is inflation-adjusted. Data for 2015 are for the four quarters ending Q3 2015, the latest data available for international passengers.
 SOURCE: U.S. Department of Commerce Bureau of Economic Analysis, May 2016; U.S. Department of Transportation, Form T-100, May 2016.
 PREPARED BY: Ricondo & Associates, Inc., May 2016.

Exhibit 3-4: Growth Trends of U.S. Domestic Passengers, Passenger Revenue, and Gross Domestic Product



NOTE: U.S. GDP and U.S. Domestic Passenger Revenue are inflation-adjusted.
 SOURCES: U.S. Department of Commerce Bureau of Economic Analysis, May 2016; U.S. Department of Transportation, DB1B Survey, May 2016.
 PREPARED BY: Ricondo & Associates, Inc., May 2016.

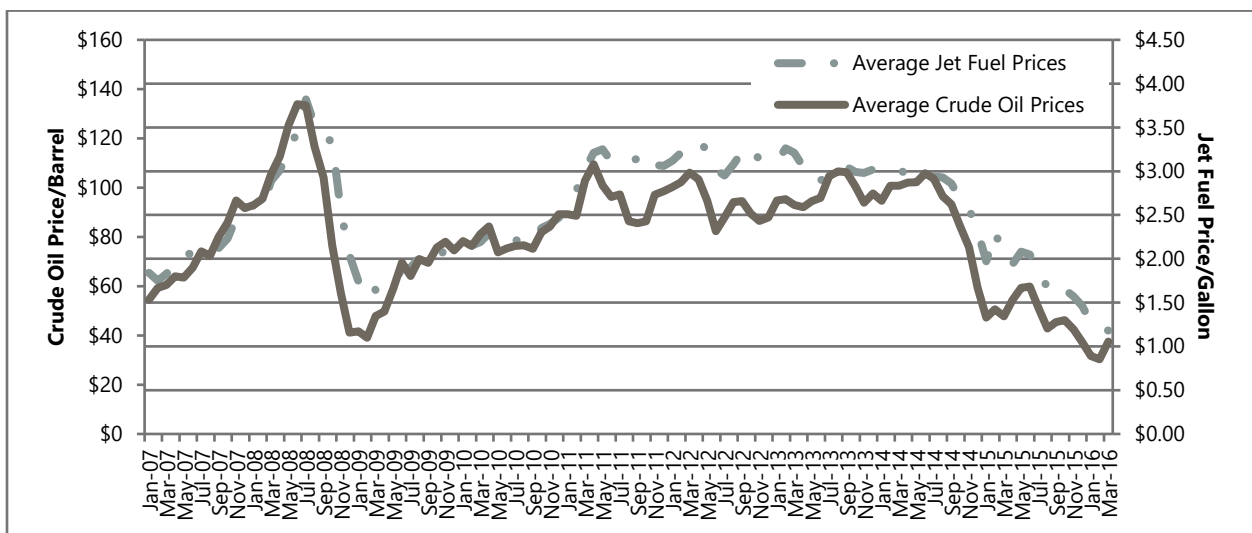
3.2.5 COST OF AVIATION FUEL

The price of fuel is one of the most significant and volatile expenses for airlines. Historically, fuel has been the first- or second-largest operating expense for the airline industry, shifting with labor cost. As of the third quarter of 2015, despite decreasing fuel costs, fuel was the largest operating expense for the airline industry, representing 28.0 percent of operating expenses. **Exhibit 3-5** shows the quarterly average prices of jet fuel

and crude oil from January 2007 through March 2016. Since 2007, the average monthly price of jet fuel fluctuated between a high of \$3.82 per gallon in July 2008 to a low of \$1.18 in March 2016.

Fluctuating fuel costs will continue to impact airline profitability, and this could lead to changes in air service as airlines restructure air service to address increases or decreases in the cost of fuel.

Exhibit 3-5: Historical Monthly Averages of Jet Fuel and Crude Oil Prices



SOURCES: U.S. Bureau of Transportation Statistics, May 2016 (Average Jet Fuel Prices); U.S. Energy Information Administration, May 2016 (Average Crude Oil Prices).

PREPARED BY: Ricondo & Associates, Inc., May 2016.

3.2.6 THREAT OF TERRORISM AND GEOPOLITICAL ISSUES

Since September 11, 2001, the recurrence of terrorism incidents against either domestic or world aviation remains a risk to achieving the activity forecasts contained in this report. Tighter security measures have restored the public's confidence in the safety of U.S. and world air travel. However, any terrorist incident aimed at aviation could impact demand for aviation services.

Additionally, geopolitical issues may affect aviation demand during the forecast period. Potential governmental or regional instability in certain countries or locations may affect access to, or demand for, aviation service in these places. Future governmental or regional instability could also impact demand for international aviation service at the Airport.

3.2.7 OPERATIONAL CAPACITY OF THE NATIONAL AIRSPACE SYSTEM

A significant concern of the FAA is how increased delays at busy airports impact the efficiency of the National Airspace System. In its January 2015 Airport Capacity Needs in the National Airspace System report, the FAA

stated the need to address delays that remain at key airports since its 2007 assessment and to implement NextGen airspace system improvements. The report emphasized the need to continue to invest in system improvements with airfield enhancements and NextGen capabilities.

3.2.8 COMPETING AIRPORTS

Other airports serving passengers in the southwest Florida region include Florida Keys Marathon Airport (MTH), located in Marathon, Florida, approximately 50 miles northeast of EYW; Miami International Airport (MIA), located in Miami, Florida, approximately 160 miles northeast of EYW; and Fort Lauderdale-Hollywood International Airport (FLL), located approximately 190 miles northeast of EYW. While MTH was previously a commercial service airport similar in traffic composition to EYW, it is now a general aviation airport, with no scheduled passenger service; therefore, it has little current potential leakage to or from EYW. FLL is a commercial service airport that is the largest base for Spirit Airlines; it is also a focus airport for Allegiant Air, JetBlue Airways, and Southwest Airlines. FLL is also the location of Silver Airways' headquarters. These airlines typically offer lower fares than mainline airlines, so passengers may opt to fly out of FLL for the lower fares. In contrast to FLL, MIA serves as a hub for American Airlines; as a major hub, it has historically served a greater component of connecting passengers that use MIA as a waypoint on journeys between two other airports, as opposed to using it as their originating or terminating airport. Passengers may choose to fly out of MIA for the greater number of destinations and airlines offered.

Table 3-14 presents a comparison of the average O&D domestic fares at EYW, MIA, and FLL since 2006. At no point in the past 10 years has the average domestic fare at EYW been lower than those at MIA or FLL. Of the three airports, FLL has had the lowest average fare every year since 2006, primarily due to its status as a focus city for low-cost carriers and the lack of a single dominant airline, such as American Airlines at MIA.

Table 3-14: Average Domestic O&D Fare at EYW, MIA, and FLL

YEAR	KEY WEST (EYW)	MIAMI (MIA)	FORT LAUDERDALE (FLL)
2006	\$158	\$147	\$123
2007	\$178	\$153	\$124
2008	\$202	\$165	\$129
2009	\$189	\$151	\$119
2010	\$188	\$162	\$128
2011	\$188	\$172	\$138
2012	\$194	\$181	\$142
2013	\$197	\$187	\$149
2014	\$214	\$199	\$154
2015	\$232	\$190	\$143

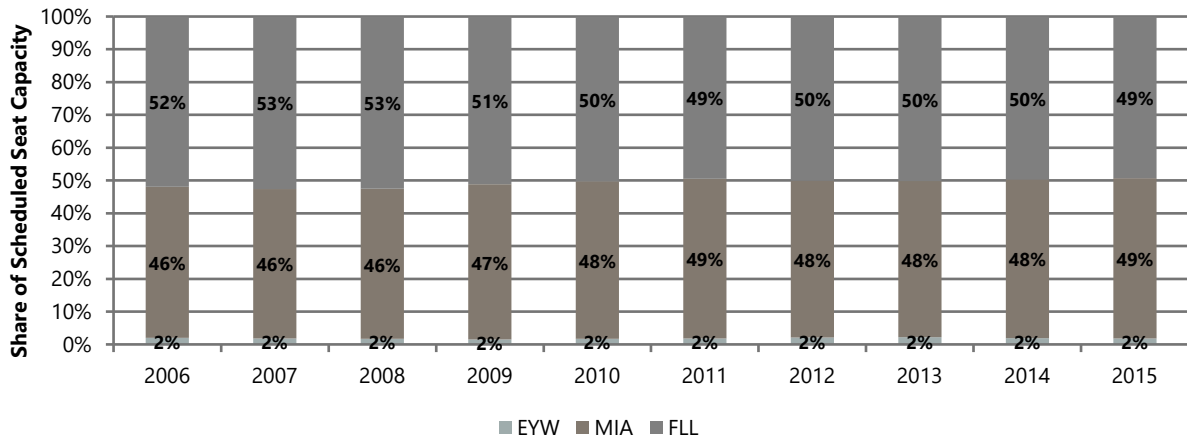
SOURCE: U.S. Department of Transportation, DB1B Survey, March 2016.

PREPARED BY: Ricondo & Associates, Inc., March 2016.

With a drive time of fewer than four hours between EYW and FLL and between EYW and MIA, and cheaper fares to FLL and MIA than EYW, many passengers choose to fly into FLL or MIA and drive to EYW. According to the Monroe County Tourist Development Council, in a survey conducted from January to June 2013, 45 percent of visitors to the Florida Keys flew to Miami and rented a car, and 11 percent flew to another Florida airport and rented a car for their visit.¹² However, the relative aviation activity among the three airports showed little change from 2006 to 2015, suggesting limited leakage beyond what occurs currently.

Exhibit 3-6 presents the proportions of scheduled domestic seat capacity among EYW, MIA, and FLL. The total share of scheduled seat capacity at EYW has consistently been approximately 2 percent from 2006 to 2015, while MIA has been gaining a slight proportion of scheduled domestic seat capacity compared to FLL, with the two airports each having approximately 49 percent in 2015. Overall, however, the share of scheduled seats has not varied significantly among the airports.

Exhibit 3-6: Proportion of Historical Scheduled Seat Capacity at EYW, MIA, and FLL



NOTE: Figures may not sum to 100 percent due to rounding.

SOURCE: U.S. Department of Transportation, DB1B Survey, September 2015.

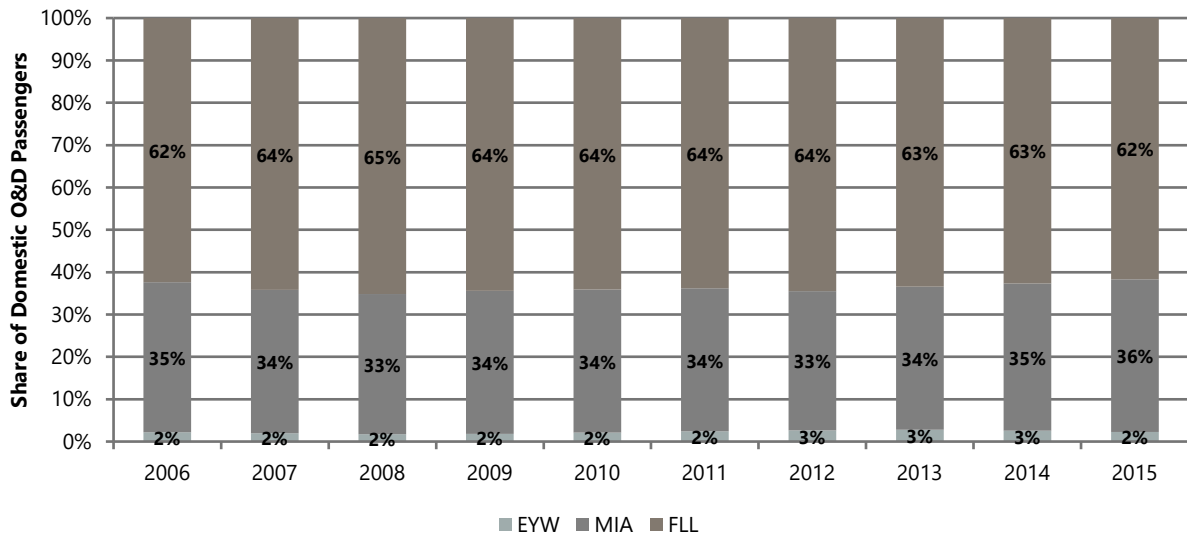
PREPARED BY: Ricondo and Associates, Inc., September 2015.

