COOLIDGE MUNICIPAL AIRPORT

Coolidge, Arizona

CHAPTER 2

FORECASTS

AIRPORT MASTER PLAN

An important factor in facility planning involves a definition of demand that may reasonably be expected to occur during the useful life of the facility's key components. For Coolidge Municipal Airport, this involves projecting potential aviation demand for a 20-year timeframe. In this Master Plan, forecasts of based aircraft, based aircraft fleet mix, aircraft operations, peaking characteristics, and instrument approaches will be considered which will serve as the basis for facility planning.

The aviation demand forecasts presented in this chapter have been prepared using airport-specific data provided by airport management, as well as data compiled by the Federal Aviation Administration (FAA). Updated national forecasts in the publication *FAA Aerospace Forecast - Fiscal Years 2009-2025* were also referenced for industry trends.

The FAA has oversight responsibility to review and approve aviation forecasts that are submitted to the agency in conjunction with airport planning, including Master Plans. The FAA reviews such forecasts with the objective of including them in its *Terminal Area Forecasts* (TAF) and the *National Plan of Integrated Airport Systems* (NPIAS). In addition, aviation activity forecasts are an important input to the benefit-cost analyses associated with airport development, and the FAA reviews these analyses when federal funding requests are submitted.

As stated in FAA Order 5090.3C, Field Formulation of the National Plan of Integrated Airport Systems, dated December 4, 2004, forecasts should be:

- Realistic.
- Based on the latest available data.
- Reflective of current conditions at the airport.
- Supported by information in the study.
- Capable of providing adequate justification for airport planning and development.

Recognizing this, it is intended to develop a Master Plan for Coolidge Municipal Airport that will be demand-based rather than time-based. As a result, the reasonable levels of activity potential that are derived from this forecasting effort will be related to the planning horizon levels rather than dates in time. These planning levels will be established as levels of activity from which specific actions for the airport to consider will be presented.

The demand-based manner in which this Master Plan is being prepared is intended to accommodate variations in demand at the airport. Demand-based planning relates capital improvements to demand factors such as based aircraft operations, instead of points in time. This allows the airport to address capital improvement needs according to actual demand occurring at the airport. Therefore, should growth in aircraft operations or based aircraft slow or decline, it may not be necessary to implement some improvement projects. However, should the airport experience accelerated growth, the plan will have accounted for that growth and will be flexible enough to respond accordingly.

In order to fully assess current and future aviation demand for Coolidge Municipal Airport, an examination of several key factors is needed. These include national and regional aviation trends, historical and forecast socioeconomic and demographic information of the area, and competing transportation modes and facilities. Consideration and analysis of these factors will ensure a comprehensive outlook for future aviation demand at Coolidge Municipal Airport.

NATIONAL AVIATION TRENDS

Each year, the FAA updates and publishes a national aviation forecast. Included in this publication are forecasts for passengers, airlines, air cargo, general aviation, and FAA workload measures. The forecasts are prepared to meet the budget and planning needs of the constituent units of the FAA and to provide information that can be used by state and local authorities, the aviation industry, and the general public.

The current edition when this chapter was prepared was *FAA Aerospace Forecast - Fiscal Years 2009-2025*, published in March 2009. The forecasts use the economic performance of the United States as an indicator of future aviation industry growth. Similar economic analyses are applied to the outlook for aviation growth in international markets.

Following more than a decade of decline, the general aviation industry was revitalized with the passage of the *General Aviation Revitalization Act* in 1994, which limits the liability on gen-

eral aviation aircraft to 18 years from the date of manufacture. This legislation sparked an interest to renew the manufacture of general aviation aircraft due to the reduction in product liability, as well as renewed optimism for the industry. The high cost of product liability insurance had been a major factor in the decision by many American aircraft manufacturers to slow or discontinue the production of general aviation aircraft.

In the seven years prior to the events of September 11, 2001, the U.S. civil aviation industry experienced unprecedented growth in demand and profits. The impacts to the economy and aviation industry from the events of 9/11 were immediate and significant. The economic climate and aviation industry had been recovering until early 2008 when it became clear that an economic downturn was underway. High oil prices and an economic recession caused general aviation activity at FAA air traffic facilities to fall sharply in 2008, declining by 5.6 percent. The downturn in the economy has dampened the near-term prospects for the general aviation industry. As the U.S. and world economy recovers, general aviation demand is anticipated to rebound and grow.

The National Bureau of Economic Research announced that the U.S. economy entered into recession in December 2007. The U.S. economy is undergoing significant structural changes, particularly in the housing and banking sectors as the true prices of assets are being revealed. The combination of the nearly $800 billion fiscal stimulus package and the aggressive monetary policies that have been undertaken are projected to lead the economy out of the recession in the second half of 2009. The Administration calls for the U.S. recession to end by the third quarter in fiscal year 2009 followed by a relatively modest recovery over the next six quarters. Between 2010 and 2013, U.S. economic growth is projected to range between 2.4 and 4.5 percent. Beyond 2013 through the balance of the forecast period, U.S. economic growth is projected to slow to around 2.6 percent per year.

In 2008, there were an estimated 234,015 active general aviation aircraft in the United States. **Exhibit 2A** depicts the FAA forecast for active general aviation aircraft. The FAA projects an average annual increase of 1.0 percent through 2025, resulting in 275,230 active aircraft. Active piston-powered aircraft are expected to decline through 2013, then gradually increase to 170,475 by 2025 for an overall average annual increase of 0.1 percent. This is driven primarily by a 3.9 percent annual increase in piston-powered rotorcraft and growth in experimental and sport aircraft, as single engine fixed-wing piston aircraft are projected to increase at just 0.1 percent annually, and multi-engine fixed-wing piston aircraft are projected to decrease by 1.0 percent per year. This is due, in part, to declining numbers of multi-engine piston aircraft and the expectation that the new, light sport aircraft and the relatively inexpensive microjets will dilute or weaken the replacement market for piston aircraft.

New models of business jets are also stimulating interest for the high-end market. The FAA expects the busi-

ness segment to expand at a faster rate than personal/sport flying. Safety and security concerns combined with increased processing time at commercial terminals make business/corporate flying an attractive alternative. Turbine-powered aircraft (turboprop and jet) are expected to grow at an average annual rate of 3.2 percent over the forecast period. Even more significantly, the jet portion of this fleet is expected to almost double in size in 14 years, with an average annual growth rate of 4.8 percent. The total number of jets in the general aviation fleet is projected to grow from 11,400 in 2008, to 25,165 by 2025.

A significant portion of the turbine aircraft growth is anticipated to occur within the very light jet (VLJ), or microjet aircraft, market. Microjets entered the active fleet in 2007, with the delivery of 143 new aircraft. VLJs are commonly defined as a jet aircraft that weighs less than 10,000 pounds and include aircraft such as the Eclipse 500 and Adams 700 jets. While not categorized by Cessna Aircraft as a VLJ, the Cessna Mustang is a competing aircraft to many of the VLJs expected to reach the market. These jets cost between $1 and $2 million, can takeoff on runways less than 3,000 feet, and cruise at 41,000 feet at speeds in excess of 300 knots. The VLJ manufacturing industry has fallen on hard times in 2008 due to the global economic crisis with Adams Aircraft, Eclipse Aviation, and DayJet filing for bankruptcy and halting operations. Despite these hardships, the VLJ is still expected to have a significant impact on the business jet segment by expanding business jet flying and offering operational costs that can support on-demand air taxi point-to-point service. They are forecast to grow by 200 aircraft per year through 2011 and then increase to a rate of 270 to 300 a year through 2025, contributing a total of 4,875 aircraft to the jet forecast.

Owners of ultralight aircraft began registering their aircraft as "light sport" aircraft in 2005. Light sport aircraft may be operated by holders of a sport pilot certificate. Pilots with a private, recreational, or higher pilot certificate may also fly light sport aircraft, even if their medical certificates have expired, so long as they have a valid driver's license. There are less restrictive maintenance requirements for light sport aircraft as well. These factors have made this aircraft category more popular over the past several years. At the end of 2008, a total of 6,965 aircraft were estimated to be in this category. The FAA estimates this fleet will increase by approximately 930 aircraft per year until 2013, and then taper off to about 300 per year. By 2025, a total of 15,865 light sport aircraft are projected to be in the fleet.

