Chapter Two
Forecasts of Aviation Activity

Colorado City Municipal Airport
Airport Master Plan

Chapter Two
Forecast

INTRODUCTION

Forecasts of aviation activity serve as a guideline for the timing required for implementation of airport improvement programs. While such information is necessary for successful comprehensive airport planning, it is important to recognize that forecasts are only approximations of future activity, based upon historical data and viewed through present situations. They must therefore, be used with careful consideration, as they may lose their validity with the passage of time.

For this reason, an ongoing program of examination of local airport needs and national and regional trends is recommended and encouraged in order to promote the orderly development of aviation facilities at the Colorado City Municipal Airport.

At airports not served by air traffic control towers, estimates of existing aviation activity are necessary in order to form a basis for the development of realistic forecasts. Unlike towered airports, non-towered general aviation airports have historically not tracked or maintained comprehensive logs of aircraft operations. Estimates of existing aviation activity are based upon a review of based aircraft, available historical data, available local information and regional, state and national data form the baseline to which forecasted aviation activity trends are applied.

Activity projections are made based upon estimated growth rates, area demographics, industry trends and other indicators. Forecasts are prepared for the Initial-Term (0-5 years), the Intermediate-Term (6-10 years) and the Long-Term (11-20 years) time frames. Utilizing forecasts within these time frames will allow the construction of airport improvements to be timed to meet demand, but not so early as to remain idle for an unreasonable length of time.

There are four types of aircraft operations considered in the planning process. These are termed “local, based, itinerant and transient.” They are defined as follows:

Local operations are defined as aircraft movements (departures or arrivals) for the purpose of training, pilot currency or pleasure flying within the immediate area of the local airport. These operations typically consist of touch-and-go operations, practice instrument approaches, flights to and within local practice areas and pleasure flights that originate and terminate at the airport under study.

Based aircraft operations are defined as the total operations made by aircraft based (stored at the airport on a permanent, seasonal or long-term basis) at the study airport, with no attempt to classify the operations as to purpose.

Itinerant operations are defined as arrivals and departures other than local operations and generally originate or terminate at another airport. These types of operations are closely tied to local demographic indicators, such as local industry and business use of aircraft and usage of the facility for recreational purposes.

Transient operations are defined as the total operations made by aircraft other than those based at the airport under study. These operations typically consist of business or pleasure flights originating at other airports, with termination or a stopover at the study airport.

The terms transient and itinerant are sometimes erroneously used interchangeably. This study will confine analysis to local and itinerant operations.

NATIONAL AND REGIONAL TRENDS

According to factors such as aircraft production, pilot activity and hours flown, general aviation reached a peak in the late 1970s. This peak was followed by a long downturn that persisted through most of the 1980s and the early 1990s and has been attributed to high manufacturing costs associated with product liability issues as well as other factors. The General Aviation Revitalization Act (GARA) of 1994 was enacted with the goal of revitalizing the industry by limiting product liability costs. The Act established an 18-year statute of repose on liability related to the manufacture of all general aviation aircraft and their components. According to a 2001 report to Congress by the General Accounting Office (GAO), trends in general aviation since GARA was enacted suggest that liability costs have been less burdensome to manufacturers, shipments of new aircraft have increased and technological advances have been made. Indicators of general aviation activity, such as the numbers of hours flown and active pilots, have also increased in the years since GARA, but their growth has not been as substantial as the growth in manufacturing.

The unfortunate terrorist attacks of September 11, 2001 have had a substantial impact on these positive general aviation industry trends. Significant restrictions were placed on general aviation flying following September 11th which resulted in a considerable decrease in general aviation activity. Fortunately, most of these restrictions have now been lifted and the Federal Aviation Administration (FAA) is forecasting continued growth in general aviation.

The FAA annually convenes expert panels in aviation and develops forecasts for future activity in all areas of aviation, including general aviation. The FAA's 2007-2020 forecast predicts that total general aviation fleet will increase at an average annual rate of 1.4 percent during the 14-year forecast period, growing from an estimated 226,422 aircraft in 2006 to 274,914 aircraft in 2020. The fleet of jet turbine aircraft is expected to increase at a greater rate than the fleet of piston aircraft; as a result, the number of piston aircraft, while continuing to increase, is expected to represent a smaller percentage of the total general aviation fleet. Figures 2-1 and 2-2 illustrate this forecasted change to the general aviation fleet that is forecast to occur over the 14-year period.

