Whiteman Airport Master Plan Update
Interim Report

February 2009

Whiteman Airport
Master Plan

INTERIM REPORT

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Chapter 1
Introduction

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INTRODUCTION

Whiteman Airport is a 187 acre publicly owned facility that serves the aviation needs of the City of Pacoima and surrounding areas of Los Angeles County. The airport is owned by the County of Los Angeles Department of Public Works, Aviation Division and operated by a private management company through an agreement with the County. In order to determine the potential of the airport and specific opportunities for improving facilities, the County sponsored an airport master plan through a planning grant from the FAA Airport Improvement Program (AIP). In July 2008, a contract was awarded to DMJM Aviation, Inc. of Orange, California to prepare a master plan for Whiteman Airport.

This document comprises the Phase 1 Interim Report for the airport master plan that documents the initial elements of the work program including inventory, market assessment and forecasts, and facility requirements. This is intended as a working document and will be superseded by subsequent documents, namely the Draft Final Report for the airport master plan. This report serves the purpose of documenting existing conditions, presenting the forecast of general aviation demand to be used for planning, and the identification of facilities needed to accommodate the demand through the year 2030.

PURPOSE AND SCOPE OF STUDY

The main objective of this study is to prepare an airport master plan to determine the extent, type and schedule of development needed to accommodate future aviation demand at the airport. The recommended development shall be a twenty year program and presented in the following three planning periods: Phase 1 (2009-2013); Phase 2 (2014-2018); and Phase 3 (2019-2030). The recommended development should satisfy aviation demand, community development, and other transportation modes. Above all else, the plan must be technically sound, practical, and economically feasible. The following objectives shall also serve as a guide in the preparation of the study:

- To provide an effective graphic presentation of the ultimate development of the airport.
- To present the pertinent backup information and data which were essential to the development of the airport master plan.
- To describe the various concepts and alternatives which were considered in the establishment of the proposed plan.
- To provide a concise and descriptive report so that the impact and logic of its recommendations can be clearly understood by the community the airport serves and by those authorities and public agencies that are charged with the approval, promotion, and funding of the improvements proposed in the master plan.

- To ensure reliability and safety of airport operations.

THE PLANNING PROCESS

A transportation planning study, such as this, is accomplished by following some fundamental, sequential steps that are briefly stated as an overview of the work to be accomplished. The initial step involves taking inventories of existing facilities and systems, documenting existing conditions, and coordinating activities with other agencies. Next, an assessment of air traffic demand is undertaken and forecasts are prepared and then translated into a listing of required facilities. Once this list is determined it is possible to compare requirements with existing facilities to identify deficiencies. Alternative development concepts that satisfy the deficiencies are then developed and evaluated so that a recommended concept is identified. Once identified, the preferred alternative will then be detailed and examined in terms of a staged development plan. This report documents the first three basic steps outlined above that need to be accomplished in preparing the master plan. These are documentation of existing conditions, forecast of aviation demand, and determination of facility requirements.

It should be noted that the airport master plan focuses on the airport and the planning of facilities within its property boundary. The evaluation of off-airport areas is considered to the extent that acquisition of land is required for airport use, or that off-airport areas are impacted by airport noise or height restrictions. The airport master plan is not intended as a comprehensive general development plan for the area surrounding the airport or community. However, it can be coordinated or incorporated into other community development programs.

PLANNING ISSUES

The master plan includes opportunities for airport tenants to review and comment. Three meetings, at key points of the project are included. The first tenant review meeting was held at Whiteman on September 9, 2008 and the purpose of the meeting was to identify key planning issues and explain to tenants the process of a master plan and share preliminary findings. The meeting comprised of two parts: an informational presentation, and an open house. Key members of the consultant team were available and four stations were established (Existing Conditions, Preliminary Forecast, Key Issues, and Project Approach) allowing tenants to ask questions and voice their concerns. Minutes prepared for the meeting were distributed to airport tenants and are included as Appendix A of this report. Key issues identified were:

- Replacement of the terminal building, that includes meeting rooms, restaurant, viewing areas, pilot lounge, restrooms, grassy area with trees and adequate vehicle parking
- Change in fleet mix (accommodations for helicopters)
- Segregation of vehicle and air traffic
- Determination of best use for available land for aviation facilities
- Relocation of fuel facilities
- Compass rose location
- Derelict aircraft occupying tie-down spaces
- Competition of flight schools (have at least two)
- Hangar and tie-down rates
- Land use zoning of the hill on airport property and potential aviation uses; possible terraced development on hill
- Security including installation of lights, cameras, and better gate control
- Weed control
- Runway 30 hold apron perimeter fence clearance; possible IFR hold apron
- Rehabilitation/maintenance of County hangars
- Provide shade hangars; retain portable hangars
- Weatherproofing and providing electricity to all hangars
- Install ASOS/AWOS

GOALS AND OBJECTIVES

Planning can be defined as a rational process for formulating and meeting desired goals and objectives that properly express the benefits that such a plan will produce for its users. Goals are defined as desired ends relating to the physical, social, or economic context as to how the airport should develop and how it should be operated. It should be pointed out that goals might not entirely be attainable. Objectives, on the other hand, are specific and attainable actions, which lead to the attainment of goals. The goals and objectives serve as a foundation used to guide the planning process. They can also be used to rate the merits of alternative plans.

The following preliminary goals and objectives were developed based on the planning team's master planning experience and the discussion of issues at the first tenant review meeting.

GOAL NO. 1 – Function: The airport should accommodate based aircraft owners and needs of existing and anticipated tenants.

Objectives:

1. Provide through planning, an orderly and timely development of facilities adequate to meet future air transportation needs.
2. Develop the role of the airport in terms of its specific capabilities and demand.
3. Accommodate those classes of general aviation aircraft operations consistent with the airport role.
4. The plan should be expandable and flexible.

GOAL NO. 2 – Safety: The operation of the airport related to all aspects of air transportation for the users, operators, and general public should be safe.

Objectives:

1. Minimize exposure to risk.
2. Conformance with FAA regulations and airport design standards.
   - FAA Advisory Circular 150/5300-13, Airport Design (latest version)
   - FAR Part 77, Objects Affecting Navigable Airspace which forms the basis for zoning regulations to prevent obstructions to air navigation.
3. Segregation of vehicles and aircraft operating areas.

GOAL NO. 3 – Efficiency and Economy: The airport should achieve financial self-sustenance.

Objectives:

1. Maximize best possible use of existing facilities.
2. Make best use of airport property for landside development through application of appropriate airport design standards.
3. Maximize the ability to implement the plan.
4. Consider use of property not needed to accommodate long-term aviation demand for other revenue producing uses.
5. Identify means of local funding requirements, including revenue from possible non-aviation uses of airport property.
6. Minimize costs to users, operators, and general public.

GOAL NO. 4 – Environment: The airport should be developed and operated with a minimum of adverse effects on the social and natural environment.

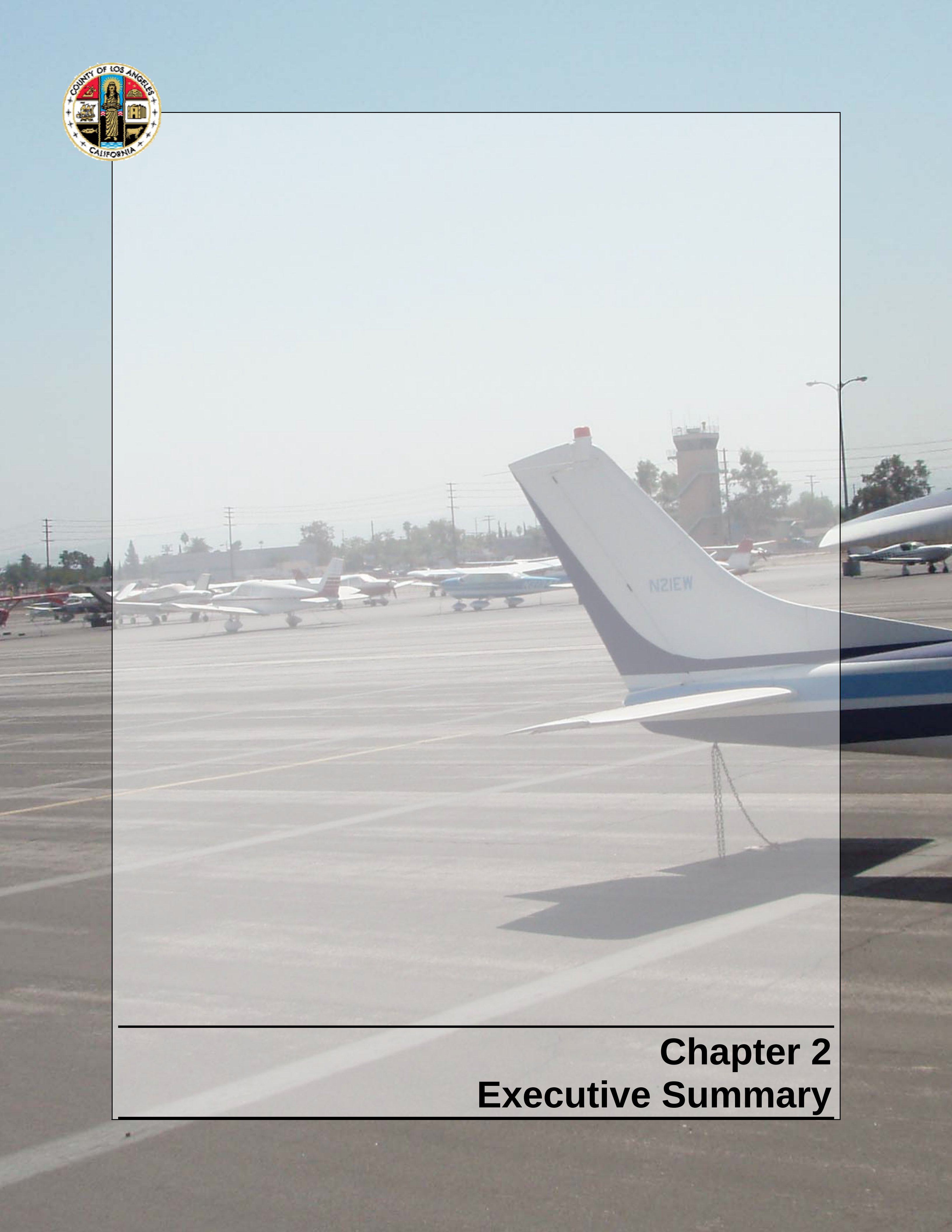
Objective:

1. Develop new airport facilities and correct deficiencies in existing aviation facilities to conform to Federal and State environmental regulations.

GOAL NO. 5 – Local Compatibility: The airport should be developed in agreement with proposed land use plans.

Objectives:

1. The plan should agree with the goals of the Los Angeles County General Plan.
2. The plan should provide information for off-airport land use planning and control to facilitate updating of the CLUP and assure compatibility with operations.



Chapter 2
Executive Summary

Chapter 2

Executive Summary

INTRODUCTION

The findings, conclusions, and development recommendations of the master plan are highlighted in this executive summary. It should be noted that the development recommendations contained in this report are based upon projected traffic levels and attainment of these levels. It cannot be overemphasized that where development is recommended based upon demand or traffic levels, it is ***actual***, not forecast, demand that dictates the timing of construction. However, for planning purposes, a schedule must be provided and this schedule is based upon the development concept requirements and the forecasts of traffic presented in Chapter 4.

It is also important to point out that the schedule of improvements proposed in this plan is contingent upon the availability of Federal, State, and local funds and private investment. While improvements will eventually be scheduled for specific years in this master plan, it must be remembered that it is the programming of the Airport Improvement Program by the FAA that will determine the timing of projects eligible for FAA funding assistance. Development projects at Whiteman Airport must be reconciled with the development priorities of other airports in the region. In terms of projects not eligible for FAA monies, the implementation will depend on the availability of local funds and private sources. Thus, the implementation of the recommendations will depend upon FAA programming and funding availability, as well as the attainment of the projected traffic levels.

The following subsections highlight the forecast of aviation demand and the initial findings on required facilities. Details on the various master plan elements can be found in subsequent chapters of this report. Chapter 3 describes the existing airport and conditions. The forecast of aviation demand and the translation of the future demand into a list of required facilities can be found in Chapters 4 and 5, respectively. Appendix A contains the meeting minutes from the first tenant review meeting. To assist the reader, a glossary and list of abbreviations used in this report has been provided as Appendix B. Appendix C is a questionnaire that was distributed to owners of based aircraft at the airport.

AIRPORT ROLE

The airport will continue to serve in its present role as a general aviation (GA) airport and significant changes in the GA role are not expected. The airport will continue to primarily serve small, personal use aircraft and helicopters. This role was confirmed during the first Tenant Review meeting.

FORECASTS OF AVIATION DEMAND

Aviation demand forecasts are projections of air traffic levels at an airport. In the case of Whiteman Airport, a general aviation airport, the forecast used the FAA Terminal Area Forecast (TAF) as a basis of projects.

Historical and a range of projected based aircraft are graphically presented in Figure 2-1. A based aircraft is one that is permanently stationed at an airport, usually by some form of agreement between the aircraft owner and the airport management. This forecast value is useful in developing projections of aircraft activity, as well as determining future needs of certain airport elements. As detailed in Chapter 4, three forecasts were developed: TAF, TAF Adjusted, and TAF Reconciled.

The TAF Adjusted and Reconciled forecasts were developed to compensate for the large difference in based aircraft noted in the TAF from existing conditions (the TAF noted an additional 110 based aircraft). TAF Reconciled shifts the entire forecast by 110 aircraft, the difference between the TAF and present day based aircraft levels. TAF Adjusted initially shifts the forecast to account for existing conditions, but also assumes that Whiteman will attract new based aircraft owners at a slightly accelerated rate.

For the purposes of this master plan, the TAF reconciled (which reconciled differences between the TAF forecast and existing conditions) was selected and is represented by the solid blue line in Figure 2-1.

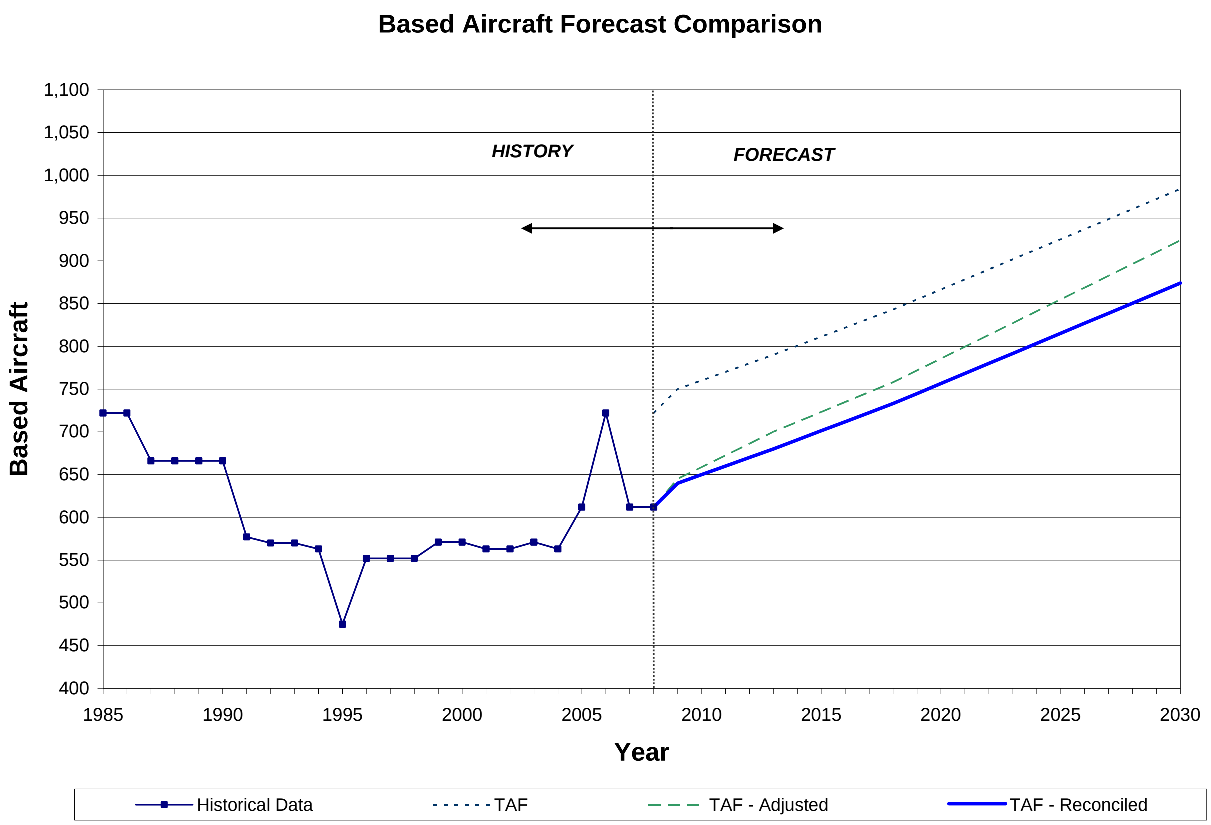


Figure 2-1
Historical and Forecast Based Aircraft

Table 2-1 provides based aircraft information (by aircraft type) for each phase of the master plan.

Aircraft operations are projected to increase from present levels of approximately 93,200 to 143,500 by the year 2030. Itinerant operations are projected to be slightly more than local operations, and account for approximately 55 percent of total operations. Table 2-2 presents the forecast of annual aircraft operations.

Table 2-1
FORECAST OF BASED AIRCRAFT

Aircraft Type	2008	2009	2013	2018	2030
Single Engine Piston	553	575	611	658	783
Multi-Engine Piston	34	35	37	40	48
Turboprop	10	13	14	15	17
Turbine Jet	3	3	3	4	7
Helicopter	13	13	15	15	18
Total	**612**	**640**	**680**	**733**	**874**

Source: DMJM Aviation analysis.

Table 2-2
FORECAST AIRCRAFT OPERATIONS

	Actual	Forecast		
Operations Category	**2007**	**2013**	**2018**	**2030**
Local Operations				
Single Engine Piston	36,970	46,600	49,200	56,520
Multi-Engine Piston	2,270	2,850	3,010	3,470
Turboprop	680	1,040	1,100	1,260
Turbojet	170	260	330	500
Helicopter	850	1,120	1,150	1,320
Itinerant Operations				
Single Engine Piston	47,060	54,710	60,140	71,930
Multi-Engine Piston	2,890	3,350	3,680	4,420
Turboprop	870	1,220	1,340	1,610
Turbojet	220	300	400	640
Helicopter	1,080	1,310	1,410	1,690
Military				
Local Operations	0	0	0	0
Itinerant Operations	140	140	140	140
Total Local Operations	40,900	51,900	54,800	63,100
Total Itinerant Operations	52,300	61,000	67,100	80,400
Total Operations	**93,200**	**112,900**	**121,900**	**143,500**

Source: DMJM Aviation analysis.

FACILITY REQUIREMENTS

Chapter 5 presents the projection of facility requirements deemed necessary to accommodate the forecast aviation demand through the year 2030. Listed below are the initial findings and conclusions of the analysis.

Airside

- For this master plan the airport is designated as airport reference code (ARC) B-I, small aircraft exclusively. This is consistent with the forecast and is the airport reference code that is reflected on the current Airport Layout Plan. This will ensure that general aviation aircraft that currently use the airport will be provided adequate facilities.

- Airfield capacity is sufficient to accommodate forecast operations. However, the master plan should consider capacity enhancements in the ultimate layout of the airfield where practical.

- The existing runway provides 99.66 percent coverage for a 10.5 knot (12 mph) crosswind and 99.82 percent for a 13 knot (15 mph) crosswind which exceeds the FAA recommendation of 95 percent wind coverage.

- The runway safety area (RSA) is non-standard as it is traversed by Pierce Street (Runway 12), Osborne Street (Runway 30), and local residential areas. Deficiencies are mitigated through the application of declared distances.

- Pierce Street and Osborne Street traverse the runway obstacle free zones of Runway 12 and 30, respectively. Obstacle free zone is provided through the application of declared distances.

- Pierce and Osborne Streets also obstruct the runway object free areas of Runway 12 and 30. Residential areas are also contained within the extended runway object free areas. Declared distances provide full runway object free area.

- The Runway 12 protection zone (RPZ) includes portions of Sutter Avenue, Jouett Street, Carl Street, Hoyt Street, and industrial uses. Runway 30's RPZ includes Wingo Street, San Fernando Road, Correnti Street and Bromwich Street. Both RPZs include residential development.

- Pavement maintenance will be needed throughout the planning period. The County is planning an apron slurry seal project in the short-term.

- Declared distances are currently applied to the airport. Declared distances are not typically found at a general aviation airport and consideration should be taken to eliminate them.

Landside

- The existing terminal facilities are not adequate for forecast demand. Approximately 7,920 total square feet may be needed in 2030. In addition, it is recommended that a 4,000 square foot restaurant be accommodated at the airport in 2030.

- The existing parking apron is not capable of meeting requirements for based aircraft and transient tie-downs in the year 2030. Forecasts for 2030 indicate the need for 290 based aircraft tie-downs that require an additional 78 tie-downs. In 2030, 34 total transient tie-downs are required. Currently there are eight transient tie-downs, resulting in an additional 26 required by 2030.

- New individual hangars should be provided for based aircraft. Based on the forecast, this results in the need for 147 new individual hangars; however, existing hangars that are in poor condition should also be replaced by new hangars.

- Additional rectangular/conventional hangar space (fixed wing) of approximately 8,800 square feet is needed to meet long-term requirements. The master plan should also provide space for future development of conventional hangars by a Fixed Base Operator (FBO), or other tenant.

- Based on the 2030 forecast, 6,480 square feet of rectangular/conventional hangar space for helicopters should be provided.

- The existing fuel storage capacity is adequate for the master plan period.

Table 2-3 summarizes the landside facility requirements.

Table 2-3
SUMMARY OF LANDSIDE FACILITY REQUIREMENTS

Item	Existing	2013	2018	2030	Additional Facilities (2030)
GA Terminal (SF)	2,800	6,270	6,710	7,920	5,120*
Transient Apron (number of aircraft/area in SY)					
Single engine/Multi-engine	8/5,340	24/7,737	27/8,299	32/10,295	24/5,045
Turboprops/Small jets	1 acft.	1/1,600	1/1,600	2/3,200	1/1,600
Individual hangars (spaces)	407	432	465	554	147
Conventional Hangar Space (SF) (fixed wing)	36,865	33,275	36,475	45,690	8,825
Rectangular/Conventional Hangar Space (SF) (helos)	8,100	12,150	12,150	14,580	6,480
Based Aircraft Tie-downs (number of aircraft)	212	227	244	290	78
Auto Parking (spaces)	152	186	199	234	82
Airport Maintenance (acres)	0.5	0.5	0.5	0.5	0
Fuel Storage (gallons)					
Avgas	20,000	20,000	20,000	20,000	0
Jet A	20,000	20,000	20,000	20,000	0

* Including meeting rooms and office spaces
SF = square feet, SY = square yards
Source: DMJM Aviation.

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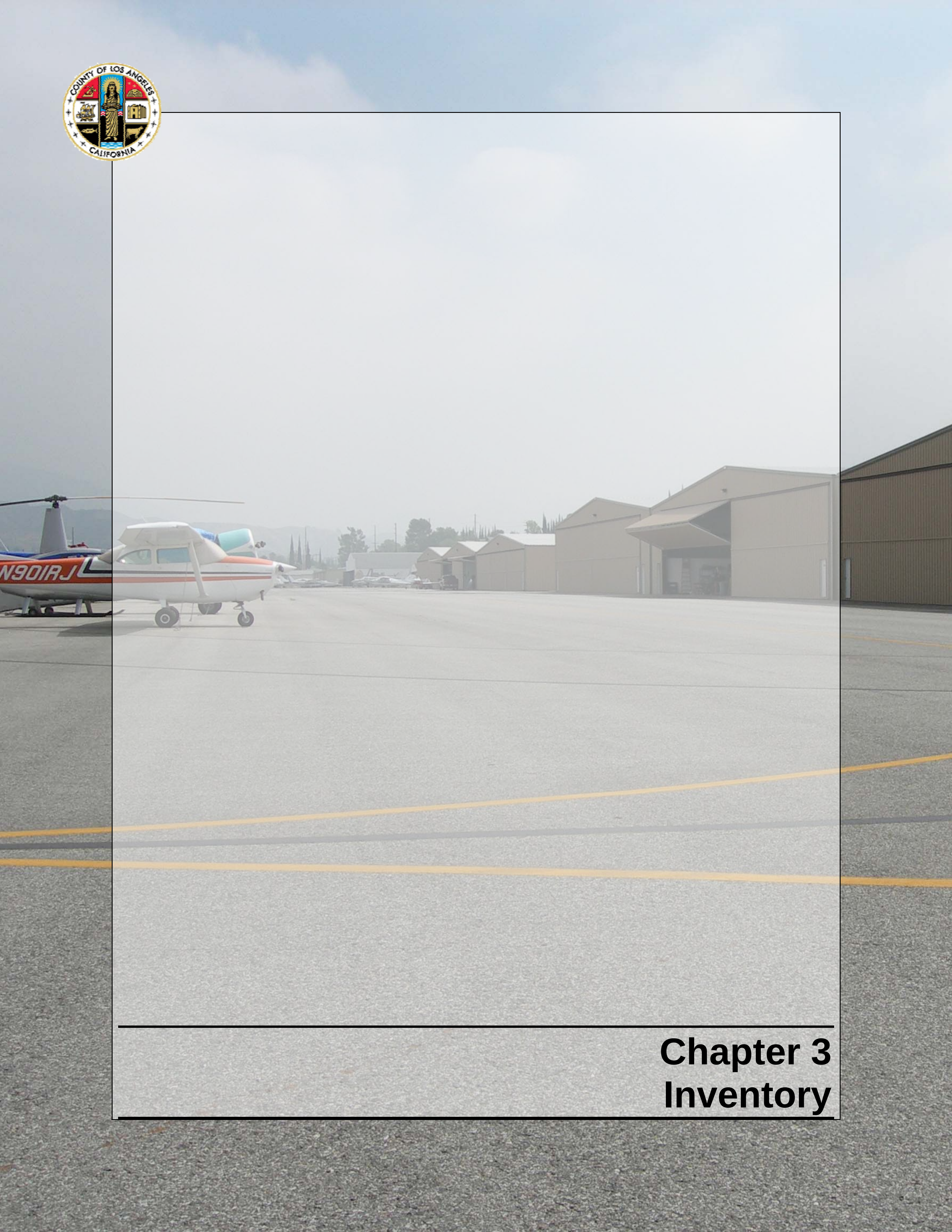

Chapter 3
Inventory

Chapter 3
Inventory

INTRODUCTION

This chapter documents the number, type, and general condition of the existing facilities that comprise Whiteman Airport (WHP). It is a complete compilation of all systems, including airfield, terminal area, ground access, parking, NAVAIDS, pavement conditions, utilities, and the physical characteristics of the airport site.

A comprehensive inventory of existing facilities is made to assess their capacity to accommodate future traffic volumes. By comparing the capacity of existing facilities with future traffic volumes as defined by the FAA Terminal Area Forecast, capacity deficiencies were determined. Once the deficiencies are identified, alternative expansion concepts (capable of accommodating future demand) can be formulated, evaluated, and ultimately, a recommended development program formulated.

AIRPORT HISTORY

In 1946, Marvin E. Whiteman, a Los Angeles County businessman, saw the need for a public-use aviation facility in the northeast portion of the San Fernando Valley and established Whiteman Airpark on his land. As traffic and number of aircraft and pilots increased, Whiteman began leasing additional land from the County. The Whiteman Airpark was attractive because Mr. Whiteman only charged parking and fuel fees.

By the late 1960's, the number of airports in Los Angeles County were declining and Whiteman Airpark's existence was in danger. To prevent the Airpark being turned into an industrial park, the Board of Supervisors purchased Mr. Whiteman's 32 acres in 1970 and changed its name to Whiteman Airport.

Through continued expansion and renovation by the County, the airport now encompasses 184 acres of land, has an FAA Airport Contract Control Tower (which was approved by the FAA in 1988), and is currently home to over 600 aircraft.

Since 1984, the airport has received several Airport Improvement Plan (AIP) grants as can be seen in Table 3-1.

EXISTING AIRPORT

Whiteman Airport is situated in the northwestern portion of Los Angeles County, in the San Fernando Valley. The airport is owned by the County of Los Angeles Department of Public Works, Aviation Division. The airport is operated by a private management company through an agreement with the County. The Los Angeles County Aviation Commission – comprised of 10 members – serves as an advisor to the Board of Supervisors, Regional Planning Commission, and Department of Public Works.

Members are appointed by each of the Supervisors to represent his/her respective district. Commission members generally serve a four year term.

Table 3-1:
AIRPORT IMPROVEMENT PROJECTS AT WHITEMAN
1984 through 2008

Year	Project Number	Description
1984	001-1984	Improve Access Road, Construct Taxiway, Install Apron Lighting, Improve Airport Drainage
1986	002-1986	Improve Airport Drainage
1988	003-1988	Conduct Airport Master Plan Study
1993	004-1993	Taxiway, Install Runway Lighting, Install Runway Vertical/Visual Guidance System
1999	005-1999	Remove Obstructions, Acquire Land for Approaches
2001	006-2001	Improve Access Road
2002	007-2002	Expand Access Road
2003	008-2003	Construct Service Road
2006	009-2006	Rehabilitate Runway, Rehabilitate Taxiway
2007	010-2007	Update Airport Master Plan Study (this project)
2008	011-2008	Update Airport Master Plan Study (this project)
2008	012-2008	Construct Apron

Source: FAA – Office of Airports

The airport is one of five airports owned by Los Angeles County. The County also owns Brackett Field, Compton/Woodley, El Monte, and General William J. Fox Airfield. Whiteman is also one of nine public airports operating in Los Angeles County. The other airports are Bob Hope Airport (Burbank), Van Nuys Airport, Santa Monica Airport, Agua Dulce Airport, Los Angeles International Airport, El Monte Airport, Jack Northrop Field/Hawthorne Municipal Airport, and Compton/Woodley Airport. Location of the airport with respect to ground access is very good. Interstate 5 is approximately one mile southwest of the airport, with access primarily by Osborne Street and Airport Entrance Roadway. A Union Pacific Railroad owned railroad line, adjacent to the airport, parallels the runway. The location of the airport and the local highway system is graphically presented in Figure 3-1, Vicinity Map.

Whiteman Airport is contained in the National Plan of Integrated Airport Systems (NPIAS) and is classified as a Reliever Airport. Reliever airports are defined as general aviation airports that provide general aviation access to the surrounding area and have 100 or more based aircraft or 25,000 annual itinerant operations. In the NPIAS there are 274 airports designated as reliever airports. These 274 airports have an average of 232 based aircraft each, which is 29 percent of the nation's total general aviation fleet. Whiteman has over 600 based aircraft and nearly 44,000 itinerant operations. The function of a reliever airport is to reduce the aircraft mix at a Commercial service primary airport and provide a less congested airport for smaller jet and general aviation operations.

For comparison, a General Aviation (GA) airport is one that serves a community that does not receive scheduled commercial air service. There are 2,574 airports in the nation with this designation and these airports account for 40 percent of the Nation's general aviation fleet. Reliever airports are also general aviation airports that serve GA near large congested commercial airports.

The airport is classified as a Metropolitan-Business/Corporate Airport in the California Aviation System Plan (CASP). This is a functional classification developed by the State to categorize airports based on an airport's function, services provided, and role in the aviation system. Whiteman is included in the Los Angeles/Desert Region (Region 8) of the CASP. This region is comprised of San Bernardino, Ventura, Los Angeles, Orange, Riverside, and Imperial Counties.

Figure 3-1
Vicinity Map

Planning standards contained in FAA AC 150/5300-13, Airport Design, were applied in this master plan study of Whiteman Airport using standards for Airplane Design Group (ADG) I, small airplanes exclusively. Design Group I is defined as aircraft with wingspans up to but not including 49 feet and tail heights up to but not including 20 feet. A “small airplane” is an airplane of 12,500 pounds or less maximum certified takeoff weight. The Airport Reference Code identified on the current Airport Layout Plan and previous master plan reflected Design Group I, small airplanes exclusively, and assumed a Beech King Air as the critical (design) aircraft. Other popular aircraft in this Design Group include Cessna 150, Cessna 172, Cessna Citation CJ1, Beech Bonanza, and Piper Navajo. Application of planning and design standards for this aircraft group ensures that all aircraft that could be expected to use the airport will be accommodated by facilities of appropriate design.

AIRSIDE FACILITIES

The term "airside" as used in this report relates principally to the airfield facilities, or landing area, and includes the runway and taxiway system, the runway approach areas and the associated appurtenances such as airfield lighting, visual, and navigation aids. One might argue that the aircraft parking aprons are also part of the airside operating element; however, we prefer to consider aprons as part of the "landside" because apron planning considerations are more intimately associated with passenger terminal or FBO operations which are classified in the landside element. Air traffic control facilities and meteorological considerations are also addressed in the airside facility discussion as they can significantly affect aircraft operations into and out of an airport. Existing airside and landside facilities are shown in Figure 3-2, Existing Airport.

Runway/Taxiway System

The airport has one runway, designated 12-30 and encompasses 184 acres. The runway is of asphalt construction and is 4,120 feet long and 75 feet wide. The true bearing of the runway is North 41° 01’ 37” West.

The present airport reference point (ARP) is located at 34° 15' 33.8" North latitude and 118° 24' 48.4" West longitude. The established airport elevation, defined as the highest point along any of an airport's runways, is 1,003 feet above mean sea level (MSL). As of September 2008, the magnetic declination was 12° 58’ East with an annual rate of change of -5 minutes per year.