Aircraft utilization rates are projected to increase through the forecast period. The number of general aviation hours flown is projected to increase at 1.8 percent annually. Similar to active aircraft projections, there is projected disparity between piston and turbine aircraft hours flown. Hours flown in turbine aircraft are expected to increase at 3.6 percent annually, compared with 0.4 percent for piston-powered aircraft. Jet aircraft hours flown are projected to increase at 5.2 percent annually over the next 17 years, second only to the sport aircraft

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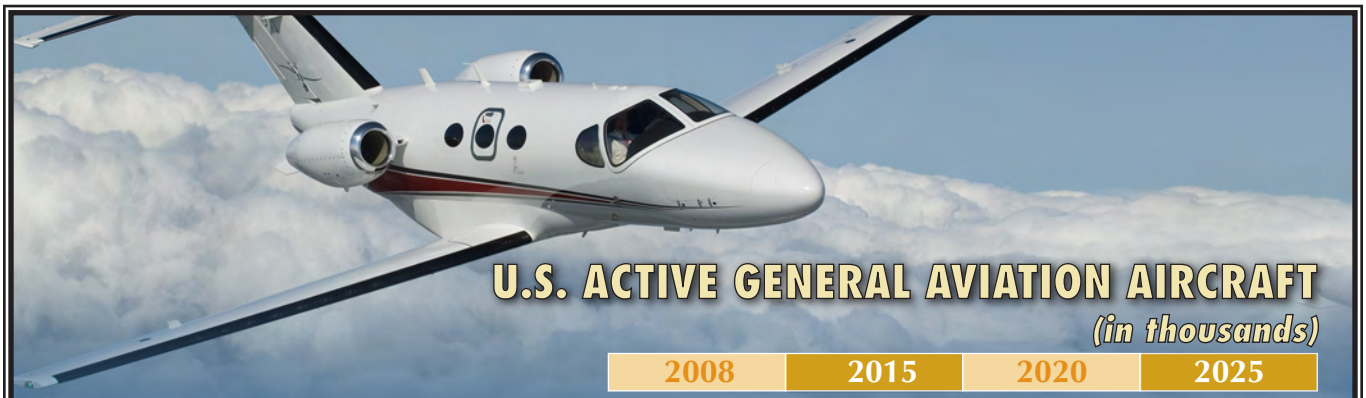
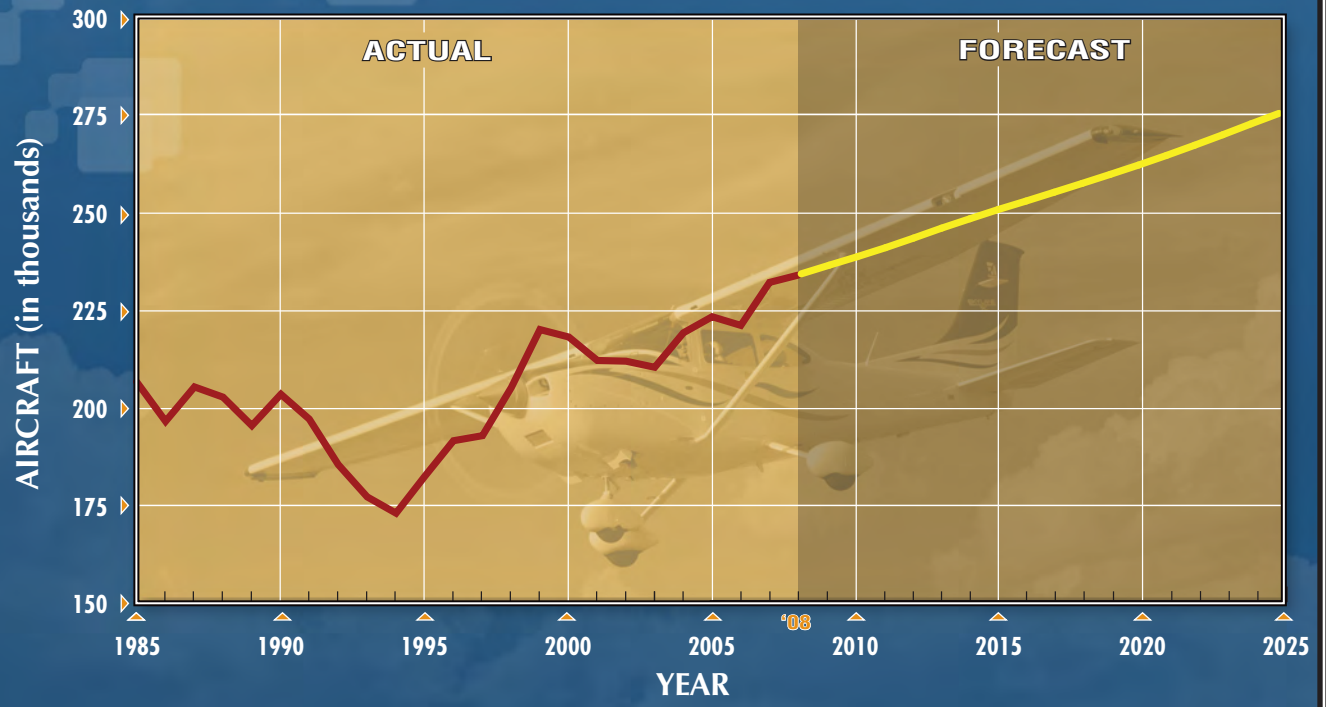


U.S. ACTIVE GENERAL AVIATION AIRCRAFT

(in thousands)

	2008	2015	2020	2025
FIXED WING				
PISTON				
Single Engine	146.6	143.5	144.9	148.5
Multi-Engine	19.1	17.9	17.0	16.0
TURBINE				
Turboprop	9.6	10.5	11.5	12.2
Turbojet	11.4	17.1	20.9	25.2
ROTORCRAFT				
Piston	3.1	4.6	5.3	5.9
Turbine	7.1	9.0	9.9	10.9
EXPERIMENTAL	24.1	29.1	32.0	34.6
SPORT AIRCRAFT	7.0	12.7	14.4	15.9
OTHER	6.0	6.1	6.0	6.0
TOTAL	234.0	250.5	261.8	275.2



Source: FAA Aerospace Forecasts, Fiscal Years 2009-2025.

Notes: An active aircraft is one that has a current registration and was flown at least one hour during the calendar year.

COOLIDGE MUNICIPAL AIRPORT

Exhibit 2A
U.S. ACTIVE GENERAL AVIATION
AIRCRAFT FORECASTS

fleet which represents the largest increase in any one category for total aircraft hours flown at 7.1 percent.

The total pilot population is projected to increase by 43,000 in the next 17 years, from an estimated 466,000 in 2008 to 509,900 in 2025, which represents an average annual growth rate of 0.5 percent. The student pilot population is forecast to increase at an annual rate of 0.4 percent, reaching a total of 86,600 in 2025. Growth rates for other pilot categories over the forecast period are as follows: recreational pilots and private pilots remaining constant; commercial pilots increasing 0.6 percent; airline transport pilots increasing 0.3 percent; rotorcraft-only pilots increasing 1.2 percent; and glider-only pilots increasing 0.4 percent. The sport pilot is expected to grow significantly through 2025 at 12.9 percent annually.

Over the past several years, the general aviation industry has launched a series of programs and initiatives whose main goals are to promote and assure future growth within the industry. Several programs are intended to promote growth in new pilot starts and introduce people to general aviation. "Project Pilot," sponsored by the Aircraft Owners and Pilots Association (AOPA), promotes the training of new pilots in order to increase and maintain the size of the pilot population. The Experimental Aircraft Association (EAA) promotes the "Young Eagles" program which introduces young children to aviation by offering them a free airplane ride courtesy of aircraft owners who are part of the association. Over the years, programs such as these have played an important role in the success of general aviation and will continue to be vital to its growth in the future.

