CHAPTER THREE
Aviation Forecasts

3.1 Overview

This chapter discusses both recent and ongoing aviation industry trends in relation to projections of aviation demand at CRG. A key focus is how the former affects the latter. CRG is a general aviation airport, which serves a variety of aviation activities including: personal and recreational flying, flight training, corporate flying, aircraft servicing, limited military operations and other similar activities. As a result, particular attention was given to factors that affect this type of activity including, but not limited to, fuel price, the national and local economy, insurance rates, pilot training, and airspace restrictions instituted after the September 2001 terrorist attacks. Nationally, the use of general aviation (GA) for business travel has increased due in part to the development of the fractional aircraft ownership industry and the implementation of extensive security measures that have deterred business travelers from commercial airlines and airports. Prediction of corporate general aviation operations at the airport is essential as facility requirements for corporate aircraft usually exceed recreational GA aircraft requirements. Growth in corporate aviation activity is expected as part of the recent economic recovery. In addition, development of light jet aircraft such as the Eclipse 500 and Cessna Mustang offer a lower cost and fuel-efficient alternative to larger corporate jets currently on the market. Furthermore, learn-to-fly programs (such as the Young Eagles) and aircraft safety improvements, as well as the development of new aircraft models featuring reduced operating costs are expected to increase both corporate and recreational flying at CRG in the near future.

Typically the planning forecast is based upon a 20-year period divided into short-term (2007-2011), mid-term (2012-2016) and long-term (2017-2026). 2006 data was used as the base year for calculating based aircraft and aircraft operations over the 20-year planning period.

3.2 Previous Forecasts

Aviation activity forecasting generally commences by analyzing the most recent data along with the historical trends obtained from previous activity. For CRG, this data has evolved from a comprehensive examination of historical airport records from airport personnel and review of the following documents:

- 2001 Master Plan Update Craig Airport
- 2005 Craig Airport FAR Part 150 Noise Study
- 2005 Florida Aviation System Plan
- 2007 FAA Terminal Area Forecasts

- 2006-2017 FAA Aerospace Forecasts
- Socioeconomic data obtained from Department of Labor, and the Florida Legislature Office of Economic and Demographic Research (EDR)
- Florida Aviation System Plan (FASP)

This data was supplemented by information obtained during interviews with airport management, tenants, and users to derive a more complete picture of operational activities and emerging trends at CRG.

3.3 Forecast Elements and Assumptions

Two primary considerations that can influence activity forecasts at an airport include historical trends and industry trends. By tracing historic trends, it is possible to determine the impact that economic fluctuations, as well as changes in the industry have had on activity at the airport. Likewise, applying recent or anticipated industry trends can allow educated assumptions to be made as to how CRG's activity is affected in the future. These considerations play a key role in the forecast of based aircraft and annual operations.

In addition, assumptions were made with respect to how aviation activity may change in the future based on trends emerging in the aviation industry. Along these lines, many different factors were considered which may influence the course in which activity at an airport develops. This included evaluating CRG's role in Florida's aviation transportation network. The primary goal of the analysis was to develop an approach that gives reasonable attention to these factors while at the same time providing a rational basis on which to base the forecast selection.

Another key element in the forecast process is the identification of local trends that enhance the potential for additional activity, as well as the potential for the airport to attract new tenants and users. In developing the forecasts for CRG, historic and projected demographics of the region were analyzed to identify potential factors that could impact the level or type of aviation activity. This data was used to develop the series of linear and multiple regression analyses. The methodology used to develop forecasts and the reasoning behind the selection of a preferred forecast is discussed in detail in each of the following sections. Depending on the availability of information and correlation of data, different methods were used to produce selected forecasts for each type of activity. The methods used to develop and select forecasts are indicated in each forecast section.

3.3.1 Socio-Economic Analysis

Levels of aviation activity at local and regional airports can generally be predicted from the size and wealth of the surrounding community. These characteristics can be defined for a region from a variety of statistical sources. Historical and projected data for socioeconomic indicators used in this analysis were obtained from the 2006 Bureau of Economic Analysis,

which is published annually by the U.S. Department of Commerce. Additional sources include the U.S. Bureau of Labor Statistics, published by the Department of Labor, and the Florida Legislature Office of Economic and Demographic Research (EDR). The following sections provide information about trends of economic indicators as they relate to employment sectors by industry, regional economic trends, and local development that will also serve as the basis for the forecasts of aviation demand.

The demand for aviation services can also be related to key characteristics (i.e. population, employment, household income, etc.), which are combined to profile the larger community served by the local airport. Aviation services include commercial air carrier, flight training, maintenance, cargo, and storage of private aircraft. Usually the level of demand is directly related to the size and composition of the regional population, which may be described in terms of earnings (the ability to pay for services), and the employment that provides such earnings. Therefore, the existing data and characteristics (i.e. population, income, employment, etc.) are used as a basis upon which future aviation activity is forecast. Any necessary airport facilities can then be planned accordingly. The following sections describe key population, demographic, employment, income, socio-economic, and transportation trends, as they relate to aviation activity.

3.3.1.1 Local Area Characteristics

The Jacksonville Metropolitan Statistical Area (MSA) includes Clay, Baker, Duval, Nassau, and St. John's Counties. The Airport's service area also extends to portions of extreme southern Georgia including Camden and Charlton Counties. However, socioeconomic data for only Duval County and the greater Jacksonville MSA based upon the First Coast Metropolitan Planning Organization service area as shown in Figure 3-1, were considered to be the key input in quantifying future levels of aviation activity at Craig Municipal Airport. Moreover, the data provides sufficient background information on local trends and projections since Jacksonville serves as the principal city within the MSA.

Figure 3-1
Greater Jacksonville Metropolitan Statistical Area

Source: First Coast Metropolitan Planning Organization (www.firstcoastmpo.com), January 2007

3.3.1.2 Population

The historical population data shows that the permanent population of the Jacksonville MSA and Duval County grew at a relatively stable rate between 1990 and 2004. The city limits of Jacksonville extend well beyond concentrated population centers within central parts of Duval County. As such, greater population growth between 1990 and 2004 occurred in neighboring counties such as Nassau and St. John's Counties. Comparative data; however, shows that population growth for the Jacksonville MSA was below that for the State of Florida as a whole. **Table 3-1** summarizes historical population information for the State of Florida, Duval County, and the Jacksonville MSA.

Table 3-1
Historical Population (1990-2004)

Year	Florida	Duval County	Jacksonville MSA
1990	13,033,307	677,746	932,169
1991	13,369,798	693,469	955,572
1992	13,650,553	707,797	977,699
1993	13,927,185	711,693	990,520
1994	14,239,444	717,206	1,004,478
1995	14,537,875	724,468	1,020,631
1996	14,853,360	744,682	1,052,363
1997	15,186,304	757,842	1,077,069
1998	15,486,559	766,249	1,094,889
1999	15,759,421	773,150	1,109,951
2000	16,048,887	779,689	1,126,194
2001	16,350,565	790,485	1,148,289
2002	16,677,860	801,793	1,173,474
2003	17,385,430	811,531	1,196,464
2004	17,789,864	819,623	1,223,741
AAGR	**2.25%**	**1.37%**	**1.96%**

Source: Bureau of Economic Analysis, 2006; The LPA Group, 2006

Population projections for the local area were gathered from the Florida Office of Economic and Demographic Research (EDR). Growth forecasts for the Jacksonville MSA are expected to slow to 1.74 percent annually through 2026, above the projected average for the State of Florida. **Table 3-2** outlines EDR's growth forecast for Florida, Duval County, and the Jacksonville MSA through 2026.