Runway 12 is the preferred Runway, and it is used for approximately 90 percent of the operations at the airport. Runway 30 is primarily used during IFR operations. Based on information contained in the latest U.S. Government Flight Information Publication Airport/Facility Directory the runway pavement strength is 12,500 pounds for single wheel landing gears. Pertinent runway end data obtained from the Airport Layout Plan is:

	Runway 12	**Runway 30**
Elevation	1,003.0’	960.0’
Latitude	34º 15′ 48.7″	34º 15′ 18.1″
Longitude	118º 25′ 4.5″	118º 24′ 32.1″

The runway is equipped with medium intensity edge lights (MIRL). The runway is marked with basic runway markings that include centerline, designator (runway number), and threshold. Threshold markings are for a visual runway. Runway markings should be for a non-precision runway, since the airport presently has non-precision approaches.

Runways 12 and 30 feature displaced landing thresholds. Landing thresholds may be displaced due to an obstacle within the approach surfaces to the runway. The threshold for Runway 12 is displaced 729 feet due to a power line approximately 200 feet from the runway end, 45 feet right (south) of the extended

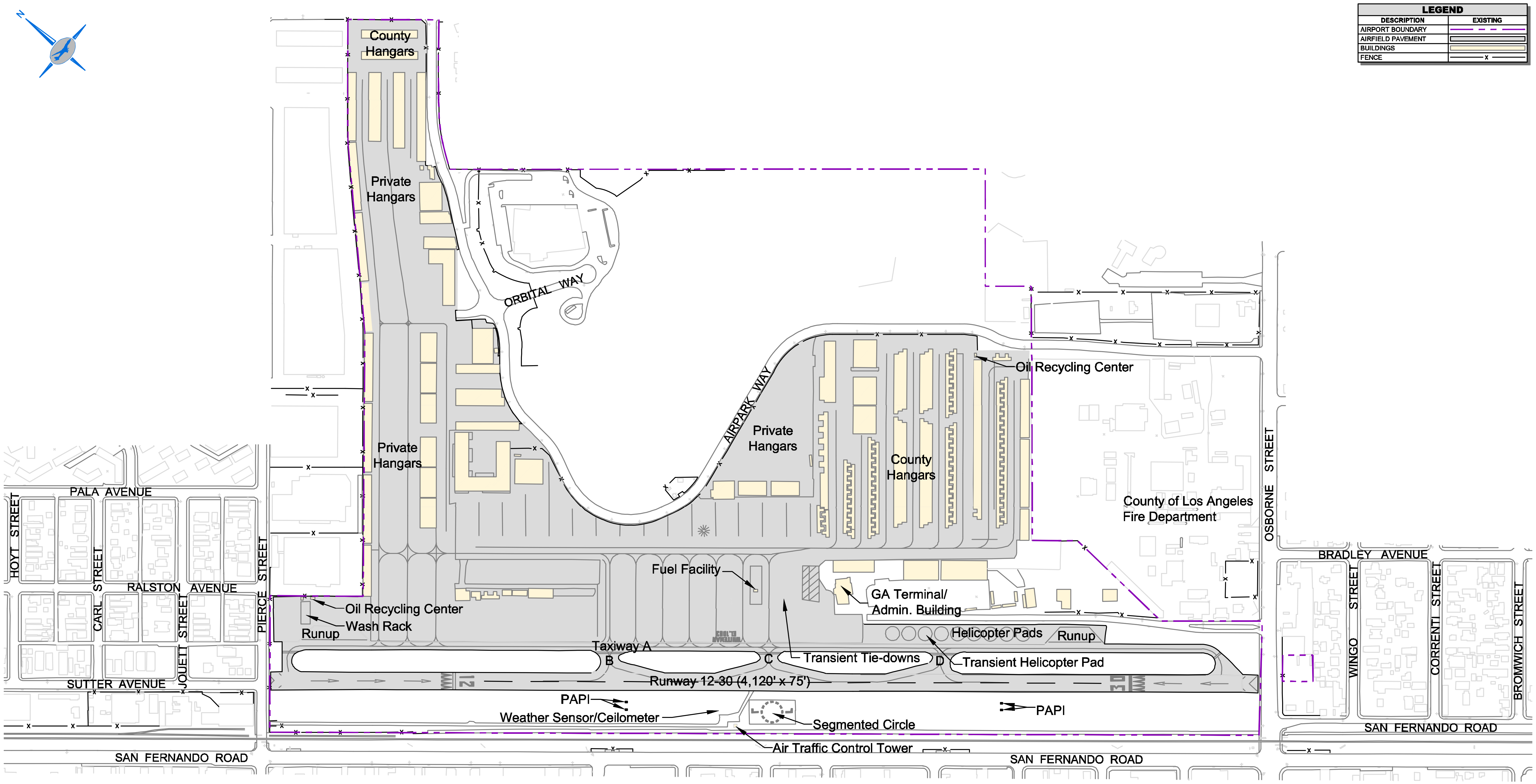

Figure 3-2
Existing Airport

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runway centerline. Runway 30's threshold is displaced 478 feet, due to a power line, with obstruction lights, 200 feet from the runway end, 10 feet right (north) of the extended runway centerline.

A segmented circle and lighted wind sock are located south of the runway, approximately midfield. This marking system helps visiting pilots locate wind indicators, as well as indicating nonstandard traffic patterns that may exist. The traffic pattern for Runway 12 is left-hand and for Runway 30 is right-hand.

The runway is served by a 35-foot wide parallel taxiway (Taxiway A) on the north side of the runway. Taxiway A also serves as an entrance taxiway to both runway ends. Other taxiways are as follows:

- **Taxiway B** – a 75-foot wide exit taxiway located approximately 660 feet from the runway threshold of Runway 12.
- **Taxiway C** – a 75-foot wide exit taxiway located approximately midfield.
- **Taxiway D** – a 75-foot wide exit taxiway located approximately 2,090 feet from the threshold of Runway 12.

Deviations from FAA Airport Design Standards

There are deviations from standard FAA airport design standards. Extended runway safety areas and object free areas – beyond the runway end – are required to be 240 feet. The runway object free zone requires 200 feet beyond the physical end of the runway. Due to the airport perimeter fence, the existing lengths are 55 feet at Runway 12 and 78 feet at Runway 30. Power lines southwest of the runway penetrate the 7:1 transitional surface. Furthermore, objects are penetrating the 20:1 approach surface at both ends of the runway.

While it is desirable to clear all objects from the runway protection zone (RPZ), some uses are permitted, provided they are outside of the runway object free area (ROFA), and do not interfere with navigational aids. Land uses specifically prohibited from the RPZ are residences and places of public assembly (such as churches, schools, hospitals, office buildings, shopping centers and other uses with similar concentrations of persons typify places of public assembly). Fuel storage facilities may not be located in the RPZ. The RPZ is divided into two components: the central portion of the RPZ and the controlled activity area. The central portion of the RPZ is the same width as the runway object free area, and extends the entire length of the RPZ. Automobile parking facilities are not permitted within the central portion of the RPZ. Trees located within the RPZ should not be allowed to penetrate approach and departure surfaces. Through discussions with the FAA it has been discovered that future roads will be deterred from being within the RPZ.

At Whiteman the runway protection zones contain areas of residential, commercial, and industrial uses. 24 buildings are completely within and 14 buildings are partially within the RPZ for Runway 12. Additionally, several streets traverse Runway 12's RPZ, including Sutter Avenue, Jouett Street, Carl Street, and Hoyt Street. Contained within the limits of the RPZ associated with Runway 30 are 41 complete and eight partial buildings and San Fernando Road, Correnti Street, Wingo Street, and Bromwich Street.

Declared Distances

Declared distances are applied when standard safety areas beyond the runway threshold are not met. Deviations from the runway safety area, runway obstacle free zone, and runway object free area are mitigated through the application of declared distances. Four distances are declared for each runway end: takeoff run available (TORA); takeoff distance available (TODA); accelerate stop distance available (ASDA); and, landing distance available (LDA). Takeoff run available is the declared length of runway available and suitable for the ground run of an airplane taking off. Takeoff distance available is the length of the takeoff run available, plus the length of the clearway, where provided. Accelerate stop distance available is the length runway and stopway available and suitable for the acceleration and deceleration of an airplane aborting a takeoff. Landing distance available is the length of the runway which is declared available and suitable for the ground run of an airplane landing. The following are the published declared distances for Whiteman Airport:

Distance	Runway 12	Runway 30
Takeoff Run Available (feet)	3,442	3,191
Takeoff Distance Available (feet)	4,120	4,120
Accelerate Stop Distance Available (feet)	3,910	3,940
Landing Distance Available (feet)	3,181	3,462

Meteorological Considerations

Meteorological considerations for this master plan are based on weather observations taken at the airport as obtained from the National Climatic Data Center (NCDC). This is a part-time facility, conducting weather observations during the day time only, and therefore, consists of only 14,435 weather observations. These observations are taken at Whiteman Airport over the period 1999 through 2007. The analysis resulted in the preparation of wind roses which will be included on the Airport Layout Plan.

The existing runway configuration provides 99.42 percent coverage for a 10.5 knot crosswind. FAA states in AC 150/5300-13 that the allowable crosswind is 10.5 knots for Airport Reference Codes A-I and B-I. The coverage provided by the present runway meets the FAA recommendation of 95 percent crosswind coverage, thus additional runways for improved crosswind coverage are not required.

The average wind speed is 7 knots and calm wind conditions (less than 4 knots) prevail approximately 47.6 percent of the time. Wind speeds of 17 knots (19 mph) and greater are infrequent and occur approximately 0.6 percent of the time.

Based on the data provided by the NCDC, instrument flight rules (IFR) weather conditions occur 4.2 percent of the time. These are periods when cloud ceilings are less than 1,000 feet above ground and/or visibility is less than 3 miles. Periods of IFR are most likely to occur during October (6.6 percent), January (4.8 percent), and March and May (4.6 percent). These four months account for approximately 41 percent of all IFR conditions throughout the year. Weather conditions prevail so that the airport is closed (visibility greater than 1 mile and ceilings greater than 900 feet) approximately 4.3 percent of the time.

The airport reference temperature, which is defined as the mean maximum temperature of the hottest month, is 89.1° and occurs in July. This is based on historical data compiled by the NCDC at the Burbank Valley Pump Plant (Station 041194). The average total annual precipitation is 16.35 inches. These are based on weather observations for the period 1939 through 2007.

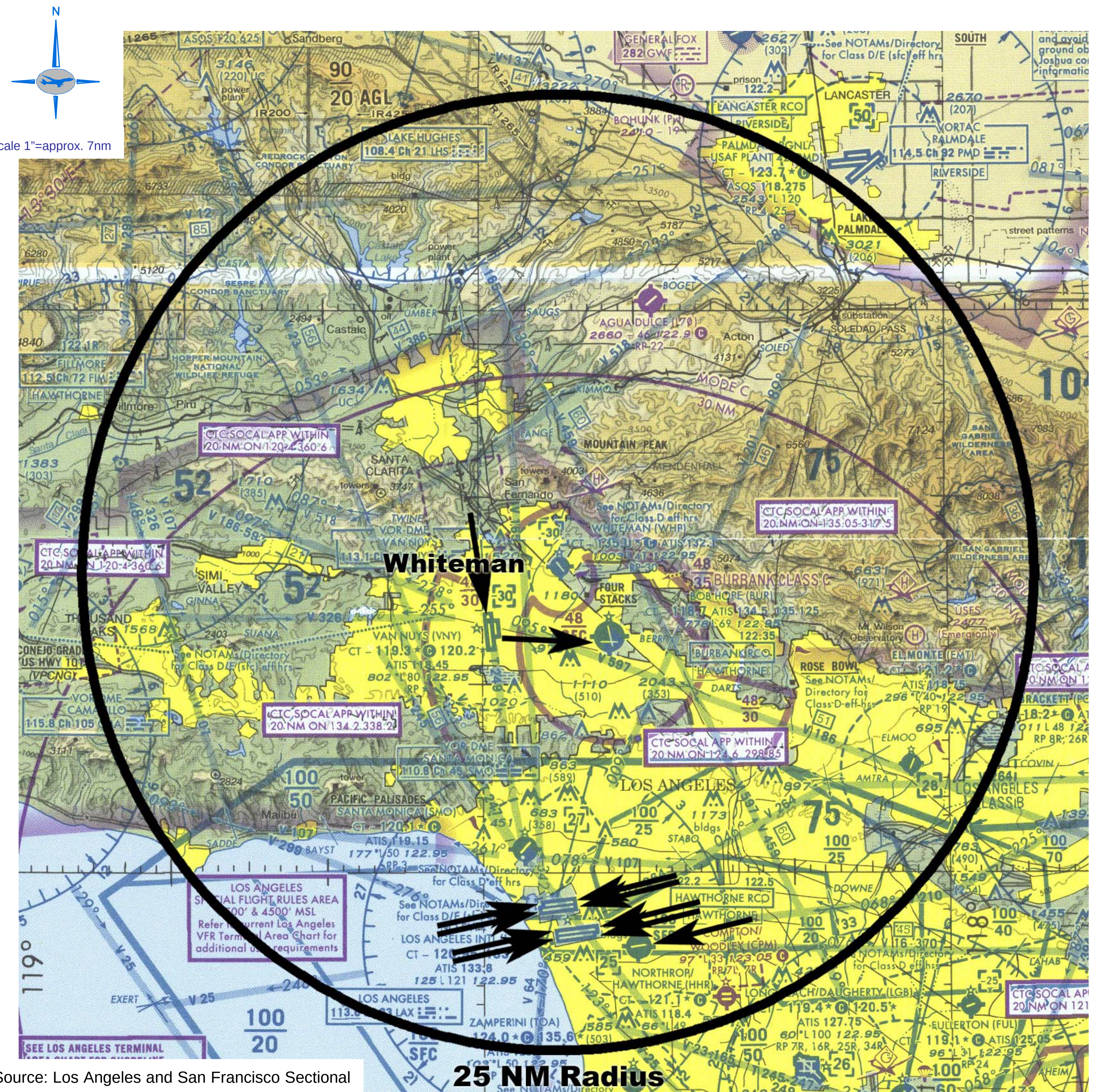
Helicopter Operating Area

Nine helipads have been developed on the north side of the airport parallel to Taxiway A, adjacent to the Runway 30 runup apron. Helipad number three is designated as the transient helipad, and is located across from Taxiway B. The helicopters will either follow the runway pattern during training or practice on the runup pad adjacent to the helipads. Helicopters use the runway, taxiway, and/or run-up areas to practice maneuvers. Due to its location, the apron containing the helipads can become congested, especially when an aircraft is on Taxiway A and a helicopter is occupying the apron. This can lead to delays. These conflicts are infrequent and primarily occur in IFR conditions, when Runway 30 is in use.

AIRSPACE AND NAVIGATIONAL AIDS

Airspace

The existing system of enroute airways, navigational aids, and airports located within a 25 nautical mile (nm) radius of Whiteman Airport is depicted on Figure 3-3. The low altitude airways which traverse the



Source: Los Angeles and San Francisco Sectional Aeronautical Chart, December 18, 2008.

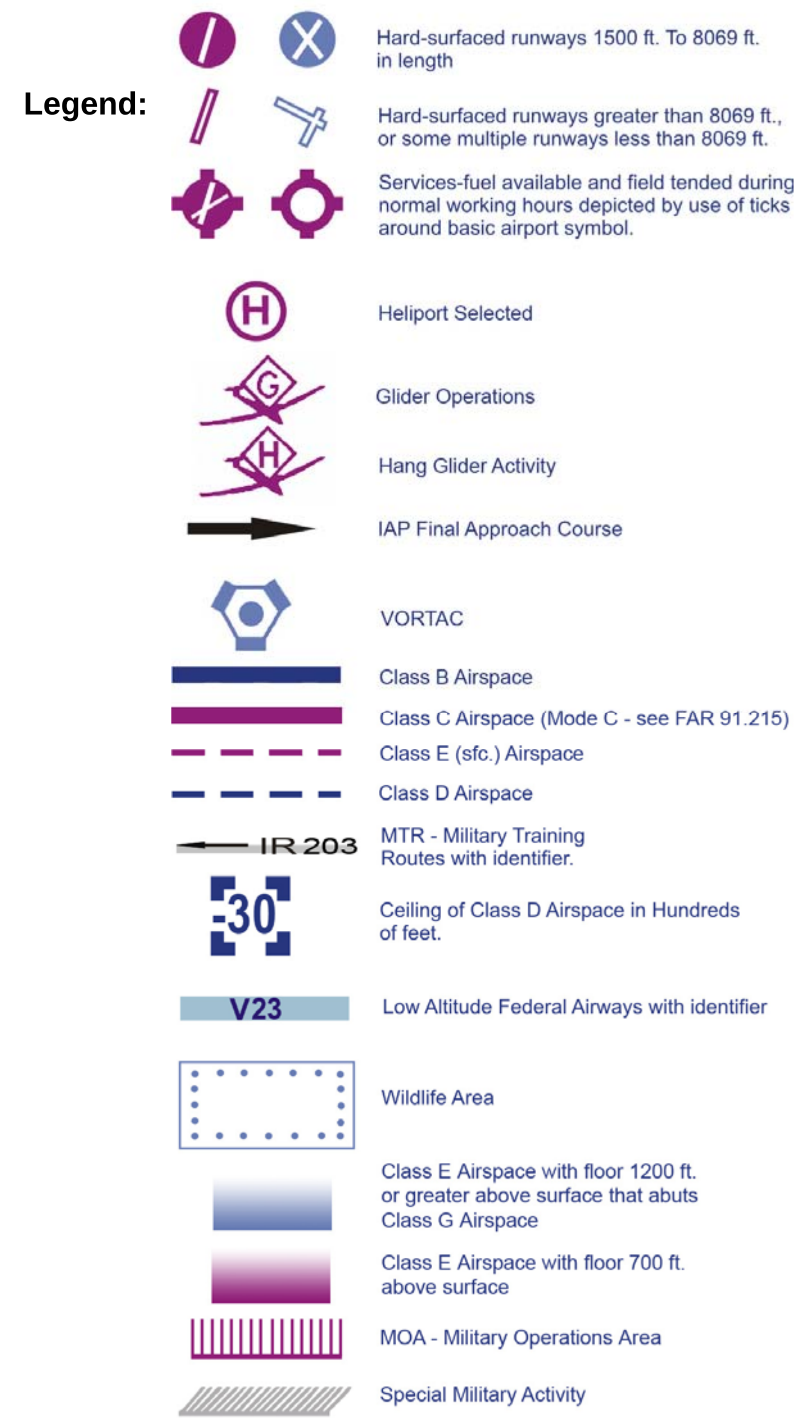


Figure 3-3
Airspace Environment and Adjacent Airports

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area serve those enroute aircraft flying below 18,000 feet MSL. Including Whiteman Airport, there are nine airports within 25 nautical miles of the airport which are shown on Figure 3-3. Eight of the nine airports (including Whiteman) are publicly owned airports. These are Northrop/Hawthorne, Los Angeles International, Santa Monica, El Monte, Bob Hope (Burbank), Compton/Woodley, and Van Nuys. Table 3-2 presents the eight neighboring airports within the 25 nautical mile radius and includes a summary of facilities and services. Public airports located immediately beyond the 25 nautical mile radius include Zamperini Field, Long Beach/Daugherty, and Palmdale Regional/USAF Plant.

Controlled airspace means an area in which some or all aircraft may be subject to air traffic control. It is a generic term that covers the different classification of airspace (Class A, Class B, etc.) and defined dimensions within which air traffic control service is provided to instrument flight rules (IFR) and visual flight rules (VFR) flights in accordance with the airspace classification. The various controlled airspace areas found in the vicinity of Whiteman Airport are discussed below.

- **Class B Airspace.** Class B airspace consists of the airspace surrounding airports that serve at least 5 million enplaned passengers annually and whose total operations count 300,000 (of which 240,000 are air carriers and air taxi). A Class B designation contributes to the efficiency and safety of operations. The airspace should be designed in a circular configuration around the primary airport of which the outer limits should not exceed 30 nautical mile laterally and 10,000 feet MSL vertically. This airspace will then be subdivided into three concentric circles at 20 and 10 nautical miles. These airspace areas generally consist of a surface area with an additional layer above it, resembling an upside-down wedding cake. At the 30 nautical mile limit laterally, usually there is a Mode C veil where all aircraft are required to be flying with a working Mode C transponder. Pilots are required to obtain air traffic control (ATC) clearance prior to entering Class B airspace. Within Class B airspace, air traffic controllers are required to separate aircraft operating under VFR from aircraft operating under IFR, but are not required to separate VFR operations from one another. The nearest Class B airspace is approximately 10 nautical miles south of Whiteman and is associated with Los Angeles International Airport (LAX). Whiteman is within LAX's Mode C veil.

- **Class C Airspace.** Class C airspace consists of the airspace surrounding airports that have an operational airport traffic control tower (ATCT), are serviced by radar approach control, and accommodate minimum levels of aviation activity as specified by the FAA. Class C airspace is individually tailored for the airports they serve. These airspace areas generally consist of a surface area with an additional layer above it, resembling an upside-down wedding cake. Pilots are required to establish two-way radio communications with the ATC facility providing air traffic services prior to entering Class C airspace and must maintain those communications while in the airspace. Within Class C airspace, air traffic controllers are required to separate aircraft operating under VFR from aircraft operating under IFR, but are not required to separate VFR operations from one another. The nearest Class C airspace is associated with Bob Hope (Burbank) Airport. Bob Hope's Class C airspace extends over Whiteman. The portion of the airspace over Whiteman has a floor of 3,000 feet and a ceiling of 4,800 feet.

- **Class D Airspace.** This is generally airspace from the surface to 2,500 feet above the airport elevation surrounding those airports that have an operational control tower. The area is generally defined as all area within five statute miles (4.3 nautical miles) of the airport; however, the circular configuration can be tailored when instrument approach procedures are published for an airport. Whiteman Airport is designated as Class D Airspace and has a ceiling of 3,000 feet when the ATCT is operated. After hours, when the tower is closed, Whiteman reverts to Class G airspace. No separation services are provided to VFR aircraft in the Class D airspace area. Other Class D airspace areas within 25 nautical miles of Whiteman are associated with El Monte Airport to the southeast and Santa Monica Airport to the south.

Table 3-2
AIRPORTS IN THE VICINITY OF WHITEMAN AIRPORT
(Radius of 25 nautical miles)

Airport	Distance from Delano (nm)	Runways	Runway Surface	Ownership	Based Aircraft	Individual Hangars	Fuel	Maintenance	Control Tower
Whiteman Airport	-	12-30(4,120')	Asphalt	Public	708	330	100LL/Jet A	Major	Yes
Bob Hope	4.4 SE	08-29(5,801'); 15-33(6,886')	Asphalt	Public	113	102	100LL/Jet A	Major	Yes
Van Nuys	4.8 SW	16L-34R(4,011'); 16R-34L(8,001')	Asphalt	Public	776	195	100LL/Jet A	Major	Yes
Santa Monica	14.7 S	03-21(4,973')	Asphalt	Public	408	130	100LL/Jet A	Major	Yes
Agua Dulce	15.4 N	04-22(4,600')	Asphalt	Private	34	47	100LL	[a]	None
Los Angeles International	19.0 S	06L-24R(8,925'); 06R-24L(10,285'); 07L-5R(12,091'); 7R-25L(11,095')	Asphalt	Public	4	None	Jet A	Major	Yes
El Monte	21.5 SE	01-19(3,995')	Asphalt	Public	343	291	100LL/Jet A	Major	Yes
Northrop/Hawthorne	20.6 S	07-25(4,956')	Concrete	Public	153	None	100LL/Jet A	Major	Yes
Compton/Woodley	23.7 S	07L-25R(3,322'); 07R-25L(3,322')	Asphalt	Public	209	190	100LL	Major	None

Source: DMJM Aviation analysis of FAA Form 5010; Individual hangars are from 1998 California Aviation System Plan.
[a] Data not available.

- **Class E Airspace.** There are two types of Class E airspace in the vicinity of Whiteman; one starts 700 feet above the surface, or ground, and the other starts at the surface. Class E airspace is controlled airspace, but is the least stringently controlled airspace classification in terms of pilot certification, aircraft equipment, entry requirements, etc. No separation services are provided to VFR aircraft in the Class E airspace area. The closest Class E airspace starting at 700 feet above the surface is approximately 3 nautical miles east of the airport. The closest Class E airspace starting at the surface is about 4 nautical miles west of the airport associated with Van Nuys Airport.

- **Class G Airspace.** Class G airspace includes all airspace not otherwise classified below flight level 600 (60,000 feet). There are no entry or clearance requirements, even for IFR operations. Class G airspace is uncontrolled airspace and radio communication is not required. It is typically near the ground, beneath Class E Airspace. Whiteman Airport reverts to Class G airspace when the ATCT is closed.

There are no special use airspace areas (Prohibited, Restricted, Warning, or Military Operations Areas) within 25 nautical miles of the airport. However, several areas regarding flights over charted National Park Service, U.S. Fish and Wildlife Service and U.S. Forest Service exist within a 25 nautical mile radius. These are depicted on Figure 3-3 and include the Sespe and San Gabriel Wilderness Area, Sespe Condor Sanctuary, and Hopper Mountain National Wildlife Refuges. These are areas where aircraft are requested to maintain an altitude of at least 2,000 feet above ground.

A corridor of Special Military Activity is within 25 nautical miles of Whiteman (approximately 20 nautical miles north of the airport). This corridor is centered upon military training route IR 200. The Department of Defense conducts periodic operations involving unmanned aircraft systems along this route. These aircraft may be accompanied by military or other aircraft to provide the pilots of unmanned aircraft systems visual observation information about other aircraft operations near them. The corridor has a floor of 2,000 feet above ground level and a ceiling of 9,000 feet MSL.

Victor Airways are airspace routes typically used by low-performance aircraft that fly at lower altitudes than commercial jets, including propeller and turboprop commuter and general aviation aircraft. Victor airways are also frequently used to define the route structures used by higher performance aircraft flying below 18,000 feet MSL. Victor airways are defined in terms of the radial headings that extend outwards from VORs and VORTACs. Low altitude federal airway segments in the vicinity of the airport can be seen on Figure 3-3 and are listed in Table 3-3.

As seen in Table 3-3 numerous Victor Airways are present within 25 nautical miles of Whiteman. Victor Airways are used primarily by pilots that have filed IFR flight plans, including pilots of commercial aircraft. Pilots who have not filed such flight plans fly under VFR. In Southern California, preferred VFR Flyways have been designated to keep these VFR flights from interacting with IFR traffic.

Two military training routes (VR1257 and VR1265) traverse the airspace within 25 nautical miles of the airport approximately 16 nautical miles north of Whiteman. These two military routes combine into one and the common route is roughly parallel to V186.

Figure 3-4 depicts the various airspace classes in the vicinity of Whiteman and shows the designated VFR flyways (shown by blue bands) and transition routes (shown in red) in the region. The bands represent approximate locations of the flight corridors used by VFR flights. Altitude restrictions associated with these flyways are also shown on the figure. VFR transition routes require air traffic control clearance.

Table 3-3:
VICTOR AIRWAYS NEAR WHITEMAN AIRPORT

Route	Direction	VOR/VORTAC	Notes
V12	east/west	Palmdale VORTAC, San Marcus VORTAC	
V16 - 370	east/west	Los Angeles VORTAC, Riverside VOR	
V23	northwest/southeast	Gorman VORTAC, Santa Monica VOR-DME	
V23 - 165	northwest/southeast	Los Angeles VORTAC, Seal Beach VORTAC	via V25
V25	northwest/southeast	Los Angeles VORTAC, Poggi VOR	via San Diego
V64	north/south	Los Angeles VORTAC, Seal Beach VORTAC	via V8-64
V107	north/south	Santa Monica VOR-DME, Los Angeles VORTAC	via V107-264
V165	north/south	Lake Hughes VORTAC, Los Angeles VORTAC	
V186	northwest/southeast	Riverside VOR, Van Nuys VOR-DME	via V597
V201	northeast/southwest	Palmdale VORTAC, Los Angeles VORTAC	
V210	northeast/southwest	Palmdale VORTAC, Los Angeles VORTAC	via Pomona and V394
V264	east/west	Los Angeles VORTAC, Palmdale VORTAC	via V107-264, 46º LAX turns to 254º POM
V299	east/west	Los Angeles VORTAC, Camarillo VOR-DME	
V326	east/west	Camarillo VOR-DME, Van Nuys VOR-DME	
V386	east/west	Palmdale VORTAC, Fillmore VORTAC	
V459	northwest/southeast	Lake Hughes VORTAC, Seal Beach VORTAC	via V597
V518	northeast/southwest	Palmdale VORTAC, Fillmore VORTAC	218º PMD turns to 87º FIM
V597	northwest/southeast	Fillmore VORTAC, Seal Beach VORTAC	via V186-597, 95º VNY turns to 319º SLI

Source: DMJM Aviation analysis.

Whiteman Airport has two published instrument approach procedures, both of which are classified as non-precision instrument approaches. An instrument approach procedure is a series of predetermined maneuvers for the orderly transfer of an aircraft under instrument flight conditions from the beginning of the initial approach to a point where a landing may be made visually. The procedure provides protection from obstacles that could jeopardize safety of aircraft operations by providing a specific clearance over obstacles. There are two types of procedures - precision and non-precision instrument approaches. A precision approach procedure is one in which an electronic glide slope is provided that gives the pilot glide path, or specific descent profile guidance. A non-precision approach is a procedure in which no electronic glide slope is provided. In this case the pilot is provided with directional, or azimuth, guidance only. Table 3-4 summarizes the instrument approaches and navigational aids for the airport and shows the NAVAID, location of the NAVAID, type of procedure and the lowest landing minima of nearby airports.

Plan and profile views of the Whiteman instrument approach procedures are presented in Figures 3-5 and 3-6.

Published instrument approaches are available at six of the public airports within 25 miles of the airport (see Table 3-4). These are Bob Hope (Burbank) Airport, Van Nuys Airport, Santa Monica Airport, Los Angeles International Airport, El Monte Airport, and Northrop/Hawthorne Airport. Bob Hope has five approaches, Van Nuys has four approaches, Santa Monica has one approach, Los Angeles International has 22 approaches, El Monte has three approaches, and Northrop/Hawthorne has two approaches. Los Angeles International Airport has excellent approach capabilities landing minima down to 200 foot ceilings and ½ mile visibilities on ILS or LOC approaches for Runways 6R, 7R, 25L, 25R, and 24L. Additionally, Los Angeles International has two Category IIIc approaches (Runways 24R and 25L). Category IIIc approaches have no decision heights and no visual range limitations, the system is capable of using an aircraft's autopilot system to land the aircraft.