AIRPORT SERVICE AREA

In determining the aviation demand for an airport, it is necessary to identify the role of that airport. Coolidge Municipal Airport is classified as a general aviation airport in the NPIAS. As such, the primary role of Coolidge Municipal Airport is to serve the needs of general aviation in the area. General aviation is a term used to describe a diverse range of aviation activities, which includes all segments of the aviation industry except commercial air carriers and military. General aviation is the largest component of the national aviation system and includes activities such as pilot training, recreational flying, and the use of sophisticated turboprop and jet aircraft for business and corporate use. The airport does not currently serve nor is it expected to serve scheduled commercial activity in the future.

The initial step in determining the general aviation demand for an airport is to define its generalized service area. The airport service area is a generalized geographical area where there is a potential market for airport services, in particular based aircraft. Access to general aviation airports and transportation networks enter into the equation to determine the size of a service area, as well as the quality of aviation facilities, distance, and other subjective criteria.

Typically, the service area for a rural general aviation airport can extend up to 30 miles. The proximity and level of general aviation services are largely the defining factors when describing the general aviation service area. A description of nearby airports was previously completed in Chapter One. Coolidge Municipal Airport is one of several airports in the region, and one of seven public-use airports in Pinal County. Six airports are located within 30 miles of Coolidge Municipal Airport including Eloy Municipal Airport, Casa Grande Municipal Airport, Phoenix-Mesa Gateway Airport, Phoenix Regional Airport, Kearney Airport, and Chandler Municipal Airport. Several other airports are located within 50 miles of Coolidge.

All of the above-mentioned airports present competitive services for aviation demand in the immediate region by providing aircraft fuel, hangars, and maintenance. Eloy Municipal Airport and Casa Grande Municipal Airport, however, present the most competitive facilities in terms of aviation services and facilities in respect to their close proximity to Coolidge Municipal Airport. 100LL Avgas and Jet A fuel, aircraft maintenance, storage hangars, and tiedowns are among several types of aviation services offered at these airports. Eloy Municipal Airport and Casa Grande Municipal Airport, as well as the other airports in the region, will limit the reaches of the Coolidge Municipal Airport general aviation service area.

When discussing the general aviation service area, two primary demand segments need to be addressed. The first component is the airport's ability to attract based aircraft. Almost universally, aircraft owners choose to base at an airport nearer their home or business. Convenience is the most common reason for basing in close proximity. According to airport records, a large percentage of Coolidge Municipal Airport tenants possess an address in Coolidge or the immediate surrounding area. The remaining tenants are located in adjacent cities and towns nearby. The second segment is itinerant aircraft operations. In most cases, transient aircraft operators will also elect to utilize airports nearer their intended destination. This, however, is highly dependent on the airport's capabilities to accommodate the aircraft operator. As a result, the more attractive the facility, the more likely an airport will be to attract a larger portion of the region's itinerant aircraft operations.

Given these considerations, the primary general aviation service area for Coolidge Municipal Airport includes the City of Coolidge. The secondary service area extends into the surrounding areas, especially those with limited general aviation services and/or for areas nearer to Coolidge Municipal Airport. The Town of Florence, located approximately ten miles east-northeast of Coolidge, would be included in the secondary service area for Coolidge Municipal Airport. With a population of approximately 20,800 people and no public-use general aviation airport nearby, the Town of Florence derives a need for general aviation services that could be accommodated at Coolidge Municipal Airport, a relatively short distance away.

The potential for increased aviation demand for Coolidge Municipal Airport lies in the growing population and promising service and business growth within the City of Coolidge and surrounding areas. The forecast analyses conducted in the following sections take into consideration the expected local and regional growth.

FORECASTING APPROACH

The development of aviation forecasts proceeds through both analytical and judgmental processes. A series of mathematical relationships is tested to establish statistical logic and rationale for projected growth. However, the judgment of the forecast analyst, based upon professional experience, knowledge of the aviation industry, and assessment of the local situation, is important in the final determination of the preferred forecast.

The most reliable approach to estimating aviation demand is through the utilization of more than one analytical technique. Methodologies frequently considered include trend line projections, correlation/regression analysis, and market share analysis.

Trend line projections are probably the simplest and most familiar of the forecasting techniques. By fitting growth curves to historical demand data, then extending them into the future, a basic trend line projection is produced. A basic assumption of this technique is that outside factors will continue to affect aviation demand in much the same manner as in the past. As broad as this assumption may be, the trend line projection does serve as a reliable benchmark for comparing other projections.

Correlation analysis provides a measure of direct relationship between two separate sets of historic data. Should there be a reasonable correlation between the data sets, further evaluation using regression analysis may be employed.

Regression analysis measures the statistical relationship between dependent and independent variables yielding a correlation coefficient. The correlation coefficient (Pearson's "r") measures association between the changes in a dependent variable and independent variable(s). If the r-squared (r^2) value (coefficient determination) is greater than 0.90, it indicates good predictive reliability. A value below 0.90 may be used with the understanding that the predictive reliability is lower.

Market share analysis involves a historical review of airport activity as a percentage, or share, of a larger regional, state, or national aviation market. A historical market share trend is determined providing an expected market share for the future. These shares are then multiplied by the forecasts of the larger geographical area to produce a market share projection. This method has the same limitations as trend line projections, but can provide a useful check on the validity of other forecasting techniques.

It is important to note that one should not assume a high level of confidence in forecasts that extend beyond five

years. Facility and financial planning usually require at least a ten-year view, since it often takes more than five years to complete a major facility development program. However, it is important to use forecasts which do not overestimate revenue-generating capabilities or understate demand for facilities needed to meet public (user) needs.

A wide range of factors is known to influence the aviation industry and can have significant impacts on the extent and nature of air service provided in both the local and national markets. Technological advances in aviation have historically altered, and will continue to change, the growth rates in aviation demand over time. The most obvious example is the impact of jet aircraft on the aviation industry, which resulted in a growth rate that far exceeded expectations. Such changes are difficult, if not impossible, to predict, and there is simply no mathematical way to estimate their impacts. Using a broad spectrum of local, regional, and national socio-economic and aviation information, and analyzing the most current aviation trends, forecasts are presented in the following sections.

The following forecast analysis examines each of the aviation demand categories expected at Coolidge Municipal Airport through 2030. Each segment will be examined individually, and then collectively, to provide an understanding of the overall aviation activity at Coolidge Municipal Airport during the next 20 years.

GENERAL AVIATION FORECASTS

To determine the types and sizes of facilities that should be planned to accommodate general aviation activity, certain elements of this activity must be forecast. Indicators of general aviation demand include:

- Based Aircraft
- Based Aircraft Fleet Mix
- Annual Operations
- Peaking Characteristics
- Annual Instrument Approaches

The remainder of this chapter will examine historical trends with regard to these areas of general aviation and project future demand for these segments of general aviation activity at Coolidge Municipal Airport.

BASED AIRCRAFT

The number of based aircraft is the most basic indicator of general aviation demand. By first developing a forecast of based aircraft, other demand elements can be projected based upon this trend. An effective method of forecasting based aircraft at an airport is to first examine aircraft ownership in the surrounding area. The forecasting effort will begin by analyzing historical trends and projecting future demand for registered aircraft in Pinal County. As a result, this information can then be related to the historical trends at Coolidge Municipal Airport and future based aircraft projections can be made.

Registered Aircraft Forecasts

Historical records of aircraft ownership in Pinal County, presented on **Table 2A**, were obtained from the U.S. Census of Civil Aircraft for the years 1989 through 1992, Aviation Goldmine for the years 1993 through 2000, and Avantext, Inc., Aircraft & Airmen for the years 2001 to 2007, and the FAA for years 2008 and 2009. Since 1989, registered general aviation aircraft in the county have grown from 236 to 433, for an annual average growth rate of 3.1 percent.

