Whiteman Airport Master Plan Update
Final Report





Whiteman Airport
Master Plan

FINAL REPORT

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Table of Contents

Page

CHAPTER 1 INTRODUCTION

CHAPTER 2 EXECUTIVE SUMMARY

CHAPTER 3 INVENTORY

CHAPTER 4 FORECASTS OF AVIATION DEMAND

Table of Contents
(Continued)

Page

CHAPTER 4 FORECASTS OF AVIATION DEMAND **(Continued)**

CHAPTER 5 FACILITY REQUIREMENTS

CHAPTER 6 ALTERNATIVE DEVELOPMENT CONCEPTS

CHAPTER 7 AIRPORT PLANS

CHAPTER 8 COST AND FUNDING CONSIDERATIONS

Table of Contents
(Continued)

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List of Tables
(continued)

Page

CHAPTER 5 FACILITY REQUIREMENTS

CHAPTER 6 ALTERNATIVE DEVELOPMENT CONCEPTS

CHAPTER 7 AIRPORT PLANS

CHAPTER 8 COST AND FUNDING CONSIDERATIONS

CHAPTER 9 ENVIRONMENTAL OVERVIEW

List of Figures

Page

CHAPTER 2 EXECUTIVE SUMMARY

CHAPTER 3 INVENTORY

CHAPTER 4 FORECASTS OF AVIATION DEMAND

CHAPTER 5 FACILITY REQUIREMENTS

CHAPTER 6 ALTERNATIVE DEVELOPMENT CONCEPTS

List of Figures
(Continued)

Page

CHAPTER 6 ALTERNATIVE DEVELOPMENT CONCEPTS **(Continued)**

List of Tables

Page

CHAPTER 2 EXECUTIVE SUMMARY

CHAPTER 3 INVENTORY

CHAPTER 4 FORECASTS OF AVIATION DEMAND

Chapter 1
Introduction

Chapter 1
Introduction

INTRODUCTION

Whiteman Airport (WHP) 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 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 AECOM of Orange, California to prepare a master plan for Whiteman Airport.

This document comprises the Final Report for the airport master plan that documents the research, analyses, and findings of the study. During the course of the study, an Interim Report was issued which documented the initial elements of the work program including inventory, forecasts of aviation demand, and facility requirements. The Interim Report was a working document and is superseded by the Draft Final report. This Final report supersedes all previous reports.

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.

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

A combined Tenant Review Meeting and Public Open House was conducted on March 11, 2009. During this meeting the initial findings documented in the Interim Report were presented. During this meeting initial airside and landside alternatives were shared and feedback obtained.

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 input from the County 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.

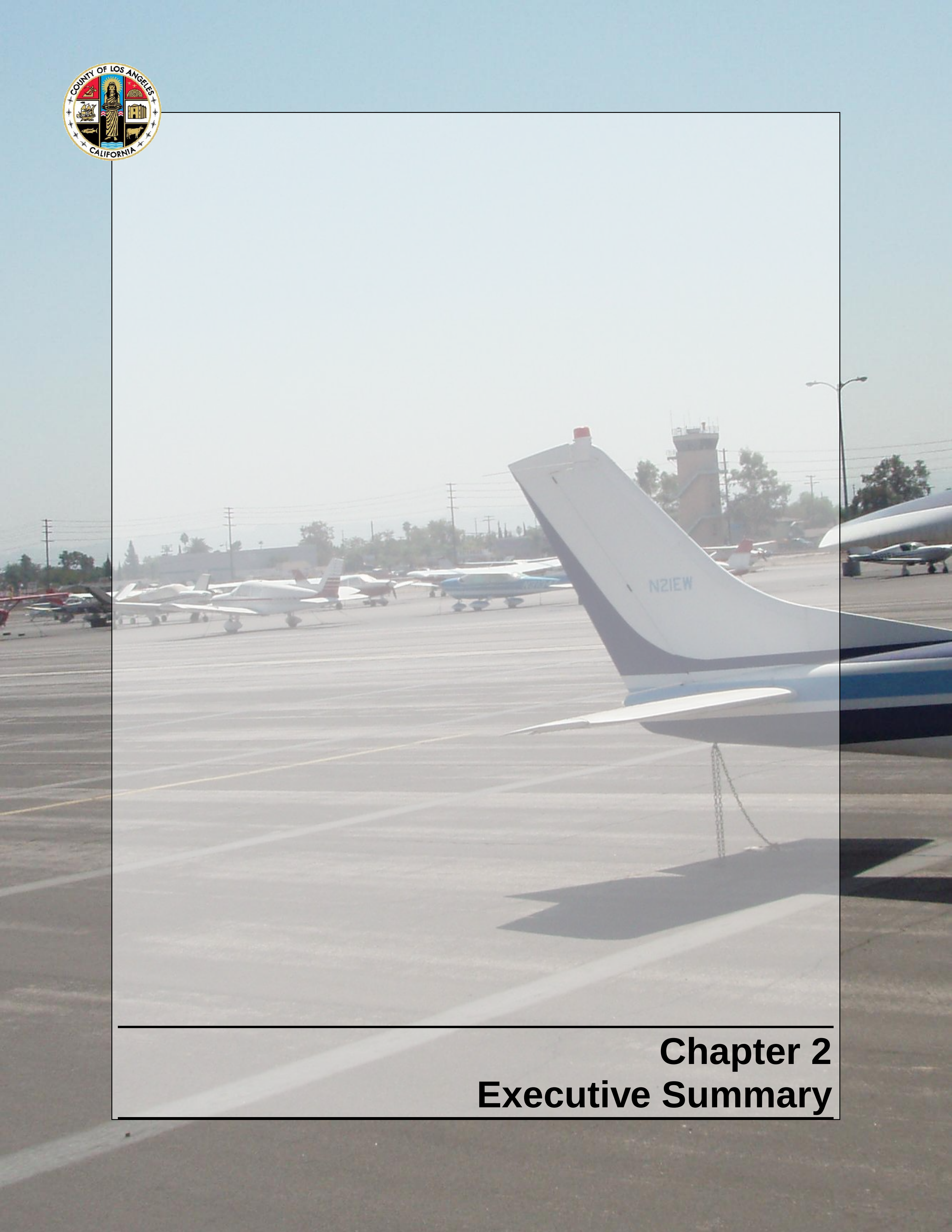
Objective:

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 aviation forecasts and the findings on required facilities, along with the sequencing of development recommendations and a summary of capital costs. Details on the various strategic development plan elements can be found in subsequent chapters of this report. Chapter 3 describes the existing airport and conditions. The forecasts 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. Presented in Chapter 6 are the various alternative development concepts considered and Chapter 7 contains the recommended development plan. Chapter 8 includes the costs of capital improvements and identifies potential funding sources and Chapter 9 presents an environmental overview analysis performed as part of the master plan update. Meeting minutes from the first Tenant Review Meeting is contained in Appendix A. To assist the reader, a glossary and list of abbreviations used in this report has been provided as Appendix B. Appendix C contains a questionnaire that was distributed to owners of based aircraft at the airport. Reduced Airport Layout Plans prepared in this master plan are contained in Appendix D. Included in Appendix E are the pertinent Caltrans Airport Compatibility Guidelines. Detailed cost estimate data and the noise study are included in Appendices F and G, respectively.

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 projections.

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.

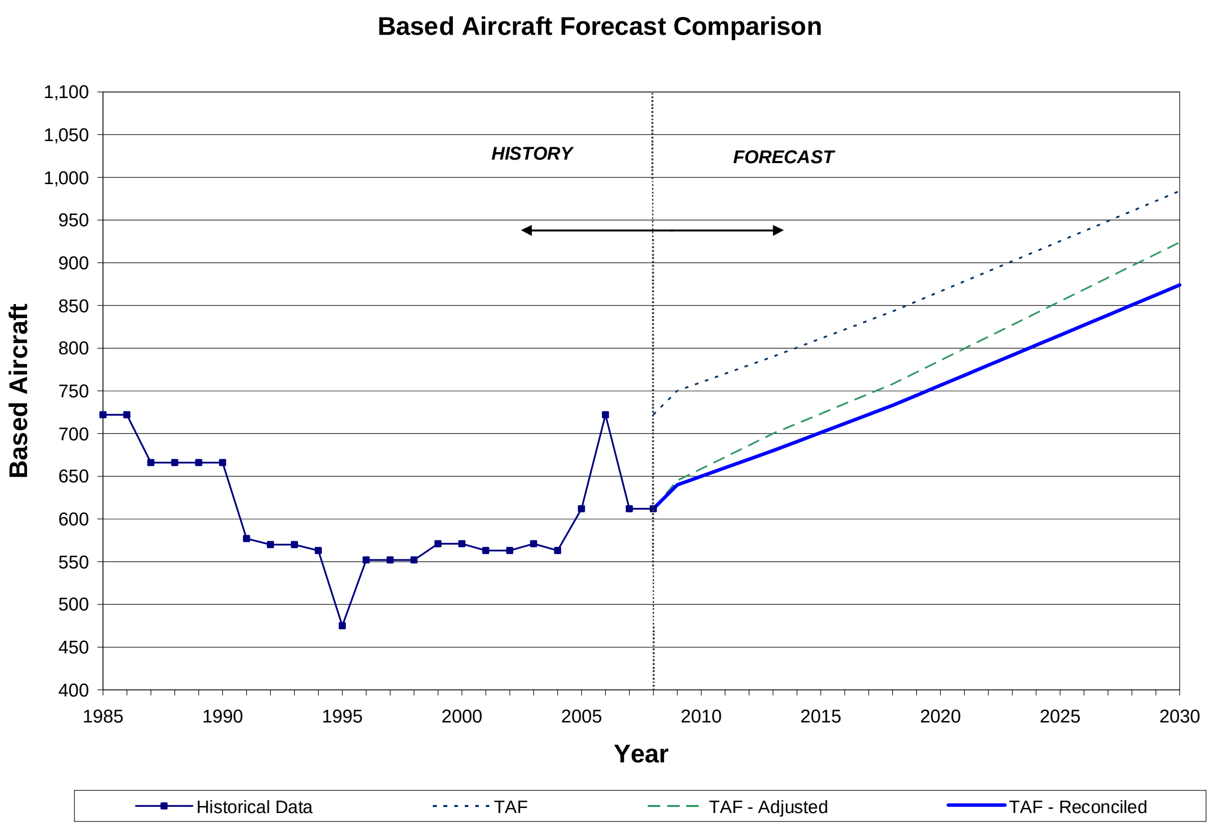


Figure 2-1
Historical and Forecast Based Aircraft

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. 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: AECOM 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: AECOM 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 findings and conclusions of the analysis.

Airside

- For this master plan the airport is designated as airport reference code (ARC) B-I, small airplanes 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 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. Presently, the deficiencies are provided through the application of declared distances.

- Pierce Street and Osborne Street traverse the runway obstacle free zones of Runways 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 Runways 12 and 30. Residential areas are also contained within the extended runway object free areas. Presently, declared distances provide full runway object free area.

- The Runway 12 protection zone includes portions of Sutter Avenue, Jouett Street, Carl Street, Hoyt Street, and industrial uses. Runway 30's protection zone includes Wingo Street, San Fernando Road, Correnti Street, and Bromwich Street. Both runway protection zones include residential development. Proposed corrective action includes shortening of Runways 12 and 30 and avigation easement acquisitions.

- Pavement maintenance will be needed throughout the planning period. The County is planning an apron slurry seal project in the short-term. The County is currently developing a pavement management plan for all County owned airports.

- Declared distances are currently applied to the airport. Declared distances are not typically found at a general aviation airport and consideration should be given 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 5,000-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; an additional 35 tie-downs are required. In 2030, 34 total transient tie-downs are required. Currently there are nine transient tie-downs, resulting in an additional 25 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 or rehabilitated.

- 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 Facilities	Requirements 2013	2018	2030	Additional Facilities (2030)
General aviation 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)	255	227	244	290	35
Auto parking (spaces)	182	186	199	234	52
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, helos = helicopters, acft = aircraft
Source: AECOM analysis.

ALTERNATIVE DEVELOPMENT CONCEPTS

During the course of this master plan study several airside and landside development concepts were analyzed. A total of eight development concepts were developed and analyzed, a no action alternative, three airside, and four landside concepts. Airside concepts focused on meeting full runway safety area, obstacle free zone, and runway object free area without the use of declared distances. Landside concepts focused on meeting facility requirements noted in Table 2-3, above.

The no action alternative assumes that no changes would occur to the airfield or landside (beyond presently planned hangar developments). This alternative would not meet aviation demand and declared distances will remain as a means to provide adequate safety areas beyond the runway ends. The FAA discourages use of declared distances at general aviation airports, such as Whiteman.

The alternative development concepts are discussed in Chapter 6. Based on County, airport management, public, tenant, and stakeholder input, a recommended development concept was identified.

RECOMMENDED DEVELOPMENT

The Airport Layout Plan (ALP), depicted in Figure 2-2, presents the overall development concept plan for Whiteman Airport as recommended in this master plan. This plan was based on the recommended development concept defined in Chapter 6 and refined based input from the County, consultant, stakeholders, and funding considerations. Key recommendations are as follows:

- Shorten the runway from 4,120 feet to 3,768 feet to provide full runway safety area, obstacle free zone, and runway object free area on existing airport property and discontinue use of declared distances at the airport. The Runway 12 threshold will be relocated southeasterly 185 feet and the Runway 30 threshold will be relocated northwesterly 167 feet.

- Construct new runway entrances and exits.

- Relocate the general aviation terminal to a centralized location on the airport east of the existing alignment of Airpark Way, adjacent to the electrical vault. This location requires significant grading because of the hill. The proposed two-story terminal will provide adequate space for pilots, passengers, airport management offices, and a restaurant. Relocation of the terminal facilities will require grading of the hill.

- Consolidate all helicopter operations to the existing terminal area. Once a new terminal is constructed and the existing terminal demolished, all helicopter operations can be consolidated into one area. This will enhance operations of the airport and minimize mixing of fixed wing and rotorcraft.

- Construct based aircraft tie-downs and hangars.

- Acquire 10.8 acres of avigation easements.

The primary focus of Phase 1 improvements is to move the general aviation terminal and associated facilities to allow for development of the consolidated helicopter operating area. The runway is shortened in Phase 2 to enhance the safety of the airport. Construction of the new terminal facility occurs in Phase 2. Phases 2 and 3 focus on providing based aircraft storage facilities. Additionally, Phase 3 enhances the operational capacity of the runway. Acquisition of avigation easements are also scheduled for the third phase. Table 2-4 summarizes all development recommendations which are more fully described in Chapter 7.

COSTS AND FUNDING

Implementation of the recommended development plan will require the expenditure of $42.0 million during the 20-year planning period. The master plan capital improvement program will be funded from various sources including FAA, State, County/airport revenues, and private investments. Table 2-5 summarizes the program expenditures.

As seen in Table 2-5, $20.6 million, or 49.1 percent, of the program is funded through FAA grants. Private investment accounts for 30.2 percent or $12.7 million of the program cost. The County will fund $8.5 million (20.3 percent) and it is estimated that the State will fund approximately $197,000 (0.5 percent).

Phase 1 costs account for approximately 39 percent of the total program, and includes removing the hill and constructing a transient apron. These projects are enabling projects; allowing for development of a consolidated helicopter operating area and based aircraft facilities. These projects total $14.5 million or 88 percent of Phase 1 costs and 35 percent of the total program cost. Relocation of the terminal facility continues into Phase 2, when the terminal is constructed. In total, the cost to grade the hill and relocate the terminal facility is $17.4 million, or 41 percent of the total program cost. The consolidated helicopter operating area enhances safety and operations at the airport. Increased based aircraft facilities will allow increased revenues to help create a financially sustainable airport.

County funds represent the airport sponsors' matching share under the FAA AIP program and projects that are ineligible for AIP grants. Private investment at the airport represents based aircraft facility construction and investment by the airport management company.

Figure 2-3 graphically depicts the location of the recommended improvement projects in each of the three development phases. Project costs, along with the County's share and funding sources for projects are also illustrated on the figure.

ENVIRONMENTAL CONSIDERATIONS

Environmental analysis in this study involved the preparation of an environmental overview contained in Chapter 9 of this report. Further studies are recommended and may be addressed as part of project implementation.

ABBREVIATIONS:

APP	Approach
ARP	Airport Reference Point
ATCT	Airport Traffic Control Tower
AWOS	Automated Weather Observing System
BRL	Building Restriction Line
DEP	Departure
Disp.	Displaced
(E)	Existing
Elev.	Elevation
ENTR.	Entrance
Est.	Estimated
(A)	Future
LOS	Line of Sight
NDB	Non-Directional Beacon
OFZ	Obstacle Free Zone
PAPI	Precision Approach Path Indicator
Pt.	Point
REIL Lights	Runway End Identifier
ROFA	Runway Object Free Area
RPZ	Runway Protection Zone
RSA	Runway Safety Area
RW	Runway
TDZE	Touchdown Zone Elevation
TSS	Threshold Siting Surface
TW	Taxiway

OBSTACLE FREE ZONE (OFZ) PENETRATIONS

#	DESCRIPTION	REQUIRED	EXISTING	ACTION
1	AIRPORT PROPERTY FENCE/ PIERCE STREET	200'	55'	RELOCATE RUNWAY THRESHOLD 183'/ ELIMINATE DECLARED DISTANCES
2	AIRPORT PROPERTY FENCE/ OSBORNE STREET	200'	73'	RELOCATE RUNWAY THRESHOLD 169'/ ELIMINATE DECLARED DISTANCES

DEVIATIONS FROM FAA DESIGN STANDARDS

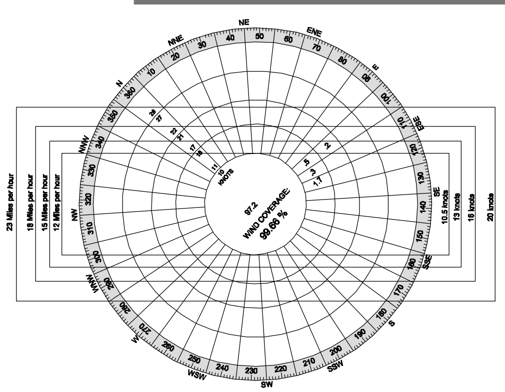
	DESCRIPTION	REQUIRED	EXISTING	ACTION
A	RSA LENGTH¹	240'	55'	RELOCATE RUNWAY THRESHOLD 183'/ ELIMINATE DECLARED DISTANCES
	ROFA LENGTH¹	240'	55'	
	OFZ LENGTH¹	200'	55'	
B	RSA LENGTH¹	240'	73'	RELOCATE RUNWAY THRESHOLD 169'/ ELIMINATE DECLARED DISTANCES
	ROFA LENGTH¹	240'	73'	
	OFZ LENGTH¹	200'	73'	

¹ Beyond runway end

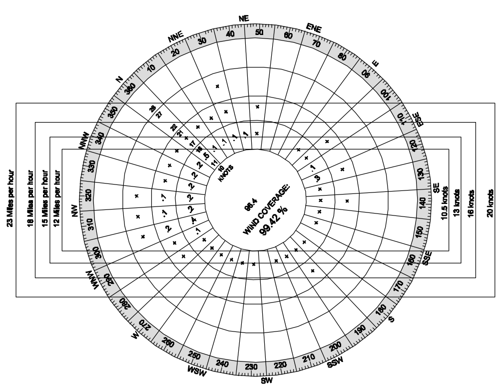
WIND COVERAGE

RUNWAY	CROSSWIND COVERAGE							
	ALL WEATHER				IFR			
	10.5 Kts.	13 Kts.	16 Kts.	20 Kts.	10.5 Kts.	13 Kts.	16 Kts.	20 Kts.
12	59.34%	59.63%	59.80%	59.83%	70.68%	70.68%	70.68%	70.68%
30	87.45%	87.48%	87.50%	87.51%	98.76%	98.90%	98.94%	98.94%
12-30	99.42%	99.74%	99.93%	99.97%	99.66%	99.80%	99.83%	99.83%

Source: National Climatic Data Center Asheville, NC. Based on 14,435 observations (1999 - 2007) taken at Whiteman, CA.



IFR WIND ROSE



ALL WEATHER WIND ROSE

NOTES:

1. California Coordinate System, Zone 5 NAD 83.
2. All elevations are in NAVD 88. All future elevations are estimated.
3. Threshold Siting Surfaces are shown in plan view on Sheet 4 and in profile view on Sheet 5. There are penetrations to the Runway 12 Threshold Siting Surface.
4. Hangar layouts shown are conceptual to depict potential future capacities. The ultimate configurations may vary based on actual demand.
5. The airport is part of Lot 37 San Fernando Road and has not been sectioned. The nearest section corner is over two miles northeast of the airport.
6. Declared distances published in the Airport/Facility Directory (23 September 2010 - 18 November 2010) will not apply after the relcoation of runway thresholds. Approval date of existing declared distances are unknown.
7. Future tie-downs parallel to San Fernando are only for non-airworthy aircraft. Movement of aircraft in this area requires closure of the runway.
8. Monuments are either protected by a 4" brass disk embedded in 12 square inches of concrete mass or by a monument well.

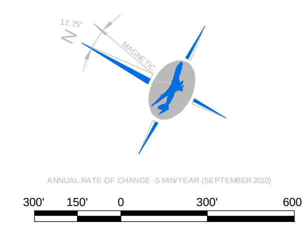
AIRPORT DATA

DESCRIPTION		EXISTING	FUTURE
AIRPORT ELEVATION (MSL)		1,005'	1,004'
AIRPORT REFERENCE POINT (ARP) COORDINATES (NAD 83)	LATITUDE	34°15'33.57"N	34°15'33.33"N
	LONGITUDE	118°24'48.36"W	118°24'48.30"W
NAVAIDS (i.e. ILS, BEACON)		BEACON, NDB	SAME
MEAN MAX. TEMP. OF HOTTEST MONTH		89.1°(July)	SAME
AIRPORT REFERENCE CODE		B-I, SMALL	SAME
GPS AT AIRPORT		YES	SAME

DECLARED DISTANCES

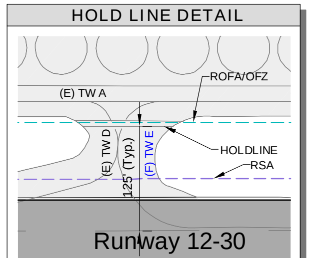
	RUNWAY 12	RUNWAY 30
TAKEOFF RUN AVAILABLE (TORA)	3,442'	3,191'
TAKEOFF DISTANCE AVAILABLE (TODA)	4,120'	4,120'
ACCELERATE-STOP DISTANCE AVAILABLE (ASDA)	3,910'	3,940'
LANDING DISTANCE AVAILABLE (LDA)	3,181'	3,462'

See Note 6.



GRAPHIC SCALE

HOLD LINE DETAIL



Scale: 1" = 100'

LEGEND

DESCRIPTION	EXISTING	FUTURE
AIRPORT BOUNDARY		SAME
AIRFIELD PAVEMENT		
AIRFIELD PAVEMENT TO BE REMOVED	NONE	
BUILDING RESTRICTION LINE (BRL)		SAME
RUNWAY OBJECT FREE AREA (ROFA)/ OBSTACLE FREE ZONE (OFZ)		SAME
RUNWAY SAFETY AREA (RSA)		SAME
RUNWAY PROTECTION ZONE (RPZ)		
BUILDINGS		
BUILDINGS TO BE REMOVED	NONE	
GROUND CONTOURS	1000'	SAME
AIRPORT REFERENCE POINT (ARP)		
HELIPADS		SAME
THRESHOLD SITING SURFACE		SAME
FENCE		
ROAD/PARKING		
ROTATING BEACON		SAME
MONUMENT	M	SAME
HOLDLINE		
RUNWAY LIGHTS/PAPI		NOT SHOWN
HELICOPTER OPERATING AREA	NOT SHOWN	
AVIGATION EASEMENT	NONE	
ATCT LOS		NOT SHOWN
GATE/TO BE REMOVED	G	G / G

MONUMENT DATA

	LATITUDE	LONGITUDE
1	34°15'47.84"N	118°25'03.34"N
2	34°15'43.01"N	118°24'58.24"N
3	34°15'43.09"N	118°25'00.73"N
4	34°15'33.29"N	118°24'47.96"N
5	34°15'23.57"N	118°24'37.69"N
6	34°15'19.03"N	118°24'35.58"N
7	34°15'18.42"N	118°24'32.24"N
8	34°15'48.83"N	118°24'29.87"N

For monument protection see note 8.

FACILITY TABLE

#	DESCRIPTION
1	PRIVATELY OWNED HANGARS
2	LA COUNTY OWNED HANGARS
3	FUEL ISLAND
4	TERMINAL (to be relocated)
5	AIRPORT TRAFFIC CONTROL TOWER
6	FUTURE HANGARS
7	FUTURE AWOS
8	FUTURE TERMINAL/RESTAURANT
9	WASH RACK

For more details see Sheet 3 - Building Area Plan.

RUNWAY END DATA

RUNWAY		EXISTING	FUTURE
12	LATITUDE	34°15'48.70"N	34°15'47.34"N
	LONGITUDE	118°25'04.53"W	118°25'03.10"W
	ELEVATION¹	1,005.4'	1,004.0'¹
30	LATITUDE	34°15'18.06"N	34°15'19.33"N
	LONGITUDE	118°24'32.15"W	118°24'33.49"W
	ELEVATION¹	962.0'	964.0'¹

¹ See Note 2.

TAXIWAY DETAILS

DESIGNATOR		WIDTH
EXISTING	FUTURE	
TAXIWAY A PARALLEL	TAXIWAY A PARALLEL	35'
TAXIWAY A ENTR.	-	41'
-	TAXIWAY A ENTR.	41'
-	TAXIWAY B	80'
TAXIWAY B	TAXIWAY C	80'
TAXIWAY C	TAXIWAY D	80'
TAXIWAY D	TAXIWAY E	80'
-	TAXIWAY F	80'

RUNWAY DATA

DESCRIPTION		RUNWAY 12 - 30 EXISTING	RUNWAY 12 - 30 FUTURE
EFFECTIVE GRADIENT (IN %)		1.04	1.10
MAXIMUM GRADIENT (IN %)		2.04	SAME
RUNWAY BEARING		N 41° 16' 04.94" W	SAME
WIND COVERAGE % (10.5 KNOTS)		99.42	SAME
APPROACH VISIBILITY MINIMUMS		1 MILE	SAME
DESIGN AIRCRAFT	MAKE AND MODEL	BEECH KING AIR B100	SAME
	WINGSPAN (FEET)	45.8	SAME
	UNDERCARRIAGE WIDTH	14.92	SAME
	APPROACH SPEED (KNOTS)	111	SAME
	MAX. TAKEOFF WEIGHT (LBS)	11,800	SAME
RUNWAY MARKING		VISUAL	NON-PRECISION
APPROACH CATEGORY (FAR PART 77)	RUNWAY 12	NON-PRECISION	SAME
	RUNWAY 30	NON-PRECISION	SAME
RUNWAY ℄ TO PARALLEL TAXIWAY ℄		150'	SAME
TAXIWAY ℄ TO FIXED OR MOVABLE OBJECT		44.5'	SAME
TAXIWAY OBJECT FREE AREA WIDTH		89'	SAME
TAXIWAY SAFETY AREA WIDTH		49'	SAME
TAXIWAY WINGTIP CLEARANCE		20'	SAME
RUNWAY ELEVATIONS (NAVD 88) (See Note 2)	TOUCHDOWN ZONE (TDZ)	1,000'	SAME
	HIGH POINT	1,005.4'	1,004.0'
	LOW POINT	962.0'	964.0'
	END POINT (RUNWAY 12/30)	1,005.4'/962.0'	1,004.0'/964.0'
BLAST PAD (ASPHALT) (WIDTH X LENGTH)	RUNWAY 12	78' x 48'	80' x 60'
	RUNWAY 30	77 x 60'	80 x 60'
LINE OF SIGHT REQUIREMENT MET		YES	SAME
RUNWAY LENGTH		4,120'	3,768'
RUNWAY WIDTH		75'	SAME
RUNWAY/TAXIWAY PAVEMENT MATERIAL		ASPHALT	SAME
APPROACH SLOPE		20:1	SAME
PAVEMENT STRENGTH (S) (000 LBS)		12.5	SAME
RUNWAY LIGHTING		MIRL	SAME
NAVIGATIONAL AIDS		Beacon/GPS	SAME
VISUAL AIDS	RUNWAY 12	REIL, PAPI	SAME
	RUNWAY 30	REIL, PAPI	SAME
RUNWAY SAFETY AREA	LENGTH¹	55'/73'	240'
	WIDTH	120'	SAME
RUNWAY OBJECT FREE AREA	LENGTH¹	55'/73'	240'
	WIDTH	250'	SAME
OBSTACLE FREE ZONE	LENGTH¹	55'/73'	200'
	WIDTH	250'	SAME
RUNWAY CENTERLINE TO HOLD LINE		125'	SAME

¹Length from runway end

FAA APPROVAL

Approved conditionally JAN 2 4 2011

Subject to comments contained in our letter dated: JAN 2 4 2011

FEDERAL AVIATION ADMINISTRATION

Western-Pacific Region

By

Manager - LAX-ADO

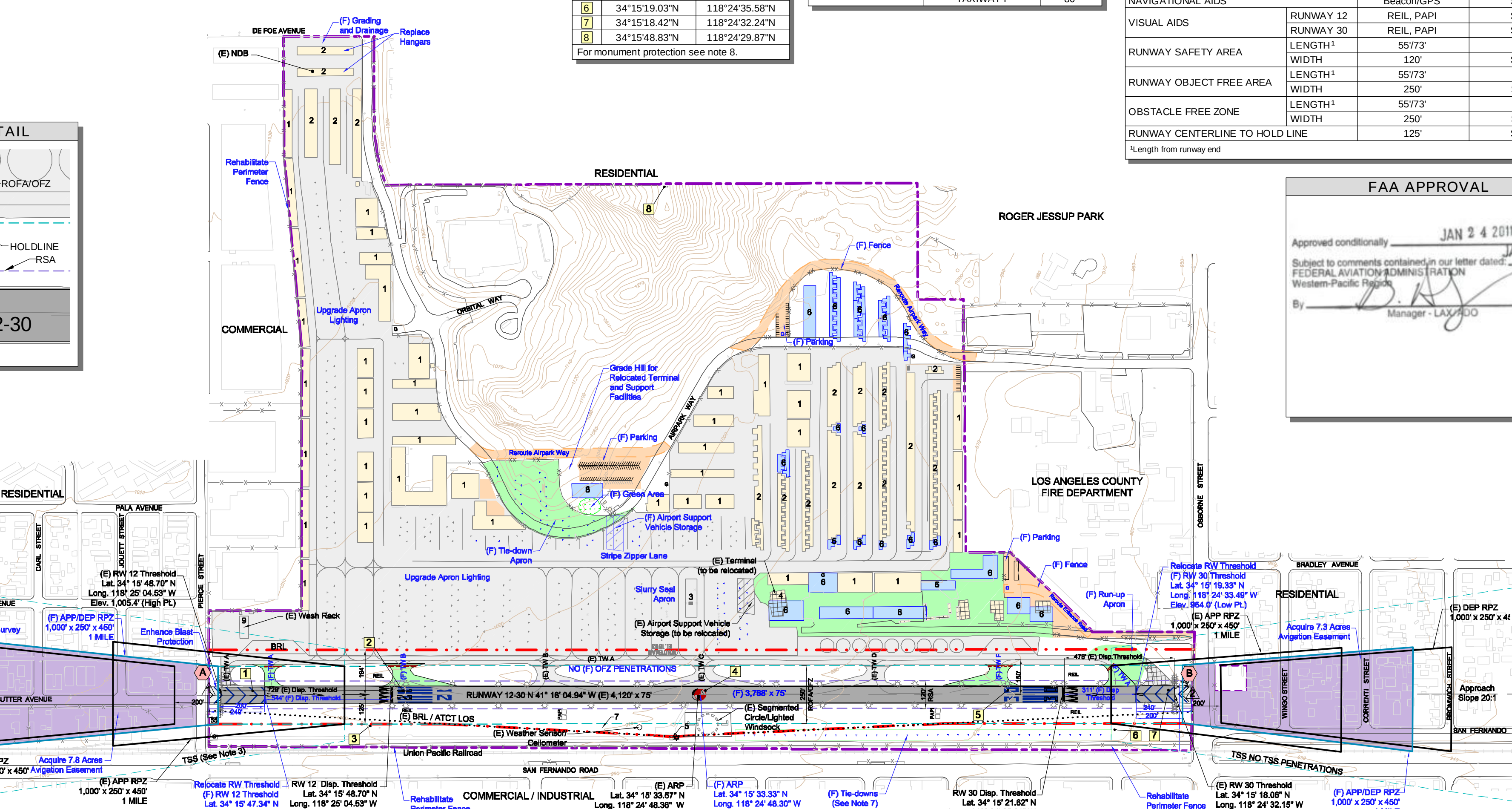


Figure 2-2
Airport Layout Plan

Table 2-4
SUMMARY OF RECOMMENDED IMPROVEMENTS

Project	Timing
Phase 1 (2009 – 2013)	
WAAS/LPV Survey	Underway
Slurry Seal Aircraft Parking Ramp	2011
Perimeter Fencing Rehabilitation and “Penalty Box” Gate Access System	2011
Grade Hill for Terminal Facility	2012
Relocate Terminal Facility	2012 – 2014
Reroute Airpark Way behind Terminal Facility	2012
Construct Transient Ramp	2013
Phase 2 (2014 – 2018)	
Relocate Terminal Facility (continued)	2012 – 2014
Construct Terminal Facility, Associated Parking, and Green Space	2014
Relocate Runway Thresholds and Paint Non-Precision Markings	2014
Construct Runway 30 Hold Apron	2014
Demolish Existing Terminal Facility	2015
Reroute Airport Entrance Road and Construct Automobile Parking Lot	2015
Construct New Conventional Hangar in Helicopter Area	2015
Construct Hangars	2015
Construct Conventional Hangars	2016
Stripe Zipper Lane	2016
Enhance Blast Protection	2017
Survey Underground Utilities – Develop Utility Map	2018
Replace Northeast County T-Hangars	2018
Phase 3 (2019 – 2030)	
Upgrade Apron Lighting/Security Camera System	Long-Term
Construct Second Conventional Hangar in Helicopter Area	Long-Term
Construct Exit Taxiways	Long-Term
Construct Hangars in Helicopter Area	Long-Term
Reroute Airpark Way behind County Hangars	Long-Term
Construct Additional Portable Hangars	Long-Term
Construct Portable Hangars/Individual and Associated Auto Parking	Long-Term
Construct Non-Airworthy Tie-Down Parking Area	Long-Term
Acquire 10.8 Acres in Avigation Easements	Long-Term

Source: AECOM.