Exhibit 3-7 presents the proportions of domestic O&D passengers among EYW, MIA, and FLL. The share of domestic O&D passengers at EYW remained between 2 percent and 3 percent from 2006 to 2015, but it has averaged nearly 3 percent since 2011. The shares of domestic O&D passengers at FLL and MIA have also

¹² Monroe County Tourist Development Council, *Visitor Profile Survey: Monroe County – Calendar Year 2013 by Quarter*, <http://www.monroecounty-fl.gov/DocumentCenter/Home/View/6956> (accessed June 1, 2016).

remained consistent from 2006 to 2015 relative to EYW: in 2015, FLL and MIA accounted for 62 percent and 36 percent, respectively, of domestic O&D passengers at the three airports.

Exhibit 3-7: Proportion of Historical Domestic O&D Passengers at EYW, MIA, and FLL



NOTE: Figures may not sum to 100 percent due to rounding.

SOURCE: U.S. Department of Transportation, DB1B Survey, March 2016.

PREPARED BY: Ricondo and Associates, Inc., March 2016.

3.3 Passenger Airline Forecast Methodology and Results

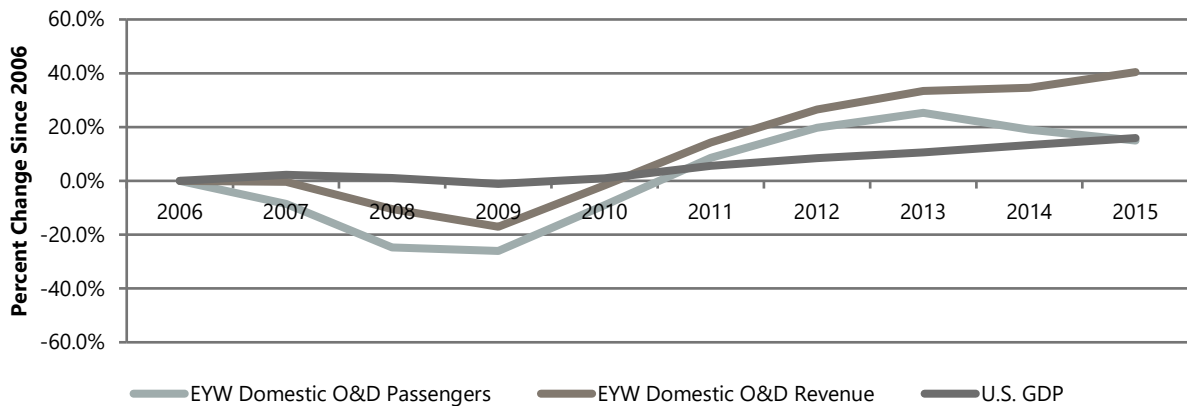
3.3.1 PASSENGER AIRLINE FORECAST OVERVIEW

The Airport primarily serves the domestic aviation market and accounts for approximately 0.05 percent of total U.S. enplaned passengers. Throughout the last decade, EYW has been characterized by a fragmented market share, with nonstop air service provided to hub airports of the various airlines serving EYW and to several regional markets. Traffic at the Airport is largely O&D and primarily comprises visiting or nonresident passengers.

It is expected that over the forecast period, EYW will continue to operate primarily as an O&D airport and that passenger demand growth will be accommodated by airline seat capacity and frequency growth mainly to and from existing nonstop destinations. Demand growth is expected to materialize as a result of

socioeconomic demand-related market forces, both in top destination markets from the Airport¹³ and in the broader United States. **Exhibit 3-8** shows the Airport's domestic O&D demand since 2006, both in terms of passenger volume and passenger revenue, along with U.S. GDP. Domestic O&D revenue and passengers at the Airport both declined with U.S. GDP from 2006 to 2009, though at a faster rate. As the economy recovered after the recession, domestic O&D revenue and passengers also grew; however, since 2013, domestic O&D passengers at the Airport have been declining, while both domestic O&D revenue and U.S. GDP continue to grow. This is indicative of the effects of airline industry capacity discipline in an improving economic environment, as described in Section 2.2.4. Similar results were found with other socioeconomic variables; therefore, passenger demand was forecast in terms of O&D revenue. In examining future demand growth at the Airport, estimates were made as to how passenger revenue growth will materialize between its two components, passenger fare growth and passenger volume growth.

Exhibit 3-8: Domestic O&D Passenger Volume and Passenger Revenue Trends at EYW



NOTES: EYW Domestic O&D Revenue and U.S. GDP are inflation-adjusted. Passenger volumes do not include nonrevenue passengers.

SOURCE: U.S. Department of Transportation, DB1B Survey, May 2016.

PREPARED BY: Ricondo & Associates, Inc., May 2016.

3.3.2 PASSENGER AIRLINE FORECAST METHODOLOGY

Several methodologies were employed to forecast enplaned passengers, passenger aircraft operations, and the passenger aircraft fleet mix at the Airport. These methodologies are discussed for three time periods: the short-term (2016–2020), the medium-term (2021–2025), and the long-term (2026–2035).

¹³ Top destination markets from the Airport, by O&D passengers, include Atlanta (ATL), Boston (BOS), Chicago (ORD and MDW), Fort Lauderdale (FLL), New York City/Newark (EWR, JFK, and LGA), Orlando (MCO), Philadelphia (PHL), Tampa (TPA), and Washington, D.C. (BWI, DCA, and IAD).

3.3.2.1 Short-Term Methodology (2016–2020)

Published airline schedules for 2016 were analyzed, and flight segment-level estimates of performance were developed based on trends of load factors and completion rates (the number of flights scheduled compared to the number of flights completed). These completion rates were identified through analysis of U.S. Department of Transportation enplanement and O&D data. Estimates of load factor and completion rates were applied to scheduled capacity in order to derive enplaned passenger and operations forecasts for 2016.

For the 2017 through 2020 period, air service profiles were developed (number of operations and seat capacity) using 2016 service levels and performance as a baseline reference. Passenger activity in 2016, both O&D and connecting passengers (a minimal component), was used as a baseline and grown using forecasts of growth derived through socioeconomic regression analysis. Greater detail on the use of socioeconomic regression modeling is presented in Section 2.3.2.4.

3.3.2.2 Medium-Term Methodology (2021-2025)

Forecasts of underlying passenger demand for the period from 2021 through 2025 were developed using socioeconomic regression analysis, as described in Section 2.3.2.4. Forecasts of passenger demand were combined with estimates of airline capacity deployment (such as airline per-departure seat capacity and average load factors), resulting in forecasts of passenger airline operations. The expectations of airline capacity deployment were developed through analysis of fleet plans, airline industry performance trend analysis, and analysis of possible new air service opportunities.

3.3.2.3 Long-Term Methodology (2026–2035)

Similar to the approach taken for the medium-term, underlying passenger demand forecasts were developed for the long-term period (2026–2035) using socioeconomic regression analysis. Forecasts of passenger demand were combined with estimates of airline capacity deployment, which resulted in forecasts of passenger airline operations. The expectations of airline capacity deployment were developed through analysis of fleet plans, airline industry performance trends, and possible new air service opportunities.

3.3.2.4 Socioeconomic Regression Analysis to Estimate Future Growth

Longer-term passenger demand growth rates at the Airport were derived using socioeconomic regression analysis. Socioeconomic regression analysis is used to identify causal relationships between a dependent variable (e.g., passenger volume) and one or more independent variables (e.g., socioeconomic factors, such as population, employment, per capita personal income, etc.). These relationships, or regression models, can be employed to forecast future growth in aviation activity using projections of independent variables. A standard measure of how well each socioeconomic variable explains passenger demand is the regression model's coefficient of determination, or R-squared. A result of 100 percent is the maximum value possible for a coefficient of determination, and it represents a perfect fit between the variables analyzed. For purposes of this analysis, an R-squared value of 75 percent or better was considered adequate.

Socioeconomic regression analysis was conducted to identify causal relationships between EYW passenger demand and socioeconomic variables at the national level and for the Air Trade Area. Forecasts were

developed using these regression models that incorporated independent projections of the relevant socioeconomic variables. The Airport primarily serves originating passengers who reside in or visit the Air Trade Area. With the Airport's high proportion of visiting passengers, demand for air service is driven by factors directly related to the demographic and economic characteristics of the points of origin for most passengers¹⁴ and the nation. As such, the following three socioeconomic variables were analyzed separately as independent variables in the regression analyses, for both the nation and the top markets to/from EYW: population, income, and gross regional/domestic product. Historical and projected data for these independent variables were obtained from Woods & Poole Economics, Inc.

The historical and projected socioeconomic data are shown in **Table 3-15**. Airline capacity discipline has resulted in fewer, yet higher fare-paying passengers, since that business model was introduced during the economic recession. This environment has enabled airlines to improve their financial results by increasing passenger revenues without greatly increasing passenger volumes. The capacity discipline model has resulted in the breakdown of historical relationships between socioeconomic growth and increasing domestic passenger volumes. Relationships between passenger volumes and the socioeconomic variables depicted in Table 2.3-1 were explored. The best relationship between domestic O&D passenger volumes and socioeconomic variables (specifically U.S. GDP) exhibited an R-squared value of 0.70, which is below the 0.75 minimum value considered acceptable for use in the forecast.

In an effort to identify stronger relationships between socioeconomic variables and passenger demand at the Airport, socioeconomic regression analysis was undertaken to identify causal relationships between socioeconomic variables and domestic passenger revenues. Four relationships with R-squared values greater than 0.80 were identified, leading to higher confidence in the relationships than those found using O&D passengers as a measure of demand. The four strongest relationships produced a forecast 20-year CAGR for passenger revenue that ranged between 2.0 percent and 2.6 percent.

To convert passenger revenue growth to passenger volume growth, analysis of several U.S. airports comparable to EYW—chosen based on similarities in market size, competitive characteristics, and passenger traffic composition—was undertaken.¹⁵ Similar to EYW, these airports have experienced disproportionately high domestic passenger revenue growth relative to domestic passenger volume growth. However, these airports have shown a reversal in the passenger fare to passenger volume trend, and revenue growth has

¹⁴ Top destination markets from the Airport, by O&D passengers, include Atlanta (ATL), Boston (BOS), Chicago (ORD and MDW), Fort Lauderdale (FLL), New York City/Newark (EWR, JFK, and LGA), Orlando (MCO), Philadelphia (PHL), Tampa (TPA), and Washington, D.C. (BWI, DCA, and IAD).

¹⁵ Airports with between 150,000 and 630,000 enplaned passengers in 2014, and at least 51 percent destination passengers for each year from 2004 through 2014, were chosen for comparison: Nantucket Memorial (ACK), Pitkin County (ASE), Rafael Hernandez (BQN), Yellowstone International (BZN), Daytona Beach Regional (DAB), La Plata (DRO), Eagle County Regional (EGE), Glacier Park International (FCA), Hilo International (ITO), Jackson Hole (JAC), Sarasota-Bradenton (SRQ), Henry E. Rohlsen (STX), and Destin-Ft. Walton Beach (VPS).

recently been driven by increasing passenger volumes. In these peer airports, approximately 60 percent of revenue growth can be attributed to passenger growth and 40 percent can be attributed to average fare growth. This ratio of passenger growth to fare growth has been applied to the EYW revenue forecasts to derive passenger volume forecasts. Results of the regression analyses with R-squared values above 0.80 are presented in **Table 3-16**.