Figure 3-4
Airspace in the Vicinity of Whiteman Airport

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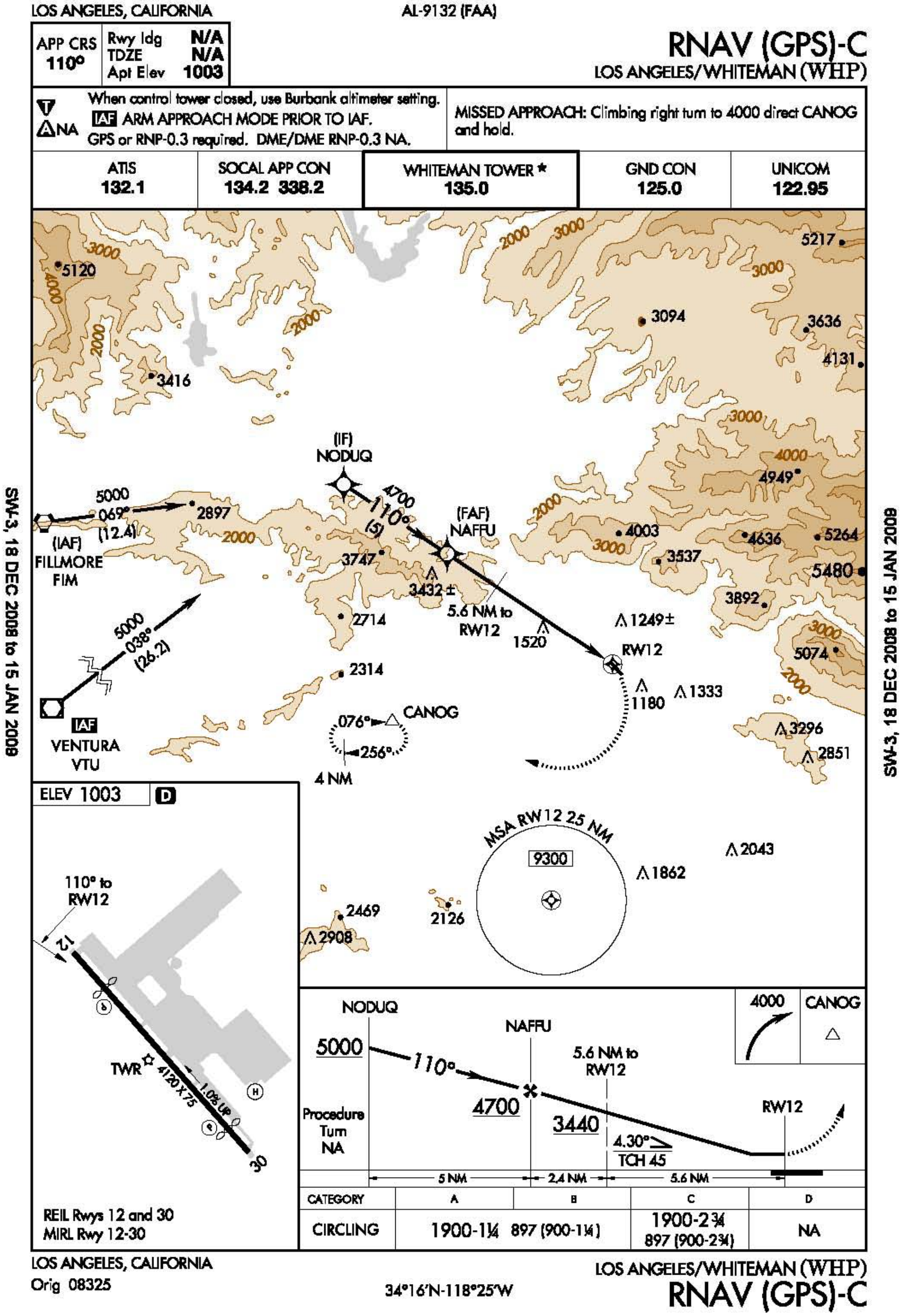
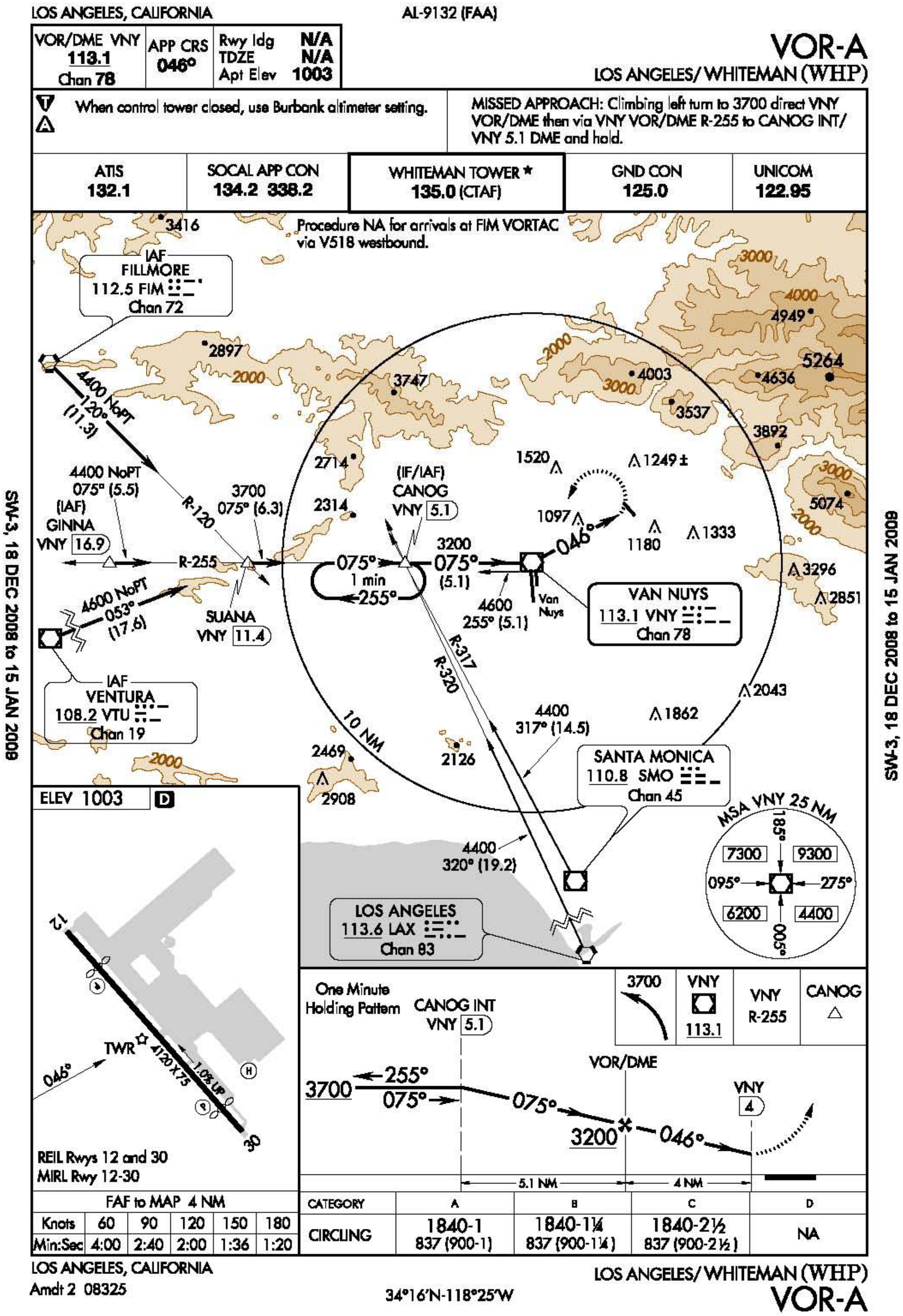


Figure 3-5
RNAV (GPS)-C



FAF to MAP 4 NM					
Knots	60	90	120	150	180
Min:Sec	4:00	2:40	2:00	1:36	1:20

CATEGORY	A	B	C	D
CIRCLING	1840-1 837 (900-1)	1840-1¼ 837 (900-1¼)	1840-2½ 837 (900-2½)	NA

Figure 3-6
VOR-A

Table 3-4:
INSTRUMENT APPROACH PROCEDURES
AT WHITEMAN AIRPORT

Airport	Approach Procedure	Lowest Minima
Whiteman Airport	RNAV (GPS)-C	1900 -1¼
	VOR-A	1840-1
Bob Hope	ILS RWY 08	200-1
	RNAV (GPS) RWY 08	800-1
	GPS-A	900 -1¼
	LOC RWY 08	800-1
	VOR RWY 08	900 -1¼
Van Nuys	ILS RWY 16R	300-¾
	LDA-C	1,900 -1¼
	VOR/DME or GPS-B	600-1
	VOR or GPS-B	700-1
Santa Monica	VOR or GPS-A	600-1
El Monte	VOR/DME or GPS-C	1,100-1¼
	VOR or GPS-A	1,000-1¼
	NDB or GPS-C	1,000-1¼
Jack Northrop Field/ Hawthorne Municipal	LOC RWY 25	600-¾
	VOR or GPS RWY 25	600-¾
Los Angeles International	ILS or LOC RWY 7R	200-½
	ILS or LOC RWY 24L	200-½
	ILS or LOC RWY 25L	200-½
	ILS or LOC RWY 25R	200-½
	ILS or LOC RWY 6R	200-½

Source: United States Government Flight Information Publication, U.S. Terminal Procedures: U.S. Department of Transportation.

Local Operating Procedures

- **Helicopter and Fixed Wing Procedures** – After hours (8 PM to 8 AM) Whiteman Airport turns from Class D to Class G airspace (uncontrolled). No touch-and-go landings or pattern practice is allowed after hours. Runway 12 has a standard left traffic pattern, while Runway 30 has a non-standard right traffic pattern. Helicopters shall not air or hover–taxi over ramp areas or taxilanes. Runway 12 VFR departures have left downwind departures, while Runway 30 VFR departures are straight out departures.

- **Helicopter Operations** – As previously stated, the helicopters are stationed on the south side of the airport, east of the Runway 30 end. Helicopters that are not typically located on helipads are towed to the helicopter parking positions where they hover-taxi to/from the runway.

- **Noise Abatement** – There are no noise abatement procedures for Whiteman Airport, while there are noise sensitive areas on all sides of the airport, complaints regarding aircraft noise are infrequent. Areas most affected are the north and northeast sections of the airport, since these areas are below the traffic patterns for both Runway 12 and Runway 30.

Navigational Aids

An inventory of the navigational aids and air traffic services available at the airport is as follows:

- **Airport Traffic Control Tower (ATCT)** - The airport is equipped with a control tower which is operated from 8AM to 8PM daily. After hours, when the tower is closed, Whiteman Airport turns from Class D to Class G airspace (uncontrolled). The tower was constructed in 1989 and is a “contract tower,” meaning that it is not staffed by the FAA, but rather a hired company.

- **Non-Directional Beacon (NDB)** - A low/medium frequency or ultra-high frequency (UHF) radio beacon transmitting non-directional signals whereby the pilot of an aircraft equipped with direction finding equipment can determine his/her bearing to or from the radio beacon and "home" on or track to or from the station. When the radio beacon is installed in conjunction with the Instrument Landing System marker, it is normally called a Compass Locator. The NDB is located on top of one of the older County owned hangars in the north hangar area.

- **Very High Frequency Omni-Directional Range** – A type of radio navigation system broadcasting a very-high frequency radio signal allowing receiving equipment to derive a magnetic bearing from the station of choice to the aircraft. VOR stations within 25 nautical miles are located at Van Nuys and Santa Monica Airports. Both VORs are low altitude (1,000 to 18,000 feet) and have a range of 40 nautical miles. The Van Nuys VOR is unusable in the following directions and altitudes:

  - 260° to 280° beyond 15 nautical miles below 4,000 feet
  - 280° to 290° beyond 20 nautical miles below 4,000 feet
  - 290° to 330° beyond 30 nautical miles below 8,000 feet
  - 330° to 360° beyond 30 nautical miles below 6,000 feet
  - 360° to 030° beyond 35 nautical miles below 9,000 feet

  Similarly, the Santa Monica VOR is unusable in the following directions and altitudes:

  - 010° to 030° beyond 20 nautical miles below 6,700 feet
  - 030° to 050° beyond 25 nautical miles below 8.600 feet
  - 330° to 350° beyond 25 nautical miles below 5,500 feet
  - 350° to 010° beyond 15 nautical miles below 6,100 feet

Automated Flight Service Station provided by Lockheed Martin Flight Services located in Prescott, Arizona.

Assistance from the Flight Service Station (FSS) is available to pilots in the Whiteman Airport area through the Automated Flight Service Station provided by Lockheed Martin Flight Services located in Prescott, Arizona. The services which are provided by the FSS include:

- Issuance of Notices to Airmen (NOTAM's)
- Dissemination of Pilot Reports (PIREP's) to interested parties
- Issuance of weather data and National Airspace System (NAS) information
- VFR advisory service
- Direction finding assistance to "lost" aircraft
- Pilot briefing service
- Flight plan assistance

In addition to the above navigational aids, the airport is equipped with the following visual aids. These are provided to assist pilots in locating the airport at night or during periods of reduced visibility.

- **Rotating Beacon** - a visual aid that indicates the location of an airport. Alternating white and green beams indicate an airport with beacons located either on or close to an airport. The beacon at Whiteman Airport is located on top of the control tower.

- **Precision Approach Path Indicator (PAPI)** - provides vertical visual glide path information to approaching pilots and consists of a two, three, or four boxes of lights usually located on the left side of the associated runway. Runway 12 and 30 are both equipped with a two-box PAPI. Runway 12 PAPI is on the right side of the runway and Runway 30's PAPI is located to the left of the runway. The PAPI system can usually be seen for up to five miles during the day and up to 20 miles at night. Approach angles for both runways is set at a fairly steep 3.8 degrees.

- **Runway End Identifier Lights (REIL)** – are two synchronized flashing lights, one on each side of the runway threshold, which provide rapid and positive identification of a runway end to approaching pilots. Runways 12 and 30 are equipped with REIL.

- **Medium Intensity Runway Lights (MIRL)** - Runway 12 – 30 is equipped with MIRL, which are used to outline the edges of runways during periods of darkness or restricted visibility.

LANDSIDE FACILITIES

The landside facilities consist of those airport elements that support the various activities of the airport except for the navigation and maneuvering of aircraft. The exception to this categorization is the aircraft parking apron, which due to its relation with terminals and FBOs, is considered a landside component. At Whiteman Airport the landside facilities include aircraft parking aprons, terminal building, hangars, fuel facilities, auto parking, and a restaurant. All landside facilities at Whiteman Airport are located north of the runway. As shown in Figure 3-3, landside facilities at Whiteman Airport are accessible primarily from Osborne Street and the Main Entrance Roadway.

General Aviation Terminal Buildings

Whiteman's general aviation terminal is located north of the runway, near midfield. The general aviation terminal building totals about 2,800 square feet. The main terminal building is in fair condition but is too small to accommodate airport administration and pilot facilities. This building houses an operations office, a storage closet, airport administration offices, and a conference room. In addition, the terminal building has a 24-hour pilot's lounge and the Pilot Learning Center (a pilot supply shop and flight training) attached to it. Also attached to the main terminal building is Rocky's Restaurant, which has an additional area of 2,730 square feet. There are approximately 100 automobile parking spaces in the vicinity of the terminal building. Two of the spaces are designated as handicapped parking. Adjacent to the terminal is a grassy area with several mature trees. This area serves as a public viewing area with picnic tables.

Aircraft Parking Apron

Large apron areas are available for aircraft parking. Aircraft parking is provided along Taxiway A as well as in the north hangar area. Parking is available for based and transient aircraft. There are approximately 212 based aircraft and 8 transient tie-downs. Transient tie-downs are adjacent to the terminal area. The apron area is served by several taxilanes, with primary taxilanes being ones connecting to Taxiways B and C, a parallel taxilane north of the terminal building, and a taxilane serving the north hangar area.

Aircraft Storage Hangars

Whiteman Airport features over 400 hangars for based aircraft storage and fixed based operators. Hangars at the airport are a mixture of County and privately owned. The County owns 257 hangars. Basic maintenance on County owned hangars is provided through the airport management contract. The other 159 hangars at the airport are privately owned and maintained. Sizes and types of County hangars are seen in Table 3-5.

Table 3-5:
HANGAR DETAILS

Hangar Type	Number	Size (SF)
Port-A-Port	4	1,512
Port-A-Port	17	1,428
Port-A-Port	114	1,140
Standard	16	1,140
Endrooms	4	140
Rectangular	15	1,512
Portable	50	1,428
Executive Portable	4	1,840
Rectangular	9	1,512
T-Hangars Large	13	1,312
T-Hangars Standard	15	1,428
Endrooms	3	600
Total Square Footage		334,408

Source: Los Angeles County;
DMJM Aviation analysis.

Fixed Base Operators

Whiteman Municipal Airport has 34 businesses located on the airport. The location and names of the business are shown on Figure 3-7. Some of these businesses are fixed based operators or FBOs. FBO's provide hangars, tie-downs, maintenance, office space, and/or other aviation services. This information is complied with the help of the Airport Manager and through results of an FBO phone survey.

Able Air

Able Air (number 1 on Figure 3-7) is located adjacent to the Gustintaero property. The 10,000 square foot hangar is used for general repair and structural maintenance. Transient aircraft being serviced park on one of Able Air's 19 tie-downs.

Adventure Helicopter Tours

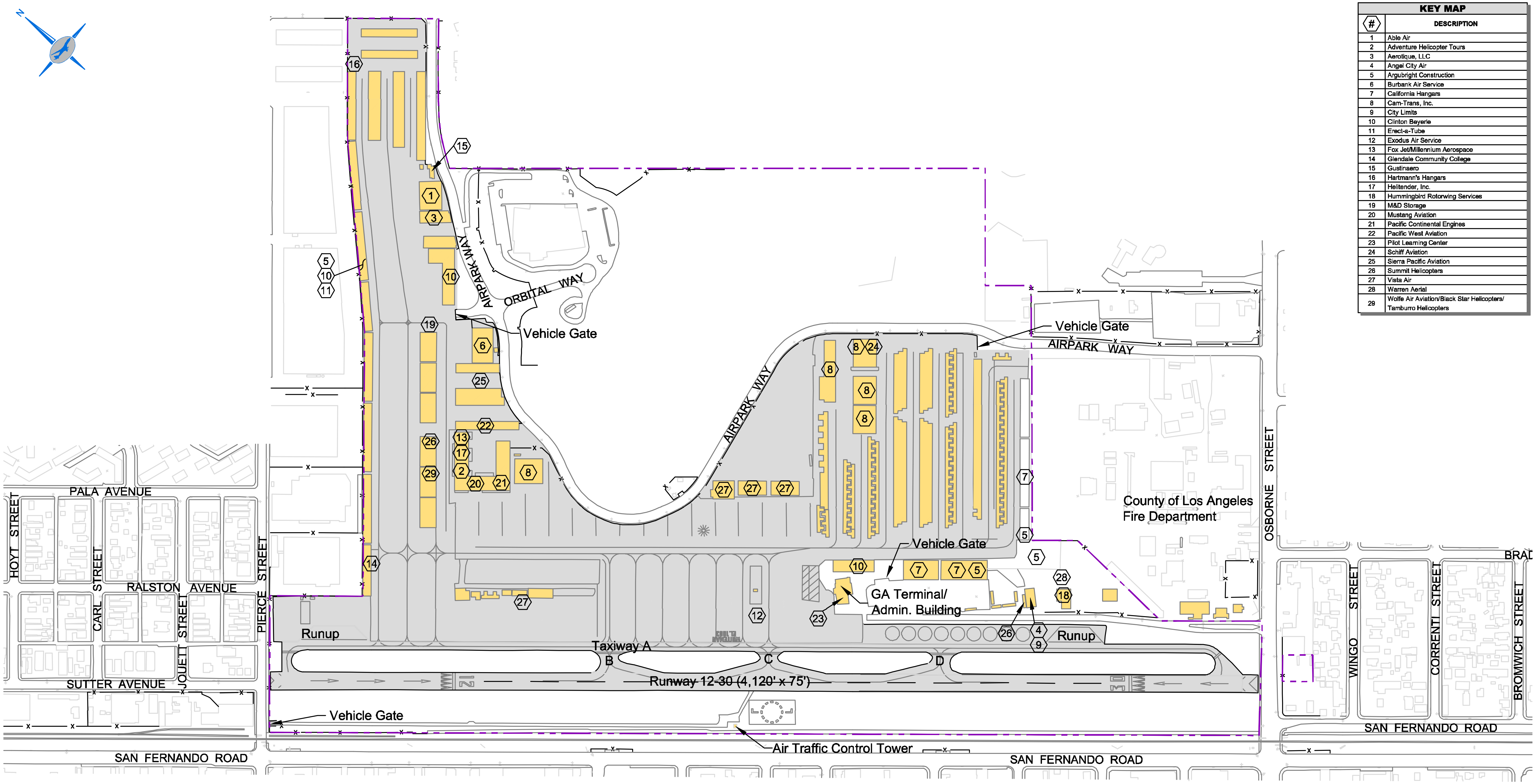
Adventure Helicopter Tours (number 2 on Figure 3-7) is located in the Pacific West Hangars east of the Runway 12 threshold. They are a full service helicopter company offering tours, helping in movies, conducting aerials, videos, and reality TV shows.

Aerotique, LLC

Aerotique recently constructed six individual box hangars (approximately 2,000 square feet per hangar) adjacent to Able Air (number 3 on Figure 3-7).

Angel City Air

Angel City Air (number 4 on Figure 3-7) is located on the northeast side of Runway 12-30, by the helicopter operating area, and rents hangars east of the Runway 12 displaced threshold. Angel City Air is a commercial helicopter operator providing helicopters for production companies and television news stations. Angel City Air has the rights to develop a triangular shaped parcel adjacent to their current location. Expansion plans include a 12,000 square foot hangar.



KEY MAP

#	DESCRIPTION
1	Able Air
2	Adventure Helicopter Tours
3	Aerotique, LLC
4	Angel City Air
5	Argubright Construction
6	Burbank Air Service
7	California Hangars
8	Cam-Trans, Inc.
9	City Limits
10	Clinton Beyerle
11	Erect-a-Tube
12	Exodus Air Service
13	Fox Jet/Millennium Aerospace
14	Glendale Community College
15	Gustinaero
16	Hartmann's Hangars
17	Helitender, Inc.
18	Hummingbird Rotorwing Services
19	M&D Storage
20	Mustang Aviation
21	Pacific Continental Engines
22	Pacific West Aviation
23	Pilot Learning Center
24	Schiff Aviation
25	Sierra Pacific Aviation
26	Summit Helicopters
27	Vista Air
28	Warren Aerial
29	Wolfe Air Aviation/Black Star Helicopters/ Tamburro Helicopters

Figure 3-7
FBOs at Whiteman Airport

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Argubright Construction

Argubright Construction is a hangar design and construction company. Hangar components are manufactured at the airport (number 5 on Figure 3-7), and then shipped to the construction site to be erected. Argubright uses two hangars in support of this business. Argubright also owns several (17) small box hangars which are leased out to based aircraft owners.

Burbank Air Service

Burbank Air Service (number 6 on Figure 3-7) provides repair, preventative maintenance, modifications, and annual inspections for single and multi-engine aircraft. Burbank Air Service operates out of a 9,000 square foot hangar and three tie-downs.

California Hangars

California Hangars owns 22 hangars which are sublet to tenants including the RV hangars on the parking lot side near the terminal building (number 7 on Figure 3-7).

Cam-Trans, Inc.

Cam-Trans Inc. (number 8 on Figure 3-7) has 17 hangars dispersed throughout the airport property. The hangars are leased to airport tenants. Cam-Trans, Inc. also conducts business as APIP 60, LLC. APIP 60, LLC rents the hangar that the U.S. Marshal occupies. Cam-Trans has submitted plans to the County for review to develop additional hangars.

City Limits

City Limits (number 9 on Figure 3-7) is located adjacent to the helicopter operating area. The hangar and associated office space are sublet while expansion plans include building a new hangar on adjacent property. They are finalizing details on a lease with the County for additional land near the terminal area for additional hangar and apron development.

Clinton Beyerle

Clinton Beyerle has eight hangars which are leased to airport tenants. Five hangars are in row HH (long hangar row adjacent to western perimeter fence) and the other three are near the terminal area (number 10 on Figure 3-7).

Erect-a-Tube

Erect-a-Tube leases 14 hangars to airport tenants in hangar row HH (number 11 on Figure 3-7).

Exodus Air Service

Exodus Air Service rent a County tie-down and operate a Cessna 172 to provide aerial traffic watch services (number 12 on Figure 3-7).

Fox Jet / Millennium Aerospace

Fox Jet / Millennium Aerospace (number 13 on Figure 3-7) is located in the Pacific West Hangars east of the Runway 12 threshold. Operations and services provided include engineering of aircraft produced in Georgia and Mississippi.

Glendale Community College

Glendale Community College (number 14 on Figure 3-7) is located south and east of the wash rack and oil recycling center. Primary services include instrument and commercial flight instruction.

Gustintaero

Gustintaero (number 15 on Figure 3-7) is on the far eastern part of the airport property accessible via Airpark Airway. They perform aircraft interior services to all aircraft, including corporate and small jets.

Hartmann's Hangars

Hartmann's Hangars (number 16 on Figure 3-7) are located along the north-western property line of Whiteman Airport. Peter Hartmann owns HH1 to HH14, which are hangars available only for aircraft storage.

Helitender Inc.

Helitender Inc. (number 17 on Figure 3-7) rents one hangar from Pacific West Aviation, LLC and the fourth helipad. Helitender Inc. is a helicopter repair facility with a 15x30 foot office area within the 50x50 foot hangar. Helitender would like a bigger hangar, including a property lease, closer to the helicopter operating area.

Hummingbird Rotorwing Services, Inc.

Hummingbird Rotorwing Services, Inc. (number 18 on Figure 3-7) is located adjacent to the helicopter operating area. Light and heavy helicopter maintenance and part sales are conducted in the two hangars. The primary maintenance hangar is approximately 3,000 square feet and the storage hangar is approximately 1,280 square feet. These hangars are located along the road to the terminal. A mobile home trailer is being used for an office/administrative building.

M&D Aircraft Storage

M&D Aircraft Storage (number 19 on Figure 3-7) is located on the northern part of Whiteman Airport parallel to Hartmann's Hangars and is known as the MD hangar row. The 30 hangars are leased to airport tenants (including other FBOs) and used for storage of aircraft and helicopters. M&D Storage would like to add approximately 20 additional hangars of various sizes to lease out to the public.

Mustang Aviation

Mustang Aviation, shown as number 20 on Figure 3-7, provides aircraft repair, restoration, and maintenance services. They specialize in older military aircraft restorations.

Pacific Continental Engines

This FBO performs aircraft repairs and maintenance and is located in number 21 on Figure 3-7.

Pacific West Aviation

Designated as number 22 on Figure 3-5, this company leases 10 hangars to airport tenants (M hangars).

Pilot Learning Center

Aviation supplies are available from the Pilot Learning Center (number 23 on Figure 3-7). They also provide flight training and occupy six tie-downs.

Schiff Aviation

Schiff Aviation also performs aircraft maintenance and repairs (number 24 on Figure 3-7).

Sierra Pacific Aviation

As seen on Figure 3-7, number 25, Sierra Pacific Aviation owns 20 1,470 square foot hangars (35 feet by 42 feet). These hangars are leased out to other airport tenants.

Summit Helicopters

Summit Helicopters (number 26 on Figure 3-7) is located adjacent to the helicopter operating area and uses hangars east of the Runway 12 displaced threshold (MD hangar row). They are a commercial helicopter operator specializing in utility line repairs and construction in the western United States. Summit Helicopters would like to consolidate operations into one 10,000 square foot bay hangar, with an attached 3,600 square foot office, 600 square foot maintenance area and roughly 3,000 square feet of storage area.

Vista Air

Vista Air (number 27 on Figure 3-7) is located south of and adjacent to the hill, across the street from Airpark Way as well as parallel to the Runway 12 end. Vista Air is the largest flight school based out of Whiteman conducting flight training and aircraft rentals. The area adjacent to the hill is currently being constructed to replace the older facilities along the flightline. New office facilities, a two-story building, two larger bay type hangars, and five rows of individual hangars are being developed on Vista's leasehold near the hill. A total of 36 hangars are planned. Facilities along the flightline will be demolished and the area is to be developed as tie-downs in the near future.

Warren Aerial

Warren Aerial is an aerial photography company (number 28 on Figure 3-7) housed in a construction trailer with an airplane on a tie-down.

Wolfe Air Aviation / Black Star Helicopter / Tamburro Helicopters

Wolfe Air Aviation / Black Star Helicopters / Tamburro Helicopters does aviation film work (number 29 on Figure 3-7) and is housed in a MD Hangar east of the Runway 12 threshold.

Tenants responded to a survey indicating they would like competition among flight schools. Consideration may be given to accommodate addition FBO/flight schools.

Restaurant

A restaurant, Rocky's V on the Strip, is located adjacent to the terminal area. The main restaurant dining area often serves as a meeting room. The total restaurant area is 2,730 square feet. The adjacent 2,300 square foot patio is also part of the restaurant.

Automobile Parking

The existing auto parking facilities totals about 100 spaces in the terminal area as shown in Table 3-6. Defined automobile parking around the airport is scarce, with the only other developed vehicle parking area at the Pacific West Hangars. Designated parking is not present on the airside; rather aircraft owners can park their vehicle on their tie-down or in hangar while they are flying. There is a shortage of marked airport parking spaces at the airport. Presently, tenants park and stage vehicles adjacent to hangars and thus encroach upon adjacent taxilanes.

Table 3-6:
EXISTING AUTOMOBILE PARKING

Location	Number of Spaces			Use
	Conventional	Handicapped	Total	
Terminal Building	98	2	100	General Aviation/ Airport Administration/ Restaurant
Pacific West Hangars	28	4	32	General Aviation
Other FBO Parking	20	0	20	General Aviation
Total	146	6	152	

Source: Whiteman Airport.

Vehicle Access

Vehicle access is provided through four gates. Gate locations are shown on Figure 3-7. One gate is located near the terminal building, another gate is east of the C-row hangars, a third gate is by Airpark Way and Orbital Way (near Burbank Air Services), and the final gate is the ATCT gate on Pierce Street. Gates feature a magnetic card reader. Vehicles primarily use the gate east of the terminal building to access the airport, and then travel across active apron areas to reach their destination. Designated vehicle roads are not provided on the airport to segregate vehicle and aircraft traffic. Airport management has noted that there have been several aircraft/vehicle incidents.

Vehicles and aircraft traffic should be separated and airport business should have direct access to the road, with designated landside parking, to promote safe operations.

Wash Rack

Aircraft washing facilities (wash rack) are located adjacent to the Runway 12 runup apron (see Figure 3-2). Water from aircraft washing is filtered through an underground oil/water separator to remove oil and other contaminants. After the water is filtered it is released into the storm drain system. Hoses are available at the facility for aircraft owner use. The wash rack is 27 feet by 73 feet (1,971 square feet).

Oil Recycling Center

Two oil recycling centers are located at Whiteman Airport for tenant use. One center is adjacent to the wash rack and the other center is near the County owned portable hangars (see Figure 3-2).

Fuel Facilities

Whiteman Airport has two 20,000 gallon underground tanks of fuel. One tank is for 100 Octane (100LL) fuel and the other holds Jet A.

EXISTING UTILITIES

Water for domestic and fire-fighting purposes is provided by the City of Pacoima. Telephone service is provided by Verizon and trash services are provided by Waste Management. The Department of Water and Power provides Whiteman Airport with all remaining utilities.

Locations of most utilities serving the airport are unknown. However, several utilities are located along Airpark Way telephone, domestic water (6-inch), fire protection water (10-inch), sanitary sewer (8-inch), a 30-inch storm drain, and several electrical lines cross Airpark Way to the electrical vault, located at the base of the hill.

In 2006, the airport administration building and nearby restrooms were connected to the sanitary sewer system under Osborne Street via an 8-inch vitrified clay pipe (VCP). The domestic and fire protection water lines connect from Airpark Way, and travel southeastern along Vista's new hangar development, perpendicular to the runway and connect near the terminal building to rest of the domestic and fire protection systems. Consideration should be given to develop a detailed utility map for the airport, based on as-built drawings and through the use of utility locating services.

AIRPORT OPERATIONS

Historical Aviation Activity

This subsection summarizes the recent historical levels of aviation activities at the airport in terms of based aircraft and aircraft operations. The turnaround in the general aviation industry that began with the passage of the General Aviation Revitalization Act in 1994 encountered setbacks in 2002. The tragic events of September 11th and their aftermath did impact the demand for general aviation products and services, both negatively and, in some cases positively. The continued weak U.S. economy, declining industry profits, and increased corporate accountability, may account for a large part of the declining demand for general aviation aircraft in 2002. General aviation activity at FAA air traffic facilities was, for the most part, flat in 2002, declining less than one percent.

Business and corporate aviation continues to be a bright spot for the general aviation industry. Increased growth in fractional ownership companies and corporate flying has continued to expand the market for jet aircraft, though at reduced annual numbers. Numerous trade journal articles suggest that the fallout from September 11th has spurred interest in fractional or corporate aircraft ownership provided new growth opportunities for the on-demand charter industry.

A based aircraft is one that is permanently stationed at an airport or a lessee, usually through some form of agreement between the aircraft owner and the airport management. Information indicating the history of based aircraft at Whiteman Airport was compiled from data contained in the latest FAA Terminal Area Forecast. Table 3-7 presents a history of based aircraft for the period 1985 to 2006.

As seen in Table 3-7 the number of based aircraft at Whiteman total has not changed comparing 1985 to 2006. But there has been significant changes during these 20 years. After 1985 based aircraft declined to a low in 1995 of 475 aircraft. Then, the based aircraft increased to the 722 aircraft in 2006. The County estimates that 612 were based aircraft at Whiteman in August 2008.

An aircraft operation, or movement, is defined as either a takeoff or landing with each operation being categorized as either local or itinerant. A local operation is one that is performed by aircraft that: 1) operate in the local traffic pattern or within sight of the airport; 2) are known to be departing for or arriving from flights in local practice areas located within a 20-mile radius of the airport; or 3) execute simulated instrument approaches or low passes at the airport. Itinerant operations are all operations other than local. Aircraft operations for the period 1985-2007 are shown in Table 3-8. The data for the period 1985-2002 is based on the FAA Terminal Area Forecast and 2003 to 2007 data is from county records. Itinerant operations have been staying relatively constant between 1985 and 2005 while local operations have been declining significantly overall while the time period between 1998 and 2000 had over 140,000 operations.

Table 3-7:
HISTORY OF BASED AIRCRAFT

Year	Single Engine	Multi Engine	Jet	Helicopter	Other	Total
1985	679	35	0	8	0	722
1986	679	35	0	8	0	722
1987	620	35	0	11	0	666
1988	620	35	0	11	0	666
1989	620	35	0	11	0	666
1990	620	35	0	11	0	666
1991	530	39	0	8	0	577
1992	529	32	0	9	0	570
1993	529	32	0	9	0	570
1994	526	32	0	5	0	563
1995	435	34	0	6	0	475
1996	505	39	0	8	0	552
1997	505	39	0	8	0	552
1998	505	39	0	8	0	552
1999	521	42	0	8	0	571
2000	521	42	0	8	0	571
2001	521	42	0	0	0	563
2002	521	42	0	0	0	563
2003	529	42	0	0	0	571
2004	521	42	0	0	0	563
2005	558	42	2	10	0	612
2006	655	42	15	10	0	722
2007	650	3	40	15	0	708

Source: FAA 2008 Terminal Area Forecast.

Table 3-8:
ANNUAL AIRCRAFT OPERATIONS

Year	Itinerant	Percent Itinerant	Local	Percent Local	Military	Total
1985	50,750	37%	86,300	63%	0	137,050
1986	40,050	28%	104,096	72%	0	144,196
1987	40,050	26%	113,788	74%	0	153,838
1988	41,862	26%	117,946	74%	0	159,808
1989	62,268	49%	64,082	51%	100	126,450
1990	66,134	48%	71,889	52%	1	138,024
1991	62,950	51%	60,869	49%	6	123,825
1992	55,268	50%	54,671	50%	12	109,951
1993	50,664	50%	49,864	50%	44	100,572
1994	49,880	50%	48,994	49%	743	99,617
1995	42,871	48%	46,304	52%	165	89,340
1996	43,522	48%	47,300	52%	70	90,892
1997	39,360	46%	46,980	54%	33	86,373
1998	49,511	47%	55,790	53%	136	105,437
1999	65,797	45%	81,355	55%	75	147,229
2000	65,709	46%	76,461	54%	52	142,222
2001	53,693	48%	58,510	52%	172	112,375
2002	58,801	54%	50,706	46%	194	109,701
2003	54,715	55%	44,890	45%	2	99,607
2004	57,328	53%	50,780	47%	4	108,112
2005	50,996	49%	53,122	51%	0	104,118
2006	53,319	51%	51,999	49%	4	105,322
2007	54,080	51%	46,198	46%	140	100,418
2008	25,122	50%	25,017	50%	43	50,182

Source: 1985-2002, 2007: FAA 2008 Terminal Area Forecast;
2003-2006 County Data; 2008 Air Traffic Activity System (ATADS)

SURVEYS

County Survey

In May 2008 the county conducted a survey at Whiteman Airport. The survey was distributed through direct mailing, available on the internet, handed out at meetings, and made available at the Airport Administration Office. A total of 177 people responded. Of the 177 respondents, 113 were based hangar tenants, 55 were based tiedown tenants, 16 were general users or airport facilities and services, and 9 were based business operators. Overall, services were rated as above average, promptness was rated above average, courteousness was rated as excellent, and knowledge was rated above average. The majority of respondents rated security, appearance, amenities and fuel as average and safety, runway/taxiway conditions, and lighting as above average.

