

AVIATION FORECASTS

Aviation forecasts are time-based projections that provide a reasonable expectation for anticipating airport demand and serve as a guide in determining required airport infrastructure, equipment, and service needs. The forecasts provide an assessment of activity during the next 20-year (2018-2038) planning period and provide the framework for future facilities that would be needed to meet the anticipated demand. The following components of aviation demand have been forecasted as part of the Master Plan Update for the Concord-Padgett Regional Airport:

- Existing airport activity levels
- Passenger enplanements
- Based aircraft
- Aircraft operations
- Critical aircraft
- Airport peaking characteristics
- Operations by aircraft/operation type
- Instrument operations



As part of the Master Plan Update process, various federal, state, and local sources of existing and projected airport activity were confirmed to validate projections using the most current airport activity trends and conditions. These sources include the FAA, NCDOT-DOA, and JQF airport records.

3.1 Existing Airport Activity Levels

A snapshot of *current* activity was determined as part of the Master Plan Update. This information serves as the baseline for developing forecasts throughout the 20-year planning period (2018-2038). Table 3.1-1 (page 48) summarizes the airport activity for the 12 months ending September 30, 2016, which corresponds with the federal fiscal year.

Table 3.1-1
2016 Airport Activity
Concord-Padgett Regional Airport

Year	Total Based Aircraft	Total Annual Operations	Total Annual Enplanements
2016	158	59,395	81,984

Source: Concord-Padgett Regional Airport (January 2018).
Federal Aviation Administration, "FAA APO Terminal Area Forecast Detail Report," <<http://aspm.faa.gov/>>, accessed January 23, 2018

3.2 Passenger Enplanements

Measuring and forecasting airport passenger levels is a key component of the JQF Master Plan Update. Passenger traffic is measured by annual enplanements, which are defined as a boarding by one passenger at their trip origin. The Concord-Padgett Regional Airport had existed primarily as a general aviation airport with limited air taxi and commuter traffic until December 2013 when Allegiant Air began scheduled commercial air carrier service at the Airport. Historical air carrier enplanements for JQF are shown in Table 3.2-1.

Table 3.2-1
Historic Annual Enplanements
Concord-Padgett Regional Airport

Year	Air Carrier Enplanements	Air Taxi/Commuter Enplanements	Total Enplanements
2007	341	1,647	1,988
2008	450	4,363	4,813
2009	97	6,978	7,075
2010	102	9,024	9,126
2011	6,477	4,133	10,610
2012	11,099	26	11,125
2013	10,403	0	10,403
2014	15,986	65	16,051
2015	62,588	52	62,640
2016	81,934	50	81,984
2017*	115,074	0	115,074

*Note: Concord-Padgett Regional Airport Enplanement Records
Source: Concord-Padgett Regional Airport records (January 2018).
Federal Aviation Administration, "FAA APO Terminal Area Forecast Detail Report," <<http://aspm.faa.gov/>>, accessed January 23, 2018.

As shown in Table 3.2-1 (page 48), air carrier enplanements have increased significantly at JQF with the introduction of Allegiant Air scheduled service in December 2013. The enplanements shown for 2017 were taken from airport and airline records as final enplanement numbers for 2017 have not yet been included in the FAA Terminal Area Forecasts (TAF). Air taxi and commuter airline enplanements are also included in Table 3.2-1 (page 48). These enplanements typically occur on general aviation flights or smaller (less than 60 seats) regional commuter aircraft. The reduction in these enplanements since the introduction of scheduled air carrier service at JQF is likely due to the classification of these enplanements.

Allegiant Air typically operates from underutilized and smaller air carrier airports located in major population centers. The Concord-Padgett Regional Airport matches Allegiant’s business plan well for providing low-cost direct flights to popular tourist destinations from the Charlotte region. Allegiant serves JQF with Airbus A320-200 aircraft, which seat up to 177 passengers in a single-class configuration. Allegiant operates out of the new terminal building at JQF that was recently constructed on the south side of the Airport.



Allegiant Air currently (November 2017) operates an average of 15 weekly flights to five destinations as shown in Table 3.2-2. These flights vary seasonally and their frequency can change based on passenger demand and time of year.

Table 3.2-2
Allegiant Air Flight Schedule (2017)
Concord-Padgett Regional Airport

Destination	Weekly Flights
FLL, Fort Lauderdale, FL	4
MSY, New Orleans, LA	2
PGD, Punta Gorda/Fort Meyers, FL	2
PIE, Tampa Bay, FL	3
SFB, Orlando/Sanford, FL	4
Total	15

Source: Concord-Padgett Regional Airport, “Scheduled Airline Service,” <<http://www.concordnc.gov/Departments/Concord-Regional-Airport/Airline-Information>>, accessed September 28, 2017

Typically, historical enplanement data and industry trends are used to develop enplanement forecasts. However, limited historic data is available for air carrier enplanements at JQF since Allegiant has only been operating at the Airport since December 2013. The FAA TAF project enplanements growing at

an average annual growth rate of 2.1 percent at JQF over the next 20 years. The 2017 FAA aerospace forecasts indicate that revenue passenger enplanements for domestic flights will grow at an average rate of 1.7 percent annually over the next 20 years. Allegiant has grown at an average annual rate of approximately 100 percent since flights started at JQF. This growth rate is not realistically sustainable and cannot be used for developing enplanement forecasts. There is however, potential for another low-cost air carrier to begin service at JQF. Based on these factors, the enplanement forecasts for JQF were developed by applying the FAA TAF growth rate to the current (2017) enplanement levels. The results are shown in Table 3.2-3.