Table 2-5
SUMMARY OF CAPITAL IMPROVEMENT COSTS
(thousands of 2009 dollars)

Phase	**FAA**	**State**	**Local**	**Private**	**Total**	**% Total**
1 (2009 - 2013)	$10,285	$13	$6,242	$0	$16,540	39.3%
2 (2014 - 2018)	$4,826	$74	$1,493	$4,295	$10,688	25.4%
3 (2019 - 2030)	$5,521	$110	$782	$8,403	$14,816	35.2%
Total	$20,632	$197	$8,517	$12,698	$42,044	100.0%
% Total	49.1%	0.5%	20.3%	30.2%	100.0%	

Source: AECOM analysis.

- An air quality assessment is recommended to establish compliance with federal, state, and regional standards.

- While there are no known historic, architectural, archeological, or cultural sites located near the airport, an archeological study and field review is recommended to establish what, if any, historic resources or cultural resources of value exist on the site. A specific area of concern is the hill, which has been and is currently being disturbed.

- A biological site assessment and biological database search is recommended to establish what, if any, wildlife or plants of value exist on site.

- A hazardous waste study is recommended to establish whether Master Plan improvements will impact or be affected by the Burbank and North Hollywood TCE contamination area that extends on to the southern tip of the airport.

- Review historical accidents at the airport and determine risk probabilities of an accident occurring near Whiteman Airport.

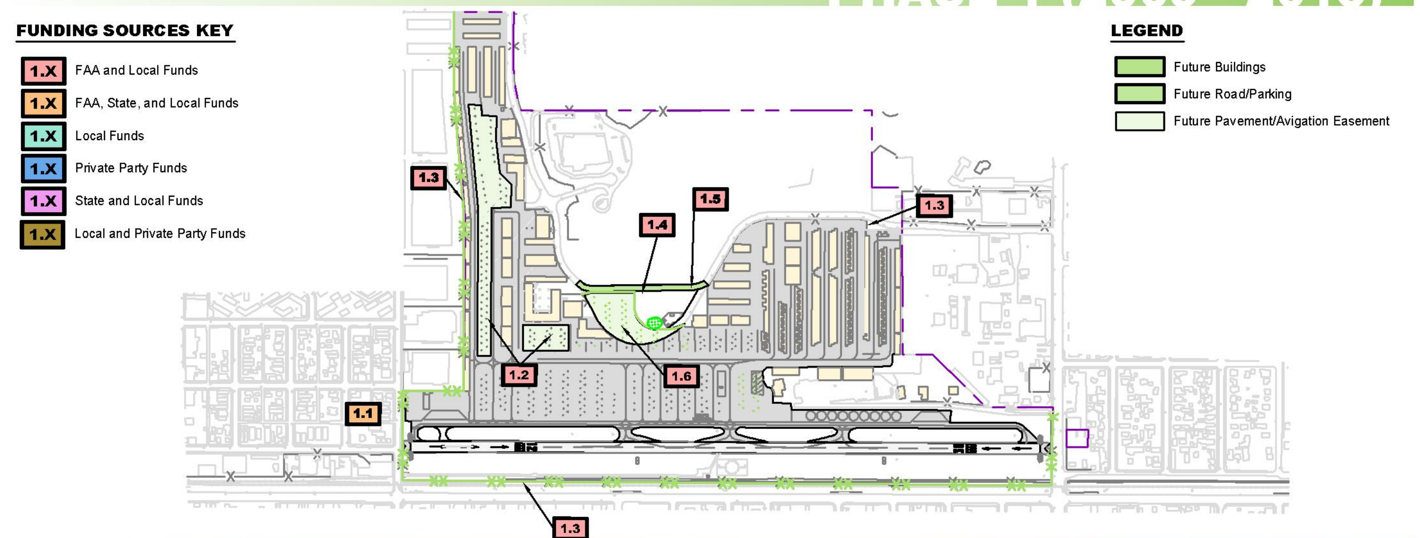
In addition, prior to approval of airport improvements, public service providers (energy supply, natural resources, solid waste) should be contacted to determine whether the demand can be met through existing or planned service facilities. If additional residential or other uses are affected by proposed improvements, appropriate mitigation as described in this overview should be addressed. Finally, when a potential drainage issue is known, a drainage study should be conducted.

It is also anticipated that an Initial Study (IS) will be required pursuant to CEQA (California Public Resources Code 21000 et seq.). Information contained in Chapter 9 may be used in the preparation of an Initial Study.

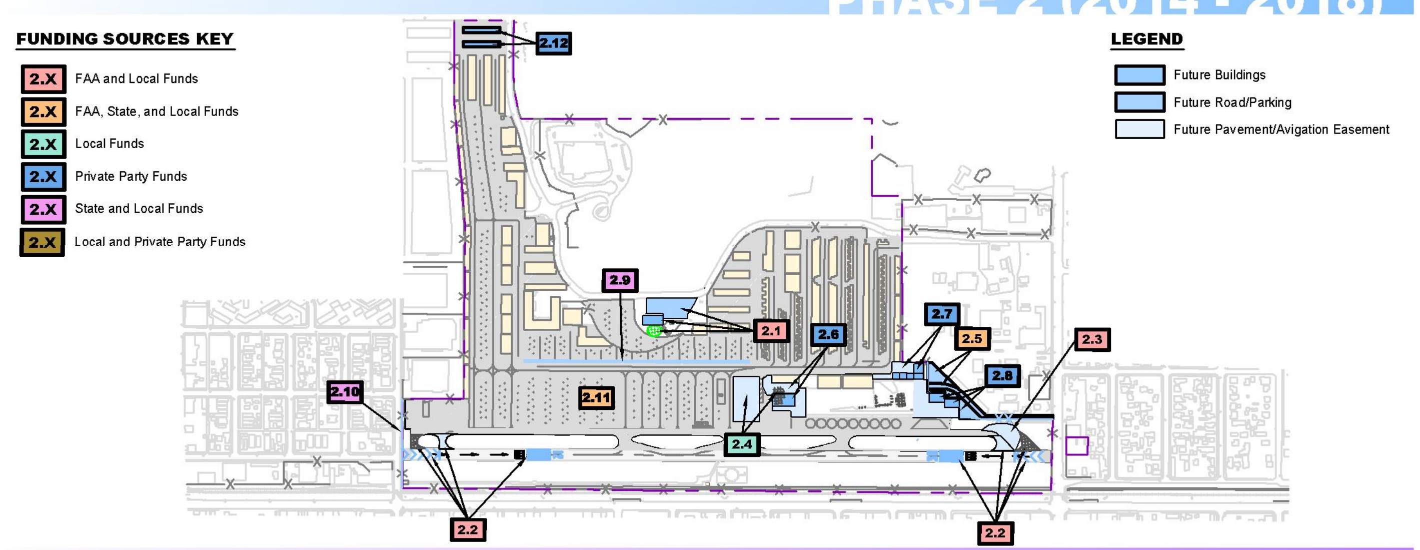
PUBLIC INVOLVEMENT

In addition to the Tenant Review meetings convened during the project, a public open house was held on March 11, 2009. Since the March open house, the airport has hosted several airport tours for interested members of the community. A second public open house will be held on November 18, 2009 to review the contents of this report. The Airport Commission will also be briefed on the master plan.

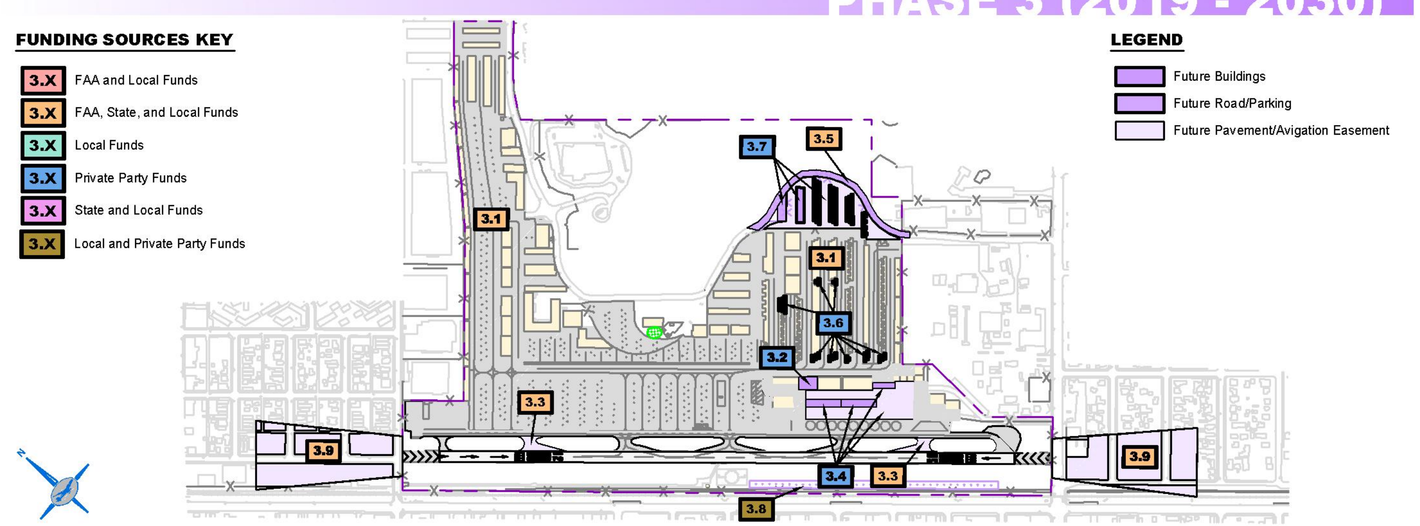
PHASE 1 (2009 - 2013)



PHASE 2 (2014 - 2018)

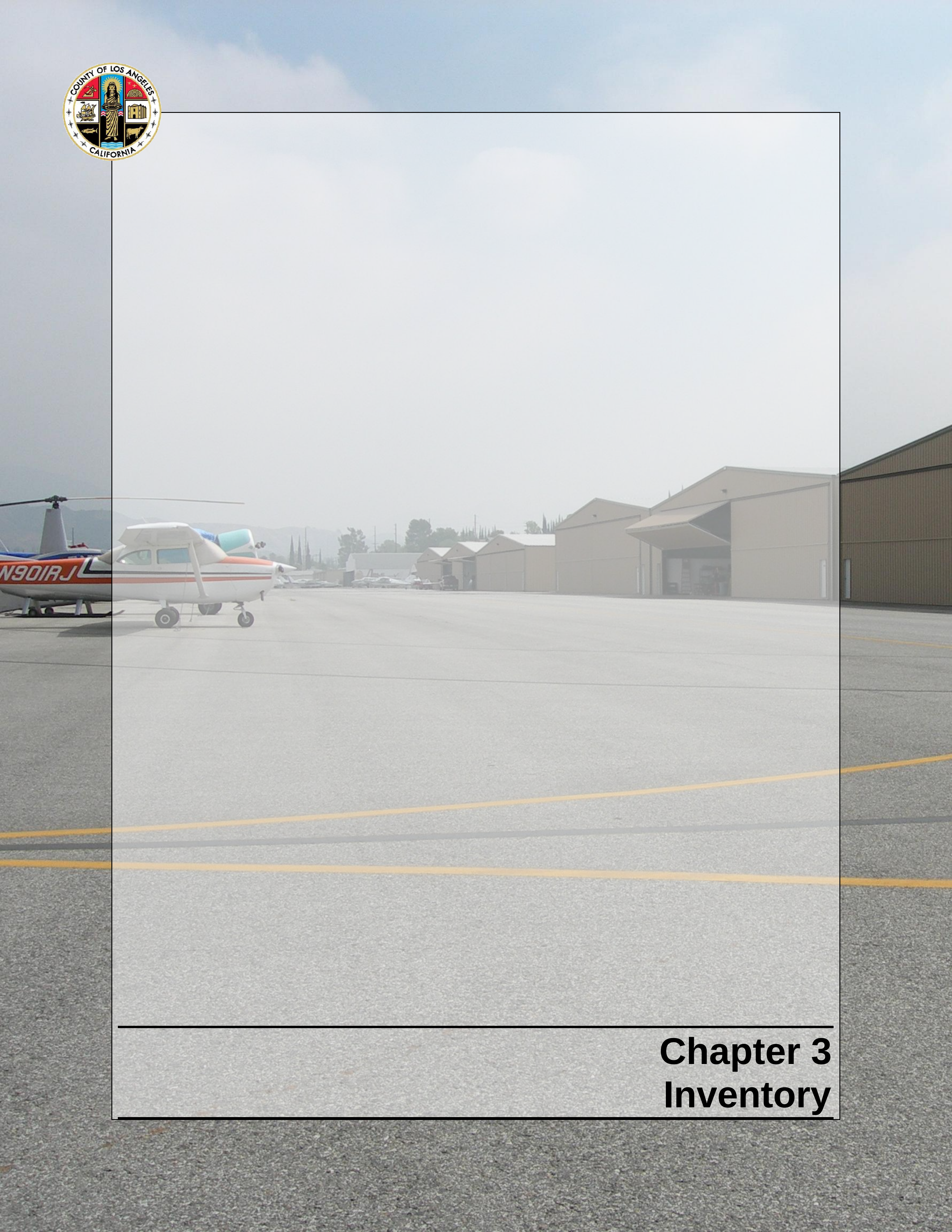


PHASE 3 (2019 - 2030)



	Project	County Cost	Project Cost	Timing
	Phase 1 (2009 - 2013)			
1.1	WAAS/LPV Survey	$ 13,000	$ 260,000	Underway
1.2	Slurry Seal Aircraft Parking Ramp	$ 25,000	$ 500,000	2011
1.3	Perimeter Fencing Rehabilitation and "Penalty Box" Gate Access System	$ 65,650	$ 1,313,000	2011
1.4	Grade Hill for Terminal Facility	$ 5,783,000	$ 10,918,000	2011
1.5	Reroute Airpark Way behind Terminal Facility	$ 159,450	$ 1,594,500	2012
1.6	Construct Transient Apron	$ 195,440	$ 1,954,400	2013
	Phase 1 Total	**$ 6,228,540**	**$ 16,279,900**	
	Phase 2 (2014 - 2018)			
2.1	Construct Terminal Facility, Associated Parking, and Green Space	$ 994,400	$ 2,917,400	2014
2.2	Relocate Runway Thresholds and Paint Non-Precision Markings	$ 67,875	$ 678,750	2014
2.3	Construct Runway 30 Hold Apron	$ 33,525	$ 335,250	2014
2.4	Demolish Existing Terminal Facility	$ 87,700	$ 87,700	2015
2.5	Reroute Airport Entrance Road and Construct Automobile Parking Lot	$ 143,150	$ 1,731,500	2015
2.6	Construct New Conventional Hangar in Helicopter Area	$ -	$ 1,428,400	2015
2.7	Construct Hangars	$ -	$ 658,600	2015
2.8	Construct Conventional Hangars	$ -	$ 1,437,800	2016
2.9	Stripe Zipper Lane	$ 20,000	$ 30,000	2016
2.10	Enhance Blast Protection	$ 122,750	$ 132,750	2017
2.11	Survey Underground Utilities - Develop Utility Map	$ 24,000	$ 480,000	2018
2.12	Replace Northeast County T-Hangars	$ -	$ 770,000	2018
	Phase 2 Total	**$ 1,493,400**	**$ 10,688,150**	
	Phase 3 (2019 - 2030)			
3.1	Upgrade Apron Lighting/Security Camera System	$ 142,300	$ 1,723,000	Long-Term
3.2	Construct Second Conventional Hangar in Helicopter Area	$ -	$ 987,000	Long-Term
3.3	Construct Exit Taxiways	$ 46,400	$ 764,000	Long-Term
3.4	Construct Hangars in Helicopter Area	$ -	$ 2,267,900	Long-Term
3.5	Reroute Airpark Way behind County Hangars	$ 294,255	$ 3,242,550	Long-Term
3.6	Construct Additional Portable Hangars	$ -	$ 574,500	Long-Term
3.7	Construct Portable Hangars/Individual Hangars and Associated Auto Parking	$ -	$ 4,294,500	Long-Term
3.8	Construct Non-Airworthy Tie-Down Parking Area	$ 278,800	$ 557,600	Long-Term
3.9	Acquire 10.8 Acres in Avigation Easements	$ 20,250	$ 405,000	Long-Term
	Phase 3 Total	**$ 782,005**	**$ 14,816,050**	
	Total All Phases	**$ 8,503,945**	**$ 41,784,100**	

Figure 2-3
Master Plan Improvements



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 were identified, alternative expansion concepts (capable of accommodating future demand) were formulated, evaluated, and ultimately, a recommended development program was formulated.

The following subsections document the findings of the facility inventory work.

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 187 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. 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 advisory 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 Road. 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 269 airports designated as reliever airports. These 269 airports have an average of 186 based aircraft each, which is 22 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 2,560 airports in the nation with this designation and these airports account for 34 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.

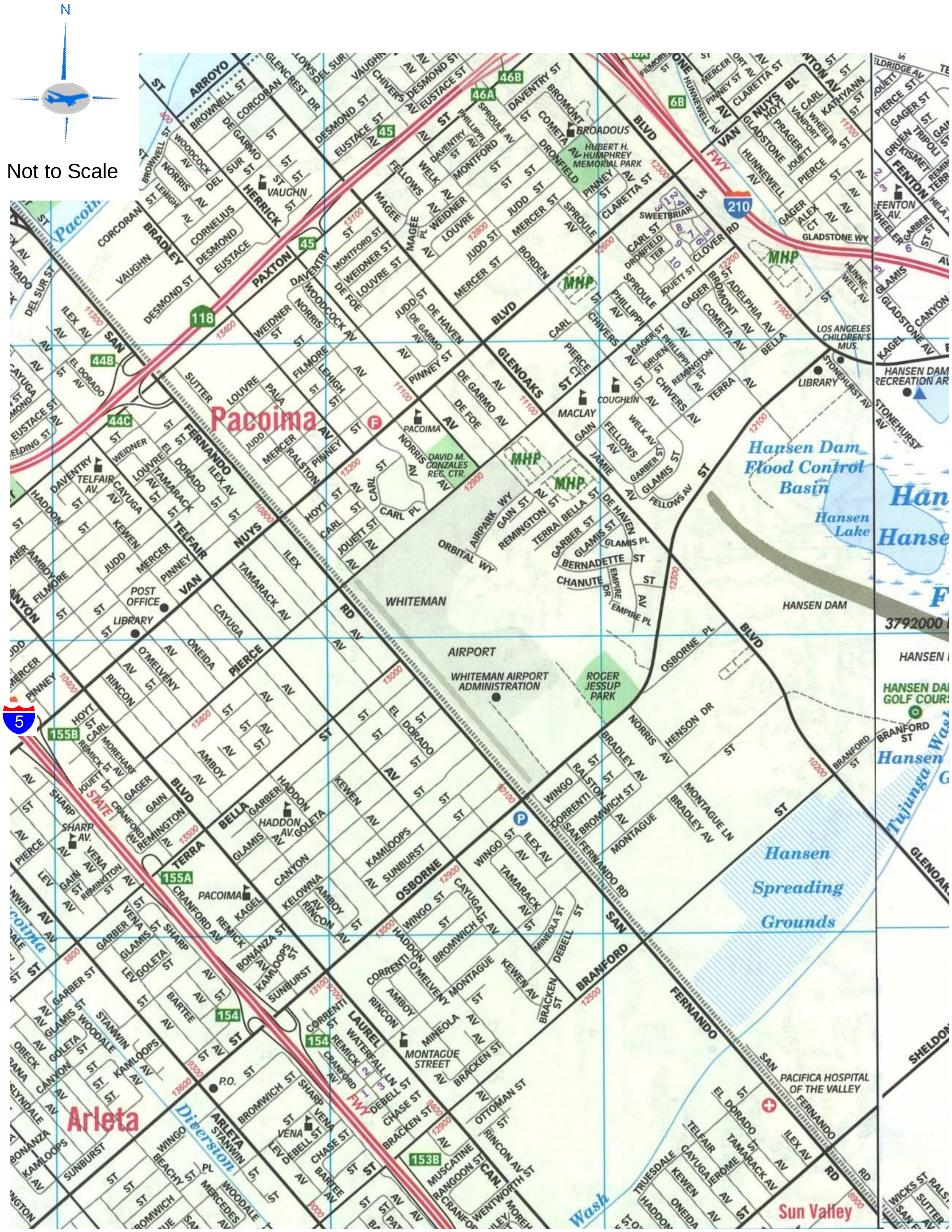


Figure 3-1
Vicinity Map

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 187 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' 33.6" 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 1,005 feet above mean sea level (MSL). As of September 2010, the magnetic declination was 12° 45’ 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 gear aircraft. Pertinent runway end data obtained from the Airport Layout Plan is:

	Runway 12	**Runway 30**
Elevation	1,005.4’	962.0’
Latitude	34º 15′ 48.7″	34º 15′ 18.1″
Longitude	118º 25′ 04.5″	118º 24′ 32.2″

Note: North American Datum 1983, North American Vertical Datum 1988.

The runway is equipped with medium intensity runway 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

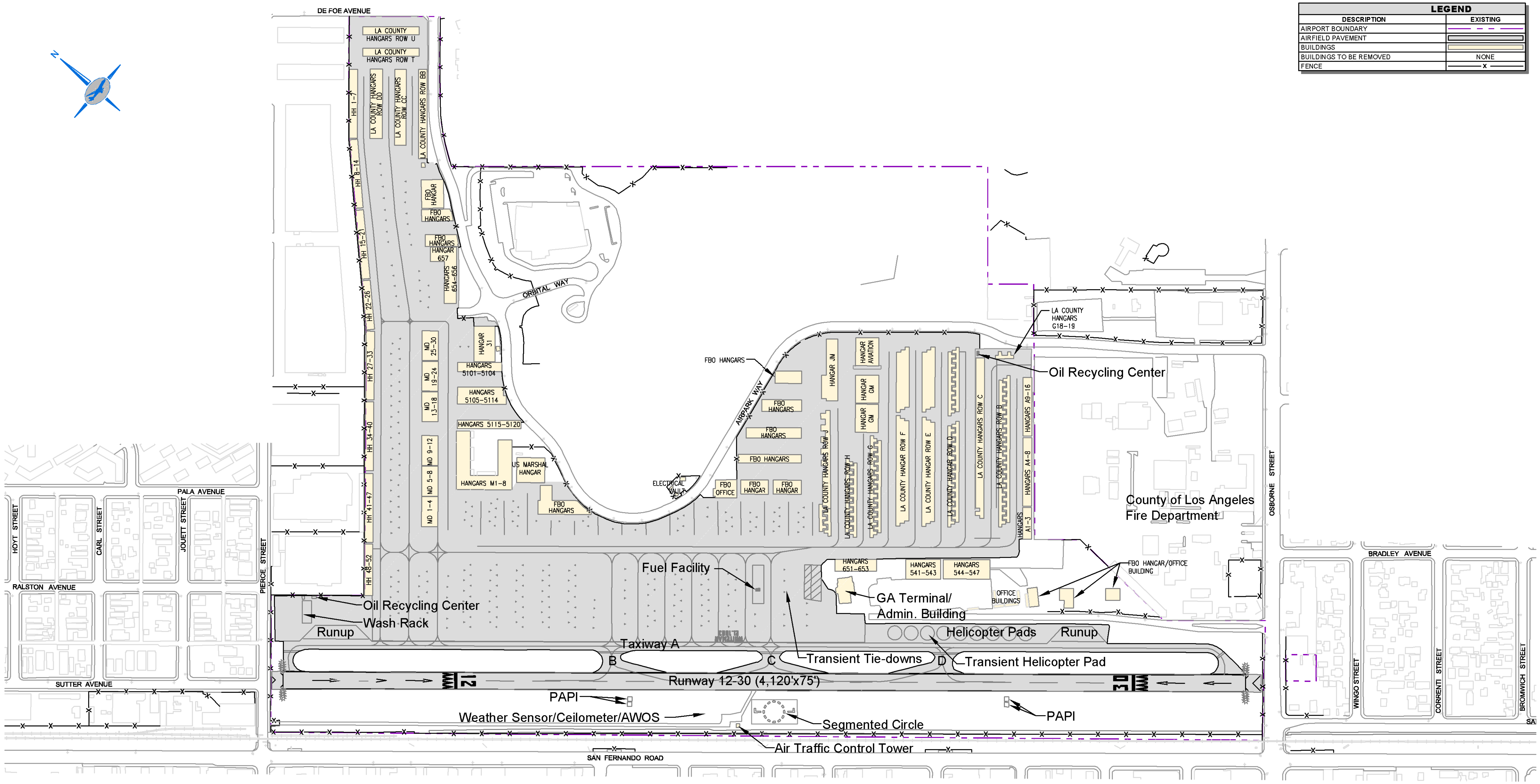


Figure 3-2
Existing Airport

feet due to a power line approximately 200 feet from the runway end, 45 feet right (south) of the extended 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** – an 80-foot wide exit taxiway located approximately 660 feet from the runway threshold of Runway 12.
- **Taxiway C** – an 80-foot wide exit taxiway located approximately midfield.
- **Taxiway D** – an 80-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 obstacle 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 extended 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. Twenty-four 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. These uses have historically been within the RPZs at Whiteman.

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 of 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

Source: Airport/Facility Directory, November 18, 2010 through January 13, 2011.

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 are 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 less than 1 mile and ceilings less 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 2009.

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 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, there is usually 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.

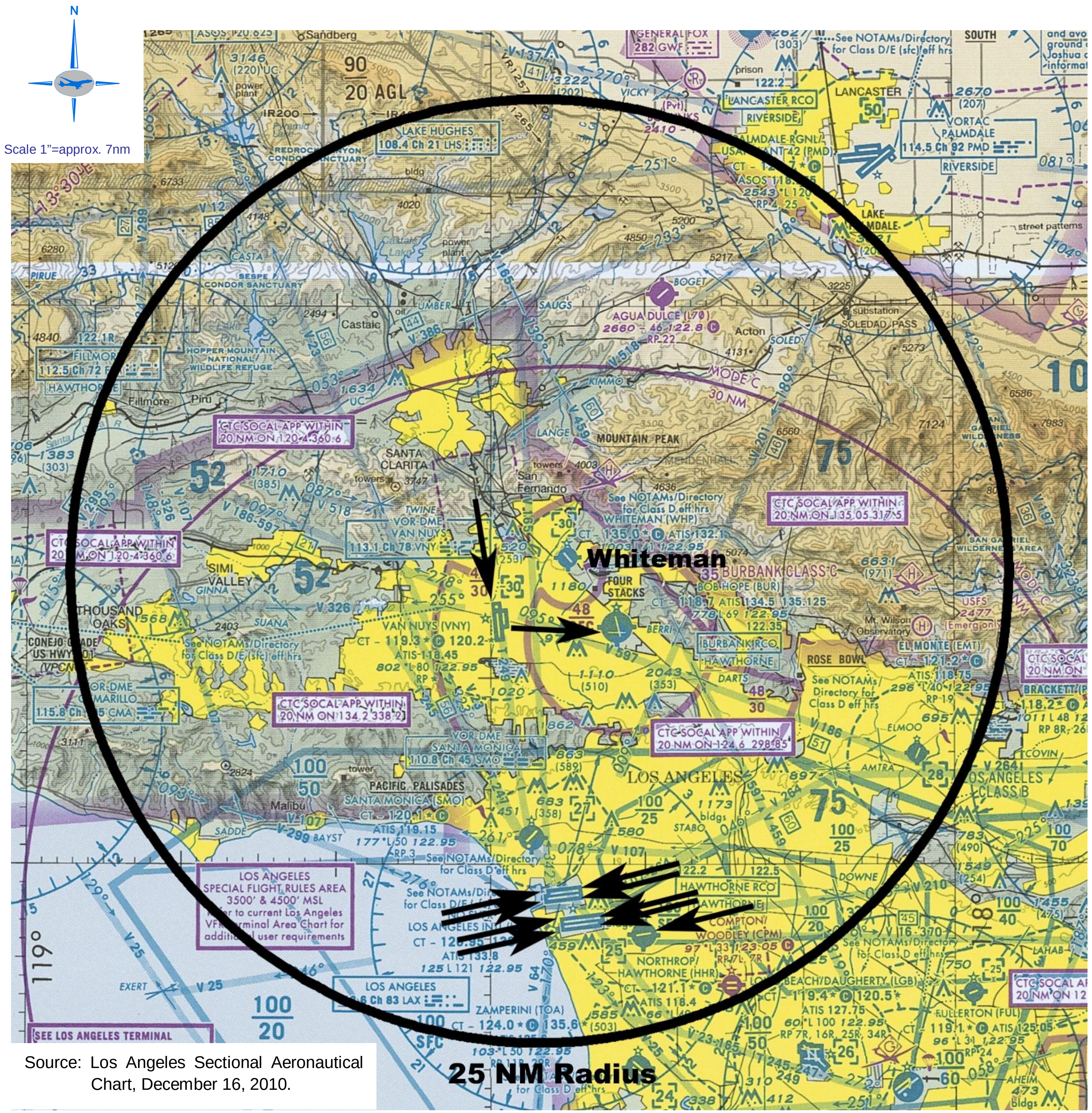
- **Class C Airspace.** Class C airspace consists of the airspace surrounding airports that have an operational airport traffic control tower (ATCT), are serviced by radar approach control, and accommodate minimum levels of aviation activity as specified by the FAA. Class C airspace is individually tailored for the airports they serve. These airspace areas generally consist of a surface area with an additional layer above it. 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. Airspace surrounding Whiteman Airport is Class D airspace. This airspace is extends from the

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



Source: Los Angeles Sectional Aeronautical Chart, December 16, 2010.

Legend:

- Hard-surfaced runways 1500 ft. To 8069 ft. in length
- Hard-surfaced runways greater than 8069 ft., or some multiple runways less than 8069 ft.
- Services-fuel available and field tended during normal working hours depicted by use of ticks around basic airport symbol.
- Heliport Selected
- Glider Operations
- Hang Glider Activity
- IAP Final Approach Course
- VORTAC
- Class B Airspace
- Class C Airspace (Mode C - see FAR 91.215)
- Class E (sfc.) Airspace
- Class D Airspace
- IR 203 — MTR - Military Training Routes with identifier.
- 30 — Ceiling of Class D Airspace in Hundreds of feet.
- V23 — Low Altitude Federal Airways with identifier
- Wildlife Area
- Class E Airspace with floor 1200 ft. or greater above surface that abuts Class G Airspace
- Class E Airspace with floor 700 ft. above surface
- MOA - Military Operations Area
- Special Military Activity

Figure 3-3
Airspace Environment and Adjacent Airports

surface up to but not including 3,000 feet. No separation services are provided to VFR aircraft in Class D airspace area.

- **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

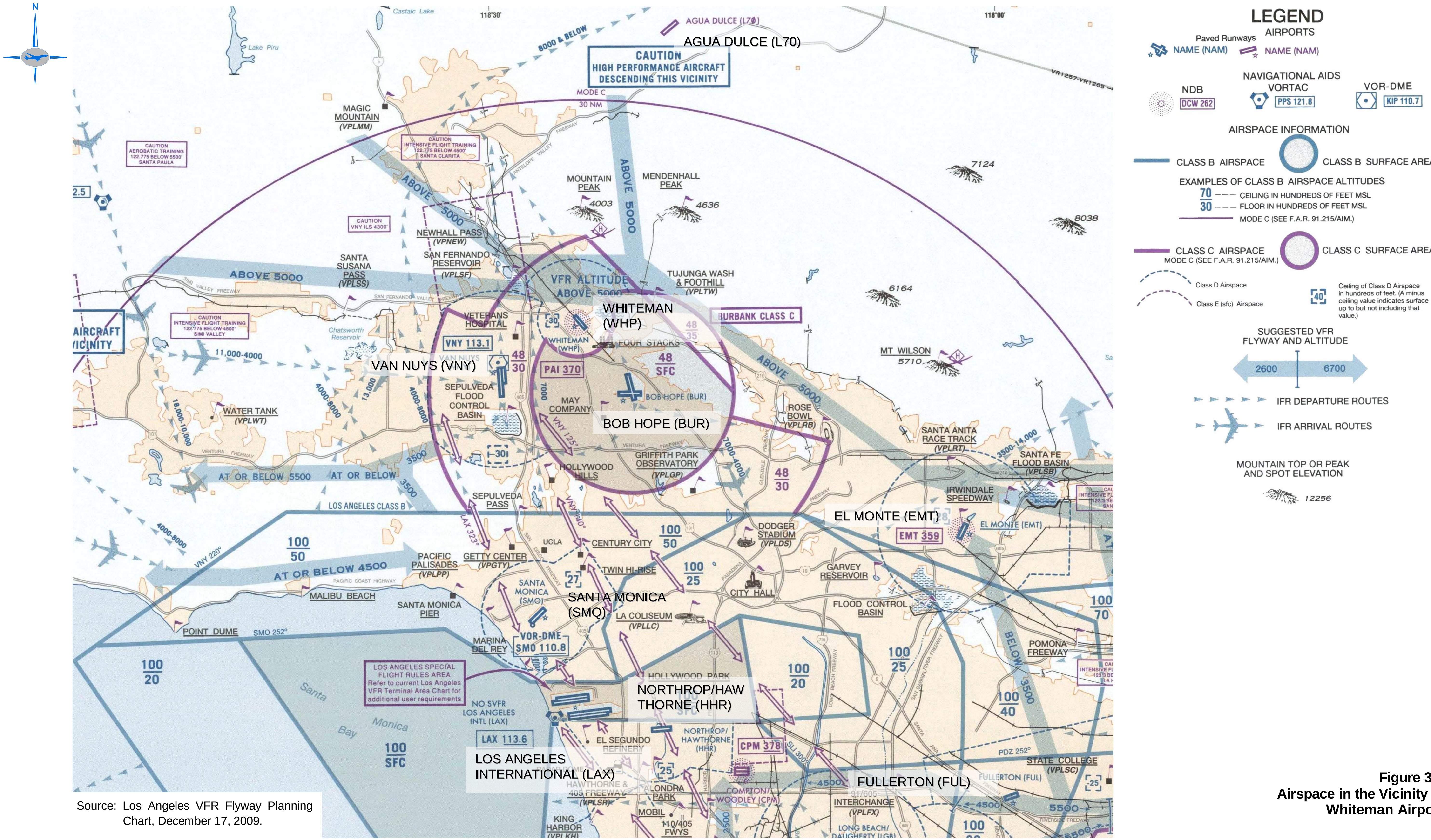
Route	Direction	VOR/VORTAC	Notes
V12	east/west	Palmdale VORTAC, San Marcus VORTAC	
V16 - 370	east/west	Los Angeles VORTAC, Riverside VOR	
V23	northwest/southeast	Gorman VORTAC, Santa Monica VOR-DME	
V23 - 165	northwest/southeast	Los Angeles VORTAC, Seal Beach VORTAC	via V25
V25	northwest/southeast	Los 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: AECOM 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.



Source: Los Angeles VFR Flyway Planning Chart, December 17, 2009.