Master Plan Survey

A based aircraft survey was conducted as part of the master plan. Surveys were distributed through direct mail, the Whiteman Pilots Association, handed out at meetings, made available at the Airport Administration Office, and available on the internet. A copy of the survey can be found in Appendix C. Of the 612 based aircraft, 201 responses were received (33 percent). Most respondents base their aircraft at Whiteman airport due to its proximity to their homes. More than half the respondents (55 percent) estimate their flying activity to remain the same over the next 5 years, while 31 percent estimate an increase in activity. The remaining 14 percent estimate a decrease in flying activity. Respondents were asked to rank physical improvements they would like to see made at Whiteman Airport. The top five priorities noted by respondents were:

- New restaurant
- Expanded security program
- Additional transient parking
- T-shelters (shade hangars)
- Additional tie-downs

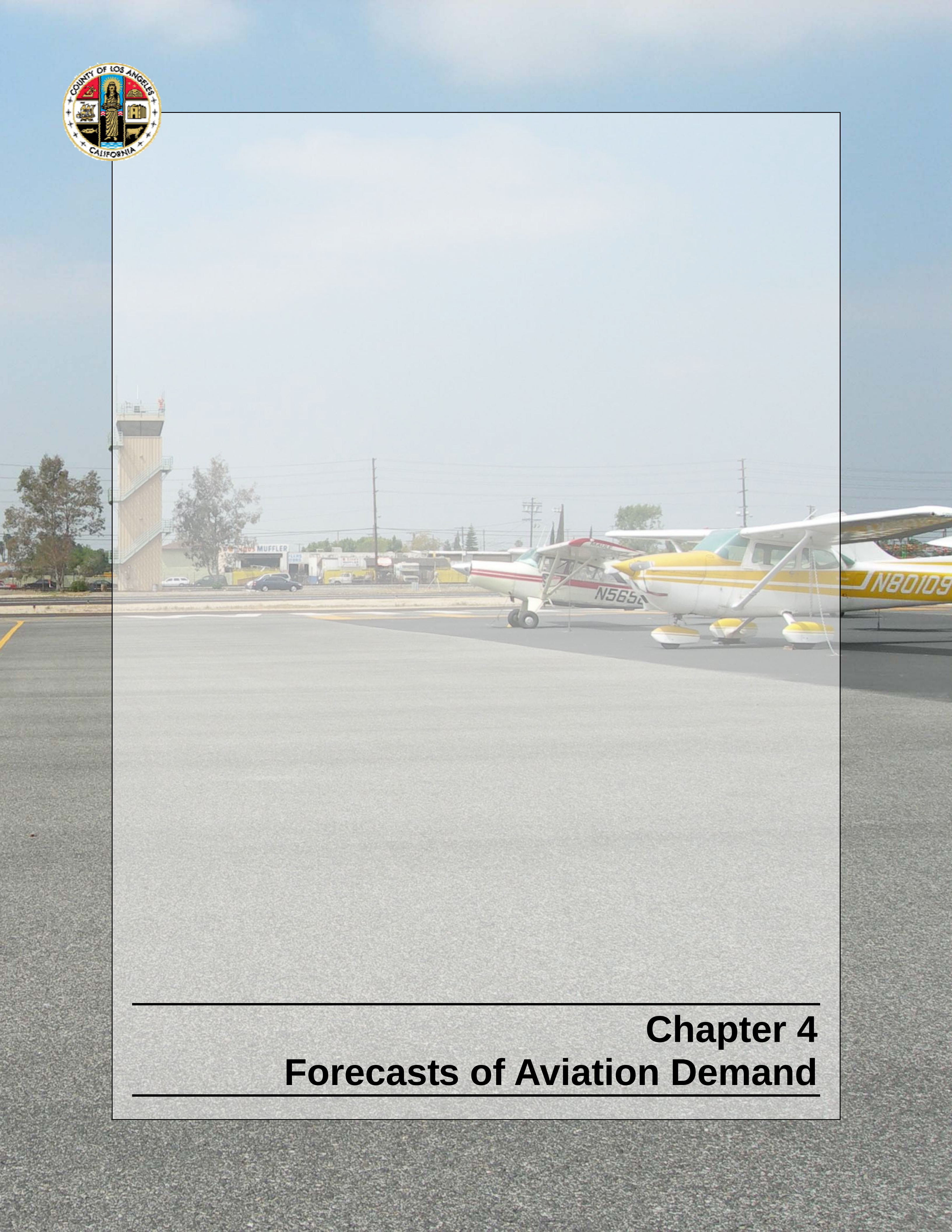
Respondents felt that the following improvements were of the lowest priority:

- Bay-type community (conventional) hangars
- Box hangars
- Compass rose
- Pavement resurfacing
- Additional portable hangars

From the above, it can be seen that based aircraft owners have the least desire for additional hangar facilities, and instead feel improved existing facilities and additional tie-downs are important at Whiteman. Respondents were also asked to rank the adequacy of existing services and facilities. Crosswind coverage was ranked the lowest in adequacy and aircraft maintenance the highest.

SURROUNDING LAND USE

The airport is located approximately two miles southeast of the Pacoima city center. The airport is surrounded by a mix of residential and industrial land uses. Industrial uses generally exist north, south, and east of the airport adjacent to airport property. These industrial areas are generally very narrow. Beyond the industrial areas, are residential areas. Directly east of the runway, on airport property, is a hill that extends up to approximately 1,300 feet above mean sea level, or roughly 300 feet above the airport elevation.



Chapter 4
Forecasts of Aviation Demand

Chapter 4
Forecasts of Aviation Demand

PURPOSE AND SCOPE

Planning for the physical development of an airport necessitates the preparation of a well-documented forecast of aviation activity to be accommodated at the subject facility. Once the forecasting tasks of the planning process have been completed, the airport planner can then translate the projected activity levels into required facilities. The forecast then serves as a basis for determining the phased development of the facility components for the short (1 to 5 years), intermediate (6 to 10 years) and long-range (11 to 21 years) planning periods. The forecast developed for this study covers a 21-year period, with the final year of the forecast period being calendar year 2030.

This chapter presents the forecasts of general aviation activity for Whiteman Airport. General aviation (GA) is defined as all civil flying not classified as air carrier and includes a variety of activity such as personal flying, transport by corporate-owned aircraft, air taxi, law enforcement, an ambulance, and agricultural application. The GA forecast will present the basic forecast values of based aircraft and annual operations. These, plus other measures of activity developed from them, will represent the future traffic levels that must be accommodated at the airport, and for which facilities must be provided.

It is important to note that the forecasts of based aircraft represent unconstrained potential or "market-driven" demand, without consideration of the physical, safety, noise, regulatory, institutional, or political constraints that may preclude development of facilities to fully serve the demand.

The scope of the analyses included projections of:

- Total based general aviation aircraft
- The fleet mix of based aircraft (single engine piston, multi-engine piston, turboprop, business jet, and rotorcraft)
- Total annual aircraft operations, by type of aircraft (single engine piston, multi-engine piston, etc.), by type of operation (local versus itinerant), and by peak hour
- Projected annual fuel flowage

The latest FAA Terminal Area Forecast (TAF) was used as the basis for the forecasts presented herein as defined during the scoping of the project approach and it was deemed to be an efficient means to develop the forecast. The 2007 TAF Model was used, and includes actual data from 2006. The TAF provides forecasts from 2007 to 2025.

It is important to note that due to the uncertainties in the long-range aviation outlook, long-term forecasting is approximate in nature. However, an indication of trends is important since estimates can be made of facility costs, social costs and environmental impacts which an airport creates on the surrounding area. Thus, the purpose of the forecasting effort is to identify activity levels which then serve as planning tools.

SUMMARY OF FINDINGS

Assuming there are no physical, safety, regulatory, institutional, or political constraints which might preclude the development of facilities to fully serve potential demand, the number of general aviation aircraft based at Whiteman is expected to reach 874 by 2030, an increase of 262 aircraft (43 percent) over current (2008) levels. While this is a significant increase in based aircraft, it is important to note that facilities for approximately an additional 100 based aircraft will be available by the end of 2009.

- Aircraft operations are projected to increase from 93,200 in 2008 to 143,500 operations in 2030.
- Sales of 100 octane fuel are expected to increase from 245,931 gallons in 2007 to 372,600 gallons by 2030. Jet fuel sales are projected to total increase from 109,673 gallons in 2007 to 221,000 gallons by 2030.

PREVIOUS MASTER PLAN FORECAST

For background purposes this subsection presents the primary forecasts of the interest from the previous Master Plan that was completed in 1990. These are based aircraft and aircraft operations. It should be noted that the previous master plan covered a 20 year period ending in the year 2010.

Based Aircraft

The 1990 Master Plan forecast of based aircraft was developed using an econometric model in conjunction with the California Aviation System Plan (CASP). The forecast was unconstrained and based on a forecast of based aircraft for the market area identified for the airport (Los Angeles County). The forecast for the County was developed via the econometric model and was thus consistent with the CASP. The forecast of based aircraft for Whiteman resulted from the use of a CASP assignment model. This model estimated the airport which an aircraft owner chooses to base an aircraft considering such factors as accessibility, quality of services provided, price of services and aircraft performance characteristics.

The total number of based aircraft was then subdivided by aircraft type, giving consideration to historical based aircraft trends, aircraft types found in the airport's market area, plans of aircraft manufacturers, the airport's operational capability, and the availability and price of airport services. The forecast of based aircraft from the 1990 Master Plan is presented in Table 4-1.

Table 4-1:
FORECAST OF BASED AIRCRAFT
CONTAINED IN 1990 MASTER PLAN

Aircraft Type	1995	2000	2005	2010
Single Engine	699	775	837	870
Multi-Engine	37	40	42	44
Helicopter	14	15	16	16
Total	750	830	895	930

Source: Whiteman Airport Master Plan. Hodges & Shutt. 1990.

Aircraft Operations

Development of the forecast for aircraft operations in the 1990 Master Plan, shown in Table 4-2, was determined as a function of the based aircraft. Using data developed by the Southern California Association of Governments (SCAG) an average number of general aviation movements per based aircraft was determined. The FAA's Terminal Area Forecast was also considered but figures were lower than those developed from SCAG data because the CASP forecast of based aircraft was unconstrained and reflected the projected effects of surrounding airport short falls. The FAA forecast lagged the master plan forecast by about three years.

Table 4-2:
FORECAST OF AIRCRAFT OPERATIONS
CONTAINED IN 1990 MASTER PLAN

Aircraft Type	1995	2000	2005	2010
Single Engine	188,800	222,700	252,000	273,700
Multi-Engine	5,000	5,900	6,400	9,500
Helicopter	1,200	1,400	1,600	1,800
Total	195,000	230,000	260,000	285,000

Source: Whiteman Airport Master Plan. Hodges & Shutt. 1990

Forecasts developed for the 1990 Whiteman Airport Master Plan have not been attained due to a number of reasons. The general aviation industry experienced a major decline in the 1980s and early 1990s. This was due to a number of reasons including high interest rates, past recession, high product liability costs, loss of the GI Bill for flight training, and increasing aircraft operating costs. During the late 1990s the industry displayed growth in terms of new aircraft deliveries (including single engine piston aircraft). The active pilot population also increased in 1998 for the first time in the 1990s which was in sharp contrast to previous years. The downward trend had appeared to halt.

The turnaround in the general aviation industry that began with the passage of the General Aviation Revitalization Act in 1994 encountered setbacks in 2002. The tragic events of September 11th and their aftermath impacted the demand for general aviation products and services, both negatively, and in some cases positively. The continued weak U.S. economy, declining industry profits, and increased corporate accountability, may account for a large part of the declining demand for general aviation aircraft in 2002. General aviation activity at FAA air traffic facilities was, for the most part, flat in 2002, declining less than one percent.

Business and corporate aviation continues to be a bright spot for the general aviation industry. Increased growth in fractional ownership companies and corporate flying has continued to expand the market for jet aircraft, though at reduced annual numbers. Numerous trade journal articles suggest that the fallout from September 11th has spurred interest in fractional or corporate aircraft ownership provided new growth opportunities for the on-demand charter industry.

FORECAST OF BASED AIRCRAFT

A based aircraft is one that is permanently stationed at an airport, usually by some form of agreement between the aircraft owner and airport management. This forecast value is used in developing projections of aircraft activity, as well as determining facility requirements for airport elements such as aprons and hangars.

As previously mentioned, the latest Terminal Area Forecast (TAF) was used as the basis to forecast based aircraft. The TAF provides forecasts of based aircraft for each region for the years 2007 through 2025. Utilizing the current TAF forecast of based aircraft at Whiteman, the trend through the year 2025 was extended to the year 2030. Estimates for the intermediate years of the 21-year planning period were then interpolated from the long term trend line. The next step involved breaking down the total number of aircraft by aircraft type.

The mix of based aircraft from the 1990 Whiteman Master Plan was initially applied to the forecast of total based aircraft. However, the 1990 Master Plan only projected single, twin-engine, and helicopters and therefore was not used as the basis for this forecast. The fleet mix was developed based upon discussions with County staff, air traffic control tower staff, airport tenants, and observations at the airport. Another consideration is that growth in traffic at Burbank and Van Nuys tends to benefit Whiteman, as pilots may seek to use less crowded facilities. The fleet mix was adjusted throughout the forecast period to represent realistic growth, based on input from County staff, air traffic control tower staff, airport tenants, and observations at the airport. The fleet mix at Whiteman is primarily comprised of single engine piston aircraft. Multi-engine piston, turboprop, and helicopters are assumed to remain at a constant level, and jets are anticipated to increase slightly as Burbank and Van Nuys increase in activity. The growth in jets is based upon Whiteman's proximity to Burbank and Van Nuys Airports. Additionally, should Burbank be successful in implementing a proposed curfew, some very light jet (VLJ) operators may move to Whiteman.

Based on the TAF, the potential number of general aviation aircraft based at Whiteman is expected to reach 984 by 2030, an increase of approximately 262 based aircraft from 2008 levels forecasted in the TAF. As seen in Table 4-3, single engine piston aircraft should account for the majority of demand or 892 aircraft by 2030. Multi-engine piston aircraft could account for another 44 aircraft, turboprop aircraft for 20, business jets and VLJs for 8, and 21 helicopters.

Table 4-3:
FORECAST OF BASED AIRCRAFT BY TYPE BASED ON LATEST FAA TERMINAL AREA FORECAST

Aircraft Type	2008	2009	2013	2018	2030
Single Engine Piston	652	674	710	757	882
Multi-Engine Piston	40	41	43	46	54
Turboprop	12	15	16	17	20
Turbine Jet	3	4	4	5	8
Helicopter	15	16	17	18	21
Total	**722**	**750**	**790**	**843**	**984**
Fleet Mix					
Single Engine Piston	90.3%	89.9%	89.9%	89.8%	89.6%
Multi-Engine Piston	5.5%	5.5%	5.5%	5.5%	5.5%
Turboprop	1.7%	2.0%	2.0%	2.0%	2.0%
Turbine Jet	0.4%	0.5%	0.5%	0.6%	0.8%
Helicopter	2.1%	2.1%	2.1%	2.1%	2.1%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

Source: FAA Terminal Area Forecast, 2007; DMJM Aviation analysis.

Based on discussions with the County, it was learned that the actual number of based aircraft at Whiteman in August 2008 is 612 compared to the TAF forecast of 722. To reconcile the apparent discrepancy between the FAA assumptions and actual data, two forecast scenarios were developed:

- **TAF Forecast – Reconciled.** The TAF forecast was reduced by 110 aircraft, the difference between the TAF and County data, so that the starting point of projections corresponded to existing conditions. This results in a total of 874 based aircraft in 2030 (see Table 4-4).

- **TAF Forecast – Adjusted.** As mentioned in Chapter 3 a number of developments are planned or being constructed at Whiteman. These developments add approximately 100 additional aircraft parking spaces. Most, if not all developments, should be completed by the end of 2009. Whiteman presently has a waiting list of some 80 names. While this represents a substantial waiting list, it is noted that security deposits are not required, and therefore names on the waiting list do not represent firm commitments. The second scenario assumes that all developments are complete by the end of 2009 and primarily filled by existing based aircraft owners presently occupying tie-downs. The additional based aircraft storage space is assumed to attract five additional aircraft per year. Table 4-5 details the "Adjusted" forecast.

Table 4-4:
FORECAST OF BASED AIRCRAFT BY TYPE BASED ON LATEST FAA TERMINAL AREA FORECAST – RECONCILED

Aircraft Type	2008	2009	2013	2018	2030
Single Engine Piston	553	575	611	658	783
Multi-Engine Piston	34	35	37	40	48
Turboprop	10	13	14	15	17
Turbine Jet	3	3	3	4	7
Helicopter	13	13	15	15	18
Total	**612**	**640**	**680**	**733**	**874**
		Fleet Mix			
Single Engine Piston	90.3%	89.9%	89.9%	89.8%	89.6%
Multi-Engine Piston	5.5%	5.5%	5.5%	5.5%	5.5%
Turboprop	1.7%	2.0%	2.0%	2.0%	2.0%
Turbine Jet	0.4%	0.5%	0.5%	0.6%	0.8%
Helicopter	2.1%	2.1%	2.1%	2.1%	2.1%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

Source: FAA Terminal Area Forecast, 2007; DMJM Aviation analysis.

Table 4-5:
FORECAST OF BASED AIRCRAFT BY TYPE BASED ON LATEST FAA TERMINAL AREA FORECAST – ADJUSTED

Aircraft Type	2008	2009	2013	2018	2030
Single Engine Piston	553	580	629	681	828
Multi-Engine Piston	34	35	39	42	51
Turboprop	10	13	14	15	18
Turbine Jet	3	3	4	5	7
Helicopter	13	14	15	16	19
Total	**612**	**645**	**700**	**758**	**924**
		Fleet Mix			
Single Engine Piston	90.3%	89.9%	89.9%	89.8%	89.6%
Multi-Engine Piston	5.5%	5.5%	5.5%	5.5%	5.5%
Turboprop	1.7%	2.0%	2.0%	2.0%	2.0%
Turbine Jet	0.4%	0.5%	0.5%	0.6%	0.8%
Helicopter	2.1%	2.1%	2.1%	2.1%	2.1%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

Source: FAA Terminal Area Forecast, 2007; DMJM Aviation analysis.

It should be noted that the number of based aircraft frequently varies during the course of a year. Airport records indicate month to month changes and thus the totals shown should be interpreted as an average for the year. Percentages of aircraft by type, or the fleet mix, is assumed to be the same in all three scenarios.

Selected Based Aircraft Forecast

The first scenario, TAF Forecast Reconciled, is selected as the based aircraft forecast for this master plan update. This forecast recognizes the difference in present day based aircraft from the TAF. While additional based aircraft facilities will be added from ongoing developments, it is anticipated that the new hangar facilities will provide hangars for based aircraft owners who currently store their aircraft on tie-downs. Since the hangar waiting list does not represent firm commitments, a sharp rise in based aircraft is not anticipated as facilities become available. Additionally, Whiteman tenants indicate that growth will be low to moderate.

Figure 4-1 graphically presents the TAF, TAF Forecast Adjusted, and TAF Forecast Reconciled based aircraft forecasts. The selected forecast – TAF Forecast Reconciled – is represented by a solid blue line.

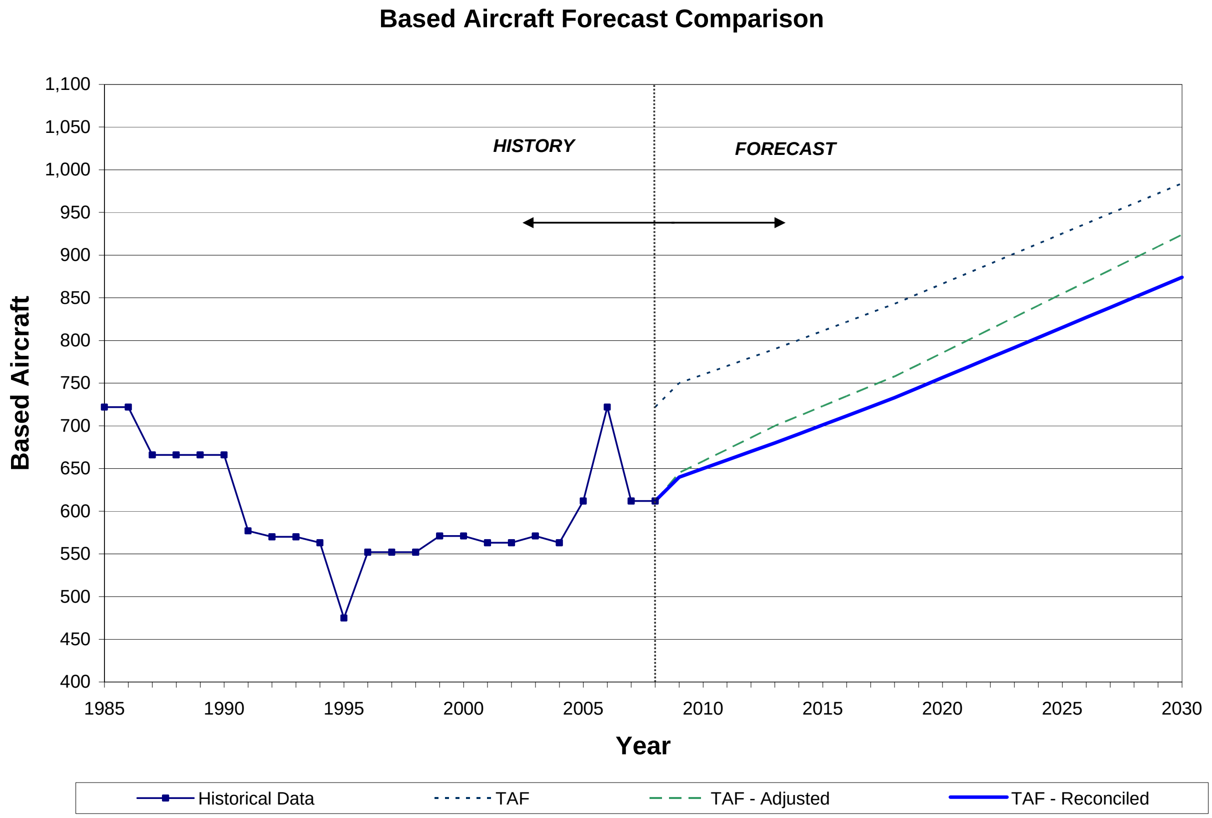


Figure 4-1
Based Aircraft Forecasts

FORECAST OF AIRCRAFT OPERATIONS

Annual Operations by Aircraft Type

An operation, or movement, is defined as either a takeoff or landing. Total annual operations were developed for the forecast years based on the current FAA forecasts available for the airport.[1] While the

[1] Terminal Area Forecasts FY 2007-2025. Federal Aviation Administration.

CASP also included projections of aircraft operations, the FAA Terminal Area Forecast was used since it is updated annually and therefore is more current. Similar to the development of based aircraft forecasts, the trend in operations projected by FAA through the year 2025 was extended to the year 2030 for use in the master plan update. Extension of the FAA trend indicates that aircraft operations will increase from current levels of approximately 93,200 to 143,500 in the year 2030.

Total annual aircraft operations and operations by type of aircraft were projected by using the TAF operations data and assigning operations by type of aircraft based upon Whiteman's fleet mix. Annual aircraft operations are projected to increase by an average of 2.4 percent annually, reaching 143,500 operations by 2030 (see Table 4-6).

Table 4-6:
PROJECTED AIRCRAFT OPERATIONS
WHITEMAN AIRPORT: 2009-2030

	Actual	**Forecast**		
Operations Category	**2007**	**2013**	**2018**	**2030**
Local Operations				
Single Engine Piston	36,970	46,600	49,200	56,520
Multi-Engine Piston	2,270	2,850	3,010	3,470
Turboprop	680	1,040	1,100	1,260
Turbojet	170	260	330	500
Helicopter	850	1,120	1,150	1,320
Itinerant Operations				
Single Engine Piston	47,060	54,710	60,140	71,930
Multi-Engine Piston	2,890	3,350	3,680	4,420
Turboprop	870	1,220	1,340	1,610
Turbojet	220	300	400	640
Helicopter	1,080	1,310	1,410	1,690
Military				
Local Operations	0	0	0	0
Itinerant Operations	140	140	140	140
Total Local Operations	40,900	51,900	54,800	63,100
Total Itinerant Operations	52,300	61,000	67,100	80,400
Total Operations	**93,200**	**112,900**	**121,900**	**143,500**

Source: DMJM Aviation analysis.

The breakdown of local and itinerant operations contained in the FAA forecast was used in this update. Itinerant operations are expected to account for a slight majority of aircraft operations at Whiteman Airport, reaching approximately 80,400, or 56 percent of total operations, by 2030. Local operations are projected to reach approximately 63,100 by 2030.

Peak Hour Operations

In airport planning, the term peak hour actually refers to the peak hour of the average day in the peak month (ADPM) instead of a true peak. This is done to avoid an over-design of facilities that most often will not be used, except for those infrequent periods of extreme peaks. Thus, FAA recommends the peak hour of the ADPM for planning purposes. Peak hour forecasts for Whiteman Airport were developed from historical traffic data and input from the control tower personnel. Air traffic data for 2007 and 2008 indicates that the peak month represents 9.3 percent of annual traffic. The peak month occurred in a month having 30 days, therefore, the average daily traffic is obtained by dividing the peak month traffic by

30. The control tower estimates peak hour operations at approximately 47, which represents 16.2 percent of the current average day of the peak month. It should be noted that almost all operations during the peak hour are training (touch-and-go). For estimating future peak hour activity, the following characteristics will be used.

- Peak month = 9.3% of annual
- Average Day of Peak Month (ADPM) = Peak Month ÷ 30
- Peak Hour = 16.2% of ADPM

Table 4-7 summarizes the projections and as seen peak hour activity is expected to increase to over 70 operations by the end of the planning period.

Table 4-7:
FORECAST OF PEAK HOUR OPERATIONS

Item	2007	2013	2018	2030
Annual Operations	93,219	113,000	121,900	143,500
Peak Month (9.3% Annual)	8,707	10,510	11,340	13,350
Average Day Peak Month (ADPM)	290	350	378	445
Peak Hour of ADPM	47	57	61	72

Source: DMJM Aviation analysis.

FUEL FLOWAGE FORECASTS

Fuel flowage was projected using historic ratios of fuel flowage to annual operations. As noted in Table 4-8, sales of 100 octane fuel is expected to increase, from 245,931 gallons to 372,600 gallons between 2009 and 2030. This corresponds with the increase projected for single and multi-engine piston aircraft operations. Jet fuel sales are projected to increase from 109,673 gallons in 2009 to 221,000 gallons in 2030. This is based on the assumption that fuel sales will double with the expected growth in very light jets and other turbine traffic assumed to increase at the airport.

Table 4-8:
PROJECTED FUEL FLOWAGE
(Gallons)

Year	100 Octane	Jet A
2007	245,931	109,673
2013	294,000	162,000
2018	317,100	178,000
2030	372,600	221,000

Source: DMJM Aviation analysis.

COMPARISON OF FORECASTS

Comparison with Prior Forecast

The forecast developed for this master plan update reflects a significantly lower number of based aircraft and annual operations compared with those projections in the previous 1990 master plan. The forecast of this update projects a total number of based aircraft of 752 in the year 2013, with 805 estimated for the year 2018 (the midpoint of the planning period), and 946 in 2030. The original master plan estimated 930 based aircraft for the year 2010.

In addition, County data indicates that current (2007) operations at Whiteman are about 93,300, forecasted to increase to 112,900 in 2013. The previous master plan estimated 285,000 annual operations for the year 2010.

It is evident that traffic has not materialized at the airport as originally anticipated, which as previously discussed, is the result of numerous factors. Growth of general aviation throughout the region has not occurred due in part to a downturn in the economy, and factors such as aircraft costs due to manufacturer's costs, liability insurance, and fuel costs.

Comparison with California Aviation System Plan Forecast

The California Aviation System Plan (CASP) included a forecast for Whiteman Airport. CASP based aircraft forecasts are substantially lower than the previous master plan forecast and also the Terminal Area Forecast. The CASP 2010 based aircraft number is identical to the projected 2009 based aircraft levels of this master plan forecast. The CASP projects a much slower growth in based aircraft than this master plan forecast. Operations forecast for 2010 is relatively close to the Terminal Area Forecast. However, the CASP projects a decrease in operations to 2015, which is inconsistent with the TAF.

Comparison with Terminal Area Forecast

The forecast developed for this master plan are based on the 2007 Terminal Area Forecasts. As noted earlier, adjustments were made to the based aircraft, to reflect current based aircraft data available from the County. Considering the differences between the TAF and this forecast, and the ongoing developments at Whiteman, the current master plan forecast appears reasonable.

Table 4-9 shows the three forecasts prepared by others along with the selected forecast for this master plan update. Comparisons of the selected forecast and the TAF are also included. As seen in the table, based aircraft forecasts are within 11 percent of the TAF, and operations forecasts are identical. Figures 4-2 and 4-3 depict the various based aircraft and operations forecasts, respectively, described above.

Table 4-9:
COMPARISON OF FORECASTS

Item	**Year**						
Based Aircraft	**2005**	**2008**	**2010**	**2013**	**2015**	**2018**	**2030**
Previous Master Plan	895	N/A	930	N/A	N/A	N/A	N/A
California Aviation System Plan	N/A	N/A	640	N/A	650	N/A	N/A
Terminal Area Forecast (TAF)	612	722	760	790	812	843	984
Master Plan Update	N/A	612	N/A	680	N/A	733	874
Master Plan Forecast Percent Above (Below) TAF	**N/A**	**85%**	**N/A**	**86%**	**N/A**	**87%**	**89%**
Annual Aircraft Operations	**2005**	**2007**	**2010**	**2013**	**2015**	**2018**	**2030**
Previous Master Plan	260,000	N/A	285,000	N/A	N/A	N/A	N/A
California Aviation System Plan	N/A	N/A	127,000	N/A	103,000	N/A	N/A
Terminal Area Forecast (TAF)	102,382	100,418	106,485	112,941	116,830	121,914	143,533
Master Plan Update	N/A	93,214	N/A	113,000	N/A	121,900	143,500
Master Plan Forecast Percent Above (Below) TAF	**N/A**	**100%**	**N/A**	**100%**	**N/A**	**100%**	**100%**

Sources: Hodges & Shutt. 1990; California Aviation System Plan. 1998; FAA Terminal Area Forecast. 2007; DMJM Aviation.