**Table 3.2-3
Annual Enplanements Forecast
Concord-Padgett Regional Airport**

Year	FAA TAF	Enplanement Forecasts with FAA Aerospace Growth Rate (1.8% and 1.7%)	Enplanement Forecasts with FAA TAF Growth Rate (2.1%)
2017	36,866	115,074	115,074
2018	37,634	117,145	117,491
2023	41,724	128,075	130,356
2028	46,256	139,749	144,631
2038	56,858	165,409	178,040

Source: Federal Aviation Administration, "FAA APO Terminal Area Forecast Detail Report," <<http://aspm.faa.gov/>>, accessed January 23, 2018.

Using the method described above, total enplanements at JQF will increase from 115,000 in 2017 to more than 178,000 in 2038. This represents a more realistic expectation of enplanements compared to those represented in the TAF, which indicate enplanements will drop from 82,000 in 2016 to 36,866 in 2017. Enplanements are then projected to grow at 2.1 percent annually after the drop according to the TAF. There is no indication that JQF will experience this sudden drop in enplanements. This projected drop could be the result of an automatic *correction* that is applied to any enplanement forecasts exceeding a set threshold by the FAA.

A third enplanement forecast was developed using the historic fiscal year 2017 enplanements (115,074) with the FAA Aerospace enplanement annual growth rate applied, which is 1.8 percent for the next ten years and then 1.7 percent for the ten- to 20-year timeframe. This results in 165,409 enplanements by 2038. As previously mentioned, a number of variables can impact the enplanement growth rate at JQF including the number of air carriers and type of aircraft operating at the Airport. Therefore, the spread between the three forecasts mentioned above represent a likely outcome range for future enplanements given the information currently available. This range between the forecasts is illustrated in Figure 3.2-1 (page 51).

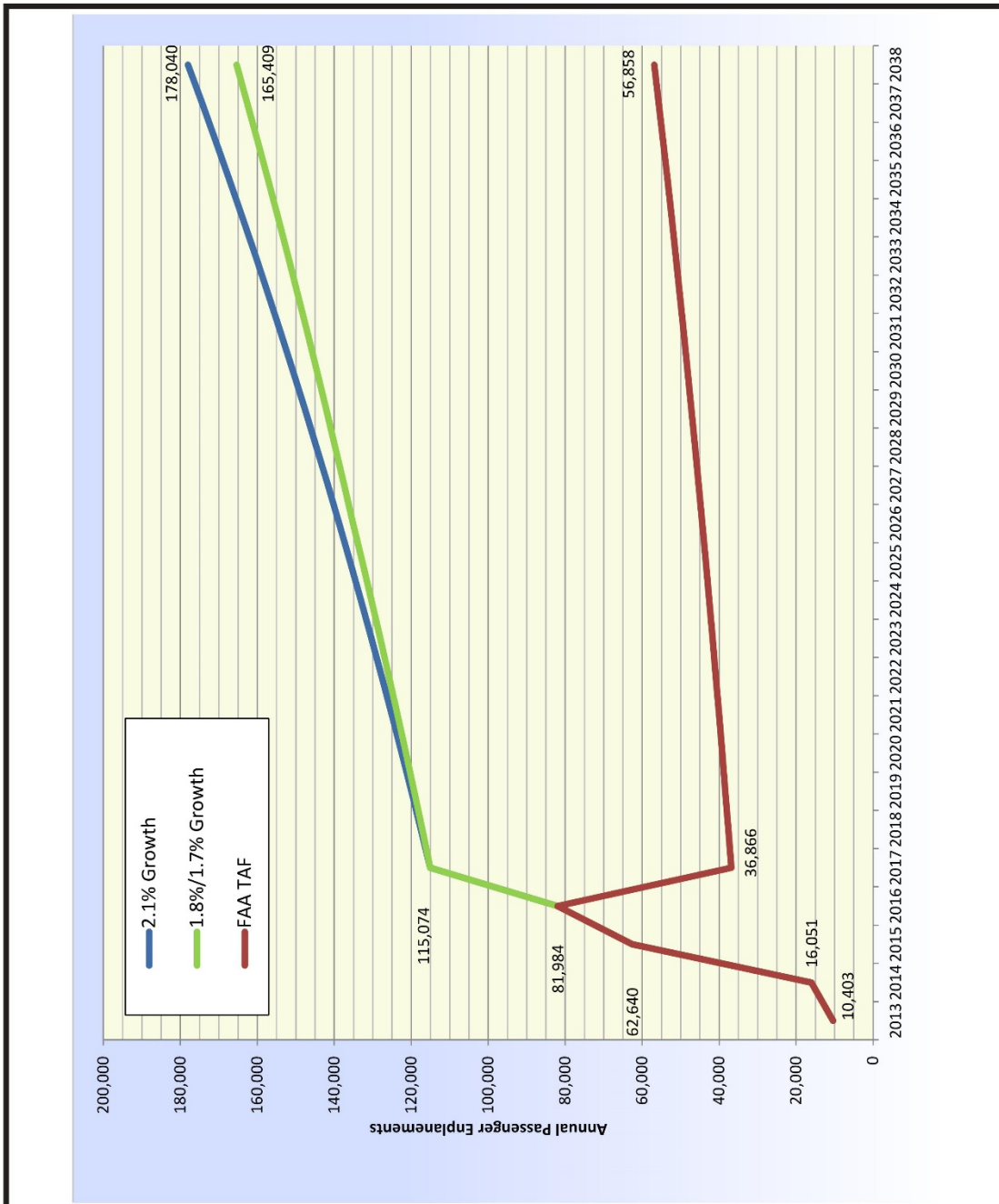


Figure 3.2-1
Concord-Padgett Regional Airport
Enplanement Growth Rate Comparison

3.3 Based Aircraft

A based aircraft is defined as an actively registered aircraft stationed at a select airport, which regularly uses that airport as the primary *home base* for filing flight plans, frequently uses available airport amenities, and/or maintains a formal commitment for long-term parking/storage.