Figure 3-4
Airspace in the Vicinity of Whiteman Airport

Table 3-4
INSTRUMENT APPROACH PROCEDURES
AT WHITEMAN AIRPORT

Airport	Approach Procedure	Lowest Minima
Whiteman Airport	RNAV (GPS)-C	1,900 -1¼
	VOR-A	1,840-1
Bob Hope	ILS or LOC Z RWY 08	977/50
	RNAV (GPS) Y RWY 08	1,600/50
	GPS-A	1,600 -1¼
	RNAV (RNP) Z RWY 08	1,260/60
	LOC Y RWY 08	1,600/50
	VOR RWY 08	1,340/50
Van Nuys	ILS RWY 16R	1,119-1
	LDA-C	2,600 -1¼
	VOR/DME or GPS-B	1,300-1
	VOR-A	1,500-1
Santa Monica	VOR or GPS-A	680-1
El Monte	VOR/DME or GPS-B	1,340-1¼
	VOR or GPS-A	1,260-1¼
	NDB or GPS-C	1,200-1¼
Jack Northrop Field/ Hawthorne Municipal	LOC RWY 25	620-1
	VOR RWY 25	600-1
Los Angeles International	ILS or LOC RWY 6L	367/50
	ILS or LOC RWY 6R	314/18
	ILS or LOC RWY 7L	327/18
	ILS or LOC RWY 7R	325/24
	ILS or LOC RWY 24L	321/24
	ILS RWY 24R (CAT IIIc)	NA
	ILS RWY 25L (CAT IIIc)	NA
	ILS RWY 25R	302/24

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

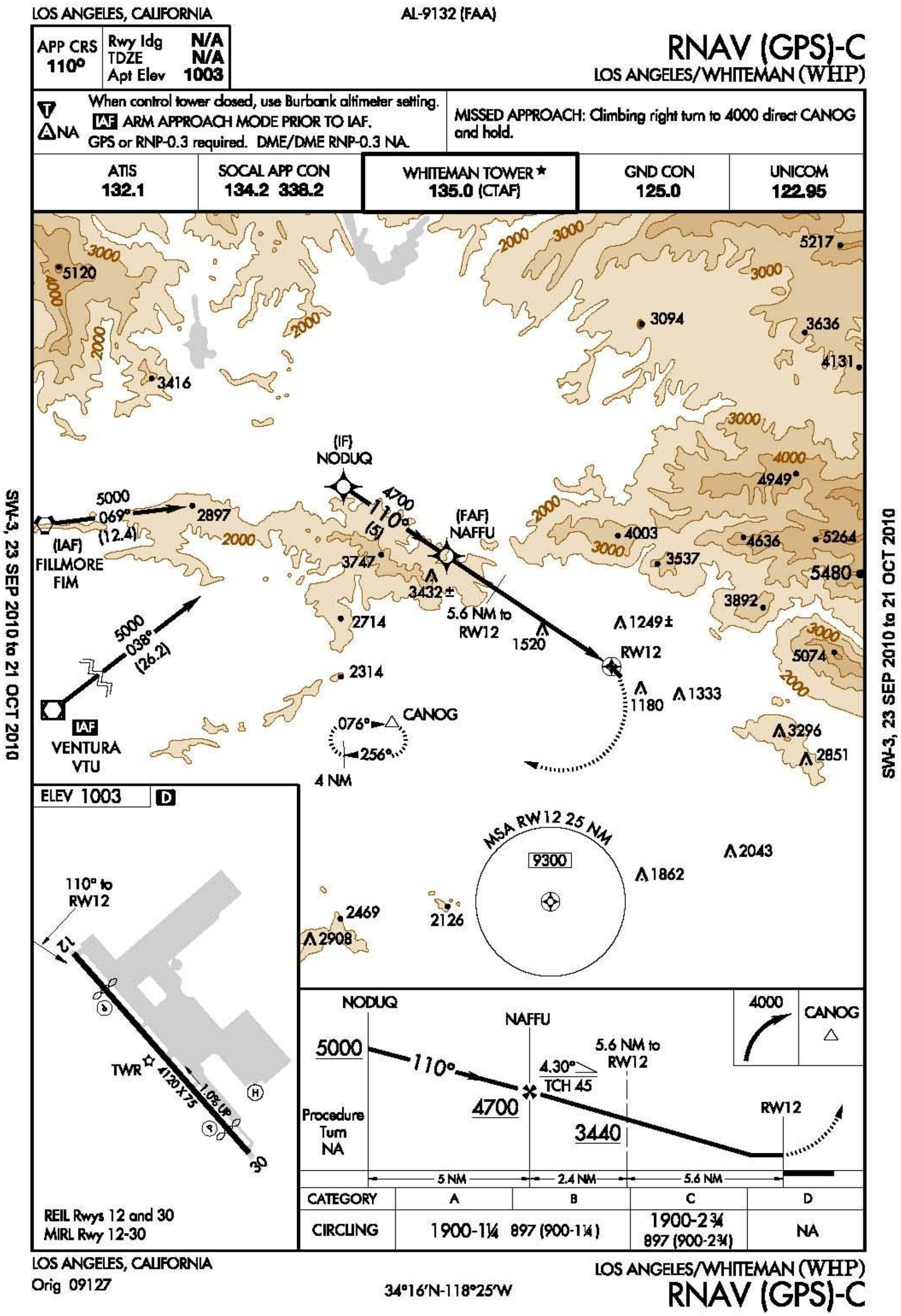
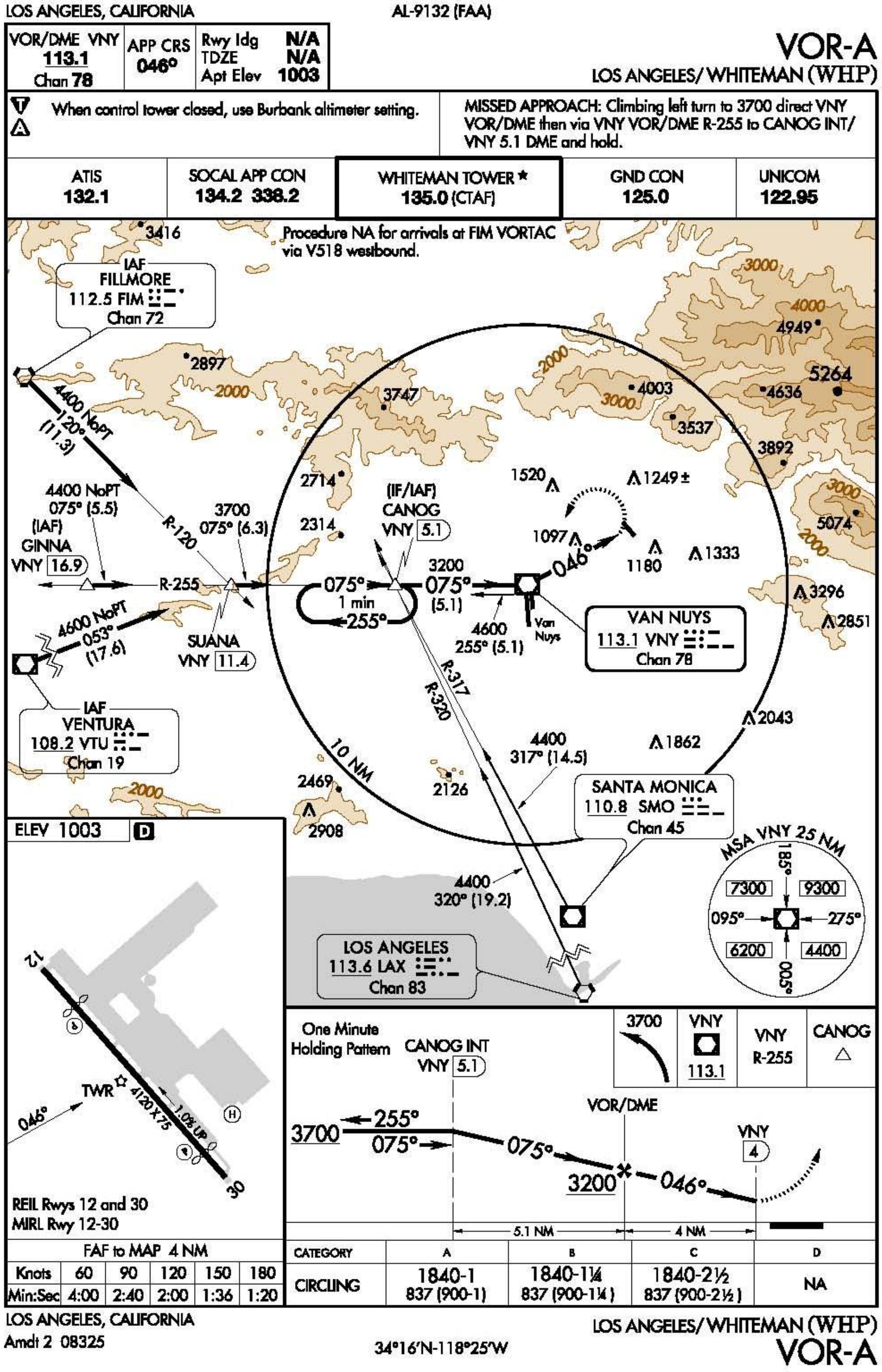


Figure 3-5
RNAV (GPS)-C



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

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. 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. Helicopters use the same traffic patterns as fixed wing aircraft.

- **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 reported 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 8 AM to 8 PM daily. After hours, when the tower is closed, Whiteman Airport turns from Class D to Class G airspace. 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 that is FAA certified. When the tower is closed operations are coordinated through the UNICOM.

- **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 (ILS) 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

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 a lighted land 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 non-standard 3.8 degrees.

- **Runway End Identifier Lights (REIL)** – are two synchronized flashing lights, one on each side of the displaced 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.

An AWOS was installed in 2010.

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, FBOs, and Specialized Aviation Service Operators (SASOs) 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 northeast of the runway. As shown in Figure 3-3, landside facilities at Whiteman Airport are accessible primarily from Osborne Street and the Airport 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 255 based aircraft and 9 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 remaining hangars at the airport are privately owned and maintained. Sizes and types of County hangars are seen in Table 3-5.

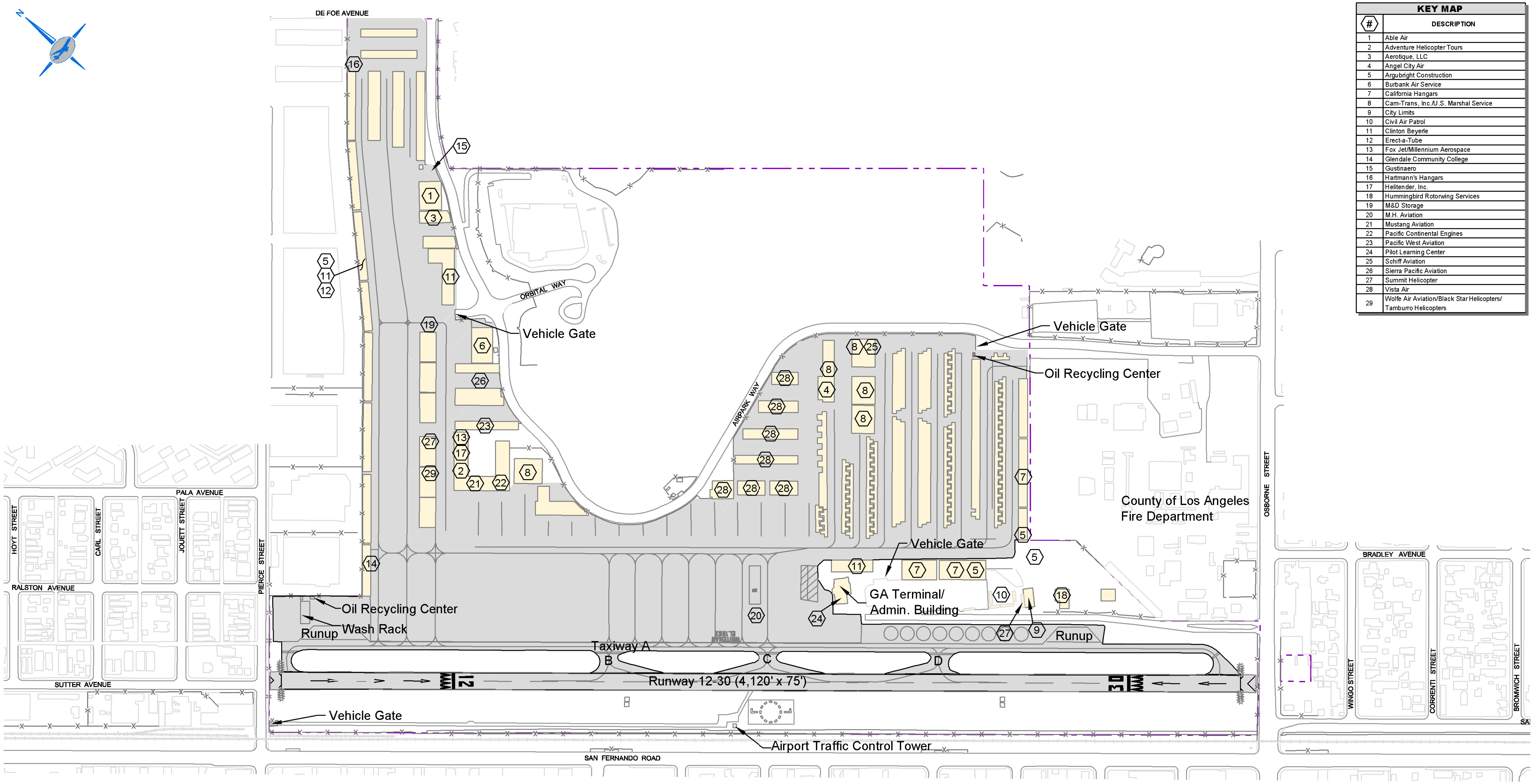
Table 3-5
COUNTY OWNED HANGAR DETAILS

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;
AECOM analysis.

Fixed Base Operators and Specialized Aviation Service Operators

Whiteman Municipal Airport has 30 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 and some are Specialized Aviation Service Operators (SASOs). A SASO is any person or entity with a lease or sub-lease from the airport to provide only a single aeronautical service to the public at the airport. A SASO cannot provide fuel and oil dispensing services. FBOs may provide multiple services including, but not limited to fuel and oil dispensing, hangars, tie-downs, maintenance, office space, and other aviation services. This information is complied with the help of the Airport Manager and through results of a telephone survey.



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./U.S. Marshal Service
9	City Limits
10	Civil Air Patrol
11	Clinton Beyerle
12	Erect-a-Tube
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	M.H. Aviation
21	Mustang Aviation
22	Pacific Continental Engines
23	Pacific West Aviation
24	Pilot Learning Center
25	Schiff Aviation
26	Sierra Pacific Aviation
27	Summit Helicopter
28	Vista Air
29	Wolfe Air Aviation/Black Star Helicopters/ Tamburro Helicopters

Figure 3-7
FBOs/SASOs at Whiteman Airport

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

In 2008, Aerotique (number 3 on Figure 3-7) constructed six individual box hangars (approximately 2,000 square feet per hangar) adjacent to Able Air.

Angel City Air

Angel City Air (number 4 on Figure 3-7) is located on the northeast side of Runway 12-30, by the County hangars and Vista Aviation, and leases a helipad. 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 (the Quigley parcel) adjacent to the run-up apron. Expansion plans include a 12,000-square foot hangar.

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. Argubright plans to construct 5 hangars adjacent to its office, totaling 12,020-square feet.

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). The intermediate walls forming the RV storage areas are designed to be removed and hangars for aircraft provided.

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 Service occupies. APIP 60, LLC constructed 5 hangars (15,140-square feet) in 2009.

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.

Civil Air Patrol

Squadrons 35 (Senior Squadron) and 137 (CAP Cadets) at Whiteman Airport have a multitude of roles that benefit both the local community as well as state and federal agencies.

Squadron 35 assists but is not limited to the following roles: Search and Rescue missions, Homeland Security missions in collaboration with the Border Patrol and Coast Guard, Shuttle Recovery at Edwards AFB as well as working with the Air Force on WADS missions. Squadron 35 is an operational organization that operates throughout the state on the above operations, missions and exercises.

Squadron 137 serves as an Education Center for local youth to receive general aviation and aerospace education. The cadets also assist in ground crew exercises for searches

The Civil Air Patrol is a resource to local, state and federal agencies in time of need such as during fire, floods, earthquakes and any other emergency in or out of the state. The Civil Air Patrol would like the following facilities to conduct their operations: a half acre area with access to auto parking, utilities (electricity, water, and waste water) and access to tie-downs. Civil Air Patrol operations do not need to be located on the airside, but do currently base aircraft at the airport.

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 11 on Figure 3-7).

Erect-a-Tube

Erect-a-Tube leases 14 hangars to airport tenants in hangar row HH (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 northern 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 helipad number 4. Helitender Inc. is a helicopter repair facility with a 15-foot by 30-foot office area within the 50-foot by 50-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.

M. H. Aviation

Exodus Air Service rents a County two tie-downs and operates two Cessna 172s to provide aerial traffic watch services (number 20 on Figure 3-7).

Mustang Aviation

Mustang Aviation, shown as number 21 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 where number 22 is on Figure 3-7.

Pacific West Aviation

Designated as number 23 on Figure 3-7, this company leases 10 hangars to airport tenants (M hangars).

Pilot Learning Center

Aviation supplies are available from the Pilot Learning Center (number 24 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 25 on Figure 3-7).

Sierra Pacific Aviation

As seen on Figure 3-7, number 26, Sierra Pacific Aviation owns twenty 1,470-square foot hangars (35 feet by 42 feet). These hangars are leased out to other airport tenants.

Summit Helicopter

Summit Helicopter (number 27 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 Helicopter 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 Aviation

Vista Aviation (number 28 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 Aviation is the largest flight school based out of Whiteman conducting flight training and aircraft rentals. Vista Aviation also provides aircraft maintenance, aircraft parts sales, and based aircraft facilities. In 2009, new office facilities, a two-story building, two larger bay type hangars, and five rows of individual hangars were constructed. A total of 36 hangars are provided.

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 additional FBO services and 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 5,030 square feet. The adjacent 2,300 square foot patio is also part of the restaurant area.

Automobile Parking

The existing auto parking facilities totals approximately 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 and Vista Aviation. 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 Conventional	Handicapped	Total	Use
Terminal Building	98	2	100	General Aviation/ Airport Administration/ Restaurant
Pacific West Hangars	28	4	32	General Aviation
Vista Aviation	29	1	30	General Aviation
Other FBO Parking	20	0	20	General Aviation
Total	175	7	182	

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 airside 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 3-7). 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 3-7).

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, traveling southeastern along Vista Aviation's hangar development, and perpendicular to the runway, and connecting near the terminal building with the 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 2008.

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 2008 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
2008	N\A	N\A	N\A	N\A	N\A	612

Source: 1985-2007 FAA 2008 Terminal Area Forecast; 2008 County Data.

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	96,036
2008	25,122	50%	25,017	50%	43	87,406

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 tie-down 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.

In 2009 the County conducted its annual survey. The results of this survey showed that airport tenants and users consistently rated the Department of Public Works and airport management as “above average” in overall operations, knowledge, promptness, courtesy, and helpfulness. The airport was rated “above average” for safety, security, appearance, fuel facilities, and lighting, marking and airfield guidance systems. Users rated the airport amenities and runway/taxiways as “average.” On a scale of 1 to 5, with 5 being best, the airport averaged a 3.67 rating from users. Whiteman’s rating has increased every year since 2005 and is above the department’s goal of 3.5.

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 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.

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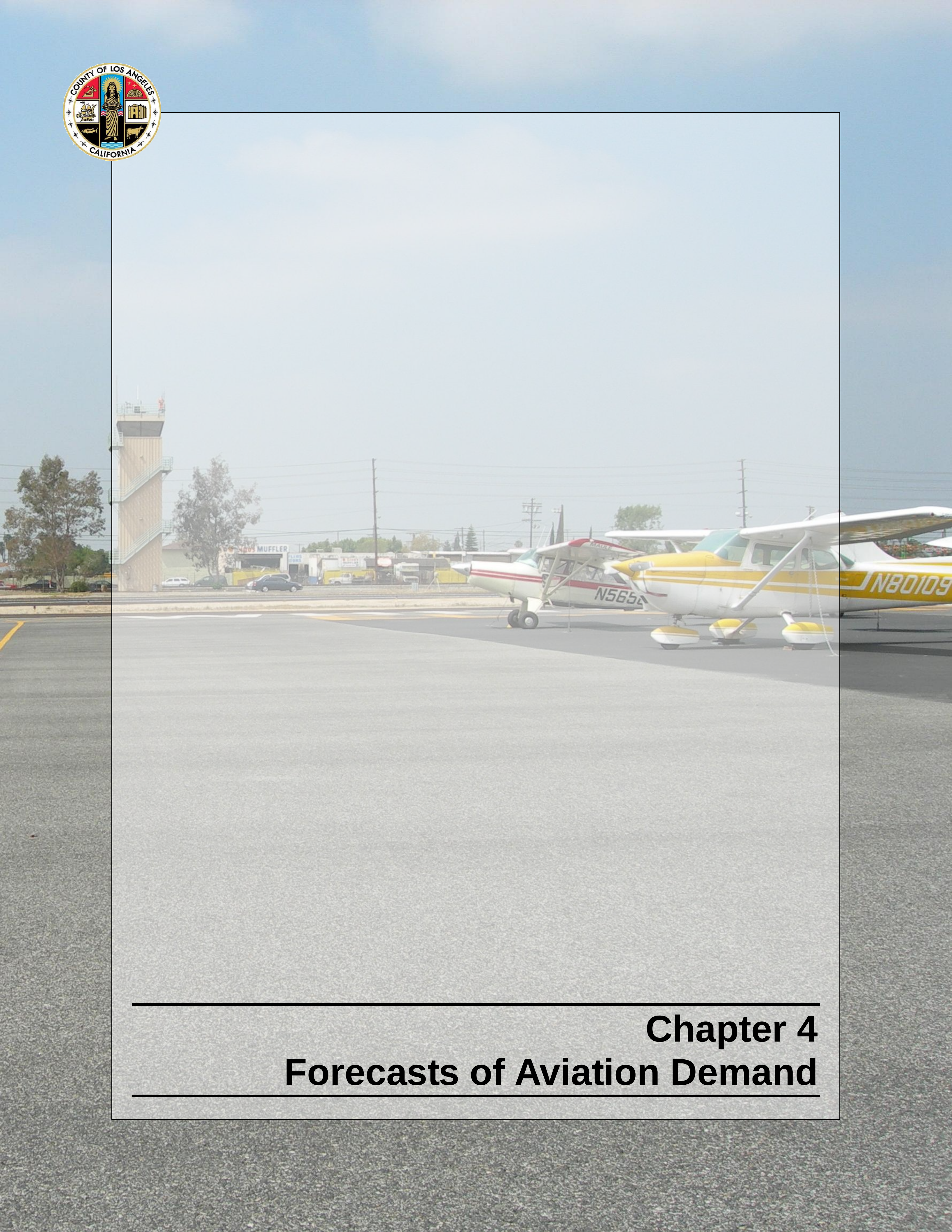


Chapter 4
Forecasts of Aviation Demand

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-term (11 to 21 years) planning periods. The forecast developed for this study covers a 20-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, air 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 existing and future 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. 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 may account for the majority of demand or 882 aircraft by 2030. Multi-engine piston aircraft could account for another 54 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; AECOM 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).

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; AECOM analysis.

- **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 4-5
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; AECOM 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.

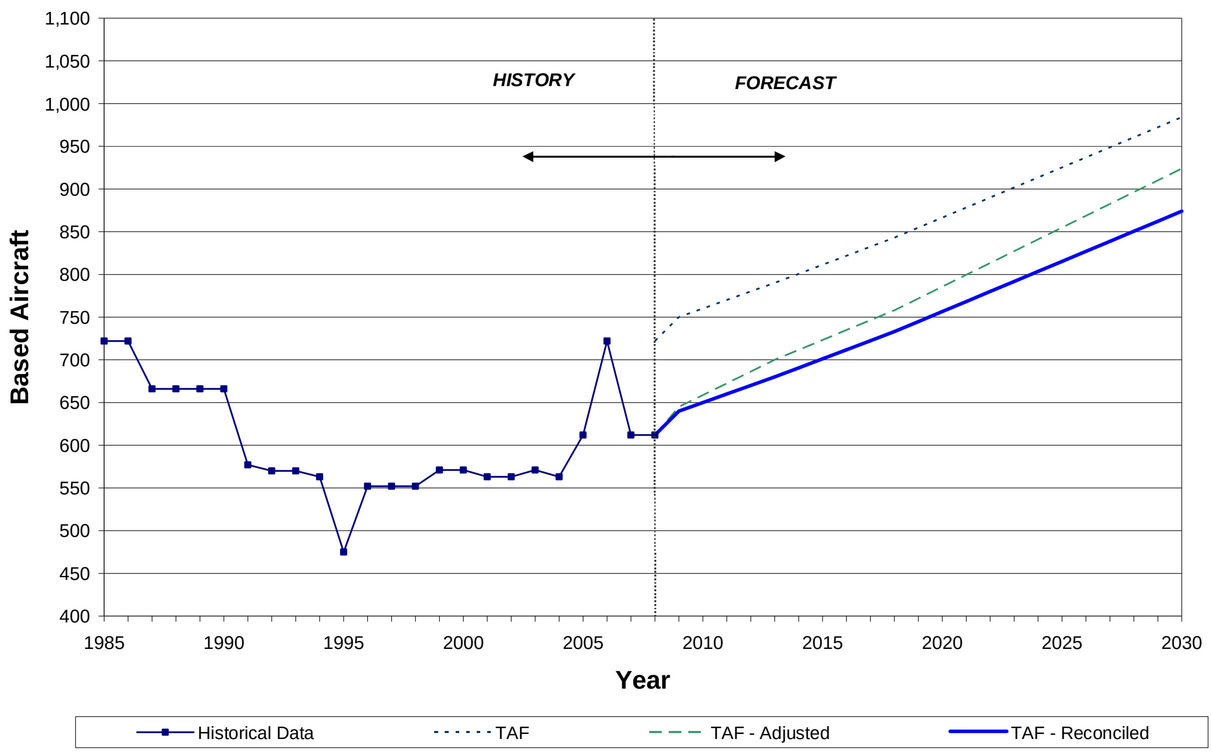


Figure 4-1
Based Aircraft Forecasts

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).

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.

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: AECOM analysis.

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 airport traffic 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: AECOM 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: AECOM 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 680 in the year 2013, with 733 estimated for the year 2018 (the midpoint of the planning period), and 874 in 2030. The original master plan estimated 930 based aircraft for the year 2010.

In addition, County data indicates that current (2007) operations are about 93,200, 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**
Terminal Area Forecast (TAF)	N/A	722	N/A	790	N/A	843	984
Previous Master Plan	895	N/A	930	N/A	N/A	N/A	N/A
Master Plan Update	N/A	612	N/A	680	N/A	733	874
California Aviation System Plan (CASP)	N/A	N/A	640	N/A	650	N/A	N/A
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**
Terminal Area Forecast (TAF)	N/A	93,214	N/A	112,941	N/A	121,914	143,533
Previous Master Plan	260,000	N/A	285,000	N/A	N/A	N/A	N/A
Master Plan Update	N/A	93,214	N/A	113,000	N/A	121,900	143,500
California Aviation System Plan (CASP)	N/A	N/A	127,000	N/A	103,000	N/A	N/A
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; AECOM.

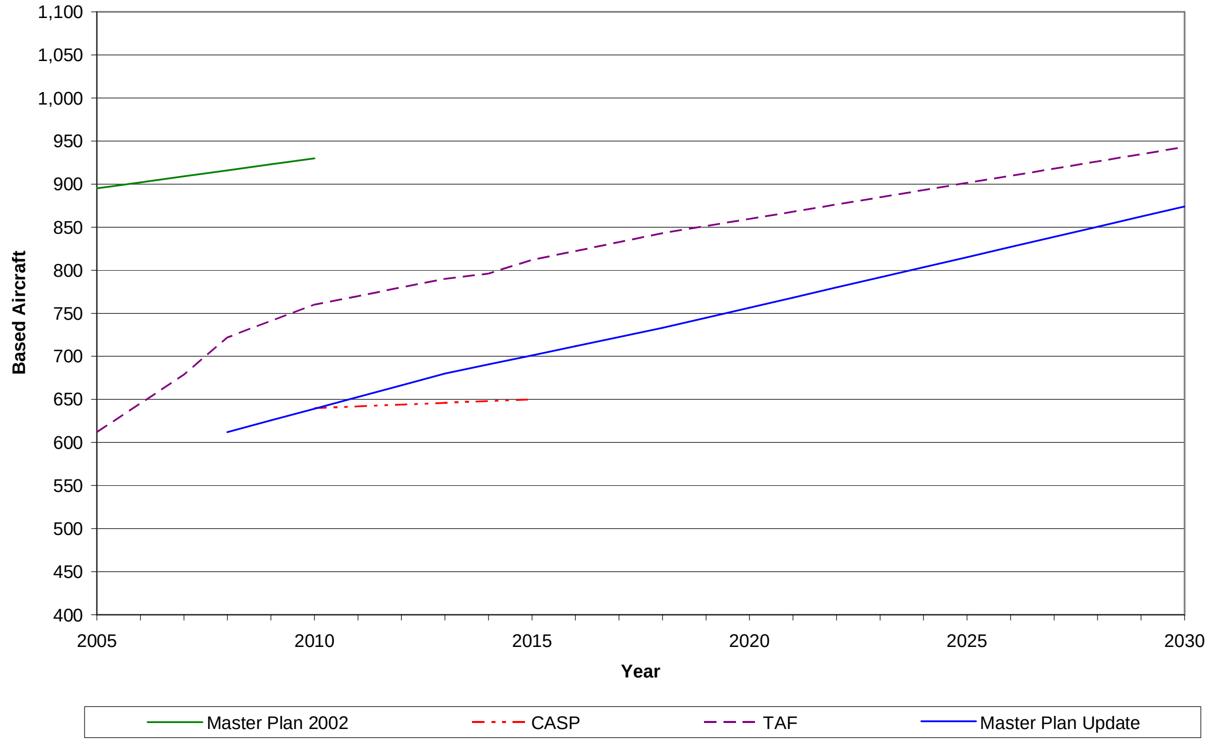


Figure 4-2
Comparison of Based Aircraft Forecasts

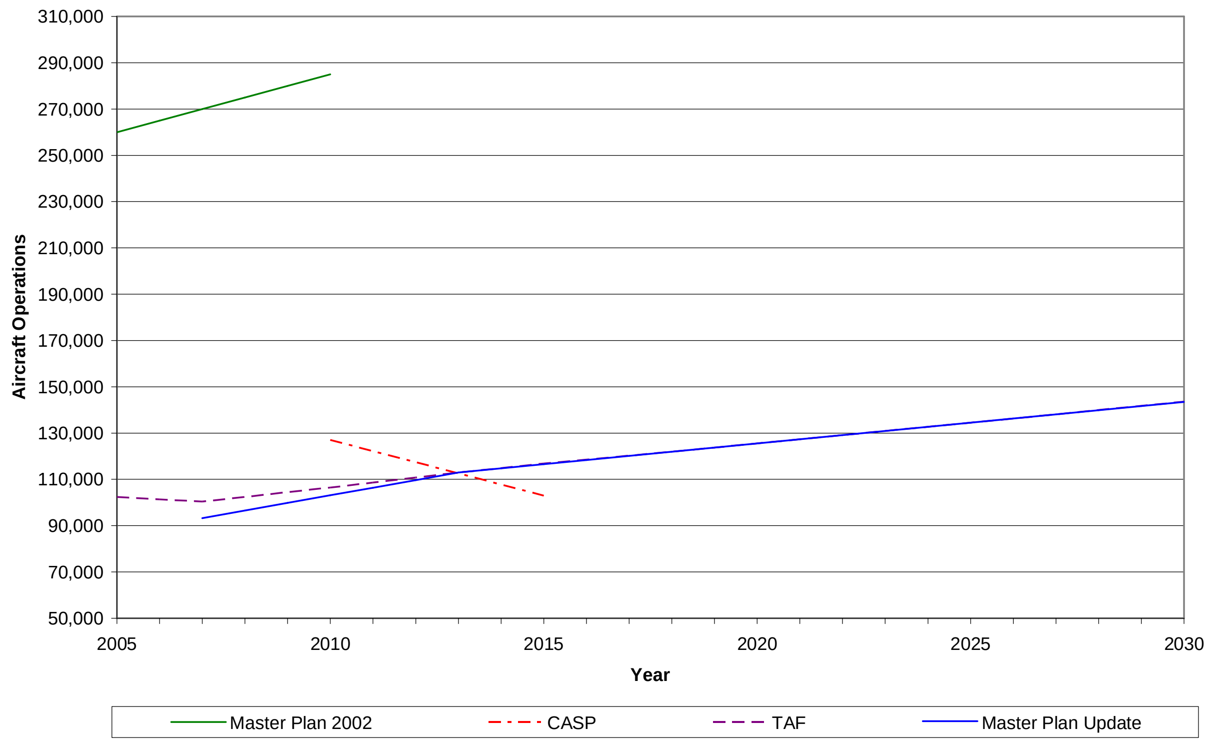
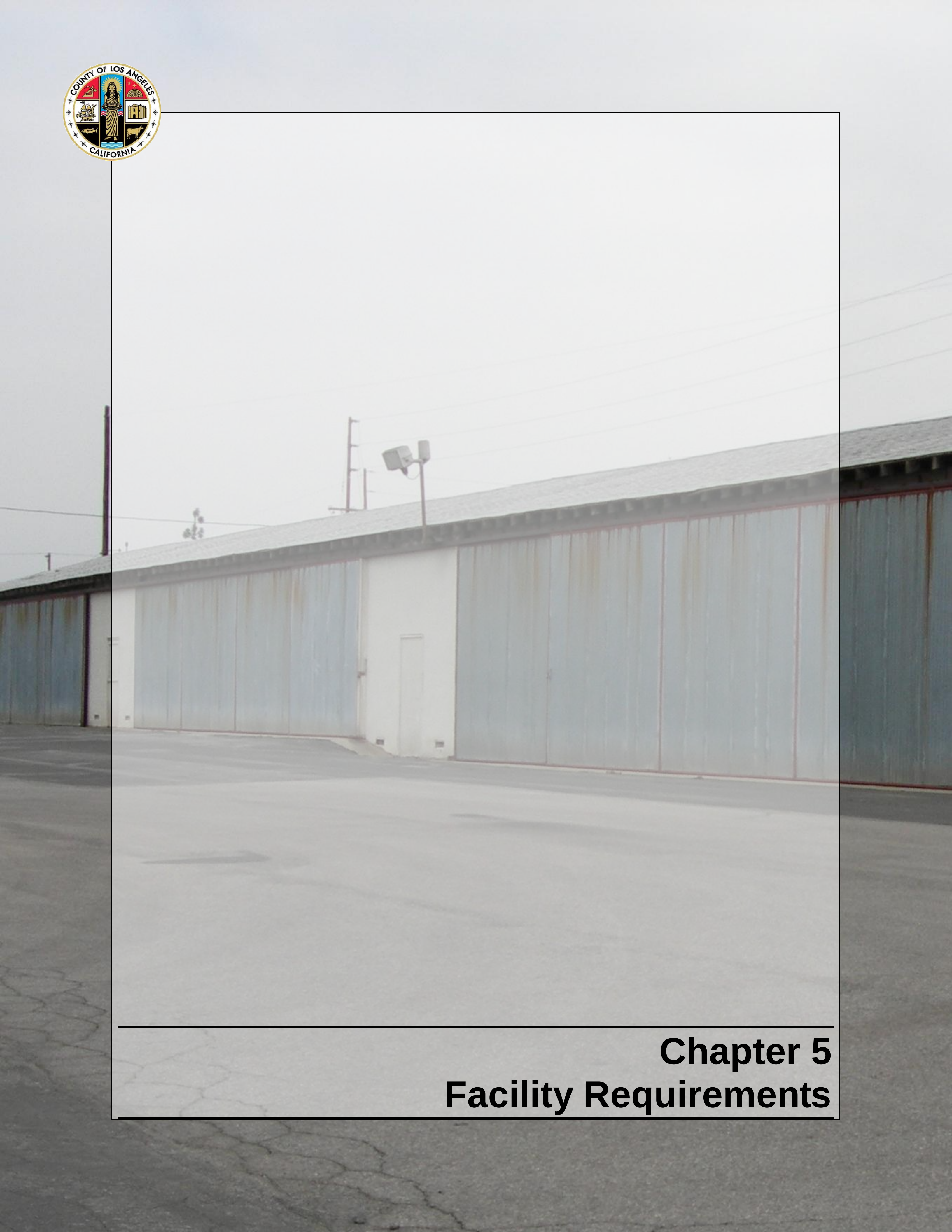


Figure 4-3
Comparison of Aircraft Operations Forecasts



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 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, Alternative Development Concepts, the recommended improvements derived from the facility requirements are 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 TAF Forecast Reconciled 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 TAF Forecast Reconciled 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, due to its runway length, 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 in the landing configuration at the certified maximum flap setting and maximum landing weight at standard atmospheric conditions 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 ....1,005 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........ 89 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 14 dated November 11, 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.