2006

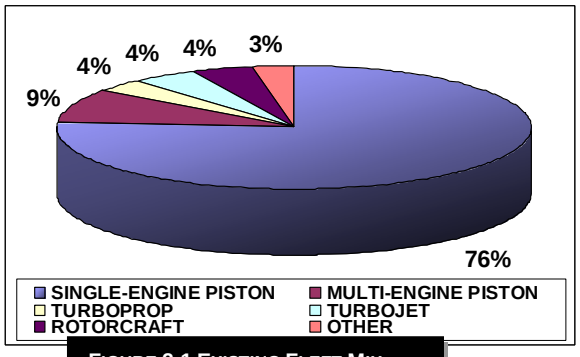

FIGURE 2-1 EXISTING FLEET MIX

2020

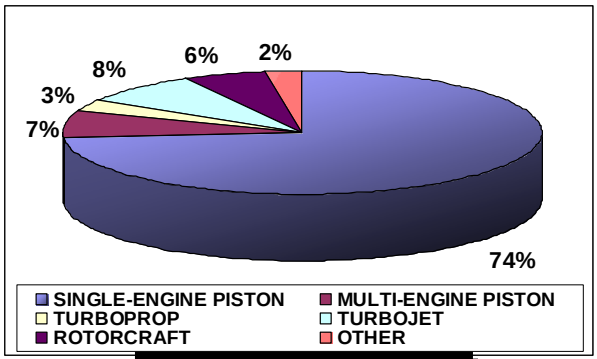

FIGURE 2-2 FUTURE FLEET MIX

Source: General Aviation & Air Taxi Activity & Avionics Survey 2005

The General Aviation Manufacturer's Association (GAMA) produces activity forecasts based on general aviation hours flown. As shown in Table 2-1, the number of turbojet (TJ) hours is forecasted to increase by 203 percent between 2006 and 2017.

Table 2-1 National General Aviation Forecast

	Hours Flown (in millions)				
Year	SE	ME	TP	TJ	Total
2006	17.0	2.4	2.0	3.2	24.6
2007	17.2	2.4	2.0	3.6	25.2
2008	17.5	2.4	2.1	4.0	26.0
2009	17.7	2.5	2.1	4.6	26.9
2010	17.9	2.5	2.1	5.2	27.7
2011	18.1	2.5	2.1	5.9	28.6
2012	18.3	2.6	2.2	6.6	29.7
2013	18.6	2.6	2.2	7.2	30.6
2014	18.8	2.6	2.2	7.9	31.5
2015	19.0	2.6	2.2	8.5	32.3
2016	19.2	2.7	2.2	9.0	33.1
2017	19.5	2.7	2.3	9.7	34.2

Source: General Aviation Manufacturer's Association 2006 statistical Databook

Another industry trend is the increasing amount of research funding for programs like the Small Aircraft Transportation System (SATS). The National Aeronautics and Space Administration (NASA), Federal Aviation Administration, States, industry and academic partners have joined forces to pursue the NASA National General Aviation Roadmap leading to a Small Aircraft Transportation System. This long-term strategic undertaking seeks to bring next-generation technologies and improved air access to small communities. The envisioned outcome is to improve travel between remote communities and transportation centers in urban areas by utilizing a new generation of single-pilot light aircraft for personal and business transportation between the nation's 5,400 public use general aviation airports. Current NASA investments in aircraft technologies are enabling industry to bring affordable, safe and easy-to-use features to the marketplace, including "Highway in the Sky" glass cockpit operating capabilities, affordable crashworthy composite airframes, more efficient IFR flight training and revolutionary aircraft engines. To facilitate this initiative, a comprehensive upgrade of public infrastructure must be planned, coordinated and implemented within the framework of the national air transportation system. State partnerships are proposed to coordinate research support in key public infrastructure areas. Ultimately, SATS may permit more than tripling aviation system throughput capacity by tapping the under-utilized general

Source: NASA Nebraska Space Grant & EPSCoR

FIGURE 2-3 SATS CONCEPTUALIZATION

aviation facilities to achieve the national goal of doorstep-to-destination travel at four times the speed of highways for the nation's suburban, rural and remote communities.

FIGURE 2-4 VLJ

The introduction of the Very Light Jet (VLJ) is a major milestone in aviation history. The small (less than 10,000 lbs.) jet can travel at speeds exceeding 400 knots at altitudes of 41,000 feet and is relatively inexpensive in the jet market. These aircraft will allow people to travel in jet aircraft to virtually any airport in the U.S due to the small size and the short length required for takeoff and landing. The demand for these aircraft is beginning to take shape. Estimates have forecasted as many as 4,500 VLJs flying by 2016. The majority of the VLJ market is expected to be business people who seek flexible traveling schedules and air taxi services. The lack of efficiency in the hub and spoke system is a major contributor to the VLJ market which will provide high-speed, low cost, convenient service to desired destinations.