The number of based aircraft at any given airport directly impacts the size, number, and type of facilities needed at that airport. Table 3.3-1 (page 51) lists the historical and current based aircraft forecasts from the FAA TAF and JQF airport records. The TAF projects an increase in based aircraft at JQF to 217 by the year 2038. The information on the 2017 home-based aircraft data provided by Concord-Padgett Regional Airport was used as the starting point, which is more accurate than the current TAF based aircraft levels. The TAF numbers are revised annually using the updated based aircraft counts. The based aircraft forecasts are shown in Table 3.3-1 and the methodology for determining these forecasts is discussed below.

Year	FAA TAF
2000	156
2005	189
2010	181
2015	168

Source: Federal Aviation Administration, "FAA APO Terminal Area Forecast Detail Report," <http://aspm.faa.gov/>, accessed January 23, 2017.

It should be noted that the total based aircraft identified on the FAA TAF report for 2017 is 171. The actual based aircraft number according to JQF airport records for 2017 is 158 (Table 2.2.6.10-1, page 42). Therefore, 158 was used as the baseline starting point for the based aircraft forecasts as it represents a more accurate depiction of current activity than the FAA TAF levels. Table 3.3-2 (page 52) depicts the current and forecast based aircraft by type and the percentages used to determine the forecast aircraft types. Single-engine aircraft are anticipated to represent a lower percentage of the total based aircraft in the future as these types are removed from the overall U.S. fleet. However, turboprop, jet, and helicopters are anticipated to increase at JQF as these types of aircraft are added to the U.S. fleet. Applying the FAA aerospace forecast annual growth rates to these aircraft types results in fractions of based aircraft. Therefore, the based aircraft by type were rounded up to the nearest whole number with the average annual growth rates depicted in Table 3.3-2 (page 53).

**Table 3.3-2
Based Aircraft Forecast
Concord-Padgett Regional Airport**

Year	Single-Engine	Multi-Engine	Turboprop	Jet	Helicopter	Total
2017	107 (67.7%)	15 (9.5%)	8 (5.1%)	23 (14.6%)	5 (3.2%)	158
2018	107 (67.4%)	15 (9.5%)	8 (5.1%)	24 (14.8%)	5 (3.2%)	159
2023	108 (65.7%)	16 (9.5%)	9 (5.3%)	26 (16.1%)	5 (3.4%)	164
2028	108 (64.0%)	16 (9.5%)	9 (5.5%)	30 (17.5%)	6 (3.5%)	169
2038	107 (59.9%)	17 (9.5%)	11 (6.0%)	37 (20.7%)	7 (3.9%)	179
Average Annual Increase	0.0%	0.6%	1.4%	2.3%	1.6%	0.6%

Source: Concord-Padgett Regional Airport, "Home Based Aircraft," September 2017.
Talbert, Bright & Ellington, Inc., November 2017.

Based aircraft at JQF grew at 0.6 percent annually on average between 2000 and 2017. When carried forward at 0.6 percent annually, the total number of based aircraft is projected to grow from 158 in 2017 to 179 in 2038. A growth rate consistent with FAA aerospace projections (0.1 percent annually) would result in the addition of three based aircraft at JQF over the next 20 years. The TAF projects based aircraft will increase at an annual rate of 1.14 percent over the next 20 years. This would result in 59 additional based aircraft at JQF by the end of the 20-year planning period, which is unlikely since nearly no net based aircraft have been added at JQF over the last 17 years. A linear regression forecast was also developed, which results in a total of 164 aircraft at the end of the 20-year planning period. Therefore, the 0.6 percent JQF historical growth rate was selected as the preferred forecast method as it represents the most likely outcome based on historical airport trends.

These forecast numbers were then used to determine the forecast types of aircraft over the 20-year planning period. The percentages of types of aircraft remain consistent with historical data. However, the number of based jets and turboprop aircraft is projected to increase at a higher rate than single-engine aircraft as more of these corporate class aircraft are added to the national fleet mix in accordance with the 2017 FAA aerospace forecasts for the U.S. general aviation aircraft fleet. The aircraft classified as *other* may include sailplanes or ultralight aircraft and are not considered as part of the total based aircraft number as per the FAA definition of a based aircraft.

3.4 Aircraft Operations

An aircraft operation is defined as either a takeoff or landing at an airport. The number of forecast annual operations at an airport is used to determine future facilities that may be required to accommodate this activity. The Concord-Padgett Regional Airport has an air traffic control tower and therefore, details operations records. A list of historical JQF operations is shown in Table 3.4-1 (page 54).

**Table 3.4-1
 Historic Operations
 Concord-Padgett Regional Airport**

Year	JQF ATCT Records
2007	67,367
2008	65,397
2009	53,767
2010	60,534
2011	62,953
2012	58,305
2013	61,177
2014	55,438
2015	55,470
2016	62,038

Source: Federal Aviation Administration, "FAA APO Terminal Area Forecast Detail Report," <<http://aspm.faa.gov/>>, accessed January 23, 2018.

The annual operations forecasts for JQF were developed by applying the same growth rate (0.6 percent) from the based aircraft forecasts to the annual operations. Operations are anticipated to increase at JQF commensurate with the projected increase in based aircraft. Trend line and linear regressions calculations resulted in no projected growth in annual operations. Therefore, these forecasts methods were not used for JQF as they do not accurately project anticipated and realistic growth at the Airport.

