



FORECASTS

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2. AVIATION DEMAND FORECASTS

2.1. Introduction

The purpose of this chapter is to prepare forecasts of aviation activity for the Avi Suquilla Airport. These forecasts will serve as the basis for planning the aviation facilities required to meet the needs of the airport and its users over the next twenty years. The forecasts will be applied to several phases of the Airport Master Plan. Initially, they will be used to identify individual segments of future activity. They will then be used in the evaluation of airfield capacity, and the facility requirements of the airfield and the terminal area. From these evaluations, the need for new or improved facilities within the twenty year planning period can be determined.

Aviation activity and the demand for aviation services is affected by a variety of unforeseeable and unpredictable influences such as competition; local, regional, national and global economies; fuel supply volatility and pricing; and the implementation of effective airport sales and marketing programs. Planning and projecting aviation activities for a twenty year planning period with absolute certainty is unrealistic. Therefore, forecasts should only serve only as guidelines. Planning and development of improvements must remain a dynamic process, flexible enough to respond to unforeseen facility needs.

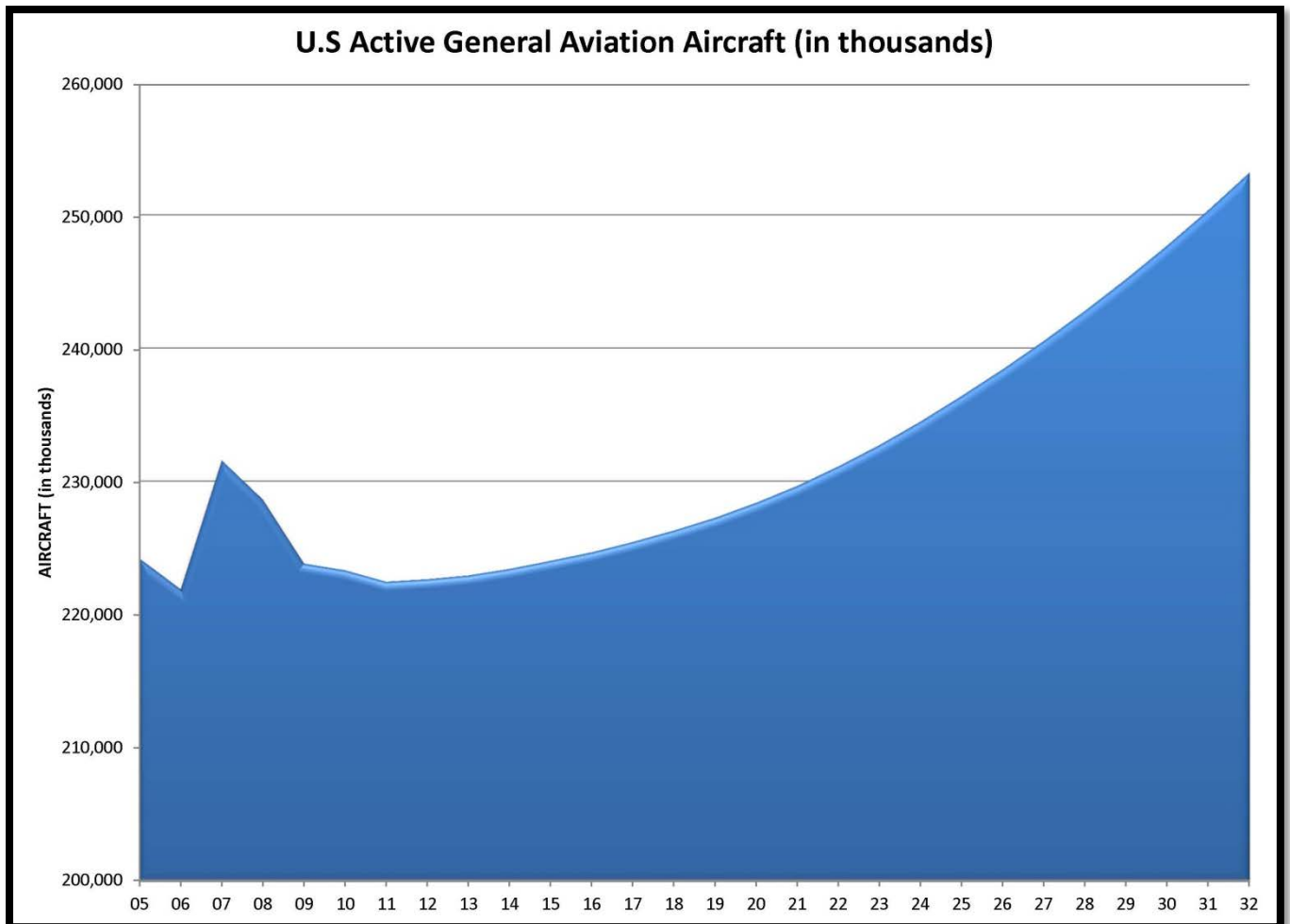
The following forecast analysis examines recent developments, historical information, and current aviation trends for the Avi Suquilla Airport to provide an updated set of based aircraft and operational projections.