Table 3-2 Forecast Population (2006-2026)			
Year	**Florida**	**Duval County**	**Jacksonville MSA**
2006	18,321,668	879,661	1,311,067
2011	20,301,399	954,831	1,457,993
2016	22,121,516	1,025,911	1,595,936
2021	23,792,157	1,089,622	1,721,789
2026	25,289,717	1,147,508	1,835,694
AAGR	**1.65%**	**1.38%**	**1.74%**
Source: Florida Office of Economic and Demographic Research (EDR), 2006; The LPA Group, 2006			

3.3.1.3 Per Capita Income

Per capita income levels provide a valuable assessment of the economic strength of a particular area and specifically relates to the measure of wealth among a sample of a population. Historical numbers indicate that on average, per capita personal income grew at 3 percent annually in the United States. Such a figure is representative with the cost of living and Consumer Price Index (CPI) increases year-on-year. Per capita income growth within the Jacksonville MSA as well as Duval County grew at an average annual rate of 3.83 percent, nearly 28 percent faster that the national average and 11 percent faster than the historical average for the State of Florida. Increases in disposable income often leave more discretionary income to be used for goods and services. It is projected that per capita income will continue to rise at the historical rate until 2026. **Table 3-3** provides a historical perspective of per capita income growth. **Table 3-4** shows forecast per capita income for the same study areas.

Table 3-3 Historical Per Capita Income (1990-2004)			
Year	**Florida**	**Duval County**	**Jacksonville MSA**
1990	$19,564	$19,001	$19,087
1991	$19,780	$19,137	$19,278
1992	$20,417	$19,690	$19,943
1993	$21,050	$20,549	$20,744
1994	$21,666	$21,308	$21,494
1995	$22,691	$22,527	$22,719
1996	$23,655	$23,404	$23,725
1997	$24,502	$24,147	$24,667
1998	$25,987	$25,869	$26,445
1999	$26,894	$26,666	$27,304
2000	$28,509	$28,920	$29,436
2001	$29,273	$28,879	$29,439
2002	$29,709	$29,498	$29,931
2003	$30,128	$30,546	$30,826
2004	$31,469	$32,175	$32,283
AAGR	**3.45%**	**3.83%**	**3.83%**
Source: Bureau of Economic Analysis, 2006; The LPA Group, 2006			

Table 3-4 Forecast Per Capita Income (2006-2026)			
Year	**Florida**	**Duval County**	**Jacksonville MSA**
2006	$33,677	$34,686	$34,803
2011	$34,839	$36,015	$36,136
2016	$36,041	$37,394	$37,520
2021	$37,285	$38,826	$38,957
2026	$38,571	$40,313	$40,449
AAGR	**3.45%**	**3.83%**	**3.83%**
Source: Bureau of Economic Analysis, 2006; The LPA Group, 2006			

3.3.1.4 Unemployment

The rate of local and regional unemployment for the Jacksonville MSA and the Duval County study areas has historically been below that of the Florida average, varying between 4.58 and 4.75 percent to the State average of 5.53 percent. The volatility of unemployment

rates correspond to fluctuations in both the local and national economies. According to **Table 3-5**, the Jacksonville MSA recorded relatively stable unemployment rates between 1995 and 2000. During this time, the U.S economy experienced an upward cycle of economic activity, whereas between 2001 and 2005 a recession triggered by the events of September 11 affected national, regional, and local job growth rates. However, the average annual growth rate between 1990 and 2005 indicated a downward trend in unemployment statistics, albeit slower than the pace of job growth in the State of Florida.

Projections of unemployment are particularly difficult to measure because they most specifically reflect the cyclical patterns of national economic activity. In addition to typical economic trends, local influences in business patterns, taxation, and property markets affect the dynamism of employment growth. However, it is expected that the unemployment rate for the Jacksonville MSA to remain below 5 percent throughout the planning period to 2026. **Table 3-5** summarizes historical unemployment rates for the three study areas.

Table 3-5
Historical Unemployment Rates (%) (1990-2005)

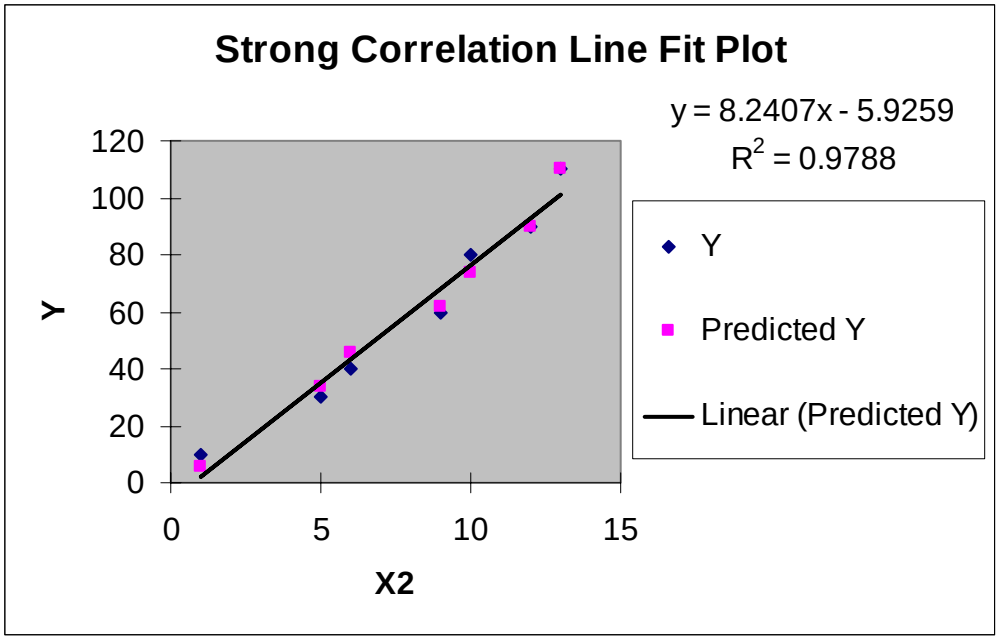
Year	Florida	Duval County	Jacksonville MSA
1990	6.3	5.4	5.3
1991	7.6	6.5	6.4
1992	8.4	7.1	7.0
1993	7.2	5.7	5.7
1994	6.7	5.0	4.9
1995	5.5	3.8	3.7
1996	5.3	3.9	3.7
1997	5.0	3.9	3.8
1998	4.5	3.4	3.2
1999	4.0	3.2	3.1
2000	3.8	3.3	3.2
2001	4.7	4.2	4.1
2002	5.7	5.7	5.4
2003	5.3	5.5	5.2
2004	4.7	5.2	4.7
2005	3.8	4.2	3.9
Mean	5.53%	4.75%	4.58%
AAGR	**-3.31%**	**-1.66%**	**-2.02%**

Source: Bureau of Labor Statistics, 2006; The LPA Group, 2006

3.3.1.5 Regression Analysis / Socioeconomic Correlation

The purpose of a regression analysis is to use independent variable data to predict the value of a dependent variable. Some regression analyses provide strong correlations, i.e. a comparison of automobile insurance rates to population within a square mile. The increased traffic in higher populated areas results in additional number of accidents, thefts, etc. and therefore causes insurance rates to increase. In this example, the population per square mile would be the independent variable, whereas the cost of insurance would be the dependent variable. There are numerous methods validating regression analysis reliability; however, the most common methods include use of R-squared or an analysis of variance (ANOVA). The ANOVA methodology uses an approach known as the F test to determine the difference between the means of two or more groups. The R-squared output of the regression is the fraction or percentage of the variation in dependent variables that is explained by the independent variables. In essence, data from both sources are used to develop a scatter plot of x and y values. This data is then analyzed to formulate a best fit line which represents the least amount of deviation for both predictors. Variables that demonstrate strong correlations will produce values (or confidence) above 90%. In these cases, the independent variable does a good job of explaining variation in the dependent variable and the analysis is therefore considered valid. If the significance value of F or R-squared is less then 90% then the independent variables do not explain the dependent variable and a null hypothesis is accepted for the model as a whole. **Figure 3-2** below denotes a strong correlation between independent and dependent variables and **Figure 3-3** indicates the output generated by the variables for CRG.