The continued growth in fractional ownership arrangements is another significant industry trend. Fractional ownership arrangements allow businesses and individuals to purchase an interest in an aircraft and pay for only the time that they use the aircraft. According to the National Business Aviation Association (NBAA), in 1986, there were three owners of fractionally held aircraft. By 1993, there were 110. From 2000 to 2002, the number of companies and individuals using fractional ownership grew by 52 percent, from 3,834 to 5,827 shares; the growth from 1999 (2,607) to 2002 was 124 percent. The number of airplanes in fractional programs grew 11 percent in 2002, from 696 to 776. The shift toward turbine aircraft is likely a result of the success of fractional ownership, the introduction of new types of turbine aircraft and a transition from commercial air travel to corporate/business air travel as a result of September 11th.

AVAILABLE ACTIVITY FORECASTS

The first step in preparing aviation forecasts is to examine historical and existing activity levels and currently available forecasts from other sources. The FAA Terminal Area Forecasts (TAF) and the Arizona State Aviation Needs Study (SANS) 2000 were reviewed for the Colorado City Municipal Airport. The FAA TAF (December 2006) indicates 12 existing based aircraft for Colorado City Municipal Airport and 3,700 existing annual operations. The TAF numbers are forecast to remain constant through the year 2025. The Arizona SANS 2000 indicates 13 existing based aircraft and 4,233 existing annual operations at the Colorado City Municipal Airport. SANS 2000 includes a forecast of 19 based aircraft and 6,441 annual operations for Colorado City by the year 2020. The 1999 Colorado City Municipal Airport Master Plan projected 30 based aircraft and 13,500 operations by 2020.

FAA RECORDS OF BASED AIRCRAFT AND OPERATIONS

FAA Form 5010-1, *Airport Master Record*, is the official record kept by the Federal Aviation Administration to document airport physical conditions and other pertinent information. The record normally includes an annual estimate of aircraft activity as well as the number of based aircraft. This information is normally obtained from the airport sponsor. The accuracy of these documents varies directly with the sponsor's record keeping system. The FAA Form 5010-1 for the Colorado City Municipal Airport indicates 8-based aircraft (including one jet and one multiengine piston) and 5,390 annual aircraft operations. This form also breaks down the

Colorado City operations to 240 Air Taxi, 1,600 GA Local, 3,500 GA Itinerant and 50 Military operations. Airport management records and the inventory (August, 2007) for this Master Plan documented the seven based aircraft listed in Table 2-2.

EXISTING AVIATION ACTIVITY

According to the 2006 airport inventory and correspondence with the current airport manager, based aircraft and operations totals at the Colorado City Municipal Airport are similar to the numbers shown in the 5010.

There are currently seven aircraft based at the Colorado City Municipal Airport. The total annual operations estimate for the Colorado City Municipal Airport is approximately 4,500. For the purposes of this study, existing based aircraft and operations at the Colorado City Municipal Airport will be seven aircraft and 4,500 operations. These totals result in approximately 643 operations per based aircraft (OBPA).

The Colorado City Municipal Airport is currently an Airport Reference Code (ARC) B-II airport serving predominately single engine piston, multi-engine piston and turbo prop aircraft, with some use by light turbojet aircraft. Users include:

Air Medivac Services: Air medivac provides essential emergency medical transport in life threatening situations and patient transfers from clinics to higher level care facilities throughout the Colorado City area. These users utilize a variety of multi-engine turboprop and turbojet aircraft.

Business/Recreational Transportation: These users desire the utility and flexibility offered by general aviation aircraft. The types of aircraft utilized for personal and business transportation varies with individual preference and resources and generally include a mix of single-engine, multi-engine and turbojet aircraft. This category also includes hunting and tourism traffic. There will be an increased number of these users as the community continues to grow and the number of second homes increases.

Flight Training: Flight schools from other airports in the state and region have students perform cross-country flights to Colorado City Municipal Airport. Flight training includes instructional flying to obtain a pilot's license or proficiency checks including biennial flight reviews. The majority of aircraft used for flight instruction include single and multi engine piston.

TABLE 2-2 COLORADO CITY BASED AIRCRAFT

Type	Model	Tail Number	Type
Cessna	421	N283PT	MEP
Cessna	Citation	N47FH	TJ
Cessna	140	N76927	SEP
Cessna	172	N739MX	SEP
Cirrus	SR-22	N18DN	SEP
Cessna	182	N9024G	SEP
Piper	Super Cub	N9956T	SEP

SEP: Single-Engine Piston
TJ: Turbojet
MEP: Multi-Engine Piston

Source: Airport Management, August 2007

HISTORICAL BASED AIRCRAFT AND OPERATIONS

There is no accurate historical record of based aircraft and operations for the Colorado City Municipal Airport. According to the 1999 Airport Master Plan, there were 10 based aircraft in 1997 and approximately 3,500 annual operations. There are currently no commercial service or air cargo operations at the Colorado City Municipal Airport.

FORECASTS OF AVIATION ACTIVITY

FACTORS INFLUENCING AVIATION DEMAND

There are several factors that are influencing the aviation demand at the Colorado City Municipal Airport. These factors include the location of the community to several national monuments and parks. The economic development taking place in Colorado City and Hildale is a major factor in the demand for airport facilities. Private recreational, government and tourism flying will continue to be factors in the utilization of the airport.