Table 5-2
AIRCRAFT CLASSIFICATIONS

Aircraft Class	Max. Cert. T.O. Weight (lbs.)	Numer of Engines	Wake Turbulence Classification
A	12,500 or less	Single	Small (S)
B	12,500 or less	Multi	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.

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 less than 1,000, but greater than 500 feet and/or visibility is less than three statute miles, but greater than one statute mile.
>
> ***PVC*** - Poor visibility and ceiling conditions exist whenever the cloud ceiling is less than 500 feet and/or the visibility is less than 1 statute mile.

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:

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

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:

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

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 Runways 12 and 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 81 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 a 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	81	81	81	81
Capacity Utilized	58%	70%	75%	89%

Source: AECOM 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 81, 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 150/5325-4B 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 – 1,005 feet MSL
- Temperature – 89.1°F (July)
- 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	1,005 feet
Mean daily maximum temperature of the hottest month	89.1° 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 150/5325-4B, Runway Length Requirements for Airport Design.
AECOM 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 airplanes 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 airplanes 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 airplanes 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 airplanes 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 Obstacle Free Zone

The runway obstacle free zone (OFZ) is a volume of airspace centered above the runway centerline and the elevation of the OFZ is the same as the nearest point on the runway centerline. 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 for Runways 12 and 30, respectively is available and the OFZ is obstructed by the perimeter fence on both ends. 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.

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 airplanes 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.

Declared Distances

Declared distances can be 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 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 discovered two items: 1) more accurate topographic data which was obtained for this study and 2) obstacles were removed 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.

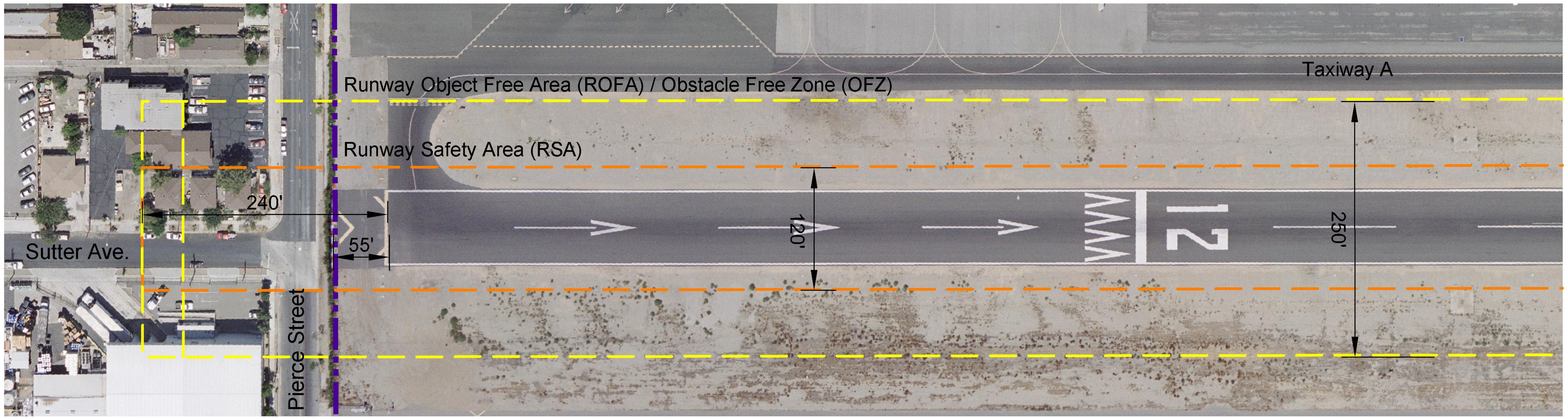
Table 5-5
PUBLISHED DECLARED DISTANCES

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’

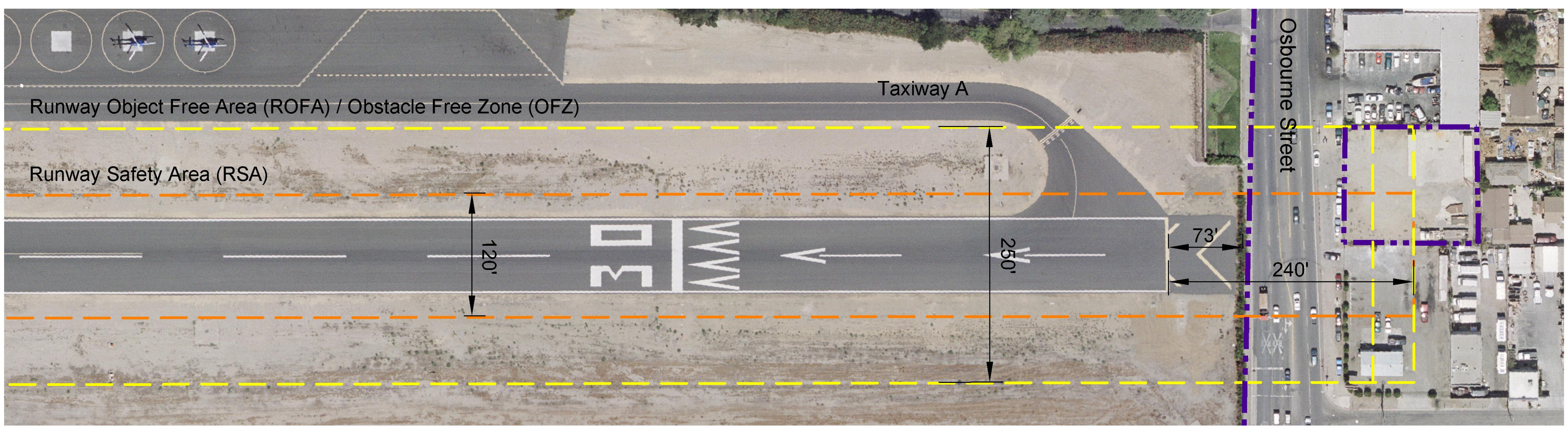
Source: Airport/Facility Directory, November 18, 2010 through January 13, 2011.

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

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 (if there is an approach with vertical guidance).

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. The perimeter fence west of the airport penetrates the Runway 12 threshold siting surface; however, the threshold cannot be displaced to remove the penetration. 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 0.37 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.

Runway 12

Runway 30

Figure 5-2
Runway 12-30 Runway Protection Zones

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, 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 194.5 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 airport 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, for airport reference code B-I, small airplanes 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 D 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).

Whiteman is in the process of receiving 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.

Next Generation Air Transportation System (NextGen)

NextGen will reshape the national airspace system by 2025. Changes will affect not only airspace and navigational aids, but will affect all phases of a flight, from flight planning, to the landing. The FAA has detailed plans for intermediate-term implementation (year 2018). Most technology being implemented during the intermediate-term will utilize advanced avionics found on modern aircraft. Changes to the national airspace system will be most noticeable in and around large commercial service airports, such as

Los Angeles, San Francisco, and Oakland International Airports. Reliever airports, such as Whiteman, may receive enhance GPS instrument approach procedures, more direct en route navigation, and additional airspace they can occupy.

Since one of the goals of NextGen is to reduce aviation's impact on the environment, alternative fuels are being considered and developed. This is a long-term implementation, seeking to replace current leaded aviation fuels (Avgas) and could potentially have an impact on general aviation. Storage requirements for alternative fuel may also be different than Avgas, but it is assumed that regardless of the selected fuel, storage tanks will be required.

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: AECOM.

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. An 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 addition to 1,950 square feet needed for the main building. In addition, it is suggested to accommodate 5,000 square feet of restaurant area by 2030. Currently, the restaurant area is 5,030 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.

Consistent with the forecast for 2030, 75,600 square feet (8,400 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.

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: AECOM.
SY = square yard
[a] Based upon estimated mix of transient aircraft

The analysis concludes that roughly 12,900 square yards of apron for 34 aircraft are required to accommodate transient demand in 2030. Currently 9 of approximately 255 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, 25 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 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 individual 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 5-11 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 TAF Forecast Reconciled 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.

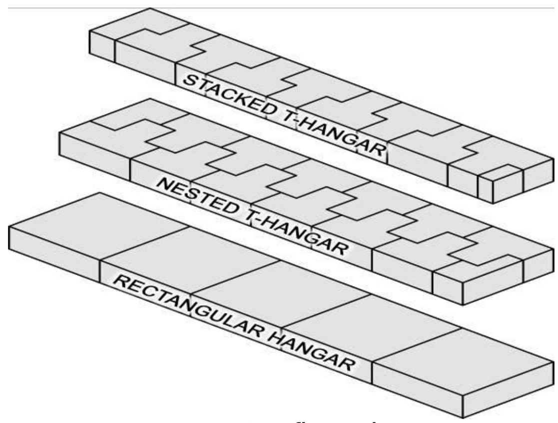
An alternative to aircraft storage hangars is to provide space on the parking apron with tie-down facilities to secure the aircraft during severe weather or periods of high winds (Table 5-12). For planning purposes, an allowance of 300 square yards for single engine and 625 square yards for multi-engine 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 261 single engine aircraft will be provided. It is noted that the County currently operates approximately 255 aircraft tie-downs which is adequate to satisfy current needs. As previously stated, transient aircraft parking needs in 2030 require approximately 25 additional tie-downs.

INDIVIDUAL HANGARS

Portable Hangar

T-Hangar

Rectangular Hangar



Hangar Configurations

CONVENTIONAL HANGARS

Conventional Hangars

Figure 5-3
Hangar Types

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	733	874
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: AECOM analysis.

Table 5-11
BASED AIRCRAFT STORAGE
HANGAR COMPARISON

		Deficiency		
Item	**Existing**	**2009-2013**	**2014-2018**	**2019-2030**
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: AECOM 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 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.

Table 5-12
WHITEMAN TIE-DOWN FACILITIES

Item	Existing	2013	2018	2030	Deficiency
Based Aircraft (Spaces)	255	227	244	290	35
Single Engine	N/A	204	219	261	
Multi-Engine	N/A	12	13	16	
Helicopter	N/A	11	11	13	
Transient Aircraft (Spaces)	9	25	28	34	25
Total	264	252	272	324	60

N/A = Not Available
Source: AECOM analysis.

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: AECOM.

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: AECOM 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 Forecast Reconciled 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)
General aviation 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)	255	227	244	290	35
Auto parking (spaces)	182	186	199	234	52
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; helos = helicopters
Source: AECOM analysis.

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 Route 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. Table 5-16 displays the Airport Characteristics Measurement Tool along with Whiteman's ranking. Overall risk is measured on a scale of 0 (lowest risk) 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, along with enhanced gate access.

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

- **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 read policies and procedures before obtaining access to the gate entrances.

- **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. In March of 2009 the Whiteman Airport Safety and Security Working Group was formed. The group meets quarterly and includes representatives from L.A. County Aviation Division, the Airport Commission, American Airports, Whiteman Airport Association, commercial and non-commercial tenants, and other general aviation stakeholders.

- **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 identity of all passengers is 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 194.5 feet from the runway centerline on the northeast side and 125 feet on the southwest side of Runway 12-30 and includes the Airport Traffic Control Tower Line of Sight. 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.

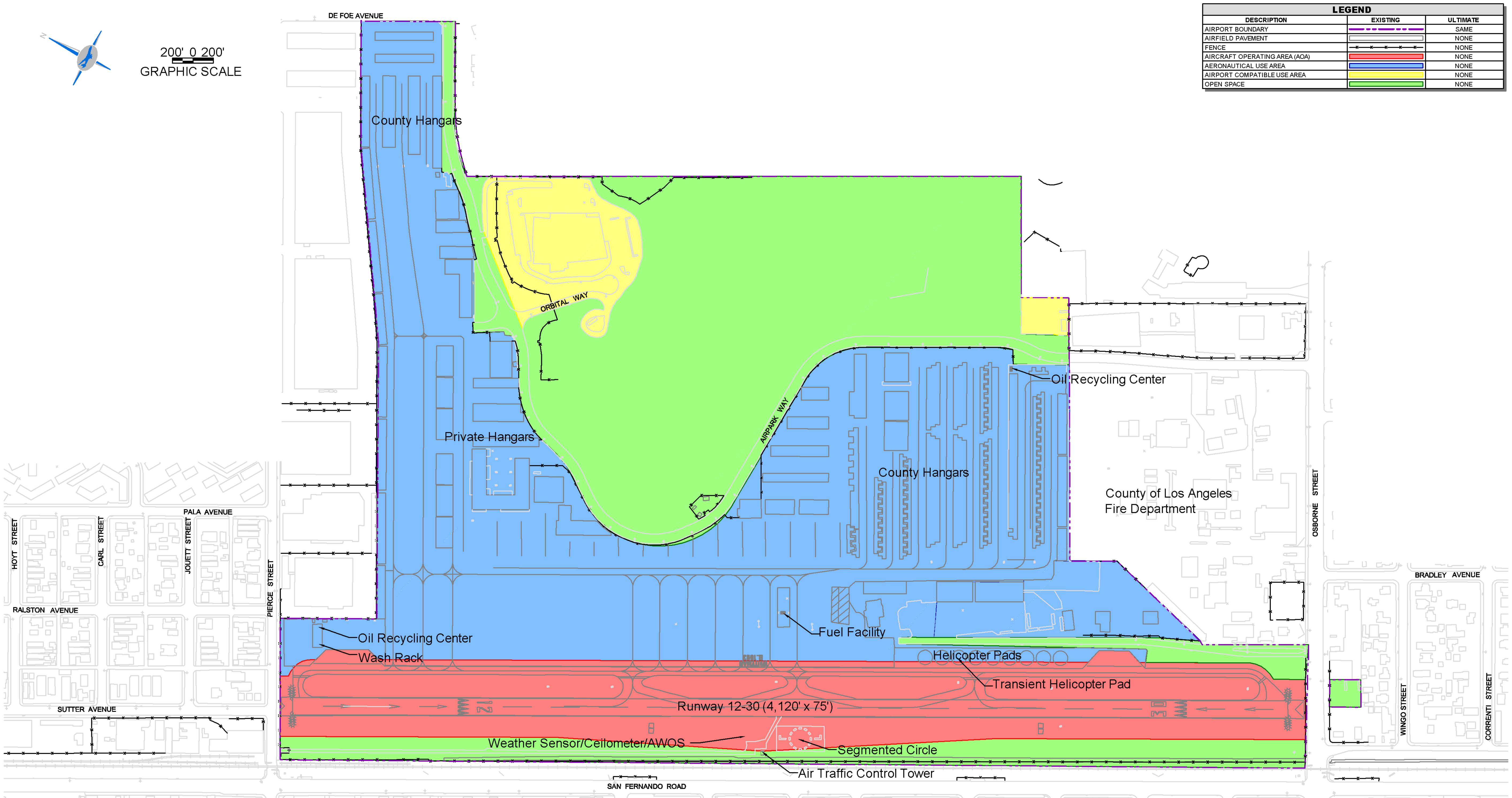
The current airport is approximately 187 acres. The breakdown of current airport property is shown on Table 5-17 and graphically presented on Figure 5-5. Areas classified as open space reflect undeveloped and vacant areas on the airport including the hill and vacant area west of the runway. It should 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	85	45
Airport Compatible Use Areas	8	4
Open Space	62	34
Total	187	100

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

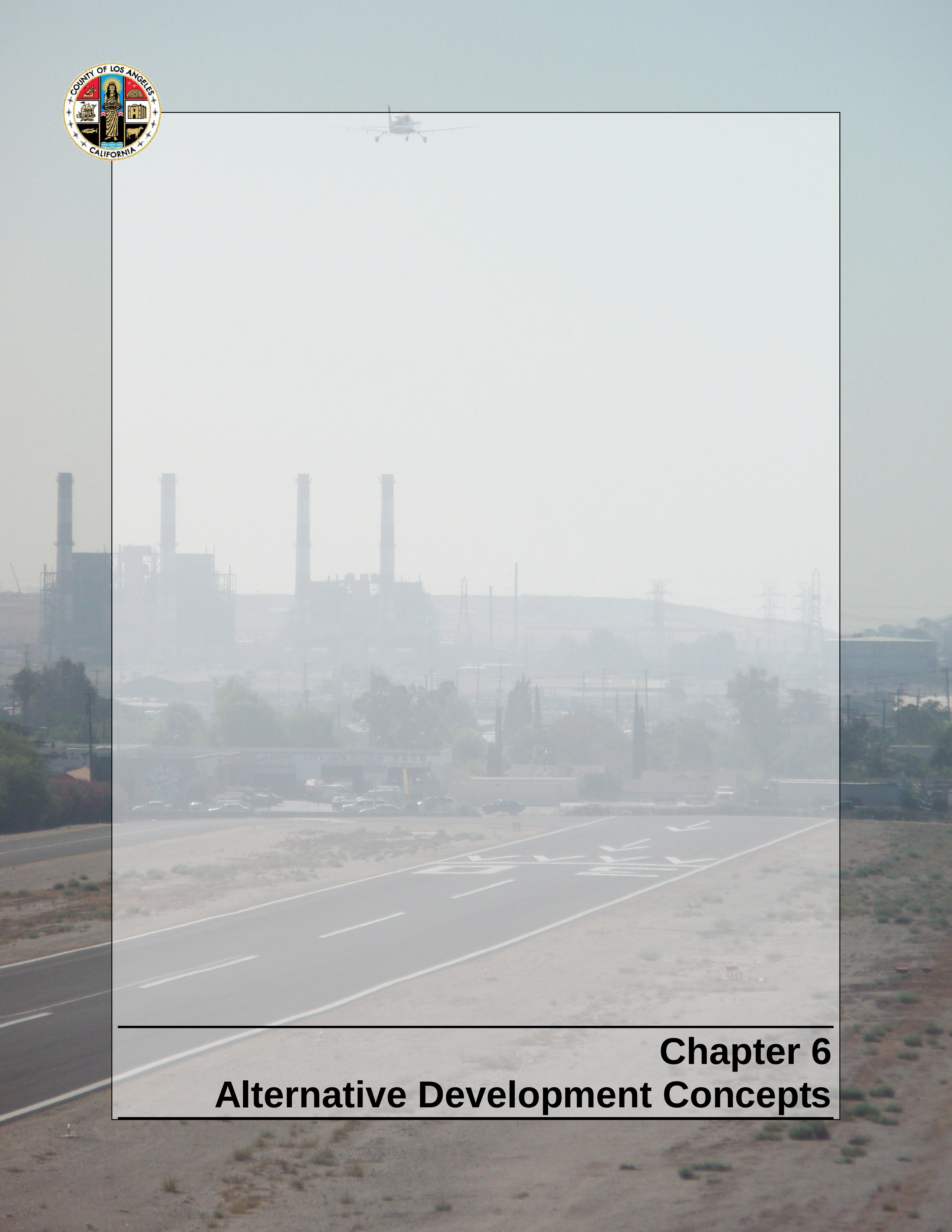
As seen in Table 5-17, approximately one-fifth of the airport is aircraft operating area (AOA) category. Almost half of the airport is aeronautical use area. Aeronautical use area includes all apron and hangar areas. Four percent are revenue supporting areas, which are industries that are non-airport 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.



LEGEND

DESCRIPTION	EXISTING	ULTIMATE
AIRPORT BOUNDARY		SAME
AIRFIELD PAVEMENT		NONE
FENCE		NONE
AIRCRAFT OPERATING AREA (AOA)		NONE
AERONAUTICAL USE AREA		NONE
AIRPORT COMPATIBLE USE AREA		NONE
OPEN SPACE		NONE

Figure 5-5
Existing Airport Land Uses



Chapter 6
Alternative Development Concepts

Chapter 6
Alternative Development Concepts

INTRODUCTION

This chapter, Alternative Development Concepts, describes the recommended development concept and the different development options that were evaluated. Once a preferred development concept is identified, the remaining tasks in the Master Plan Update are to define the concept through a series of airport layout drawings and implementation plan. The airport concepts as described herein are based upon the facility requirements discussed in Chapter 5 and the forecasts of aviation demand in Chapter 4. The concept defines in general terms, the different areas on-airport and the type of development to organize the basic land uses and major on-airport facilities, which will ultimately promote the orderly development of the airport.

BASIS OF CONCEPT DEVELOPMENT

The recommended concept was influenced by four primary factors. These are 1) facility requirements derived from forecasts of aviation demand, 2) facility improvements to enhance safety, 3) providing a flexible plan that accommodates new aviation uses, and 4) the existing terrain at the airport. Since the development of the concept acknowledged these factors, it is believed the future recommended development will result in a plan that will satisfy future aviation demand, accommodate demand safely and efficiently, conform with FAA standards, and permit the airport to react to potential changes in demand within limitations imposed by the terrain.

EVALUATION CRITERIA

The goal of the concept alternatives analysis was to identify the appropriate airport development that best satisfies the following criteria:

- **Long-Term Aviation Needs**: Conceptual plans must address the 20-year facility requirements identified in Chapter 5. Additionally, the plans should consider aviation needs beyond the year 2030. The airport should be a user-friendly aviation facility for personal and business travel and aviation public safety operations.

- **Safety of Aircraft Operations**: The future development should meet current FAA planning and design criteria if feasible, particularly those that enhance the safety of air operations.

- **Community and Environmental Compatibility**: The future development and operation of the airport must be sensitive to the environment and compatible with the surrounding community.

- **Flexibility to Accommodate Change**: The plans for future airport development must be flexible enough to accommodate changing needs that cannot be anticipated now.

- **Efficiency of Construction Phasing**: Construction of the proposed improvements should be implemented without interfering with existing operations.

- **Operational Efficiency**: The future development at the airport should be configured and located to maintain or enhance the operational efficiency of the airport.

- **Relative Financial Effectiveness**: Airport improvements must be cost-effective and be matched with the ability of the airport to fund the improvements, without subsidy from the County.

The alternative airport improvement concepts discussed below are prepared with the objective of satisfying these criteria.

NO ACTION

Figure 6-1 presents the "no action" alternative. There would be no changes to the existing airfield (runway/taxiways). Currently, full runway safety areas (RSAs), obstacle free zones (OFZs), and runway object free areas (ROFAs) are provided through the application of declared distances which is uncommon at a GA airport. Included within the RPZs are approximately 100 buildings, Pierce Street, and Osborne Street. The only changes included within this alternative are those currently being approved or previously approved by the County (County tie-down ramp, Cam-Trans/APIP 60, LLC hangars, Angel City Air, and Argubright Construction hangars).

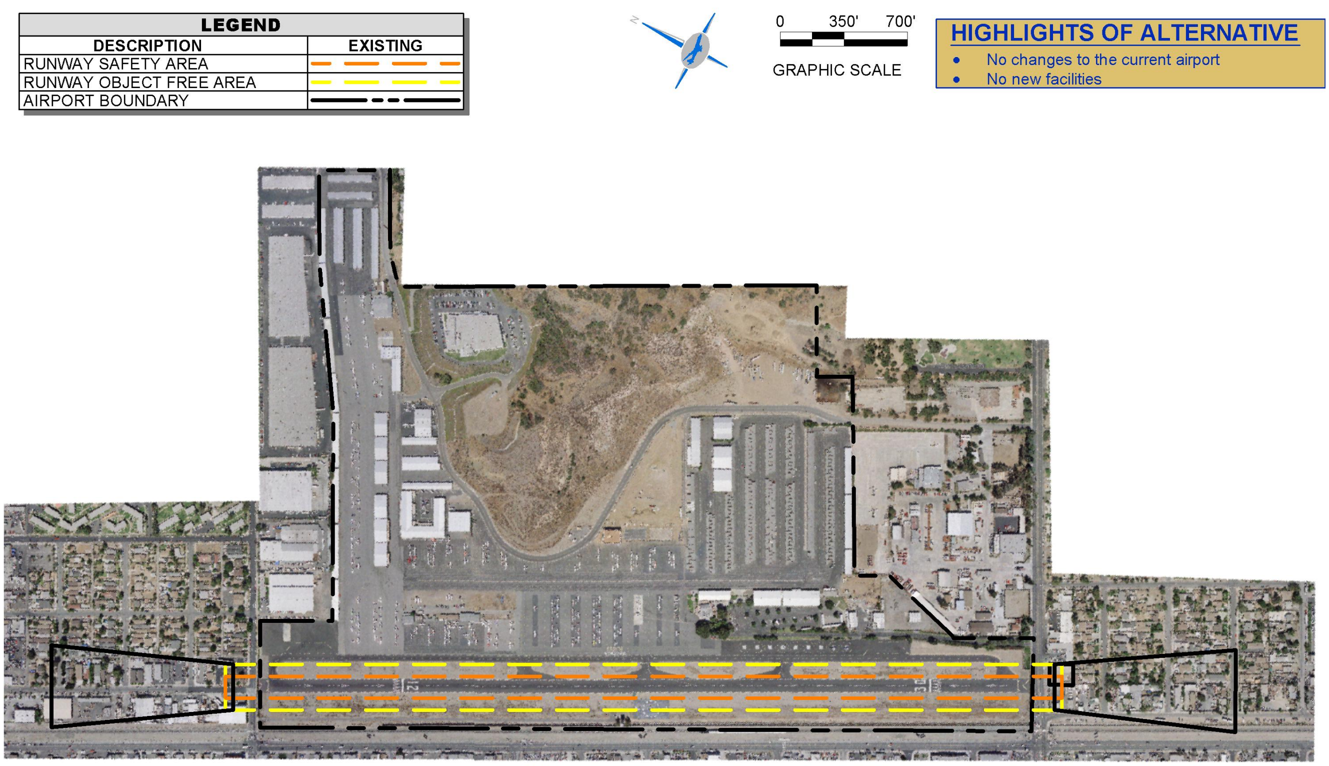


Figure 6-1
No Action Alternative

Under the no action alternative, aviation demand will not be met and declared distances will remain as a means to provide adequate safety areas beyond the runway ends.

AIRSIDE ALTERNATIVES

As previously discussed, the airside 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 following airside alternatives were created to accommodate future traffic demands safely and efficiently.

Capacity Enhancements

As discussed in Chapter 5, the airfield meets forecasted demand, but reaches a threshold where improvements should be planned before the airport becomes saturated. As was also discussed in Chapter 5, airport capacity can be affected by airfield improvements, airfield or airspace geometry, ATC procedures, weather, and mix of aircraft operating at the airport. Due to physical constraints at the airport, it is unlikely that the mix of aircraft or the airfield improvements will significantly change at Whiteman. Airspace geometry is defined by the FAA and due to the complex airspace in the vicinity of LAX and Burbank, changes to the airspace are also unlikely. Since weather is beyond control, the methods investigated to increase capacity at Whiteman were limited to: airfield geometry and ATC procedures. Consideration was given to increase the number of runway exits to decrease runway occupancy time and to increase the percentage of touch and go operations.

When conducting a capacity analysis, Whiteman Airport currently features three taxiways that are considered runway exits (for each runway end). A maximum of four runway exits are included in the airfield capacity circular; as more than four runway exits does not increase airfield capacity. Adding two additional right angle taxiways (one between Taxiways A and B and one between Taxiways D and A) will result in one additional runway exit for each runway end and produces a marginal increase in airfield capacity (see Table 6-1).

Table 6-1
ENHANCED AIRFIELD CAPACITY ALTERNATIVES

Description	Annual Service Volume	Capacity Utilized	Weighted Hourly Capacity	Capacity Utilized
Existing Conditions				
Demand (2030)	143,500	-	72	-
Capacity	219,000	66%	81	88%
Additional Runway Exits				
Capacity	224,500	64%	86	84%
Increased Touch and Go				
Capacity	279,300	51%	107	67%
Additional Exits and Increased Touch and Go				
Capacity	297,500	48%	114	63%

Source: AECOM analysis.

A marked increase in airfield capacity is noted when an increase of touch and go operations is included in the calculations. As previously noted touch and go operations at Whiteman have recently declined. While it is unclear why the decrease occurred, through discussions with the County, airport management, airport traffic control tower staff, and Vista Aviation (the flight school operator) there seems to be nothing that would prevent a return of touch and go operations at Whiteman. Touch and go's typically account for approximately 50 percent of operations at a general aviation airport. Assuming that touch and go operations increase to previous levels (about 50 percent of operations) capacity at the airport will increase (see Table 6-1), thus reducing the need for capacity enhancing improvements to the airport.

A maximum level of capacity enhancement would be reached if touch and go operations at the airport were to resume, and additional runway exits were constructed. Again, adding runway exits features relatively little capacity enhancement at Whiteman (see Table 6-1).

For the purpose of this master plan, the maximum level of capacity enhancements (additional runway exits and an increase of touch and go operations) is included as part of the following safety enhancement alternatives.

Safety Enhancements

A key goal of this master plan is to eliminate the application of declared distances. The application of declared distances at a general aviation airport is undesirable to the FAA as it is a potential source of pilot confusion.

Alternative 1

To protect approaching and departing aircraft as well as the surrounding neighborhood, Alternative 1 suggests shortening the runway to an overall length of 3,768 feet (Figure 6-2). This runway length will accommodate 98 percent of small airplanes with less than 10 passenger seats.

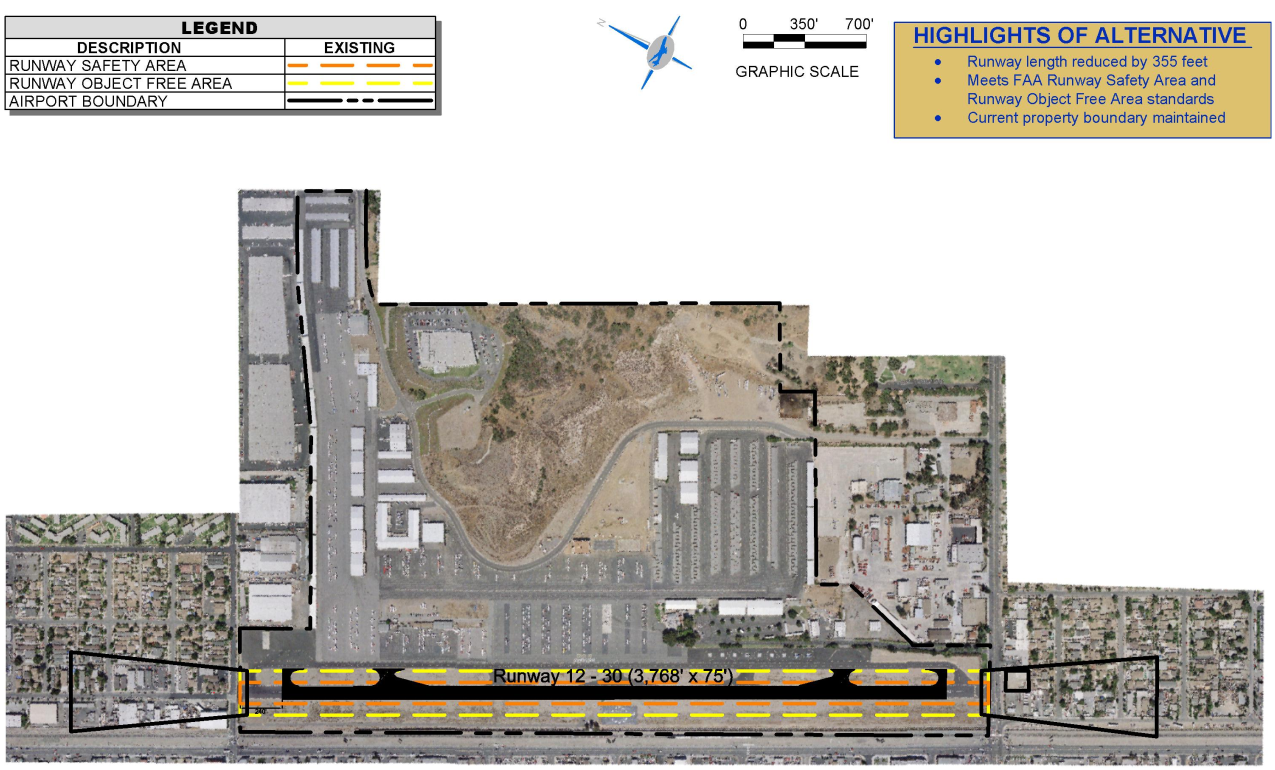


Figure 6-2
Airside Alternative 1 – Shorten Runway

The Runway 12 threshold will be relocated southeasterly 185 feet and the Runway 30 threshold will be relocated northwesterly 167 feet. This results in displaced thresholds of 546 feet at

Runway 12 and 309 feet at Runway 30. Shortening the runway will provide full RSA, OFZ, and ROFA within current airport property limits. The RPZs will continue to include incompatible land uses as they are traversed by several streets, contain residential areas, and contain commercial buildings. Runway 12 RPZ includes approximately 36 buildings (10 residences) and Runway 30 RPZ includes approximately 50 buildings (16 residences), which is an improvement over existing conditions.

Alternative 2

This alternative (Figure 6-3) suggests acquiring and clearing areas of RSA and ROFA which are off airport property. The areas to be acquired total approximately two acres, but to acquire this land, Osborne Street, Pierce Street, and Sutter Avenue would have to be closed or relocated. On the Runway 12 end the area to be acquired contains three residential properties and parts of a commercial property. The Runway 30 RSA and ROFA include one building and associated parking area that would be acquired. The runway length would remain 4,120 feet. The Runway 12 RPZ includes approximately 32 buildings (14 residences) and the Runway 30 RPZ includes approximately 35 buildings (15 residences). Alternative 2 features fewer buildings within RPZs than existing conditions or Alternative 1.