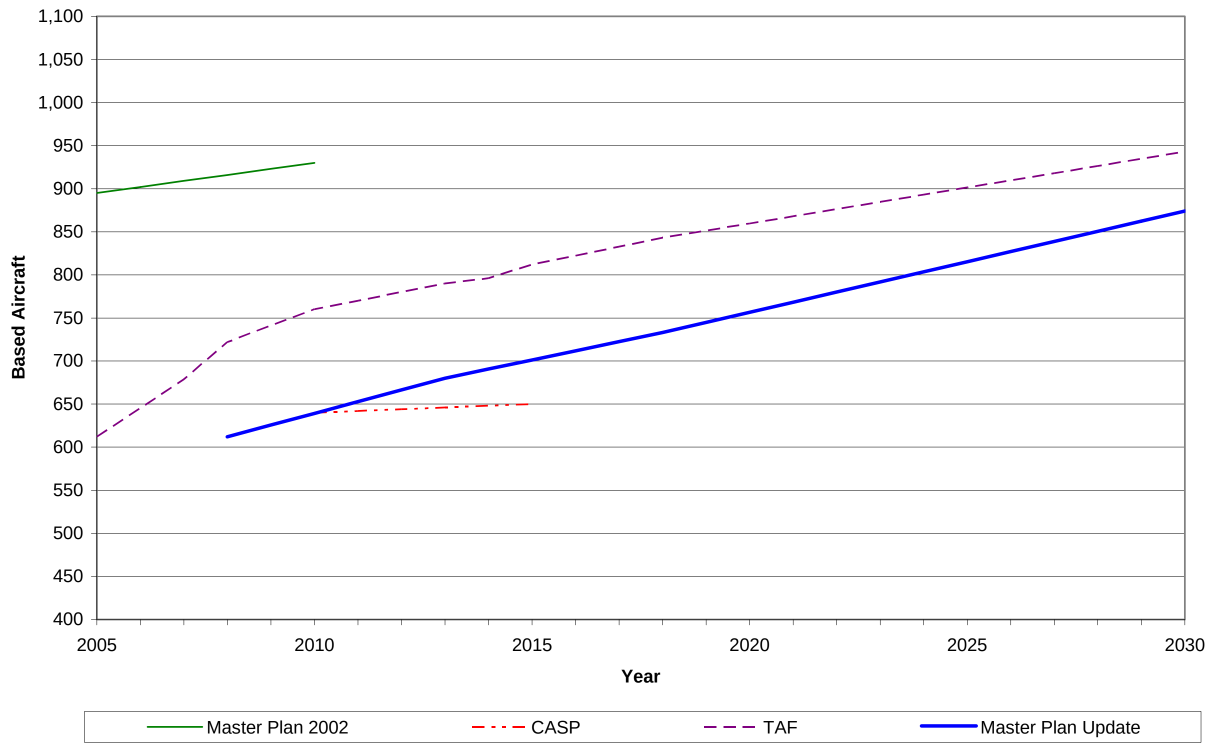


Figure 4-2
Comparison of Based Aircraft Forecasts

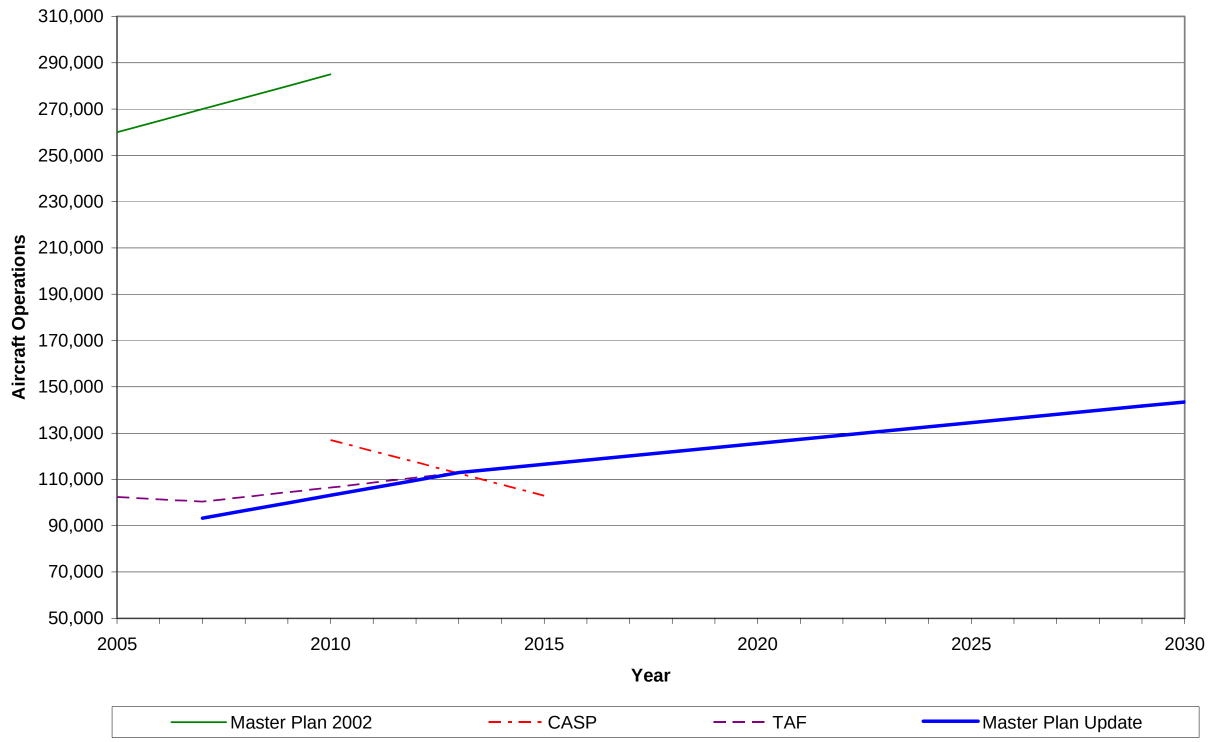
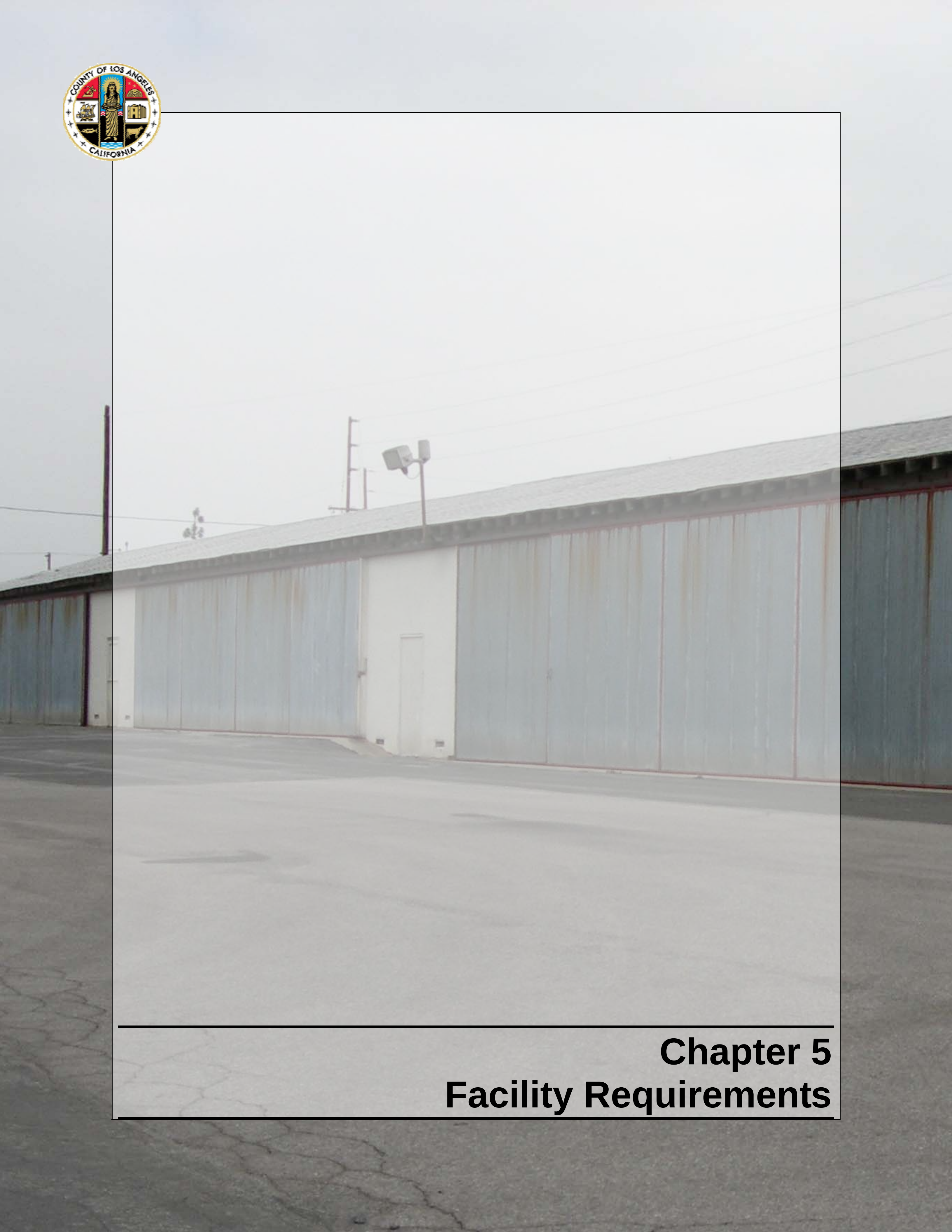


Figure 4-3
Comparison of Aircraft Operations Forecasts



Chapter 5
Facility Requirements

Chapter 5
Facility Requirements

INTRODUCTION

Chapter 4 produced a forecast of traffic volumes estimated to be generated at the airport during the 20-year forecast period. The next step in the planning process is to determine the type and magnitude of airport facilities that will be needed during the 20-year strategic planning period to satisfactorily accommodate future traffic volumes.

The process of determining facility requirements involves the application of acceptable airport planning standards to the various forecast components to identify the needed facilities that will provide sufficient capacity to handle the expected traffic. By comparing the sizes and capacities of the future facility needs with existing facility sizes and capacities, facility deficiencies can be determined and quantified.

The deficiencies are then resolved by increasing facility capacities over a phased development program. This chapter of the report addresses the calculation of theoretical airport facility requirements as discussed above. The facilities developed through this planning process must be considered theoretical until they have been related to existing facilities. In Chapter 6, Concept Development, the recommended improvements derived from the facility requirements will be delineated in a series of plans and drawings.

The uncertainty of long-range forecasting was noted in Chapter 4, and a range of forecasts was provided. In the interest of preparing a reasonable plan that can be used as a development guide for the 20-year master planning period, the analysis of facility requirements used the Reconciled Forecast presented in Chapter 4. However, to create a more flexible plan, facilities are provided which would accommodate the most demanding forecast levels – the TAF forecast, when practical. While forecasts appear to be on the conservative (high) side, this is done to help guide the County should demand at Whiteman exceed the forecasted levels.

It cannot be overemphasized that it will be ***actual*** demand that dictates the eventual development of facilities and not forecast demand. Should traffic actually materialize faster than forecast, then facility improvements should be accelerated. Should demand actually lag the forecast, then facility improvements may be deferred. Thus, the use of the Reconciled Forecast does not commit the County to construct the facilities associated with projected demand, but it provides an assumed schedule for planning purposes. Airport facility requirements are grouped into the two main operating elements - airside facilities and landside facilities. Before addressing the facility requirements, a brief discussion of airport classification is presented.

AIRPORT CLASSIFICATION

Whiteman Airport functions in several roles as defined by FAA and explained in Chapter 3. The airport is contained in the National Plan of Integrated Airport Systems (NPIAS) and is classified as a Reliever Airport. Reliever airports are defined as general aviation airports that provide general aviation access to the surrounding area and have 100 or more based aircraft or 25,000 annual itinerant operations. The airport is also contained in the California Aviation System Plan (CASP) and is classified as a Metropolitan-Business/Corporate Airport.

Metropolitan-Business/Corporate Airports, as defined by the CASP, are airports that serve the same activities as regional airports; are located in urbanized areas; provide for the same flying activities as regional airports with an emphasis on business, charter and corporate flying; accommodate all business jet and turboprop aircraft with a higher level or activity than regional airports; provide full services for pilots and aircraft, including jet fuel; has a published instrument approach and a control tower; provides flight planning facilities. While this is a system planning classification it is noted that Whiteman is unable to accommodate all business jet and turboprop aircraft.

Business/Corporate is defined as the use of an airport by aircraft by an individual for transportation required by a business in which the individual is engaged (the pilot is not compensated); or the use of an airport by aircraft owned or leased by a company to transport its employees and/or property (professional pilot is compensated). Business/Corporate designation is a subcategory to designate prevalent service at a regional or metropolitan airport.

Airport Reference Code

The FAA in its current Advisory Circular (AC) 150/5300-13, Airport Design, has developed an airport reference code (ARC) which is a coding system that relates airport design criteria and planning standards to two components: the operational and physical characteristics of aircraft operating at or expected to operate at the airport. It is an alphanumeric code with the numeric component consisting of a Roman numeral. The letter element of the code is the aircraft approach category and thus relates to operational characteristics. The aircraft approach category is a grouping of aircraft that is based on 1.3 times the stalling speed as follows:

Category	Speed
A	Speed less than 91 knots
B	Speed 91 knots or more but less than 121 knots
C	Speed 121 knots or more but less than 141 knots
D	Speed 141 knots or more but less than 166 knots
E	Speed 166 knots or more

The second component of the ARC is the airplane design group and relates to the wingspan and tail height of aircraft and is a physical characteristic. The grouping of aircraft by airplane design group is as follows:

Airplane Design Group	Wingspan	Tail Height
I	Up to but not including 49 feet	Up to but not including 20 feet
II	49 feet up to but not including 79 feet	20 feet up to but not including 30 feet
III	79 feet up to but not including 118 feet	30 feet up to but not including 45 feet
IV	118 feet up to but not including 171 feet	45 feet up to but not Including 60 feet
V	171 feet up to but not including 214 feet	60 feet up to but not including 66 feet
VI	214 feet up to but not including 262 feet	66 feet up to but not including 80 feet

The aircraft approach speed element of the ARC will generally deal with runways and runway related facilities whereas the airplane design group relates to separations required between airfield elements, i.e., runway-taxiway separations, taxilane, and apron clearances, etc.

Critical Aircraft and Associated Airport Reference Code

The ARC to be used for airport master planning, as well as airport layout plans, is the ARC category applicable to the most demanding class of aircraft estimated to fly at least 500 annual operations at the airport. The current Airport Layout Plan (ALP) indicates an existing ARC of B-I, small airplanes exclusively for the airport. This is appropriate for future planning and includes aircraft such as a Beech King Air B100 and Cessna Citation CJ1 aircraft.

ARC B-I, small airplanes exclusively will be used for existing and future planning purposes. Application of planning and design standards for ARC B-I, small airplanes exclusively ensures that all general aviation aircraft that use the airport will be provided facilities that are designed to appropriate standards, in accordance with the planning standards contained in FAA AC 150/5300-13, Airport Design. The existing constraints, namely Osborne and Pierce Streets, prevent the frequent (more than 500 annual operations) accommodation of larger aircraft and more demanding airport design standards. However, larger aircraft can occasionally use the airport at the pilot's discretion. Table 5-1 presents the airport planning standards for Airport Reference Code B-I, small airplanes exclusively.

Table 5-1:
AIRPORT PLANNING STANDARDS
FOR AIRPORT REFERENCE CODE B-I, SMALL AIRPLANES EXCLUSIVELY

AIRPORT DESIGN AIRPLANE AND AIRPORT DATA

Aircraft Approach Category B
Airplane Design Group I, Small Airplanes Exclusively
Airplane wingspan .... 48.99 feet
Primary runway end approach visibility minimums are not lower than 1 mile
Other runway end approach visibility minimums are not lower than 1 mile
Airplane undercarriage width (1.15 x main gear track) .... 15.00 feet
Airport elevation .... 1,003 feet
Airplane tail height .... 19.99 feet

SEPARATION STANDARDS

Runway centerline to parallel runway centerline .... 700 feet
  wider runway separation may be required for capacity (See AC 150/5060-5)
Runway centerline to parallel taxiway/taxilane centerline .... 150 feet
Runway centerline to edge of aircraft parking .... 125 feet
Taxiway centerline to parallel taxiway/taxilane centerline .... 69 feet
Taxiway centerline to fixed or movable object .... 44.5 feet
Taxilane centerline to parallel taxilane centerline .... 64 feet
Taxilane centerline to fixed or movable object .... 39.5 feet

RUNWAY PROTECTION ZONE

Runway protection zone: (Runway 12-30)
  Length .... 1,000 feet
  Width 200 feet from runway end .... 250 feet
  Width 1,200 feet from runway end .... 450 feet

Table 5-1 (cont'd)
AIRPORT PLANNING STANDARDS
FOR AIRPORT REFERENCE CODE B-I, SMALL AIRPLANES EXCLUSIVELY

OBSTACLE FREE ZONES

Runway obstacle free zone (OFZ) width	250 feet
Runway obstacle free zone length beyond each runway end	200 feet
Inner-approach obstacle free zone width	250 feet
Inner-approach obstacle free zone length beyond approach light system	200 feet
Inner-approach obstacle free zone slope from 200 feet beyond threshold	50:1
Inner-transitional obstacle free zone slope	0:1

RUNWAY DESIGN STANDARDS

Runway width	60 feet
Runway shoulder width	10 feet
Runway blast pad width	80 feet
Runway blast pad length	60 feet
Runway safety area width	120 feet
Runway safety area length beyond each runway end or stopway end, whichever is greater	240 feet
Runway object free area width	250 feet
Runway object free area length beyond each runway end or stopway end, whichever is greater	240 feet
Clearway width	500 feet
Stopway width	60 feet

THRESHOLD SITING SURFACE

Threshold siting surface: (Runway 12-30)	
Distance out from threshold to start of surface	200 feet
Width of surface at start of trapezoidal section	400 feet
Width of surface at end of trapezoidal section	3,400 feet
Length of trapezoidal section	10,000 feet
Length of rectangular section	0 feet
Slope of section	20:1

TAXIWAY DESIGN STANDARDS

Taxiway width	25 feet
Taxiway edge safety margin	5 feet
Taxiway shoulder width	10 feet
Taxiway safety area width	49 feet
Taxiway object free area width	88.9 feet
Taxilane object free area width	79 feet
Taxiway wingtip clearance	20 feet
Taxilane wingtip clearance	15 feet

Source: FAA Advisory Circular 150/5300-13, Airport Design, Change 13 dated June 18, 2008.

AIRFIELD CAPACITY REQUIREMENTS

Hourly runway capacities and annual service volume (ASV) estimates are needed to design and evaluate airfield development and improvement projects. The method for computing airport capacity is the throughput method described in FAA AC 150/5060-5, Airport Capacity and Delay.

Definition of Terms

The terms used in analyzing airport capacity are defined below:

Aircraft Mix - is the relative percentage of operations conducted by each of four classes of aircraft according to size (A, B, C and D). Table 5-2 identifies the physical characteristics of the four aircraft size classifications and their relationship to terms used in the wake turbulence standards.

Annual Service Volume (ASV) - is a reasonable estimate of an airport's annual capacity. It accounts for differences in runway use, aircraft mix, weather conditions, etc., that would be encountered over a year's time.

Capacity - (throughput capacity) is a measure of the maximum number of aircraft operations (takeoffs and landings) which can be accommodated on the airport or airport component in an hour. Since the capacity of an airport component is independent of the capacity of other components, it can be calculated separately.

Ceiling and Visibility - for purposes of capacity calculations, the following terms are used as measures of ceiling and visibility conditions:

> ***VFR*** - Visual flight rule conditions occur whenever the cloud ceiling is at least 1,000 feet above ground level and the visibility is at least three statute miles.
>
> ***IFR*** - Instrument flight rule conditions occur whenever the cloud ceiling is at least 1,840 feet but less than three statute miles.
>
> ***PVC*** - Poor visibility and ceiling conditions exist whenever the cloud ceiling is less than 1,840 feet and/or the visibility is less than 1 ¼ statute mile.

Table 5-2:
AIRPORT CLASSIFICATIONS

Aircraft Class	Max. Cert. T.O. Weight (lbs.)	Numer of Engines	Wake Turbulence Classification
A, B	12,500 or less	Single	Small (S)
C	12,500 - 300,000	Multi	Large (L)
D	Over 300,000	Multi	Heavy (H)

Source: FAA AC 150/5060-5, Airport Capacity and Delay.

Delay - is the difference between constrained and unconstrained operating time.

Demand - is the magnitude of aircraft operations to be accommodated in a specified time period.

Mix Index - is a mathematical expression. It is the percent of Class C aircraft plus three times the percent of Class D aircraft, and is written % (C+3D).

Percent Arrivals (PA) - is the ratio of arrivals to total operations and is computed as follows:

$$PA = \frac{A + \frac{1}{2}(T\&G)}{A + DA + (T\&G)} \times 100$$ where:

A = number of arriving aircraft in the hour

DA = number of departing aircraft in the hour

T&G = number of touch and go's in the hour

Percent Touch and Go's (T&G) - is the ratio of landings with an immediate take-off to total operations and is computed as follows:

$$T\&G = \frac{(T\&G)}{A + DA + (T\&G)} \times 100$$ where:

A = number of arriving aircraft in the hour

DA = number of departing aircraft in the hour

T&G = number of touch and go's in the hour

Touch and go operations are normally associated with training. The number of these operations usually decrease as the number of air carrier operations increase, as demand for service approaches runway capacity, or as weather conditions deteriorate.

Runway Use Configuration - is the number, location and orientation of the active runway(s), the type and direction of operations, and the flight rules in effect at a particular time.

Having established the definitions of terms used in the capacity analysis, the balance of this subsection deals with the calculation of runway hourly capacities and the annual service volume.

Annual and Hourly Capacity

Runway hourly capacity is calculated for the different configurations under which the Airport will operate. Since the airfield configuration of Whiteman is basic, symmetric layout (single runway with parallel taxiway, midfield turnoff, and two large fillet taxiways) the different operating configurations are:

- **VFR**
- **IFR**
- **Airport closed** - those periods when weather conditions are below published landing minimums.

The hourly capacity estimates were carried out in accordance with instructions and capacity curves set forth in FAA AC 150/5060-5, Chapter 3. The basic steps followed were:

1. From Figure 3-1 of the AC, the appropriate graph for determining **VFR** hourly capacity is identified.
2. Use Figure 3-3 for **VFR** capacity.
3. Mix Index % (C+3D) = (1+3[0]) = 1%. (Based on forecast fleet mix).
4. Percent Arrivals - 50%. (Arrivals are assumed to equal departures).
5. From Figure 3-3 Hourly **VFR** Base Capacity - 96 operations.
6. Tough-and-go operations are estimated at 5% of total operations. This translates into a touch-and-go factor of 1.04 during **VFR**.
7. Since two runway exits (turnoffs) exists for the exit range determined by FAA (2,000-4,000 feet) an exit factor of 0.94 is obtained from Figure 3-3.
8. **VFR** Capacity = 96*1.04*0.94 = ***94 Operations.***

IFR hourly capacities are lower than VFR capacities as more spacing is needed between operations. The basic following steps as outlined in FAA AC 150/5060-5 were followed:

1. From Figure 3-1 of the AC, the appropriate graph for determining **IFR** hourly capacity is identified.
2. Use Figure 3-43 for **IFR** capacity.
3. Mix Index % (C+3D) = (3+3[0]) = 3%. (Based on forecast fleet mix).
4. Percent Arrivals - 50%. (Arrivals are assumed to equal departures).
5. From Figure 4-15 Hourly **IFR** Base Capacity - 27 operations.
6. Tough-and-go operations are estimated at 0% of total operations. This translates into a touch-and-go factor of 1.00 during **IFR**.
7. Since two runway exits (turnoffs) exists for the exit range determined by FAA (2,000-4,000 feet) an exit factor of 0.99 is obtained from Figure 3-43.
8. **IFR** Capacity = 27*1.00*0.99 = ***27 Operations.***

For the purposes of capacity estimates, the hourly capacity is assumed to be the same for both operating directions (east and west, or Runway 12 or 30) due to the symmetry of the airfield layout.

Annual Service Volume (ASV)

The hourly capacities determined in the preceding steps together with the percent of operating conditions are used to calculate a weighted hourly capacity (C_w). For the estimate of **ASV** it was assumed that **IFR** conditions occur 4 percent of the time. The airport was closed 4 percent of the time due to **IFR** conditions below the published minimums for the instrument approach procedures. When not closed, the conditions were assumed to be **VFR** (92 percent of the time).

Based on the above and procedures contained in the AC a weighted hourly capacity of 84 operations is obtained for the airport and is used for estimating **ASV**.

Annual service volume is calculated as:

$$ASV = (C_w)*(D)*(H)$$

where:

C_w = weighted hourly capacity

D = ratio of annual to average day of the peak month (ADPM) demand

H = ratio of ADPM to peak hour demand

Average demand ratios were developed from historical data obtained from the ATCT and used in the projection of peak hour forecasts for the years 2007 and 2008. The ratios derived were a daily demand ratio (D) of 290 and an hourly ratio (H) of 16.2. These were then compared for reasonableness with typical demand ratios provided in the AC. The derived daily ratio represented a reasonable number and fell within the lower end of the range (280-310) contained in the AC and the hourly ratio proved to be higher than the range of 7-11. In order to provide a more conservative estimate of capacity the peaking factors assumed in the AC for long range planning estimates were adopted (D = 290, H = 9).

The **ASV** is then calculated at approximately 219,000 operations. This was then checked against long range planning **ASV** estimates contained in AC 150/5060-5 for the airport configuration and fleet mix. The long range estimate provided in the AC is 230,000 operations. The difference appears to lie in the fact that a Whiteman has recently experienced lower amount of touch-and-go activity than it historically has and than reflected in the long range planning contained within the AC. Since the variance of the **ASV** is due to the recent decline in touch-and-go activity, and touch-and-go activity at the airport will likely increase at the airport within the planning period, it will be assumed that that annual capacity for the airport is 230,000 operations.

It should be noted that the above calculated **ASV** represents the capacity of the present airport. It is also important to note the capacity of an airport is not constant and may vary over time depending upon airfield improvements, airfield or airspace geometry, ATC procedures, weather and mix of aircraft operating at the airport. The capacity of an airport can change with or without airfield improvements.

Demand Versus Capacity

By comparing ASV and hourly capacities with the forecast annual and peak hour demand, the relationship between demand and capacity can be determined. Table 5-3 presents the comparisons of demand versus capacity and as seen it appears that the present airfield will accommodate demand through the planning period.

Table 5-3:
DEMAND VERSUS CAPACITY

	2007	2013	2018	2030
ANNUAL:				
Demand	93,219	113,000	121,900	143,500
Capacity	230,000	230,000	230,000	230,000
Capacity Utilized	41%	49%	53%	62%
WEIGHTED HOURLY				
Demand	47	57	61	72
Capacity	84	84	84	84
Capacity Utilized	56%	68%	73%	86%

Source: DMJM Aviation analysis.

Throughout the twenty year planning period, capacity is adequate, but the relationship of demand and capacity reaches a threshold when capacity requirements are usually considered. Generally, capacity improvements should be recommended when demand is forecast to utilize 60 percent of capacity. This allows sufficient lead time to develop the improvement before the airport becomes saturated. Airport activity levels warranting capacity improvements are contained in FAA Order 5090.3B. As seen in Table 5-3, the forecast demand utilizes more than 60 percent of annual capacity in the 20-year planning period. The hourly capacity is forecasted to utilize more than 60 percent of capacity in the short-term planning period. In the comparison of demand and capacity, the hourly basis will be used due to the lower degree of precision inherent in the **ASV** calculations through application of a range of peaking factors. For example, with a weighted capacity of 84, the **ASV** can be estimated between 164,600 and 286,400 based on typical GA airport demand ratios specified in AD 150/5060-5.

From the preceding demand/capacity analysis it is concluded that airfield (runway/taxiway) improvements may be warranted based upon capacity reasons in the short-term. It is noted that 80 percent of operations on an average day in the peak month occur from 12:00 pm to 6:00 pm. Shifting flight school operations to off peak hours (the morning) would temporarily lower the peak hour demand currently experienced at the airport. This demand management strategy is a temporary measure to relieve peak hour demands at the airport. More permanent capacity measures will be required in the long term, such as additional runway exits.

AIRSIDE FACILITY REQUIREMENTS

As discussed earlier, the airside operating element as used in this report includes the runway and taxiway system, the runway approach areas and the associated appurtenances such as airfield lighting, visual aids, and navigation aids. With the exception of aircraft aprons which, due to their interface with terminal facilities, are analyzed as a landside element, airside refers to those airport areas where aircraft operations are conducted. The ability of the present airside facilities to accommodate existing and future traffic loads and the facilities required through the year 2030 are examined in the following subsections.

Runway System

The existing runway system was described in Chapter 3. This section deals with runway requirements needed to satisfy the forecast demand in terms of runway length, pavement strength requirement, crosswind coverage, and safety areas. Planning and design standards set forth in FAA AC 150/5300-13, Airport Design, for airport reference code B-I, small airplanes exclusively are the basis of this analysis. This will provide satisfactory facilities for the variety of aircraft expected to use the airport.

When determining runway requirements it is important to account for the type of approach the airport has or can be expected to have. Runways with lower visibility minimums have more restrictive requirements. Currently Runways 12 and 30 are equipped for non-precision instrument approaches with visibility minimums not lower than 1 mile. For the purpose of this master plan, these instrument approach capabilities are assumed in the future.

Crosswind Runway

The existing runway system provides 99.42 percent coverage for a 10.5 knot (12 mph) crosswind. FAA states in AC 150/5300-13 that the allowable crosswind is 10.5 knots for Airport Reference Codes A-I and B-I. The coverage provided by the existing runway alignment meets the FAA recommendation of 95 percent crosswind coverage, thus additional runways for improved crosswind coverage are not required.

Runway Length

This subsection deals with the runway length requirements for the existing runway at Whiteman. Runway length is a critical consideration in airport planning and design. Aircraft need specified runway lengths to operate safely under varying conditions of wind, temperature, and takeoff weight.

FAA Advisory Circular 150/5325-4A contains criteria used in developing runway lengths required for various general aviation utility and transport airports. The recommended runway lengths are based on performance information from manufacturer's flight manuals in accordance with provisions in FAR (Federal Aviation Regulations) Part 23, Airworthiness Standards: Normal, Utility, and Acrobatic Category Airplanes, and FAR 91, General Operating and Flight Rules.

Aircraft performance combined with significant site characteristics are considered in analyzing runway length. The site characteristics that are evaluated include: airport elevation, temperature (mean maximum temperature of the hottest month), runway gradient, and wind conditions.

The FAA Airport Design (Version 4.2d) software package contains a program to calculate typical runway requirements for various classes of aircraft. This model was applied and the results are presented in Table 5-4. The airport site characteristics used in the runway length analysis were:

- Elevation – 1,003 feet MSL
- Temperature – 89.3°F
- Maximum Difference in Runway Centerline Elevation – 42.9 feet
- Surface Winds – Calm

Table 5-4:
FAA RECOMMENDED RUNWAY LENGTHS
FOR WHITEMAN AIRPORT

AIRPORT AND RUNWAY DATA	
Airport elevation	1,003 feet
Mean daily maximum temperature of the hottest month	89.3° F
Maximum difference in runway centerline elevation	42.9 feet
RUNWAY LENGTHS RECOMMENDED FOR AIRPORT DESIGN	
Small airplanes with approach speeds of less than 30 knots	330 feet
Small airplanes with approach speeds of less than 50 knots	880 feet
Small airplanes with less than 10 passenger seats	
75 percent of these small airplanes	2,850 feet
95 percent of these small airplanes	3,380 feet
100 percent of these small airplanes	4,000 feet
Small airplanes with 10 or more passenger seats	4,450 feet
Large airplanes of 60,000 pounds or less	
75 percent of these large airplanes at 60 percent useful load	5,240 feet
75 percent of these large airplanes at 90 percent useful load	7,160 feet
100 percent of these large airplanes at 60 percent useful load	6,100 feet
100 percent of these large airplanes at 90 percent useful load	9,100 feet
Airplanes of more than 60,000 pounds	approx. 5,360 feet

Sources: FAA Advisory Circular 150/5325-4A, Runway Length Requirements for Airport Design.
DMJM Aviation application of FAA Airport Design (Version 4.2d).

The critical aircraft for Whiteman Airport are single engine and multi-engine aircraft which primarily weigh less than 12,500 pounds. As seen in Table 5-4, the recommended runway lengths for small airplanes with less than 10 passenger seats is 2,850 to 4,000 feet.

The present length of Runway 12-30 is 4,120 feet which is estimated to satisfy the requirements for 100 percent of small airplanes with less than 10 passenger seats.

Runway Width

Runway width is a dimensional standard that is based upon the physical and performance characteristics of aircraft using the airport (or runway). The characteristics of importance are wingspan and approach speeds. In this case, FAA Airplane Design Group I, small aircraft exclusively (wingspans up to but not including 49 feet) and approach category B are used and will provide adequate width and separation for current and anticipated aircraft operations. FAA AC 150/5300-13 specifies a runway width of 60 feet for an airport reference code of B-I, small aircraft exclusively. The present runway is 75 feet wide and exceeds the standard.

Runway Grades

The maximum longitudinal grade is 2.0 percent for runways serving aircraft approach category B aircraft. The existing maximum longitudinal runway grade is 2.0 percent and therefore longitudinal grade for the runway is within acceptable limits. The runway should have adequate transverse slopes to prevent the accumulation of water on the surface. A maximum transverse grade of 1.0 to 1.5 percent is recommended for the airport by FAA. Based on inspection of digital topographical mapping obtained for this study, it appears the runway complies with these standards.

Pavement Strength

As mentioned in Chapter 3, based on information contained in the latest U.S. Government Flight Information Publication/Facility Directory the runway pavement strength is 12,500 pounds for single wheel landing gears. The pavement strength is determined by the design aircraft (Beech King Air) weight and gear configuration. Dual-wheel configuration is approximately double the single-wheel configuration pavement strength (approximately 25,000 pounds). This is adequate to accommodate aircraft expected to use the airport in the future. Therefore strengthening of the runway pavement is not required. The runway is capable of accommodating heavier aircraft on an infrequent basis. However, regular operations by heavier aircraft will damage the runway pavement. The runway and taxiway were rehabilitated in 2006 and pavement maintenance should occur throughout the planning period. The County has a slurry seal project planned for the apron in the short-term.

Runway Signage

Whiteman Airport has signs on the airfield including exit signs for both runway directions to all taxiways, holding position signs along with taxiway location signs on all taxiways that intersect the runway. Signage at Whiteman Airport meets standards.

Runway Blast Pads

A runway blast pad provides blast erosion protection beyond runway ends. Runway 12-30 requires blast pads that are 80 feet wide and 60 feet long in accordance with airport reference code B-I, small aircraft exclusively criteria. The end of Runway 30 has a blast pad that is 77 feet wide and 68 feet long. The end of Runway 12's blast pad is 78 feet wide and 48 feet long. These do not meet FAA requirements. There is a quasi blast fence on Runway 12. Consideration should be given to provide enhanced blast protection if it can be practicably provided and remain clear of FAR Part 77 surfaces.

Runway Safety Area

A runway safety area (RSA) is defined as a rectangular area centered about the runway that is cleared, drained, graded, and usually turfed. Under normal conditions, this area should be capable of accommodating occasional aircraft that may veer off the runway, as well as fire fighting equipment. For Whiteman Airport, the existing and future requirement for Runway 12-30 to accommodate airport reference code B-I, small aircraft exclusively is an area 120 feet wide centered on the runway centerline, and extending 240 feet beyond each runway end. Of the 240 feet required as extended RSA, only 55 feet is provided at Runway 12 and 73 feet at Runway 30. Runway 12 RSA is traversed by Pierce Street and Sutter Avenue and encompasses three buildings. Runway 30 RSA is traversed by Osborne Street. Figure 5-1 shows the Whiteman Airport safety areas. Full RSA is provided at Whiteman through the application of declared distances.

Runway Object Free Areas

The runway object free area (ROFA) is a two dimensional ground area surrounding the runway and its clearing standard precludes parked aircraft, agricultural operations, and objects, except those fixed by function. The criterion replaces the former design standard of the aircraft parking limit line and is designed with the intention of providing adequate wing-tip clearance. The design standards for an ARC of B-I, small aircraft exclusively call for a ROFA extending 125 feet on either side the runway centerline and extending 240 feet beyond the end of the runway. Object free areas also exist for taxiways and are 89 feet wide (44.5 feet on either side of centerline) for Airplane Design Group I.