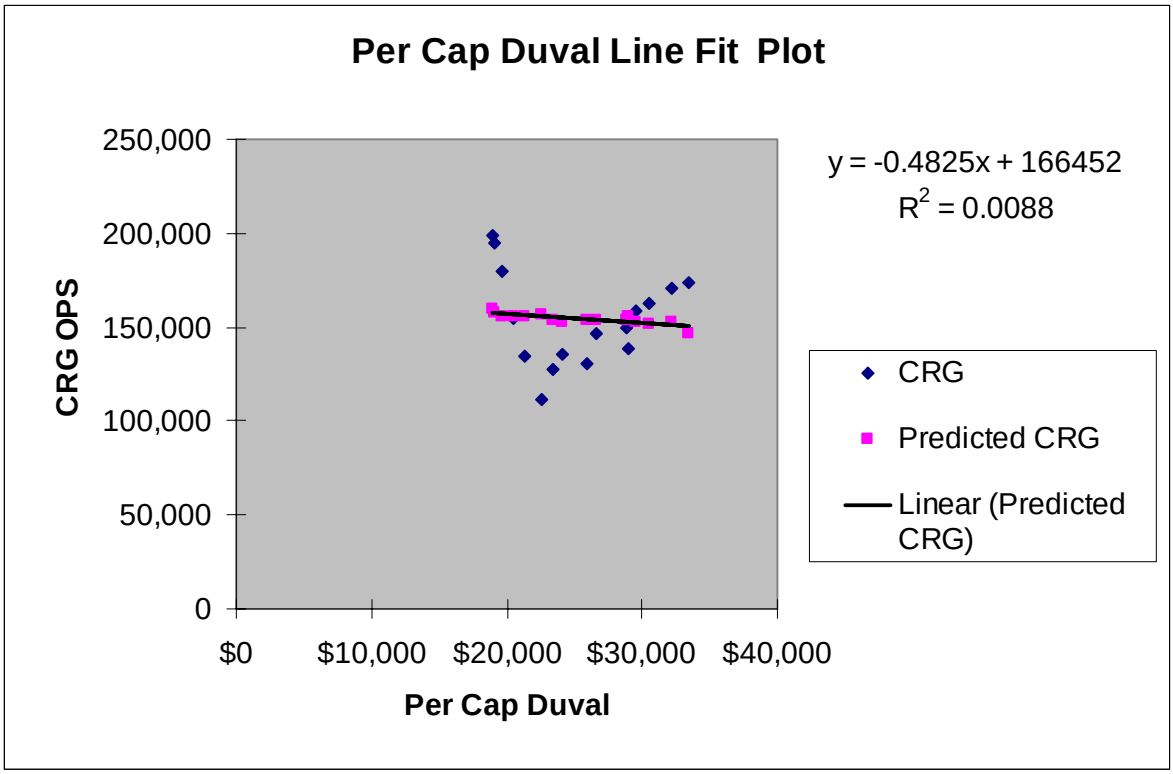
Figure 3-2 – Strong Correlation



Source: The LPA Group Incorporated, 2006

In the case of CRG, the independent variables are comprised of population and per capita income data for both Duval County and the Jacksonville MSA, whereas the dependent variable is the number of based aircraft and/or operations. The objective of this analysis was to determine whether or not a correlation existed between population and income to the number of based aircraft and/or operational activity at CRG. After analyzing the data collected by using the two regression methods discussed, it was determined that the F statistic was too high and the R squared value was too low. Therefore, neither of the models described produced a valid correlation. A possible reason for this may be attributed to the fact that CRG functions as a part of the Jacksonville Aviation System and that the number of operations cannot be exclusively correlated to income levels or population because there are many airports within the system. As such, the number of operations at CRG is most closely affected by variables related to the airport itself and not as a result of local socioeconomic influences. For this reason, the creation of a regression forecast using the aforementioned variables was abandoned due to a lack of correlation. Thus, alternative forecasting methodologies were implemented in the following sections to calculate activity projection forecasts for CRG.

Figure 3-3 – Weak Correlation: Per Capita Income and CRG Operations



Source: The LPA Group Incorporated, 2006

3.3.2 Aviation Activity Forecasts

Historic trends are one of the primary considerations that can influence activity forecasts at an airport. By tracing these trends, it is possible to determine the impact that economic fluctuations, as well as changes in the industry have had on activity at the airport. Study of historical trends is particularly valuable at those airports having an active air traffic control tower. Historic operations at CRG include air taxi, general aviation, and military operations. However, historically general aviation (GA) operations consistently represent the majority of airport operations.

Many elements make up the broad definition of general aviation activity. General aviation includes all segments of the aviation industry except those conducted by scheduled commercial air carriers. Its activities include the training of new pilots, sightseeing, aerial photography, law enforcement, and medical flights, as well as business, corporate, and personal travel. General aviation operations are divided into the categories of local or itinerant. Local operations are those arrivals or departures performed by aircraft that remain in the airport traffic pattern, or those that occur within sight of the airport. This covers an area within a 20 nautical mile radius of the airfield. Local operations are most often

associated with training activity and flight instruction. Itinerant operations are arrivals or departures other than local operations, performed by either based or transient aircraft that do not remain within the airport traffic pattern.

The FAA defines an operation as either a single aircraft landing or takeoff. Under this definition, touch-and-go training procedures are considered two operations (one arrival and one departure) and are deemed local operations. Itinerant general aviation operations are typically comprised of private, business/corporate, and air taxi flight activity. Additionally, itinerant activity may include law enforcement and medical flights.

In addition, a comparison of the estimated traffic count at CRG for 2006 with historic data from the 2007 FAA TAF, FAA Air Traffic Activity Database System (ATADS), which compiles specific operational information from airports that have control tower facilities, and 2005 FASP has revealed some inconsistency. Historic data from those sources seem to indicate a level of operations either below or significantly above operations recorded by CRG ATCT. Since ATCT recorded data at CRG counts only those operations that occurred during times the control tower was operational, historic tower data were benchmarked to FAA TAF and historical airport information to adjust for activity that occurred after hours.

Industry trends, as well as national and local economy reviews, constituted the most reliable sources of information for the projection of aircraft activity at the airport. The best source of information on the nation's general aviation activity is contained in the 2006 FAA Aerospace Forecasts. Given the nature of the airport operations, which are mostly general aviation, projection of future activity based on these forecasts with an adjustment based on local trends was considered a reasonable forecasting approach. The primary goal of the analysis was to develop an approach that gives reasonable attention to all factors while at the same time providing a rational basis on which to base the forecast selection.