3.4.1 Operations by Aircraft Type

The forecast operations levels were further divided into types of aircraft among the total operations. The based aircraft are grouped into these same categories. These aircraft categories are primarily grouped by the type of aircraft propulsion and include:

- Single-engine piston
- Multi-engine piston
- Turboprop
- Jet
- Helicopter

The operations per type of aircraft are determined using the anticipated percentages of activity among these groups. The existing (2017) percentages by aircraft type are depicted in Table 3.4.1-1 (page 55). These percentages were then applied to the total operations forecasts (0.6 percent annual growth) to

develop the operations by aircraft type as shown in Table 3.4.1-1. The percentages of existing activity by type are anticipated to remain constant over the planning period.

Year	Single-Engine	Multi-Engine	Turboprop	Jet	Helicopter	Total
Percentage	23.0%	7.0%	23.0%	45.0%	2.0%	100.0%
2017	14,354	4,369	14,354	28,085	1,248	62,410
2018	14,440	4,395	14,440	28,253	1,256	62,785
2023	14,879	4,528	14,879	29,111	1,294	64,691
2028	15,331	4,666	15,331	29,995	1,333	66,655
2038	16,276	4,953	16,276	31,844	1,415	70,764

Source: Talbert, Bright & Ellington, Inc., November 2017.

The operations forecast by aircraft type are based on the percentages of FAA instrument flight rules (IFR) data for JQF as outlined in Table 3.4.1-2.

Year	Single-Engine	Multi-Engine	Turboprop	Jet	Helicopter	Total
2007	26.4%	17.3%	26.3%	29.9%	0.1%	100%
2008	31.7%	14.1%	23.4%	30.7%	0.1%	100%
2009	37.5%	12.4%	21.8%	28.1%	0.2%	100%
2010	36.3%	12.4%	20.0%	31.1%	0.2%	100%
2011	27.7%	10.6%	21.9%	39.7%	0.1%	100%
2012	26.6%	8.8%	27.0%	37.4%	0.2%	100%
2013	25.6%	7.4%	28.9%	37.9%	0.3%	100%
2014	25.0%	6.7%	28.1%	39.9%	0.2%	100%
2015	26.2%	6.7%	25.2%	41.5%	0.3%	100%
2016	23.3%	7.3%	22.5%	46.7%	0.2%	100%
2017	21.8%	7.6%	21.9%	48.5%	0.3%	100%
Average	28.0%	10.1%	24.3%	37.4%	0.2%	100.0%

Source: Federal Aviation Administration, "Traffic Flow Management System Counts (TFMSC) Repository, 2007-2017," <<https://aspm.faa.gov/tfms/sys/main.asp>>, accessed September 28, 2017

3.4.2 Local/Itinerant Operations Forecast

The forecast operations at the Concord-Padgett Regional Airport were also divided into local and itinerant operations categories, as well as general aviation and military classifications. Table 3.4.2-1 (page 56) lists the average percentages of operation by type at JQF. Table 3.4.2-2 (page 56) shows the

breakdown of annual operations, by operation type, for the Airport throughout the 20-year planning period. The mix of forecast aircraft was projected using historic operations types as indicated in historic JQF air traffic control tower counts. The percentage of operations by type was calculated from the Airport Master Record 5010 data, as well as the FAA TAF. The current (2014) percentages by aircraft type are anticipated to remain constant over the planning period and were applied to the total annual operations forecasts. There is no indication that these percentages will vary from current levels over the next 20 years.

**Table 3.4.2-1
Percentage of Operations by Type
Concord-Padgett Regional Airport**

	Itinerant Operations				Local Operations		Total
	Air Carrier	Air Taxi	General Aviation	Military	General Aviation	Military	
Average	4.0%	9.9%	50.0%	1.0%	35.0%	0.1%	100%

Source: GRC & Associates, Inc., "FAA's Airport Master Record Forms (5010-1 and 5010-2), 2017," <<http://www.gcr1.com/>>, accessed September, 2017.
Federal Aviation Administration, "FAA APO Terminal Area Forecast Detail Report," <<http://aspm.faa.gov/>>, accessed January 23, 2018.
Talbert, Bright & Ellington, Inc., January 2018.

**Table 3.4.2-2
Annual Operations by Type
Concord-Padgett Regional Airport**

Year	Itinerant Operations				Local Operations		Total
	Air Carrier	Air Taxi	General Aviation	Military	General Aviation	Military	
2017	2,496	6,179	31,205	624	21,844	62	62,410
2018	2,511	6,216	31,392	628	21,975	63	62,785
2023	2,588	6,404	32,345	647	22,642	65	64,691
2028	2,666	6,599	33,328	667	23,329	67	66,655
2038	2,831	7,006	35,382	708	24,767	71	70,764
Average Annual Increase	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%

Aircraft Operation (Defined) – An aircraft operation is one takeoff and/or landing of an aircraft (i.e., a touch and go consists of 2 operations). Aircraft operations are identified as local and itinerant. Local operations consist of those within a 25-mile radius of the Airport vicinity. Itinerant operations include flights having a terminus of flight from another airport at least 25 miles away.
Source: Talbert, Bright & Ellington, Inc., November 2017.

3.5 Critical Aircraft

Table 3.5-1 provides information about the existing and ultimate critical aircraft for the Concord-Padgett Regional Airport. The critical aircraft is the largest airplane within a composite family of aircraft conducting at least 500 annual operations (combination of 250 takeoffs and landings) per year at the Airport. The critical aircraft is evaluated with respect to size, speed, and weight and is important for determining airport design, structural, and equipment needs for the airfield and terminal area facilities.