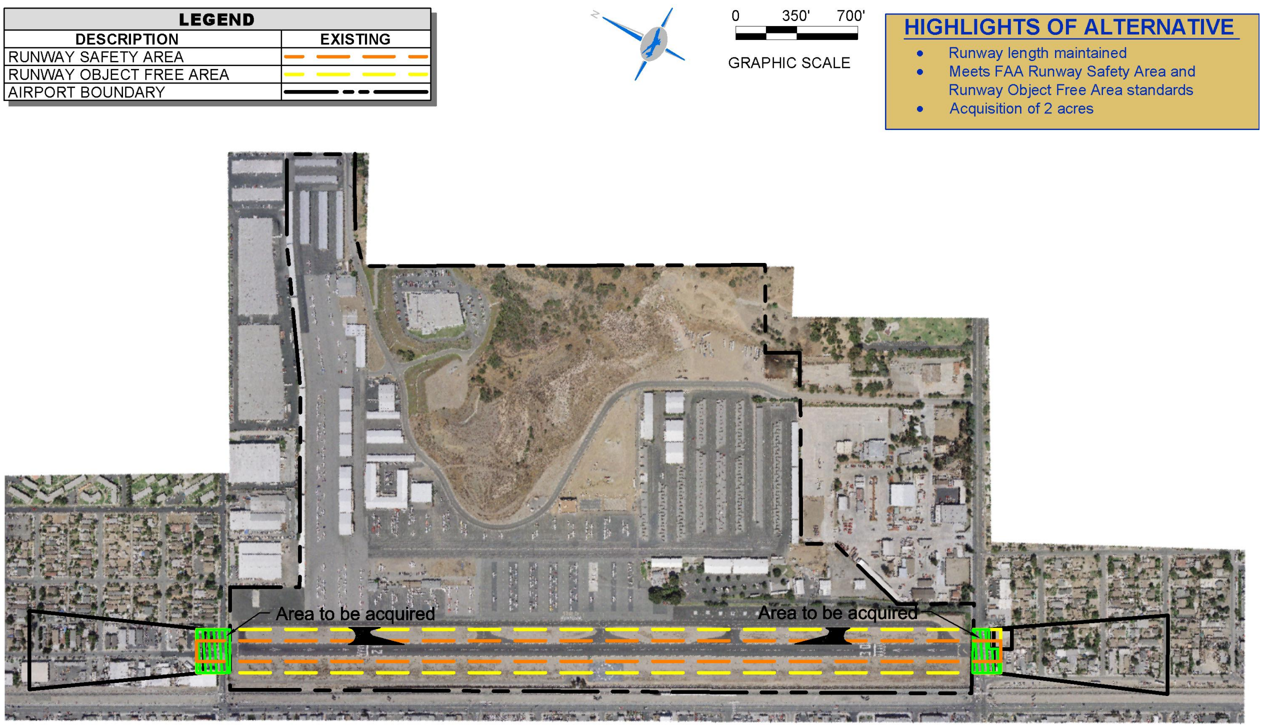


Figure 6-3
Airside Alternative 2 – Acquire ROFA

Alternative 3

Alternative 3 (see Figure 6-4) suggests acquiring and clearing full safety areas including RSA, OFZ, ROFA, and RPZ. The runway would remain 4,120 feet in length, but 17 acres of surrounding area would be acquired and cleared. This area includes approximately 43 buildings (16 residences), Sutter Avenue, Pierce Street, Jouett Street, Carl Street, and Hoyt Street on the Runway 12 end. The Runway 30 end includes approximately 61 buildings (18 residences), Osborne Street, Wingo Street, Correnti Street, Bromwich Street, and San Fernando Road. This alternative recommends closing/relocating roads outside of RPZ limits. As an option, roads could be relocated underground.

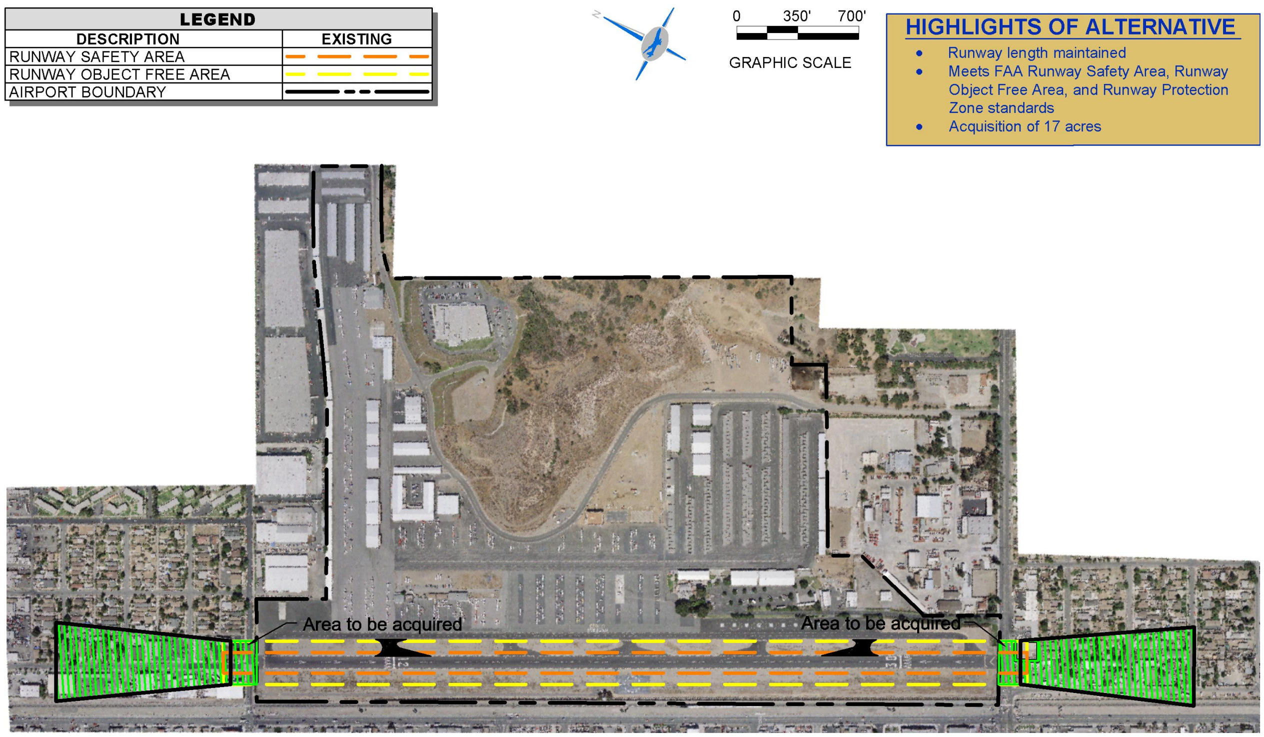


Figure 6-4
Airside Alternative 3 – Acquire RPZ

Evaluation of Airside Alternatives

Table 6-2 ranks the various airside alternatives against the evaluation criteria previously defined. A brief discussion of the alternatives evaluation follows. As a reminder, all airside alternatives feature the capacity enhancement modifications outlined above (touch and go activity of 50 percent of operations and additional runway exits).

Airside Alternative 1 proposes to shorten the runway to accommodate RSA/OFZ/ROFA. The community would benefit as aircraft will be higher above adjacent neighborhoods near the runway ends. The project can be done efficiently as the runway would only be closed for a relatively short time during low-volume traffic times to repaint both runway ends. Similar type aircraft would be able to access the airport as the runway would only be 355 feet shorter than current conditions.

Airside Alternative 2 proposes to acquire the land within the RSA/OFZ/ROFA. While the acquisition of land is relatively minor, it may still negatively impact the land use, population, and housing in the area. The community would be affected by the acquisition of the land, as major roads (Pierce Street, Sutter Avenue, and Osborne Street) would be rerouted. Existing aircraft operations will not be affected by the acquisition of the land. Operations would be just as efficient as current conditions, as the runway length would remain the same. Relatively, this is the second most costly alternative, as land acquisition and rerouting of major roads will require significant capital.

Airside Alternative 3 proposes to acquire safety areas and RPZ on both runway ends. This alternative impacts the community as 17 acres of land would be acquired and will impact the land use, population, and housing in the area. A total of 104 buildings and ten roads would be relocated or removed/closed. The acquisition of the land would not interfere with the aircraft operations. Operational efficiency would remain the same as the current situation as the runway length is to remain the same. Financially, this is the most expensive alternative due to the land acquisition and removal of structures and rerouting of roads within the current ROFA/RSA/RPZ.

Table 6-2
AIRSIDE EVALUATION MATRIX

Criterion	No Action	Alternative 1	Alternative 2	Alternative 3
Long-Term Aviation Needs	Excellent – Runway length remains the same	Good – Slight reduction in runway length.	Excellent – Runway length remains the same.	Excellent – Runway length remains the same.
Safety of Aircraft Operations	Poor –RSA and ROFA are met through declared distance use; potential pilot confusion. RPZ remains the same.	Good – Meets FAA design standards for RSA and ROFA; slight RPZ improvement.	Good – Meets FAA design standards for RSA and ROFA; slight RPZ improvement.	Excellent – Meets FAA design standards for RSA, ROFA and RPZ.
Community and Environmental Compatibility	Excellent – Does not impact the community.	Excellent – Does not impact the community.	Poor – Road rerouting and residential acquisition.	Poor – 17-acre land acquisition includes 104 buildings and ten roads.
Flexibility to Accommodate Change	Good – Accommodates same mix of aircraft as currently found at the airport	Fair – Reasonably accommodates same aircraft that presently uses the airport. Slight decrease in ability for larger aircraft to use the facility.	Good – Accommodates same mix of aircraft as currently found at the airport	Good – Accommodates same mix of aircraft as currently found at the airport
Efficiency of Construction Phasing	Excellent – No changes planned.	Good – Minimal impacts to airport and neighboring community.	Poor – Traffic rerouting will cause significant delays.	Poor – Major road rerouting and residential displacement. Significant vehicle traffic delays.
Operational Efficiency	Poor – Weighted hourly capacity reaches 88% in 2030.	Excellent – Increased efficiency through increased operational capabilities.	Excellent – Increased efficiency through increased operational capabilities.	Excellent – Increased efficiency through increased operational capabilities.
Relative Financial Effectiveness	Excellent – No costs.	Good – Low costs for new entrance taxiways and striping.	Fair – Higher cost of 2-acre land acquisition.	Poor – Highest cost of 17-acre land acquisition.

Source: AECOM analysis.

Recommended Airside Alternative

Airside Alternative 1 is the recommended alternative. While this alternative does not rank highest in every category, it provides a good balance in enhancing the safety of airport operations with minimal impact to the surrounding community. In this alternative the runway length is reduced to remove the application of declared distances. The reduction in runway length results in less impacts to the surrounding community than found in other alternatives and accommodates more than 95 percent of small aircraft operations with less than 10 passengers.

The airside alternatives were presented at the first public open house, held on March 11, 2009. Attendees included tenants of the airport and residents from the surrounding community. During this meeting attendees were polled to learn which alternative they preferred. Attendees favored the "No Action" alternative first with Airside Alternative 1 coming in a close second. Prudent planning dictates that some action be taken in order to enhance the safety of the airport; therefore, Airside Alternative 1 remains as the selected airside alternative.

LANDSIDE ALTERNATIVES

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.

Development Areas

Prior to defining alternatives to meet landside facility requirements, it is important to define developable areas on the airport. Whiteman Airport is restricted in its development by surrounding land use areas and on airport constraints. On Figure 6-5 nine areas on airport property and two areas off airport property are identified for possible future landside development. The following discussion describes each development area and notes potential uses.

- **Development Area A.** Development Area A includes the current terminal area, helicopter pads, helicopter operating area, run-up apron, and small hangar/office/administrative buildings and covers approximately 11 acres of land. Current uses include the helicopter operating area, run-up apron, office space, and hangars. The Development Area A could be used for other aviation-related uses such as the helicopter operating area, individual hangars for aircraft storage, terminal and restaurant area, and airport access.

- **Development Area B.** This area is a triangular-shaped plot of land along Airpark Way. It was recently developed by Vista Aviation and covers approximately 4.5 acres. Vista Aviation's development utilizes the entire 4.5 acres, includes 36 hangars and FBO offices.

- **Development Area C.** This area is adjacent to Taxiway A. Hangars, a flight school, and tie-downs were located on this land area. Facilities were removed and 70 based aircraft tie-downs were constructed while this study was being conducted.

- **Development Area D.** The front of the hill along Airpark Way is identified as Development Area D. This area is currently not in use. Previous uses include a company that was removing dirt for fill material at other sites. For this area to be useful, the hillside would have to be graded and the hill stabilized, incurring large costs to the development. After the grading, the area could be used for any airport or revenue supporting use. This area has previously been designated as the site for a new terminal building. Other potential uses include a helicopter operating area, hangar development, tie-down area, and a relocated fuel facility location.

0' 350' 700'
GRAPHIC SCALE

LEGEND		
DESCRIPTION	EXISTING	ULTIMATE
AIRPORT BOUNDARY		SAME
RUNWAY OBJECT FREE AREA (ROFA)		SAME
RUNWAY SAFETY AREA (RSA)		SAME
RUNWAY PROTECTION ZONE (RPZ)		SAME
DEVELOPMENT AREA		NONE

POTENTIAL USES	
AREA	DESCRIPTION
A	RECONFIGURE TERMINAL AREA
B	CURRENT DEVELOPMENT - VISTA AVIATION
C	CURRENT DEVELOPMENT - TIEDOWN
D	REMOVE HILL, CONVERT TO AIRPORT USE, PORTION NATURALLY LOWER
E	BOUNDARY SET BY ROFA, ATCT LINE OF SIGHT, ROAD/FENCE
F	TEARDROP AREA
G	REMOVE HILL, CONVERT TO AIRPORT USES - PORTION IS LOWER
H	HILL - REMAIN AVIATION (REVENUE SUPPORT)
I	AREA WITHIN RPZ
J	BORDER BY FENCE, OSBOURNE STREET, AIRPARK WAY - REQUIRES ACQUISITION
K	HANGAR WAS AIRPORT PROPERTY - RECLAIM (ACQUIRE IT)

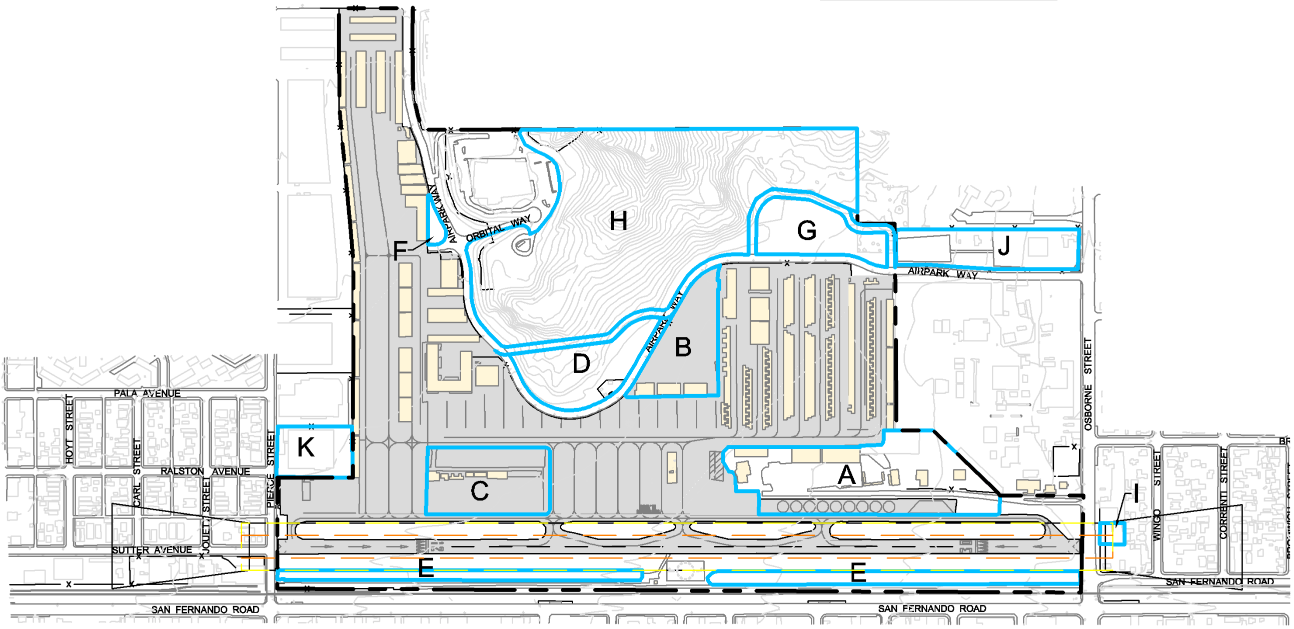


Figure 6-5
Land Development Areas

- **Development Area E.** Development Area E is represented by two strips of land located on the south side of the runway beyond the runway obstacle free area (ROFA) and airport traffic control tower (ATCT) line of sight. The land, parallel to the runway, is open space but could be designated aviation use area. This aviation use area is limited due to its location. Additionally airport facilities (including fuel, wash-racks, oil recycling, etc.) are located on the other side of the runway and frequent crossing of the runway to use these facilities poses potential runway incursions. A taxiway could not be built on this side of the runway, as there is not enough space to accommodate runway-taxiway separations. A potential use is to set up tie-downs for derelict aircraft in this area. The tie-down area could only support uses of nonfunctioning aircraft, because movements within this area would require closure of the runway.

- **Development Area F.** This teardrop-shaped parcel is located along Airpark Way near Orbital Way. The area is currently open space, but could be used for automobile parking, designated aviation use or designated as revenue support area.

- **Development Area G.** Area G is east of the County T-hangars across from Airpark Way. This area is currently being used for equipment storage and dirt is being moved on the site. This open area could be used for aviation or airport revenue support. Specifically, the area could serve as a terminal area or helicopter operating area. In addition, it could accommodate hangar space, automobile parking, and tie-downs.

- **Development Area H.** This is the largest development area encompassing the hill except for Orbital Way and the existing manufacturing company located on the hill. Development of this area would require significant grading and stabilization of the hill, incurring high costs. It is suggested that development H remain aviation related or revenue supporting land use. Potential non-aviation uses are limited due to the terrain but may include a restaurant, park, museum, or nature center.

- **Development Area I.** Development Area I is a rectangular area of land not connected to the rest of the airport property. It is located along Osborne Street and is mostly within the Runway 30 runway protection zone (RPZ). This parcel is segregated from the airport by Osborne Street. Use of this parcel is limited by criteria set forth in the AC 150/5300-13 for RPZ land. Prohibited uses of the RPZ include residences and places of public assembly (including churches, schools, hospitals, office buildings, shopping centers, etc.). Furthermore, fuel storage facilities and areas that attract wildlife are not permitted within the RPZ. Since this area is within the RPZ, it should remain as open space.

- **Development Area J.** Area J is a 5.9 acre rectangular parcel off airport property along Airpark Way and Osborne Street, adjacent to the Los Angeles County Fire Station. In order to utilize this area, the County would need to acquire it. The property is fenced and could be used for aviation or revenue support. The area currently has three large buildings on it and seems to primarily be used for storage of equipment. As of this writing it is unclear if this area is part of airport property.

- **Development Area K.** Development Area K is another rectangular shaped area off airport property, and encompasses 2.5 acres. It is located northeast of the airport along Pierce Street. The parcel includes a large hangar building, a smaller building, and automobile parking facilities. Consideration may be given to reclaim/acquire this piece of land to use it for aviation use. Potential uses include hangar development, automobile parking, and non-aviation uses.

Helicopter Operating Area

There are several helicopter operators located at Whiteman. Currently, operators are scattered around the airport. Generally, it is desirable to co-locate all helicopters into one area to minimize mixing of helicopters and fixed wing aircraft.

Potential helicopter operating areas have previously been identified as landside Development Areas A, D, or G. Area A includes the nine helipads, run-up apron, terminal building, and small hangars. The majority of helicopters operate in this area and it has always been envisioned to be the consolidated helicopter area at the airport. Development Area D is located at the base of the hill which would require significant grading. This area is open space and if used, could increase potential growth by opening up current space used by helicopters for fixed wing aircraft use. Also, helicopter noise would be centered on the airport, minimizing impacts to the surrounding community. Development Area G could be used as a remote helicopter area. However, this would bring the associated noise much closer to the residences northeast of the airport.

Currently, helicopter operators use approximately 8,100 square feet of hangar space distributed around the airport. There are nine heliports including one transient heliport. Within the planning period, it is expected that helicopters will use approximately 14,600 square feet of conventional hangar space.

Operational concerns regarding the existing helicopter operating area are that it is within the movement area and helicopters have the same traffic pattern as fixed wing aircraft. However, if the helicopter operating area were to be moved to a remote location, there would be no ATCT visual feedback and the new traffic pattern could interfere with the Los Angeles County Fire Department operations.

Compass Rose

The Advisory Circular 150/5300-13 details requirements for a compass rose (also known as a compass calibration pad) locations as follows:

- At least 300 feet from power and communication cables (both above and below ground) and from other aircraft

- At least 600 feet from large magnetic objects such as buildings, railroad tracks, high voltage electrical transmission lines, or cables carrying direct current
- Located off the side of a taxiway or runway a sufficient distance to satisfy the runway and taxiway clearances applicable to the airport on which it is located
- After site selection, a thorough magnetic survey of the site should be conducted
- The difference between magnetic and true north must be uniform in the vicinity of the site

A review of the current airport layout was conducted based on the above criteria. It was discovered that there are no appropriate locations for a compass rose to be located without significant magnetic deviations due to buildings, power lines, railroad tracks, or other aircraft.

Alternatives to meet Landside Facility Requirements

The alternatives described below were developed to meet year 2030 landside facility requirements noted in Chapter 5. In summary, the alternatives seek to provide:

- 7,920 square feet of general aviation terminal space including offices and meeting rooms
- 34 transient tie-downs
- 290 based aircraft tie-downs
- 554 individual hangar spaces
- 45,690 square feet of fixed wing conventional hangar space
- 14,580 square feet of helicopter conventional hangar space
- 234 automobile parking spaces

Development is divided into three phases. Phase 1, or the short-term phase, encompasses the first five years (through 2013). The intermediate phase – Phase 2 – is for years 2014 through 2018. Phase 3 represents the long-term phase and includes years 2019 through 2030. These phases match the forecast years presented in Chapter 4. Table 6-3 depicts the additional facilities required by phase. These facilities are in addition to present facilities, as documented in Chapter 3.

Table 6-3
ADDITIONAL FACILITY REQUIREMENTS BY PHASE

Item	Phase 1 (through 2013)	Phase 2 (2014 – 2018)	Phase 3 (2019 – 2030)
General Aviation Terminal (SF)	3,470	3,910	5,120
Based Aircraft Tie-Downs	15	32	78
Transient Tie-Downs	16	19	25
Individual Hangar Spaces	25	58	147
Conventional Hangar Space – Fixed Wing (SF)	0	0	8,825
Conventional Hangar Space – Helicopter (SF)	4,050	4,050	6,480
Automobile Parking Spaces	34	47	82

SF = square feet
Source: AECOM analysis.

Alternative 1

Alternative 1 at Whiteman Airport (Figure 6-6) will meet and exceed facility requirements for the forecasted 2030 demand. The terminal is relocated to Development Area D and the existing helicopter operating area is reconfigured/consolidated. This alternative suggests acquiring Development Area K (2.5 acres) in fee. The existing building on the property will be converted to a conventional hangar for fixed wing aircraft use and automobile parking will be provided adjacent to the building.

Phase 1: Development Area D is proposed to be graded and the hill stabilized. This area will become the new terminal area allowing for an approximately 8,000-square foot terminal, 4,000-square foot restaurant, picnic area, and 93 automobile parking spaces. Airpark Way is rerouted to accommodate the terminal. New tie-downs (13 based and 28 transient) are provided adjacent to the terminal along with an area for airport support vehicles. The terminal area development is completed in Phase 1. To meet short-term requirements, a new conventional hangar should be built in the current terminal/helicopter operating area. Within the short-term, five hangar buildings will be completed in the current terminal/helicopter operating area. Development Area F is developed to accommodate automobile parking.

Phase 2: The current terminal/helicopter operating area (Development Area A) would be reconfigured to accommodate a consolidated helicopter operating area and based aircraft hangars. One conventional hangar (in addition to the one in Phase 1), 10 hangar buildings (49 individual hangars), and automobile parking are accommodated in Development Area A. The Airport Entrance Road would be rerouted to allow for direct airside access for all aircraft operating in this area. The helicopter operating area in this alternative provides 161,664 square feet of combined hangar and apron space.

Phase 3: Development Area G will be graded to accommodate portable and individual hangars as well as additional automobile parking for tenants. Furthermore, tie-downs for derelict aircraft are planned on the opposite side of the runway, adjacent to the railroad tracks and San Fernando Road. Full apron pavement is not required, rather tie-down cables (anchored in concrete) could be provided. It is estimated that approximately 24 tie-downs can be accommodated on the south side of the ATCT. Moving aircraft to and from this area will results in a temporary shut-down of the runway. Of the existing tie-downs by the terminal, an additional six will be designated transient tie-downs to meet long-term requirements. This phase also includes the acquisition of Development Area K to provide additional automobile parking and a fixed wing conventional hangar (49,100 square feet). Individual hangars (16) will be placed throughout the County hangar area to more efficiently use airport property.

The fuel farm is expected to maintain its location and Development Area H (the main portion of the hill) is proposed to be designated non-aviation use area. The hill covers approximately 33 acres of land. Additionally, hangars will be added into the County hangar development.

Alternative 1 meets and exceeds short, intermediate, and long-term aviation needs. The table below shows 2030 facility requirements and provided facilities in this alternative.

	2030	
Item	**Required**	**Provided**
General Aviation Terminal	7,920 SF	8,040 SF
Restaurant	5,000 SF	4,040 SF
Tie-Downs	324	325
Individual Hangars	554	572
Conventional Hangars (Fixed Wing)	45,850 SF	101,625 SF
Conventional Hangars (Helicopters)	14,580 SF	30,670 SF
Automobile Parking	234	267

Source: AECOM analysis.

Alternative 2

Landside Alternative 2 meets facility requirements for the 2030 demand. This alternative relocates the helicopter operating area to Development Area D and the terminal to Development

200' 0 200'
GRAPHIC SCALE

FACILITIES TABLE				
DESCRIPTION	EXISTING	PROVIDED (TOTAL)	REQUIRED (2030)	DIFFERENCE
INDIVIDUAL HANGARS	444	572	554	18
TIE-DOWNS*	220	325	324	1
CONVENTIONAL HANGARS (FIXED WING)	36,865 SF	101,625 SF	45,650 SF	55,975 SF
CONVENTIONAL HANGARS (HELICOPTER)	8,100 SF	30,670 SF	14,580 SF	16,190 SF
TERMINAL	2,800 SF	8,040 SF	7,920 SF	120 SF
RESTAURANT	2,730 SF	4,040 SF	4,000 SF	40 SF
AUTOMOBILE PARKING	152	267	234	33

* DERELICT AIRCRAFT TIE-DOWNS NOT INCLUDED

LEGEND	
DESCRIPTION	SYMBOL
INDIVIDUAL HANGARS	
TIE-DOWNS	
TIE-DOWNS FOR DERELICT AIRCRAFT	
CONVENTIONAL HANGARS	
TERMINAL	
RESTAURANT	
NON-AVIATION USE	
AUTOMOBILE PARKING	
ACQUIRE IN FEE	
HELICOPTER OPERATING AREA	
PICNIC AREA	
WEATHER SENSOR	
ROAD	
FENCING	

HIGHLIGHTS OF ALTERNATIVE

- Exceeds 2030 requirements
- New Terminal Area approximately midfield
- Consolidated Helicopter Operating Area
- Expanded hangar area
- 2.5 acres of land acquisition

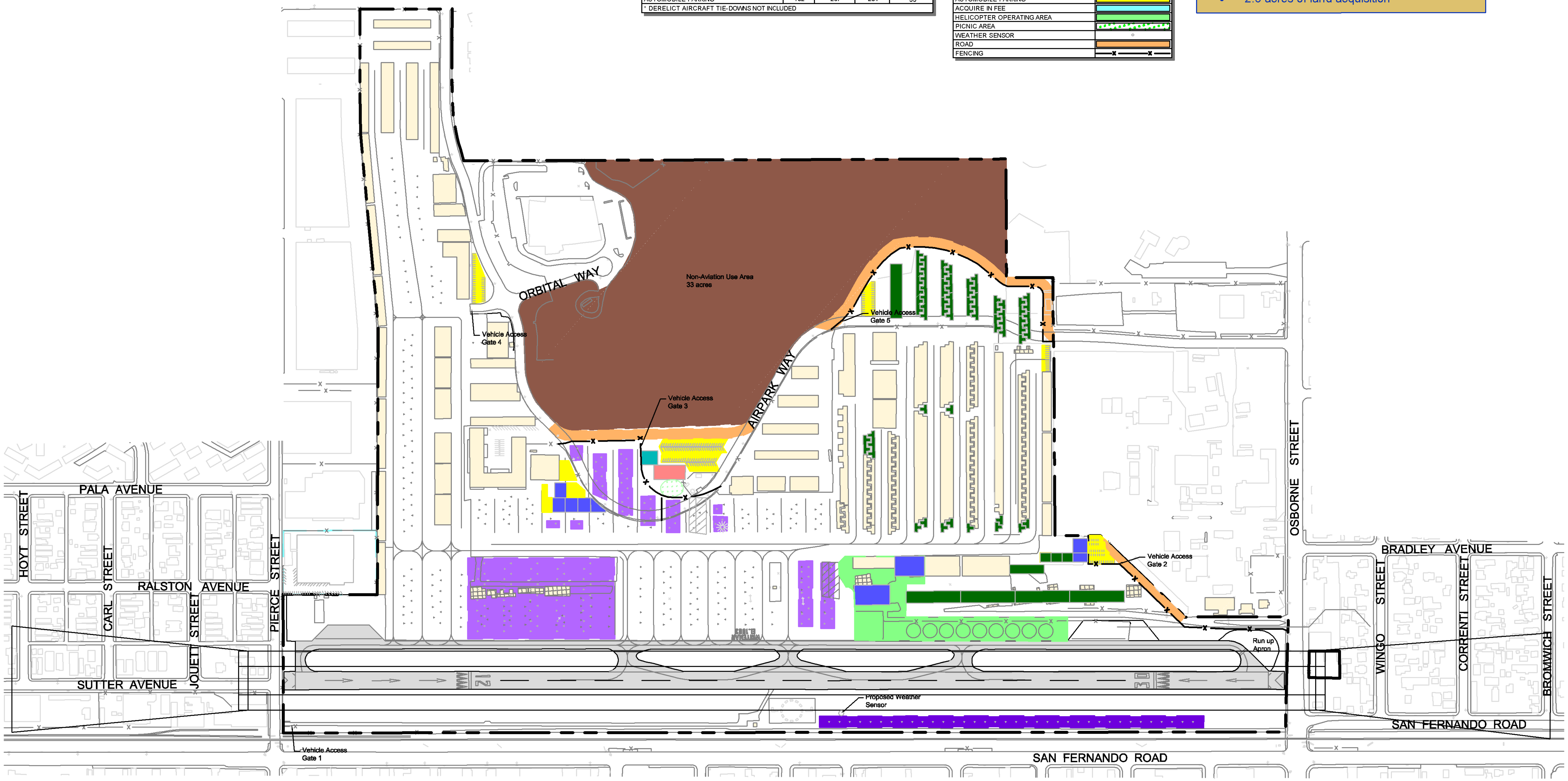
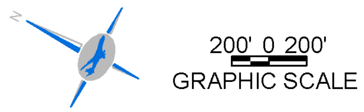


Figure 6-6
Landside Alternative 1



FACILITIES TABLE

DESCRIPTION	EXISTING	PROVIDED (TOTAL)	REQUIRED (2030)	DIFFERENCE
INDIVIDUAL HANGARS	443	560	554	6
TIE-DOWNS*	220	324	324	0
CONVENTIONAL HANGARS (FIXED WING)	36,865 SF	57,268 SF	45,650 SF	11,618 SF
CONVENTIONAL HANGARS (HELICOPTER)	8,100 SF	25,214 SF	14,580 SF	10,634 SF
TERMINAL	2,800 SF	8,040 SF	7,920 SF	120 SF
RESTAURANT	2,730 SF	4,040 SF	4,000 SF	40 SF
AUTOMOBILE PARKING	152	349	234	115

* DERELICT AIRCRAFT TIE-DOWNS NOT INCLUDED

LEGEND

DESCRIPTION	SYMBOL
INDIVIDUAL HANGARS	
TIE-DOWNS	
TIE-DOWNS FOR DERELICT AIRCRAFT	
CONVENTIONAL HANGARS	
TERMINAL	
RESTAURANT	
NON-AVIATION USE	
AUTOMOBILE PARKING	
ACQUIRE IN FEE	
HELICOPTER OPERATING AREA	
PICNIC AREA	
WEATHER SENSOR	
ROAD	
FENCING	

HIGHLIGHTS OF ALTERNATIVE

- Meets 2030 requirements
- New remote Terminal Area
- Expanded based aircraft facilities
- Two fuel facilities
- Acquire 5.9 acres - potential aviation related use

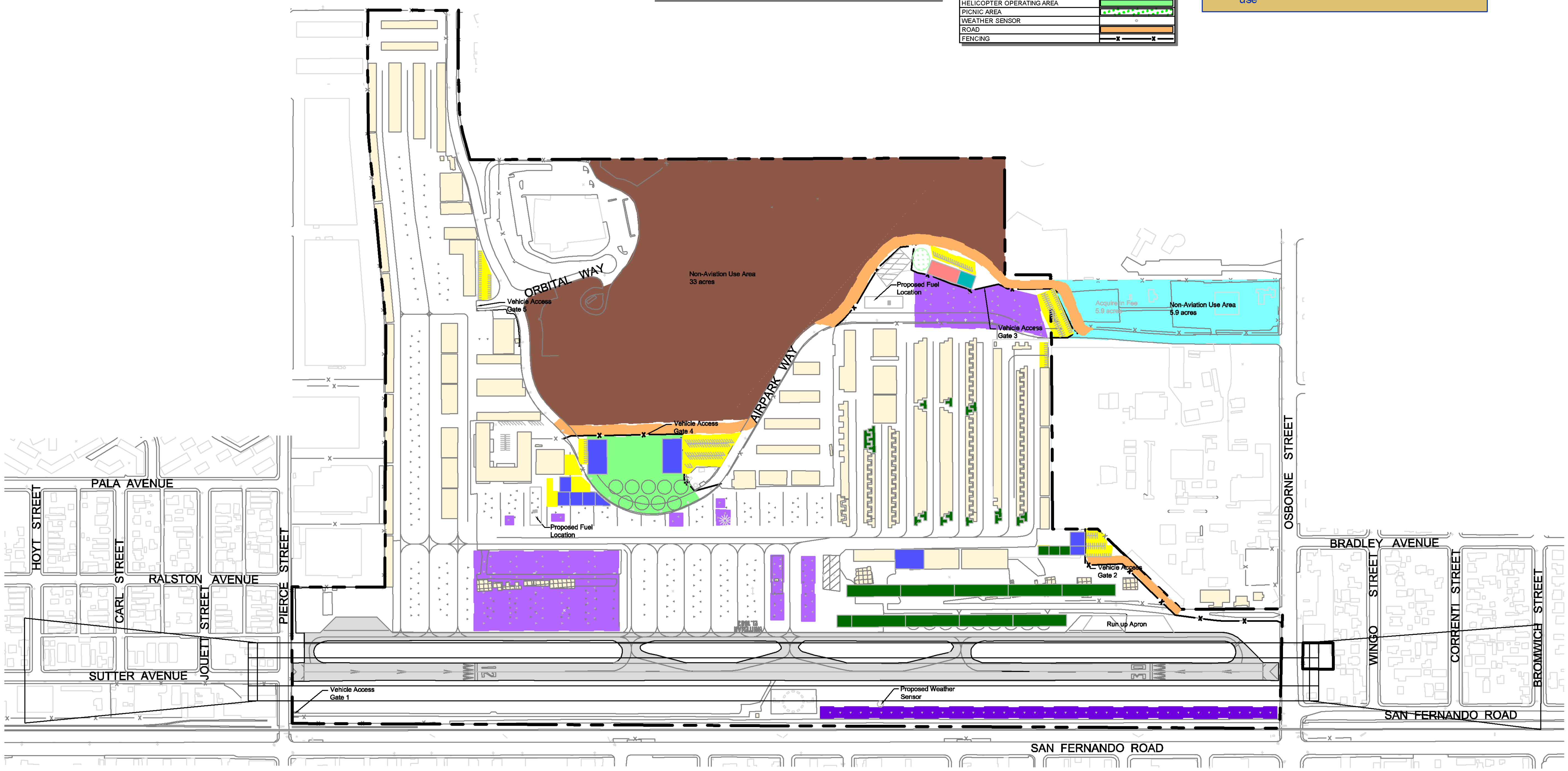


Figure 6-7
Landside Alternative 2

Area G. In addition, Development Area J (approximately 5.9 acres) will be acquired and used mostly for non-aviation use. The northern end of the area will accommodate the relocation of Airpark Way and airside automobile parking. This alternative is depicted on Figure 6-7.