TABLE 2A
Registered Aircraft and Independent Variables
Pinal County

Year	Registered Aircraft	U.S. Active Aircraft	% of U.S. Market	Population	PCPI (2004 $)	AC Per 1,000 Residents
1989	236	N/A	N/A	112,200	18,503	2.10
1990	245	N/A	N/A	116,379	17,621	2.10
1991	228	N/A	N/A	119,650	17,849	1.91
1992	235	185,650	0.127%	122,600	17,601	1.92
1993	231	177,120	0.130%	127,225	17,739	1.82
1994	243	172,935	0.141%	132,225	17,659	1.84
1995	251	182,605	0.137%	139,050	17,488	1.81
1996	259	187,312	0.138%	144,150	17,739	1.80
1997	277	189,328	0.146%	150,375	17,962	1.84
1998	268	205,700	0.130%	157,675	18,706	1.70
1999	293	219,500	0.133%	165,400	19,198	1.77
2000	310	217,533	0.143%	179,727	19,143	1.72
2001	305	211,446	0.144%	186,795	20,278	1.63
2002	307	211,244	0.145%	192,395	20,201	1.60
2003	305	209,606	0.146%	201,565	20,372	1.51
2004	327	219,319	0.149%	219,780	20,831	1.49
2005	335	224,262	0.149%	246,660	21,987	1.36
2006	356	221,942	0.160%	299,875	21,284	1.19
2007	407	231,606	0.176%	327,670	20,258	1.24
2008	416	234,015	0.178%	350,558	20,396	1.19
2009	433	236,235	0.183%	N/A	20,577	N/A
Constant Market Share of U.S. Active Aircraft						
2015	458	250,450	0.183%	486,363	22,205	0.94
2020	479	261,840	0.183%	609,720	24,021	0.79
2025	504	275,230	0.183%	732,282	26,223	0.69
2030	529	289,305	0.183%	852,463	28,813	0.62
Constant Aircraft Registrations Per 1,000 Population						
2015	579	250,450	0.231%	486,363	22,205	1.19
2020	726	261,840	0.277%	609,720	24,021	1.19
2025	871	275,230	0.317%	732,282	26,223	1.19
2030	1,014	289,305	0.351%	852,463	28,813	1.19

Sources:
Registered Aircraft – U.S. Census of Civil Aircraft (1989-1992), Aviation Goldmine (1993-2000), Avantext, Inc., Aircraft & Airmen (2001-2007), FAA (2008-2009).
U.S. Active Aircraft – *FAA Aerospace Forecast – Fiscal Years 2009-2025*
Population – Arizona Department of Commerce (1989, 1991-1999, 2001-2008, 2015-2030); Census Bureau (1990, 2000)
PCPI – U.S. Department of Commerce, Bureau of Economic Analysis (1987-1999), Woods & Poole *CEDDS*, 2008 (2000-2009, 2015-2030).

Table 2A also compares registered aircraft to active general aviation aircraft in the United States. The method used by the FAA to tabulate active general aviation aircraft changed in 1992, which is why annual counts before this time were not included in this study. The Pinal County share of the U.S. market of general aviation aircraft has grown from 0.127 percent in 1992 to 0.183 percent in 2009.

Socioeconomic Trends

Pinal County historical trends for key socioeconomic variables provide an indicator of the potential for creating growth in aviation activities at an airport. Typical variables used in evaluating potential for traffic growth include population and per capita personal income (PCPI). This data is readily available on an annual historic basis at the county level.

Table 2A presents historical population data for Pinal County from 1989 to 2008. It should be noted that 2009 population estimates for Pinal County have not been released as of the time of this study and, therefore, are not included in the table. Population growth has been strong over the past several years with an increase of 238,358 residents from 1989 to 2008 equating to an average annual percentage increase of 6.2 percent. Much of the recent growth can be attributed to the urban sprawl of the Phoenix metropolitan area.

Historical and projected PCPI for the County is also presented on **Table 2A** and are inflation-adjusted to year 2004 dollars. Inflation-adjusted PCPI for the County has been growing slowly at an annual average of 0.5 percent over the last 20 years. Projected numbers through 2030 show PCPI growing at an increased average annual rate of 1.6 percent.

Registered Aircraft Projections

Based on the historical registered aircraft, U.S. active aircraft, County population, and PCPI data, projections of registered aircraft in Pinal County have been prepared and are shown in **Table 2A**. Several analytical techniques were examined for their applicability to projecting registered aircraft in Pinal County. These included market share analysis, time-series extrapolation, and regression analyses.

First, a market share analysis was developed, which keeps Pinal County's share of U.S. active aircraft constant through 2030 at 0.183 percent, resulting in a 1.0 percent annual growth rate. This constant market share projection yields 529 registered aircraft in Pinal County by 2030. Historical records indicate, however, that Pinal County's market share of U.S. active aircraft has consistently grown over the 20-year period. As a result, an increasing market share forecast was also analyzed internally which yields 650 registered aircraft by 2030.

The population of Pinal County was also used as a comparison with registered aircraft in the County. The forecast examines the history of registered aircraft as a ratio of residents in Pinal County. The 2008 estimated population for the County was 350,558, re-

sulting in a ratio of 1.19 registered aircraft per 1,000 residents. Maintaining the current ratio would yield a projection of 1,014 registered aircraft in Pinal County by 2030. It should be noted that the ratio of County registered aircraft per 1,000 residents has gradually declined since 1989, as depicted on **Table 2A**. A decreasing ratio projects 725 registered aircraft in Pinal County by 2030.

A time-series extrapolation of registered aircraft was developed based upon the period from 1989 to 2009. The correlation coefficient, (r^2), was determined to be 0.97 for this trend line projection, which yields 592 registrations by 2030. As previously discussed, the correlation coefficient (Pearson's "r") measures the association between changes in the dependent variable (registered aircraft) and the independent variable(s). An "r^2" greater than 0.90 generally indicates good predictive reliability. A lower value may be used with the understanding that the predictive reliability is lower.

Several other regression analyses were also prepared to determine the association between U.S. active aircraft, socioeconomic indicators (population and PCPI), and registered aircraft growth. This association is represented by the correlation coefficient. The separate regression analyses project registered aircraft in Pinal County to increase to between 742 and 802 aircraft through 2030. **Table 2B** presents the resulting regression projections for comparison with the market share and ratio projections previously discussed.

The results of the regression analysis indicate that the socioeconomic factor that associates closest with registered aircraft change is population. The time-series analysis resulted in a projection that was considerably lower than the other four regressions and projects a 1.5 percent annual increase through 2030. The multiple regression that analyzed the independent variables of population, U.S. active aircraft, and PCPI since 1992 produced the highest "r^2" at 0.98 and equates to a 2.5 percent annual growth rate for registered aircraft.

Registered Aircraft Summary

Table 2B and the top half of **Exhibit 2B** provide a summary of all registered aircraft forecasts previously discussed. It is determined that the constant market share of U.S. active aircraft and constant ratio of registered aircraft per County population represent a high and low range of projected registered aircraft in the County by 2030. As depicted on **Exhibit 2B**, the constant market share of U.S. active aircraft forecast understates growth potential, as the historical trend in recent years points to a more aggressive registered aircraft forecast. Conversely, the constant ratio of registered aircraft per 1,000 residents may overstate growth potential by having a stronger growth rate than experienced in the past 20 years. Considering that aircraft registrations have grown at 3.1 percent annually during this timeframe, the selected forecast projects registered aircraft in Pinal County increasing to 800 by 2030. This forecast closely mirrors the regression analysis comparing County population and PCPI to registered aircraft, which yielded an "r^2" value of 0.96. As a result, registered aircraft are projected to grow 3.0 percent annually.

TABLE 2B
Registered Aircraft Projections
Pinal County

	r^2	2009	2015	2020	2025	2030	Avg. Annual Growth Rate
Market Share Projection							
Constant Market Share of U.S. Active Aircraft		433	458	479	504	529	1.0%
Constant Aircraft Registrations Per 1,000 Population		433	579	726	871	1,014	4.1%
Regression Analysis Projections							
Time-Series 1989-2009	0.97	433	450	497	545	592	1.5%
US Active Aircraft & Population 1992-2008	0.97	433	502	582	663	742	2.6%
Population 1989-2008	0.96	433	522	617	710	802	3.0%
Population & PCPI 1989-2008	0.95	433	516	608	702	795	2.9%
Population, US Active Aircraft & PCPI 1992-2008	0.98	433	505	581	656	730	2.5%
Selected Forecast		**433**	**500**	**615**	**710**	**800**	**3.0%**

Based Aircraft Forecasts

Determining the number of based aircraft at an airport can be a challenging task. With the transient nature of based aircraft due to the availability and cost of aircraft storage, it can be hard to arrive at an exact number of based aircraft. As a result, airports often do not keep records of based aircraft. Coolidge Municipal Airport maintains a current count based on hangar storage utilization. Unfortunately, an exact count does not exist for previous years. Thus, historical data from the FAA was utilized. While this data is not as accurate as the data maintained by the airport, it is reasonable for use in this study as it presents the FAA's estimate arrived at by on-site visits to prepare the Airport Master Record (FAA Form 5010).