As noted in Chapter 3, the required ROFA extended beyond Runways 12 and 30 is not available. The ROFA is traversed by the perimeter fence, local roads, and includes neighboring residential areas. Same as the RSA, only 55 feet of unobstructed ROFA exist at the end of Runway 12 and 73 feet beyond Runway 30. Runway 12 ROFA is traversed by Pierce Street and Sutter Avenue and includes approximately five buildings and at least one light pole. Runway 30 ROFA is traversed by Osborne Street and within it are at least three power line poles and a building. Figure 5-1 shows safety areas and surrounding land uses. Full ROFA is provided through the application of declared distances.

Runway Obstacle Free Zone

The runway obstacle free zone (OFZ) is a two dimensional ground area surrounding the runway. The OFZ clearing standard precludes taxiing and parked airplanes and object penetrations, except for frangible visual NAVAIDs that need to be located in the OFZ because of their function. The design standards for an ARC of B-I call for an OFZ extending 200 feet beyond each of the runway ends. For runways serving small airplanes with approach speeds of 50 knots or more the width of the OFZ is 250 feet, or 125 feet on either side of the runway centerline. Of the required 200 feet, 55 feet and 73 feet respectively are traversed by the perimeter fence. In addition, Runway 12 OFZ includes Pierce Street, Sutter Avenue, and approximately three buildings. Runway 30 OFZ is traversed by Osborne Street and two buildings (see Figure 5-1). Similar to the RSA and ROFA, full OFZ is provided through the application of declared distances.

Declared Distances

Declared distances are applied when standard safety areas beyond the runway threshold are not met. Deviations from the runway safety area, runway obstacle free zone, and runway object free area may be mitigated through the application of declared distances as an alternative to constructing full safety areas. As detailed in Chapter 3, four distances are declared for each runway end: takeoff run available (TORA); takeoff distance available (TODA); accelerate stop distance available (ASDA); and, landing distance available (LDA).

As noted in Chapter 3, declared distances are currently applied to Whiteman Airport because full RSA, OFZ, and ROFA are not provided. The existing declared distances, were established sometime in the 1990s. Table 5-5 contains the published declared distances for the airport. A preliminary review was conducted of the declared distances. This review recognized two factors: 1) more accurate topographic data which was obtained for this study and 2) removal of obstacles near Runway 30. The review concluded that ASDA and LDA for both runways could be slightly increased. However, the use of declared distances at general aviation airports is uncommon and alternatives should be considered to provide full safety areas without applying declared distances.

Table 5-5:
PUBLISHED DECLARED DISTANCES

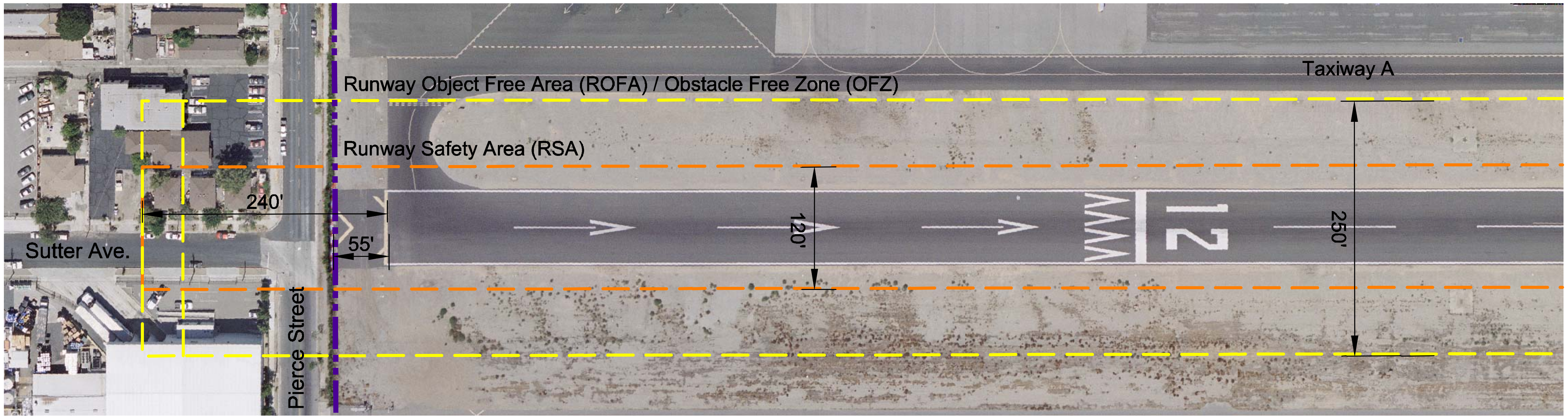
Distance	Runway 12	Runway 30
Takeoff Run Available (feet)	3,442'	3,191'
Takeoff Distance Available (feet)	4,120'	4,120'
Accelerate Stop Distance Available (feet)	3,910'	3,940'
Landing Distance Available (feet)	3,181'	3,462'

Source: FAA Form 5010.

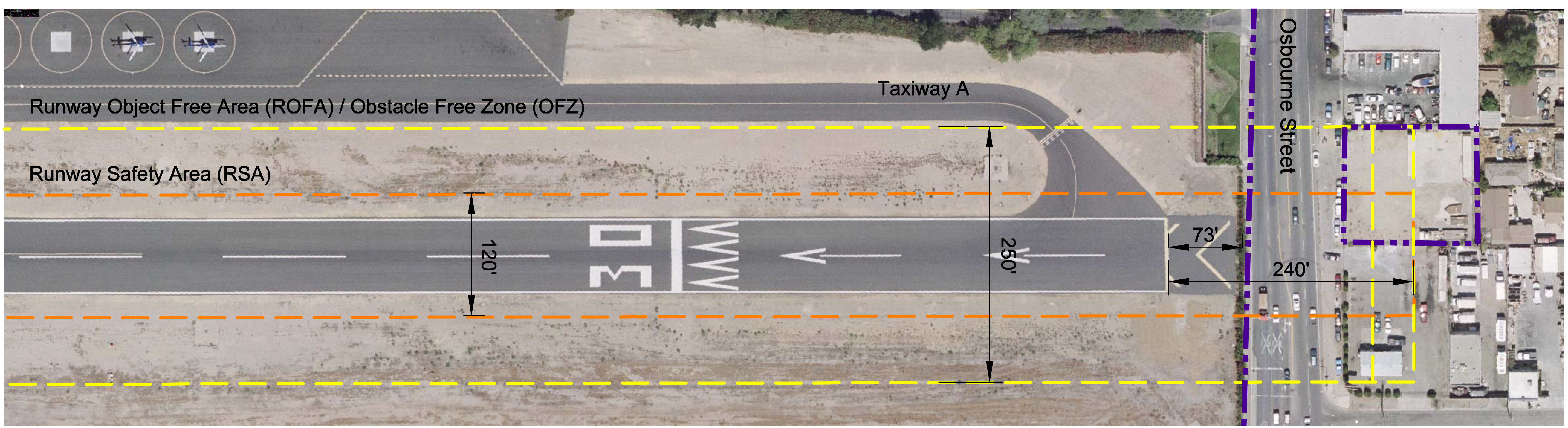
50' 0 50'
GRAPHIC SCALE

LEGEND

DESCRIPTION	EXISTING	ULTIMATE
AIRPORT BOUNDARY		SAME
RUNWAY OBJECT FREE AREA (ROFA)		SAME
RUNWAY SAFETY AREA (RSA)		SAME



Runway 12



Runway 30

Figure 5-1
Runway 12-30 Safety Zones

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Threshold Siting Surface

Appendix 2 of FAA Advisory Circular 150/5300-13, Airport Design, contains guidance on locating runway thresholds to meet approach obstacle clearance requirements using threshold siting surfaces. If an object penetrates a threshold siting surface, one or more of the following actions is required: 1) the object is removed or lowered to preclude the penetration; 2) the threshold is displaced to preclude the object penetration; 3) visibility minimums are raised; 4) night operations are prohibited; or 5) raising the threshold crossing height.

The shape, dimensions and slope of a threshold siting surface are dependent upon the type of aircraft operations, landing visibility minimums and types of instrumentation available. For the purpose of this analysis, a threshold siting surface for the following type of runway is assumed: "Approach end of runways expected to support instrument night circling."

The applicable threshold siting surface is described as follows. The centerline of the surface extends 10,000 feet along the extended runway centerline. The surface extends laterally on each side of the centerline 200 feet from the runway threshold and increases to a width of 1,700 feet on each side of the runway centerline at the end of the surface. The beginning of the elevation is 200 feet from the runway threshold, and the surface extends outward and upward at a slope of 20 to 1.

Based on a review of the obstacles in the vicinity of the airport and current threshold siting criteria, displaced thresholds for Runway 12 and 30 are properly located. As noted in Chapter 3, the approach slopes to both runways is higher than standard, due to obstacles. Should a standard approach slope be desired, the displaced thresholds would need to be relocated.

Approach Surfaces and Runway Protection Zones

The approach surface and the runway protection zone (formerly called clear zone) are important elements in the design of runways which help to ensure the safe operations of aircraft. A brief description of these two areas follows:

- **The Approach Surface** is an imaginary inclined plane beginning at the end of the primary surface and extending outward to distances up to 10 miles depending on runway use (i.e., instrument or visual approaches). The width and slope of the approach surface are also dependent on runway use. The approach surface governs the height of objects on or near the airport. Objects should not penetrate or extend above the approach surface. If they do, they are classified as obstructions and must be either marked or removed.

- **The Runway Protection Zone (formerly Clear Zone)** is an area at ground level that provides for the unobstructed passage of landing aircraft through the above airspace and is used to enhance the protection of people and property on the ground. The clear zone has evolved into the runway protection zone (RPZ). This evolution is noticed in the location, size, and permissible uses within the zone. The RPZ, as applied according to current FAA design standards, begins at the end of the primary surface and has a size which varies with the designated use of the runway. Land uses specifically prohibited from the RPZ are residences and places of public assembly (churches, schools, hospitals, office buildings, shopping centers, and other uses with similar concentrations of persons typify places of public assembly). Fuel storage facilities also should not be located in the RPZ.

Federal Aviation Regulations Part 77 indicates that the approach surface should be kept free of obstructions to permit the unrestricted flight of aircraft in the vicinity of the airport. As the type of instrument approach to a runway becomes more precise, the approach surface increases in size and the required approach slope becomes more restrictive.

The runway protection zone is the most critical safety area under the approach path and should be kept free of all obstructions. No structure should be permitted nor the congregation of people allowed within the runway protection zone. Control of the runway protection zone by the airport owner is preferred. The airport owner should acquire adequate property interests, preferably in fee title, in the runway protection zone to ensure compliance with the above when practicable. However, at a developed airport, such as Whiteman, avigation easements present a more realistic approach than acquiring property.

As indicated above, the approach and runway protection zone dimensions are dependent on the type of approach being made to a runway. Presented in Table 5-6 are runway protection zone dimensions for various type runways. As previously noted, visibility minimums for Runways 12 and 30 are not lower than 1 mile. Runway 12 RPZ is completely off airport property. Runway 30 RPZ is mostly off airport property except for a 0.3 acre (approximately) rectangle. Runway 12 RPZ encompasses approximately 39 buildings and is traversed by Sutter Avenue, Jouett Street, Carl Street, and Hoyt Street. Runway 30 RPZ encompasses approximately 53 residences and is traversed by San Fernando Road, Correnti Street, Wingo Street, Bromwich Street, and Osborne Street (see Figure 5-2). Residential development is not a compatible land use within an RPZ.

Table 5-6:
RUNWAY PROTECTION ZONE DIMENSIONS

Approach Visibility Minimums	Facilities Expected To Serve	Runway Protection Zone Dimensions			
		Length (Feet)	Inner Width (Feet)	Outer Width (Feet)	Area (Acres)
Visual and Not lower than 1 mile	Small Aircraft Exclusively	1,000	250	450	8.035
	Aircraft Approach Categories A & B	1,000	500	700	13.770
	Aircraft Approach Categories C & D	1,700	500	1,010	29.465
Not lower than ¾ mile	All Aircraft	1,700	1,000	1,510	48.978
Lower than ¾ mile	All Aircraft	2,500	1,000	1,750	78.914

Source: FAA Advisory Circular 150/5300-13, Airport Design.

Control of the runway protection zone may be acquired in fee or through easement and is an eligible item under the FAA Airport Improvement Program. These land uses at Whiteman have existed within the RPZ for many years and are likely to remain.

Building Restriction Line

According to AC 150/5300-13, the building restriction line (BRL) is defined as a line identifying suitable building area locations on airports. It encompasses runway protection zones, runway object free areas,

100' 0 100'
GRAPHIC SCALE

LEGEND		
DESCRIPTION	EXISTING	ULTIMATE
AIRPORT BOUNDARY		SAME
RUNWAY PROTECTION ZONE (RPZ)		SAME

Runway 12

Runway 30

Figure 5-2
Runway 12-30 Runway Protection Zones

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runway and taxiway visibility zone critical areas, areas required for terminal instrument procedures, and airport traffic control tower clear line of sight.

In the case of Whiteman, the BRL should be located 125 feet from the runway centerline on the southwest side and 194 feet on the northeast side. This marks the outline of the TOFA on the northeast side and the ROFA on the southwest side of Runway 12-30. The BRL also includes the air traffic control tower line of sight, which is defined as a line from the control tower to the furthest midpoint of both RPZs.

Taxiways

Runway 12-30 has a centerline-to-centerline separation from Taxiway A of 150 feet, which meets requirements contained in FAA AC 150/5300-13, Airport Design (Change 13 dated June 19, 2008), for airport reference code B-I, small aircraft exclusively. The FAA runway to parallel taxiway standard precludes any part of an airplane (tail, wingtip, nose, etc.) on a parallel taxiway centerline from being within the runway safety area or penetrating the OFZ.

Airspace and Navigational Aids

There are no special use airspace areas such as restricted, prohibited or warning areas that influence the airport. Whiteman is Class C airspace. The airspace in the immediate vicinity of Whiteman is Class E (starting at the surface) northwest, Class E (starting at 700 feet above the surface) north and northeast, and Class C south, east, and west. Whiteman is also within 30 nautical miles of the LAX Class B airspace south of the airport and is within the Mode C veil for LAX. Aircraft departing at Whiteman are required to fly with automatic pressure altitude reporting equipment having Mode C capability. Aircraft climbing above 3,000 feet or flying south or east of Whiteman must establish two-way radio communication with Burbank before entering its Class C airspace. Below 3,000 feet, pilots must establish two-way radio communication with Van Nuys before entering its Class D airspace west of the airport. As it was described in Chapter 3, the airport has two instrument approaches, and is a controlled airport with various visual aids.

The airport is served by a GPS and a VOR approach. These approaches permit landings with visibilities as low as one mile and a 1,840-foot minimum descent height. Runway 12-30 is also equipped with a two-box precision approach path indicator (PAPI) on either runway end with a 3.8 degree glide path. This glide path is steeper than standard due to obstacles in the vicinity of the airport. Both runways are also equipped with runway end identifier lights (REIL).

The County expressed an interest in installation of an automated weather observation station (AWOS) / automated surface observing system (ASOS). It is suggested that the County pursue a WAAS (Wide Area Augmentation System)/LPV (Lateral Precision Performance with Vertical Guidance) approach to the airport. WAAS/LPV approaches are enhanced GPS based approaches, and precision approaches (approaches with lateral and vertical guidance) can be developed using this technology. The County has expressed interest in pursuing development of a WAAS approach at Whiteman. In order for the approach to be developed, new obstruction data is required, which is an AIP eligible project.

LANDSIDE FACILITY REQUIREMENTS

The airport landside system is comprised of all facilities supporting the movement of goods between the community's ground transportation system and the airport's airside system, and also any facilities used in the maintenance or protection of those facilities. For Whiteman, these include general aviation terminal/administration building, aircraft storage and services, automobile parking, and airport support facilities. The landside elements, together with the previously discussed airside elements, form all of the airport development facilities required to accommodate the forecast level of traffic.

Since the airfield development program has been based upon an ultimate level of some 143,500 operations and 874 based aircraft, the planning of landside facilities should be based upon striking a balance of airside and landside capacity. The determination of general aviation and support area facilities has been accomplished for the three future planning periods of 2013 (short term), 2018 (intermediate term), and 2030 (long term).

The following subsections present the rationale for determining future landside facility requirements to serve the general aviation role of the airport.

General Aviation Terminal

Terminal facilities at Whiteman relate to those required to support general aviation operations. The existing terminal building is approximately 2,800 square feet.

The amount of general aviation terminal space required is based upon the expected demand, i.e., the peak hourly volume of pilots and passengers who will use the facilities. A planning standard of 44 square feet per peak hour pilot/passengers is used to determine the required area. Table 5-7 shows the breakdown of the planning standard. An estimated 2.5 pilot/passengers are assumed per peak hour operation. Table 5-8 shows the building requirements that were calculated using the above approach.

Table 5-7:
DERIVATION OF REQUIREMENTS FOR GENERAL AVIATION TERMINAL BUILDINGS

Operational Use	Area Required (SF) Per Peak Hour Pilot/Passenger
Waiting Area/Pilot's Lounge	15
Management Operations	3
Public Conveniences	1.5
Circulation, Mechanical, Maintenance	24.5
Total	44

Note: Space requirements for circulation, mechanical and maintenance should be allocated equally among other terminal building uses in calculating total building requirements.

Table 5-8:
GENERAL AVIATION TERMINAL AREA REQUIREMENTS

Item	2013	2018	2030
Peak Hour Operations	57	61	72
Total Peak Hour Occupants	143	153	180
Area/Occupant (SF)	44	44	44
Total Building Area (SF)	6,270	6,710	7,920

Source: DMJM Aviation.

As Table 5-8 indicates, a terminal area requirement of approximately 8,000 square feet is required in 2030. Currently the 1,250 square feet terminal building is used for offices and a conference room. A 360 square feet pilot lounge with computer, internet, printer, cable television, planning area, and telephone is provided at the terminal/building. The equipment shed consists of two storage areas (435 and 320 square feet, respectively) and the pilot supply shop is approximately 415 square feet. To accommodate future traffic, an additional 5,120 square feet general aviation terminal should be built. There has also been interest by the County and airport management to have meeting rooms and office spaces that can be leased. Approximately 3,200 square feet (in 2030) is assumed to accommodate meeting rooms and office space resulting in an additional 1,950 square feet needed for the main building. In addition, it is suggested to accommodate 4,000 square feet of restaurant area by 2030. Currently, the restaurant area is 2,730 square feet. Demand in 2013, 2018, and 2030 is forecast at 3,000 square feet, 3,500 square feet, and 4,000 square feet respectively.

Transient Aircraft Parking Apron

The overall requirements for facilities are driven by the desires of the market. Aircraft parking apron is required primarily for visiting transient aircraft as most based aircraft are stored in hangars. These are aircraft that land at Whiteman, but are based elsewhere. A busy itinerant day is derived from the average day of the peak month forecasts (ADPM) of aircraft activity and forms the basis of estimating transient parking apron requirements. Currently transient aircraft park on the transient apron east of the runway. Summarized in Table 5-9 are the transient apron requirements.

Transient aircraft parking apron requirements were determined by applying the following assumptions to itinerant movements performed by transient aircraft on an ADPM.

- Transient operations are approximately 50 percent of itinerant aircraft operations.
- The majority of transient aircraft will arrive and depart on the same day, thus it is assumed that the actual number of aircraft utilizing the parking apron is one-half (50 percent) of the transient movements being performed on the average day of the peak month.
- During the planning period, 50 percent of the transient aircraft will be on the ground at any given time.
- Thus, 25 percent of transient operations (during ADPM) will be temporarily parked on the transient apron.

Table 5-9:
TRANSIENT AIRCRAFT TO BE ACCOMMODATED
ON TRANSIENT AIRCRAFT APRON

Number of Aircraft to be Accommodated	2013	2018	2030
Annual Transient Operations	30,500	33,550	40,200
Peak Month Transient Operations	3,050	3,355	4,020
ADPM Transient Operations	102	112	134
Number of Aircraft Parked	25	28	34
Size of Transient Aircraft Apron			
Single Engine: Number of Aircraft [a]	22	24	28
Area/Aircraft (SY)	300	300	300
Apron Area (SY)	6,600	7,200	8,400
Multi- Engine/Helicopter: Number of Aircraft [a]	2	3	4
Multi-Engline/Helicopter: Area/Aircraft (SY)	625	625	625
Apron Area (SY)	625	1,250	1,250
Turboprop/Small Jet: Number of Aircraft [a]	1	1	2
Turboprop/Small Jet: Area/Aircraft (SY)	1,600	1,600	1,600
Apron Area (SY)	1,600	1,600	3,200
Total Aircraft	25	28	34
Total Apron Area (SY)	8,825	10,050	12,850

Source: DMJM Aviation.
[a] Based upon estimated mix of transient aircraft

Consistent with the forecast for 2030, 81,405 square feet (9,054 square yards) of apron space will be required for all single engine transient aircraft; all multi-engine aircraft and helicopters will require 11,250 square feet (1,250 square yards); and all turboprops and small jets will require 28,800 square feet (3,200 square yards) of apron for parking and maneuvering.

The analysis concludes that roughly 13,500 square yards of apron for 34 aircraft are required to accommodate transient demand in 2030. Currently eight of approximately 212 existing tie-down areas are reserved for transient aircraft, which does not meet current demand. There are approximately 238,674 square yards of aircraft apron, of which approximately 1,200 square yards are the transient tie-downs. By 2030, if operations increase as forecast, 26 new transient tie-downs should be allocated or built, for a total area of approximately 13,500 square yards. On the airport there are derelict aircraft using tie-downs. Consideration should be taken to locating these derelict aircraft to less remote locations to provide parking spaces for active aircraft.

Based Aircraft Storage

Aircraft based at the airport can be stored either by occupying a paved tie-down parking space or by storage within a hangar. The number of aircraft stored in hangars varies according to the desire for hangar space versus apron storage, the economics of providing hangars, and the severity of weather conditions prevailing at the airport location. The number of based aircraft at Whiteman may increase from the present level of approximately 612 to 874 aircraft in the year 2030. Adequate storage facilities should be provided to accommodate forecast based aircraft. In determining the demand for the various types of storage, the following assumptions were made:

- Approximately two-thirds of the present aircraft at Whiteman Airport are stored in hangars.
- All turboprops and small jets will be stored in small conventional/large box hangars.
- It is assumed that 70 percent of single engine and multi-engine aircraft will be stored in T-hangars. Multi-engine aircraft will require a larger size T-hangar.
- Approximately 50 percent of based helicopters will be stored in rectangular or conventional hangars with each helicopter requiring 1,620 square feet of floor space.

For the purpose of this analysis of facility requirements, hangars are generally categorized into two basic types, “conventional”, bay or community type hangars and “individual” hangars. Conventional hangars are large structures that will accommodate several aircraft of different sizes in an open bay, while individual hangars are sized to accommodate one aircraft. Individual hangars may be portable hangars, T-hangars, or rectangular (“box”) hangars. Conventional hangars can serve a variety of aircraft including turboprops and small jets and individual hangars primarily serve personal use aircraft and smaller business use aircraft. Individual hangars can be combined to create an apparently larger structure. Figure 5-3 presents the different types of individual hangars and a typical conventional hangar.

For the purpose of this analysis, individual hangar requirements are determined as number of spaces, or units and may be provided through a mix of rectangular, T-hangar, and portable hangars. Table 5-10 summarizes the storage hangar requirements for based aircraft determined in this analysis.

Table 5-10:
BASED AIRCRAFT STORAGE HANGAR REQUIREMENTS BASED TAF RECONCILED

	2013	2018	2030
Single Engine Piston			
Number of Based Aircraft	611	658	783
Number of Aircraft in Individual Hangars*	407	439	522
Multi-Engine Piston			
Number of Based Aircraft	37	40	48
Number of Aircraft in Individual Hangars*	25	27	32
Turboprop/Small Jets			
Number of Based Aircraft	17	19	24
Number of Aircraft in Individual Hangars*	17	19	24
Area/Aircraft (SF)	1,600	1,600	1,600
Conventional Hangar Floor Area (SF)	27,200	30,400	38,400
Helicopters			
Number of Based Aircraft	15	15	18
Number of Aircraft in Individual Hangars*	8	8	9
Area/Aircraft (SF)	1,620	1,620	1,620
Rectangular/Conventional Hangar Floor Area (SF)	12,150	12,150	14,580
Other			
Number of Based Aircraft	0	0	0
Number of Aircraft in Individual Hangars*	0	0	0
Total Based Aircraft	680	732	873
Total Aircraft Hangared	457	492	587
Required Individual Hangar (Spaces)*	432	465	554
Required Conventional Hangar Area (SF)	39,350	42,550	52,980

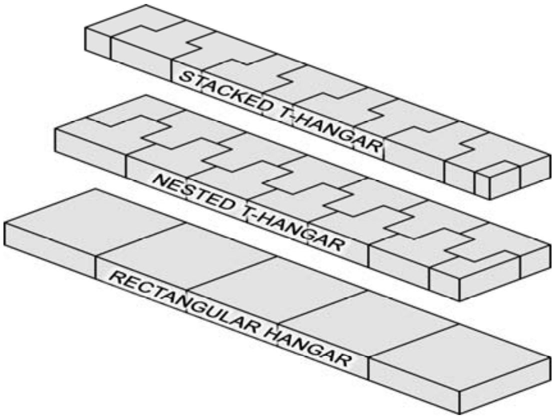
*May be rectangular, T-hangar, or portable hangar.
Source: DMJM Aviation analysis.

INDIVIDUAL HANGARS

Portable Hangar

T-Hangar

Rectangular Hangar



Hangar Configurations

CONVENTIONAL HANGARS

Conventional Hangars

Figure 5-3
Hangar Types

Table 5-11:
BASED AIRCRAFT STORAGE
HANGAR COMPARISON

Item	Existing	Deficiency 2009-2013	2014-2019	2020-2030
Individual Hangar (Spaces)	407	25	58	147
Rectangular/Conventional Hangar (SF) (helicopter)	8,100	4,050	4,050	6,480
Conventional Hangar (SF) (fixed wing)	36,865	0	0	8,825

Source: DMJM Aviation analysis.

Table 5-11 shows that if based aircraft increase as forecasted, 147 new individual hangars will be needed in 2030. In addition, the replacement of old hangars (primarily the County hangars) should be anticipated in the 20 year planning study. As maintenance costs of the older hangars continue to rise, it will become less economical for the County to continue maintaining these hangars. Based on forecasted based helicopters, approximately 6,500 square feet of conventional hangar space will be needed. Fixed wing aircraft will require approximately 8,800 square feet of additional hangar space to accommodate 2030 traffic.

The Reconciled Terminal Area Forecast projects 786 single engine and 48 multi-engine aircraft in the year 2030. These are assumed to be stored in individual hangars and tie-downs. As it can be seen from the previous summary table, an additional 147 individual hangars are required in 2030. By 2030, a total of 18 helicopters are forecast at the airport, half of which are expected to be stored in hangars. This is an additional four helicopters in individual hangars.

Three approaches are available to the County in providing hangars. The first would involve leasing land to aircraft owners and allowing them to construct their own hangars. To assure uniformity in construction as well as visually pleasing results, the airport owner (the County) could control the type of hangar built by a clause in the land lease. An alternative to the above would be for the airport owner to construct the hangars and then rent or lease them to aircraft owners. If this approach is followed, firm commitments for their use should be made before construction of the hangars are undertaken. A third approach is to have a complex of hangars built by a private party on property leased by the airport. The County prefers to lease land to private parties to develop a complex of hangars.

An alternative to aircraft storage hangars is to provide space on the parking apron with tie-down facilities to secure the aircraft during severe weather or periods of high winds (Table 5-12). For planning purposes, an allowance of 300 square yards for single engine and 625 square yards for multi-engine and helicopters can be used to calculate the size of the based aircraft tie-down area. For the purposes of establishing an overall facility program of the master plan, an area suitable for an additional 115 single engine aircraft will be provided. It is noted that the County currently operates approximately 212 aircraft tie-downs which is adequate to satisfy based needs. As previously stated, transient aircraft parking needs in 2030 require approximately 26 additional tie-downs.

Table 5-12:
WHITEMAN TIE-DOWN FACILITIES

Item	Existing	2013	2018	2030	Deficiency
Based Aircraft (Spaces)	212	227	244	290	78
Single Engine	N/A	204	219	261	
Multi-Engine	N/A	12	13	16	
Helicopter	N/A	11	11	13	
Transient Aircraft (Spaces)	8	25	28	34	26
Total	220	252	272	324	104

Source: DMJM Aviation analysis.

Table 5-12 breaks down the need for additional tie-downs. Since there is a deficiency of transient tie-downs, an additional 17 transient and 15 based aircraft tie-downs should be built by 2013. Once transient tie-down demand is met, each year the demand will increase by approximately four tie-downs. By 2030 it is assumed that a rehabilitation of apron pavement will be required.

Aircraft Maintenance Facilities

Fixed Base Operators at Whiteman Airport provide major airframe repair and major power plant repairs services. Aircraft maintenance provided at the airport include general repair, structural maintenance, preventative maintenance, modifications, annual inspections, interior services, helicopter repair, and aircraft restoration. Adequate space for anticipated demand is provided.

Automobile Parking

For general aviation users, the parking areas are designed to accommodate peak activity periods. A generally accepted value for computing the amount of general aviation parking space needed is 1.3 spaces per peak hour general aviation pilot/passenger. This factor takes into account airport employees, rental car spaces, and visitors as well as pilots/passengers. The area required per automobile is 350 square feet, which includes circulation routes and other necessary clearances within the parking area. The projected general aviation auto parking requirements are summarized in Table 5-13.

Table 5-13:
AUTOMOBILE PARKING REQUIREMENTS
FOR GENERAL AVIATION USERS

Item	2013	2018	2030
Peak Hour Operations	57	61	72
Total Occupants	143	153	180
Spaces/Occupant	1.3	1.3	1.3
Total Parking Spaces (Each)	186	199	234
Area/Parking Space (SF)	350	350	350
Total Parking Area (SF)	65,065	69,615	81,900

Source: DMJM Aviation.

There are approximately 100 existing parking spaces provided for general aviation at the terminal building, with additional parking available in the hangars. The existing auto parking facilities were documented in Chapter 3. As seen in Table 5-13 a requirement of 234 spaces is identified. Some based aircraft owners will park their cars in hangar or tie-down space, but there is a need for more parking spaces. Currently there are no designated parking spots in the hangar areas. Designated automobile parking areas and spaces should be defined. Additional parking facilities should be constructed as part of individual hangar developments. In addition, segregation of vehicle and air traffic is recommended.

Aircraft Rescue and Fire Fighting (ARFF) Facilities

The FAA requires Aircraft Rescue and Fire Fighting (ARFF) facilities for airports 14 CFR Part 139 certification. Part 139 certification is required for airports having scheduled air carrier operations. General aviation airports like Whiteman are not required to obtain Part 139 certification and therefore are not required to have ARFF facilities at the airport. Rescue and fire fighting response is provided by the local available Fire Departments/ Agencies. As such, responders typically are not trained in aircraft rescue and fire fighting techniques. However, airport staff are trained to be first responders. The nearest fire station to potentially respond is immediately adjacent to the airport.

Airport Maintenance

The airport has a tool shed next to the terminal/administrative building and multiple vehicles as needed to conduct routine maintenance. Vehicles are stored near the terminal building on an approximately 1,000 square foot outdoor parking/maintenance area. The tool shed itself is approximately 435 square feet with an attached 406 square foot covered storage area. An additional 320 square feet of area is available in a storage container for tools and equipment. Consideration should be given to providing an airport maintenance facility able to accommodate storage, a small shop and a yard to park maintenance vehicles. A 1,000 square foot maintenance building, situated on about a half acre of land should be adequate for the planning period.

Aviation Fuel Storage

Fuel storage requirements were determined for the airport based upon the forecast of 100 Octane and Jet A flowage contained in Chapter 4. The storage requirements for both types of gas are determined on the following basis:

- Peak month flowage is 10 percent of annual flowage.
- Peak month is divided by 30 to determine the average day flowage in the peak month.
- A 14-day supply is provided.

Table 5-14 summarizes the fuel storage requirements. Currently there are two 20,000 gallon tanks installed at the airport. One holds 100 Octane, the other Jet A. As seen in Table 5-14, both 100 Octane and Jet A 14-day storage needs are below 20,000 gallons. While the current tanks meet the long-term requirement there may be consideration for a new fuel facility within the planning period.

Table 5-14:
AVIATION FUEL STORAGE REQUIREMENTS

Item	2013	2018	2030
100 Octane			
Annual Flowage	294,000	317,100	372,600
Peak Month Flowage	29,400	31,710	37,260
Average Day Flowage in Peak Month	980	1,057	1,242
Storage Capacity (14-day reserve)	13,720	14,798	17,388
Jet A			
Annual Flowage	162,000	178,000	221,000
Peak Month Flowage	16,200	17,800	22,100
Average Day Flowage in Peak Month	540	593	737
Storage Capacity (14-day reserve)	7,560	8,307	10,313

Source: DMJM Aviation analysis.

Oil Recycling Center

Presently, there are two oil recycling centers on the airfield. A third may be considered, depending on the ultimate landside configuration.

Summary of Landside Requirements

Table 5-15 summarizes existing facilities and planning requirements for Whiteman Airport. These requirements accommodate the forecasted 874 based aircraft and 143,500 operations of the TAF Reconciled Forecast that was assumed for facility planning purposes. As previously stated, the commitment to build and provide facilities will depend on the actual demand that materializes, and not forecasted demand.