Additionally, general aviation growth relies on many other factors, which include: level of services offered, competitive pricing, airfield characteristics, local area attractiveness, and pilots' perception of services. As a result, these forecasts assume that Airport Management, Fixed Based Operators (FBO), and other tenants, will actively support all aviation activity and initiate the appropriate measures to either maintain or extend air traffic at the airport.

Projections of military activity were included as part of the overall forecast of aviation activity at CRG. However, as a result of the relocation of the Florida Army National Guard helicopters to Cecil Field, local military operations at CRG will decrease to zero in the year 2007. Secondly, the 2005 FAR Part 150 study determined that the tower had been reporting nearby operations to Mayport and Navy JAX as military itinerant operations for CRG. Thus, itinerant military activity levels have historically been inflated due to a counting error. Now that this error has been identified and corrected, itinerant military activity levels during 2005 and 2006 reflect lower numbers than those previously reported.

Regardless of the decrease in military operations, it is anticipated that total aircraft operations at CRG will continue to grow due to a strong presence in flight training activity coupled with increased business traffic.

3.3.2.1 Aircraft Operations Forecast

Projected airport operational activity levels are an important factor in identifying existing airfield capacity shortfalls and assessing future needs for airside improvements. Frequency and type of operation also give insight into specific airfield needs that may be sensitive to increased levels of operational activity. Thus, in order to develop an accurate forecast for CRG, it was necessary to create several forecasts using existing data and also necessary to compile and compare existing forecasts from a variety of sources. A discussion of each source along with the pros and cons of each forecast are discussed below.

2007 Terminal Area Forecast (TAF) – The FAA's TAF forecast are developed for all active airports within the National Plan of Integrated Airport System (NPIAS). These forecasts are prepared to meet the budget and planning needs of FAA and provide information for use by state and local authorities, the aviation industry, and the public. The TAF forecast predicts an average annual growth rate of 1.78% for total aviation activity at CRG through the year 2026.

2006 FAA Aerospace Forecast – The FAA Aerospace forecast is a forecast developed by the FAA for the years 2006 through 2017. The FAA forecast is a macro-level forecast that anticipates operational activity for the entire United States. Although not necessarily representative of regional activity, the FAA forecast is valid for comparison and development of new forecasts. Since the majority of activity at CRG consists of general aviation operations, an average annual growth rate of 1.4% was used. According to the FAA forecast, the historic slowdown in the demand for business jets is waning due to increased security measures and processing times for commercial aircraft as well as the growing market for microjets which are expected to enter the market in 2006-2007.

2007 National Plan of Integrated Airport Systems (NPIAS) – The NPIAS is a report by the Secretary of Transportation to the United States Congress pursuant to Section 47103 of title 49, United States Code. The plan identifies airports within the country that are significant to air transportation and therefore eligible to receive grants under the FAA's Airport Improvement Program (AIP). The NPIAS provides activity forecasts for each of the airports within the system. For Craig, the NPIAS forecast had an average annual growth rate of 2.04%.

2005 Florida Aviation System Plan (FASP) – The FASP forecast is developed by the FDOT and is specific to the local economies within Florida rather than the entire nation as with the

Aerospace forecasts. FASP forecasts of operational activity are developed for all public-use airports within the state of Florida. The FASP forecast for CRG denoted an average annual growth rate of 1.62%.

2001 Master Plan Forecast – The most recent master plan update that was completed in 2001 included a preferred forecast of operational activity. The growth rate of this forecast was the second most aggressive forecast of all forecasts analyzed and closely resembled the historical forecast. The average annual growth rate of the 2001 MPU forecast is 2.10%.

Historical Operational Activity Forecast – Historic activity was used as the basis of the historical forecast. Past growth trends taken during the years 2000 and 2006 were used and incorporated into a straight-line linear regression through the year 2026. The historical forecast was revealed to be the most aggressive forecast of all the forecasts presented. The average annual growth rate of the historical forecast is 3.25%.

2005 Part 150 Study – A Part 150 noise study was completed in 2005 for Craig Municipal Airport. This study noted that the operational activity projected in the 2001 Master Plan Update deviated little from the 2005 TAF, and, therefore, were initially used as the baseline for the study. However, as stated earlier, the ATCT had recorded military itinerant operations that did not actually land at or depart from CRG. As a result, the Part 150 Study adjusted their 2004, 2009 and 2020 baseline forecasts to 162,115, 174,561, and 214,562, respectively, to more accurately reflect activity. Since these forecasts were reviewed and approved by the FAA, the forecasts were deemed to be reasonable and valid for comparison. As a result, the adjusted forecast showed an average annual growth rate of 1.80%.

Composite Forecast – The composite forecast was developed by taking the average of all other forecasts of aviation activity. The composite forecast resulted in an average annual growth rate of 2.11% through the forecast period.

Selected Forecast

After reviewing and comparing all forecasts, it was noticeable that all average annual growth rates fell within a close range of 1.4 and 3.25 percent. The historical forecast was deemed far too aggressive and the 2006 FAA Aerospace forecast was deemed too conservative to use in determining the selected forecast. Additional confidence was given to the FAR Part 150 Study forecast since it was based upon 2004 and 2005 data.

As a result, the selected forecast was based upon the average annual growth rates for the 2007 FAA TAF, 2007 NPIAS, 2005 FASP, 2001 Master Plan Update, and 2005 Part 150 Study. By applying the average growth rates for each five year period to the historic base year, the selected forecast predicts 237,049 total operations to occur in 2026. This represents an average annual growth rate of 1.86 percent for the period 2006 through 2026.

Although the 2005 Part 150 Study predicts approximately 1,200 operations more than the 2006 Master Plan Update, they are both reliable forecasts since they are based upon the market conditions and data available at the time. The 2005 FAR Part 150 Study used 2004 historic data, which was available at the time, as well as the 2005 FAA TAF data. Whereas, the 2006 Master Plan Update obtained historic data through the year 2006 and utilized updated forecasts from the FAA TAF (2007), FAA Aerospace Forecast (2006-2011), NPIAS (2007) and FASP. In addition, the 2006 Master Plan Update used 2006 historic data as the base for the forecasts, whereas, the FAR Part 150 used 2004 historic data for the base year. Also, during the two-year period between the two forecasts, socio-economic events have impacted general aviation and military operations. Such events include increasing oil and fuel prices, the on-going conflict in the Middle East as well as severe weather events (snowstorms, hurricanes, tornados, etc.), all of which impact aviation operations. Thus, based upon this data, the selected forecast is believed to be the most accurate based upon current events and operations. **Table 3-6** illustrates the historical data and forecasts for Craig Municipal Airport.

3.3.2.2 Instrument Operations Forecast

Although included in the total operations forecast, a separate forecast for IFR operations is also analyzed in this section. This analysis is important in that it supports the development of adequate facilities pertaining to aircraft operations under instrument meteorological conditions. The FAA Aerospace Forecast (2006-2017) predicts that there will be a 3.3% increase in instrument operations after 2007 due to introduction of the microjet aircraft. An analysis of historic data from 2000 to 2006 revealed fluctuations in growth varying from a 2.29% reduction in IFR activity to an increase of 17.56%. Hence, growth from 2006 to 2007 used the FAA TAF forecast growth rate of 2.4% whereas growth beyond 2007 used FAA Aerospace growth rate of 3.3% through the duration of the planning period. The instrument operations forecast is shown below in **Table 3-7**.