Before preparing new forecasts for based aircraft, previous based aircraft projections were reviewed for current validity. These included the 2008 FAA TAF, 2008 *Arizona State Airports System Plan* (SASP), and the previous *Coolidge Municipal Airport Master Plan* from 1997. Each of the previous forecasts use different base years as well as projection years. For comparison, these forecasts were interpolated and extrapolated to correlate with this Master Plan's projection years. Each of these previous based aircraft forecasts are presented in **Table 2C**. It should be noted that, at the time of this writing, the 2008 Arizona SASP Update is in draft format and currently being finalized by the Arizona Department of Transportation (ADOT) – Aeronautics Group.

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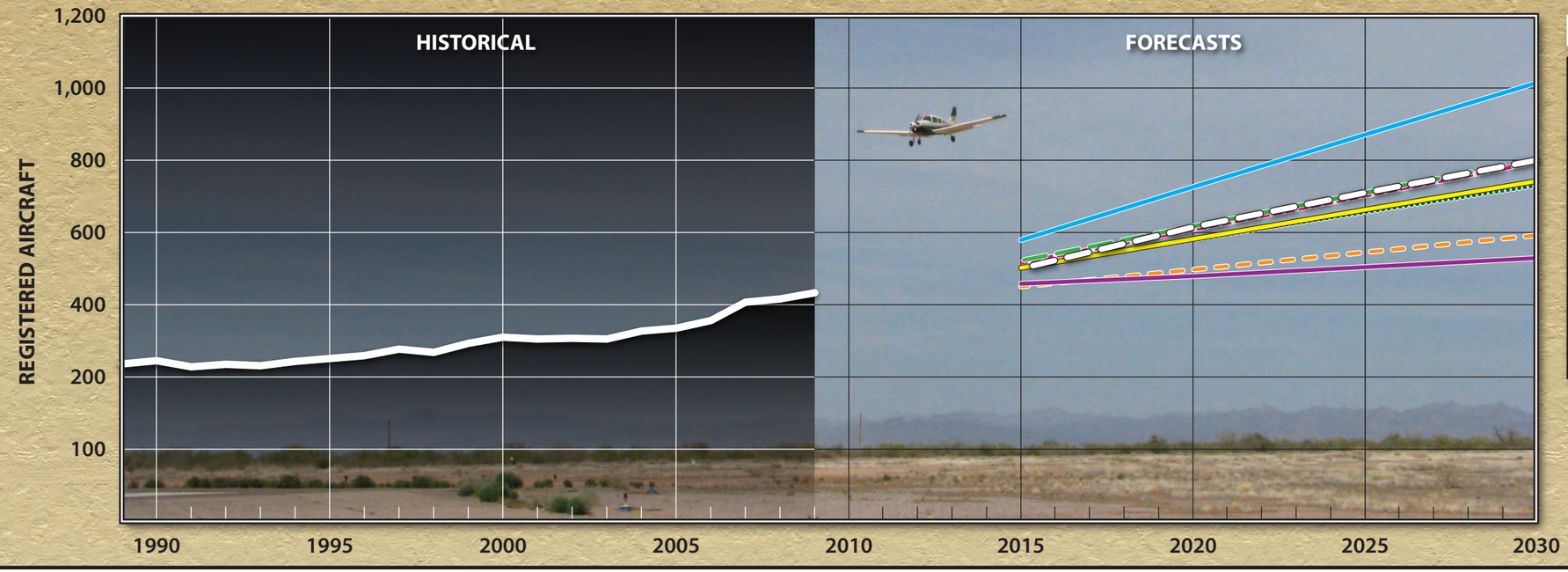
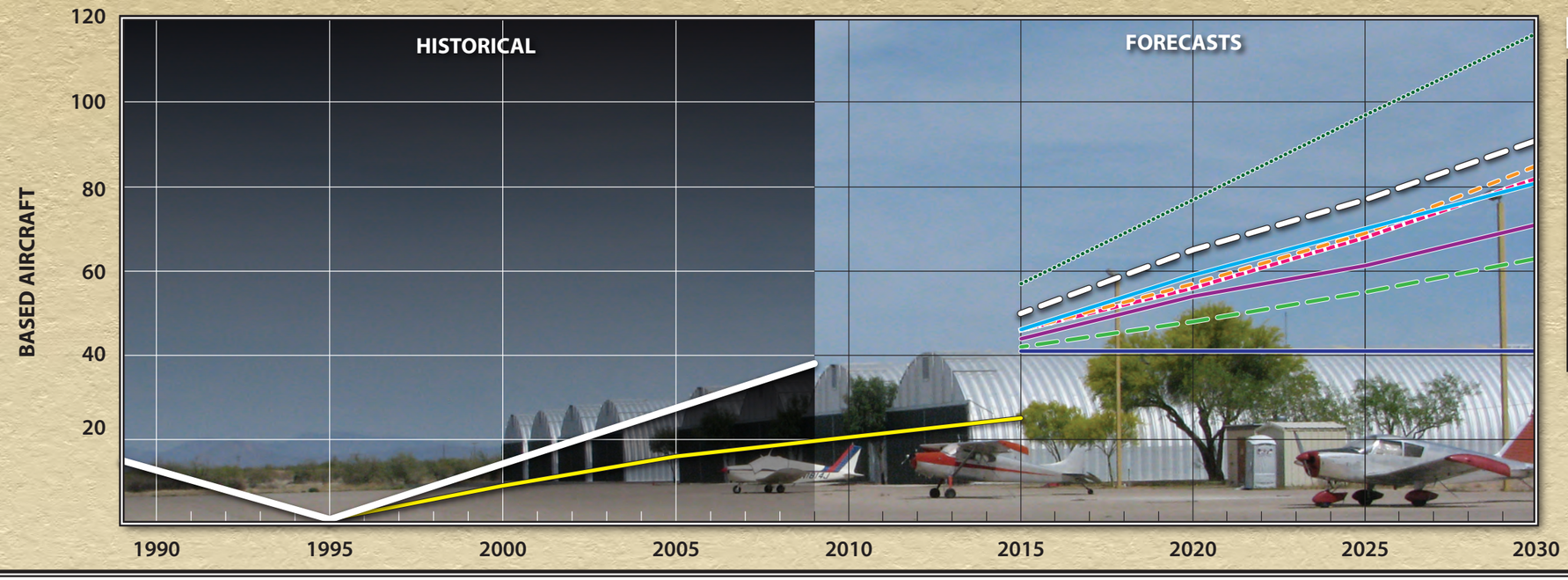
PINAL COUNTY REGISTERED AIRCRAFT



COOLIDGE MUNICIPAL AIRPORT BASED AIRCRAFT



COOLIDGE MUNICIPAL AIRPORT

Exhibit 2B
PINAL COUNTY REGISTERED AIRCRAFT/
COOLIDGE MUNICIPAL AIRPORT BASED AIRCRAFT

TABLE 2C
Previous Based Aircraft Projections
Coolidge Municipal Airport

	Current	Base Year	2015	2020	2025	2030
Airport Records	38					
2008 FAA TAF 2008		41	41	41	41	41**
2008 Arizona SASP – High		34	46*	57*	69*	85
2008 Arizona SASP – Medium		34	46*	56*	68*	82
2008 Arizona SASP – Low		34	42*	48*	55*	63
1997 Airport Master Plan		1	25	N/A	N/A	N/A

*Interpolated; **Extrapolated

Since each of these comparative studies was prepared at different times, it is expected that they will be different from each other and may not match recent historical counts. According to airport records, the current based aircraft count is 38. The 2008 SASP considered 34 aircraft for its base year, which is lower than the actual 2009 based aircraft count. The FAA TAF projection has based aircraft at Coolidge Municipal Airport remaining constant at 41 through the planning period. Finally, the previous Master Plan Update identified only one based aircraft at the airport during its base year of 1996.