2.2 National Aviation Trends

The Federal Aviation Administration (FAA) publishes its national aviation forecast each year which includes forecasts for major air carriers, regional/commuters and general aviation. The forecast uses the economic performance of the United States as an indicator of future aviation industry growth. The current edition at the time of this chapter's preparation was FAA Aerospace Forecast Fiscal Years 2012-2032.

The FAA forecast indicates that the aviation industry is in the process of recovering from the shocks of the past decade including the terror attacks of September 11, skyrocketing prices for fuel, and a global recession which led to a reduced demand for air travel. As the economy recovers from the most serious economic downturn since the Great Depression, the FAA forecasts that aviation will continue to grow over the long term.

Figure 2-3 depicts the FAA forecast for active general aviation aircraft in the United States. The FAA forecasts general aviation active aircraft to increase at an average annual rate of 0.6 percent over the next 20 years. The growth in business jet aircraft is expected to outpace that of personal/recreational use aircraft. The turbine-powered fleet is projected to grow at an average of 4.7 percent a year over the forecast period with the turbine jet portion increasing at 4.8 percent a year.



Source: FAA Aerospace Forecast, FY 2012-2032

Figure 2-1 U.S. General Aviation Aircraft Forecasts

2.3 Airport Activity

Airport activity at Avi Suquilla is influenced by the resort area activity associated with the CRIT Blue Water Casino, second home sites along the Colorado River located on land leased from CRIT, or located on the Parker Strip area north of the reservation. According to the La Paz County website (www.co.la-paz.az.us) the area can experience some 500,000 visitors during the months of March to September. In addition two major hospitals also impact airport activity through regular medical staff travel and Medi-Vac flights. The La-Paz Regional Hospital serves La Paz County and surrounding California areas. The Indian Health Service Hospital opened in 2002 and serves five reservations.

Airport activity is heavily oriented toward weekend travel, starting as early as Thursday evenings and extending into Monday. During the week, much of the airport activity is related to Medi-Vac flights, and corporate flights serving tribal business, casino business, the two hospitals and businesses owned by non-Parker residents (grocery chains, banks, U.S. filter, etc.)



Avi Suquilla Airport's activity is not typical of a rural airport serving a slow growing rural economy. Its activity is more related to the economic health of the more affluent people of Arizona, California and Nevada who have a significant amount of disposal income.

2.4 Based Aircraft Forecasts

The number of general aviation aircraft which can be expected to base at an airport facility is dependent on several factors, such as airport communication practices, available facilities, airport operator's services, airport proximity and access, and similar considerations.

In 2002, a CRIT survey found 41 aircraft and one helicopter based at the Avi Suquilla Airport, including:

- 30 Single Engine
- 5 Light Twin Engine
- 6 Executive Jets
- 1 Jet Helicopter

Of the above, one of the executive jets was hangared at the airport. The other executive jets belonged to companies or individuals with homes on the Colorado River. These individuals typically use executive jet aircraft to (1) visit their homes on weekends, (2) for extended family stays, or (3) to ferry household guests to the Parker area. Length of time these aircraft are at Avi Suquilla Airport varies, as many of the jets are also used for other corporate or charter duties.

In 2004, Airport management reported the following aircraft based at the Avi Suquilla Airport.

- 40 Single Engine including: Beech Bonanza; Cessna 150, 170, 172 and 182; Mooneys; Piper Lances and Commanches
- 7 Twin Engine including: 3 Piper Navajos; 1 Cessna 424, 1 Cessna 441 (Medi-Vac), 1 Beech Barron and 1 Aero Commander.
- 2 Jet Helicopters (CRIT Police and La Paz Regional Hospital)

Executive jet aircraft owned by companies or individuals with second homes on the CRIT Reservation or in the Parker Strip area were not counted as based in the 2004 summary.