BASED AIRCRAFT

A comparative analysis of based aircraft forecasts was accomplished using three methodologies to derive a preferred forecast of based aircraft for the Colorado City Municipal Airport. The first method utilized a bottom-up per capita approach that projects the number of based aircraft in direct proportion to the projected population of Colorado City and Hildale. This resulted in 14 based aircraft at Colorado City in 2026.

TABLE 2-3 PER CAPITA METHOD

Year	Population	Aircraft
2006	6,512	7
2011	8,862	10
2016	9,579	11
2021	11,085	12
2026	12,571	14

According to FAA Order 5090.3C, when forecast data is not available, a satisfactory procedure is to forecast based aircraft using the statewide growth rate from the December 2006 TAF and to develop activity statistics by estimating annual operations per based aircraft. The second forecasting method for based aircraft utilized the FAA's Terminal Area Forecast annual growth rate for the State of Arizona of 2 percent per year. This growth rate of 10 percent every five years results in approximately 12 based aircraft in Colorado City in 2026. The TAF Method has been selected as the preferred based aircraft forecast. With future improvements made to the facilities and increased landside development anticipated to take place the TAF reflected the most realistic increase in based aircraft.

TABLE 2-4 FAA TAF METHOD

Year	Based Aircraft
2006	7
2011	8
2016	9
2021	10
2026	12

*Preferred Based Aircraft Forecast

The third forecasting method for based aircraft utilized a market share analysis based on the State Aviation Needs Study (SANS 2000) forecast of based aircraft for Mohave County. The SANS 2000 based aircraft projection for Mohave County was applied to the existing demand level to estimate Colorado City's market share. This market share was then applied to the SANS 2000 aircraft projections. This resulted in 11 based aircraft in Colorado City in 2026.

TABLE 2-5 MARKET SHARE METHOD

Year	Mohave County Based Aircraft	Colorado City Market Share Aircraft
2006	501	7
2011	547	8
2016	601	8
2021	661	9
2026	773	11

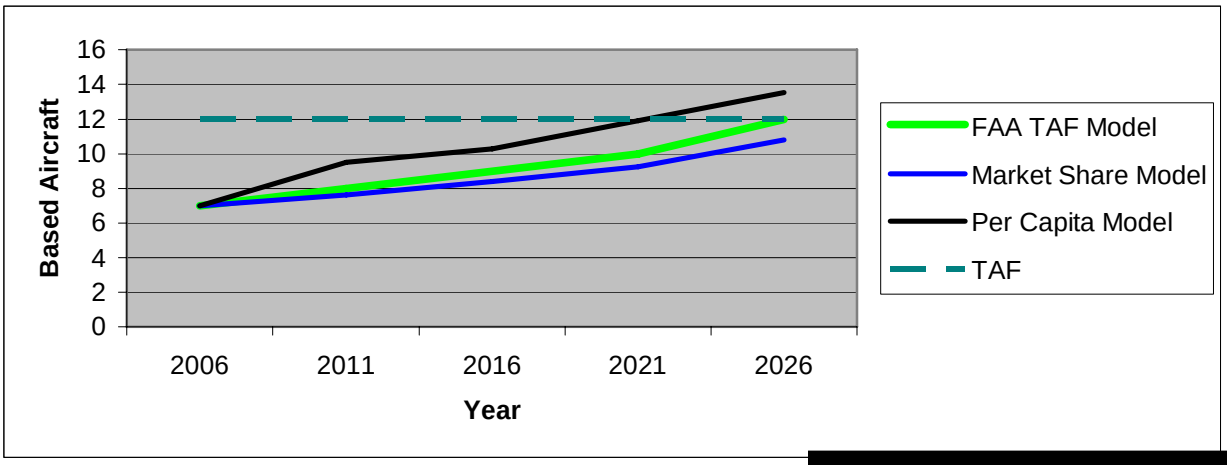

FIGURE 2-5 BASED AIRCRAFT FORECAST

ANNUAL AIRCRAFT OPERATIONS

In order to develop a preferred method of forecasting aircraft operations at the Colorado City Municipal Airport, a number of methods were analyzed. Each method utilizes the preferred based aircraft forecast of 12 based aircraft in 2026, then applies an operations per based aircraft (OPBA) to the based aircraft forecast. The methods are summarized as follows:

Method 1: Existing operations and based aircraft (643 OPBA)

Method 2: FAA Order 5090.3C (250 OPBA)

Method 3: All Arizona NPIAS GA Airports (459 OPBA)

Method 4: FAA Advisory Circular 150/5300-13 (679 OPBA)

For the first method, the base year level of operations per based aircraft of 643 was applied to the preferred based aircraft forecast. Applying 643 OPBA to the preferred based aircraft forecast (Table 2-3) results in 7,716 annual operations in 2026.