**Table 3.5-1
Critical Aircraft Forecast
Concord-Padgett Regional Airport**

Aircraft Type and ARC	Wing-Span	Aircraft Length	Aircraft Height	Seating	Maximum Gross Takeoff Weight	Takeoff Distance (ISO)	Approach Speed
Airbus A320-214 (RDC C-III) (Current)	117.4'	123.3'	38.6'	Up to 177 pax + 2 pilots	172,000 lbs.	6,900'	130 KIAS
Boeing 737-800 (RDC D-III) (Future)	117.4'	129.5'	41.2'	Up to 175 pax + 2 pilots	174,200 lbs.	7,598'	141 KIAS

Note: Takeoff weight indicates maximum takeoff and ramp weight, respectively.

ISO (International Standard Observation): 59°F @ 29.92"

pax – passengers

KIAS – knots indicated air speed

RDC – Runway Design Code

Critical Aircraft (Defined) – The largest aircraft within a family of FAA Runway Design Code (RDC) that conducts at least 500 annual itinerant operations per year at the airport. The FAA establishes airport design criteria in accordance with the airport's airport reference code (ARC) designation, which provides minimum safety standards with respect to the performance characteristics of the family of aircraft represented by the airport's critical aircraft.

Source: Talbert, Bright & Ellington, Inc, November 2017.

The FAA Traffic Flow Management System Counts (TFMSC) data was used to determine the approximate number of operations currently being conducted at JQF by category C-III and larger aircraft. This information is used to determine if the future critical aircraft needs to be upgraded from the existing designation of C-III. Approximately 2.1 percent of the total operations at JQF are conducted by C-III and larger aircraft based on FAA TFMSC records for 2017, as shown in Table 3.5-2 (page 58). Operations by C-III and larger aircraft, such as the Airbus A320 exceeded 500 starting in 2015 based on the FAA TFMSC data. The predominant C-III aircraft operating at JQF in 2017 is the Airbus A320-200 with some (below 500) operations by Boeing 737-700 and 737-800 aircraft. Therefore, the existing airport critical aircraft is the Airbus A320-200. However, it is likely that 737-

800 operations will increase at JQF in the next 20 years, which would require a change in the airport reference code from C-III to D-III due to the 737's higher approach speed.

**Table 3.5-2
Critical Aircraft Operations
Concord-Padgett Regional Airport**

Year	Total Operations	Total IFR Operations	Operations by C-III and Larger Aircraft	Percent of Total Operations by C-III and Larger Aircraft
2007	67,367	27,411	4	0.0%
2008	65,397	26,070	0	0.0%
2009	53,767	21,033	0	0.0%
2010	60,534	18,753	5	0.0%
2011	62,953	16,234	295	0.5%
2012	58,305	16,490	318	0.5%
2013	61,177	17,231	332	0.5%
2014	55,438	17,108	485	0.9%
2015	55,470	18,705	853	1.5%
2016	62,038	17,813	1,330	2.1%
2017*	62,410	11,939	1,291	TBD

*Note: Includes 2017 operations through August 2017.
TBD – To Be Determined
Source: Federal Aviation Administration, "Traffic Flow Management System Counts (TFMSC) Repository, 2007-2017," <<https://aspm.faa.gov/tfms/sys/main.asp>>, accessed September 28, 2017.

3.6 Airport Peaking Characteristics

Peak period operations indicate the amount of activity that occurs during the busy times of the year and busy times of the day. Peak period operations can be used to determine the recommended size of administration/terminal buildings, itinerant apron spaces, and automobile parking lots. Tables 3.6-1 (page 59) and 3.6-2 (page 59) illustrate airport peaking criteria calculated from the forecast of annual operations. These calculations are based upon industry-accepted standards for peak operations. Peak hour operations are projected to increase from 32 to 37 operations over the 20-year planning period. These forecasts represent a “worst case” scenario for space planning purposes and indicate the maximum operations likely to be seen in the peak hour of the busiest day of the busiest month of activity at JQF. Future facilities will be planned to accommodate at least 37 hourly operations by 2038.

**Table 3.6-1
Airport Peaking Characteristics (2018-2038)
Concord-Padgett Regional Airport**

Year	Total Annual Operations	Peak Month Operations	Peak Day Operations	Peak Hour Operations
2017	62,410	6,553	216	32
2018	62,785	6,592	217	33
2023	64,691	6,793	223	34
2028	66,655	6,999	230	35
2038	70,764	7,430	244	37

Peak Month = (Annual operations) x (10.5%).
 Peak Day = (Peak Month Operations)/(30.4 Days).
 Peak Hour = (Peak Day Operations) x (15%).
 Source: Talbert, Bright & Ellington, Inc., November 2017.

**Table 3.6-2
General Aviation Annual Passenger Forecasts (2018-2038)
Concord-Padgett Regional Airport**

	Aircraft Type					Total
	Single-Engine	Multi-Engine	Turboprop	Jet	Helicopter	
Percentage of Aircraft Operations	23.0%	7.0%	23.0%	45.0%	2.0%	100.0%
Estimate of Aircraft Passenger/Pilot Capacity	4	6	8	10	4	
70% Load Factor	3	4	6	7	3	
2018						
Peak Hour Flights	7	2	7	15	1	33
Peak Hour Passengers	21	10	42	102	2	177
2023						
Peak Hour Flights	8	2	8	15	1	34
Peak Hour Passengers	22	10	43	106	2	182
2028						
Peak Hour Flights	8	2	8	16	1	35
Peak Hour Passengers	22	10	44	109	2	188
2038						
Peak Hour Flights	8	3	8	16	1	37
Peak Hour Passengers	24	11	47	115	2	199

Source: Talbert, Bright & Ellington, Inc., November 2017.