Table 3-15 (1 of 2): Historical and Projected Socioeconomic Characteristics

YEAR	INDEPENDENT SOCIOECONOMIC VARIABLES								
	UNITED STATES OF AMERICA			TOP DESTINATION MARKETS ^{1/}			EYW AIR SERVICE AREA		
	TOTAL POPULATION ^{2/}	TOTAL PERSONAL INCOME ^{3/}	TOTAL GDP ^{3/}	TOTAL POPULATION ^{2/}	TOTAL PERSONAL INCOME ^{3/}	TOTAL GRP ^{3/}	TOTAL POPULATION ^{2/}	TOTAL PERSONAL INCOME ^{3/}	TOTAL GRP ^{3/}
Historical									
2006	298,380	11,883,038	14,028,843	53,546	2,574,974	3,251,861	74	4,220	3,521
2007	301,231	12,256,151	14,352,564	53,934	2,607,895	3,281,688	73	4,162	3,505
2008	304,094	12,443,868	14,184,185	54,322	2,640,815	3,311,515	73	4,104	3,489
2009	306,772	11,852,751	13,869,679	54,710	2,673,735	3,341,341	73	4,045	3,472
2010	309,330	12,108,318	14,154,695	55,097	2,706,656	3,371,168	73	3,987	3,456
2011	311,583	12,664,566	14,816,834	55,523	2,792,124	3,384,867	74	3,962	3,367
2012	313,874	13,080,341	15,218,600	55,913	2,861,392	3,462,445	75	4,123	3,430
2013	316,129	13,184,706	15,514,792	56,284	2,865,604	3,504,832	76	4,114	3,438
2014	318,699	13,501,635	15,892,855	56,649	2,929,788	3,583,327	77	4,244	3,599
Projected									
2015 ^{4/}	321,449	13,829,017	16,261,994	57,044	2,994,777	3,661,997	77	4,336	3,688
2016	324,392	14,160,640	16,632,973	57,472	3,060,504	3,741,028	78	4,428	3,777
2017	327,372	14,498,205	17,005,442	57,904	3,127,208	3,820,220	78	4,520	3,866
2018	330,383	14,845,792	17,382,455	58,340	3,195,732	3,900,289	78	4,614	3,955
2019	333,427	15,204,916	17,765,537	58,780	3,266,360	3,981,510	79	4,710	4,046
2020	336,500	15,576,939	18,155,067	59,222	3,339,333	4,063,939	79	4,809	4,137
2021	339,602	15,953,666	18,550,436	59,668	3,413,134	4,147,512	80	4,908	4,230
2022	342,734	16,340,432	18,950,272	60,117	3,488,657	4,231,825	80	5,009	4,323
2023	345,892	16,730,551	19,353,691	60,568	3,564,626	4,316,670	81	5,110	4,417
2024	349,078	17,122,537	19,760,977	61,023	3,640,744	4,402,091	81	5,211	4,512
2025	352,281	17,524,039	20,171,743	61,478	3,718,465	4,488,038	82	5,313	4,608
2026	355,498	17,924,123	20,585,046	61,933	3,795,747	4,574,257	82	5,415	4,704

Table 3-15 (2 of 2): Historical and Projected Socioeconomic Characteristics

YEAR	INDEPENDENT SOCIOECONOMIC VARIABLES								
	UNITED STATES OF AMERICA			TOP DESTINATION MARKETS ^{1/}			EYW AIR SERVICE AREA		
	TOTAL POPULATION ^{2/}	TOTAL PERSONAL INCOME ^{3/}	TOTAL GDP ^{3/}	TOTAL POPULATION ^{2/}	TOTAL PERSONAL INCOME ^{3/}	TOTAL GRP ^{3/}	TOTAL POPULATION ^{2/}	TOTAL PERSONAL INCOME ^{3/}	TOTAL GRP ^{3/}
2027	358,726	18,321,113	21,001,199	62,389	3,872,251	4,660,787	82	5,515	4,800
2028	361,960	18,718,520	21,420,447	62,843	3,948,615	4,747,663	83	5,614	4,896
2029	365,205	19,116,811	21,842,960	63,297	4,024,932	4,834,899	83	5,712	4,993
2030	368,462	19,510,989	22,268,693	63,751	4,100,286	4,922,470	84	5,809	5,090
2031	371,612	19,894,862	22,704,264	64,180	4,173,171	5,010,960	84	5,902	5,188
2032	374,761	20,278,736	23,139,836	64,609	4,246,057	5,099,451	85	5,994	5,285
2033	377,910	20,662,609	23,575,408	65,038	4,318,942	5,187,941	85	6,086	5,383
2034	381,059	21,046,482	24,010,980	65,467	4,391,828	5,276,431	85	6,179	5,481
2035	384,208	21,430,356	24,446,551	65,896	4,464,713	5,364,922	86	6,271	5,578
Compound Annual Growth Rate									
2014–2020	0.9%	2.4%	2.2%	0.7%	2.2%	2.1%	0.6%	2.1%	2.4%
2021–2025	0.9%	2.4%	2.1%	0.7%	2.2%	2.0%	0.6%	2.0%	2.2%
2026–2035	0.9%	2.0%	1.9%	0.7%	1.8%	1.8%	0.5%	1.6%	1.9%
2014–2035	0.9%	2.2%	2.1%	0.7%	2.0%	1.9%	0.5%	1.9%	2.1%

NOTES:

GDP – Gross Domestic Product

GRP – Gross Regional Product

1/ Top non-Florida destination markets, by O&D passengers: Atlanta (ATL), Boston (BOS), Chicago (ORD and MDW), New York City/Newark (EWR, JFK, and LGA), Philadelphia (PHL), and Washington, D.C. (BWI, DCA, and IAD).

2/ In thousands.

3/ In millions of 2009 U.S. Dollars.

4/ Socioeconomic data for 2015 are forecast by Woods & Poole Economics, Inc.

SOURCE: Woods & Poole Economics, Inc., March 2016.

PREPARED BY: Ricondo & Associates, Inc., March 2016.

Table 3-16: Regression Model Outputs and Forecast Growth Rates of Passengers and Passenger Revenues through 2035 Compared to Federal Aviation Administration Forecasts of U.S. Enplanement Growth

DEMAND ELEMENT	INDEPENDENT VARIABLE	R-SQUARED (TIMES 100)	DOMESTIC O&D REVENUE GROWTH (2015–2035 CAGR)	ENPLANED PASSENGER GROWTH (2015–2035 CAGR)
EYW Domestic O&D Passenger Revenue	U.S. GDP	87.5	3.9%	2.4%
	U.S. Personal Income	83.8	4.1%	2.5%
	Top Markets Personal Income	87.4	4.4%	2.6%
	Top Markets Population	82.9	3.3%	2.0%
	Average			3.9%
U.S. Passenger Enplanements (FAA Aerospace Forecast)			N/A	2.2%
U.S. Passenger Enplanements (FAA National Terminal Area Forecast)			N/A	1.9%

NOTE:

N/A – Not Applicable

SOURCES: Woods & Poole Economics, Inc., March 2016; Ricondo & Associates, Inc., March 2016 (Analysis); Federal Aviation Administration, 2015 Terminal Area Forecast, March 2016; Federal Aviation Administration, 2016–2036 Aerospace Forecast, March 2016.

PREPARED BY: Ricondo & Associates, Inc., March 2016.

3.3.2.5 Other Assumptions

Activity forecasts for the Airport are based on a number of other underlying assumptions of national aviation trends and national and regional economic conditions. In particular:

- The Airport will continue to primarily serve O&D passengers, with no airline developing a base of operations with the goal of serving a combination of O&D and connecting passenger demand.
- Competition with other airports in or near the EYW Air Service Area is expected to remain stable, with no structural advantages or disadvantages occurring relative to other regional airports.
- Additional airline consolidation/mergers that may occur during the forecast period are not likely to negatively affect numbers of enplaned passengers at the Airport. New airline alliances, should they develop, would be restricted to code-sharing and joint frequent-flyer programs and would not reduce airline competition at the Airport.
- For this analysis, and similar to the FAA's nationwide forecasts, it was assumed that there will be no terrorist incidents during the forecast period that would have significant, negative, and prolonged effects on aviation demand at the Airport or nationwide.
- Economic disturbances will occur during the forecast period, causing year-to-year variations in airline traffic; however, long-term increases in nationwide and Airport traffic are forecast.
- It was assumed that no major "acts of God" that may disrupt the national or global airspace system, such as the 2010 volcanic eruption in Iceland, will occur during the forecast period that would negatively affect aviation demand.

Many of the factors influencing aviation demand cannot readily be quantified, and any forecast is subject to uncertainties; as a result, the forecast process should not be viewed as precise. Actual airline traffic at the Airport may differ from the forecasts presented herein, because events and circumstances may not occur as expected, and these differences may be material.

3.3.3 ENPLANED PASSENGER AND AIRLINE OPERATIONS FORECASTS

Table 3-17 presents historical and forecast enplaned passengers, with detail on O&D and connecting passenger components. **Table 3-18** presents historical and forecast enplaned passengers with detail on mainline airline and regional airline shares. **Table 3-19** presents historical and forecast enplaned passengers along with associated operations, average load factors, and average aircraft seat capacity. Specific assumptions and points regarding enplaned passenger and passenger airline operations forecasts for the short-term (2015 to 2020), medium-term (2021 to 2025), and long-term (2026 to 2035) periods are discussed in the following subsections.

3.3.3.1 Forecast Short-Term Enplaned Passengers and Airline Operations (2016–2020)

Enplaned passengers are forecast to grow 3.6 percent annually between 2015 (the base year) and 2020, from 362,802 in 2015 to 433,318 in 2020. During the same period, passenger airline operations are forecast to grow 3.4 percent annually, from 18,651 in 2015 to 22,056 in 2020.

Throughout the short-term period, passenger growth is captured through a growth in operations. While average seat capacity is expected to grow for scheduled passenger airlines, as they replace regional jet aircraft with small narrowbody aircraft on routes with sufficient demand, overall average seat capacity is expected to remain between 50.2 and 50.5 seats per departure, due to increased operations by Silver Airways and nonscheduled charter airlines with small aircraft. **Table 3-20** presents EYW's current (2015) and forecast aircraft fleet mix categorized into five groups of average seat capacity. Through 2020, it is expected that aircraft having 100 or fewer seats will comprise approximately 86 percent of total passenger airline operations, similar to the approximately 86 percent share of operations in 2015. Operations in aircraft with between 51 and 76 seats are expected to decline from approximately 8 percent in 2015 to about 6 percent in 2020, as mainline airlines replace regional jet operations with small narrowbody operations and the smaller regional airlines at the Airport continue to use aircraft with 50 or fewer seats. Average passenger aircraft seat capacity is forecast to grow from 49.6 in 2015 to 50.2 in 2020. Load factors are forecast to remain generally constant at approximately 77 percent. In the short-term period, the split of enplaned passengers served by mainline and regional airlines is forecast to change minimally, as the regional airlines' share declines slightly from 69.4 percent in 2015 to 66.6 percent in 2016, due to an expected increase in mainline operations by Delta Air Lines relative to regional operations by American Airlines and Silver Airways at the Airport.

Table 3-17: Historical and Forecast O&D and Connection Demand

YEAR	O&D ENPLANED PASSENGERS	O&D PERCENT OF TOTAL	PASSENGER CONNECTIONS	CONNECTION PERCENT OF TOTAL	TOTAL AIRPORT ENPLANED PASSENGERS
Historical					
2006	283,965	99.4%	1,839	0.6%	285,804
2007	270,418	99.6%	1,214	0.4%	271,632
2008	231,466	99.5%	1,086	0.5%	232,552
2009	234,398	99.8%	489	0.2%	234,887
2010	286,437	99.5%	1,412	0.5%	287,849
2011	333,841	99.4%	1,859	0.6%	335,700
2012	368,104	99.2%	2,855	0.8%	370,959
2013	399,131	98.9%	4,241	1.1%	403,372
2014	380,126	98.8%	4,537	1.2%	384,663
2015	360,664	99.4%	2,138	0.6%	362,802
Forecast					
2016	388,730	99.4%	2,305	0.6%	391,035
2020	430,764	99.4%	2,554	0.6%	433,318
2025	482,844	99.4%	2,863	0.6%	485,707
2035	577,053	99.4%	3,421	0.6%	580,474
Compound Annual Growth Rate					
2006–2015	2.7%		1.7%		2.7%
2015–2020	3.6%		3.6%		3.6%
2021–2025	2.3%		2.3%		2.3%
2026–2035	1.8%		1.8%		1.8%
2015–2035	2.4%		2.4%		2.4%

NOTE: Passenger totals do not include nonrevenue passengers.

SOURCES: U.S. Department of Transportation, T-100, March 2016; U.S. Department of Transportation, DB1B Survey, March 2016; Ricondo & Associates, Inc., March 2016 (Forecast).

PREPARED BY: Ricondo & Associates, Inc., March 2016.