Having forecast the aircraft ownership demand in Pinal County, the historic based aircraft figures at Coolidge Municipal Airport were reviewed to examine the change in market share over the years. **Table 2D** examines Coolidge Municipal Airport's historical share of County registered aircraft.

Between 1989 and 2009, Coolidge Municipal Airport based aircraft grew from 15 to 38 at a rate of 4.8 percent annually. As presented in the table, however, the increase in based aircraft did not follow a gradual increasing trend. According to previous records, an active skydiving operation was located at the airport during the late 1980s and early 1990s that supported approximately 15 aircraft that were considered to be based at the airport during this time. Due to a large number of military aircraft operations that were being conducted at Coolidge Municipal Airport during the early 1990s, the skydiving operation vacated the airport, and as a result, the number of based aircraft declined significantly in the mid 1990s to one aircraft. Since this time, several hangars have been constructed at the airport that support an increasing trend in based aircraft and an array of aviation services accommodates the general aviation presence on the field.

During the time period, Coolidge Municipal Airport's share of registered aircraft in the County has grown from 6.4 percent in 1989 to 8.8 percent in 2009. Three market share projections were generated based from historical trends. The first projection keeps the current market share static at 8.8 percent, resulting in 70 based aircraft by 2030 and an annual average growth rate of 3.0 percent.

TABLE 2D
Updated Based Aircraft Projections
Coolidge Municipal Airport

Year	County Registered Aircraft	Coolidge Based Aircraft	% of Registered Aircraft	Coolidge Population*	AC per 1,000 Residents
1989	236	15	6.4%	6,945	2.16
1995	251	1	0.4%	7,055	0.14
2009	433	38	8.8%	12,311	3.09
Average Annual Increase		4.8%		3.1%	
Constant Market Share Projection					
2015	500	44	8.8%	18,558	2.37
2020	615	54	8.8%	24,949	2.17
2025	710	62	8.8%	31,332	1.99
2030	800	70	8.8%	37,609	1.87
Average Annual Increase		3.0%		5.5%	
Increasing Market Share Projection					
2015	500	46	9.1%	18,558	2.45
2020	615	58	9.4%	24,949	2.32
2025	710	70	9.8%	31,332	2.22
2030	800	82	10.2%	37,609	2.17
Average Annual Increase		3.7%		5.5%	
Constant Based Aircraft Per 1,000 Population Projection					
2015	500	57	11.5%	18,558	3.09
2020	615	77	12.5%	24,949	3.09
2025	710	97	13.6%	31,332	3.09
2030	800	116	14.5%	37,609	3.09
Average Annual Increase		5.5%		5.5%	
Selected Forecast					
2015	500	50	10.0%	18,558	2.69
2020	615	65	10.6%	24,949	2.61
2025	710	77	10.8%	31,332	2.46
2030	800	90	11.3%	37,609	2.39
Average Annual Increase		4.2%		5.5%	

Source: Based Aircraft – FAA TAF, 2008 (1989); Coolidge Municipal Airport Master Plan, 1997 (1995); Airport Records, (2009).
Coolidge Population – Arizona Department of Commerce
*2009 estimate for City of Coolidge population was not available; therefore, the 2008 estimate was used.

A second forecast was prepared, which maintains the trend of an increasing market share. This forecast represents a projection based on positive socioeconomic growth in the region and that other regional general aviation airports do not absorb as much of the market growth. This forecast results in 82 based aircraft by 2030.

A third forecast was prepared, which maintains Coolidge Municipal Airport's ratio of based aircraft per 1,000 residents. This results in a healthy

5.5 percent annual growth rate which yields 116 based aircraft by 2030.

Based Aircraft Summary

Future based aircraft at Coolidge Municipal Airport will depend on several factors, including the state of the economy, fuel costs, available airport facilities, and competing airports. Forecasts assume a reasonably stable and growing economy after a short term decline, as well as reasonable development of airport facilities necessary to accommodate aviation demand. Competing airports will play a role in deciding regional demand shifts; however, Coolidge should fare well in this competition as it is served by a crosswind runway system and is fully capable of being expanded to meet future demand.

Deciding which forecast or combination of forecasts to use to arrive at a final based aircraft forecast involves more than just statistical analysis. Consideration must be given to the current and future aviation conditions at the airport in the short term. For example, Coolidge Municipal Airport has improved in a manner to be more attractive to aircraft owners. Several new aircraft storage hangars have been constructed in recent years to better serve the aviation community, and existing airport businesses have experienced growth in activity.

The city has given every indication that it plans to continue strong support of its airport and, as such, the constant market share projection appears to be too conservative given that the market share of registered aircraft has increased over the previous 20 years. The City of Coolidge has made a concerted and successful effort to position the airport to accommodate and accept growth. As a result, the airport should be fully capable of maintaining at least an increasing market share trend. The constant ratio of based aircraft per 1,000 residents' projection appears to be too aggressive given the short term economic outlook and resultant strong market share return when compared to the historical trend.

The selected based aircraft forecast is presented in **Table 2D** and depicted on the bottom half of **Exhibit 2B**. The projection most closely follows the increasing market share of the county's registered aircraft. As detailed, the forecast considers 50 aircraft by 2015, 65 aircraft by 2020, 77 aircraft by 2025, and 90 aircraft by 2030. This equates to a 4.2 percent average annual growth rate.

BASED AIRCRAFT FLEET MIX

Knowing the aircraft fleet mix expected to utilize the airport is necessary to properly plan for facilities that will best serve the level of activity and the type of activities occurring at the airport. The existing based aircraft fleet mix is comprised of 22 single engine aircraft, two multi-engine aircraft, eight turboprop aircraft, four jets, one helicopter, and one ultralight.

As detailed previously, the national trend is toward a larger percentage of sophisticated turboprop aircraft, jet aircraft, and helicopters in the nation-

al fleet. Active multi-engine piston aircraft are expected to be the only category of aircraft which shows a decrease in annual growth. Growth within each based aircraft category at the airport has been determined by comparison with national projections (which reflect current aircraft production) and consideration of local economic conditions.

The based aircraft fleet mix at Coolidge Municipal Airport, as shown on **Table 2E**, was compared to the existing and forecast U.S. general aviation fleet mix trends as presented in *FAA Aerospace Forecast - Fiscal Years 2009-2025*. The FAA expects business jets will continue to be the fastest growing general aviation aircraft type in the future. The number of business jets in the industry fleet is expected to almost double in the next 15 years. Single engine piston aircraft (including sport aviation and experimental aircraft), helicopter, and turboprop aircraft are expected to grow at slower rates. The number of multi-engine piston aircraft in the U.S. will actually decline slightly as older aircraft are retired, according to FAA forecasts.

TABLE 2E
Based Aircraft Mix Forecast
Coolidge Municipal Airport

	2009		2015		2020		2025		2030*	
	#	%	#	%	#	%	#	%	#	%
Coolidge Municipal Airport Based Aircraft										
Single Engine Piston	22	57.9%	30	60.0%	40	61.6%	49	63.6%	57	63.3%
Multi-Engine Piston	2	5.3%	3	6.0%	3	4.6%	4	5.2%	4	4.4%
Turboprop	8	21.1%	9	18.0%	11	16.9%	12	15.6%	14	15.6%
Jet	4	10.5%	5	10.0%	7	10.8%	8	10.4%	10	11.1%
Rotorcraft	1	2.6%	2	4.0%	3	4.6%	3	3.9%	4	4.4%
Other	1	2.6%	1	2.0%	1	1.5%	1	1.3%	1	1.2%
Totals	**38**	**100.0%**	**50**	**100.0%**	**65**	**100.0%**	**77**	**100.0%**	**90**	**100.0%**
U.S. Active Aircraft (from FAA Aerospace Fiscal Years [2009-2025])										
Single Engine Piston	178,460	75.5%	185,320	74.0%	191,270	73.0%	199,035	72.3%	206,356	71.3%
Multi-Engine Piston	18,965	8.0%	17,910	7.2%	16,965	6.5%	16,005	5.8%	15,099	5.2%
Turboprop	9,665	4.1%	10,540	4.2%	11,480	4.4%	12,245	4.4%	13,061	4.5%
Jet	12,325	5.2%	17,100	6.8%	20,945	8.0%	25,165	9.1%	30,235	10.5%
Rotorcraft	10,760	4.6%	13,520	5.4%	15,170	5.8%	16,795	6.1%	18,594	6.4%
Other	6,060	2.6%	6,060	2.4%	6,010	2.3%	5,985	2.2%	5,960	2.1%
Totals	**236,235**	**100.0%**	**250,450**	**100.0%**	**261,840**	**100.0%**	**275,230**	**100.0%**	**289,305**	**100.0%**

Note: Experimental and sport aircraft are included under single engine piston.
Total percentages may not equal 100.0 due to rounding.
*2030 U.S. Active Aircraft figures were extrapolated.