3.7 Instrument Operations

Instrument flight rule operations account for every approach that is made to the Concord-Padgett Regional Airport using one of the instrument approaches available or an instrument departure. Approximately 32 percent of annual operations on average are categorized as instrument operations based on current and projected airport activity and FAA TFMSC data. No significant change in this percentage is anticipated over the 20-year planning period. Therefore, this percentage was applied to the forecast annual operations to determine the forecast instrument operations. This forecast is listed in Table 3.7-1.

Year	Annual Instrument Operations
2017	19,971
2018	20,091
2023	20,701
2028	21,330
2038	22,645

Source: Federal Aviation Administration, "Traffic Flow Management System Counts (TFMSC) Repository, 2007-2017," <<https://aspm.faa.gov/tfms/sys/main.asp>>, accessed September 28, 2017.
Talbert, Bright & Ellington, Inc., November 2017.

3.8 Aviation Forecast Summary

The forecasts of aviation activity developed as part of this Master Plan Update indicate consistent growth in activity over the next 20 years. The increase in aviation activity at the Concord-Padgett Regional Airport is due in part to the addition of new/upgraded facilities at the Airport as well as the introduction of scheduled air carrier service.

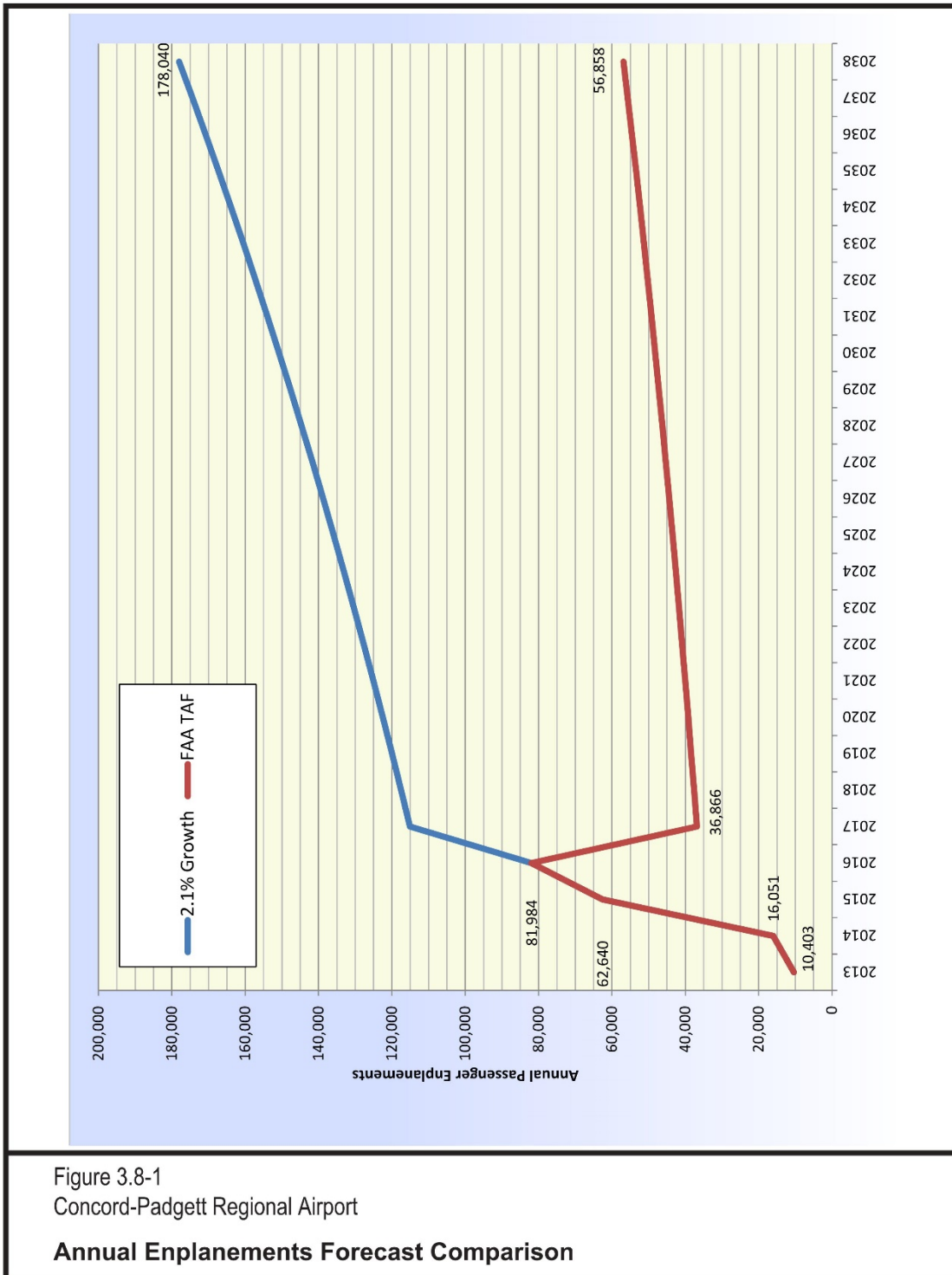
Table 3.8-1 (page 61) provides a summary of the forecasts for the Concord-Padgett Regional Airport throughout the 20-year Master Plan planning period.⁹ The forecasts are compared with the FAA TAF projections for the same time periods in Table 3.8-1 (page 61) and in Figures 3.8-1, 3.8-2, and 3.8-3 (pages 62 through 64). Based aircraft forecasts are within 10 percent of the FAA TAF forecasts