Phase 1: Development Area G is shown as a remote terminal area. Acquisition of Development Area J supports the remote terminal and provides opportunities for aviation related uses. This alternative proposes 8,000 square feet for the terminal and 4,000 square feet for a new restaurant. A picnic area as well as automobile parking will be located near the terminal. The rest of this area is designated for tie-downs, a second fuel farm, and parking for airport support vehicles. In the current terminal area, one conventional hangar should be built to meet short-term requirements. This phase also includes relocating the existing fuel facility near the U.S. Marshal hangar. Development Area F will accommodate automobile parking.

Phase 2: Phase 2 suggests grading and stabilizing the hill in Development Area D to provide for a consolidated helicopter operating area. All nine heliports will be relocated into this area and it will include two conventional hangars (approximately 12,600 square feet each). Automobile parking and apron space will also be provided for tenants, customers, and visitors. The area is centralized on the airport and the hill will help to shield the community from helicopter noise. The area adjacent to and north of the terminal (including where the fuel farm used to be) will include additional tie-downs. To meet forecasted individual hangar demand, T-hangars are suggested to be built intermittently throughout the County hangar area. In addition, five hangar buildings in Land Development Area A will be completed. A total of 126,631 square feet of helicopter hangar and apron space is provided in this alternative.

Phase 3: Transforms the existing helicopter operating area and terminal area to based aircraft storage (individual hangars). The Airport Entrance Road is relocated along the property line, ending in a parking lot. The remaining area allows for additional conventional and individual hangar space as well as a larger run-up apron for Runway 30.

Similar to Alternative 1, Development Area E can accommodate tie-downs for derelict aircraft. Approximately 24 tie-downs are provided. Development Area H will be used for non-aviation uses. Additionally, hangars will be added into the County hangar development. Alternative 2 meets and exceeds short, intermediate, and long-term forecasted demand.

	2030	
Item	**Required**	**Provided**
General Aviation Terminal	7,920 SF	8,040 SF
Restaurant	5,000 SF	4,040 SF
Tie-Downs	324	324
Individual Hangars	554	560
Conventional Hangars (Fixed Wing)	45,850 SF	57,268 SF
Conventional Hangars (Helicopters)	14,580 SF	25,214 SF
Automobile Parking	234	349

Source: AECOM analysis.

Alternative 3

Alternative 3 (Figure 6-8) meets long-term aviation needs for 2030 requirements and does not propose to acquire land. This alternative transforms Development Area G into a helicopter operating area, expand the current terminal area, and grading of Development Area D to provide additional individual based aircraft hangars.

Phase 1: Transform Development Area G into a helicopter operating area. The area will include nine heliports, two conventional hangars, and automobile parking. In addition, to meet short-term terminal requirements, the terminal building will be expanded at its current location to allow approximately 12,000 square feet for a combined terminal and restaurant. Development Area F will accommodate automobile parking. Phase 1 development meets short-term requirements and provides 174,663 square feet of total helicopter operating area.

Phase 2: After the new helicopter operating area is in use, the current helicopter operating area can be reconfigured. The plans include rerouting the Airport Entrance Road, adding automobile parking spaces to meet forecasted requirements, expanding the run up apron, constructing two conventional hangars (12,600 and 10,700 square feet) and tie-down facilities. Individual tie-downs, portables, and automobile parking spaces are proposed to be installed as infill throughout the airport property.

Phase 3: This Phase is the most costly and time-consuming. This phase grades and stabilizes the hill area in Land Development Area D, reroutes Airpark Way and uses the additional land gained to add individual and portable hangars. Approximately 44 individual and portable hangars are estimated to be accommodated within the graded area. South of the tower is an area designated to store derelict aircraft.

	2030	
Item	**Required**	**Provided**
General Aviation Terminal	7,920 SF	8,154 SF
Restaurant	5,000 SF	4,077 SF
Tie-Downs	324	334
Individual Hangars	554	569
Conventional Hangars (Fixed Wing)	45,850 SF	57,350 SF
Conventional Hangars (Helicopters)	14,580 SF	21,628 SF
Automobile Parking	234	252

Source: AECOM analysis.

Alternative 4

Alternative 4 (Figure 6-9) meets and exceeds facility requirements for 2030. This alternative is a compilation of the first three alternatives. The three main development locations features of this alternative are the terminal in Development Area D, a new remote helicopter operating area in Development Area G and based aircraft facilities (hangars) in Development Area A. In comparison to the other three alternatives, Airpark Way is suggested to be modified only in one place – to cut across the hill at Development Area D. Since helicopters do not require direct airfield access, the helicopter operating area (Development Area G) does not need to be graded to match the existing hangar development adjacent to Airpark Way. Therefore, the other alternatives require more extensive grading. Similarly, since direct airfield access is not required, Airpark Way does not need to be relocated.

Phase 1: The first phase is similar to Phase 1 for Alternative 1 Development Area D is proposed to be graded and the hill stabilized. This area will become the new terminal area allowing for an approximately 8,000-square foot terminal, 4,000-square foot restaurant, picnic area, and 93 automobile parking spaces. Airpark Way is rerouted to accommodate the terminal area. New tie-downs are provided adjacent to the terminal (13 based and 28 transient). The new terminal area is completed in Phase 1. It is suggested that individual hangars and parking designations be built as infill throughout the airport.

Phase 2: The second phase of this project incorporates parts of Phase 1 from Alternative 3. Development Area G is to be developed as a remote helicopter operating area. This area will

200' 0 200'
GRAPHIC SCALE

FACILITIES TABLE				
DESCRIPTION	EXISTING	PROVIDED (TOTAL)	REQUIRED (2030)	DIFFERENCE
INDIVIDUAL HANGARS	443	558	554	4
TIE-DOWNS*	220	334	324	10
CONVENTIONAL HANGARS (FIXED WING)	36,865 SF	57,350 SF	45,650 SF	11,700 SF
CONVENTIONAL HANGARS (HELICOPTER)	8,100 SF	21,628 SF	14,580 SF	7,048 SF
TERMINAL	2,800 SF	8,040 SF	7,920 SF	120 SF
RESTAURANT	2,730 SF	4,040 SF	4,000 SF	40 SF
AUTOMOBILE PARKING	152	262	234	28

* DERELICT AIRCRAFT TIE-DOWNS NOT INCLUDED

LEGEND	
DESCRIPTION	SYMBOL
INDIVIDUAL HANGARS	
TIE-DOWNS	
TIE-DOWNS FOR DERELICT AIRCRAFT	
CONVENTIONAL HANGARS	
TERMINAL	
RESTAURANT	
NON-AVIATION USE	
AUTOMOBILE PARKING	
ACQUIRE IN FEE	
HELICOPTER OPERATING AREA	
GRASS/RECREATION AREA	
WEATHER SENSOR	
ROAD	
FENCING	

HIGHLIGHTS OF ALTERNATIVE

- Meets 2030 requirements
- Remote Helicopter Operating Area
- Expand existing terminal facilities
- Increase based aircraft parking in current helicopter area

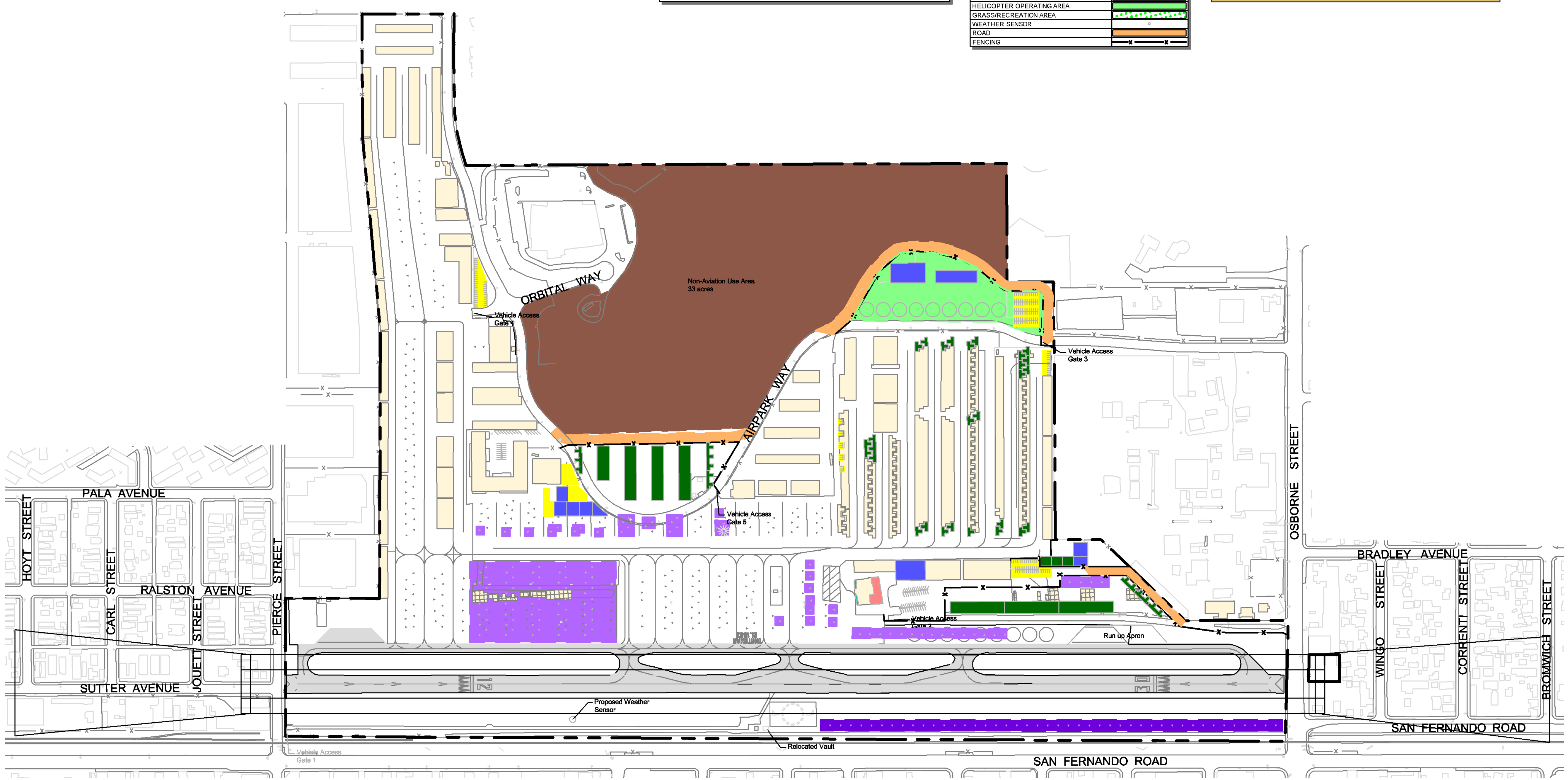
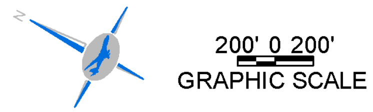


Figure 6-8
Landside Alternative 3



FACILITIES TABLE				
DESCRIPTION	EXISTING	PROVIDED (TOTAL)	REQUIRED (2030)	DIFFERENCE
INDIVIDUAL HANGARS	444	569	554	15
TIE-DOWNS*	220	325	324	1
CONVENTIONAL HANGARS (FIXED WING)	36,865 SF	63,128 SF	45,650 SF	17,478 SF
CONVENTIONAL HANGARS (HELICOPTER)	8,100 SF	29,122 SF	14,580 SF	14,642 SF
TERMINAL	2,800 SF	8,040 SF	7,920 SF	120 SF
RESTAURANT	2,730 SF	4,040 SF	4,000 SF	40 SF
AUTOMOBILE PARKING	152	234	234	0
* DERELICT AIRCRAFT TIE-DOWNS NOT INCLUDED				

LEGEND	
DESCRIPTION	SYMBOL
INDIVIDUAL HANGARS	
TIE-DOWNS	
TIE-DOWNS FOR DERELICT AIRCRAFT	
CONVENTIONAL HANGARS	
TERMINAL	
RESTAURANT	
NON-AVIATION USE	
AUTOMOBILE PARKING	
ACQUIRE IN FEE	
HELICOPTER OPERATING AREA	
GRASS/RECREATION AREA	
WEATHER SENSOR	
ROAD	
FENCING	

HIGHLIGHTS OF ALTERNATIVE

- Meets 2030 requirements
- New Terminal Area approximately midfield
- Remote Helicopter Operating Area
- Exanded aircraft facilities

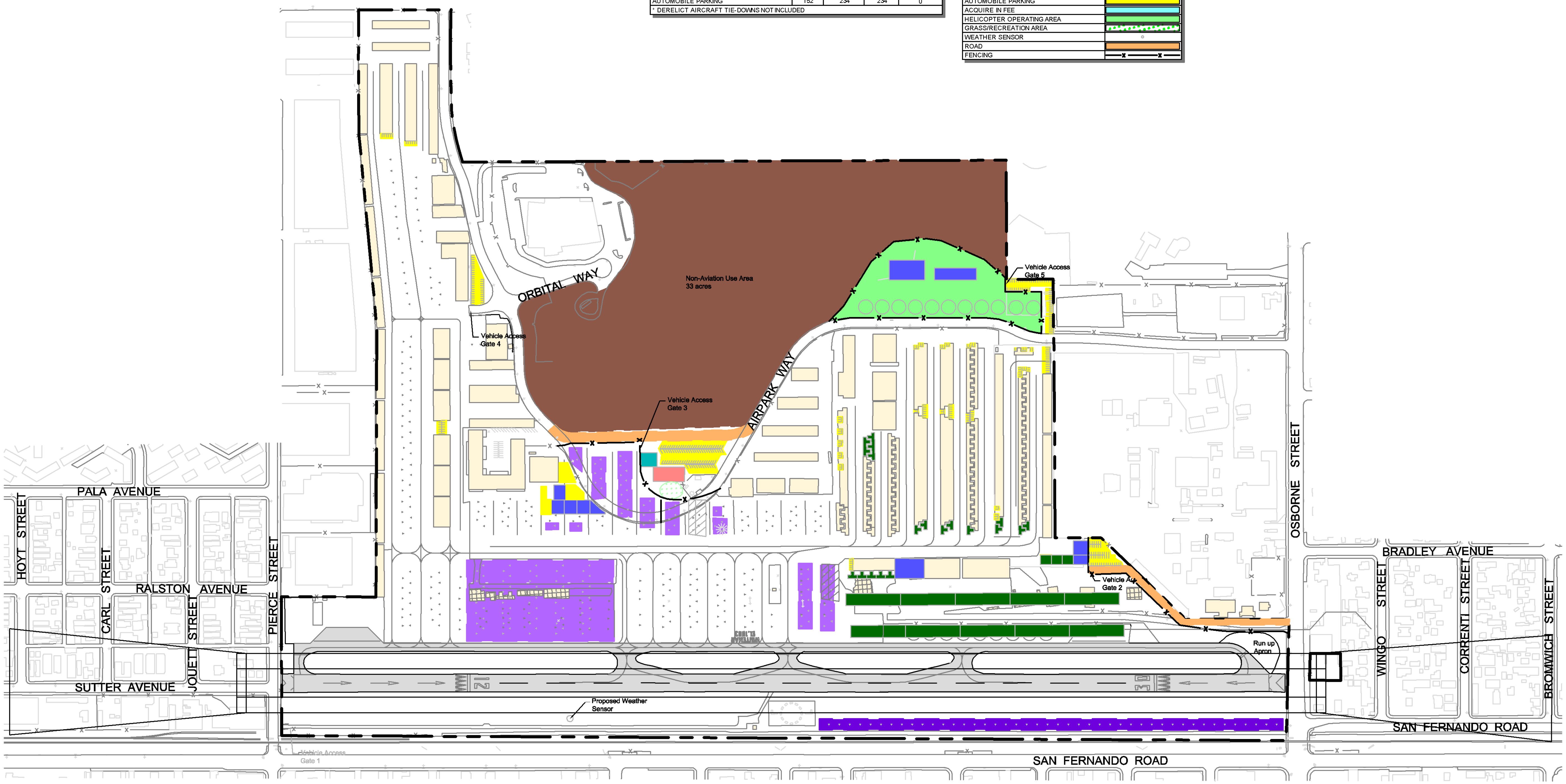


Figure 6-9
Landside Alternative 4

include eleven heliports, two conventional hangars, and an automobile parking lot. In addition, the construction in the Development Area A is suggested to start. This includes rerouting the Airport Entrance Road, building three conventional hangars, constructing approximately 61 individual hangars, and relocating parking facilities. The helicopter operating area will be at a different elevation than the rest of the airport, which will not influence expected operations. Helicopter operators will be provided 205,890 square feet of total apron, helipad, and hangar space.

Phase 3: At the completion of the new helicopter operating area, the current helicopter area will be used to build an additional 50 individual hangars and relocate the run up apron. This long-term phase also includes the completion of other projects in the former terminal/helicopter operating area. Tie-down facilities adjacent to the current terminal are proposed to be expanded and Development Area E is suggested to provide tie-downs for derelict aircraft only. This will allow approximately 24 tie-downs on the airport to be freed up for regular based aircraft. Of the existing tie-downs, an additional six will be designated transient tie-downs to meet long-term requirements. A weather sensor is proposed to be built north of the tower, adjacent to other weather sensors located on the airport.

	2030	
Item	**Required**	**Provided**
General Aviation Terminal	7,920 SF	8,040 SF
Restaurant	5,000 SF	4,040 SF
Tie-Downs	324	325
Individual Hangars	554	569
Conventional Hangars (Fixed Wing)	45,850 SF	63,128 SF
Conventional Hangars (Helicopters)	14,580 SF	29,122 SF
Automobile Parking	234	234

Source: AECOM analysis.

Evaluation of Landside Alternatives

The four landside alternatives were ranked in a similar manner as the airside alternatives. Table 6-4 depicts the ranking according to the evaluation criteria previously defined. A brief discussion of how the alternatives rank follows.

All four alternatives meet the requirements for year 2030. In addition, efforts were made to meet FAA taxilane obstacle free area design standards; however, in cases where these standards could not be met, development was designed to match existing conditions found at the airport. This means that in some hangar areas, the distance between hangars will limit hangar use to smaller aircraft.

As seen in the table, the alternatives were closely ranked. Alternative 2 ranks slightly lower in its ability to accommodate changes, largely due to the fact that should land not be acquired as shown, it would be severe detriment to the alternative, and the alternative would not be able to accommodate forecasted demand.

Alternative 1 ranks very well in operational efficiency as it centralizes the terminal and retains the helicopters in their present location. Movement of the helicopters to another area of the airport has significant air traffic control concerns.

All alternatives are expensive due in large part to the fact that easily developable areas have all but vanished at Whiteman. Large areas of land for new hangars are not available, forcing the need to perform significant grading of the adjacent hill, or acquisition of land adjacent to the airport.

Table 6-4
LANDSIDE EVALUATION MATRIX

Criterion	No Action	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Long-Term Aviation Needs	Poor – Does not meet 2030 facility requirements	Excellent – Exceeds 2030 facility requirements.	Good – Meets 2030 facility requirements.	Good – Meets 2030 facility requirements.	Good – Meets 2030 facility requirements.
Safety of Aircraft Operations	Good – No change.	Good – No change.	Good – No change.	Good – No change.	Good – No change.
Community and Environmental Compatibility	Excellent – Does not impact the community.	Good – 2.5 acre acquisition is minimal impact.	Good – 5.9 acre acquisition is a potential impact.	Fair – helicopter operations moved closer to residences.	Fair – helicopter operations moved closer to residences.
Flexibility to Accommodate Change	Poor – Additional demand would go unmet.	Good – Helicopter area is limited and new road has sharp turn.	Fair – limited hangar and tie-down flexibility; land acquisition may be limiting factor.	Good – New road has sharp turn, limited hangar space.	Good – but limited automobile parking and tie-downs.
Efficiency of Construction Phasing	Excellent – No changes planned.	Excellent – short, intermediate, and long-term needs are met.	Excellent – short, intermediate, and long-term needs are met.	Excellent – short, intermediate, and long-term needs are met.	Excellent – short, intermediate, and long-term needs are met.
Operational Efficiency	Poor – Without new facilities, aircraft and hangars demand will not be met and aircraft will be haphazardly organized.	Excellent – centralized terminal; helicopters in current location.	Poor – remote terminal difficult to navigate to/from; consolidated helicopter area in middle of tie-down ramp.	Good – Terminal in current location; remote helicopters outside of ATCT view and potential conflicts with LA County Fire.	Fair – centralized terminal; remote helicopters outside of ATCT view and potential conflicts with LA County Fire.
Relative Financial Effectiveness	Excellent – No costs.	Fair – Grading of hill, road relocation, and land acquisition.	Poor – Grading of hill, land acquisition, road relocation, moving heliports.	Fair – Grading of hill, road relocation, moving heliports.	Good – Grading of hill, less road relocation, and moving heliports.

Source: AECOM analysis.

Recommended Landside Alternative

Alternative 1 is the recommended landside alternative. While this alternative does not rank highest in every category, it provides a good balance of operational efficiency, flexibility, construction phasing, and financial effectiveness. This alternative also represents the County's intended development of airport for the last several years. The County has been striving to locate all the helicopter operators in Development Area A and planning for a new terminal in Development Area D for several years. In addition, during the March 11th public open house attendees provided input on their most preferred landside alternative. Landside Alternative 1 was the most favored alternative. Therefore, Landside Alternative 1 is the recommended landside alternative.

GENERAL AVIATION TERMINAL BUILDING

As was noted in Chapter 5, additional general aviation terminal space is required in the year 2030. Terminal space can be provided by the County or by FBOs at the airport. The current County terminal building is approximately 2,730 square feet and nearly 8,000 square feet are required in 2030. While Vista Aviation provides some terminal uses, the County has expressed interest in developing a dedicated terminal building that will also house airport administration offices, office rental spaces, and a meeting room.

The County recently (early 2000s) constructed a new terminal building at El Monte Airport (another County facility), approximately 8,000 square feet in size. While the size is nearly identical to the requirements for year 2030 at Whiteman, it is important to point out that the terminal included provisions for a restaurant. The 8,000 square feet in terminal area requirement at Whiteman does not include the restaurant.

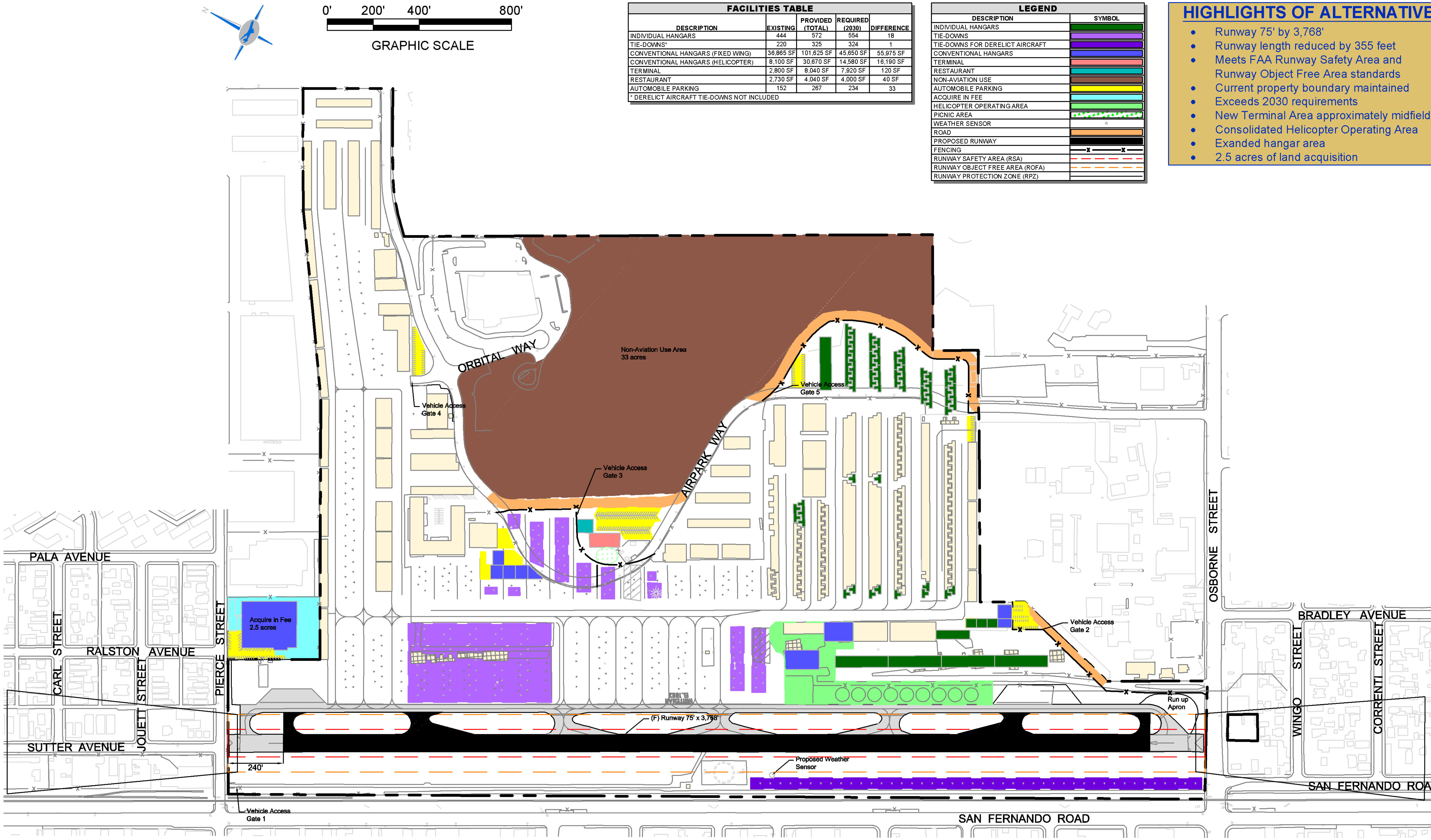
While all the alternatives described above provide a separate building for a restaurant, it is not uncommon to have a restaurant inside the terminal building. Should this be done at Whiteman, it is recommended that a two-story terminal building be provided, with the top level featuring the restaurant. Figure 6-10 shows a potential terminal building layout for a two-story, 16,000-square foot building with a restaurant located on the second story.

The recommended location for the terminal requires significant grading of the hill on airport property. It is realized that this substantially increases project costs. Therefore, should funding not be available, the County should seek to expand the existing terminal in order to meet demand.

RECOMMENDED DEVELOPMENT CONCEPT

The recommended development concepts are Airside Alternative 1 and Landside Alternative 1 (Figure 6-11). Airside Alternative 1 is the recommended alternative as it is the most cost efficient, does not impact the community, and allows for full safety areas to be provided without the use of declared distances. Landside Alternative 1 provides the best operational efficiency and is best able to accommodate facility requirements during the intermediate planning years. This alternative is aligned with recent development at the airport and retains the County's vision of expanding the current helicopter area while centralizing the terminal. Development shown in Figure 6-11 will form the basis for the Airport Layout Plan.

Figure 6-10
Potential Terminal Building Layout



FACILITIES TABLE

DESCRIPTION	EXISTING	PROVIDED (TOTAL)	REQUIRED (2030)	DIFFERENCE
INDIVIDUAL HANGARS	444	572	554	18
TIE-DOWNS*	220	325	324	1
CONVENTIONAL HANGARS (FIXED WING)	36,865 SF	101,625 SF	45,650 SF	55,975 SF
CONVENTIONAL HANGARS (HELICOPTER)	8,100 SF	30,670 SF	14,580 SF	16,190 SF
TERMINAL	2,800 SF	8,040 SF	7,920 SF	120 SF
RESTAURANT	2,730 SF	4,040 SF	4,000 SF	40 SF
AUTOMOBILE PARKING	152	267	234	33

* DERELICT AIRCRAFT TIE-DOWNS NOT INCLUDED

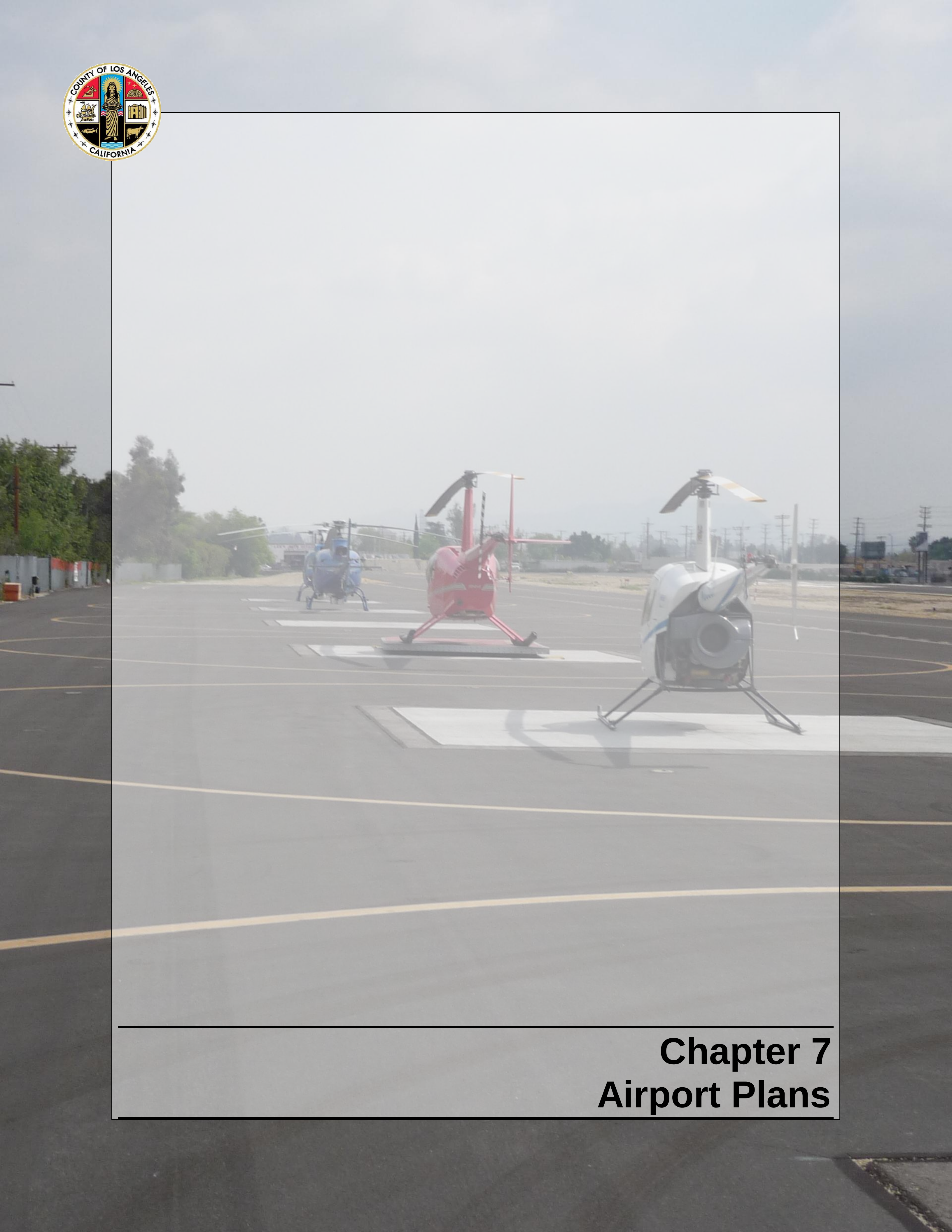
LEGEND

DESCRIPTION	SYMBOL
INDIVIDUAL HANGARS	
TIE-DOWNS	
TIE-DOWNS FOR DERELICT AIRCRAFT	
CONVENTIONAL HANGARS	
TERMINAL	
RESTAURANT	
NON-AVIATION USE	
AUTOMOBILE PARKING	
ACQUIRE IN FEE	
HELICOPTER OPERATING AREA	
PICNIC AREA	
WEATHER SENSOR	
ROAD	
PROPOSED RUNWAY	
FENCING	
RUNWAY SAFETY AREA (RSA)	
RUNWAY OBJECT FREE AREA (ROFA)	
RUNWAY PROTECTION ZONE (RPZ)	

HIGHLIGHTS OF ALTERNATIVE

- Runway 75' by 3,768'
- Runway length reduced by 355 feet
- Meets FAA Runway Safety Area and Runway Object Free Area standards
- Current property boundary maintained
- Exceeds 2030 requirements
- New Terminal Area approximately midfield
- Consolidated Helicopter Operating Area
- Exanded hangar area
- 2.5 acres of land acquisition

Figure 6-11
Recommended Development Concept



Chapter 7
Airport Plans

Chapter 7
Airport Plans

INTRODUCTION

This chapter, Airport Plans, is intended to detail the 20-year development program, as recommended by this Master Plan for Whiteman Airport. The design of the airport system, as described herein, is based upon the facility requirements discussed in Chapter 5 and the recommended development concept presented in Chapter 6. This airport development program is intended to integrate existing facilities and improvements needed over the next twenty years within the framework of an implementation schedule.