ANNUAL OPERATIONS

General aviation operations are classified as either local or itinerant. A local operation is a take-off or landing performed by an aircraft that operates within sight of the airport, or which executes simulated approaches or touch-and-go operations at the airport. Generally, local operations are characterized by training operations. Itinerant operations are those performed by aircraft with a specific origin or destination away from the airport.

Coolidge Municipal Airport operations are comprised mainly of general aviation operations. Since Coolidge Municipal Airport is not a towered airport, precise operations records are

not available. Sources for estimated operational activity at Coolidge Municipal Airport such as the FAA Form 5010, Airport Master Record, the FAA TAF, and the SASP have largely varying accounts of operational traffic. Therefore, for this study, an FAA-approved statistical methodology for estimating general aviation operations using local variables was utilized to update the operations count.

This method, the *Model for Estimating General Aviation Operations at Non-Towered Airports*, was prepared for the FAA Statistics and Forecast Branch in July 2001. This report develops and presents a regression model for estimating general aviation operations at non-towered airports. The model was derived using a combined data set for small towered and non-towered general aviation airports and incorporates a dummy variable to distinguish the two airport types. In addition, the report applies the model to estimate activity at 2,789 non-towered general aviation airports contained in the FAA *Terminal Area Forecast*. The estimate of annual operations at Coolidge Municipal Airport was computed using the recommended equation (#15) for non-towered airports. Independent variables used in the equation include airport characteristics (i.e., number of based aircraft, number of flight schools), population totals, and geographic location. This equation yields an annual general aviation operations estimate of approximately 16,700 for 2009. This estimate does not take into account an estimated 4,000 annual local general aviation operations conducted by Complete Parachute Solutions, related to specialty military parachute training operations. With these estimated specialty operations included, a baseline general aviation operations count of 20,700 can be established. Local and itinerant operation percentages for 2009 were derived from the FAA TAF estimates (61 percent and 39 percent, respectively). The inclusion of the estimated specialty operations results in a general aviation local/itinerant operational split of 70 percent and 30 percent, respectively.

Itinerant Operations

Table 2F depicts estimated general aviation itinerant operations at Coolidge Municipal Airport for 2009. This data shows a market share of 0.038 percent of all general aviation itinerant operations reported at airports with an airport traffic control tower. This also equates to 163 itinerant operations per based aircraft.

In *FAA Aerospace Forecast - Fiscal Years 2009-2025*, the FAA projects itinerant general aviation operations at towered airports. **Table 2F** presents this forecast, as well as a projection for Coolidge Municipal Airport, based upon maintaining its current share of the itinerant general aviation operations market. This forecast has itinerant operations reaching 8,493 by 2030.

TABLE 2F
General Aviation Itinerant Operations Forecast
Coolidge Municipal Airport

Year	Itinerant Operations	U.S. ATCT GA Itinerant (millions)	Coolidge Market Share	Coolidge Based Aircraft	Itinerant Ops Per Based Aircraft
2009	6,200	16.16	0.038%	38	163
Constant Market Share Projection					
2015	6,584	17.33	0.038%	50	121
2020	7,106	18.70	0.038%	65	101
2025	7,768	20.44	0.038%	77	93
2030	8,493	22.35	0.038%	90	87
Constant Operations Per Based Aircraft Projection					
2015	8,150	17.33	0.047%	50	163
2020	10,595	18.70	0.057%	65	163
2025	12,551	20.44	0.061%	77	163
2030	14,670	22.35	0.066%	90	163
2008 Arizona State Airports System Plan – High Range					
2015	7,877	17.33	0.045%	41	192
2020	9,563	18.70	0.051%	51	188
2025	11,558	20.44	0.057%	69	168
2030	13,968	22.35	0.063%	85	164
2008 Arizona State Airports System Plan – Medium Range					
2015	7,162	17.33	0.041%	41	175
2020	8,191	18.70	0.044%	50	164
2025	9,349	20.44	0.046%	68	137
2030	10,670	22.35	0.048%	82	130
2008 Arizona State Airports System Plan – Low Range					
2015	6,129	17.33	0.035%	39	157
2020	6,317	18.70	0.034%	44	144
2025	6,502	20.44	0.032%	55	118
2030	6,693	22.35	0.030%	63	106
FAA Terminal Area Forecast					
2015	2,470	17.33	0.014%	41	60
2020	2,470	18.70	0.013%	41	60
2025	2,470	20.44	0.012%	41	60
2030	2,470	22.35	0.011%	41	60
Master Plan Forecast					
2015	7,500	17.33	0.043%	50	150
2020	8,900	18.70	0.048%	65	137
2025	10,500	20.44	0.051%	77	136
2030	12,500	22.35	0.056%	90	139

Note: The 2008 SASP figures were interpolated by Coffman Associates.

The table also displays the findings of an analysis that examined the relationship of annual operations to based aircraft. The second projection in **Table 2F** reflects the itinerant operational levels that could be expected if the operations per based aircraft ratio were to remain constant into the future. This forecast results in 14,670 itinerant general aviation operations by 2030.

The 2008 SASP produced three scenarios for operational growth at Coolidge Municipal Airport based on low, medium, and high range operations enve-

lopes. The annual itinerant operations are projected to range from a low of 6,693 to a high of 13,968. For comparison, the FAA TAF projections are also presented and keep annual itinerant operations static at 2,470 through 2030.

The selected Master Plan itinerant general aviation operations forecast takes into account the growth potential associated with the Coolidge community and surrounding areas. As the area's population and economy grow, Coolidge Municipal Airport's market share of itinerant general aviation operations should also grow. Also, as the airport facilities and services improve over the planning period, it can be expected that more itinerant general aviation aircraft will choose to utilize Coolidge Municipal Airport over other airports in the region. In addition, as the based aircraft level rises, the ratio of itinerant general aviation operations to based aircraft should lower to a level more relative to general aviation airports in the region. The selected Master Plan forecast, shown at the bottom of **Table 2F**, has itinerant general aviation operations at Coolidge Municipal Airport growing to 7,500 by 2015; 8,900 by 2020; 10,500 by 2025; and 12,500 by 2030. This equates to a 3.5 average annual growth rate.

Local Operations

A similar methodology was utilized to forecast local general aviation operations. **Table 2G** depicts estimated local operations at Coolidge Municipal Airport in 2009 and examines its market share of general aviation local operations at towered airports in the United States. In 2009, Coolidge Municipal Airport experienced 0.110 percent of all local general aviation operations at towered airports. This also equates to 382 local general aviation operations per based aircraft. Typically, airports with active flight training schools can average up to 500 local operations per based aircraft. Coolidge Municipal Airport does not have an active flight school located on the field; however, the number of local aircraft operations conducted by Complete Parachute Solutions, related to its military parachute training operations, plays a direct role in maintaining a rather high number of local operations per based aircraft.

Table 2G presents a market share projection based upon carrying forward a constant share of 0.110 percent. This projection results in 16,268 local general aviation operations by 2030.

The second projection in **Table 2G** examines local operations based on the operations per based aircraft remaining static at 382 through the planning period. This projection results in 34,380 local operations by 2030.