Table 3-18: Historical and Forecast Mainline and Regional Passenger Airline Enplaned Passengers

YEAR	MAINLINE PASSENGERS	MAINLINE SHARE OF TOTAL	REGIONAL AIRLINE PASSENGERS	REGIONAL SHARE OF TOTAL	TOTAL AIRLINE PASSENGERS
Historical					
2006	4,733	1.7%	281,071	98.3%	285,804
2007	0	0.0%	271,632	100.0%	271,632
2008	0	0.0%	232,552	100.0%	232,552
2009	2,647	1.1%	232,240	98.9%	234,887
2010	65,343	22.7%	222,506	77.3%	287,849
2011	140,356	41.8%	195,344	58.2%	335,700
2012	158,045	42.6%	212,914	57.4%	370,959
2013	213,594	53.0%	189,778	47.0%	403,372
2014	176,106	45.8%	208,557	54.2%	384,663
2015	111,151	30.6%	251,651	69.4%	362,802
Forecast					
2016	130,844	33.5%	260,191	66.5%	391,035
2020	144,665	33.4%	288,653	66.6%	433,318
2025	172,480	35.5%	313,227	64.5%	485,707
2035	188,235	32.4%	392,239	67.6%	580,474
Compound Annual Growth Rate					
2006–2015	42.0%		-1.2%		2.7%
2015–2020	5.4%		2.8%		3.6%
2021–2025	3.5%		1.6%		2.3%
2026–2035	0.8%		2.2%		1.8%
2015–2035	2.7%		2.2%		2.4%

NOTES: Passenger totals do not include nonrevenue passengers. Charter service is included in the regional airline category.

SOURCES: U.S. Department of Transportation, T-100, March 2016; Ricondo & Associates, Inc., March 2016 (Forecast).

PREPARED BY: Ricondo & Associates, Inc., March 2016.

Table 3-19: Historical and Forecast Passenger Airline Operations

YEAR	ENPLANED PASSENGERS	GROWTH	AVERAGE LOAD FACTOR	AVERAGE SEATS PER DEPARTURE	PASSENGER AIRLINE OPERATIONS	GROWTH
Historical						
2006	285,804		64.2%	33.8	25,715	
2007	271,632	-5.0%	65.1%	34.3	23,698	-7.8%
2008	232,552	-14.4%	64.2%	33.4	21,043	-11.2%
2009	234,887	1.0%	74.3%	37.6	16,279	-22.6%
2010	287,849	22.5%	73.6%	42.0	18,087	11.1%
2011	335,700	16.6%	80.3%	50.7	15,965	-11.7%
2012	370,959	10.5%	76.9%	48.0	19,566	22.6%
2013	403,372	8.7%	77.6%	51.3	19,718	0.8%
2014	384,663	-4.6%	82.5%	49.6	18,267	-7.4%
2015	362,802	-5.7%	76.2%	49.6	18,651	2.1%
Forecast						
2016	391,035	7.8%	76.5%	50.5	19,902	6.7%
2020	433,318	2.5%	77.0%	50.2	22,056	2.7%
2025	485,707	2.2%	77.5%	54.0	22,832	0.7%
2035	580,474	1.5%	78.0%	59.7	24,498	0.6%
Compound Annual Growth Rate						
2006–2015	2.7%			4.4%	-3.5%	
2015–2020	3.6%			0.2%	3.4%	
2021–2025	2.3%			1.5%	0.6%	
2026–2035	1.8%			1.0%	0.7%	
2015–2035	2.4%			0.9%	1.4%	

NOTES:

1/ Includes nonscheduled (charter) service.

2/ Passenger totals do not include nonrevenue passengers.

SOURCES: U.S. Department of Transportation, T-100, March 2016; Innovata, March 2016; Ricondo & Associates, Inc., May 2016 (Forecast).

PREPARED BY: Ricondo & Associates, Inc., May 2016.

Table 3-20: Historical and Forecast Operations Fleet Mix

AIRCRAFT CATEGORY	SEAT RANGE	2015		2016		2020		2025		2035	
		OPERATIONS	PERCENT	OPERATIONS	PERCENT	OPERATIONS	PERCENT	OPERATIONS	PERCENT	OPERATIONS	PERCENT
Passenger											
Small Piston/Turboprop/Regional Jet	<51	10,204	55%	11,167	56%	12,667	57%	10,525	46%	1,588	6%
Medium Regional Jet/Turboprop	51-76	1,527	8%	1,247	6%	1,299	6%	2,649	12%	11,022	45%
Large Regional Jet/Turboprop	77-100	4,399	24%	4,983	25%	4,999	23%	5,061	22%	5,337	22%
Small Narrowbody	101-130	2,521	14%	2,505	13%	2,334	11%	2,985	13%	1,531	6%
Medium Narrowbody	131-150	0	0%	0	0%	757	3%	1,612	7%	5,020	20%
Large Narrowbody/Widebody	151+	0	0%	0	0%	0	0%	0	0%	0	0%
Total		18,651	100%	19,902	100%	22,056	100%	22,832	100%	24,498	100%
Cargo											
Small Piston/Turboprop		729	100%	754	100%	854	100%	984	100%	1,247	100%
General Aviation											
Single Engine		20,716	72%	N/A	N/A	20,743	68%	21,180	66%	21,612	60%
Multi-Engine		5,436	19%	N/A	N/A	6,742	22%	7,705	24%	10,569	29%
Jet		1,974	7%	N/A	N/A	2,399	8%	2,901	9%	3,668	10%
Rotocraft		486	2%	N/A	N/A	486	2%	451	2%	472	1%
Other		0	0%	N/A	N/A	0	0%	0	0%	0	0%

NOTES:

N/A – Not Applicable

Table does not include other air taxi or military operations.

SOURCES: U.S. Department of Transportation, T-100, April 2016; Innovata, April 2016; Ricondo & Associates, Inc., May 2016 (Forecast); McFarland Johnson, Inc., May 2016 (GA Fleet Mix).

PREPARED BY: Ricondo & Associates, Inc., May 2016.

3.3.3.2 Forecast Medium-Term Enplaned Passengers and Airline Operations (2021–2025)

Enplaned passengers for the period are forecast to grow at an average annual rate of 2.3 percent per year, from 443,898 in 2021 to 485,707 in 2025. Associated passenger airline operations are forecast to grow by 0.6 percent annually for the period, from 22,257 in 2021 to 22,832 in 2025.

Passenger growth in the medium-term period is forecast to be accommodated mostly by growth in average aircraft seat capacity. Similar to the short-term period, average load factors are expected to remain between 77.0 and 77.5 percent. Average aircraft seats per departure are forecast to grow from 50.9 in 2021 to 54.0 in 2025, which is expected as a result of the mainline airlines' continued trend away from aircraft with fewer than 50 seats. In addition, it is forecast that regional airlines at the Airport will replace smaller turboprop aircraft with larger versions as they retire aging fleets.

3.3.3.3 Forecast Long-Term Enplaned Passengers and Airline Operations (2026–2035)

Enplaned passengers for the long-term period are forecast to grow at an average annual rate of 1.8 percent per year, from 495,904 in 2026 to 580,474 in 2035. Associated passenger airline operations are forecast to increase by 0.7 percent annually for the period, from 23,065 in 2026 to 24,498 in 2035.

Passenger growth in the long-term period is forecast to be accommodated by the continued growth in average aircraft size. Average aircraft seat capacity is forecast to grow from 54.5 in 2026 to 59.7 in 2035. As passenger demand increases, it is expected that airlines will add flights on larger aircraft to hub destinations. Overall, the forecast proportion of operations on small or medium narrowbody aircraft with 101–150 seats is expected to be approximately 26 percent in 2035, up from approximately 14 percent in 2015. Similar to the short- and medium-term periods, average load factors are forecast to remain constant between 77.5 and 78.0 percent, as airlines are not expected to add capacity beyond the demand in the market.

For the period from 2015 to 2035, enplaned passengers are forecast to increase at a CAGR of 2.4 percent, while airline operations are forecast to increase at a CAGR of 1.4 percent.

3.3.4 CRITICAL AIRCRAFT

3.3.4.1 Definition

The FAA's current Standard Operating Procedure (SOP) for FAA Review and Approval of Airport Layout Plans (ALPs) defines the critical aircraft as "... the most demanding aircraft type, or grouping of aircraft with similar characteristics."¹⁶ Federally funded projects require that the critical aircraft will make regular use of the airport in the planning period. Regular use means 500 or more annual itinerant operations or scheduled service.

¹⁶ Federal Aviation Administration, *Advisory Circular 150/5000-XX (Draft)*, September 2015.

3.3.4.2 Existing Critical Aircraft

Based on current operations at the Airport, the existing critical aircraft is the Boeing 737 series of jets. Delta Air Lines operates a 124-seat Boeing 737-700 at the Airport, and there were a total of 2,087 operations with this aircraft at the Airport in 2015.¹⁷ The Boeing 737 series of jets is classified as a C-III, according to the FAA's Airplane Design Group (ADG) classifications. Based on the outer-to-outer Main Gear Width (MGW) and Cockpit-to-Main-Gear distance (CMG), the Taxiway Design Group (TDG) of the Boeing 737 series is TDG III.¹⁸

3.3.4.3 Future Critical Aircraft

Based on the forecast fleet mix at the Airport, the future critical aircraft, through 2035, is forecast to be the Boeing 737 series of jets or the Airbus A319. Like the Boeing 737, the ADG for the Airbus 319 is C-III, and it is a TDG III aircraft.

3.4 All-Cargo Volumes and Operations Forecast

The forecast of cargo volume was developed using a combined socioeconomic regression and market share analysis.¹⁹ Regression analysis was conducted to evaluate the relationship between total domestic cargo volumes at nine southern Florida airports²⁰ and local (Monroe County) and national (U.S.) socioeconomic variables. Several of the regressions between the socioeconomic variables and total cargo volumes exhibited reasonable R-squared values and, in combination, resulted in an average forecast of 2.7 percent compound annual growth across the south Florida airports.

The Airport's recent approximate 0.08 percent share of total cargo volumes among the nine airports was applied to the total forecast southern Florida cargo volumes in order to determine the forecast cargo volumes at EYW. All-cargo operations at EYW were forecast assuming the average cargo volume per operation would remain constant throughout the forecast period. As provided in **Table 3-21**, annual all-cargo volumes are forecast to grow from 968,408 pounds in 2015 to approximately 1.66 million pounds in 2035, a CAGR of 2.7. Annual all-cargo operations are forecast to grow from 729 in 2015 to 1,247 in 2035, a CAGR of 2.7.

¹⁷ United States Department of Transportation, T-100, July 2016.

¹⁸ Federal Aviation Administration, *Advisory Circular 150-5300-13A*, February 2014.

¹⁹ Excludes belly cargo, which comprise less than 0.3 percent of total cargo volumes at the Airport.

²⁰ The airports included in the analysis were Dade Collier Airport (TNT), FLL, Kendall-Tamiami Executive Airport (TMB), EYW, MTH, MIA, Miami Sea Plane Base (MPB), Miami-Opa Locka Executive Airport (OPF), and Palm Beach International Airport (PBI).

Table 3-21: All-Cargo Volumes and All-Cargo Operations

YEAR	TOTAL CARGO VOLUME (lbs.)	CARGO VOLUME GROWTH	ALL-CARGO OPERATIONS	ALL-CARGO OPERATIONS GROWTH
Historical				
2006	1,136,820		866	
2007	1,122,379	-1.3%	858	-0.9%
2008	1,032,725	-8.0%	818	-4.7%
2009	957,560	-7.3%	706	-13.7%
2010	1,000,544	4.5%	711	0.7%
2011	880,430	-12.0%	660	-7.2%
2012	911,778	3.6%	672	1.8%
2013	994,252	9.0%	726	8.0%
2014	1,006,731	1.3%	743	2.3%
2015	968,408	-3.8%	729	-1.9%
Forecast				
2016	1,001,427	3.4%	754	3.4%
2020	1,134,451	3.1%	854	3.1%
2025	1,307,603	2.8%	984	2.8%
2035	1,656,479	2.2%	1,247	2.2%
Compound Annual Growth Rate				
2006–2015	-1.8%		-1.9%	
2015–2020	3.2%		3.2%	
2021–2025	2.9%		2.9%	
2026–2035	2.4%		2.4%	
2015–2035	2.7%		2.7%	

NOTE: Only includes all-cargo volumes and operations.