Airport records indicate a current total of 35 based aircraft broken down as follows:

- 27 Single Engine
- 5 Light Twin Engine
- 1 Executive Jet
- 2 Helicopter

Table 2-1 presents the based aircraft at the Avi Suquilla Airport since 2000 by category. Historical based aircraft counts from the FAA's Terminal Area Forecast (TAF) are shown in years where airport records were not available. The historical counts show that based aircraft counts have fluctuated from a low of 18 in 2000 to a high of 49 aircraft in 2004. Following a drop-off in 2008 through 2011 that coincided with a severe national economic downturn, it appears that based aircraft counts are again on the increase. These trends are consistent with national general aviation trends.



Table 2-1 Avi Suquilla Airport Based Aircraft

	Single Engine	Multi Engine	Jet	Helicopter	Other	TOTAL
ACTUAL						
2000*	18	0	0	0	0	18
2001*	40	1	0	1	0	42
2002**	30	5	6	1	0	42
2003*	40	1	0	1	0	42
2004**	40	7	0	2	0	49
2005*	40	1	0	1	0	42
2006*	40	1	0	1	0	42
2007*	40	1	0	1	0	42
2008*	20	7	0	2	0	29
2009*	20	7	0	2	0	29
2010*	16	4	0	2	0	22
2011*	16	4	0	2	0	22
2012**	27	5	1	2	0	35

*Source: FAA Terminal Area Forecast 2011

** Source: Airport Records

The historical counts for based aircraft have fluctuated widely to say the least. The based aircraft count went from 18 to 35 in this period, which equates to an average annual compound growth rate of 5.7 percent. The high growth period between 2000 and 2004 showed an average annual compound growth rate of 28.4 percent. The growth period between 2008 and 2012 shows an average annual compound growth rate of 4.8 percent. The period of decline associated with the economic downturn between 2007 and 2011 represented an average annual decline of 17.5 percent.

The FAA's Terminal Area Forecast presents a scenario of no growth in based aircraft at Avi Suquilla airport over the twenty year planning horizon. This flat growth rate does not seem likely given past growth rates and the dynamic nature of recreation and tourism in the region.

Table 2-2 presents a based aircraft forecast compared to La Paz County and Parker Townsite populations. The relationship between historic population and based aircraft does not demonstrate a strong correlation. As noted previously, the sporadic based aircraft count at Avi Suquilla has little to do with the local resident population of Parker or of La Paz County which has seen relatively slow, steady growth over the last 20 years. Rather, based aircraft counts are tied to the more variable rate of tourism and recreational activity along the Parker Strip. Therefore, population based forecasts are not given a high degree of confidence relative to predicting based aircraft counts at Avi Suquilla.



Table 2-2 Based Aircraft Projections Based on Population Trends

	La Paz County Population*	Population Per Based Aircraft - La Paz County	Parker Townsite Population*	Population Per Based Aircraft - Parker	Based Aircraft per La Paz County Population	Based Aircraft per Parker Population
Historical						
1990	13,900	515	2,900	107	27	27
1995	16,550	473	2,950	84	35	35
2000	19,903	1,106	3,139	174	18	18
2005	20,608	491	3,164	75	42	42
2010	20,495	932	3,088	140	22	22
2012	20,730	664	3,111	89	35	35
Forecast						
2017	24,629	666	3,606	88	37	41
2022	26,039	668	3,740	90	39	42
2027	27,352	668	3,865	90	41	43
2032	28,509	663	3,975	89	43	45

*Source: Arizona Department of Administration Office of Employment and Population Statistics

Tables 2-3, 2-4 and 2-5 present three forecast scenarios for total based aircraft at Avi Suquilla Airport that are based on a more judgmental analysis, taking into consideration of the impact of local marketing initiatives, as well as growth connected to resort development and single family residential development ancillary to the casino / hotel complex. The low forecast, presented in **Table 2-3**, applies an annual compound growth rate of 0.6 percent to based aircraft levels. This is the growth rate predicted for the national general aviation fleet in the current 2012-2032 FAA Aerospace Forecast, and would assume minimal effects of community based marketing and development. The high forecast, presented in **Table 2-5**, represents a based aircraft growth rate of 4 percent, which is consistent with a slightly slower continuation of the 4.8 percent growth in based aircraft seen at Avi Suquilla between 2008 and 2012. This scenario would assume an aggressive marketing effort by the community as well as a strong response to local development initiatives. A mid-range forecast, presented in **Table 2-4**, represents an average annual compound growth rate of 2.3 percent. This scenario assumes that while Avi Suquilla will be influenced by the somewhat sluggish growth predicted in the general aviation fleet nationwide, a combination of marketing by the community, growth in local amenities available, and development of the casino complex will contribute to a higher growth rate as compared to national levels. This mid-range forecast is considered a reasonable growth rate and is selected as the preferred forecast.