TABLE 2G
General Aviation Local Operations Forecast
Coolidge Municipal Airport

Year	Local Operations	U.S. ATCT GA Local (millions)	Coolidge Market Share	Coolidge Based Aircraft	Local Ops Per Based Aircraft
2009	14,500	13.18	0.110%	38	382
Constant Market Share Projection					
2015	14,642	13.31	0.110%	50	293
2020	14,953	13.59	0.110%	65	230
2025	15,596	14.18	0.110%	77	203
2030	16,268	14.79	0.110%	90	181
Operations Per Based Aircraft Projection					
2015	19,100	13.31	0.143%	50	382
2020	24,830	13.59	0.183%	65	382
2025	29,414	14.18	0.207%	77	382
2030	34,380	14.79	0.232%	90	382
FAA Terminal Area Forecast					
2015	3,970	13.31	0.030%	41	97
2020	3,970	13.59	0.029%	41	97
2025	3,970	14.18	0.028%	41	97
2030	3,970	14.79	0.027%	41	97
Master Plan Forecast					
2015	16,800	13.31	0.126%	50	336
2020	19,900	13.59	0.146%	65	306
2025	22,500	14.18	0.159%	77	292
2030	25,300	14.79	0.171%	90	281

Although not depicted in **Table 2G**, the 2008 SASP was used for comparison purposes. As with itinerant operations, this study projected a low, medium, and high range operations envelope for local operations at Coolidge Municipal Airport. These projections ranged from 207 to 432 annual local operations at the airport by 2030. Due to the fact that the airport is already experiencing annual local operations well above these projected numbers, the SASP will not be further considered in reaching a selected forecast for annual local operations. The FAA TAF also projects annual local operations. As with forecast itinerant operations, the TAF shows no growth in local operations through 2030.

It is anticipated that Coolidge Municipal Airport will continue to be used by Complete Parachute Solutions in order to conduct parachute training operations and, thus, play a major role in contributing to the number of local operations at the airport. The level of local activity will also be dependent upon the number of aircraft basing at the airport and potential flight schools that could potentially utilize the facility. The selected Master Plan local general aviation operations forecast, shown at the bottom of **Table 2G**, has local operations growing to 16,800 by 2015; 19,900 by 2020; 22,500 by 2025; and 25,300 by 2030. This is a growth rate of 2.7 percent annually.

Annual General Aviation Operations Summary

Table 2H depicts estimated 2009 general aviation operations at Coolidge Municipal Airport, as well as the updated Master Plan projections. Total general aviation operations are projected to reach 37,800 annually by 2030. This yields a growth rate of 3.0 percent over the planning period. Itinerant operations are projected to increase to 33 percent of total operations by the end of the planning period. This is consistent with the type of activity at the airport.

TABLE 2H
General Aviation Operations Forecast Summary
Coolidge Municipal Airport

Year	Total Operations	Itinerant Operations	Local Operations	Based Aircraft	Itinerant Ops/BA	Local Ops/BA
2009	20,700	6,200	14,500	38	163	382
Master Plan Forecast						
2015	24,300	7,500	16,800	50	150	336
2020	28,800	8,900	19,900	65	137	306
2025	33,000	10,500	22,500	77	136	292
2030	37,800	12,500	25,300	90	139	281

Military

Military operations account for the smallest portion of the operational traffic at Coolidge Municipal Airport. Military activity has been estimated at approximately 100 operations annually. Unless there is an unforeseen mission change in the area, a significant change from these military operational levels is not anticipated. Therefore, annual military operations have been projected at 100 throughout the planning period. This is consistent with typical industry practices for projecting military operations.

PEAKING CHARACTERISTICS

Many airport facility needs are related to the levels of activity during peak periods (busy times). The periods used in developing facility requirements for this study are as follows:

- **Peak Month** – The calendar month when peak aircraft operations occur.
- **Design Day** – The average day in the peak month. This indicator is derived by dividing the peak month operations by the number of days in the month.
- **Busy Day** – The busy day of a typical week in the peak month.
- **Design Hour** – The peak hour within the design day.

Without an ATCT, adequate operational information is not available to directly determine peak operational activity at the airport. Therefore, peak period forecasts have been determined according to trends experienced at similar airports and by examining the operational counts estimated at the airport in 2009.

Typically, the peak month for activity at general aviation airports approximates 10 to 15 percent of the airport's annual operations. For planning purposes, peak month operations have been estimated at 12 percent of annual operations at Coolidge Municipal Airport. The design day operations were calculated by dividing the peak month by 30. The design day is primarily used in airfield capacity calculations.

The busy day provides information for use in determining aircraft parking apron requirements. The busiest day of each week accounts for approximately 18 percent of weekly operations. Thus, to determine the typical busy day, the design day is multiplied by 1.25, which represents approximately 18 percent of the days in a week. Design hour operations were determined at 15 percent of the design day operations. **Table 2J** summarizes peak operations forecasts for the airport.

TABLE 2J
Peak Period Forecasts
Coolidge Municipal Airport

	2009	2015	2020	2025	2030
Annual Operations	20,800	24,400	28,900	33,100	37,900
Peak Month	2,496	2,928	3,468	3,972	4,548
Design Day	83	98	116	132	152
Busy Day	104	123	145	165	190
Design Hour	12	15	17	20	23

Source: Coffman Associates analysis

ANNUAL INSTRUMENT APPROACHES

An instrument approach, as defined by the FAA, is "an approach to an airport with the intent to land by an aircraft in accordance with an Instrument Flight Rule (IFR) flight plan, when visibility is less than three miles and/or when the ceiling is at or below the minimum initial approach altitude." To qualify as an instrument approach at Coolidge Municipal Airport, aircraft must land at the airport after following the published instrument approach procedure and then properly close their flight plan on the ground. The approach must be conducted in weather conditions which necessitate the use of the instrument approach. If the flight plan is closed prior to landing, then the instrument approach is not counted in the records. It should be noted that practice or training approaches do not count as annual instrument approaches.

The increased availability of low-cost navigational equipment could allow smaller and less sophisticated aircraft to utilize instrument approaches. National trends indicate an increasing percentage of approaches given the greater availability of approaches at airports with GPS and the availability of more cost-effective equipment.

Typically, annual instrument approaches for airports with available instrument approaches utilized by advanced aircraft will average between one and two percent of itinerant operations. In the Coolidge area, weather conditions rarely necessitate an instrument approach. In environments similar to the Coolidge area, one percent of itinerant operations has been utilized to estimate potential future instrument approaches. A forecast utilizing this percentage is shown on **Exhibit 2C**.

SUMMARY

This chapter has provided demand-based forecasts of aviation activity at Coolidge Municipal Airport over the next 20 years. An attempt has been made to define the projections in terms of short (1-5 years), intermediate (6-10 years), and long (11-20 years) term expectations. Elements such as local socioeconomic indicators, anticipated regional development, and historical aviation data, as well as national aviation trends, were all considered when determining future conditions.

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 and/or landside facilities which will create a more functional aviation facility. A summary of aviation forecasts is depicted on **Exhibit 2C**.

	2009	2015	2020	2025	2030
OPERATIONS FORECASTS					
Itinerant Operations					
General Aviation	6,200	7,500	8,900	10,500	12,500
Military	100	100	100	100	100
Total Itinerant	*6,300*	*7,600*	*9,000*	*10,600*	*12,600*
Local Operations					
General Aviation	14,500	16,800	19,900	22,500	25,300
Total Operations	***20,800***	***24,400***	***28,900***	***33,100***	***37,900***
Peak Period Forecasts					
Peak Month	2,496	2,928	3,468	3,972	4,548
Design Day	83	98	116	132	152
Busy Day	104	123	145	165	190
Design Hour	12	15	17	20	23
BASED AIRCRAFT FORECASTS					
Single Engine Piston	22	30	40	49	57
Multi-engine Piston	2	3	3	4	4
Turboprop	8	9	11	12	14
Jet	4	5	7	8	10
Rotorcraft	1	2	3	3	4
Other	1	1	1	1	1
Total Based Aircraft	***38***	***50***	***65***	***77***	***90***
ANNUAL INSTRUMENT APPROACHES					
	NA	75	90	105	125

COOLIDGE MUNICIPAL AIRPORT

Exhibit 2C
FORECAST SUMMARY

Chapter Three

FACILITY REQUIREMENTS