3.3.2.3 Local / Itinerant Operations Forecast

The operations forecast developed in **Table 3-6** is further broken down by local and itinerant activity in **Table 3-8**. A historic analysis of the TAF and tower data during the last two years revealed that CRG's operations are comprised of 58.96% to 60.54% of itinerant activity and the remaining 39.46% to 41.04% was made up of local activity. As shown in the based aircraft forecast, **Table 3-10**, the number of based aircraft is expected to continue increasing each year. This compiled with a likely increase in training operations is expected to raise the number of local operations thus diminishing the number of itinerant operations throughout the planning period. For this reason, the TAF 58.96% itinerant versus 41.04% local split was used as a starting point for the local/itinerant forecast, and then the rate was adjusted each year during the forecast period until it reached a 50/50 split by the year 2026. The forecast of local/itinerant operations is shown in **Table 3-8**.

Table 3-6
CRG Forecast of Total Operations

Year	2007 FAA TAF	2006 FAA Aero	2007 NPIAS	2005 FASP	2001 MPU	Historical	Part 150 Study	Composite	Selected Forecast
2000	131,210	137,856		138,307	155,741	137,856	137,856	139,804	137,856
2001	140,839	158,456		150,000	151,895	158,456	158,456	153,017	158,456
2002	168,485	163,114		158,769	156,909	163,114	163,114	162,251	163,114
2003	165,559	170,643		163,114	161,922	170,643	170,643	167,087	170,643
2004	170,076	162,115		170,643	166,936	162,115	162,115	165,667	162,115
2005	171,350	161,798		173,407	171,950	161,798	161,798	167,017	161,798
2006	**156,915**	**163,988**	**163,988**	**176,217**	**175,529**	**163,988**	**166,972**	**163,988**	**163,988**
2007	160,321	166,284	168,580	179,071	179,109	169,318	169,460	170,306	167,079
2008	163,808	168,612	171,951	181,972	182,688	174,820	171,990	173,692	170,229
2009	167,383	170,972	175,390	184,920	186,268	180,502	174,561	177,142	173,438
2010	171,045	173,366	178,898	187,916	189,847	186,368	177,646	180,727	176,707
2011	174,796	175,793	182,476	190,960	193,799	192,425	180,785	184,434	180,038
2012	178,639	178,254	186,126	194,054	197,751	198,679	183,980	188,212	183,325
2013	182,577	180,750	189,848	197,197	201,703	205,136	187,232	192,063	186,672
2014	185,495	183,280	193,645	200,392	205,655	211,803	190,541	195,830	190,080
2015	188,463	185,846	197,518	203,638	209,607	218,687	193,908	199,667	193,550
2016	191,482	188,448	201,468	206,937	213,970	225,794	197,335	203,634	197,084
2017	194,554	191,086	205,498	210,290	218,333	233,132	200,822	207,674	200,790
2018	197,677	193,762	209,608	213,696	222,697	240,709	204,371	211,788	204,566
2019	200,856	196,474	213,800	217,158	227,060	248,532	207,983	215,980	208,413
2020	204,090	199,225	218,076	220,676	231,423	256,610	214,562	220,666	212,332
2021	207,379	202,014	222,437	224,251	236,885	264,949	218,354	225,181	216,325
2022	210,726	204,842	226,886	227,884	242,475	273,560	222,213	229,798	220,320
2023	214,129	207,710	231,424	231,576	248,197	282,451	226,140	234,518	224,388
2024	217,593	210,618	236,052	235,327	254,055	291,631	230,136	239,345	228,531
2025	221,117	213,567	240,773	239,140	260,051	301,109	234,203	244,280	232,751
2026	223,527	216,556	245,589	243,014	266,188	310,895	238,342	249,159	237,049
AAGR 2006-2026	**1.78%**	**1.40%**	**2.04%**	**1.62%**	**2.10%**	**3.25%**	**1.80%**	**2.11%**	**1.86%**

Source: The LPA Group Incorporated, 2006

Table 3-7 Instrument Operations Forecast			
	Preferred Total Operations	**Instrument Ops (% of Total Ops)**	**Total Instrument Ops**
2006	**163,988**	**20.76%**	**34,041**
2007	167,079	20.86%	34,858
2011	180,038	22.05%	39,692
2016	197,084	23.69%	46,688
2026	237,049	27.25%	64,596
AAGR (2006-2026)	**1.86%**	**1.37%**	**3.25%**
Source: The LPA Group Incorporated, 2007.			

Table 3-8 Local / Itinerant Operations Forecast					
Year	**Total Ops**	**Itinerant %**	**Itinerant Ops**	**Local %**	**Local Ops**
2006	163,988	58.96%	96,687	41.04%	67,301
2007	167,079	60.00%	100,248	40.00%	66,832
2011	180,038	57.00%	102,622	43.00%	77,416
2016	197,084	55.00%	108,396	45.00%	88,688
2026	237,049	50.00%	118,525	50.00%	118,525
Source: The LPA Group Incorporated, 2007.					

3.3.2.4 TAF / Airport Forecast Comparison

During the FAA's review of the forecasts provided, it is necessary to compare the TAF forecast of operations to the selected forecast of operations. A comparison of this data reveals that the selected forecast closely resembles the TAF forecast. The selected forecast varies from 2.24% to 6.05% of the TAF forecast. A summary of the activity forecasts comparison are shown in **Table 3-9** below.

Table 3-9 TAF Forecast Comparison			
Year	**2007 FAA TAF**	**Selected**	**Deviation from TAF**
2006	**156,915**	**163,988**	**4.51%**
2007	160,321	167,079	**4.22%**
2008	163,808	170,229	**3.92%**
2009	167,383	173,438	**3.62%**
2010	171,045	176,707	**3.31%**
2011	174,796	180,038	**3.00%**
2012	178,639	183,325	**2.62%**
2013	182,577	186,672	**2.24%**
2014	185,495	190,080	**2.47%**
2015	188,463	193,550	**2.70%**
2016	191,482	197,084	**2.93%**
2017	194,554	200,790	**3.21%**
2018	197,677	204,566	**3.48%**
2019	200,856	208,413	**3.76%**
2020	204,090	212,332	**4.04%**
2021	207,379	216,325	**4.31%**
2022	210,726	220,320	**4.55%**
2023	214,129	224,388	**4.79%**
2024	217,593	228,531	**5.03%**
2025	221,117	232,751	**5.26%**
2026	223,527	237,049	**6.05%**
Source: The LPA Group Incorporated, 2007.			

3.3.2.5 Historical and Projected Based Aircraft

In order to forecast based aircraft at CRG, historic and forecast data were obtained from several information sources including the FAA Terminal Area Forecast (TAF), the FAA Aerospace Forecast, the Florida Aviation System Plan (FASP) forecast, and the 2001 Master Plan Forecast.

Based aircraft at CRG historically included a combination of single-engine, multi-engine piston and turbine aircraft used for general aviation as well as military fixed wing and rotorcraft. However, in 2003 the Florida Army National Guard helicopters were relocated to Cecil Field. This resulted in a decrease in based aircraft from 353 to 319. However, based aircraft increased in 2005 and 2006 as a direct result of increased flight training operations at the airport.