This chapter is comprised of a text discussion and accompanying graphics, some of which are reductions of large-scale plans prepared during the course of this study, which graphically depict the recommended development plan for Whiteman Airport. The overall development plan for the airport is depicted on the Airport Layout Plan (ALP). The ALP is a graphic presentation of existing and ultimate airport facilities and is a key document that serves as a reference of aviation requirements, as well as land use and financial planning. In order to receive federal funding assistance, proposed projects must be consistent with the ALP, and thus the ALP must be periodically updated.

Many development recommendations contained in this report, and indicated on the airport plans, are based on projected traffic levels and attainment of these levels. It cannot be overemphasized that where development is recommended based upon demand or traffic levels (such as hangars), 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 forecasts of traffic presented in Chapter 4.

It is also important to point out the schedule of improvements proposed in this plan is contingent upon the availability of Federal, State, and local funds, and investment from the private sector. While improvements are scheduled for specific years in this report, it must be remembered the programming of the Airport Improvement Program by the FAA will determine the timing of many projects. Development projects at Whiteman Airport must be reconciled with development priorities of other airports in the region. Therefore, implementation of projects will then depend on the availability of funds and FAA programming, as well as attainment of activity levels. Chapter 8 addresses financial aspects of the plan, including FAA funding, and presents a funding plan to implement improvements shown on the ALP.

In addition to the ALP, six other drawings are included in the set of plans prepared as part of this Master Plan. These are a Cover Sheet, the Building Area Layout, Airport Airspace Drawing, Inner Portion Approach Surface Drawing, Land Use Plan, and Exhibit “A” – Property Map. Reduced scale versions of these plans are included in Appendix D.

AIRPORT LAYOUT PLAN

The Airport Layout Plan (ALP), Figure 7-1, delineates the overall development plan for Whiteman Airport as recommended in this Master Plan. This section discusses, in phases, the projects shown on the ALP. Project phasing is not depicted on the ALP drawing, which gives the County additional flexibility with the FAA to program projects as needed to satisfy demand, rather than in a set sequence. However, phasing of the developments is used to develop the financial projections described in Chapter 8. The development phases used within this study are as follows: the short-term or Phase 1 (1-5 years); the intermediate-term or Phase 2 (6-10 years); and the long-term or Phase 3 planning period (11-20 years). Projects shown on the ALP, and phasing discussed herein, vary from the recommended plan presented in Chapter 6 due to further discussions with the County and funding considerations discussed in the next chapter.

As a graphic overview of the recommended airport development, the ALP is supported by the other plans discussed in this section. The Airport Layout Plan conforms to guidelines set forth by the FAA for the preparation of this plan. The ALP is the principal plan depicting the recommended improvements and changes to the airport configuration, and support areas. The recommended development program shown on the ALP is summarized below on a phase-by-phase basis.

Phase 1 Development (2009 – 2013)

Phase 1 development at Whiteman Airport encompasses the first five-year period (2009-2013) of the overall plan. The improvements discussed below are considered to be of the highest priority in the total development plan, but are coordinated with the remainder of the plan and are supported by findings reached during previous portions of the study. The primary focus of Phase 1 is to move the general aviation terminal and associated facilities to allow for development of the helicopter operating area. Table 7-1 summarizes Phase 1 improvements.

Table 7-1
RECOMMENDED PHASE 1 DEVELOPMENT

Project	Timing
WAAS/LPV Survey	Underway
Slurry Seal Aircraft Parking Ramp	2011
Perimeter Fencing Rehabilitation and “Penalty Box” Gate Access System	2011
Grade Hill for Terminal Facility	2012
Relocate Terminal Facility	2012 – 2014
Reroute Airpark Way behind Terminal Facility	2012
Construct Transient Apron	2013

Source: AECOM.

WAAS/LPV Survey (Long-Term)

As part of FAA’s Next Generation (NextGen) program, there is an effort to develop WAAS/LPV instrument approaches for all airports. These are satellite based approaches, replacing current radar based approaches. In order for these new approaches to be developed, an obstruction survey must be performed (this project). Depending upon need and FAA programming, this project may occur earlier.

Slurry Seal Aircraft Parking Ramp (2011)

This project applies rubberized emulsion aggregate slurry to the north aircraft parking ramp. Existing pavement markings will be removed and soil sterilant applied. Existing cracks will be routed and filled. Once the slurry is placed, airfield pavement markings will be applied.

ABBREVIATIONS:

APP Approach
ARP Airport Reference Point
ATCT Airport Traffic Control Tower
AWOS Automated Weather Observing System
BRL Building Restriction Line
DEP Departure
Disp. Displaced
(E) Existing
Elev. Elevation
ENTR. Entrance
Est. Estimated
(A) Future
LOS Line of Sight
NDB Non-Directional Beacon
OFZ Obstacle Free Zone
PAPI Precision Approach Path Indicator
Pt. Point
REIL Runway End Identifier Lights
ROFA Runway Object Free Area
RPZ Runway Protection Zone
RSA Runway Safety Area
RW Runway
TDZE Touchdown Zone Elevation
TSS Threshold Siting Surface
TW Taxiway

OBSTACLE FREE ZONE (OFZ) PENETRATIONS

#	DESCRIPTION	REQUIRED	EXISTING	ACTION
1	AIRPORT PROPERTY FENCE/ PIERCE STREET	200'	55'	RELOCATE RUNWAY THRESHOLD 183'/ ELIMINATE DECLARED DISTANCES
2	AIRPORT PROPERTY FENCE/ OSBORNE STREET	200'	73'	RELOCATE RUNWAY THRESHOLD 169'/ ELIMINATE DECLARED DISTANCES

DEVIATIONS FROM FAA DESIGN STANDARDS

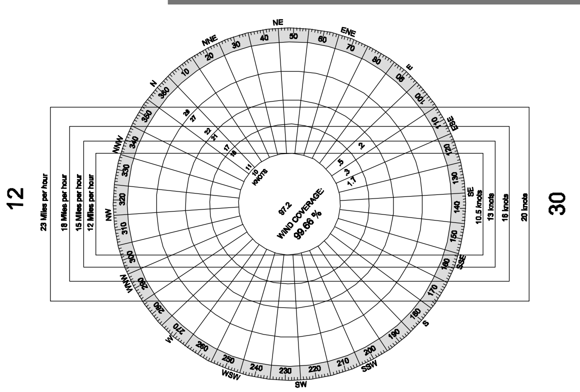
	DESCRIPTION	REQUIRED	EXISTING	ACTION
A	RSA LENGTH[1]	240'	55'	RELOCATE RUNWAY THRESHOLD 183'/ ELIMINATE DECLARED DISTANCES
	ROFA LENGTH[1]	240'	55'	
	OFZ LENGTH[1]	200'	55'	
B	RSA LENGTH[1]	240'	73'	RELOCATE RUNWAY THRESHOLD 169'/ ELIMINATE DECLARED DISTANCES
	ROFA LENGTH[1]	240'	73'	
	OFZ LENGTH[1]	200'	73'	

[1] Beyond runway end

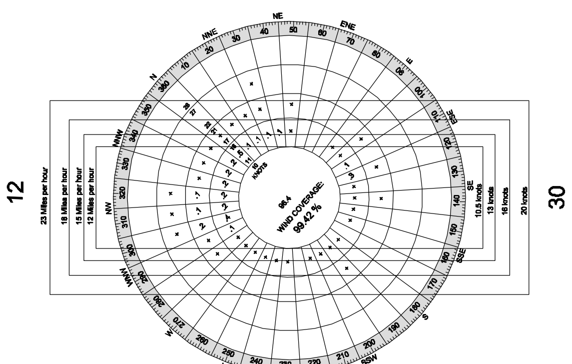
WIND COVERAGE

RUNWAY	CROSSWIND COVERAGE							
	ALL WEATHER				IFR			
	10.5 Kts.	13 Kts.	16 Kts.	20 Kts.	10.5 Kts.	13 Kts.	16 Kts.	20 Kts.
12	59.34%	59.63%	59.80%	59.83%	70.68%	70.68%	70.68%	70.68%
30	87.45%	87.48%	87.50%	87.51%	98.76%	98.90%	98.94%	98.94%
12-30	99.42%	99.74%	99.93%	99.97%	99.66%	99.80%	99.83%	99.83%

Source: National Climatic Data Center Asheville, NC. Based on 14,435 observations (1999 - 2007) taken at Whiteman, CA.



IFR WIND ROSE



ALL WEATHER WIND ROSE

NOTES:

1. California Coordinate System, Zone 5 NAD 83.
2. All elevations are in NAVD 88. All future elevations are estimated.
3. Threshold Siting Surfaces are shown in plan view on Sheet 4 and in profile view on Sheet 5. There are penetrations to the Runway 12 Threshold Siting Surface.
4. Hangar layouts shown are conceptual to depict potential future capacities. The ultimate configurations may vary based on actual demand.
5. The airport is part of Lot 37 San Fernando Road and has not been sectioned. The nearest section corner is over two miles northeast of the airport.
6. Declared distances published in the Airport/Facility Directory (23 September 2010 - 18 November 2010) will not apply after the relcoation of runway thresholds. Approval date of existing declared distances are unknown.
7. Future tie-downs parallel to San Fernando are only for non-airworthy aircraft. Movement of aircraft in this area requires closure of the runway.
8. Monuments are either protected by a 4" brass disk embedded in 12 square inches of concrete mass or by a monument well.

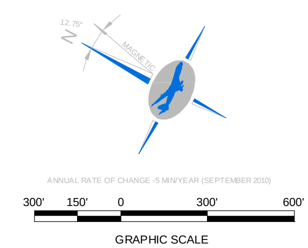
AIRPORT DATA

DESCRIPTION		EXISTING	FUTURE
AIRPORT ELEVATION (MSL)		1,005'	1,004'
AIRPORT REFERENCE POINT (ARP) COORDINATES (NAD 83)	LATITUDE	34°15'33.57"N	34°15'33.33"N
	LONGITUDE	118°24'48.36"W	118°24'48.30"W
NAVAIDS (i.e. ILS, BEACON)		BEACON, NDB	SAME
MEAN MAX. TEMP. OF HOTTEST MONTH		89.1°(July)	SAME
AIRPORT REFERENCE CODE		B-I, SMALL	SAME
GPS AT AIRPORT		YES	SAME

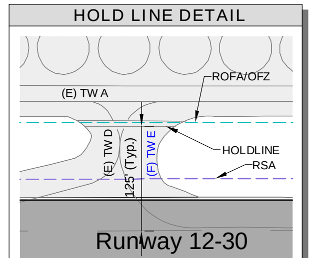
DECLARED DISTANCES

	RUNWAY 12	RUNWAY 30
TAKEOFF RUN AVAILABLE (TORA)	3,442'	3,191'
TAKEOFF DISTANCE AVAILABLE (TODA)	4,120'	4,120'
ACCELERATE-STOP DISTANCE AVAILABLE (ASDA)	3,910'	3,940'
LANDING DISTANCE AVAILABLE (LDA)	3,181'	3,462'

See Note 6.



HOLD LINE DETAIL



Scale: 1" = 100'

LEGEND

DESCRIPTION	EXISTING	FUTURE
AIRPORT BOUNDARY		SAME
AIRFIELD PAVEMENT		
AIRFIELD PAVEMENT TO BE REMOVED	NONE	
BUILDING RESTRICTION LINE (BRL)		SAME
RUNWAY OBJECT FREE AREA (ROFA)/ OBSTACLE FREE ZONE (OFZ)		SAME
RUNWAY SAFETY AREA (RSA)		SAME
RUNWAY PROTECTION ZONE (RPZ)		
BUILDINGS		
BUILDINGS TO BE REMOVED	NONE	
GROUND CONTOURS	1000'	SAME
AIRPORT REFERENCE POINT (ARP)		
HELIPADS		SAME
THRESHOLD SITING SURFACE		SAME
FENCE		
ROAD/PARKING		
ROTATING BEACON		SAME
MONUMENT	M	SAME
HOLDLINE		
RUNWAY LIGHTS/PAPI		NOT SHOWN
HELICOPTER OPERATING AREA	NOT SHOWN	
AVIGATION EASEMENT	NONE	
ATCT LOS		NOT SHOWN
GATE/TO BE REMOVED	G	G / G

MONUMENT DATA

	LATITUDE	LONGITUDE
1	34°15'47.84"N	118°25'03.34"N
2	34°15'43.01"N	118°24'58.24"N
3	34°15'43.09"N	118°25'00.73"N
4	34°15'33.29"N	118°24'47.96"N
5	34°15'23.57"N	118°24'37.69"N
6	34°15'19.03"N	118°24'35.58"N
7	34°15'18.42"N	118°24'32.24"N
8	34°15'48.83"N	118°24'29.87"N

For monument protection see note 8.

FACILITY TABLE

#	DESCRIPTION
1	PRIVATELY OWNED HANGARS
2	LA COUNTY OWNED HANGARS
3	FUEL ISLAND
4	TERMINAL (to be relocated)
5	AIRPORT TRAFFIC CONTROL TOWER
6	FUTURE HANGARS
7	FUTURE AWOS
8	FUTURE TERMINAL/RESTAURANT
9	WASH RACK

For more details see Sheet 3 - Building Area Plan.

RUNWAY END DATA

RUNWAY		EXISTING	FUTURE
12	LATITUDE	34°15'48.70"N	34°15'47.34"N
	LONGITUDE	118°25'04.53"W	118°25'03.10"W
	ELEVATION[1]	1,005.4'	1,004.0'[1]
30	LATITUDE	34°15'18.06"N	34°15'19.33"N
	LONGITUDE	118°24'32.15"W	118°24'33.49"W
	ELEVATION[1]	962.0'	964.0'[1]

[1] See Note 2.

TAXIWAY DETAILS

DESIGNATOR		WIDTH
EXISTING	FUTURE	
TAXIWAY A PARALLEL	TAXIWAY A PARALLEL	35'
TAXIWAY A ENTR.	-	41'
-	TAXIWAY A ENTR.	41'
-	TAXIWAY B	80'
TAXIWAY B	TAXIWAY C	80'
TAXIWAY C	TAXIWAY D	80'
TAXIWAY D	TAXIWAY E	80'
-	TAXIWAY F	80'

RUNWAY DATA

DESCRIPTION		RUNWAY 12 - 30 EXISTING	RUNWAY 12 - 30 FUTURE
EFFECTIVE GRADIENT (IN %)		1.04	1.10
MAXIMUM GRADIENT (IN %)		2.04	SAME
RUNWAY BEARING		N 41° 16' 04.94" W	SAME
WIND COVERAGE % (10.5 KNOTS)		99.42	SAME
APPROACH VISIBILITY MINIMUMS		1 MILE	SAME
DESIGN AIRCRAFT	MAKE AND MODEL	BEECH KING AIR B100	SAME
	WINGSPAN (FEET)	45.8	SAME
	UNDERCARRIAGE WIDTH	14.92	SAME
	APPROACH SPEED (KNOTS)	111	SAME
	MAX. TAKEOFF WEIGHT (LBS)	11,800	SAME
RUNWAY MARKING		VISUAL	NON-PRECISION
APPROACH CATEGORY (FAR PART 77)	RUNWAY 12	NON-PRECISION	SAME
	RUNWAY 30	NON-PRECISION	SAME
RUNWAY ℄ TO PARALLEL TAXIWAY ℄		150'	SAME
TAXIWAY ℄ TO FIXED OR MOVABLE OBJECT		44.5'	SAME
TAXIWAY OBJECT FREE AREA WIDTH		89'	SAME
TAXIWAY SAFETY AREA WIDTH		49'	SAME
TAXIWAY WINGTIP CLEARANCE		20'	SAME
RUNWAY ELEVATIONS (NAVD 88) (See Note 2)	TOUCHDOWN ZONE (TDZ)	1,000'	SAME
	HIGH POINT	1,005.4'	1,004.0'
	LOW POINT	962.0'	964.0'
	END POINT (RUNWAY 12/30)	1,005.4'/962.0'	1,004.0'/964.0'
BLAST PAD (ASPHALT) (WIDTH X LENGTH)	RUNWAY 12	78' x 48'	80' x 60'
	RUNWAY 30	77 x 60'	80 x 60'
LINE OF SIGHT REQUIREMENT MET		YES	SAME
RUNWAY LENGTH		4,120'	3,768'
RUNWAY WIDTH		75'	SAME
RUNWAY/TAXIWAY PAVEMENT MATERIAL		ASPHALT	SAME
APPROACH SLOPE		20:1	SAME
PAVEMENT STRENGTH (S) (000 LBS)		12.5	SAME
RUNWAY LIGHTING		MIRL	SAME
NAVIGATIONAL AIDS		Beacon/GPS	SAME
VISUAL AIDS	RUNWAY 12	REIL, PAPI	SAME
	RUNWAY 30	REIL, PAPI	SAME
RUNWAY SAFETY AREA	LENGTH[1]	55'/73'	240'
	WIDTH	120'	SAME
RUNWAY OBJECT FREE AREA	LENGTH[1]	55'/73'	240'
	WIDTH	250'	SAME
OBSTACLE FREE ZONE	LENGTH[1]	55'/73'	200'
	WIDTH	250'	SAME
RUNWAY CENTERLINE TO HOLD LINE		125'	SAME

[1] Length from runway end

FAA APPROVAL

Approved conditionally JAN 2 4 2011

Subject to comments contained in our letter dated: JAN 2 4 2011

FEDERAL AVIATION ADMINISTRATION
Western-Pacific Region

By

Manager - LAX-ADO

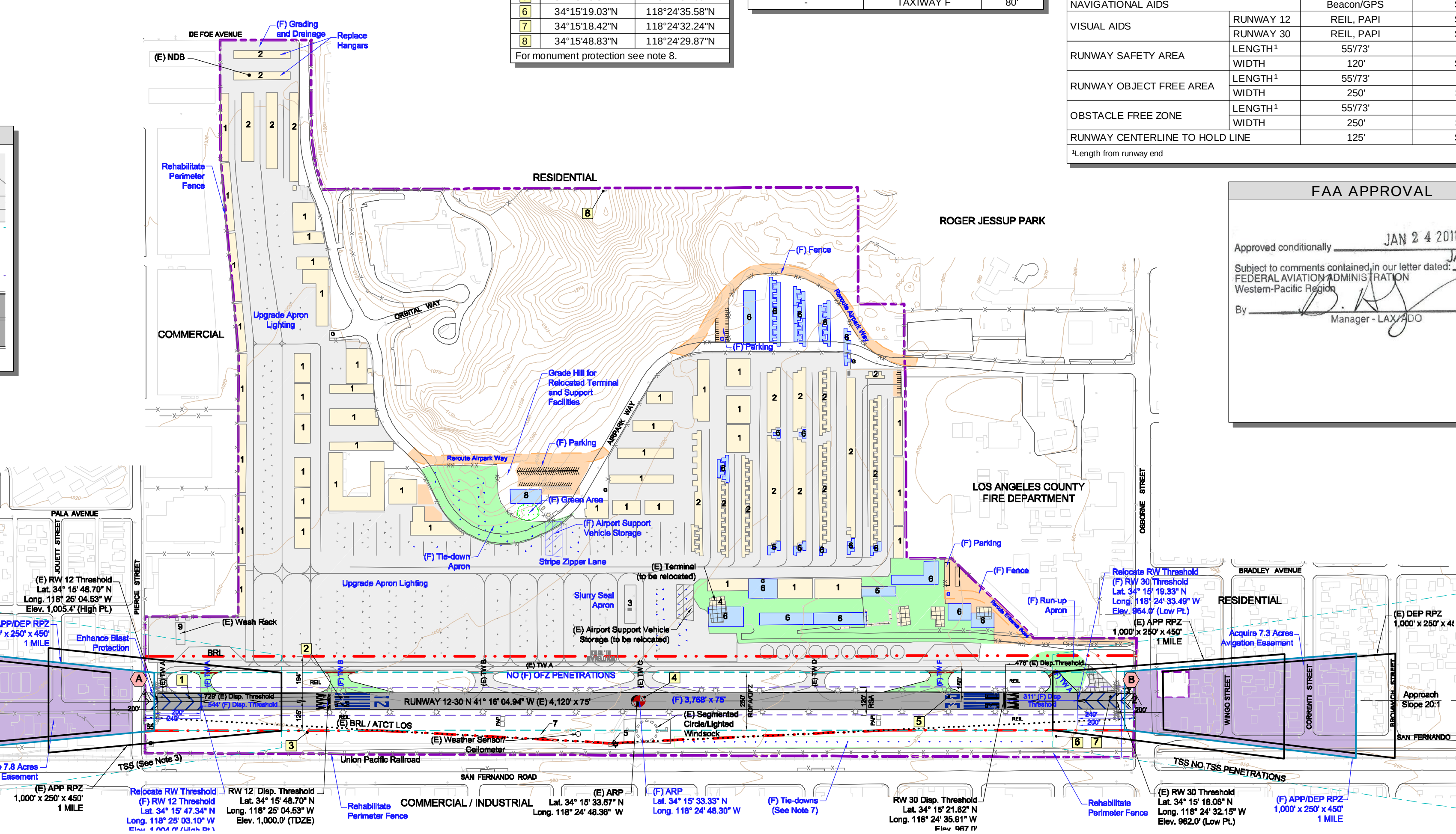


Figure 7-1
Airport Layout Plan

Perimeter Fencing Rehabilitation and "Penalty Box" Gate Access System (2011)

This project replaces approximately 10,000 linear feet of perimeter fencing. New perimeter fencing will be comprised of 8-foot tall chain link fencing, with 3 additional strands of barbed wire on top, for a total perimeter fence height of 9 feet. Existing vehicle gates will be upgraded to "penalty box" gates, preventing piggybacking.

Grade Hill for Terminal Facility (2012)

A portion of the existing hill needs to be graded and the remaining area of the hill stabilized allowing for approximately 2.6 acres of aviation uses. This area will be used for a new GA terminal facility, associated transient ramp, and vehicle parking. The new terminal will have provisions for a restaurant. It is important to note that this area has already been graded to some degree, and therefore, the area has already been disturbed. Approximately 264,000 cubic yards of earth are to be removed to enable the terminal facility to be relocated.

This is an enabling project for the airport as a number of developments are contingent upon removal of this hill. Removal of the hill is required for the new terminal facilities, but additionally, the recommended concept reconfigures the current helicopter area to provide a secure landside/airside separation and to provide additional based aircraft storage facilities. However, before the area can be reconfigured, the existing terminal building must be relocated.

Relocate Terminal Facility (2012-2014)

Reroute Airpark Way behind Terminal Facility (2012)

Once the hill has been graded, Airpark Way will be rerouted to provide the new terminal facility with direct airfield access to the airport. Airpark Way will provide vehicle access to the terminal facility along with other airport facilities it currently serves. The road will be routed adjacent to the stabilized portion of the hill, along the northeastern side of the proposed terminal facility. This project is contingent upon the hill being graded.

Construct Transient Apron (2013)

A 71,000 square yard transient apron will be constructed adjacent to the proposed terminal. This apron will accommodate 35 transient tie-downs. This project will construct necessary perimeter fencing to secure the apron and will include installation of apron lights. This project is contingent upon the hill being graded.

Phase 2 Development (2014 – 2018)

Development for Phase 2, or the intermediate-term development phase, encompasses the second five-year period (2016-2020). Improvements for Phase 2 are listed in Table 7-2. Phase 2 completes the relocation of the terminal facility and relocates the runway thresholds. Phase 2 also focuses on expanding the helicopter area.

Relocate Terminal Facility (continued) (2012-2014)

Construct Terminal Facility, Associated Parking, and Green Space (2014)

The recommended concept provides a new two story terminal building (16,000 total square feet) located approximately midfield. The building will accommodate a lobby/waiting area for pilots and passengers, administrative offices, a pilot lounge, flight planning offices, and public restrooms. The building is also able to accommodate a pilot supply shop, office space that can be leased, and a restaurant. The restaurant will be located on the second story of the building.

Vehicle parking (93 spaces) are located adjacent to the new terminal building. Also adjacent to the terminal is a green space/viewing area with trees, grass, and benches. This area is approximately 5,600 square feet and will be secured from the airfield and will provide the general public the ability to view activity at the airport. Since several mature trees are located in the current viewing area, consideration may be given to relocating the trees, rather than planting new trees.

The new terminal facility must be completed prior to the existing terminal facility being removed. This project is contingent upon the hill being graded.

Table 7-2
RECOMMENDED PHASE 2 DEVELOPMENT

Project	Timing
Relocate Terminal Facility (continued)	2012 – 2014
Construct Terminal Facility, Associated Parking, and Green Space	2014
Relocate Runway Thresholds and Paint Non-Precision Markings	2014
Construct Runway 30 Hold Apron	2014
Demolish Existing Terminal Facility	2015
Reroute Airport Entrance Road and Construct Automobile Parking Lot	2015
Construct New Conventional Hangar in Helicopter Area	2015
Construct Hangars	2015
Construct Conventional Hangars	2016
Stripe Zipper Lane	2016
Enhance Blast Protection	2017
Survey Underground Utilities – Develop Utility Map	2018
Replace Northeast County T-Hangars	2018

Source: AECOM.

Relocate Runway Thresholds and Paint Non-Precision Markings (2014)

The recommended alternative suggests shortening the runway to provide for full RSA and ROFA on airport property at both runway ends. Relocated runway thresholds will be painted. Displaced threshold markings will be reconfigured to reflect non-precision instrument approach markings. The Runway 30 threshold will be relocated 167 feet and the Runway 12 threshold 185 feet. New entrance taxiways are included in this project (approximately 1,472 square yards). This will shorten the runway to an overall length of 3,768 feet. This project also includes demolition of approximately 12,700 square feet of existing entrance taxiways at the runway ends.

Construct Runway 30 Hold Apron (2014)

The current hold apron does not provide sufficient room for aircraft to maneuver. A new hold apron is proposed adjacent to Osborne Street, near the Runway 30 end. The new apron is 21,570 square yards and can accommodate three aircraft.

Demolish Existing Terminal Facility (2015)

Once the new terminal facility is erected, the existing structure can be removed. This project demolishes the existing 7,100-square foot terminal building (including pilot shop and restaurant) along with ancillary facilities, such as the public restrooms. This area will be used to accommodate the helicopter operating area. This project is contingent upon completion of the new terminal facility, which is dependent upon grading and stabilizing of the hill. This project also transitions the existing airport support vehicle to tie-down facilities.

Reroute Airport Entrance Road and Construct Automobile Parking Lot (2015)

The existing Airport Entrance Road runs through the area designated as the future helicopter operating area. To maximize the space for hangar storage, and to eliminate the current condition where helicopters are towed across a public road, the airport entrance road will be rerouted along the southeastern airport property boundary and terminating in a parking lot by the Argubright hangar development area. This project involves the removal of 1,150 linear feet of existing road, and construction of 870 linear feet of new, 24-foot wide, road. Approximately 15 trees associated with the road will be removed or relocated. The proposed parking area accommodates 34 vehicles. Approximately 880 linear feet of perimeter fence will be erected and one vehicle gate, with penalty box, will be constructed. Existing perimeter fencing and gates will be removed. This project is dependent upon the ability to relocate the terminal building.

Construct New Conventional Hangar in Helicopter Area (2015)

Once the existing terminal facilities are demolished, development of the consolidated helicopter area can begin. This project constructs a 12,600-square foot conventional hangar and associated apron area to be used for helicopter storage and maintenance. This hangar is located where the existing terminal is located. This project will be erected through private developers.

Construct Hangars (2015)

Within the helicopter operating area, a private party will build five hangars to provide space for the short-term individual hangar demand. This project will include associated apron areas (approximately 15,600 square feet).

Construct Conventional Hangars (2016)

A private party will construct two conventional hangars totaling approximately 13,200 square feet and associated apron areas.

Stripe Zipper Lane (2016)

The airport currently has no designated area where automobile traffic can drive, causing potential incursions between aircraft and automobiles. Paralleling the taxilane along the east and northeast of the airport, a zipper lane approximately 20 feet wide will be designated, reducing potential aircraft and automobile incursions. This project paints zipper lane striping on existing pavement.

Enhance Blast Protection (2017)

As noted in Chapter 3, Runway 12 features quasi blast protection. This project proposes that an 8-foot tall block wall, with 3 strands of barbed wire on top (overall height of 9 feet) be constructed in lieu of the current airport perimeter fence. This wall will eliminate prop wash from blowing across Pierce Street, and can help to reduce noise impacts on the adjacent neighborhood. Approximately 585 feet of wall will be constructed, located from the ATCT gate up to and including the wash rack and run up apron area.

Survey Underground Utilities – Develop Utility Map (2018)

This project seeks to locate all underground utilities at the airport, and develop a map depicting locations of the utilities. A utility location company should be retained that can trace utility lines through non-destructive methods (tracing, ground penetrating radar, etc.). Location data should be available in a GIS compatible format, for inclusion in County GIS databases.

Replace Northeast County T-Hangars (2018)

This project replaces two rows of T-hangar buildings for based aircraft in the northeastern corner of the airport. This project will be erected by private developers.

Phase 3 Development (2019 – 2030)

Development recommended under Phase 3, or the long-term portion of the master plan, covers the period 2019 to 2030. As such, the improvements discussed below are considered to be of the lowest priority or least likely to obtain immediate federal funding assistance, and implementation is recommended only if activity materializes, conditions warrant, or financial funding becomes available. The third phase focuses primarily on additional based aircraft storage facilities (hangars) and enhances the operational capacity of the runway. Table 7-3 depicts improvements recommended for Phase 3.

Table 7-3
RECOMMENDED PHASE 3 DEVELOPMENT

Project	Timing
Upgrade Apron Lighting/Security Camera System	Long-Term
Construct Second Conventional Hangar in Helicopter Area	Long-Term
Construct Exit Taxiways	Long-Term
Construct Hangars in Helicopter Area	Long-Term
Reroute Airpark Way behind County Hangars	Long-Term
Construct Additional Portable Hangars	Long-Term
Construct Portable Hangars/Individual and Associated Auto Parking	Long-Term
Construct Non-Airworthy Tie-Down Parking Area	Long-Term
Acquire 10.8 Acres in Avigation Easements	Long-Term

Source: AECOM.

Upgrade Apron Lighting/Security Camera System (Long-Term)

This project includes the installation of additional apron lighting and installation of security cameras to deter theft, vandalism, and other illegal activity at night. Whiteman has some apron lighting, but tenants noted a need for improved lighting. Additionally, a security camera system should be installed to allow for monitoring of apron and hangar areas. Cameras will primarily be installed on existing structures, though there may be a need for independent security camera poles in some locations.

Construct Second Conventional Hangar in Helicopter Area (Long-Term)

This project constructs a 10,500-square foot hangar within the helicopter operating areas between two existing hangars. This hangar will primarily be used by based helicopter, maintenance, and services. This project will be erected by private developers.

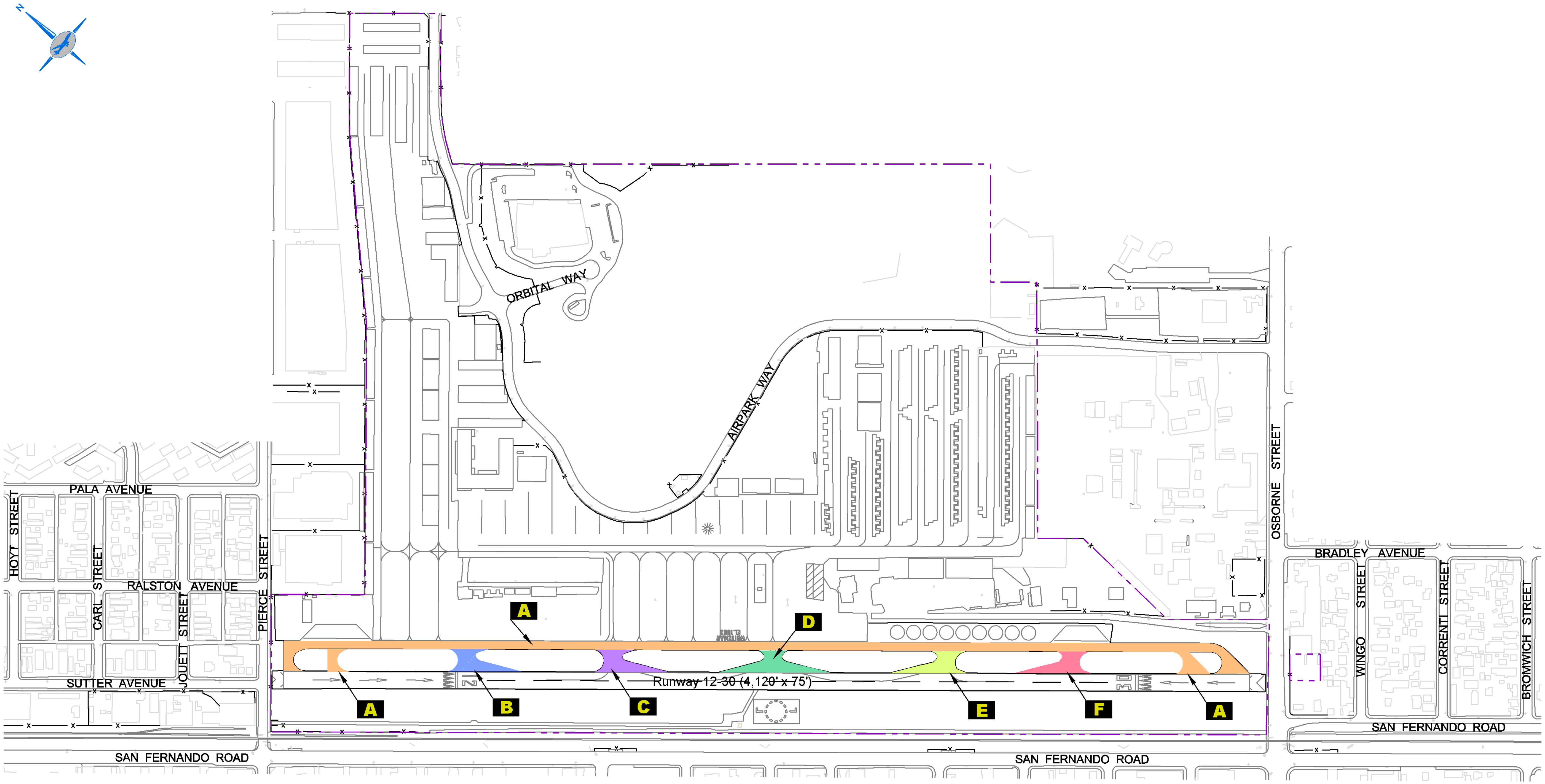


Figure 7-2
Proposed Taxiway Designations

Construct Exit Taxiways (Long-Term)

Two high speed taxiway exits are constructed in this project. One of the taxiways will be 603 feet from the future Runway 12 end, and the second taxiway will be 588 feet from the Runway 30 end. These additional taxiway exits enhance capacity by providing an additional exit for each runway. Exits are located to allow for aircraft that miss the second exit to turn off before the end of the runway. With construction of these new exit taxiways, taxiway designations at the airport will be modified. The parallel and entrance taxiways will remain as Taxiway A. As seen in Figure 7-2 taxiways will be designated B through F from Runway 12 to Runway 30. Approximately 3,080 square yards of taxiway pavement will be constructed.