SOURCES: U.S. Department of Transportation, T-100, June 2016; Ricondo & Associates, Inc., June 2016 (Forecast).

PREPARED BY: Ricondo & Associates, Inc., June 2016.

3.5 General Aviation Forecast

This section presents the GA forecast analysis and supporting data completed for EYW. The following indicators of general aviation activity were forecast/projected to determine the types and sizes of GA facilities that should be planned to accommodate demand at the Airport:

- Number of Based Aircraft
- Based Aircraft Fleet Mix
- Annual Operations
- Peak Activity including peak month and peak day

3.5.1 PREVIOUS AVIATION ACTIVITY FORECASTS

Three previous forecasts were identified for use in this analysis and are briefly summarized in this chapter. These are the 2003 Master Plan Update, the 2015 Federal Aviation Administration (FAA) Terminal Area Forecast (TAF), and the 2013-2033 Florida Department of Transportation (FDOT) Florida Aviation System Plan (FASP). For comparison, actual based aircraft at EYW in 2015 were 58 and general aviation operations were approximately 28,300.

3.5.1.1 2003 Master Plan Update

The 2003 Key West International Airport Master Plan Update projects based aircraft from 56 to 67 between 2001 and 2021, respectively. **Table 3-22** shows based aircraft and annual general aviation operations as forecast in the 2003 Master Plan.

Table 3-22: 2003 Master Plan Forecasts

FISCAL YEAR (FY)	BASED AIRCRAFT	ANNUAL GENERAL AVIATION AIRCRAFT OPERATIONS
Base Year		
2001	56	46,640
Forecast		
2006	59	56,257
2011	61	60,523
2021	67	68,831

SOURCE: 2003 Key West International Airport Master Plan Update.

PREPARED BY: McFarland Johnson, Inc., May 2016.

3.5.1.2 FAA Terminal Area Forecast (TAF)

The 2015 FAA TAF is shown in **Table 3-23**. It shows based aircraft increasing at a rate of approximately 2.15 percent per year for the 20-year planning period. Similarly, general aviation aircraft operations are forecast to increase by approximately 1.7 percent per year to 29,194 in 2035.

Table 3-23: FAA Terminal Area Forecast

FISCAL YEAR (FY)	BASED AIRCRAFT	ANNUAL GENERAL AVIATION AIRCRAFT OPERATIONS
Base Year		
2015	66	28,300
Forecast		
2020	73	27,668
2025	81	28,166
2035	101	29,194
Average Annual Growth Rate	2.15%	1.73%

SOURCE: Federal Aviation Administration, *Terminal Area Forecast*, April 2016.

PREPARED BY: McFarland Johnson, Inc., May 2016.

3.5.1.3 FDOT Florida Aviation System Plan (FASP)

Table 3-24 shows the 2013-2033 Florida Aviation System Plan based aircraft and aircraft operations forecasts. Only general aviation aircraft operations are shown.

Table 3-24: 2013–2033 Florida Aviation System Plan (FASP)

YEAR	BASED AIRCRAFT	ANNUAL AIRCRAFT OPERATIONS
Base Year		
2015	68	35,157
Forecast		
2020	74	36,950
2025	79	38,835
2035	N/A	N/A
Average Annual Growth Rate	1.57%	1.0%

NOTE:

N/A – Not Applicable

SOURCE: Florida Department of Transportation, *Florida Aviation System Plan 2013-2033*, April 2016.

PREPARED BY: McFarland Johnson, Inc., May 2016.

3.5.2 FORECAST OF GENERAL AVIATION ACTIVITY

3.5.2.1 Forecasting Approach

Forecasts of aviation demand are a key element in all airport planning. Demand forecasts, based upon the characteristics of the service area and airport, provide a basis for determining the type, size, and timing of aviation facility development and are a platform upon which this master planning study is based. Consequently, these forecasts influence virtually all phases of the planning process.

This section presents the methodologies and assumptions used in the development of the GA aviation forecasts. To provide a useful planning tool, the projections are presented for short- (2015-2019), intermediate- (2020-2024), and long- (2025-2035) range time frames. These time frames will be used to develop the Airport's capital improvement program (ACIP).

The aviation demand forecasts will serve three primary purposes in the development of this Master Plan. Specifically, they provide the basis for:

- Determining the necessary capacity of the airfield, flight school, and ground access network serving the Airport.
- Identifying the needed size of future facilities and the type of expansion (if any) needed.
- Assessing the financial feasibility of alternative development scenarios.

3.5.2.2 Global and National Market Trends

Local socioeconomic factors alone cannot guarantee a predictable level of air operations. Growth in the overall U.S. aviation market is based on a variety of factors that are independent of the local market conditions. These external considerations have the ability to affect the overall market. Many of these factors are beyond the control of the airport itself and represent tangible considerations such as national economic conditions, implications of national and international geopolitical events, and changes in the cost of fuel.

Fuel prices are currently approaching a 7-year low while unemployment is five percent (October/November 2015). The last time unemployment was at five percent was prior to the Great Recession starting around 2007-2008. These factors could be an indicator of increased aviation activity.

On the other hand, geopolitical unrest could cause the reverse. General aviation activity may not be affected as much as commercial activity due to incidents of commercial and military planes becoming casualties of global terrorism and political unrest in the Middle East and northern Africa.

3.5.2.3 Forecast of Based Aircraft

Based aircraft forecasts serve an important role in the planning of future facilities at the Airport, particularly as it relates to features such as hangars and apron space. The based aircraft history according to the FAA TAF has ranged from 35 to 66 aircraft, as shown in **Table 3-25**. However, it should be noted that based on conversations with the Airport and FBO, 2015 based aircraft were counted at 58 rather than 66 as presented in the TAF. The base year will show 58 based aircraft for all forecasts.

Table 3-25: Historical Based Aircraft (FAA TAF)

YEAR	SINGLE	JET	MULTI	HELICOPTER	OTHER	TOTAL
1980	36	0	14	0	0	50
1981	37	0	14	0	0	51
1982	37	0	13	0	0	50
1983	37	0	13	0	0	50
1984	37	0	13	0	0	50
1985	37	0	13	0	0	50
1986	35	0	15	0	0	50
1987	35	0	15	0	0	50
1988	35	0	15	0	0	50
1989	35	0	15	0	0	50
1990	35	0	15	0	0	50
1991	35	0	15	0	0	50
1992	35	0	15	0	0	50
1993	35	0	15	0	0	50
1994	35	0	15	0	0	50
1995	35	0	15	0	0	50
1996	35	0	15	0	0	50
1997	35	0	15	0	0	50
1998	35	0	15	0	0	50
1999	35	0	15	0	0	50
2000	35	0	15	0	0	50
2001	22	0	13	0	0	35
2002	33	0	16	0	0	49
2003	35	0	16	0	0	51
2004	42	9	13	1	0	65
2005	40	4	17	0	0	61
2006	38	3	16	0	0	57
2007	30	1	12	0	0	43
2008	31	0	12	0	0	43
2009	30	0	11	0	0	41
2010	30	0	15	0	0	45
2011	34	0	18	0	0	52
2012	36	0	22	1	0	59
2013	39	0	21	1	0	61
2014	42	0	23	1	0	66
2015	42	0	23	1	0	66

SOURCE: Federal Aviation Administration, *Terminal Area Forecast*, April 2016.

PREPARED BY: McFarland Johnson, Inc., May 2016.

Forecast of Based Aircraft using Existing Forecasts

Table 3-26 shows the baseline 2015 based aircraft and forecast growth from the following three sources:

- FDOT Aviation System Plan (FASP) 2013-2033
- FAA Aerospace Forecast 2016-2036
- FAA TAF, April 2016

These numbers were adjusted to reflect the 2015 baseline of 58 based aircraft based on information provided by the Airport and as shown in **Exhibit 3-9**.

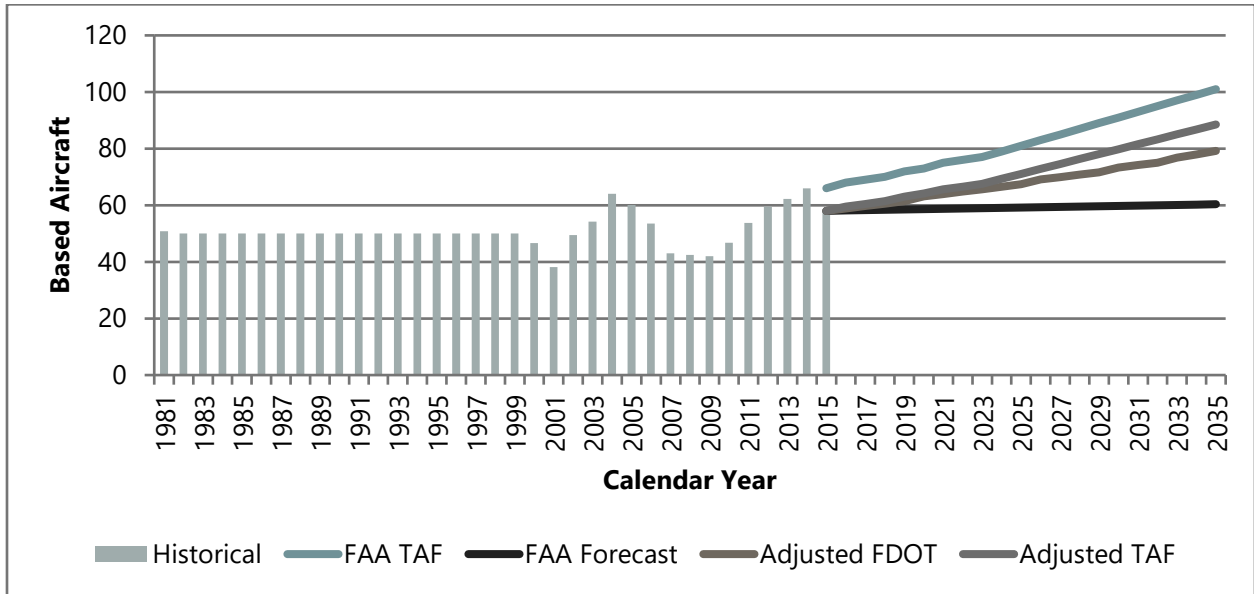
Table 3-26: Forecasts of Based Aircraft

YEAR	FDOT FASP	FAA AEROSPACE	FAA TAF
Baseline			
2015	68	58	66
Projected			
2020	74	59	73
2025	79	59	81
2035	N/A	60	101
Average Annual Growth Rate	1.57%	0.2%	2.15%

SOURCES: Federal Aviation Administration, *Terminal Area Forecast*, April 2016; Federal Aviation Administration, *FAA Aerospace Forecast Fiscal Years 2016-2036*, April 2016; Florida Department of Transportation, *Florida Aviation System Plan 2013-2033*, April 2016.

PREPARED BY: McFarland Johnson, Inc., May 2016.

Exhibit 3-9: Historical and Forecast Based Aircraft



SOURCES: Federal Aviation Administration, *Terminal Area Forecast*, April 2016; Federal Aviation Administration, *FAA Aerospace Forecast Fiscal Years 2015-2035*, April 2016; Florida Department of Transportation, *Florida Aviation System Plan 2013-2033*, April 2016; McFarland Johnson, June 2016 (adjustment).

PREPARED BY: McFarland Johnson, Inc., June 2016.

Forecasts of Based Aircraft Using National Forecasts

The FAA publishes a forecast (FAA Aerospace Forecast) containing national trends and growth projections of active general aviation aircraft by type (piston, turbine, rotorcraft, experimental, sport aircraft, and other). This forecast contains guidance that suggests that most growth will occur in turbine, rotorcraft, and sport aircraft. According to the FAA Aerospace Forecast, based aircraft are anticipated to experience a 0.2 percent growth per year throughout the planning period. This results in growth of the current 58 based aircraft to 60 based aircraft in 2035.

Forecasts of Based Aircraft Using FAA TAF Growth Rate

The FAA TAF is the official FAA forecast for aviation activity at U.S. airports included within the National Plan for Integrated Airport Systems (NPIAS). The FAA TAF is updated every year with few exceptions of significant traffic shifts by major airlines or a significant data error. The TAF shows an average annual forecast growth of 2.15 percent for Key West International Airport based aircraft. However, the recent historical growth reported in the TAF appears to be in error, with a reported 2015 base year of 66 based aircraft. Adjusting the base year to the actual 58 based aircraft and applying the TAF growth rate results in based aircraft reaching 89 aircraft in 2035 from 58 in 2015.