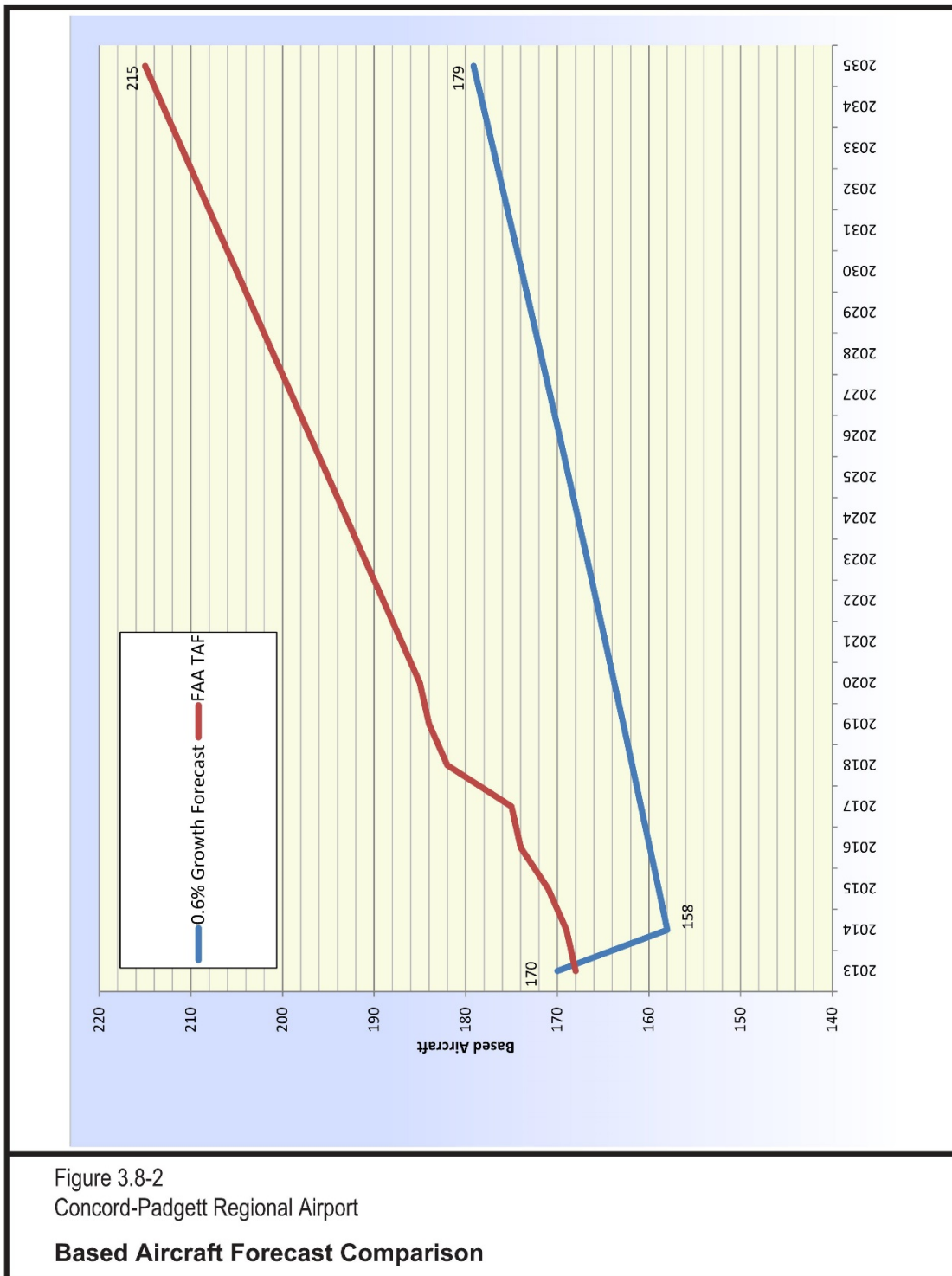
⁹Federal Aviation Administration (L. Bernard Green, CM, AICP), "Chapter 3 - Aviation Forecast Review, AIP Project No. 3-37-0015-003-2017, Airport Master Plan Update, Concord-Padgett Regional Airport (JQF)," forecast approval letter to Concord-Padgett Regional Airport (Dirk Vanderleest) March 1, 2018.