Table 5-15:
SUMMARY OF LANDSIDE REQUIREMENTS

Item	Existing	2013	2018	2030	Additional Facilities (2030)
GA Terminal (SF)	2,800	6,270	6,710	7,920	5,120*
Transient Apron (number of aircraft/area in SY)					
Single engine/Multi-engine	8/5,340	24/7,737	27/8,299	32/10,295	24/5,045
Turboprops/Small jets	1 acft.	1/1,600	1/1,600	2/3,200	1/1,600
Individual hangars (spaces)	407	432	465	554	147
Conventional Hangar Space (SF) (fixed wing)	36,865	33,275	36,475	45,690	8,825
Conventional Hangar Space (SF) (helos)	8,100	12,150	12,150	14,580	6,480
Based Aircraft Tie-downs (number of aircraft)	212	227	244	290	78
Auto Parking (spaces)	152	186	199	234	82
Airport Maintenance (acres)	0.5	0.5	0.5	0.5	0
Fuel Storage (gallons)					
Avgas	20,000	20,000	20,000	20,000	0
Jet A	20,000	20,000	20,000	20,000	0

* Including meeting rooms and office spaces
SF = square feet, SY = square yards
Source: DMJM Aviation.

GROUND ACCESS

Access to the airport is primarily provided by Osborne Street to Airport Drive. Osborne Street connects to Interstate 5 (I-5) and San Fernando Road. San Fernando Road connects to State Road 118. Since two major roads provide access to Whiteman Airport and there is direct access to I-5, needs for ground access is assumed to be adequate throughout the planning period.

AIRPORT SECURITY

The Transportation Security Administration (TSA), in cooperation with the general aviation community, has developed guidelines to enhance security at general aviation airports. To evaluate security needs at a specific airport, TSA has developed an Airport Characteristics Measurement Tool along with Whiteman's ranking. Table 5-16 displays the Airport Characteristics Measurement Tool along with Whiteman's ranking. Overall risk is measured on a scale of 0 to 55 (highest risk), and grouped into four levels. Suggested security enhancements are given for each level (see Figure 5-4).

Whiteman Airport falls into the second highest level of risk, with 28 points. Figure 5-4 displays the suggested security measures for this risk level and are summarized below.

- **Access Controls.** Physical barriers, such as fences, should be constructed around the airport perimeter securing it from unauthorized access. Physical barriers can also be in the form of natural barriers. Whiteman Airport has a perimeter fence including gate access policies and procedures. A perimeter fencing project is planned for 2011 and 2012.

- **Lighting System.** Security lighting provides a means to deter theft, vandalism, or other illegal activity at night. Security lighting should not interfere with aircraft operations. Whiteman has a lighting system installed. Airport tenants at Whiteman responded to a survey indicating a need for an improved lighting system and surveillance.

- **Personnel ID System.** Airport operators may wish to implement a method to badge employees and other authorized tenants, granting access to various areas of the airport. Whiteman Airport tenants are required to fill out personal information and reading policies and procedures before obtaining access to the gate entrances.

Table 5-16:
AIRPORT CHARACTERISTICS MEASUREMENT TOOL

Security Characteristics	Assessment Scale [a]	Whiteman Airport
Location		
Within 30 nm of mass population areas [b]	5	5
Within 30 nm of a sensitive site [c]	4	4
Falls within outer perimeter of Class B airspace	3	0
Falls within boundaries of restricted airspace	3	0
Based Aircraft		
Greater than 101 based aircraft	3	3
26-100 based aircraft	2	-
11-25 based aircraft	1	-
10 or fewer based aircraft	-	-
Based aircraft over 12,500 pounds	3	0
Runways [d]		
Runway length equal to or greater than 5,000 feet	5	-
Runway length less than 5,000 feet, greater than 2,001 feet	4	4
Runway length 2,000 feet or less	2	-
Asphalt or concrete runway	1	1
Operations		
Over 50,000 annual operations	4	4
Part 135 operations	3	0
Part 137 operations	3	0
Part 125 operations	3	0
Flight training	3	3
Flight training in aircraft over 12,500 pounds	4	0
Rental aircraft	4	4
Maintenance, repair, and overhaul facilities conducting long term storage of aircraft over 12,500 pounds	4	0
Total	**55**	**28**

[a] Assess points for every characteristic that applies to the airport.
[b] Mass population area – area with total metropolitan population of at least 100,000 people.
[c] Sensitive sites – areas which would be considered key assets or critical infrastructure of the United States. Sensitive sites can include certain military installations, nuclear and chemical plants, centers of government, monuments and iconic structures, and/or international ports.
[d] Facilities with multiple runways should only consider the longest runway on the airport.

<table>
<tr><th colspan="4">Points/Suggested Guidelines</th></tr>
<tr><th>>45</th><th>25-44</th><th>15-24</th><th>0-14</th></tr>
<tr><td>Fencing
Hangars
Closed Circuit TV
Intrusion Detection System</td><td></td><td rowspan="2"></td><td rowspan="3"></td></tr>
<tr><td colspan="2">Access Controls
Lighting System
Personnel ID System
Vehicle ID System
Challenge Procedures</td></tr>
<tr><td colspan="3">Law Enforcement Officer Support
Security Committee
Transient Pilot Sign-In/Out Procedures</td></tr>
<tr><td colspan="4">Signs
Documented Security Procedures
Positive Passenger/Cargo/Baggage ID
All Aircraft Secured
Community Watch Program
Contact List</td></tr>
</table>

Figure 5-4
Risk Level and
Suggested Airport Security Enhancements

- **Vehicle ID System.** Vehicles can be identified through the use of decals, stickers, or tags, aiding airport personnel and law enforcement in identifying authorized vehicles. All vehicles on airport property are required to have a hanging tag on the rearview mirror at Whiteman.

- **Challenge Procedures.** Challenge procedures include a developing community watch program, and encouraging airport tenants to challenge unfamiliar people at the airport. Tenants are encouraged to challenge strangers or people performing suspicious activities. In addition, tenants are asked to wait at the access gate until it is closed to prevent “piggy-backing” – allowing multiple vehicles on to the airport. The based aircraft owner’s survey indicated “piggy-backing” was a security-issue at the airport.

- **Law Enforcement Officer Support.** Airport operators are encouraged to have regular patrols of the airport by local law enforcement. Airport staff regularly patrols the airport. County Sheriff previously provided airport patrols. The contract was cancelled in 2008 and the County should investigate methods to provide law enforcement officer support.

- **Security Committee.** An airport security committee is composed of airport tenants and users drawn from all segments of the airport community. The main goal of the group is to involve airport stakeholders in developing effective and reasonable security measures and disseminating timely security information. Whiteman Airport is starting a security committee. The first meeting is scheduled for March 1, 2009.

- **Transient Pilot Sign-In/Out Procedures**. Sign in and out procedures can help identify non-based (transient) pilots and aircraft using the airport. Such procedures exist at Whiteman.

- **Signs.** Signs should be posted to warn against unlawful activity. Signs are posted at Whiteman to deter people from unlawfully entering the airport.

- **Documented Security Procedures.** Written procedures to guide airport operators on security guidelines, protocols, and procedures. Prior to receiving access to airport gates, tenants are required to read policies and procedures at Whiteman.

- **Positive Passenger/Cargo/Baggage ID.** Prior to boarding the pilot should ensure that the identify of all passengers are verified and all baggage and cargo is known to the occupants.

- **All Aircraft Secured.** All aircraft secured in locked hangar facilities or locked on the apron.

- **Contact List.** Including law enforcement and other emergency contacts.

LAND AREA REQUIREMENTS

The land use on an airport will vary depending on the role and volume of traffic. For Whiteman Airport, the on-airport land uses can be broadly categorized into four categories described herein.

The ***aircraft operating area (AOA)*** is defined as that area on-airport that lies within the building restriction lines (BRL) and runway protection zones (formerly clear zones). It includes the runways, taxiways, associated safety areas and lateral clearances, and runway approaches. The FAA defines the BRL as a line which identifies suitable building area locations and encompasses the runway protection zones, the runway object free area, the runway visibility zone, NAVAID critical areas, areas required for terminal instrument procedures (TERPS), and areas required for clear line of sight from the control tower (when applicable).

As previously mentioned, based on the existing taxiway location the existing building restriction line should be located 194 feet from the runway centerline on the northeast side and 125 feet on the southwest side of Runway 12-30. As seen above and as defined by FAA, runway protection zones (RPZs) are also encompassed within the BRL (if they are located on airport property). Therefore, the BRL is assumed to be the general boundary of the AOA.

Areas of the airport serving landside aviation facilities can be categorized as ***aeronautical use area***. This would include general aviation uses such as storage hangars, tie-downs and transient aprons, terminal and administration building, potential FBO sites, aircraft maintenance, and auto parking.

The use of airport property for non-aviation purposes can enhance the revenue generating potential, and often can ensure the economic subsistence of the airport. Such land uses can be indicated on airport layout plans as ***airport compatible use areas***. It is important that it be determined that accommodation of all anticipated requirements for aviation facilities be provided before consideration of non-aviation uses of airport property. Airport compatible uses would include business and office parks, industrial and light manufacturing, commercial, and research and development uses. The extent of airport area to be allocated for airport compatible uses depends on the extent of aviation facilities needed to accommodate forecast demand, and the demand for the non-aviation land uses.

The current airport is approximately 187 acres. The breakdown of current airport property is shown on Table 5-17 and graphically presented on Figure 5-5. Areas classified as open space reflect undeveloped and vacant areas on the airport including the hill and vacant area west of the runway. It should be noted that runway protection zones, except for a small rectangle, are not within the airport property line.

Table 5-17:
LAND AREAS AT WHITEMAN AIRPORT

Category	Acreage	Percent
Aircraft Operating Area (AOA)	32	17
Aeronautical Use Areas	84	45
Airport Compatible Use Areas	8	4
Open Space	63	34
Total	187	100

Note: Other reflects undeveloped, vacant area on the airport.
Source: DMJM Aviation.

As seen in Table 5-16, roughly one-fifth of the airport is aircraft operating area (AOA) category. Almost half of the airport is aeronautical use area. Aeronautical use area includes all apron and hangar area. Four percent are revenue support areas, which are industries that are non-airport related on airport property. Open space, which includes the hill and the empty space adjacent to San Fernando Road, covers a third of airport property.

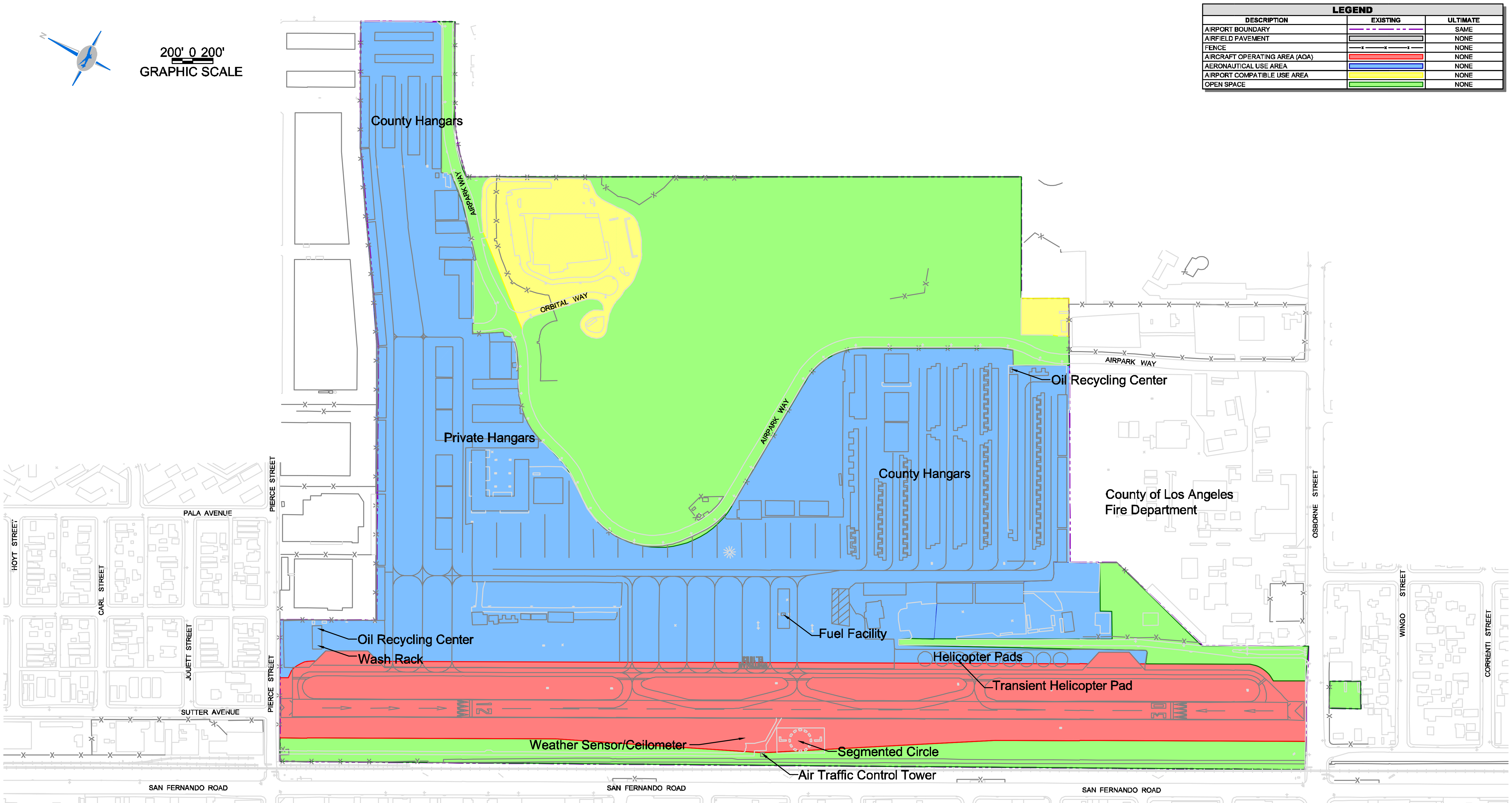


Figure 5-5
Existing Airport Land Uses

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Appendix A
Meeting Minutes

APPENDIX A

DMJM Aviation
999 Town & Country Road, 4th Floor, Orange, California 92868
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Memorandum

Date: **September 19, 2008**

To: Brendan O'Reilly, Airport Project Coordinator and Richard Smith, Chief

From: Andrew Scanlon, Project Manager

Subject: Tenant Review Kickoff Meeting Issues

Distribution:

The first of three Tenant Meetings for the Whiteman Airport Master Plan Update was held on September 9, 2008 at 3:00 p.m. at Rocky's Restaurant in the Administration Building. Richard Smith, Chief, Aviation Division and Brendan O'Reilly, Airport Project Coordinator, from Los Angeles County Department of Public Works were present. Doug Sachman, Project Principal, Andrew Scanlon, Project Manager, Laura Feja, Airport Planner, and Georgiena Vivian, who will be conducting the environmental overview, represented the consultant team. Richard Smith opened the meeting with some brief introductory remarks. This was followed by a short presentation given by Andrew Scanlon about the master plan. After the presentation, the balance of the meeting was an open house format where tenants could ask the project team questions and state their thoughts of issues at Whiteman Airport. This memorandum summarizes the key issues recorded by DMJM Aviation at the meeting. These issues were compiled based upon comments made to the project team and comments submitted on comment sheets available at the meeting. The issues are presented in no particular order. Attached to this memorandum is a copy of the presentation shown by DMJM Aviation, sign in sheets, and a blank comment sheet.

1. There was a substantial waiting list for hangars and tie-downs. Now there are some open hangars and tie-downs but there are no names on the waiting list. Questions arose at the meeting regarding the validity of the waiting list.

2. There are approximately 90 derelict aircraft occupying tie-down spaces. This prevents others who have airworthy aircraft from basing their aircraft on tie-downs at Whiteman.

3. Currently two flight schools operate at Whiteman. One flight school will likely leave the airport. Tenants stated that the airport should maintain two flight schools.

4. Much discussion arose regarding the mixing of vehicle and aircraft traffic on the ramp area. As part of this discussion, DMJM Aviation was asked to research historical car/aircraft incidents at Whiteman. Tenants at the meeting could not pinpoint specific incidents which have occurred.

5. Tenants are concerned about hangar and tie down rates at Whiteman.

6. Some tenants noted that Foxjet plans on manufacturing aircraft at Whiteman Airport. Other tenants who followed the news story explained that a later article corrected the facts and that Whiteman Airport will not be used to manufacture Foxjet aircraft.

7. Tenants expressed their interest in retaining a grassy area, with trees. If the terminal is moved, tenants support a new grass area and trees provided adjacent to the terminal. There was a suggestion to move the existing trees to the new location, as opposed to planting new trees. Tenants would prefer the new terminal and grass area completed prior to demolition of current facilities.

8. Should the terminal be relocated, sufficient parking should also be provided at the new location.

9. A new terminal should be constructed which features meeting rooms, restaurant, viewing areas, pilot lounge, and restrooms.

10. Retain portable T-hangars.

11. Keep the Civil Air Patrol and their aircraft headquartered at Whiteman.

12. Tenants questioned the need to move the fuel stating that the facility was recently constructed.

13. Questions arose as to the land use zoning of the hill on airport property, and if any portions of the hill could be used for aviation uses.

14. A tenant asked if shade hangars could be provided at Whiteman Airport.

15. Install adequate security lighting to illuminate the apron areas. Also, install cameras, secure and fix gates to enhance airport security.

16. The hold apron for Runway 30 is shallow and does not provide enough clearance from the perimeter fence. Some aircraft have struck the fence.

17. A tenant noted that better weed control is needed between the runway and taxiway, especially on the northern end of the runway.

18. The current helicopter operations interfere with traffic exiting the runway at Runway 30, or traffic using Runway 30 for takeoffs. Runway 30 is primarily used under IFR conditions.

19. Tenants would like to see County owned hangars rehabilitated.

20. Future meetings should be held in the evening hours, allowing others to attend the meeting.

21. Several tenants stated their opinion that the preliminary forecast data was too high. As stated in the presentation and in response to comments during the open house, the forecast is based on the current FAA Terminal Area Forecast. This approach was adopted for the master plan scope of services which was approved by FAA.

22. Some tenants fear that the master plan will remove facilities for the smaller airplanes to accommodate larger aircraft. They note that the runway is not long enough to allow much more than small General Aviation aircraft to safely operate at the airport.

23. The question was posed to DMJM Aviation asking where else have they done master plans and if DMJM Aviation has information on what was implemented. As explained at the meeting, this data is difficult to track and many variables affect the implementation of master plans. Variables include funding availability, airport management, the political environment, just to name a few. Implementation of master plans is ultimately dependent upon the airport sponsor, how FAA funding is pursued, and availability of funds. A master plan is part of an airport's continuous planning process, and as such is meant to be updated on a

regular basis, about every 10 years. Therefore, through the master planning process, the greatest emphasis is placed on the near-term projects, projects implemented within the next five years, but also includes long range plans to serve as a guide for airport development.

DMJM Aviation has completed numerous master plans. Some recent master plans include Fullerton Municipal Airport, Tehachapi Municipal Airport, Fallbrook Airpark, and Calexico International. Additionally, an Airport Layout Plan Update was prepared for Gillespie Field.

Fullerton is in the process of implementing the master plan completed in 2004. The master plan focused extensively on landside development (hangars). To date three T-hangar rows have been constructed, as shown in the master plan.

At Tehachapi (completed in 2004), the master plan identified a need for development to occur on the north side of the runway. The City of Tehachapi is currently in the process of designing a parallel taxiway, north of the runway, to provide access to the airfield.

Since DMJM Aviation completed Fallbrook Airpark (2006) landside development has occurred as noted in the master plan. San Diego County has moved their administration building in anticipation of developing a future General Aviation Terminal. Several other important projects, such as translating the runway to increase safety areas, conducting an airport drainage study, a new diagonal taxiway, are included within the County's current capital improvement program for funding consideration.

The master plan for Calexico International Airport was completed in 2002. Major improvements noted in the plan included purchasing land, relocating a road and building a new terminal facility. The City of Calexico is currently moving forward with the road relocation to accommodate the terminal facility.

Gillespie Field (completed in 2005) had a significant displaced threshold on its primary runway. During the Airport Layout Plan Update, DMJM Aviation reviewed the threshold siting surface criteria and determined the displaced threshold distance could be shortened from 1,306 feet to 706 feet. Additionally, a transient ramp was recently constructed, as identified in the Airport Layout Plan Update. San Diego County currently is in the process of conducting an EIR and selecting an engineer to develop 70 acres of airport land, as identified during DMJM Aviation's study.

About 12 years ago, a master plan study was completed at Fox Field. This plan depicted a 2,200-foot runway extension and numerous T-hangars to accommodate based aircraft. The runway extension subsequently went through an EIR process and was constructed according to the master plan. Additionally, six rows of T-hangars have been constructed as depicted in the master plan.

Some time ago, DMJM Aviation prepared a master plan for Lompoc. Lompoc has since built out the airport exactly as shown in the master plan.

Whiteman Airport
Master Plan Update

TENANT REVIEW

KICKOFF MEETING

September 9, 2008

Presentation Topics

- **Purpose of Master Plan Update**
- **Project Organization**
- **Project Approach, Schedule and Status**
- **Existing Facilities**
- **Issues, Goals and Objectives**
- **Preliminary Forecast Findings**
- **Next Steps**

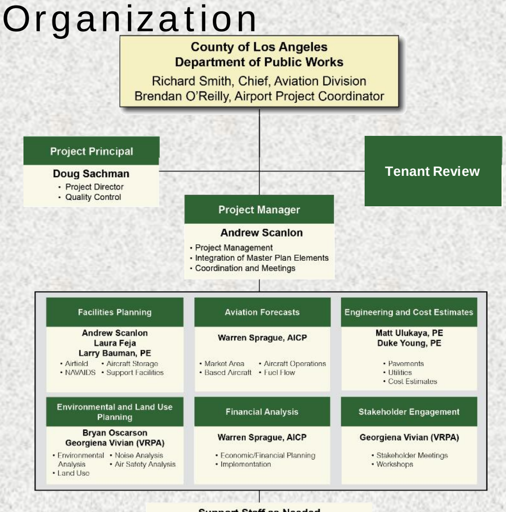
Purpose of Master Plan Update

“An airport master plan represents the sponsor approved actions to be accomplished for phased development of the airport.”

FAA Order 5100.38A, AIP Handbook

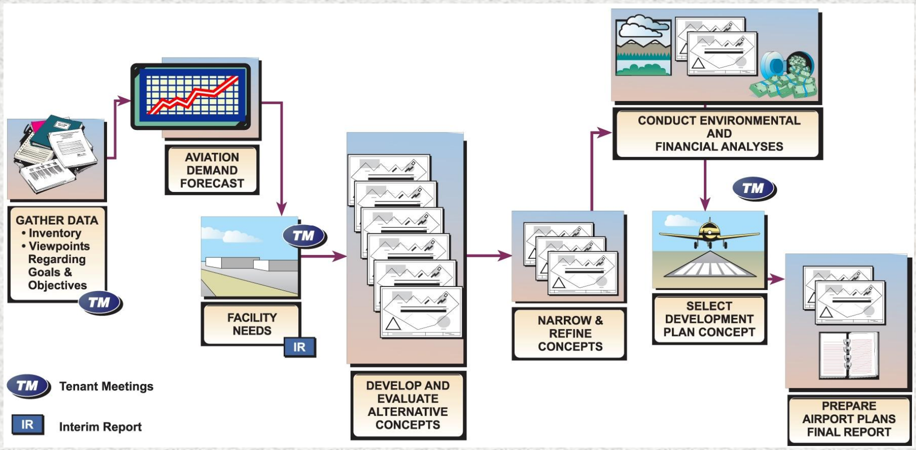
Whiteman Airport Master Plan Update

Project Organization



Whiteman Airport Master Plan Update

Project Approach

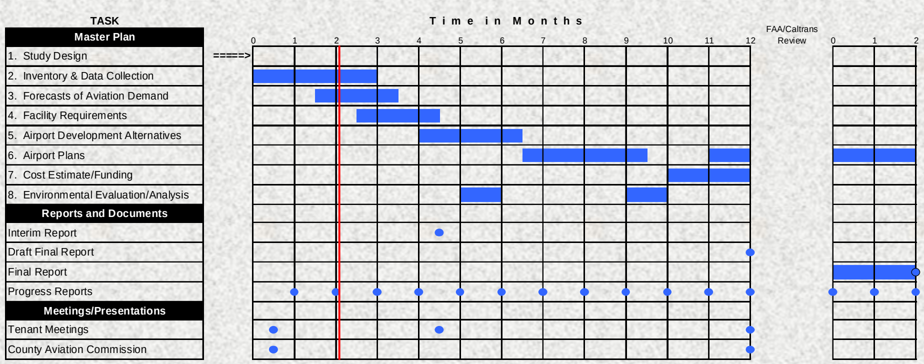


DMJM AVIATION | AECOM

5

Whiteman Airport Master Plan Update

Project Schedule



DMJM AVIATION | AECOM

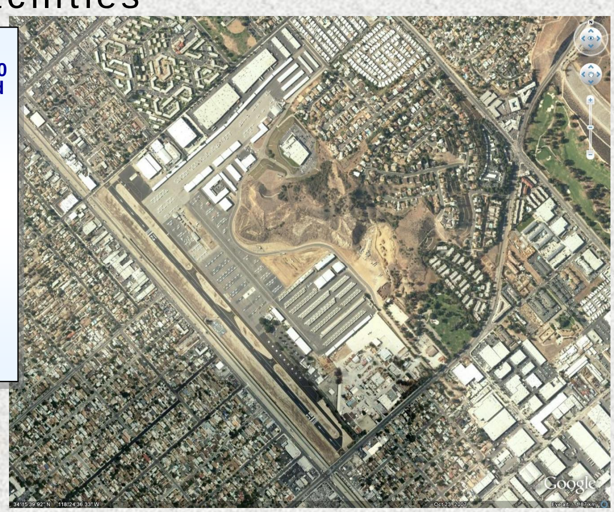
6

Project Status

- **Notice to Proceed – July 8, 2008**
- **Inventory and Data Collection**
  - Prepared based aircraft owners and transient survey
  - Coordinating digital base mapping
  - Site visit
- **Forecast of Aviation Demand**
  - Preparation of forecast of based aircraft and operations
- **Project Coordination**
  - Preparation for kick-off meetings with Tenants and County Aviation Commission

Existing Facilities

- Runway 4,120’ x 75’
- R/W 12 - 729’ and R/W 30 478’ displaced threshold
- Medium Intensity Runway Edge Lighting
- Parallel taxiway
- GPS & VOR approaches
- PAPI – R/W 12-30
- Terminal/Admin. Bldg.
- Hangars
- Aircraft tie-downs
- Fuel
- Restaurant



Whiteman Airport Master Plan Update

Key Issues

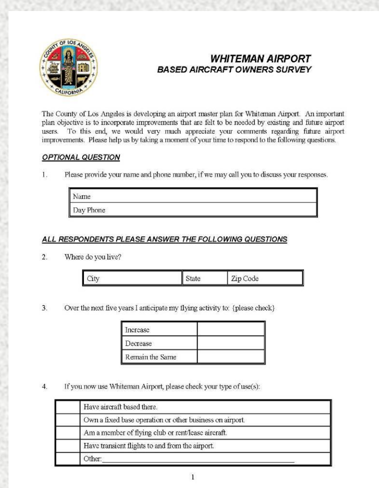
1. Terminal Siting
2. Change in Fleet Mix
3. Segregate vehicle and air traffic
4. Determine best use of available land for aviation facilities
5. Terraced development
6. Relocate fuel facility
7. Compass rose

DMJM AVIATION | AECOM

Whiteman Airport Master Plan Update

Goals and Objectives

- **Identify issues**
- **Help define airport role**
- **Identify needed facilities**
- **Establish through Tenant Review Meetings**



WHITEMAN AIRPORT
BASED AIRCRAFT OWNERS SURVEY

The County of Los Angeles is developing an airport master plan for Whiteman Airport. An important plan objective is to incorporate improvements that are felt to be needed by existing and future airport users. To this end, we would very much appreciate your comments regarding future airport improvements. Please help us by taking a moment of your time to respond to the following questions.

OPTIONAL QUESTION

1. Please provide your name and phone number, if we may call you to discuss your responses.

Name
Day Phone

ALL RESPONDENTS PLEASE ANSWER THE FOLLOWING QUESTIONS

2. Where do you live?

City	State	Zip Code

3. Over the next five years I anticipate my flying activity to: {please check}

Increase	
Decrease	
Remain the Same	

4. If you now use Whiteman Airport, please check your type of use(s):

	Have aircraft based there.
	Own a fixed base operation or other business on airport.
	Am a member of flying club or rent/lease aircraft.
	Have transient flights to and from the airport.
	Other:_______________

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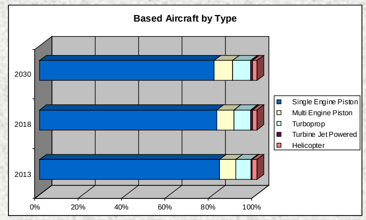
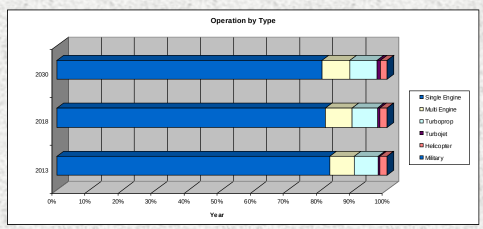
DMJM AVIATION | AECOM

Whiteman Airport Master Plan Update

Preliminary Forecast Findings

- **Based on FAA Terminal Area Forecast data**
- **Currently 612 based aircraft and 93,219 operations in 2007**
- **Forecasted to have 976 based aircraft and 143,440 operations in 2030**





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Whiteman Airport Master Plan Update

Next Steps

- **Complete inventory including digital mapping**
- **Determine facility requirements – including input from the based aircraft owners and transient surveys**
- **Prepare Interim Report**
- **2nd Tenant Review Meeting**

DMJM AVIATION | AECOM

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Whiteman Airport Master Plan Update

Tenant Review Meeting #1
September 9, 2008
SIGN IN SHEET

NAME	ADDRESS	EMAIL	PHONE
Nikki Vaughan	29039 Flowerpark Dr. Canyon Country 91387	dvaughan@lausd.net	661-251-1928
Peter Albiez	2233 Manning St Burbank	30480@msn.com	818-846-6664
Sam + Anita Santo Spirito	9408 Zelzah Ave. Northridge, CA	spiriteng@earthlink.net	818.701.5510
Ralph Truglio	12132 Hesby St. Valley Village 91607	rtruglio@att.net	818-766-5971
Andrew Scanlon	999 Town & Country Rd, Orange, CA 92868 [redacted]	andrew.scanlon@dmjm aviation.com	714 648-2017
Bart Bingaman	10511 Ormond Shadow Hills		818-504-0940
Steve Rapp	P.O. Box 12181 La Crescenta, CA 91224	SRLandscape@verizon.net	818 249.0111
Jose Torres	29124 Highplains ct Castaic, Ca 91384	tmcranges@yahoo.com	661 510 3360
Linda Worden	4527 Lenata Ln La Canada 91011	linmar@yahoo.com	818-248-4158
Don Hagopian	4415 Coldwater Cyn Ave. Studio City 91604	sheldonphoto@earthlink.net	818-782-165[illegible]

Whiteman Airport Master Plan Update

Tenant Review Meeting #1
September 9, 2008
SIGN IN SHEET

NAME	ADDRESS	EMAIL	PHONE
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Fernando Esparza	Montana	Bonanza1950@aol.com	—
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Dusty Rhodes	12653 Osborne St Pacoima		818-896-6442
Nick Tucker	" "		897 0596
R.W. Hutchings	27635 Iris Pl Castaic, CA 91384		661 294 5257
J. Negrido	10205 Vanalden Ave Northridge 91324		818-262-3616
Ron Lisberg	13408 Egbert St Sylmar CA 91342		818 266 6548
Wade Robertson	6533 Murietta Van Nuys CA 91401		818 781 6452

Whiteman Airport Master Plan Update

Tenant Review Meeting #1
September 9, 2008
SIGN IN SHEET

NAME	ADDRESS	EMAIL	PHONE
Pat Hart	The Soil & Sod Depot		(818) 686 6445
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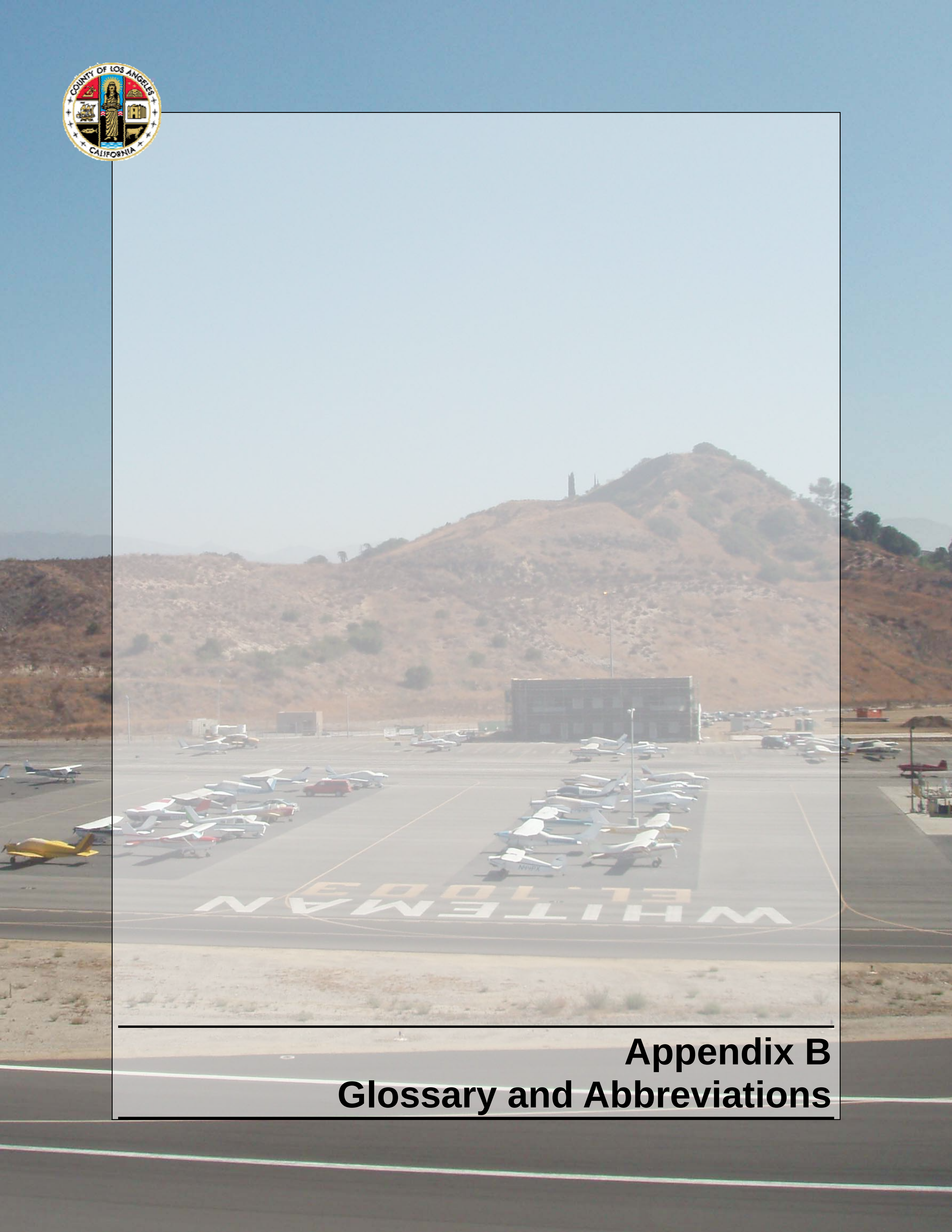
STEVE [illegible]	ABCG Air		818 889-7868
JAMES WOODAMAN	Summit Helicopter	jwoodaman@summithelicopter.com	
Roger Bourke	Box 8083, Alta, UT 84092	rbourke@earthlink.net	818-890-0903
LEIGH V NICHOLSON	26553 OAKDALE CYN LN Canyon Country		661 250-2689
JOHN CRITTENDEN	6702 SANDALWOOD DR Simi Valley CA		818/400-7033
MICHAEL STROMBECK	1805 WILLIAMS, SIMI VALLEY 93065		818 422-5586
John Jefferies	15847 McKeever St. Granada Hills.		818-366-3709
Victoria Rose Horton	28029 N Eddie Ln Santa Clarita CA 91350		661 360-9242
Ron Ellison	3610 Glenridge Dr	FLYIDRON@AOL.COM	818-995-3155
Brooke Lizotte	4232 Ethel Ave #3, Studio City, 91604	Flying88s@SBCGLOBAL.NET	818 943 7799



Appendix B
Glossary and Abbreviations

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Glossary and Abbreviations

A

A-WEIGHTED SOUND LEVEL - The sound pressure level which has been filtered or weighted to reduce the influence of low and high frequency (dBA).