A general guideline from FAA Order 5090.3C, Field Formulation of the National Plan of Integrated Airport Systems (NPIAS) of 250 OPBA for rural general aviation airports with little itinerant traffic was applied to the based aircraft forecast for Method 2. Applying 250 OPBA to the preferred based aircraft forecast results in 3,000 forecast operations in 2026.

For the third method, the average OPBA for all Arizona general aviation airports included in the NPIAS was calculated. This average was calculated by dividing the number of based aircraft by the number of operations at each airport according to the SANS 2000 data. The average was calculated to be 459 OPBA. Applying 459 OPBA to the preferred based aircraft forecast results in 5,508 annual operations in 2026.

The fourth method, as outlined in FAA Advisory Circular 150/5300-13, applied 679 OPBA (for NPIAS Public Use Airports) to the preferred based aircraft forecast. This method results in a forecast of 8,148 operations in 2026.

These estimates provide a likely range of activity for future operations at the Colorado City Municipal Airport and are shown in Figure 2-6. Because aircraft operations are expected to continue at the same rate per based aircraft as current levels, Method 1 was determined to be

the most realistic and was therefore selected as the preferred operations forecast for the Colorado City Municipal Airport.

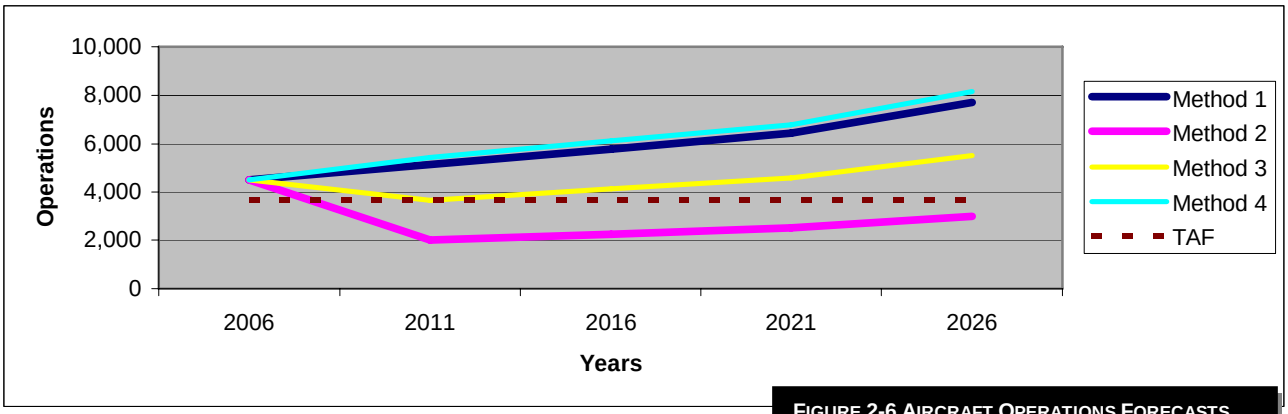

FIGURE 2-6 AIRCRAFT OPERATIONS FORECASTS

ITINERANT AND LOCAL OPERATIONS

Local operations consist primarily of training and recreational flights in the area. The remaining itinerant flights primarily consist of personal transportation, business transportation and recreational flights to and from other airports. The percentage of local versus itinerant operations is expected to trend toward the Arizona average of 58 percent itinerant and 42 percent local based on the anticipated airport users and fleet mix described in the following section. Anticipated users whose operations would likely be considered local include ranchers, aerial observation and surveying, recreation and tourism and flight training.

TABLE 2-6 PREFERRED FORECAST OF AVIATION ACTIVITY

Year	Based Aircraft	Local Operations	Itinerant Operations	Total Operations
2006	7	1,200	3,300	4,500
2011	8	1,372	3,772	5,144
2016	9	1,736	4,051	5,787
2021	10	2,315	4,115	6,430
2026	12	3,241	4,475	7,716

AIRPORT USERS AND FLEET MIX

Interviews with existing and potential users indicate the following types of operations are anticipated for the Colorado City Municipal Airport:

Ranchers: Ranching is one of the primary economic activities in this part of Arizona due to the vast expanse of ranch land. Aircraft are often used in ranching to inventory and locate livestock.

Aerial Observation and Surveying: With close proximity to the several state parks and monuments, the airport may provide a location for government agencies and private individuals to conduct environmental surveys, wildlife counts and other studies. Slow flying, single-engine aircraft are generally the preferred type of aircraft for this use.

Business Transportation: Business aviation users benefit by being able to travel to or from these business centers to conduct business activities in a single day, without requiring an overnight stay or extensive ground travel time. Local and other small businesses will generally utilize single-engine and multi-engine piston aircraft. Medium sized businesses and larger

corporations having a need to travel to the Colorado City/Hildale area would generally utilize multi-engine piston and turboprop aircraft and light to medium business jets respectively. This user category also includes state and federal agencies and travel by government officials.