Florida Aviation System Plan

The FDOT prepared a forecast of based aircraft and aircraft operations for all Florida airports. The FDOT shows an average annual forecast growth of 1.57 percent for based aircraft at the Airport. Applying this growth rate to the 2015 base year, results in based aircraft reaching 79 aircraft in 2035 from 58 in 2015.

3.5.2.4 Adjusted Based Aircraft Forecasts

The three forecasts have been adjusted to start at the same base year 2015 based aircraft of 58. The low growth scenario is based on the FAA Aerospace forecast growth. The base scenario is based on the FDOT growth. The high growth scenario is based on the FAA TAF growth. The adjusted forecast based aircraft are shown in **Table 3-27** and **Exhibit 3-10**. If possible, plans should protect for the high growth scenario to allow the Airport maximum flexibility. Of the adjusted based aircraft forecasts presented, the base scenario appears to be the most likely forecast growth to be expected over the planning period given the historical trend and foreseeable local and regional market conditions.

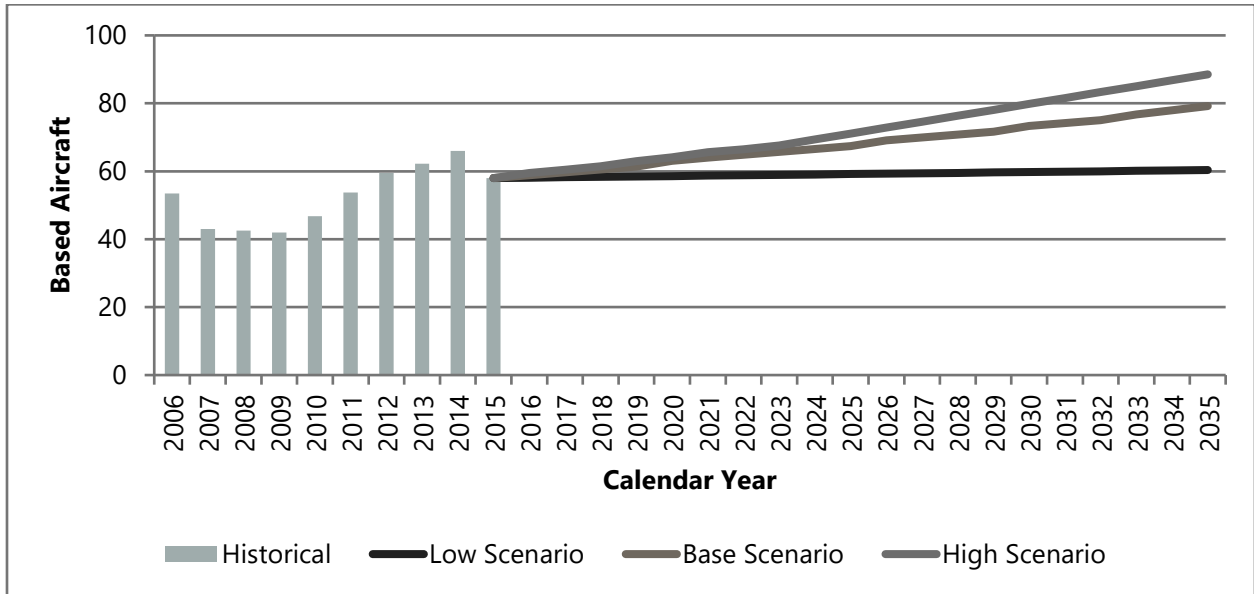
Table 3-27: Adjusted Forecasts of Based Aircraft

YEAR	LOW-GROWTH SCENARIO	BASE SCENARIO	HIGH-GROWTH SCENARIO
Baseline			
2015	58	58	58
Forecasts			
2020	59	63	64
2025	59	67	71
2035	60	79	89
Average Annual Growth Rate	0.2%	1.57%	2.15%

SOURCE: McFarland Johnson, Inc., April 2016.

PREPARED BY: McFarland Johnson, Inc., May 2016.

Exhibit 3-10: Forecast Based Aircraft



SOURCES: Federal Aviation Administration, *Terminal Area Forecast*, April 2016; Federal Aviation Administration, *FAA Aerospace Forecast Fiscal Years 2015-2035*, April 2016; Florida Department of Transportation, *Florida Aviation System Plan 2013-2033*, April 2016; McFarland Johnson, June 2016 (adjustment).

PREPARED BY: McFarland Johnson, Inc., June 2016.

3.5.2.5 Forecast Based Aircraft Fleet Mix

Current Fleet Mix

The current fleet mix of based aircraft at EYW is shown in **Table 3-28**.

Table 3-28: Current Fleet Mix

AIRCRAFT TYPE	2015
Single-Engine	42
Multi-Engine	11
Jet	4
Helicopters	1
Total	58

SOURCE: Signature Flight, April 2016.

PREPARED BY: McFarland Johnson, Inc., May 2016.

Forecast Fleet Mix

It is anticipated that within the planning period, the based aircraft fleet mix will transition to a higher percentage of multi-engine and jet aircraft and that single-engine aircraft will realize a slower growth. This is also reflected in the FAA TAF. **Table 3-29** shows the projected based aircraft fleet mix utilizing the selected base scenario forecast.

Table 3-29: Forecast Based Aircraft Fleet Mix

AIRCRAFT TYPE	2020	2025	2035
Single-Engine	43	44	47
Multi-Engine	14	16	23
Jet	5	6	8
Helicopters	1	1	1
Total	63	67	79

SOURCE: McFarland Johnson, Inc., April 2016.

PREPARED BY: McFarland Johnson, Inc., May 2016.

3.5.2.6 Forecast Aircraft Operations

The aircraft operations forecast for the Airport is important for the assessment of infrastructure and facilities accessed by all airport users, including corporate aviation, flight training, and recreational aviation. Overall, annual operations and peak hour activity numbers are not only applied in the assessment of runway and taxiway infrastructure, but the forecast is also useful for more specific Airport requirements, such as fuel facilities, GA terminal space, and hangar availability considerations.

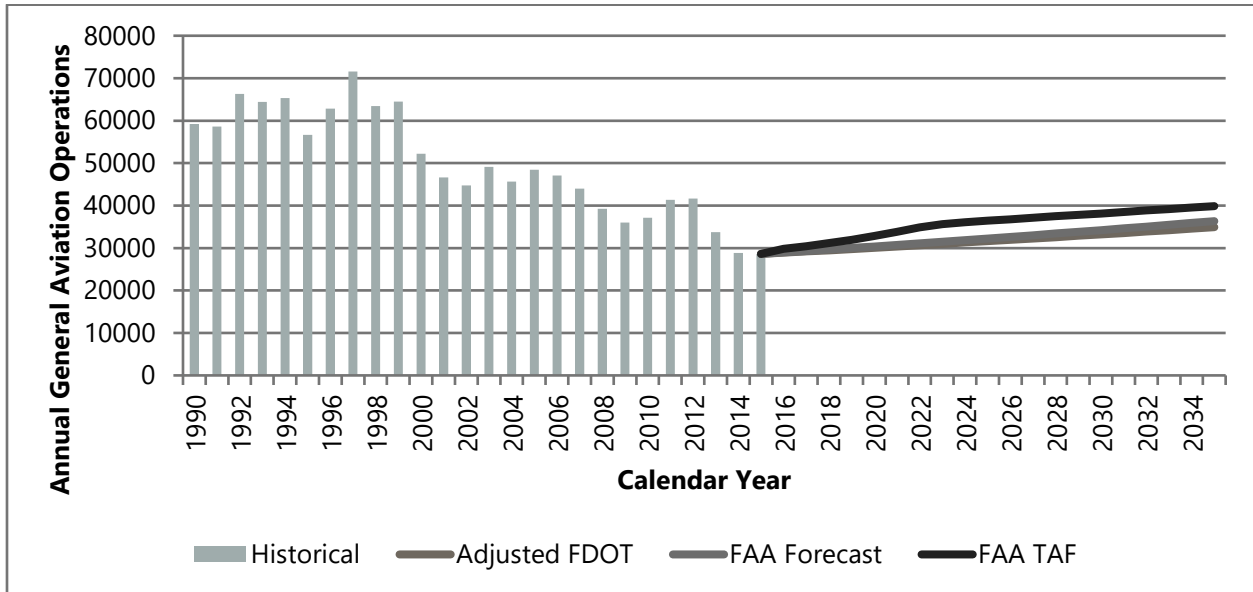
Historical annual aircraft operations at EYW are shown in **Table 3-30** and **Exhibit 3-11**. The growth elements discussed in the following sections present both the local and national factors that influence operational growth at EYW.

Table 3-30: Historical Itinerant and Local Aircraft Operations at Key West International Airport

YEAR	ITINERANT GA	LOCAL GA	TOTAL GA
1990	36,910	22,318	59,228
1991	34,763	23,875	58,638
1992	40,706	25,624	66,330
1993	43,418	21,028	64,446
1994	41,707	23,580	65,287
1995	39,603	17,012	56,615
1996	39,511	23,353	62,864
1997	45,713	25,812	71,543
1998	43,270	20,193	63,463
1999	43,867	20,653	64,520
2000	39,634	12,606	52,240
2001	35,712	10,948	46,660
2002	34,302	10,441	44,743
2003	36,999	12,125	49,124
2004	36,357	9,295	45,652
2005	33,772	14,684	48,456
2006	34,321	12,724	47,045
2007	30,964	13,024	43,988
2008	28,214	10,995	39,209
2009	28,084	7,939	36,023
2010	30,769	6,348	37,117
2011	33,946	7,420	41,366
2012	32,936	8,702	41,638
2013	27,340	6,435	33,775
2014	23,981	4,833	28,814
2015	24,851	3,761	28,612

SOURCE: Federal Aviation Administration, April 2016.

PREPARED BY: McFarland Johnson, Inc., May 2016.

Exhibit 3-11: Historical and Forecast General Aviation Aircraft Operations

SOURCES: Federal Aviation Administration, *Terminal Area Forecast*, April 2016; Federal Aviation Administration, *FAA Aerospace Forecast Fiscal Years 2015-2035*, April 2016; Florida Department of Transportation, *Florida Aviation System Plan 2013-2033*, April 2016; McFarland Johnson, June 2016 (forecast).

PREPARED BY: McFarland Johnson, Inc., June 2016.

Forecast Aircraft Operations Using National Forecasts

The FAA publishes a forecast (FAA Aerospace Forecast) containing national trends and growth projections of active general aviation aircraft hours flown. This forecast contains guidance that suggests that most growth will occur in turbine, rotorcraft, and sport aircraft. According to the FAA Aerospace Forecast, general aviation hours flown are anticipated to experience a 1.2 percent growth per year throughout the planning period. This results in a growth of the current approximately 28,600 general aviation operations to approximately 36,300 general aviation operations in 2035.

FAA Terminal Area Forecasts

The FAA TAF is the official FAA forecast for aviation activity at U.S. airports included within the National Plan for Integrated Airport Systems (NPIAS). The FAA TAF is updated every year with few exceptions of significant traffic shifts by major airlines or a significant data error. The TAF shows an average annual forecast growth of 1.68 percent for Key West International Airport aircraft operations. This results in general aviation operations reaching approximately 39,900 in 2035.

Florida Aviation System Plan (FASP)

The FDOT prepared a forecast of aircraft operations for all Florida airports. The FDOT FASP forecast shows an average annual forecast growth of one percent for Key West International Airport aircraft operations throughout the planning period. This results in aircraft operations reaching approximately 34,900 in 2035.

3.5.2.1 Selected Annual General Aviation Aircraft Operations Forecast

The three operations forecasts were adjusted for the actual 2015 base year operations and projected out over the planning period. The low growth scenario is based on the FDOT FASP forecast growth. The base scenario is based on the FAA Aerospace growth and the high growth scenario is based on the FAA TAF growth. The adjusted operations forecast are shown in **Table 3-31** and **Exhibit 3-12**. Airport plans should be considered to encourage realization of the high growth scenario and allow the Airport maximum flexibility. However, of the adjusted operations forecasts presented the base scenario appears to be the most likely forecast growth to be expected over the planning period given the historical trend.