Table 2-3 Based Aircraft Scenario 1: Low Forecast

	Single Engine	Multi Engine	Jet	Helicopter	Other	TOTAL
2012	27	5	1	2	0	35
2017	27	7	1	2	0	37
2022	27	8	1	2	0	38
2027	26	9	2	2	0	39
2032	26	10	2	2	0	40

Table 2-4 Based Aircraft Scenario 2: Mid-Range Forecast

	Single Engine	Multi Engine	Jet	Helicopter	Other	TOTAL
2012	27	5	1	2	0	35
2017	29	7	2	2	0	40
2022	32	8	2	2	0	44
2027	35	11	2	2	0	50
2032	37	14	3	2	0	56

Table 2-5 Based Aircraft Scenario 3: High Forecast

	Single Engine	Multi Engine	Jet	Helicopter	Other	TOTAL
2012	27	5	1	2	0	35
2017	32	7	2	2	0	43
2022	37	10	2	2	0	52
2027	45	15	2	2	0	64
2032	51	20	3	3	0	77



The current fleet mix for based aircraft is:

Single Engine – 77.1%
Multi Engine – 14.3%
Jet – 2.8%
Helicopter – 5.7%
Other – 0%

It is expected that the fleet mix will shift during the planning period with higher percentages of multi-engine, and business jet aircraft and lower percentages of single engine piston powered aircraft. This is consistent with national trends and the predicted need for multi-engine aircraft and corporate jets to support the air ambulance industry, the emerging gaming industry and the growth of environmental related industries on the reservation. The shift toward higher percentages of multi-engine and business jet aircraft is reflected in the forecasts provided in **Tables 2-3, 2-4 and 2-5.**

2.5 Operations Forecasts

The forecasting of aircraft operations at Avi Suquilla Airport considers the three different growth scenarios for based aircraft discussed in the previous section. As a non-towered airport, the development of trends based on historical data is difficult due to the limited information available. However, a forecast of the local and itinerant operations can be predicated on the forecast projections of based aircraft as well as on practical judgment related to the impact of gaming at other comparable airports. **Tables 2-6, 2-7 and 2-8** present aircraft operations forecasts for the low growth, mid-range and high growth scenarios. The types of aircraft currently observed at the airport include single engine aircraft, multi-engine aircraft and turbo prop aircraft.

Base year operations were estimated using the FAA Terminal Area Forecast with two additions. The TAF does not include counts for Air Taxi/Commuter Operations or itinerant military operations. Air Taxi operations occur regularly at Avi Suquilla for Medi-Vac flights and charters for medical staff serving two nearby hospitals, the Indian Health Service Hospital and La Paz Regional Hospital. On average, it is estimated that there are 5 Medi-Vac flights and 4 charter flights for medical staff weekly. Occasional itinerant military helicopter activity also occurs at Avi Suquilla. 50 annual operations are estimated which equates to approximately 4 operations per month.

Local operations projected under the low growth scenario assume Operations per Based Aircraft (OPBA) of 35 which are comparable to what exists today at Avi Suquilla. Under the high growth scenario, an OPBA of 100 is assumed for year 2017, increasing to 250 in the year 2015. These higher OPBAs are assumed since the development of the Blue Water Area includes recreational, resort and residential development which is likely to attract more aircraft owners. The OPBA is assumed to increase over time as the volume of high end residential development increases. The mid-range scenario assumes an OPBA between the low and high forecasts of 75 for year 2017, increasing to 100 by the end of the planning period. This scenario represents the assumptions that the growth brought on by development of the Blue Water Area will be tempered by sluggish growth in the national general aviation fleet as predicted in the current FAA Aerospace Forecast.



The projection of itinerant operations under the low growth scenario assumes an average annual growth rate of 0.3 percent for both air taxi and general aviation operations, which is a low growth rate, closely mirroring the FAA Aerospace Forecast for general aviation itinerant operations nationwide. Under the high growth scenario, the itinerant operations are expected to increase at a higher rate (4.0 percent) since the casino / hotel / resort complex will attract more tourists to the area. Also, because of the remoteness of the reservation from more densely populated areas, it is likely that there will be a greater percentage of tourists who travel by air. The mid-range forecast assumes a growth rate of 2.0 percent, between the low and high forecasts.

Overall, the total annual operations at Avi Suquilla are projected to increase over the forecast period under the low, mid-range and high forecasts at average annual growth rates of 0.35 percent, 2.5 percent and 5.2 percent respectively. Because it represents a balanced view of growth in airport activity, the mid-range forecast will be carried forward as the preferred forecast.