Personal Transportation: These users desire the utility and flexibility offered by general aviation aircraft. The types of aircraft utilized for personal transportation vary with individual preference and resources and generally include a mix of single-engine, multi-engine and in some cases turbojet aircraft.

Recreational and Tourism: These users include transient pilots flying into the region to visit recreational and tourist attractions. These users mostly utilize single-engine piston aircraft; however, a small percentage may operate multi-engine piston aircraft. Other types of aircraft in this category include home-built, experimental aircraft, gliders and ultralights.

Air Medivac and Medical Services: Air Medivac provides essential emergency medical transport in life threatening situations. Medical services users would be physicians traveling into the airport to provide medical or dental services in the Colorado City/Hildale area. These users utilize a variety of multi-engine turboprop and turbojet aircraft such as Cessna 421's, Beech King Airs, Pilatus PC-12s and Lear Jets.

Flight Training: These users conduct local and itinerant flights in order to meet flight proficiency requirements for obtaining FAA pilot certifications. These flights include touch-and-goes, day and night local and cross-country flights and simulated approaches. Pilot certifications include Sport, Private, Instrument, Commercial, Instructor and Airline Transport ratings. Depending on the level of interest and aircraft availability, a multi-engine rating may or may not be available. A commercial rating may be accomplished with either a single-engine or multi-engine aircraft. Air transport ratings are usually obtained at larger regional FAR Part 121 certificated flight schools.

Search and Rescue: With the vast amount of land located within the Arizona Strip, local aircraft owners and pilots may be requested to assist in search and rescue efforts in the area. The Civil Air Patrol (CAP), a non-profit aviation-related organization is commonly known for providing these types of services on a volunteer basis. CAP also provides mentoring, flight instruction and in some cases aircraft rentals for members and trainees (Cadets). Generally, small single-engine aircraft are used for this purpose.

TABLE 2-7 DETAILED FORECASTS BY AIRCRAFT TYPE

		2006	2011	2016	2021	2026
Single Engine Aircraft		5	5	6	6	6
	Operations	3,700	3,894	4,287	4,730	5,766
Multi Engine Piston/Turbo Prop Aircraft		1	1	1	2	2
	Operations	300	400	500	550	600
Turbo Jet Aircraft		1	1	1	1	2
	Operations	300	400	450	500	600
Rotorcraft		0	0	0	0	0
	Operations	0	200	250	300	350
Experimental & Other		0	1	1	1	1
	Operations	200	250	300	350	400
Annual Operations		4,500	5,144	5,787	6,430	7,716

Based on these types of uses, local operations are expected to be conducted by predominately single-engine aircraft. Itinerant operations are expected to trend from primarily single engine piston aircraft towards the GAMA forecast fleet mix of 65 percent single-engine, 11 percent multi-engine, 6 percent jet, 3 percent helicopter, 15 percent experimental and other. These trends were applied to the operations forecast to derive the forecast by aircraft type shown in Table 2-7.

FIGURE 2-7 CESSNA 525 AT COLORADO CITY MUNICIPAL AIRPORT

AIRPORT SEASONAL USE DETERMINATION

A seasonal fluctuation in aircraft operations may be expected at any airport. This fluctuation is most apparent in regions with severe winter weather patterns and at non-towered general aviation airports. The fluctuation is less pronounced at major airports, with a high percentage of commercial and scheduled airline activity.

Non-towered airports generally experience a substantially higher number of operations in summer months than off-season months. The average seasonal use trend for FAA towered airports from the 1979-1984 records (total aircraft operations handled by tower facilities nationally from FAA Statistical Handbook of Aviation) was used as a baseline for determining seasonal use trends. As discussed above, the seasonal fluctuation is more pronounced at non-towered airports than towered airports. The seasonal use trend for towered airports was adjusted to approximate seasonal use trends at non-towered airports. This is presented in Table 2-8 and in Figure 2-8.

TABLE 2-8 SEASONAL USE TREND

Month	Non-towered	Towered
January	3.5%	7.2%
February	4.0%	8.2%
March	4.8%	8.6%
April	7.5%	9.0%
May	11.3%	9.1%
June	13.5%	9.4%
July	14.8%	9.1%
August	13.0%	8.7%
September	10.0%	8.7%
October	8.0%	7.8%
November	5.8%	7.1%
December	3.8%	7.1%