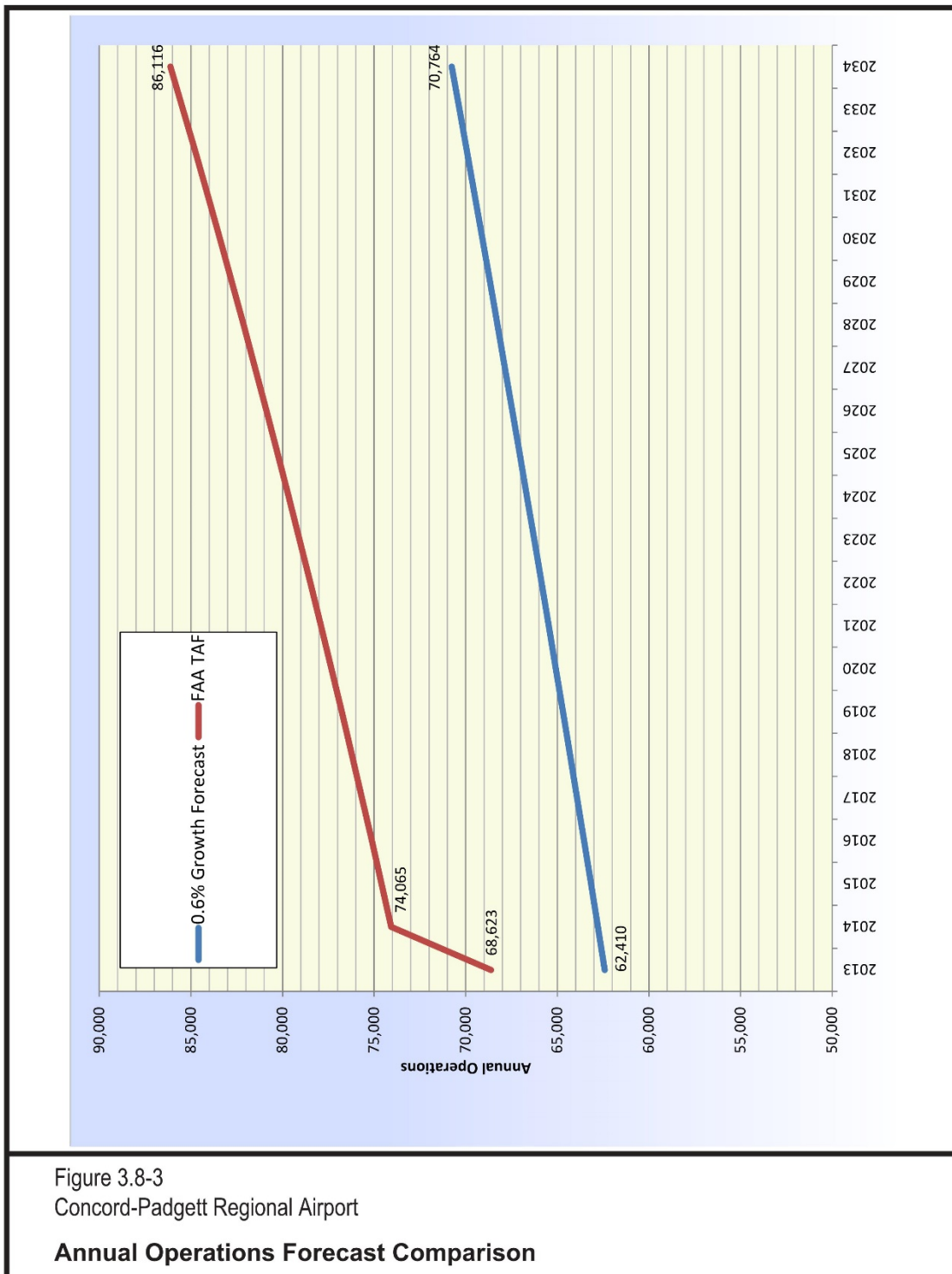
**Table 3.8-1
Aviation Forecast Summary
Concord-Padgett Regional Airport**

	2017 (Existing)		2018		2023		2028		2038	
	Forecast	TAF	Forecast	TAF	Forecast	TAF	Forecast	TAF	Forecast	TAF
Enplanements and Average Annual Growth Rate										
Air Carrier Enplanements	115,074	36,866	117,491	37,634	130,356	41,724	144,631	46,256	178,040	56,858
(Percent Difference from TAF)	(212.1%)		(212.2%)		(212.4%)		(212.7%)		(213.1%)	
Based Aircraft and Average Annual Growth Rate										
Single-Engine Piston	107		107		108		108		107	
Multi-Engine Piston	15		15		16		16		17	
Turboprop	8		8		9		9		11	
Jets	23		24		26		30		37	
Helicopters	5		5		5		6		7	
Total Based Aircraft	158	169	159	171	164	185	169	195	179	215
(Percent Difference from TAF)	(-6.5%)		(-7.0%)		(-11.4%)		(-13.3%)		(-16.7%)	
Aircraft Operations and Average Annual Growth Rate										
GA Local	21,844	19,902	21,975	20,200	22,642	21,761	23,329	23,441	24,767	27,203
GA Itinerant	31,205	32,484	31,392	32,517	32,345	32,682	33,328	32,847	35,382	33,177
Air Carrier	2,496	1,979	2,511	2,006	2,588	2,147	2,666	2,299	2,831	2,636
Air Taxi	6,179	6,551	6,216	6,643	6,404	7,112	6,599	7,610	7,006	8,720
Military	686	833	691	833	712	833	734	833	779	833
Total Operations	62,410	68,623	62,785	74,065	64,691	76,766	66,655	79,662	70,764	86,116
(Percent Difference from TAF)	(-9.1%)		(-15.2%)		(-15.7%)		(-16.3%)		(-17.8%)	
Operations per Based Aircraft	395	406	395	433	395	414	394	409	395	401

Source: Federal Aviation Administration, "FAA APO Terminal Area Forecast Detail Report," <<http://aspm.faa.gov/>>, accessed January 23, 2018.
Talbert, Bright & Ellington, Inc., January 2018.







through 2023 as shown in Table 3.8-1 (page 61). The forecast based aircraft are below the TAF due to a lower but more accurate starting point of current based aircraft. Forecast annual operations vary from 9.1 percent below to 17.8 percent below the TAF. As discussed earlier in this section, annual operations are anticipated to increase at the same rate as based aircraft at JQF over the planning period. As more aircraft are added to the JQF inventory, operations will increase and therefore, a 0.6 percent average annual increase in airport operations is considered reasonable. Also, the forecast annual operations were developed using airport records which show slightly less operations compared to the TAF.