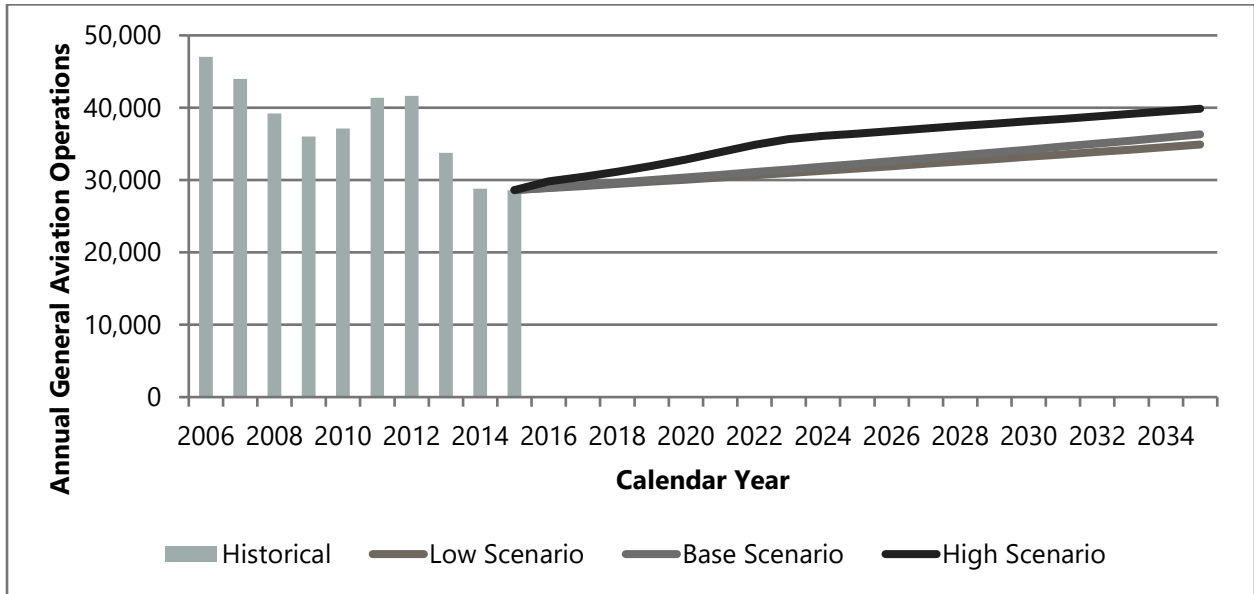
Table 3-31: Selected Forecasts of General Aviation Aircraft Operations

FISCAL YEAR	LOW-GROWTH SCENARIO (FDOT)	BASE SCENARIO (FAA AEROSPACE)	HIGH-GROWTH SCENARIO (TAF)
Baseline			
2015	28,612	28,612	28,612
Forecasts			
2020	30,071	30,370	32,856
2025	31,605	32,237	36,435
2035	34,912	36,321	39,861
Average Annual Growth Rate	1.0%	1.2%	1.7%

SOURCES: Federal Aviation Administration, *Terminal Area Forecast*, April 2016; Federal Aviation Administration, *FAA Aerospace Forecast Fiscal Years 2015-2035*, April 2016; Florida Department of Transportation, *Florida Aviation System Plan 2013-2033*, April 2016; McFarland Johnson, June 2016 (forecast).

PREPARED BY: McFarland Johnson, Inc., June 2016.

Exhibit 3-12: Forecast General Aviation Aircraft Operations



SOURCES: Federal Aviation Administration, *Terminal Area Forecast*, April 2016; Federal Aviation Administration, *FAA Aerospace Forecast Fiscal Years 2015-2035*, April 2016; Florida Department of Transportation, *Florida Aviation System Plan 2013-2033*, April 2016; McFarland Johnson, June 2016 (forecast).

PREPARED BY: McFarland Johnson, Inc., June 2016.

3.5.2.2 Types of Aircraft Operations

Local and Itinerant Operations

Based on the 2015 FAA TAF, itinerant general aviation aircraft make up approximately 85 percent of all general aviation operations. It is anticipated that this percentage will continue throughout the planning period. **Table 3-32** breaks down the historical general aviation operations into itinerant and local. **Table 3-33** shows the selected base scenario forecast of general aviation operations broken down into itinerant and local.

Table 3-32: Forecast of Local and Itinerant Operations at Key West International Airport

YEAR	ITINERANT	LOCAL
2016	24,612	4,343
2017	24,908	4,395
2018	25,206	4,448
2019	25,510	4,502
2020	25,814	4,556
2021	26,125	4,610
2022	26,438	4,666
2023	26,755	4,722
2024	27,077	4,778
2025	27,401	4,836
2026	27,730	4,894
2027	28,063	4,952
2028	28,399	5,012
2029	28,740	5,072
2030	29,085	5,133
2031	29,435	5,194
2032	29,787	5,257
2033	30,145	5,320
2034	30,506	5,384
2035	30,873	5,448

SOURCE: McFarland Johnson, Inc., April 2016.

PREPARED BY: McFarland Johnson, Inc., May 2016.

Operational Fleet Mix

Table 3-33 shows the operational breakdown of forecast general aviation operations by single-engine, multi-engine, jet, and helicopters. This breakdown was determined based on the type and number of based aircraft forecast at EYW. It is anticipated that single-engine operations will decrease as a percentage of total general aviation operations. Helicopter/rotorcraft operations will remain similar throughout the planning period. Multi-engine and jet operations as percentages of general aviation operations are anticipated to increase throughout the planning period. Overall, single-engine aircraft have experienced and continue to experience a decline in deliveries of aircraft and hours flown based on both the General Aviation Manufacturers Association (GAMA) 2016 General Aviation Databook & 2016 Industry Outlook and FAA Aerospace Forecast 2016-2036. Growth in multi-engine and jet operations is consistent with these forecasts and trends. Further,

Key West and the Florida Keys are a popular tourist destination with significant leisure travelers arriving by GA aircraft during the peak winter season and for special events. These travelers typically use more complex multi-engine and jet aircraft.

Table 3-33: Forecast General Aviation Operational Fleet Mix

YEAR	SINGLE-ENGINE		MULTI-ENGINE		JET		ROTORCRAFT	
	NUMBER	%	NUMBER	%	NUMBER	%	NUMBER	%
Base Year								
2015	20,720	72.4%	5,426	19.0%	1,973	6.9%	493	1.7%
Forecast - Base Scenario								
2020	20,729	68.3%	6,749	22.2%	2,410	7.9%	482	1.6%
2025	21,171	65.7%	7,698	23.9%	2,887	9.0%	481	1.5%
2035	21,609	59.5%	10,574	29.1%	3,678	10.1%	460	1.3%

SOURCE: McFarland Johnson, Inc., May 2016.

PREPARED BY: McFarland Johnson, Inc., May 2016.

General Aviation Peak Activity

The peaking characteristics for an airport are an important metric to note for capacity purposes. Specifically, the average day during the peak month's operations is of particular importance for evaluating the Airport's operational capacity, and identifying how much capacity is being utilized. This will be further reviewed in Facility Requirements of this Master Plan Update.

Peak Month: The peak month at an airport represents the busiest month during a calendar year. The peak month may not be the same each year. The peak month commonly accounts for 10 percent of total annual operations.

Average Day Peak Month (ADPM): The average day of the peak month is based on the peak month operations divided by the days in the month.

Peak Hour: The peak hour represents the busiest one hour period that occurs during the average day of the peak month. For many airports, this peak hour occurs during the morning or evening hours and represents between 10 and 12 percent of the total daily activities. The higher percentage (12 percent) is used at EYW for prudent planning purposes. This is largely due to the high tourist traffic volumes the Airport experiences during the peak winter season and other high traffic events.

Peaking characteristics for operations at EYW are shown in **Table 3-34**.

Table 3-34: Forecast Peak Activity

YEAR	TOTAL GENERAL AVIATION ANNUAL OPERATIONS	PEAK MONTH	AVERAGE DAY PEAK MONTH	PEAK HOUR (ADPM)
Base Scenario				
2020	30,370	3,037	100	12
2025	32,237	3,224	107	13
2035	36,321	3,632	121	15

NOTE:

ADPM – Average Day Peak Month

SOURCE: McFarland Johnson, Inc., May 2016.

PREPARED BY: McFarland Johnson, Inc., May 2016.

3.5.2.3 Summary of General Aviation Activity Forecasts

Table 3-35 presents a summary of the base scenario (selected) general aviation forecasts presented in this chapter.

Table 3-35: Summary of Activity Forecasts—Base Scenario

FORECAST	2015	2020	2025	2035
Based Aircraft				
Single-Engine	42	43	44	47
Multi-Engine	11	14	16	23
Jet	4	5	6	8
Rotorcraft	1	1	1	1
Total	58	63	67	79
General Aviation Operations				
Local	3,761	4,556	4,836	5,448
Itinerant	24,851	25,814	27,401	30,873
Total	28,612	30,370	32,237	36,321
Peak Activity				
Peak Month Operations	2,861	3,037	3,224	3,632
Average Day Operations	95	100	107	121
Peak Hour Operations	11	12	13	15

SOURCE: McFarland Johnson, Inc., May 2016.

PREPARED BY: McFarland Johnson, Inc., May 2016.

3.6 Other Air Taxi Operations Forecast

A number of techniques were examined to forecast other air taxi operations at the Airport. Other air taxi operations have been held at 20 percent of total air carrier and air taxi operations at the Airport, as experienced in the previous two years. This proportion was applied to the forecast passenger operations described in Section 2.3.3, resulting in a forecast CAGR of 1.6 percent for other air taxi operations from 2015 to 2035.

3.6.1.1 Military Operations Forecast

Forecast growth of military operations was obtained from the 2015 FAA TAF for the Airport; military operations for the forecast period are expected to remain constant.

3.6.2 OTHER AIRCRAFT OPERATIONS FORECASTS

Total historical and forecast aircraft operations at the Airport are presented in **Table 3-36**.

Table 3-36: Historical and Forecast Aircraft Operations

YEAR	PASSENGER AIRLINES	ALL-CARGO	GENERAL AVIATION	OTHER AIR TAXI	MILITARY	TOTAL OPERATIONS
Historical						
2006	25,715	866	47,045	2,825	10,598	87,049
2007	23,698	858	43,988	6,489	15,453	90,486
2008	21,043	818	39,209	4,819	5,154	71,043
2009	16,279	706	36,023	1,436	460	54,904
2010	18,087	711	37,117	857	481	57,253
2011	15,965	660	41,366	1,857	523	60,371
2012	19,566	672	41,638	622	394	62,892
2013	19,718	726	33,775	2,538	689	57,446
2014	18,267	743	28,814	5,099	662	53,585
2015	18,651	729	28,612	4,880	676	53,548
Forecast						
2016	19,902	754	28,955	5,370	676	55,657
2020	22,056	854	30,370	5,956	676	59,912
2025	22,832	984	32,237	6,191	676	62,920
2035	24,498	1,247	36,321	6,693	676	69,435
Compound Annual Growth Rate						
2006–2015	-3.5%	-1.9%	-5.4%	6.3%	-26.3%	-5.3%
2015–2020	3.4%	3.2%	1.2%	4.1%	0.0%	2.3%
2021–2025	0.6%	2.9%	1.2%	0.7%	0.0%	1.0%
2026–2035	0.7%	2.4%	1.2%	0.7%	0.0%	1.0%
2015–2035	1.4%	2.7%	1.2%	1.6%	0.0%	1.3%

SOURCES: Federal Aviation Administration, March 2016; U.S. Department of Transportation, Form T-100, March 2016; McFarland Johnson, Inc., May 2016 (GA Forecast); Ricondo & Associates, Inc., June 2016 (Forecast).

PREPARED BY: Ricondo & Associates, Inc., June 2016.

3.7 Summary of Total Operations Forecast

Operations across all aircraft categories are forecast to grow by 1.3 percent over the forecast period, through 2035. Growth is more heavily weighted in the shorter term, primarily due to passenger airline operations growth as airlines are expected to accommodate growing demand in that period through higher frequency of service. Later in the forecast period, passenger airline operations are expected to grow at a slower rate, mostly due to the use of larger aircraft.