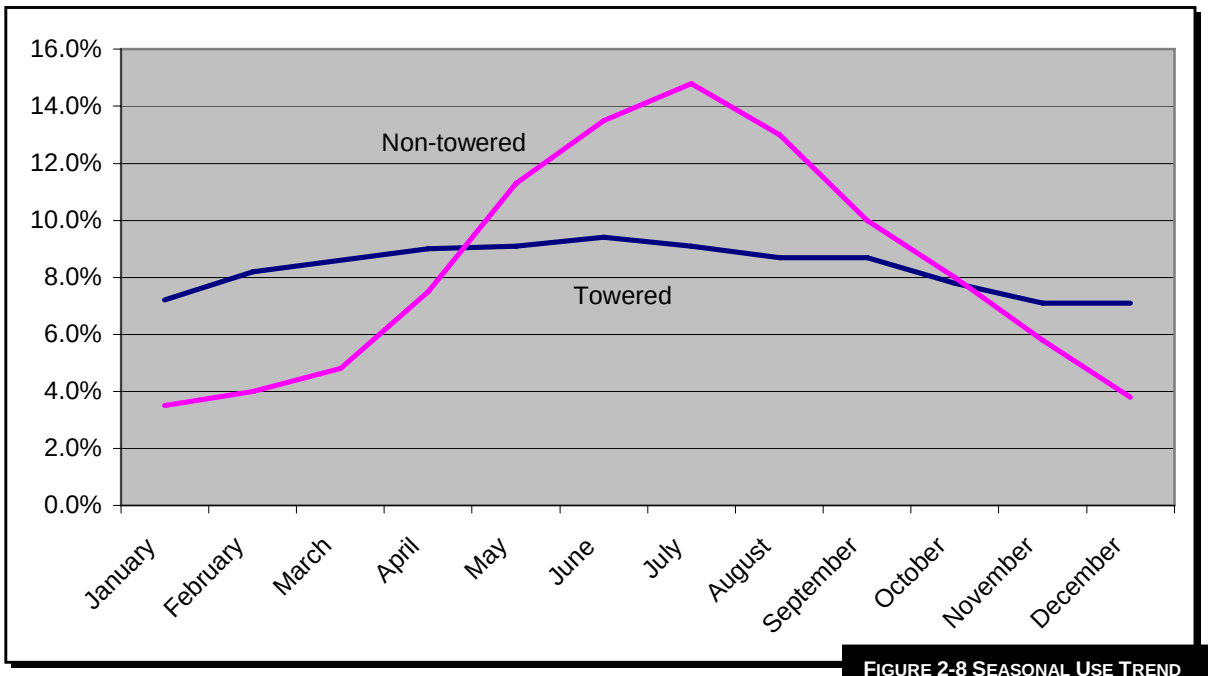

FIGURE 2-8 SEASONAL USE TREND

HOURLY DEMAND AND PEAKING TENDENCIES

In order to arrive at a reasonable estimate of demand at the airport facilities, it was necessary to develop a method to calculate the levels of activity during peak periods. The periods normally used to determine peaking characteristics are defined below:

Peak Month: The calendar month when peak enplanements or operations occur.

Design Day: The average day in the peak month derived by dividing the peak month enplanements or operations by the number of days in the month.

Busy Day: The Busy Day of a typical week in the peak month. In this case, the Busy Day is equal to the Design Day.

Design Hour: The peak hour within the Design Day. This descriptor is used in airfield demand/capacity analysis, as well as in determining terminal building, parking apron and access road requirements.

Busy Hour: The peak hour within the Busy Day. In this case, the Busy Hour is equal to the Design Hour.

The Seasonal Use Trend Curve, as presented in Figure 2-8, was used as a tool to determine the peaking characteristics for the Colorado City Municipal Airport. Using the Seasonal Use information, a formula was derived which will calculate the average daily operations in a given month, based on the percentage of the total annual operations for that month, as determined by the curve. The formula is as follows:

$$M = A (T / 100)$$
$$D = M / (365 / 12)$$

Where T = Monthly percent of use (from curve)
M = Average monthly operations
A = Total annual operations
D = Average Daily Operations in a given month

Approximately 90 percent of total daily operations will occur between the hours of 7:00 AM and 7:00 PM (12 hours) at a typical general aviation airport, meaning the maximum peak hourly occurrence may be 50 percent greater than the average of the hourly operations calculated for this time period.

The Estimated Peak Hourly Demand (P) in a given month was, consequently, determined by compressing 90 percent of the Average Daily Operations (D) in a given month into the 12-hour peak use period, reducing that number to an hourly average for the peak use period and increasing the result by 50 percent as follows:

$$P = 1.5 (0.90D / 12)$$

Where D = Average Daily Operations in a given month.
P = Peak Hourly Demand in a given month.

The calculations were made for each month of each phase of the planning period. The results of the calculations are shown in Table 2-9. As is evident in the Table, the Design Day and Design Hour peak demand in the planning year occurs under VFR weather conditions in the month of July (highlighted in bold in each Table), with 40 daily operations and approximately 4.5 operations per hour in 2026.