Table 2-6 Operations Scenario 1: Low Forecast

	Based Aircraft	OPBA	Itinerant Operations					Local Operations			Total Ops
			Air Carrier	Air Taxi / Commuter	GA	Military	Total Itinerant	GA	Military	Total Local	
2012	35	34	0	1,000	9,000	50	10,050	1,200	0	1,200	11,250
2017	37	35	0	1,015	9,136	50	10,201	1,295	0	1,295	11,496
2022	38	35	0	1,030	9,274	50	10,354	1,330	0	1,330	11,684
2027	39	35	0	1,046	9,414	50	10,510	1,365	0	1,365	11,875
2032	40	35	0	1,062	9,556	50	10,667	1,400	0	1,400	12,067

Table 2-7 Operations Scenario 2: Mid-Range Forecast

	Based Aircraft	OPBA	Itinerant Operations					Local Operations			Total Ops
			Air Carrier	Air Taxi / Commuter	GA	Military	Total Itinerant	GA	Military	Total Local	
2012	35	34	0	1,000	9,000	50	10,050	1,200	0	1,200	11,250
2017	40	75	0	1,015	9,937	50	11,002	3,000	0	3,000	14,002
2022	44	85	0	1,030	10,971	50	12,051	3,740	0	3,740	15,791
2027	50	90	0	1,046	12,113	50	13,209	4,500	0	4,500	17,709
2032	56	100	0	1,062	13,374	50	14,485	5,600	0	5,600	20,085

Table 2-8 Operations Scenario 3: High Forecast

	Based Aircraft	OPBA	Itinerant Operations					Local Operations			Total Ops
			Air Carrier	Air Taxi / Commuter	GA	Military	Total Itinerant	GA	Military	Total Local	
2012	35	34	0	1,000	9,000	50	10,050	1,200	0	1,200	11,250
2017	43	100	0	1,015	10,950	50	12,015	4,300	0	4,300	16,315
2022	52	150	0	1,030	13,322	50	14,403	7,800	0	7,800	22,203
2027	64	200	0	1,046	16,208	50	17,304	12,800	0	12,800	30,104
2032	77	250	0	1,062	19,720	50	20,832	19,250	0	19,250	40,082



Tables 2-9 and **2-10** provide a summary of the forecasts of based aircraft and aviation activity at Avi Suquilla in comparison with the 1997 Master Plan and the FAA’s Terminal Area Forecast. The Terminal Area Forecast for based aircraft is adjusted to reflect current based aircraft counts from CRIT records. The forecasts represent a middle ground between the no-growth forecasts of the TAF and the forecasts of the 1997 Master Plan which were prepared during a period of robust national economic growth.

Table 2-9 Comparison of Aircraft Operations Forecasts

	1997 Master Plan		TAF	Current Master Plan		
	Scenario 1	Scenario 2		Low Forecast	Mid Range Forecast	High Forecast
2012	24,040	36,470	10,200	11,250	11,250	11,250
2017	26,800	45,750	10,200	11,496	14,002	16,315
2022			10,200	11,684	15,791	22,203
2027			10,200	11,875	17,709	30,104
2032			10,200	12,067	20,085	40,082

Table 2-10 Comparison of Based Aircraft Forecasts

	1997 Master Plan		*TAF	Current Master Plan		
	Scenario 1	Scenario 2		Low Forecast	Mid Range Forecast	High Forecast
2012	47	62	35	35	35	35
2017	51	63	35	37	40	43
2022			35	38	44	52
2027			35	39	50	64
2032			35	40	56	77

*Adjusted for CRIT based aircraft records



2.6 Forecast Summary

This chapter has outlined the key aviation demand levels anticipated over the planning period. Long term growth at Avi Suquilla Airport will be sustained by local promotion of the airport and trends experienced at the national level. The next step in the master planning process will be to assess the capacity of existing facilities, their ability to meet forecast demand, and to identify changes to the airfield or landside facilities which will create a more functional facility. The preferred mid-range aviation forecasts have been summarized in **Table 2-11**.

Table 2-11: Aviation Demand Forecast Summary

	2012	2017	2022	2027	2032
Based Aircraft	35	40	44	50	56
Annual Operations					
Commuter / Air Taxi	1,000	1,015	1,030	1,046	1,062
Military	50	50	50	50	50
General Aviation					
Itinerant	9,000	9,937	10,971	12,113	13,374
Local	1,200	3,000	3,740	4,500	5,600
Total	11,250	14,002	15,791	17,709	20,085



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