AC - Advisory Circular published by the Federal Aviation Administration.

ACCOM. - Accommodations

ADPM - Average Day of the Peak Month

AFB - Air Force Base

AGL - Above Ground Level

AIA - Annual Instrument Approaches

AICUZ - Air Installation Compatible Use Zones define areas of compatible land use around military airfields.

AIP - Airport Improvement Program of the FAA.

AIR CARRIER - A commercial scheduled service airline carrying interregional traffic.

AIRCRAFT MIX - The relative percentage of operations conducted at an airport by each of four classes of aircraft differentiated by gross takeoff weight and number of engines.

AIRCRAFT TYPES - An arbitrary classification system which identifies and groups aircraft having similar operational characteristics for the purpose of computing runway capacity.

AIR NAVIGATIONAL FACILITY (NAVAID) - Any facility used for guiding or controlling flight in the air or during the landing or takeoff of aircraft.

AIR ROUTE SURVEILLANCE RADAR (ARSR) - Long-range radar which increases the capability of air traffic control for handling heavy enroute traffic. An ARSR site is usually located at some distance from the ARTCC it serves. Its range is approximately 200 nautical miles. Also called ATC Center Radar.

AIR TAXI - Aircraft operated by a company or individual that performs air transportation on a non-scheduled basis over unspecified routes usually with light aircraft.

AIRPORT AVAILABLE FOR PUBLIC USE - An airport available for use by the public with or without a prior request.

AIRPORT MASTER PLAN - Long-range plan of airport development requirements.

ALP - Airport Layout Plan

ALSF-1 - Approach Light System with Sequence Flasher Lights

ALS - Approach Light System

AMBIENT NOISE - All encompassing noise associated with a given environment, being usually a composite of sounds from many sources near and far.

ANCLUC - Airport Noise and Compatible Land Use Control plan; an FAA sponsored land use compatibility planning program preceding Part 150 Airport Noise Compatibility Program.

APPROACH CONTROL SERVICE - Air traffic control service provided by a terminal area traffic control facility for arriving and departing IFR aircraft and, on occasion, VFR aircraft.

APPROACH FIX - The point from or over which final approach (IFR) to an airport is executed.

APPROACH SLOPE - Imaginary areas extending out and away from the approach ends of runways which are to be kept clear of obstructions.

APPROACH SURFACE - An element of the airport imaginary surfaces, longitudinally centered on the extended runway centerline, extending upward and outward from the end of the primary surface at a designated slope.

AREA NAVIGATION (RNAV) - A method of navigation that permits aircraft operations on any desired course within the coverage or stationed-reference navigation systems or within the limits of self-contained system capability.

ARC - Airport Reference Code

ARFF - Aircraft Rescue and Fire-Fighting

ARTS-III - Automated Radar Terminal Service - Phase III. A terminal facility in the air traffic control system using air ground communications and radar intelligence to detect and display pertinent data such as flight identification, altitude and position of aircraft operating in the terminal area.

ASOS – Automated Surface Observing System

ASV - Annual Service Volume - a reasonable estimate of the airfield's annual capacity.

ATCT - Airport Traffic Control Tower

ATC - Air Traffic Control

AVIGATION AND HAZARD EASEMENT - An easement which provides right of flight at any altitude above the approach surface, prevents any obstruction above the approach surface, provides a right to cause noise vibrations, prohibits the creation of electrical interferences, and grants right-of-way entry to remove trees or structures above the approach surface.

B

BASED AIRCRAFT - An aircraft permanently stationed at the airport, usually by some form of agreement between the aircraft owner and airport management.

BIT - Bituminous Asphalt Pavement

BUR – Three letter identifier for Bob Hope Airport

BUSINESS JET - Any of a type of turbine powered aircraft carrying six or more passengers and weighing less than approximately 90,000 pounds gross takeoff weight.

C

CY - Calendar Year

CARGO - Originating and/or terminating.

CASP - California Aviation System Plan

CAT I - Category I Instrument Landing System. (Minimums: decision height of 200 feet; Runway visual range 1,800 feet).

CAT II - Category II Instrument Landing System. (Minimums: decision height of 100 feet; Runway visual range 1,200 feet).

CAT III - Category III Instrument Landing System. (Minimums: no decision height; Runway visual range of from 0 to 700 feet depending on type of CAT III facility).

CENTER'S AREA - The specified airspace within which an air route traffic control center provides air traffic control and advisory service.

CEQA - California Environmental Quality Act

CFR - Crash, Fire and Rescue. This is now called Airport Rescue and Fire Fighting (ARFF).

CIRCLING APPROACH - A maneuver initiated by the pilot to align the aircraft with a runway for landing when a straight-in instrument approach is not possible. This maneuver requires ATC clearance and that the pilot establish visual reference to the airport.

CL - Centerline

CNEL - Community Noise Equivalent Level - a noise metric used in California to describe the overall noise environment of a given area from a variety of sources.

COMM. - Communications

COMMERCIAL SERVICE AIRPORT - A public airport which received scheduled passenger service and enplanes annually 2,500 or more passengers.

COMMUTER AIRLINE - Aircraft operated by an airline that performs scheduled air transportation service over specified routes using aircraft with 60 seats or less.

CONC. - Portland Cement Concrete Pavement

CONICAL SURFACE - An imaginary surface extending upward and outward from the periphery of the horizontal surface at a slope of 20 to 1 for a horizontal distance of 4,000 feet.

CONNECTION - A passenger who boards an aircraft directly after deplaning from another flight. On-line single carrier connections involve flights of the same carrier, while interline or off-line connections involve flights of two different carriers. This term can also be applied to freight shipments.

CONTROLLED AREA - Airspace within which some or all aircraft may be subject to air traffic control.

CONTROL TOWER - A central operations facility in the terminal air traffic control system consisting of a tower cab structure (including an associated IFR room if radar equipped) using air/ground communications and/or radar, visual signaling and other devices to provide safe and expeditious movement of terminal air traffic.

CONTROL ZONES - These are areas of controlled airspace which extend upward from the surface and terminate at the base of the continental control area. Control zones that do not underlie the continental control area have no upper limit. A control zone may include one or more airports and is normally a circular area with a radius of 5 statute miles of any extensions necessary to include instrument departure and arrival paths.

CONTROLLED AIRSPACE - An airspace of defined dimensions within which air traffic control service is provided to IFR flights and to VFR flights in accordance with the airspace classification, Class A, Class B, etc.

CROSSWIND RUNWAY - A runway aligned at an angle to the prevailing wind which allows use of an airport when crosswind conditions on the primary runway would otherwise restrict use.

CURFEW - A restriction placed upon all or certain classes of aircraft by time of day, for purposes of reducing or controlling airport noise.

D

DECISION HEIGHT (DH) - With respect to the operation of aircraft, this means the height at which a decision must be made, using an ILS or PAR instrument approach, to either continue the approach or to execute a missed approach.

DEMAND - The actual number of persons, aircraft or vehicles currently using a facility if that facility is operating at or below capacity or the number of persons, aircraft or vehicles who want to use the facility when the facility is operating above capacity.

DEPLANEMENT - Any passenger getting off an arriving aircraft at an airport. Can be both a terminating and connecting passenger. Also applies to freight shipments.

DISTANCE MEASURING EQUIPMENT (DME) - An electronic installation established with either a VOR or ILS to provide distance information from the facility to pilots by reception of electronic signals. It measures, in nautical miles, the distance of an aircraft from a NAVAID.

E

ENROUTE - The route of flight from point of departure to point of destination, including intermediate stops (excludes local operations).

ENROUTE AIRSPACE - Controlled airspace above and/or adjacent to terminal airspace.

EQUIVALENT SOUND LEVEL (LEQ) - The steady A-weighted sound level over a specified period that has the same acoustic energy as the fluctuating noise during that period.

F

F&E - Facilities and Equipment Programming - FAA

FAA - Federal Aviation Administration of the United States Department of Transportation

FAR - Federal Aviation Regulation

FAR Part 36 - A regulation establishing noise certification standards for aircraft.

FAR Part 77 - A regulation establishing standards for determining obstructions to navigable airspace.

FAR Part 139 - A regulation which prescribes rules governing the certification and operation of land airports which serve any scheduled or unscheduled passenger operation of an air carrier that is conducted with an aircraft having a seating capacity of more than 30 passengers.

FAR Part 150 - A regulation establishing criteria for noise assessment and procedures and criteria for FAA approval of noise compatibility programs.

FBO - Fixed Base Operator

FEDERAL AIRWAYS - See Low Altitude Airways.

FINAL APPROACH IFR - The flight plan of landing aircraft in the direction of landing along the extended runway centerline from the base leg to the runway.

FLEET MIX - The proportion of aircraft types or models expected to operate at an airport.

FLIGHT SERVICE STATION (FSS) - A facility operated by the FAA to provide flight assistance service.

FY - Fiscal Year

G

GA - General Aviation - Refers to all civil aircraft and operations which are not classified as air carrier.

GLIDE SLOPE (GS) - The vertical guidance component of an Instrument Landing System (ILS).

GND CON. - Ground Control

GPS - Global Positioning System

H

HANGAR – In this report hangars are classified as individual or conventional. Individual hangars are designed to accommodate a single aircraft and may be portable, “T”, or rectangular hangars. These are assumed to accommodate smaller, personal use aircraft. Individual hangars may be constructed in groups that results in a larger structure, however, the individual hangar spaces are counted separately. Conventional hangars are larger structures designed to accommodate several aircraft in an open bay(s) and for the purposes of this report are assumed to house turboprop and business jet aircraft. Conventional hangars are often occupied by an FBO.

HGRS - Hangars

HIGH ALTITUDE AIRWAYS - See Jet Routes.

HIRL - High Intensity Runway Lighting

HITL - High Intensity Taxiway Lighting

HOLDING - A predetermined maneuver which keeps an aircraft within a specified airspace while awaiting further clearance.

HORIZONTAL SURFACE - An imaginary surface constituting a horizontal plane 150 feet above the airport elevation.

I

IFR - Instrument Flight Rules that govern flight procedures under IFR conditions (limited visibility or other operational constraints).

IMAGINARY SURFACE - An area established in relation to the airport and to each runway consistent with FAR Part 77 in which any object extending above these imaginary surfaces is, by definition, an obstruction.

INDUCED TRIPS - See Trip.

INSTRUMENT APPROACH - A series of predetermined maneuvers for the orderly transfer of an aircraft under instrument flight conditions from the beginning of the intial approach to a landing or to a point from which a landing may be made visually.

INSTRUMENT LANDING SYSTEM (ILS) - A precision landing aid consisting of localizer (azimuth guidance), glide slope (vertical guidance), outer marker (final approach fix) and approach light system.

INSTRUMENT OPERATION - A landing or takeoff conducted while operating on an instrument flight plan.

INSTRUMENT RUNWAY - A runway equipped with electronic and visual navigation aids for which a precision or non-precision approach procedure having straight-in landing minimums has been established.

INTEGRATED NOISE MODEL (INM) - A computer-based airport noise exposure modelling program.

ITINERANT OPERATIONS - All aircraft arrivals and departures other than local operations.

INTERNATIONAL OPERATIONS - Aircraft operations performed by air carriers engaged in scheduled international service.

J

JET ROUTES - A route designed to serve aircraft operating from 18,000 feet MSL up to and including flight level 450.

L

LAT – Latitude

LAX – Three letter identifier for Los Angeles International Airport

LDA - Localizer Type Directional Aid

LDN - Day-Night Average Sound Level. The 24-hour average sound level, in decibels, from midnight to midnight, obtained after the addition of ten decibels to sound levels for periods between 10 p.m. and 7 a.m.

LDNG. AIDS - Landing Aids

LENGTH OF HAUL - The non-stop airline route distance from a particular airport.

LEVEL OF SERVICE - An arbitrary but standardized index of the relative service provided by a transportation facility.

LIRL - Low Intensity Runway Lighting

LITL - Low Intensity Taxiway Lighting

LOAD FACTOR - Ratio of the number of passenger miles to the available seat miles flown by an airline representing the proportion of aircraft seating capacity that is actually sold and utilized. Load factors are also referred to in air cargo and can be determined by weight or volume.

LOC - Localizer (part of an ILS)

LOCAL OPERATION - Operations performed by aircraft which: (a) operate in the local traffic pattern or within the sight of the tower; (b) are known to be departing for, or arriving from, flight in local practice areas located within a 20-mile radius of the control tower, or (c) execute simulated instrument approaches or low passes at the airport.

LOM - Compass locator at an outer marker (part of an ILS). Also called COMLO.

LONG - Longitude

LOW ALTITUDE AIRWAYS - Air routes below 18,000 feet MSL. They are referred to as Federal Airways.

LRR - Long-Range Radar

M

MALS - Medium Intensity Approach Light System

MALSF - Medium Intensity Approach Light System with sequence flashing lights.

MALSR - MALS with Runway Alignment Indicator Lights (RAIL)

MARKER BEACON - An electronic navigation facility which transmits a fan or boneshaped radiation pattern. When received by compatible airborne equipment they indicate to the pilot that he is passing over the facility. Two to three beacons are used to advise pilots of their position during an ILS approach.

MGW - Maximum Gross Weight

MILITARY OPERATION - An operation by military aircraft.
MINIMUM DESCENT ALTITUDE (MDA) - The lowest altitude, expressed in feet above mean sea level, to which descent is authorized on final approach or during circling-to-land maneuvering in execution of a standard instrument approach procedure where no electronic glide slope is provided.

MIRL - Medium Intensity Runway Lighting

MISSED APPROACH - A prescribed procedure to be followed by aircraft that cannot complete an attempted landing at an airport.

MITL - Medium Intensity Taxiway Lighting

MLS - Microwave Landing System

MM - Middle Marker (part of an ILS)

MOA - Military Operations Area

MODAL SPLIT - The distribution of trips among competing travel modes, such as walk, auto, bus, etc.

MODE - A particular form or method of travel such as walk, auto, carpool, bus, rapid transit, etc.

MOVEMENT - Synonymous with the term operation, i.e., a takeoff or a landing.

MSL - Mean Sea Level

N

NA - Not applicable

NAS - NATIONAL AIRSPACE SYSTEM - The common system or air navigation and air traffic encompassing communications facilities, air navigation facilities, airways, controlled airspace, special use airspace and flight procedures authorized by Federal Aviation Regulations for domestic and international aviation.

NAVAID - See Air Navigation Facility.

NDB - NON-DIRECTIONAL BEACON - An electronic ground station transmitting in all directions in the L/MF frequency spectrum; provides azimuth guidance to aircraft equipped with direction finder receivers. These facilities are often established with ILS outer markers to provide transition guidance to the ILS system.

NEPA - National Environmental Policy Act

NM - Nautical Mile

NOISE ABATEMENT - A procedure for the operation of aircraft at an airport which minimizes the impact of noise on the environs of the airport.

NOISE CONTOUR - A noise impact boundary line connecting points on a map where the level of sound is the same.

NOISE EXPOSURE MAP - A scaled, geographic depiction of an airport, its noise contours and surrounding area.

NOISE LEVEL REDUCTION (NLR) - The amount of noise level reduction achieved through incorporation of noise attenuation (between outdoor and indoor levels) in the design and construction of a structure.

NON-PRECISION APPROACH - A standard instrument approach procedure in which no electronic glide slope is provided.

NPI - Non-Precision Instrument Runway

NPIAS - National Plan of Integrated Airport Systems

O

OAG - Official Airline Guide

OBSTRUCTION - Any structure, growth, or other object, including a mobile object, that exceeds a limiting height established by federal regulations or by a hazard zoning regulation.

OFZ – Obstacle free zone

OM - Outer Marker (part of an ILS)

OPERATION - An aircraft arrival at or departure from an airport.

OUTER FIX - A point in the destination terminal area from which aircraft are cleared to the approach fix or final approach course.

P

PAPI - Precision Approach Path Indicator

PAR - Precision Approach Radar

PEAK HOUR FACTOR - The ratio of the average flow rate during the peak hour to the highest short-term (say 15 minutes) rate within the peak hour.

PEAK HOUR PERCENTAGE - The percentage of total daily trips or traffic occurring in the highest or "peak" hour. Frequently confused with Peak Hour Factor.

PI - Precision Instrument Runway marking.

POSITIVE CONTROL - The separation of all air traffic within designated airspace by air traffic control.

PRECISION APPROACH - A standard instrument approach procedure in which an electronic glide slope/glide path is provided; e.g., ILS/MLS and PAR.

PRIMARY RUNWAY - The runway on which the majority of operations take place. On large, busy airports, there may be two or more parallel primary runways.

PRIMARY SURFACE - An area longitudinally centered on a runway with a width ranging from 250 to 1000 feet and extending 200 feet beyond the end of a paved runway.

PROHIBITED AREA - Airspace of defined dimensions identified by an area on the surface of the earth within flight is prohibited.

PU - Publicly owned airport.

PVC - Poor visibility and ceiling.

PVT - Privately owned airport.

Q

QUEUE - A line of pedestrians or vehicles waiting to be served.

R

RADAR SEPARATION - Radar spacing of aircraft in accordance with established minima.

RAIL - Runway Alignment Indicator Lights

RCAG - Remote Center Air/Ground Communications

REIL - Runway End Identification Lights

RELIEVER AIRPORT - An airport which, when certain criteria are met, relieves the aeronautical demand on a high density air carrier airport.

RESTRICTED AREAS - Airspace of defined dimensions identified by an area on the surface of the earth within which the flight of aircraft, while not wholly prohibited, is subject to restrictions.

RNAV - See Area Navigation.

ROFA – Runway Object Free Area

ROTATING BEACON - A visual NAVAID displaying flashes of white and/or colored light used to indicate location of an airport.

RPZ – Runway Protection Zone

RSA – Runway Safety Area

RUNWAY PROTECTION ZONE –An area off the end of the runway end to enhance the protection of people and property on the ground.

RUNWAY SAFETY AREA - An area symmetrical about the runway centerline and extending beyond the ends of the runway which shall be free of obstacles as specified.

RVR - Runway Visual Range

RVV - Runway Visibility Value

R/W - Runway

S

SALS - Short Approach Light System

SCAG – Southern California Association of Governments

SDF - Simplified Directional Facility landing aid providing final approach course.

SEGMENTED CIRCLE - An airport aid identifying the traffic pattern direction.

SEPARATION MINIMA - The minimum longitudinal, lateral, or vertical distances by which aircraft are spaced through the application of air traffic control procedures.

SOCIOECONOMIC - Data pertaining to the population and economic characteristics of a region.

SSALF - Simplified Short Approach Light System with Sequence Flashing lights.

SSALS - Simplified Short Approach Light System.

SSALR - Simplified Short Approach Light System with Runway Alignment Indicator Lights (RAIL)

STANDARD LAND USE CODING MANUAL (SLUCM) - A standard system for identifying and coding land use activities published by the U.S. Department of Housing and Urban Development and the Federal Highway Administration.

STRAIGHT-IN APPROACH - A descent in an approved procedure in which the final approach course alignment and descent gradient permits authorization of straight-in landing minimums.

STOL - Short Takeoff and Landing

STOVL - Short Takeoff Vertical Landing

SYSTEM PLAN - A representative of the aviation facilities required to meet the immediate and future air transportation needs and to achieve the overall goals.

T

TACAN - Tactical Air Navigation

TDZ - Touchdown Zone

TERMINAL AIRSPACE - The controlled airspace normally associated with aircraft departure and arrival patterns to/from airports within a terminal system and between adjacent terminal systems in which tower enroute air traffic control service is provided.

TERMINAL CONTROL AREA (TCA) - This consists of controlled airspace extending upward from the surface or higher to specified altitudes within which all aircraft are subject to positive air traffic control procedures.

TERPS - Terminal Instrument Procedures

T-HANGAR - A T-shaped aircraft hangar that provides shelter for a single airplane.

THRESHOLD - The beginning of that portion of the runway usable for landing.

TOUCH-AND-GO OPERATION - An operation in which the aircraft lands and begins takeoff roll without stopping.

TRAFFIC PATTERN - The traffic flow that is prescribed for aircraft landing at, taxiing on, and taking off from an airport. The usual components of a traffic pattern are upwind leg, crosswind leg, downwind leg and final approach.

TRANSIENT OPERATIONS - See Itinerant Operations.

TRANSITIONAL SURFACE - An element of the imaginary surfaces extending outward at right angles to the runway centerline and from the sides of the primary and approach surfaces to where they intersect the horizontal and conical surfaces.

TRANSITIONAL AIRSPACE - That portion of controlled airspace wherein aircraft change from one phase of flight or flight condition to another.

TRIP - The one-way unit of travel between an origin and a destination.

TRIP ASSIGNMENT - That portion of the transportation planning process where distributed trips are allocated among the actual routes they can be expected to use.

TW & T/W - Taxiway

TWR - Control Tower

TVOR - Terminal Very High Frequency Omnirange Station

U

UHF - Ultra High Frequency

UNICOM - Radio communications station which provides pilots with pertinent airport information (winds, weather, etc.) at specific airports.

UTILITY RUNWAY - A runway intended to be used by propeller driven aircraft of 12,500 pounds maximum gross weight or less.

V

VASI - Visual Approach Slope Indicator providing visual glide path.

VASI-2 - Two Box Visual Approach Slope Indicator

VASI-4 - Four Box Visual Approach Slope Indicator

VECTOR - A heading issued to an aircraft to provide navigational guidance by radar.

VNY – Three letter identifier for Van Nuys Airport

VFR - Visual Flight Rules that govern flight procedures in good weather.

VFR AIRCRAFT - An aircraft conducting flight in accordance with Visual Flight Rules.

VHF - Very High Frequency

VISUAL APPROACH RUNWAY - A runway intended for visual approaches only.

VOR - Very High Frequency Omnirange Station. A ground-based radio (electronic) navigation aid transmitting radials in all directions in the VHF frequency spectrum; provides azimuth guidance to pilots by reception of electronic signals.

VORTAC - Co-located VOR and TACAN.

V/STOL - Vertical/Short Takeoff and Landing

VTOL - Vertical Takeoff and Landing (includes, but is not limited to, helicopters).

W

WARNING AREA - Airspace which may contain hazards to non-participating aircraft in international airspace.

WHP – Three letter identifier for Whiteman Airport.

WIND CONE (WINDSOCK) - Conical wind directional indicator.

WIND TEE - A visual device used to advise pilots about wind direction at an airport.

Y

YEARLY DAY-NIGHT AVERAGE SOUND LEVEL (Ldn) - The 24-hour average sound level, in decibels, for the period from midnight to midnight, obtained after the addition of ten decibels to sound levels for the periods between 10 p.m. and 7 a.m. the following day, averaged over a span of one year.

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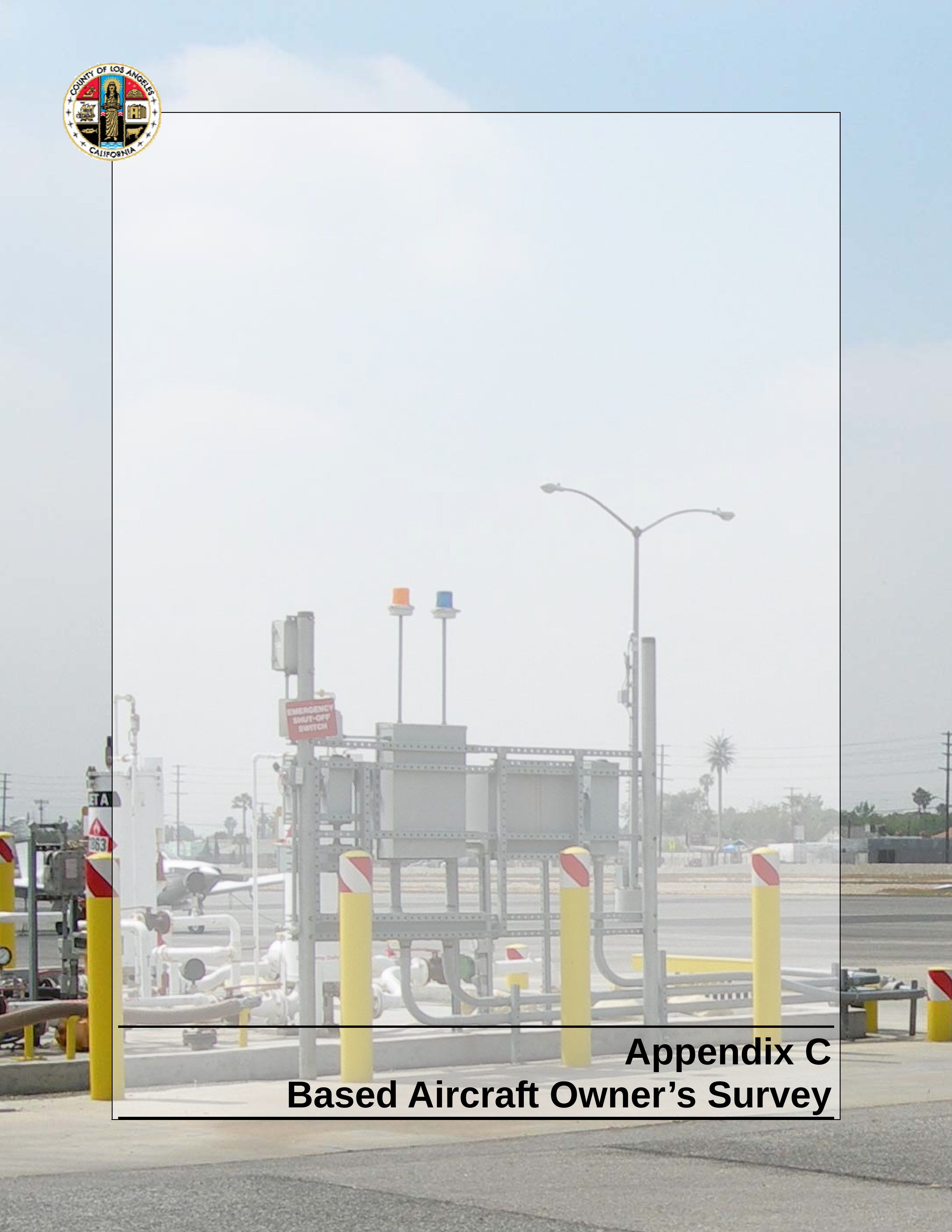

Appendix C
Based Aircraft Owner's Survey

Appendix C

WHITEMAN AIRPORT BASED AIRCRAFT OWNERS SURVEY

The County of Los Angeles is developing an airport master plan for Whiteman Airport. An important plan objective is to incorporate improvements that are felt to be needed by existing and future airport users. To this end, we would very much appreciate your comments regarding future airport improvements. Please help us by taking a moment of your time to respond to the following questions.

OPTIONAL QUESTION

1. Please provide your name and phone number, if we may call you to discuss your responses.

Name	
Day Phone	

ALL RESPONDENTS PLEASE ANSWER THE FOLLOWING QUESTIONS

2. Where do you live?

City	State	Zip Code

3. Over the next five years I anticipate my flying activity to: {please check}

Increase	
Decrease	
Remain the Same	

4. If you now use Whiteman Airport, please check your type of use(s):

	Have aircraft based there.
	Own a fixed base operation or other business on airport.
	Am a member of flying club or rent/lease aircraft.
	Have transient flights to and from the airport.
	Other:____

5. Indicate by priority the physical improvements you would like to see at Whiteman Airport.

	Highest Priority				Lowest Priority
New Terminal Facility					
Additional Portable hangars					
Additional T-hangars(including Nested T-hangars)					
T-Shelters (Shade Hangars)					
Box Hangars***** Size(s):___________________________					
Conventional, Bay-type Community Hangars					
Additional Tiedowns					
Additional Transient Parking					
Pavement Resurfacing					
Crosswind Runway					
Expanded Security Program					
Improved Auto Access/Parking					
Fuel Facility					
Compass Rose					
Navaids: _______________					
Restaurant					
Other: ___________________					
Other: ___________________					

* Box Hangars are square or rectangular and suitable for single aircraft storage. Sizes vary depending on aircraft being stored. Typical sizes range from 50 ft. by 50 ft. to 100 ft. by 100 ft.

6. Rate the adequacy of existing services and facilities as you have observed them that apply for Whiteman Airport. If a particular service or facility is not available or does not apply, please respond with "N/A" in the right hand margin for those services.

	Excellent		Satisfactory		Poor
FBO Services					
Flight Instruction					
Aircraft Maintenance					
Navigational Aids					
Transient Parking					
Tiedowns					
Auto Parking					
Hangar Facilities					
Flight Planning Area					
Pavement Condition					
Crosswind Coverage					
Other: ____________________					
Other: ____________________					

<u>PLEASE ANSWER THE REMAINING QUESTIONS THAT APPLY TO YOU</u>

7. If you have aircraft based at Whiteman Airport, please provide the following information for your airport activities:

Aircraft Type	Number of Aircraft	Annual Takeoffs *	Percent Touch and Go
Single-engine under 4 place			
Single-engine 4 place and over			
Multi-engine – piston			
Turboprop			
Turbojet			
Helicopter			
Other: _________________			

* Include Touch and Go Operations

8. What factors most influenced your decision to base your aircraft at Whiteman, and not one of the other nearby airports? (Please check all that apply)

	Proximity to home.
	Proximity to business.
	Favorable flying conditions.
	Availability of facilities (Please specify): ___________________________________
	Availability of services (Please specify): ___________________________________
	Cost of services/airport fees.
	Avoidance of potential future FAA regulations (e.g. temporary flight restrictions)
	Other:____

9. If you have aircraft based at the Airport, please indicate ***the number of*** your aircraft stored in tiedowns and stored in hangars and your preference if additional hangars were available.

	Present Method of Storing Based Aircraft	**Preference if Additional Hangars were Available**
Number in Tiedowns		
Number in Hangars		

10. If you fly to/from Whiteman Airport, what percentage of your flights by aircraft type are for the following purposes?

	Business	**Personal**	**Training**	**Other**	**Total %**
Single-engine under 4 place					100 %
Single-engine 4 place and over					100 %
Multi-engine – piston					100 %
Turboprop					100 %
Turbojet					100 %
Helicopter					100 %

11. If you fly to/from Whiteman Airport, please estimate the amount of money spent annually in the area for the operation of your aircraft.

Hangar/Tiedown	$
Fuel	$
Maintenance	$
Insurance	$
Other: ___________________	$
Total	$

12. Please indicate the type of equipment in your aircraft.

	VOR
	GPS
	Transponder
	3-Lite Marker Beacon
	Localizer
	Glide Slope Equipment
	Automatic Direction Finding (ADF)
	Distance Measuring Equipment (DME)
	Other:____
	Other:____

13. Please use this space for additional comments on other topics pertaining to the master plan (such as, how does the airport compare with others; your thoughts on development around the airport; etc.).

Kindly return your completed questionnaire in the pre-addressed, stamped envelope.

THANK YOU FOR YOUR TIME TO PROVIDE US THIS INFORMATION.

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