TABLE 2-9 ESTIMATED HOURLY DEMAND/MONTH
MONTHLY/DAILY/HOURLY DEMAND

Planning Year: 2011
Operations: 5,144

Month	% Use	Operations Monthly	Daily	Hourly
January	3.5	180	6	0.7
February	4.0	206	7	0.8
March	4.8	247	8	0.9
April	7.5	386	13	1.5
May	11.3	581	19	2.1
June	13.5	694	23	2.6
July	**14.8**	**761**	**25**	**2.8**
August	13.0	669	22	2.5
September	10.0	514	17	1.9
October	8.0	412	14	1.6
November	5.8	298	10	1.1
December	3.8	195	6	0.7

Planning Year: 2016
Operations: 5,787

Month	% Use	Operations Monthly	Daily	Hourly
January	3.5	203	7	0.8
February	4.0	231	8	0.9
March	4.8	278	9	1.0
April	7.5	434	14	1.6
May	11.3	654	22	2.5
June	13.5	781	26	2.9
July	**14.8**	**856**	**28**	**3.2**
August	13.0	752	25	2.8
September	10.0	579	19	2.1
October	8.0	463	15	1.7
November	5.8	336	11	1.2
December	3.8	220	7	0.8

Planning Year: 2021
Operations: 6,430

Month	% Use	Operations Monthly	Daily	Hourly
January	3.5	225	7	0.8
February	4.0	257	8	0.9
March	4.8	309	10	1.1
April	7.5	482	16	1.8
May	11.3	727	24	2.7
June	13.5	868	29	3.3
July	**14.8**	**952**	**31**	**3.5**
August	13.0	836	27	3.0
September	10.0	643	21	2.4
October	8.0	514	17	1.9
November	5.8	373	12	1.4
December	3.8	244	8	0.9

Planning Year: 2026
Operations: 7,716

Month	% Use	Operations Monthly	Daily	Hourly
January	3.5	270	9	1.0
February	4.0	309	10	1.1
March	4.8	370	12	1.4
April	7.5	579	19	2.1
May	11.3	872	29	3.3
June	13.5	1,042	34	3.8
July	**14.8**	**1,142**	**38**	**4.3**
August	13.0	1,003	33	3.7
September	10.0	772	25	2.8
October	8.0	617	20	2.3
November	5.8	448	15	1.7
December	3.8	293	10	1.1

INSTRUMENT OPERATIONS

According to the FAA TAF, 45 percent of the total aircraft operations in Arizona are instrument operations. This number is forecast to increase to 51 percent by 2020. Since virtually all commercial and business jet flights and most military aircraft flights are IFR, the number of instrument operations does not reflect the occurrence of instrument weather or the provision of instrument approaches at airports. At most general aviation airports with an instrument approach and no commercial service or military activity, instrument operations will comprise approximately 2.5 percent of total operations. The majority of general aviation operations are under VFR. Business transportation and air medivac/air ambulance are the most likely users of the instrument approaches at Colorado City with annual instrument operations approximately 0.2 percent of total operations. The number of instrument operations for 2006 were reviewed using GCR airport data which indicated 112 IFR filed flight plans to and from Colorado City Municipal Airport.

FORECAST SUMMARY

Multiple forecasts were prepared for the Colorado City Municipal Airport. Activity estimates were made for based aircraft operations and the ultimate fleet mix at the airport. These forecasts represent low, medium and high expected activity trends. The FAA TAF forecasts based aircraft and operations to remain constant over the 20 year planning period. However, the interest in basing aircraft at the airport shows the potential demand at the airport. This demand is currently constrained by the lack of available hangar space and the lack of a future terminal area plan at the airport. Once a terminal area plan is developed, Colorado City can begin leasing ground on the airport to allow aircraft owners to construct hangars at the airport. Another option for Colorado City is to construct hangars and lease the hangar space to these aircraft owners. This potential demand for basing aircraft and operating at the Colorado City Municipal Airport explains why the master plan preferred forecasts exceed the TAF forecasts by more than 10 percent. Table 2-10 shows the forecast summary for the Colorado City Municipal Airport Master Plan.

TABLE 2-10 FORECAST SUMMARY

	Enplanements			Itinerant Operations					Local Operations					
Year	AC	COMM	TOTAL	AC	AT & COM	GA	MIL	TOTAL	GA	MIL	TOTAL	TOT OPS	INST OPS	BASED AC
2006	0	0	0	0	100	3,200	0	3,300	1,200	0	1,200	4,500	112	7
2011	0	0	0	0	115	3,657	0	3,772	1,372	0	1,372	5,144	128	8
2016	0	0	0	0	129	4,115	0	4,244	1,543	0	1,543	5,787	144	9
2021	0	0	0	0	143	4,572	0	4,715	1,715	0	1,715	6,430	160	10
2026	0	0	0	0	171	5,487	0	5,658	2,058	0	2,058	7,716	192	12