Historically, the average annual growth rate for based aircraft between 2000 and 2005 was 6.59 percent – a distinctly high rate of growth. Using this growth rate, a historical forecast was developed through the year 2026. Although this forecast used past growth trends to develop the forecast, it is somewhat unrealistic to assume that the substantial growth rates experienced from 2000 to 2005 would continue through 2026. Under this assumption, the number of based aircraft would nearly triple over the next 20 years (from 327 to 1172). This being said, the historical forecast was assumed to be unrealistic and was therefore abandoned. A review of the FAA Aerospace Forecast and the 2001 Master Plan forecast both revealed conservative average annual growth rates of 1.4% and 1.36% respectively. The FASP and the Market Share forecasts denoted the most conservative growth rates at .68% and .85% respectively. After analyzing all historic data and forecasts for CRG, the FAA TAF forecast illustrated the most realistic growth rate through the planning period (2.65%). Applying the growth 2007 FAA TAF average annual growth rates to historic based aircraft resulted in a forecast of 543 based aircraft by the year 2026. However, this growth is highly dependent upon the Jacksonville Aviation Authority's ability to provide ample storage facilities to accommodate future demand.

Although the current percentage of local to itinerant operations is 58.96% and 41.04% respectively, this percentage is predicted to shift to more of a 50/50 split during the planning period as more based hangar facilities are available. Projections of based aircraft are shown in **Table 3-10.**

Aircraft Fleet Mix

Aside from determining the number of based aircraft, it is also vital to identify the aircraft fleet mix at the airport, both in terms of based aircraft and aircraft operations. Understanding the future fleet mix allows the airport to develop facilities to accommodate various types of aircraft that are forecast to operate at the airport. The future fleet mix data was derived from various sources, including discussions with airport management, assumptions derived from the 2005 Part 150 Study, the FAA Aerospace Forecast (2006-2017) as well as the previous master plan effort.

The Part 150 study provided detailed operational activity levels that were also broken down by aircraft type. The Part 150 fleet mix was determined by analyzing more than 5,500 flight strips, data provided by airport operations department, and also during discussions with ATCT personnel. For this reason, this dataset appeared to be the most recent and most detailed representation of the historic and current fleet mix at CRG. The Part 150 study provided operational breakdowns by itinerant and local operations. For the purpose of determining future fleet mix activity, the percentages were combined and then broken back down by local and itinerant activity. This data was used to determine the types and frequency of operations at CRG through 2006.

Table 3-10
Historic and Based Aircraft Forecast

YEAR	FAA TAF	FAA Aero	FASP	Market Share	2001 MPU	OPBA	Historical	Composite	Selected
2000	223	n/a	n/a	n/a	223	223	223	223	223
2001	304	n/a	n/a	n/a	304	304	304	304	304
2002	319	n/a	n/a	n/a	319	319	319	319	319
2003	353	n/a	n/a	n/a	353	353	353	353	353
2004	319	n/a	n/a	n/a	319	319	319	319	319
2005	327	n/a	n/a	n/a	327	327	327	327	327
2006	**334**	**327**	**304**	**327**	**311**	**327**	**327**	**322**	**327**
2007	342	332	310	330	317	325	349	329	335
2008	349	336	313	333	322	331	372	336	343
2009	358	341	316	335	327	337	396	344	351
2010	366	346	320	338	333	361	422	355	359
2011	375	351	323	341	339	367	450	364	367
2012	384	355	326	344	345	383	480	374	376
2013	392	360	329	347	352	390	511	383	386
2014	403	365	332	350	358	406	545	394	395
2015	413	371	336	353	364	414	581	404	405
2016	424	376	339	356	371	431	619	416	416
2017	434	381	343	359	377	439	660	428	427
2018	446	386	346	362	384	457	703	441	438
2019	458	392	349	365	390	466	750	453	450
2020	470	397	353	368	397	485	799	467	462
2021	483	403	356	371	402	494	852	480	475
2022	496	408	360	374	407	514	908	495	488
2023	510	414	364	378	413	523	968	510	501
2024	524	420	367	381	418	544	1031	526	515
2025	539	426	371	384	423	554	1099	542	529
2026	552	432	375	387	429	576	1172	560	543
AAGR 2000-2006	6.96%	NA	NA	NA	5.70%	NA	6.59%	6.34%	6.59%
AAGR 2006-2011	2.34%	1.40%	1.22%	0.85%	1.75%	2.36%	6.59%	2.44%	2.34%
AAGR 2012-2016	2.51%	1.40%	0.98%	0.85%	1.78%	2.99%	6.59%	2.73%	2.64%
AAGR 2017-2021	2.71%	1.40%	0.93%	0.85%	1.61%	2.99%	6.59%	2.94%	2.57%
AAGR 2022-2026	2.70%	1.40%	1.01%	0.85%	1.29%	2.89%	6.59%	3.13%	2.70%
AAGR 2006-2026	2.54%	1.40%	1.05%	0.85%	1.62%	2.87%	6.59%	2.80%	2.57%

Source: The LPA Group Incorporated, 2007

The FAA Aerospace forecast (2006-2017) includes a fleet mix forecast for the nation as a whole; however, a comparison of the FAR Part 150 data to the FAA's forecast revealed inconsistencies in fleet mix percentages primarily in the area of multi-engine aircraft and

rotorcraft. Since the FAA's forecast is representative of the entire country rather than specific to the types of activity that occur at CRG, the FAA forecast could not be used to forecast the future fleet mix for CRG. It is logical to assume that the fleet mix at CRG would remain consistent with levels witnessed during prior years; however, it is also practical to assume that the FAA's forecast is also realistic in some aspects due to their consideration of new aircraft and industry trends. The FAA's forecast denoted minimal growth in single engine and multi-engine aircraft (.3%, and .1%) respectively; whereas, the largest areas of growth were recognized in the jet and rotorcraft categories. In order to produce an accurate fleet mix forecast, it was necessary to integrate CRG's existing fleet mix with the FAA's forecast. Specifically, CRG's existing fleet mix percentages were used as a starting point during the base year (2006); however, each category was then projected outward using the FAA's average annual growth rate (AAGR) for each type of aircraft through the remainder of the forecast period (through 2017). Since it is nearly impossible to anticipate changes in fleet beyond 2017, the fleet mix percentages were held constant through the remainder of the forecast (2018-2026). The operational fleet mix forecast for CRG is shown below in **Table 3-11**. The based aircraft fleet mix forecast is shown in **Table 3-12**.

Critical Aircraft

Determination of the critical aircraft is fundamental in developing an airport's design criteria in addition to identification of the airport reference code (ARC). Characteristically, the critical aircraft is defined as the most demanding aircraft (highest approach speed and longest wingspan) that utilizes the airport on a regular basis. FAA Order 5090.3C, *Field Formulation of the National Plan of Integrated Airport Systems (NPIAS)*, defines substantial use as scheduled commercial service or at least 500 total aircraft operations a year. Further, the critical aircraft reference code is that which represents the lowest maximum allowable crosswind.

2006 airport operations data provided from the FAA (GCR Inc.) database, CRG Air Traffic Control records, and information provided by existing tenants identified that the critical aircraft at CRG is based upon two aircraft groups rather than a single aircraft. Both ARC B-II and C-I group aircraft were responsible for more than 500 operations each in 2006[1]. Applying FAA planning criteria, the existing airport reference code for CRG should be upgraded from a B-II to a C-II. **Table 3-13** provides a forecast of the jet operations by aircraft type during the planning period. This forecast indicates that 628 ARC C-II (i.e. Citation X or other) aircraft operations are forecast for 2026 due to the popularity of these jet aircraft within the business/corporate market.

[1] In 2006, 2,713 operations were associated with B-II aircraft, 907 operations with C-I aircraft, and 100 operations associated with C-II aircraft. A list of C-II aircraft is provided in **Section 5.1.2**, *Runway Length Requirements*, and **Appendix E**, *Runway Length Justification*. Historic data based upon FAA GCR Database, CRG ATCT information and Tenant logs.