3.7.1 COMPARISON TO OTHER FORECASTS

Table 3-37 presents a comparison of enplaned passengers forecast for the EYW Master Plan Study to enplaned passengers forecast by the FAA in the 2015 TAF and enplaned passengers forecast by the FDOT in the 2013-2033 FASP. **Exhibit 3-13** presents this information in graphic form. For the 2015 to 2035 period, the FAA has forecast annual enplaned passenger growth of 1.8 percent compared to the EYW forecast of 2.4 percent. From 2015 to 2033, the last year in the FASP, the FAA has forecast annual enplaned passenger growth of 1.9 percent, compared to the FASP forecast of 2.5 percent and the EYW Master Plan Study forecast of 2.5 percent. The Master Plan forecast remains within the variance tolerance levels specified by the FAA (within 10 percent over 5 years and within 15 percent over 10 years).²¹

²¹ Forecast tolerances are defined in FAA Advisory Circular 150/5070-6B.

Table 3-37: Enplaned Passenger Forecast Comparison

YEAR	2016 MASTER PLAN	2015 FAA TAF ^{1/}	VARIANCE OF MASTER PLAN VS. 2015 TAF	2013 FDOT FASP ^{2/}	VARIANCE OF MASTER PLAN VS. 2013 FASP
Historical					
2006	285,804	283,588	0.8%	294,047	-2.8%
2007	271,632	265,955	2.1%	270,781	0.3%
2008	232,552	238,558	-2.5%	231,339	0.5%
2009	234,887	239,032	-1.7%	234,322	0.2%
2010	287,849	282,704	1.8%	287,359	0.2%
2011	335,700	336,916	-0.4%	335,603	0.0%
2012	370,959	369,190	0.5%	370,637	0.1%
2013	403,372	397,417	1.5%	402,842	0.1%
2014	384,663	394,860	-2.6%	412,913	-6.8%
2015	362,802	367,833	-1.4%	423,236	-14.3%
Forecast					
2016	391,035	390,394	0.2%	433,817	-9.9%
2020	433,318	420,792	3.0%	478,853	-9.5%
2025	485,707	458,814	5.9%	541,778	-10.3%
2035	580,474	527,591	10.0%	N/A	N/A
Compound Annual Growth Rate					
2006–2015	2.7%	2.9%		4.1%	
2015–2020	3.6%	2.7%		2.5%	
2021–2025	2.3%	1.7%		2.5%	
2026–2035	1.8%	1.4%		N/A	
2015–2031	2.5%	1.9%		2.5%	
2015–2035	2.4%	1.8%		N/A	

NOTES: Passenger totals do not include nonrevenue passengers.

N/A – Not Applicable

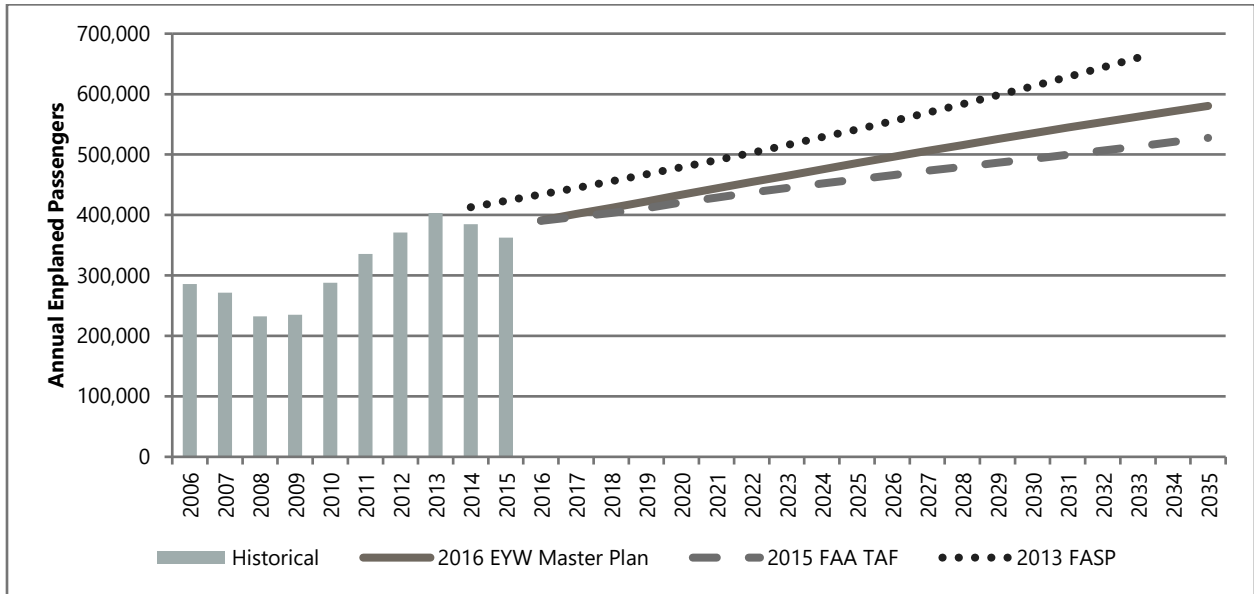
1/ Adjusted to calendar year for comparison.

2/ Years 2014–2033 are forecast, with 2033 the latest forecast year.

SOURCES: U.S. Department of Transportation, T-100, March 2016; Federal Aviation Administration, *2015 Terminal Area Forecast*, March 2016; Florida Department of Transportation, *Florida Aviation System Plan 2013-2033*, March 2016; Ricondo & Associates, Inc., March 2016 (Forecast).

PREPARED BY: Ricondo & Associates, Inc., March 2016.

Exhibit 3-13: Enplaned Passenger Forecast Comparison



NOTE: FAA TAF has been adjusted to calendar year for comparison.

SOURCES: U.S. Department of Transportation, Form T-100, March 2016; Federal Aviation Administration, *2015 Terminal Area Forecast*, March 2016; Florida Department of Transportation, *Florida Aviation System Plan 2013-2033*, March 2016; Ricondo & Associates, Inc., March 2016 (Forecast).

PREPARED BY: Ricondo & Associates, Inc., March 2016.

Table 3-38 presents a comparison of total airport operations forecast in the EYW Master Plan Study to total airport operations forecast by the FAA in the 2015 TAF and total airport operations forecast by the FDOT in the 2013-2033 FASP. **Exhibit 3-14** presents this information in graphic form. For the 2015 to 2035 period, average annual growth in operations is forecast to be 1.7 percent in the 2015 TAF, compared to an average annual growth of 1.3 percent in the Master Plan forecast. From 2015 to 2033, the last year in the FASP, the FAA has forecast annual operations growth of 1.8 percent, compared to the FASP forecast of 1.1 percent and the EYW Master Plan Study forecast of 1.3 percent. As with enplaned passengers, the Master Plan forecast of total operations remains within the variance tolerance levels specified by the FAA, within 10 percent over 5 years and within 15 percent over 10 years.

While the EYW Master Plan Study enplaned passenger forecast is higher than that projected by the FAA TAF, the opposite is true of the operations forecast. The cause of this difference likely resides in average aircraft seat capacity assumptions for passenger airline operations, with the EYW Master Plan forecast assuming a larger average aircraft size than forecast in the FAA TAF.

Table 3-38: Operations Forecast Comparison

YEAR	2016 MASTER PLAN	2015 FAA TAF ^{1/}	VARIANCE OF MASTER PLAN VS. 2015 TAF	2013 FDOT FASP ^{2/}	VARIANCE OF MASTER PLAN VS. 2013 FASP
Historical					
2006	87,049	84,774	2.7%	94,408	8.5%
2007	90,486	86,670	4.4%	91,810	1.5%
2008	71,043	74,335	-4.4%	74,157	4.4%
2009	54,904	55,863	-1.7%	56,694	3.3%
2010	57,253	57,216	0.1%	60,434	5.6%
2011	60,371	60,259	0.2%	62,293	3.2%
2012	62,892	61,923	1.6%	62,758	-0.2%
2013	57,446	57,684	-0.4%	57,446	0.0%
2014	53,585	53,958	-0.7%	58,081	8.4%
2015	53,548	55,039	-2.7%	58,722	9.7%
Forecast					
2016	55,657	57,418	-3.1%	59,370	6.7%
2020	59,912	63,203	-5.2%	62,037	3.5%
2025	62,920	70,087	-10.2%	65,543	4.2%
2035	69,435	76,677	-9.4%	N/A	N/A
Compound Annual Growth Rate					
2006-2015	-5.3%	-4.7%		-5.1%	
2015-2020	2.3%	2.8%		1.1%	
2021-2025	1.0%	1.9%		1.1%	
2026-2035	1.0%	0.9%		N/A	
2015-2033	1.3%	1.8%		1.1%	
2015-2035	1.3%	1.7%		N/A	

NOTES:

N/A – Not Applicable

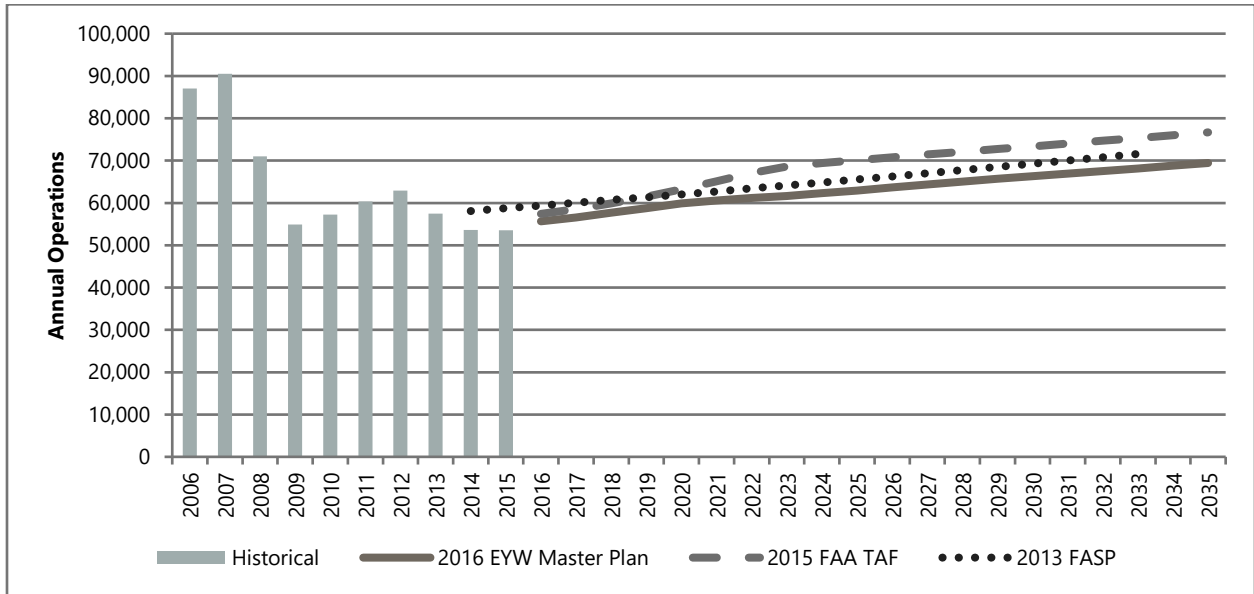
1/ Adjusted to calendar year for comparison.

2/ Years 2014–2033 are forecast, with 2033 the latest forecast year.

SOURCES: U.S. Department of Transportation, Form T-100, March 2016; Federal Aviation Administration, *2015 Terminal Area Forecast*, March 2016; Florida Department of Transportation, *Florida Aviation System Plan 2013-2033*, March 2016; McFarland Johnson, Inc., May 2016 (GA Forecast); Ricondo & Associates, Inc., June 2016 (Forecast).

PREPARED BY: Ricondo & Associates, Inc., June 2016.

Exhibit 3-14: Operations Forecast Comparison



NOTE: FAA TAF has been adjusted to calendar year for comparison.

SOURCES: U.S. Department of Transportation, Form T-100, March 2016; Federal Aviation Administration, *2015 Terminal Area Forecast*, March 2016; Florida Department of Transportation, *Florida Aviation System Plan 2013-2033*, March 2016; McFarland Johnson, Inc., May 2016 (GA Forecast); Ricondo & Associates, Inc., June 2016 (Forecast).

PREPARED BY: Ricondo & Associates, Inc., June 2016.