Table 3-11
Fleet Mix Operations Forecast

		SEP		MEP		Turbo Prop		Jet		Rotor		Total %
Year	Total Ops	%	Ops	%	Ops	%	Ops	%	Ops	%	Ops	%
2006	163,988	66.00%	108,232	20.00%	32,798	10.00%	16,399	3.00%	4,920	1.00%	1,640	100.00%
2007	167,079	65.36%	109,203	19.91%	33,265	10.09%	16,858	3.36%	5,614	1.27%	2,122	100.00%
2008	170,229	64.73%	110,189	19.82%	33,739	10.18%	17,329	3.73%	6,350	1.55%	2,639	100.00%
2009	173,438	64.09%	111,156	19.73%	34,219	10.27%	17,812	4.09%	7,094	1.82%	3,157	100.00%
2010	176,707	63.45%	112,121	19.64%	34,705	10.36%	18,307	4.45%	7,863	2.09%	3,693	100.00%
2011	180,038	62.82%	113,100	19.55%	35,197	10.45%	18,814	4.82%	8,678	2.36%	4,249	100.00%
2012	183,325	62.18%	113,991	19.45%	35,657	10.55%	19,341	5.18%	9,496	2.64%	4,840	100.00%
2013	186,672	61.55%	114,897	19.36%	36,140	10.64%	19,862	5.55%	10,360	2.91%	5,432	100.00%
2014	190,080	60.91%	115,778	19.27%	36,628	10.73%	20,396	5.91%	11,234	3.18%	6,045	100.00%
2015	193,550	60.27%	116,653	19.18%	37,123	10.82%	20,942	6.27%	12,136	3.45%	6,677	100.00%
2016	197,084	59.64%	117,541	19.09%	37,623	10.91%	21,502	6.64%	13,086	3.73%	7,351	100.00%
2017	200,790	59.00%	118,466	19.00%	38,150	11.00%	22,087	7.00%	14,055	4.00%	8,032	100.00%
2018	204,566	59.00%	120,694	19.00%	38,868	11.00%	22,502	7.00%	14,320	4.00%	8,183	100.00%
2019	208,413	59.00%	122,964	19.00%	39,598	11.00%	22,925	7.00%	14,589	4.00%	8,337	100.00%
2020	212,332	59.00%	125,276	19.00%	40,343	11.00%	23,357	7.00%	14,863	4.00%	8,493	100.00%
2021	216,325	59.00%	127,632	19.00%	41,102	11.00%	23,796	7.00%	15,143	4.00%	8,653	100.00%
2022	220,320	59.00%	129,989	19.00%	41,861	11.00%	24,235	7.00%	15,422	4.00%	8,813	100.00%
2023	224,388	59.00%	132,389	19.00%	42,634	11.00%	24,683	7.00%	15,707	4.00%	8,976	100.00%
2024	228,531	59.00%	134,833	19.00%	43,421	11.00%	25,138	7.00%	15,997	4.00%	9,141	100.00%
2025	232,751	59.00%	137,323	19.00%	44,223	11.00%	25,603	7.00%	16,293	4.00%	9,310	100.00%
2026	237,049	59.00%	139,859	19.00%	45,039	11.00%	26,075	7.00%	16,593	4.00%	9,482	100.00%

Note: Due to rounding, numbers may not sum up.
Source: The LPA Group Incorporated, 2006.

Table 3-12
Based Aircraft Fleet Mix Forecast

		SEP		MEP		Turbo Prop		Jet		Rotor	
Year	**Total Based Aircraft**	**%**	**Aircraft**	**%**	**Aircraft**	**%**	**Aircraft**	**%**	**Aircraft**	**%**	**Aircraft**
2006	327	66.00%	216	20.00%	65	10.00%	33	3.00%	10	1.00%	3
2007	335	65.36%	219	19.91%	67	10.09%	34	3.36%	11	1.27%	4
2011	367	62.82%	231	19.55%	72	10.45%	38	4.82%	18	2.36%	9
2016	416	59.64%	248	19.09%	79	10.91%	45	6.64%	28	3.73%	15
2026	543	59.00%	320	19.00%	103	11.00%	60	7.00%	38	4.00%	22

Note: 2006 data was obtained from Tenant surveys and Airport Management data in September 2006
Source: The LPA Group Incorporated, 2006.

Table 3-13
Forecast Turbojet Fleet Mix

		ARC A-I		ARC B-I		ARC B-II		ARC C-I		ARC C-II	
Year	**Total Turbojet Operations**	**Ops[1]**	**%[2]**	**Ops**	**%[2]**	**Ops**	**%[2]**	**Ops**	**%[2]**	**ARC C-II Ops**	**%[2]**
2006	4,920	0	0.00%	1,200	24.39%	2,713	55.14%	907	18.44%	100	2.03%
2007	5,614	0	0.00%	1,358	24.19%	3,080	54.87%	1,042	18.57%	117	2.37%
2011	8,678	93	1.07%	2,017	23.25%	4,669	53.81%	1,696	19.55%	202	2.33%
2016	13,086	193	1.47%	2,895	22.12%	6,871	52.51%	2,775	21.21%	352	2.69%
2021	15,143	307	2.03%	3,188	21.05%	7,759	51.24%	3,405	22.49%	483	3.19%
2026	16,593	465	2.80%	3,319	20%	8,297	50.00%	3,886	23.42%	628	3.78%

Notes: [1]Designates light sport, experimental and very light jet aircraft
[2]Percent of operations to total Jet operations
Sources: FAA Aerospace Forecasts (2006-2017; 2007-2020), Honeywell Business Jet Forecast 2007-2017, NBAA Factbook, 2004, FAA ATC Database, 2006, FAA GCR INC. Operational Data, 2007, CRG FAR Part 150 Study, 2006, Tenant Surveys, Fuel Flowage Data, and The LPA Group, Inc. 2007.

The impact of the critical aircraft on runway length is discussed in detail in **Appendix E**, *Runway Length Analysis.*

3.3.2.6 Peak Activity Projections

Annual projections generally provide a good overview of the activity at an airport, but may not reflect operational characteristics of a facility. As such, peak forecasts are developed based on the fact that annual demand is typically not equally distributed throughout the entire year. In many cases, facility requirements are not driven by annual demand, but rather by capacity shortfalls and delays experienced during peak times.

Peak month operations were determined by evaluating historical monthly activity that was tallied by city tower personnel. An analysis of the activity between the years 2000 and 2006 revealed that the busy month typically occurred sometime during the fall of each year with October being one of the busiest months. Once the busy month for each year was determined, the operations performed were divided by the annual operations in order to establish a percentage of busy month operations. The percentage of each year was then averaged in order to develop a peak month operations percentage factor of 10.91% as shown in **Table 3-14**.

Table 3-14
Historic Peak Month Percentage of Operations

Peak Month / Year	Peak Month Ops	Total Ops	% of total ops
Oct-00	15,402	125,233	12.30%
Oct-01	18,306	158,769	11.53%
Oct-02	15,691	163,064	9.62%
Oct-03	17,491	170,629	10.25%
Oct-04	17,813	174,114	10.23%
May-05	15,876	161,988	9.80%
Apr-06	15,574	123,533	12.61%
		Average	**10.91%**

Source: The LPA Group Incorporated, 2006.

This percentage was then multiplied by the number of forecasted operations in order to develop the peak month operations for the forecast years. The result of this calculation was divided by 30.42 days to find the average day peak month, (365 days divided by 12 months = 30.42 days). Peak hour calculations are usually comprised of 10 to 20 percent of the average day peak month operations. For this analysis, 15 percent of the average day peak month traffic was used to generate peak hour traffic. The results of these calculations for both historic and forecast years are shown in **Table 3-15**.

Table 3-15
Peak Hour Operations Breakdown

Year	Ops	Peak Month (10.91%)	Avg. Day Peak Month	Peak Hour (15% of ADPM)	% Itinerant Ops	Itinerant Peak hour Ops	% Local Ops	Local Peak Hour Ops
2006	163,988	17,891	588	88	58.96%	52	41.04%	36
2007	167,079	18,228	599	90	60.00%	54	40.00%	36
2008	170,229	18,572	611	92	60.00%	55	40.00%	37
2009	173,438	18,922	622	93	60.00%	56	40.00%	37
2010	176,707	19,279	634	95	58.00%	55	42.00%	40
2011	180,038	19,642	646	97	58.00%	56	42.00%	41
2012	183,325	20,001	657	99	57.00%	56	43.00%	42
2013	186,672	20,366	669	100	57.00%	57	43.00%	43
2014	190,080	20,738	682	102	56.00%	57	44.00%	45
2015	193,550	21,116	694	104	56.00%	58	44.00%	46
2016	197,084	21,502	707	106	55.00%	58	45.00%	48
2017	200,790	21,906	720	108	55.00%	59	45.00%	49
2018	204,566	22,318	734	110	54.00%	59	46.00%	51
2019	208,413	22,738	747	112	54.00%	61	46.00%	52
2020	212,332	23,165	762	114	53.00%	61	47.00%	54
2021	216,325	23,601	776	116	53.00%	62	47.00%	55
2022	220,320	24,037	790	119	52.00%	62	48.00%	57
2023	224,388	24,481	805	121	52.00%	63	48.00%	58
2024	228,531	24,933	820	123	51.00%	63	49.00%	60
2025	232,751	25,393	835	125	51.00%	64	49.00%	61
2026	237,049	25,862	850	128	50.00%	64	50.00%	64

Source: The LPA Group Incorporated, 2006.

Peak Passenger Demand

Since the airport is classified as a general aviation airport, the passenger forecast was based upon the ratio of pilots and GA passengers per GA activity at the airport. Using the FAA forecast methodology, GA passengers were determined using an average of 2.5 passengers (1 pilot and 1.5 passengers) per GA takeoff. Thus, to forecast passengers, peak operations were divided in half and then multiplied by 2.5. By using the peak operations established in the previous section, peak passengers were determined as shown below in **Table 3-16**. The forecast of peak passengers is used in the following chapter to determine FBO, parking facility, and access requirements through the remainder of the planning period.

Table 3-16 Peak Hour Passengers			
Year	**Peak Hour Ops**	**50% of Peak Ops**	**Peak Passengers**
2006	88	44	110
2007	90	45	112
2011	97	48	121
2016	106	53	133
2026	128	64	159
Source: The LPA Group, Incorporated, 2007.			

3.4 Summary

In summary, the data and methods used to forecast aviation demand for the airport are consistent with those used by the FAA and other airports located within the State. The forecasts presented in this study, as shown in **Table 3-17**, are considered to accurately reflect the activity anticipated at CRG through 2026 provided facilities necessary to accommodate this demand are made available. Overall, the current activity at CRG is expected to show moderate growth throughout the forecast period.

Table 3-17
Airport Planning Forecasts
Forecast levels and growth rates

Craig Municipal Airport											
City of Jacksonville		Base Year: **2006**									
							Average Annual Compound Growth Rates				
	Base Yr. Level	**Base Yr. + 1yr.**	**Base Yr. + 5yrs.**	**Base Yr. + 10yrs.**	**Base Yr. + 15yrs.**	**Base Yr. + 20yrs.**	**Base yr. to +1**	**Base yr. to +5**	**Base yr. to +10**	**Base yr. to +15**	**Base yr. to +20**
Operations											
Itinerant:											
Air Carrier	0	0	0	0	0	0	NA	NA	NA	NA	NA
Air Taxi	7,636	8,540	8,895	9,234	9,767	10,097	11.83%	2.58%	1.74%	1.65%	1.41%
GA	77,330	78,983	82,272	85,403	90,332	93,383	2.14%	1.04%	0.91%	1.04%	0.95%
Military	11,720	12,725	13,255	13,759	14,553	15,045	8.57%	2.07%	1.47%	1.45%	1.26%
Total Itinerant Operations	96,686	100,248	104,422	108,396	114,652	118,525	3.68%	1.29%	1.04%	1.14%	1.02%
Local:											
GA	67,052	66,832	75,616	88,688	101,673	118,525	-0.33%	2.02%	2.57%	2.81%	2.89%
Military	250	0	0	0	0	0	NA	NA	NA	NA	NA
Total Local Operations	67,302	66,832	75,616	88,688	101,673	118,525	-0.70%	1.96%	2.54%	2.79%	2.87%
TOTAL OPERATIONS	**163,988**	**167,079**	**183,325**	**200,790**	**216,325**	**237,049**	**1.89%**	**1.88%**	**1.86%**	**1.86%**	**1.86%**

Table 3-17 (Con't)
Airport Planning Forecasts
Forecast Levels and Growth Rates

Craig Municipal Airport											
City of Jacksonville		Base Year: **2006**									
							Average Annual Compound Growth Rate				
	Base Yr. Level	**Base Yr. + 1yr.**	**Base Yr. + 5yrs.**	**Base Yr. + 10yrs.**	**Base Yr. + 15yrs.**	**Base Yr. + 20yrs.**	**Base yr. to +1**	**Base yr. to +5**	**Base yr. to +10**	**Base yr. to +15**	**Base yr. to +20**
Instrument Operations	34,041	34,858	39,692	46,688	54,917	64,596	2.40%	2.59%	2.91%	3.24%	3.25%
Peak Hour Operations	88	90	97	106	116	128	1.89%	1.57%	1.69%	1.86%	1.86%
Based Aircraft											
Single Engine (Piston)	216	219	231	248	280	320	1.36%	1.11%	1.26%	1.76%	1.99%
Multi Engine	65	67	72	79	90	103	1.88%	1.56%	1.77%	2.17%	2.30%
Turboprop	33	34	38	45	52	60	3.27%	2.71%	3.01%	3.17%	3.06%
Jet	10	11	18	28	33	38	14.75%	10.33%	9.85%	8.48%	7.01%
Helicopter	3	4	9	15	19	22	30.25%	17.66%	15.19%	12.45%	9.93%
Other	0	0	0	0	0	0	NA	NA	NA	NA	NA
TOTAL	**327**	**335**	**367**	**416**	**475**	**543**	**2.34%**	**1.96%**	**2.21%**	**2.52%**	**2.57%**
Operational Factors											
Total GA Operations Per Based Aircraft (OPBA)	442	436	430	419	404	390	-1.32%	-0.45%	-0.48%	-0.59%	-0.61%
Local GA Operations Per Based Aircraft	206	200	206	213	214	218	-2.97%	0.00%	0.33%	0.26%	0.30%

Source: *The LPA Group Incorporated*, 2007

Note: Due to rounding or undisclosed editing, numbers may not sum up. Right hand side of worksheet has embedded formulas for average annual compound growth rate calculations.