Construct Hangars in Helicopter Area (Long-Term)

Along the center of the helicopter operating area, all buildings will have been removed, allowing for construction of 29 individual hangars to accommodate the increasing demand of based aircraft. These hangars may house helicopter and/or fixed wing aircraft, as demand dictates. Included in this project is the construction of associated taxilane and apron pavements. This project will be erected by private developers.

Reroute Airpark Way behind County Hangars (Long-Term)

In order to accommodate long-term based aircraft demand, Airpark Way must be rerouted east of the current County portable hangar area. This project requires that 5 acres of the hill be graded and stabilized. Approximately 1,380 linear feet of 37-foot wide road, including curbs and gutters will be constructed. This project includes necessary storm drain and street light improvements along Airpark Way.

Construct Additional Portable Hangars (Long-Term)

This project maximizes space on airport property by adding 16 portable hangars as infill throughout the County portable hangar area.

Construct Portable Hangars/Individual Hangars and Associated Auto Parking (Long-Term)

Once Airpark Way is rerouted, 63 individual/portable hangars can be constructed. This project serves as an extension of the current County portable hangar development. Also included in this project is associated taxilane construction and 40 automobile parking spaces for this hangar development. It is assumed that most based aircraft owners will park their vehicle in their hangar while they are flying.

Construct Non-Airworthy Tie-down Parking Area (Long-Term)

In an effort to remove non-airworthy or derelict aircraft from active apron areas, a designated parking area is provided along the southwestern portion of the airport property. The designated area is approximately 2.1 acres located between the segmented circle/airport traffic control tower (ATCT) along San Fernando Road/the railroad tracks toward Osborne Street. This area accommodates 36 tie-downs for non-airworthy aircraft. Concrete anchors and cables will be provided and the aircraft will park directly on the dirt. Privacy slats will be installed along the adjacent perimeter fence.

Due to the proximity of these aircraft with the runway, any movement to or from this area will require closure of the runway. Therefore, this area is only suitable for derelict, non-airworthy or inoperable aircraft. Coordination with the tower should occur prior to moving aircraft into or out of this area.

Acquire 10.8 Acres in Avigation Easements (Long-Term)

This project acquires 10.8 acres in avigation easement. Runway 12 RPZ covers 5.4 acres beyond airport property and Runway 30 RPZ covers 5.4 acres beyond airport property. Both RPZs extend into residential areas around the airport. These areas (not including roads) should be acquired as avigation easements for the airport.

BUILDING AREA PLAN

Figure 7-3 shows the Building Area Plan for Whiteman Airport. This drawing illustrates the proposed landside improvements in greater detail and delineates where aircraft can safely park. All future landside development occurs east of the runway. Development primarily occurs north of Vista Aviation (the proposed terminal facility area) and in the existing terminal area (which will be transitioned to the helicopter operating area). Development also is shown east of the County portable hangars. The building layouts as depicted convey the general development concept and show how future requirements can be accommodated on the site. The ultimate siting of these facilities, including the number and sizes of hangars, is subject to further design investigations and tenant needs, and therefore could vary from what is shown on Figure 7-3.

Principal features of the landside development are:

- Development of a new general aviation terminal facility, restaurant, green space, and associated vehicle parking. This development also includes construction of 35 tie-downs for based and transient aircraft.
- Expansion/construction of a dedicated helicopter operating area. This area will be located where the existing general aviation terminal building is located. Four conventional hangars are constructed (one 12,600 square feet, one 10,500 square feet, one 7,000 square feet, and one 6,200 square feet) and 29 individual hangars are located in this area.
- Infill of existing County owned portable hangars with more portable hangars.
- Expansion of the County owned hangars easterly, rerouting Airpark Way to accommodate the based aircraft facilities.

AIRPORT AIRSPACE DRAWING

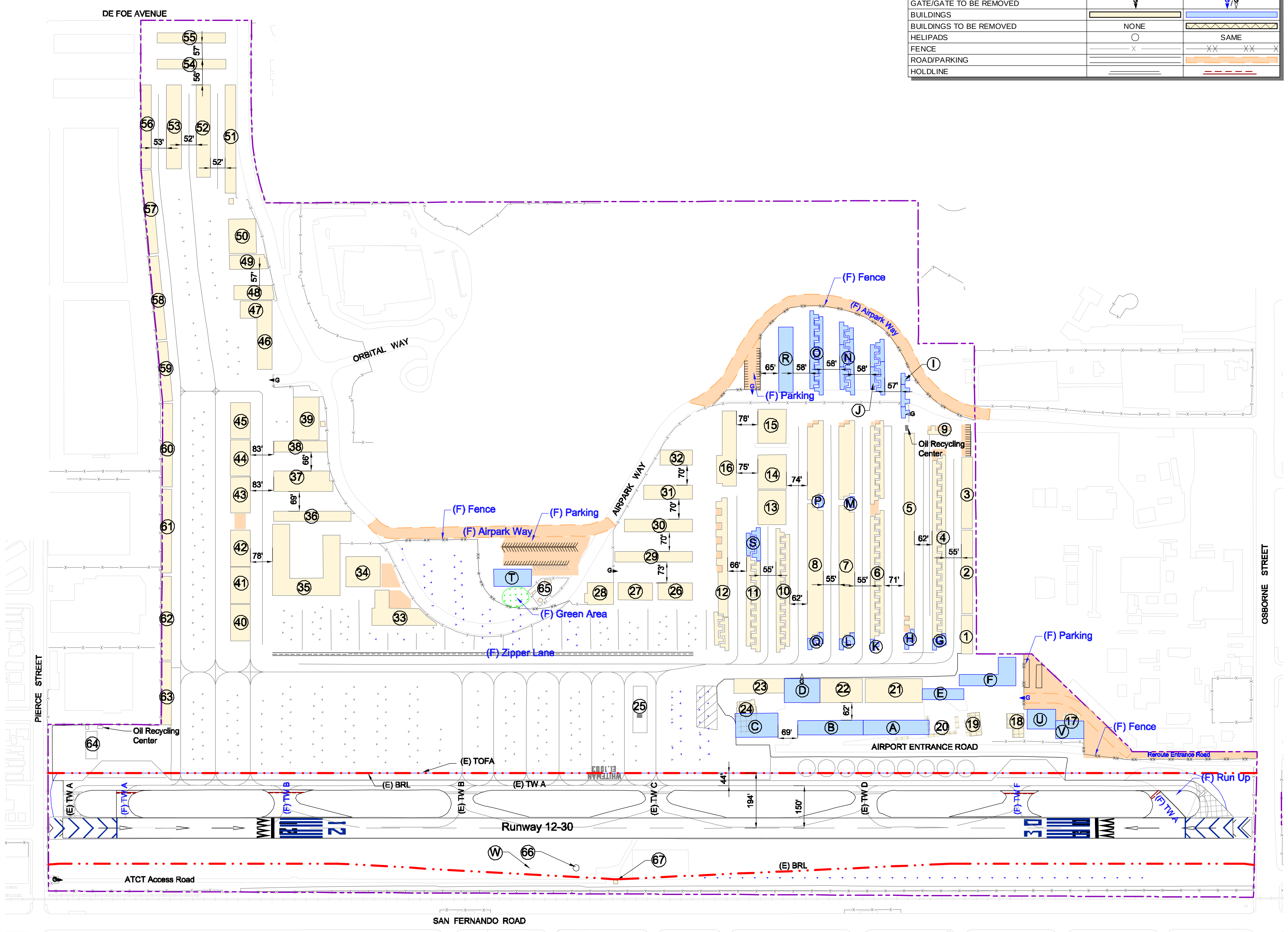
The Airport Airspace Drawing, Figure 7-4, depicts the Part 77 imaginary surfaces on and around Whiteman Airport. The dimensions and criteria employed in determining the Part 77 surfaces are those contained in Federal Aviation Regulations (FAR), Part 77, Objects Affecting Navigable Airspace (Section 77.25). An isometric view of these surfaces is found in Figure 7-5. These surfaces are defined for the purpose of identifying natural (terrain or trees) or man-made objects that could affect air navigation at an airport.

FAR Part 77.25 Criteria

The dimensions of the Part 77.25 imaginary surfaces depend on the size of aircraft using the airport and the type of instrument approach procedures. The FAR Part 77 criteria applied were as follows:

- Runway 12 – “Other than utility” runway with non-precision instrument approach with visibility greater than 1 mile.
- Runway 30 – “Other than utility” runway with non-precision instrument approach with visibility greater than 1 mile.

The descriptions of the surfaces and their dimensions for Whiteman Airport, along with a description of how to determine the height of the surface at any point follows.



LEGEND		
DESCRIPTION	EXISTING	FUTURE
AIRPORT BOUNDARY		SAME
AIRFIELD PAVEMENT		SAME
AIRFIELD PAVEMENT TO BE REMOVED	NONE	
BUILDING RESTRICTION LINE (BRL)		SAME
TAXIWAY OBJECT FREE AREA (TOFA)		SAME
GATE/GATE TO BE REMOVED	G	G / G
BUILDINGS		
BUILDINGS TO BE REMOVED	NONE	
HELIPADS		SAME
FENCE		
ROAD/PARKING		
HOLDLINE		

FUTURE BUILDING TABLE		
#	DESCRIPTION	TOP ELEVATION
A	NESTED T-HANGARS	993'*
B	NESTED T-HANGARS	997'*
C	CONVENTIONAL HANGAR	1,023'*
D	CONVENTIONAL HANGAR	1,021'*
E	BOX HANGARS	993'*
F	PRIVATE 4-HANGAR DEVELOPMENT	993'*
G	HANGAR ROW B EXTENSION	995'*
H	HANGAR ROW C EXTENSION	999'*
I	T-HANGARS	1,005'*
J	NESTED T-HANGARS	1,007'*
K	HANGAR ROW D EXTENSION	999'*
L	HANGAR ROW E EXTENSION	1,001'*
M	HANGAR ROW E INFILL	1,007'*
N	NESTED T-HANGARS	1,007'*
O	NESTED T-HANGARS	1,009'*
P	HANGAR ROW F INFILL	1,009'*
Q	HANGAR ROW F EXTENSION	1,003'*
R	NESTED T-HANGARS	1,011'*
S	HANGAR ROW J INFILL	1,011'*
T	TERMINAL/RESTAURANT (2 STORY)	1,038'*
U	CONVENTIONAL HANGAR	1,007'*
V	CONVENTIONAL HANGAR	1,005'*
W	AWOS	1,020'*
* Estimated		

NOTES:

1. All elevations are in NAVD 88. All future elevations are estimated.
2. Building elevations are based on the Topographical Survey conducted in August 2008.
3. Hangar layouts shown are conceptual to depict potential future capacities. Future configurations will be determined based on actual demand.

EXISTING BUILDING TABLE		
#	DESCRIPTION	TOP ELEVATION
1	HANGARS A1-3	995'
2	HANGARS A4-8	996'
3	HANGARS A9-16	992'
4	LA COUNTY HANGARS ROW B	988'
5	LA COUNTY HANGARS ROW C	994'
6	LA COUNTY HANGARS ROW D	997'-998'
7	LA COUNTY HANGARS ROW E	1,003'
8	LA COUNTY HANGARS ROW F	1,0005'
9	LA COUNTY HANGARS G18-19	985'
10	LA COUNTY HANGARS ROW G	1,000'
11	LA COUNTY HANGARS ROW H	1,002'
12	LA COUNTY HANGARS ROW J	1,001'-1,010'
13	HANGAR GM	1,018'
14	HANGAR GM	1,018'
15	HANGAR AVIATION	1,019'
16	HANGAR JM	1,018'
17	FBO HANGAR/OFFICE BUILDING	984'
18	FBO HANGAR/OFFICE BUILDING	988'
19	FBO HANGAR/OFFICE BUILDING	992'
20	OFFICE BUILDING	987'
21	HANGARS 544-547	1,000'
22	HANGARS 541-543	1,001'
23	HANGARS 651-653	1,009'
24	TERMINAL/RESTAURANT	998.5'
25	FUEL ISLAND	1,003'
26	FBO MAINTENANCE HANGAR	1,013'*
27	FBO MAINTENANCE HANGAR	1,015'*
28	FBO OFFICE	1,029.3'
29	FBO BASED AIRCRAFT HANGARS	1,017'*
30	FBO BASED AIRCRAFT HANGARS	1,017'*
31	FBO BASED AIRCRAFT HANGARS	1,017'*
32	FBO BASED AIRCRAFT HANGARS	1,017'*
33	PRIVATE 5-HANGAR DEVELOPMENT	1,029'*
34	MARSHALLS HANGAR	1,031.1'
35	HANGARS M1-8	1,030.4'
36	HANGARS 5115-5120	1,029'
37	HANGARS 5105-5114	1,032.5'
38	HANGARS 5101-5104	1,033.2'
39	HANGAR 31	1,035.7'
40	MD HANGARS 1-4	1,030'
41	MD HANGARS 5-8	1,031.7'
42	MD HANGARS 9-12	1,033'
43	MD HANGARS 13-18	1,030.4'
44	MD HANGARS 19-24	1,032.1'
45	MD HANGARS 25-30	1,033.0'
46	HANGARS 654-656	1,039.5'
47	HANGAR 657	1,039.5'
48	FBO BASED AIRCRAFT HANGARS	1,047.8'
49	FBO BASED AIRCRAFT HANGARS	1,047.8'
50	FBO BASED MAINTENANCE HANGAR	1,035.2'
51	LA COUNTY HANGARS ROW BB	1,043.1'
52	LA COUNTY HANGARS ROW CC	1,042.0'
53	LA COUNTY HANGARS ROW DD	1,044.8'
54	LA COUNTY HANGARS ROW T	1,044.7'
55	LA COUNTY HANGARS ROW U	1,045.3'
56	HANGARS HH 1-7	1,044.2'
57	HANGARS HH 8-14	1,042.0'
58	HANGARS HH 15-21	1,040.5'
59	HANGARS HH 22-26	1,038.1'
60	HANGARS HH 27-33	1,034.4'
61	HANGARS HH 34-40	1,030.5'
62	HANGARS HH 41-47	1,027.2'
63	HANGARS HH 48-52	1,023.9'
64	WASH RACK	1,008'
65	ELECTRICAL VAULT	1,017'*
66	WEATHER EQUIPMENT/AWOS	1,025'
67	AIRPORT TRAFFIC CONTROL TOWER	1,047.2'
* Estimated		

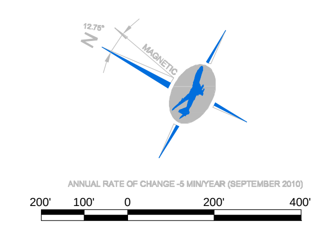
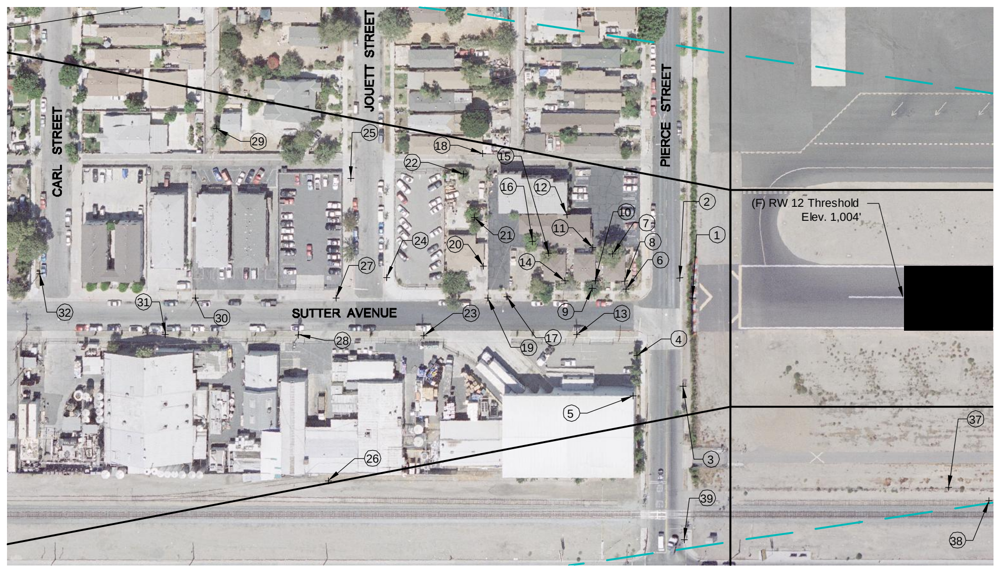


Figure 7-3
Building Area Plan

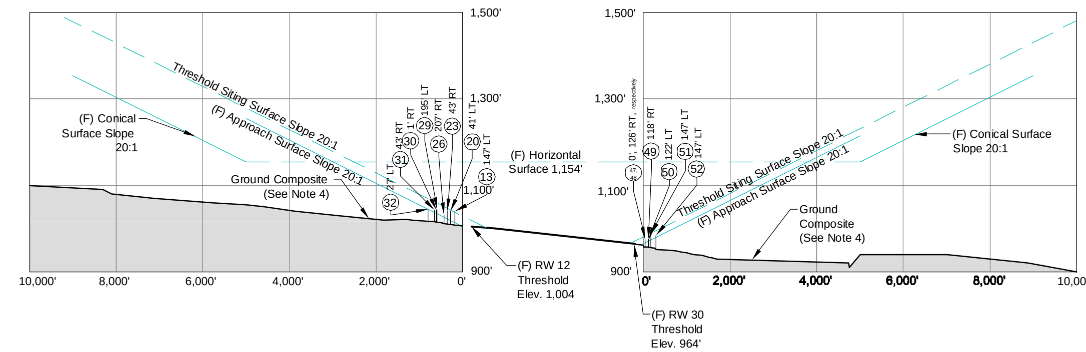
ABBREVIATIONS:

ATCT Airport Traffic Control Tower
(F) Future
FAR Federal Aviation Regulations
OL Obstruction Light
RW Runway
TSS Threshold Siting Surface

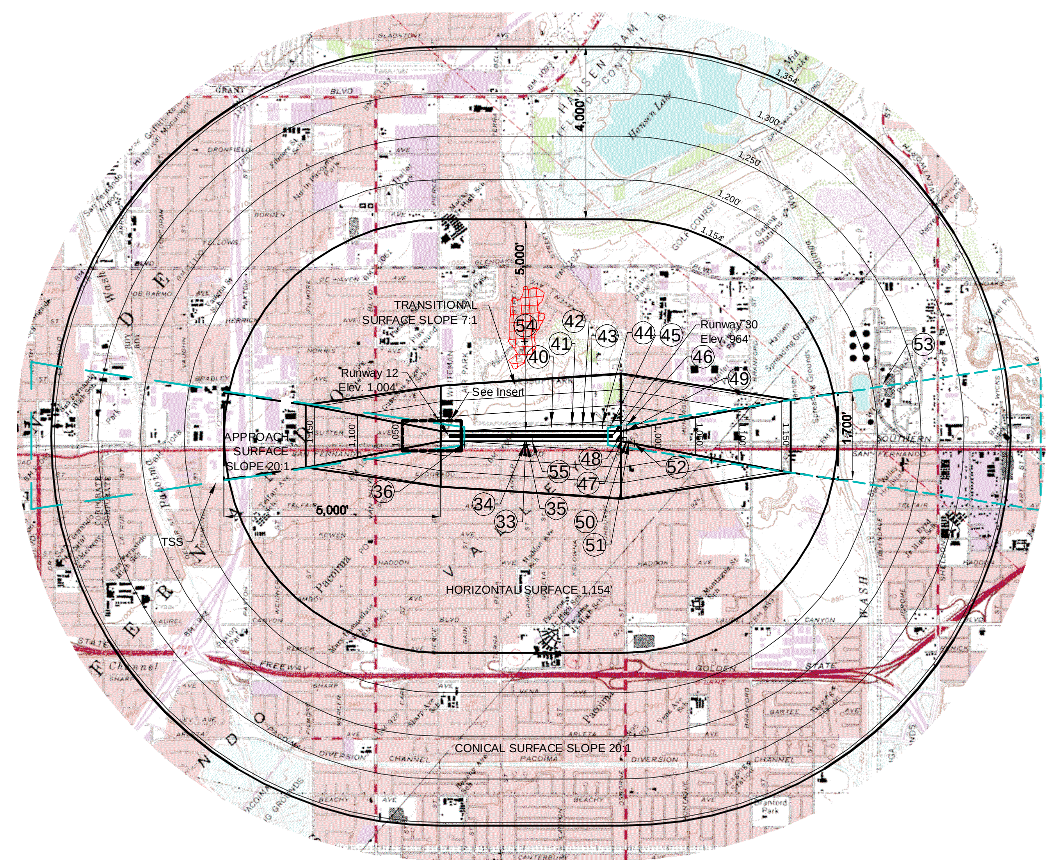
RUNWAY 12 INSERT



Scale 1" = 100'



RUNWAY 12-30
Vertical Scale: 1" = 200"
Horizontal Scale 1" = 2,000"



PART 77 OBSTRUCTION IDENTIFICATION TABLE					
OBS. No.	DESCRIPTION	ELEV.	PENETR.	SURFACE	PROPOSED ACTION
1	PERIMETER FENCE	1,012'	6'	APPROACH	TO REMAIN
2	PIERCE STREET	1,021'	14'	APPROACH	TO REMAIN
3	TREE	1,009'	2'	APPROACH	TRIM/REMOVE
4	TREE	1,014'	5'	APPROACH	TRIM/REMOVE
5	BUILDING	1,028'	18'	APPROACH	PROVIDE OL
6	TREE	1,021'	11'	APPROACH	TRIM/REMOVE
7	TREE	1,019'	8'	APPROACH	TRIM/REMOVE
8	BUILDING	1,020'	10'	APPROACH	PROVIDE OL
9	TREE	1,021'	9'	APPROACH	TRIM/REMOVE
10	BUILDING	1,020'	8'	APPROACH	PROVIDE OL
11	BUILDING	1,020'	8'	APPROACH	PROVIDE OL
12	BUILDING	1,029'	15'	APPROACH	PROVIDE OL
13	POWER POLE	1,040'	27'	APPROACH	PROVIDE OL
14	BUILDING	1,020'	6'	APPROACH	PROVIDE OL
15	TREE	1,021'	6'	APPROACH	TRIM/REMOVE
16	TREE	1,021'	5'	APPROACH	TRIM/REMOVE
17	LIGHT POLE	1,027'	10'	APPROACH	LOWER/PROVIDE OL
18	BUILDING	1,020'	2'	APPROACH	PROVIDE OL
19	POWER POLE	1,041'	23'	APPROACH	LOWER/PROVIDE OL
20	BUILDING	1,019'	1'	APPROACH	PROVIDE OL
21	TREE	1,021'	2'	APPROACH	TRIM/REMOVE
22	TREE	1,021'	1'	APPROACH	TRIM/REMOVE
23	POWER POLE	1,041'	19'	APPROACH	LOWER/PROVIDE OL
24	LIGHT POLE	1,028'	4'	APPROACH	LOWER/PROVIDE OL
25	LIGHT POLE	1,030'	5'	APPROACH	LOWER/PROVIDE OL
26	RAILROAD	1,032'	6'	APPROACH	TO REMAIN
27	LIGHT POLE	1,029'	2'	APPROACH	LOWER/PROVIDE OL
28	POWER POLE	1,042'	13'	APPROACH	LOWER/PROVIDE OL
29	POWER POLE	1,045'	11'	APPROACH	LOWER/PROVIDE OL
30	POWER POLE	1,043'	8'	APPROACH	LOWER/PROVIDE OL
31	POWER POLE	1,043'	6'	APPROACH	LOWER/PROVIDE OL
32	POWER POLE	1,045'	1'	APPROACH	LOWER/PROVIDE OL
33	ATCT	1,047'	53'	TRANSITIONAL	TO REMAIN
34	TREE	1,003'	4'	TRANSITIONAL	TRIM/REMOVE
35	TREE	1,004'	5'	TRANSITIONAL	TRIM/REMOVE
36	ACCESS ROAD	1,013'	3'	TRANSITIONAL	TO REMAIN
37	PERIMETER FENCE	1,014'	2'	TRANSITIONAL	TO REMAIN
38	RAILROAD	1,025'	6'	TRANSITIONAL	TO REMAIN
39	POWER POLE	1,037'	9'	TRANSITIONAL	PROVIDE OL
40	AIRPORT ROAD	1,010'	10'	TRANSITIONAL	TO REMAIN
41	POWER POLE	1,009'	13'	TRANSITIONAL	PROVIDE OL
42	POWER POLE	1,005'	11'	TRANSITIONAL	PROVIDE OL
43	POWER POLE	1,001'	10'	TRANSITIONAL	PROVIDE OL
44	POWER POLE	998'	12'	TRANSITIONAL	PROVIDE OL
45	POWER POLE	994'	9'	TRANSITIONAL	PROVIDE OL
46	POWER POLE	989'	5'	TRANSITIONAL	PROVIDE OL
47	OSBORNE STREET	971'	4'	APPROACH	TO REMAIN
48	LIGHT POLE	976'	9'	APPROACH	LOWER/PROVIDE OL
49	LIGHT POLE	976'	6'	APPROACH	LOWER/PROVIDE OL
50	LIGHT POLE	976'	5'	APPROACH	LOWER/PROVIDE OL
51	POWER POLE	987'	14'	APPROACH	LOWER/PROVIDE OL
52	POWER POLE	984'	55'	APPROACH	LOWER/PROVIDE OL
53	FOUR STACKS	1,180'	-31'	CONICAL	TO REMAIN
54	TERRAIN	1,294'	140'	HORIZONTAL	TO REMAIN
55	WIND SOCK	993'	6'	PRIMARY	TO REMAIN

THRESHOLD SITING SURFACE PENETRATIONS				
#	DESCRIPTION	RW	PENETRATION	PROPOSED ACTION
1	PERIMETER FENCE	12	4'	TO REMAIN
13	POWER POLE	12	4'	VERIFY HEIGHT/LOWER POLE
36	ATCT ACCESS ROAD	12	11'	TO REMAIN
38	RAILROAD TRACKS	12	14'	TO REMAIN

SURFACE ELEVATION	
SURFACE	ELEV.
END OF RUNWAY 12	1,004.0'
END OF RUNWAY 30	964.0'
HORIZONTAL SURFACE	1,154'
CONICAL SURFACE (UPPER LIMIT)	1,354'
APPROACH SURFACE (12)-UPPER LIMIT	1,254.2'
APPROACH SURFACE (30)-UPPER LIMIT	1,214.5'

USGS MAPS USED FOR BASE
7.5 MIN. QUAD
BURBANK (1966)
SAN FERNANDO (1966)
SUNLAND (1966)
VAN NUYS (1966)

NOTES:

1. All elevations are in feet above mean sea level (MSL).
2. Negative penetrations in the Obstruction Identification Table represent distance clear to specified surface.
3. The existing width of the FAR Part 77 Primary Surface and inner widths of the Approach Surfaces, which are 250 feet, have been applied to the airport historically and therefore have been retained. This is a deviation from the Part 77 standard of 500 feet for runways serving small aircraft only with a non-precision instrument approach procedure.
4. A composite ground profile is created by using the highest point at any given distance from the runway within the approach and threshold siting surface.
5. Ten feet were added to alley, fifteen feet to non-interstate road, and twenty-three feet to railroad track elevations.
6. For additional close in obstruction information for Runway 12 see Sheet 5.
7. Runway 12 insert is provided to enhance clarity of obstruction locations. no insert is provided for Runway 30 because there are only six obstructions within the approach surface.

Source of data for object elevations and locations: USGS maps Burbank, San Fernando, Sunland, and Van Nuys (1966) and Los Angeles and San Francisco Sectional Aeronautical Charts (December 18, 2008); Topographic Survey (August 2008); Digital Obstacle File (2008).

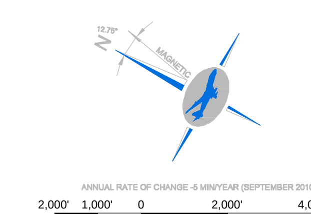
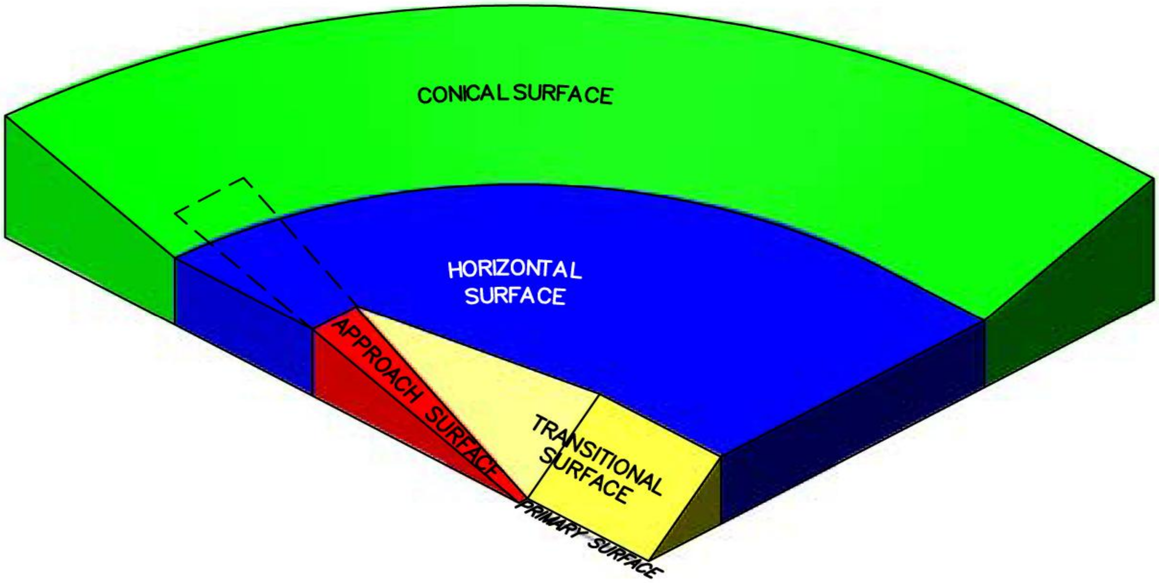
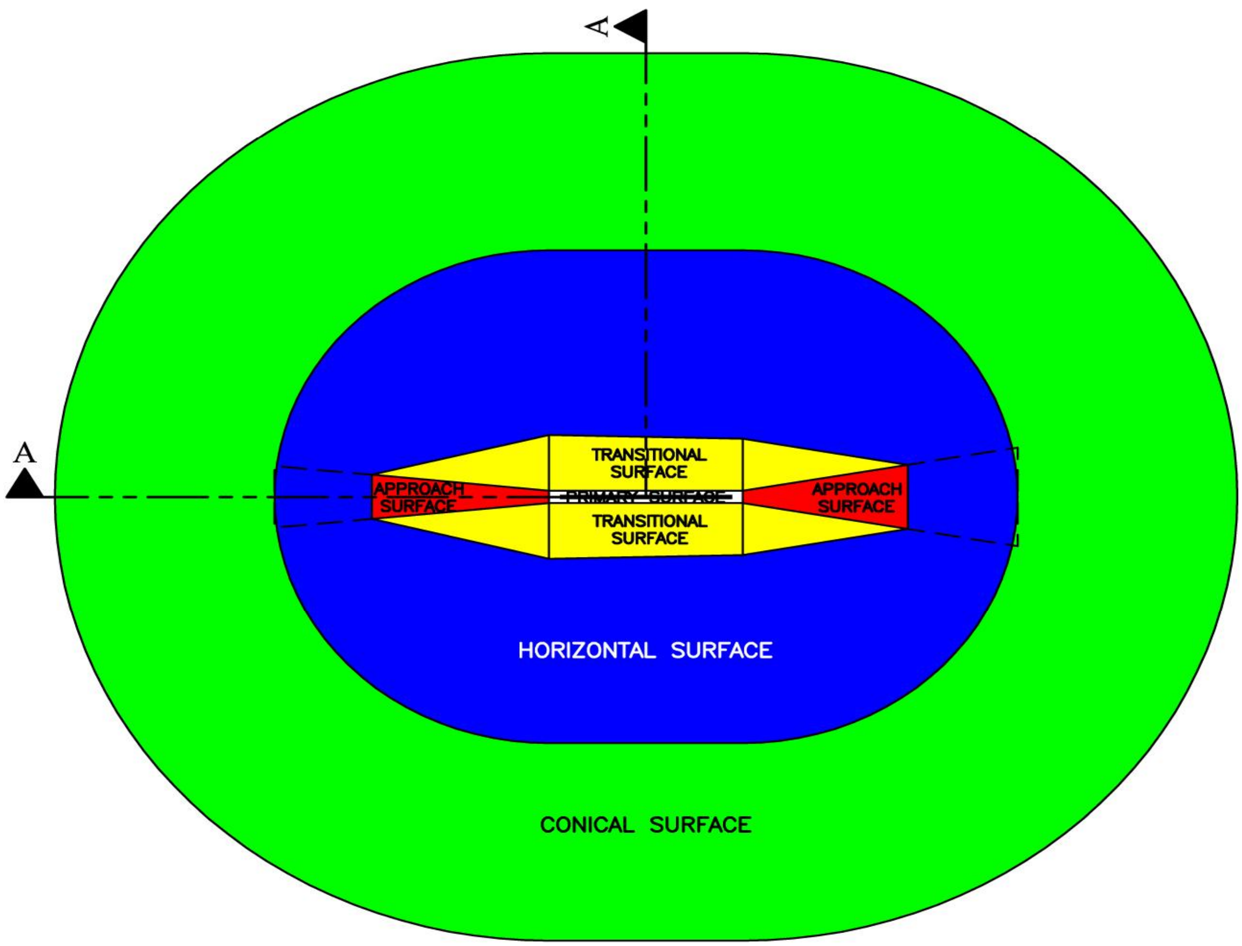


Figure 7-4
FAR Part 77 Airspace Plan



SECTION VIEW A-A



PLAN VIEW

Figure 7-5
Isometric View of FAR Part 77 Surfaces

Horizontal Surface

The horizontal surface is a horizontal plane 150 feet above the established airport elevation. The airport elevation, measured at the highest point along the runway, is 1,004 feet above mean sea level (MSL). This point occurs at the future Runway 12 threshold. Therefore, the elevation of the horizontal surface at Whiteman Airport is approximately 1,154 feet MSL.

The perimeter of the horizontal surface is delineated by arcs with radii of 5,000 feet from the center of the ends of the primary surface. Adjacent arcs are connected by lines that are tangent to these arcs. All points on the horizontal surface have an elevation of approximately 1,154 feet MSL.

Conical Surface

The conical surface extends outward and upward from the edge of the horizontal surface at a slope of 20:1, for a horizontal distance of 4,000 feet. The elevation of the conical surface at its outermost edge is approximately 1,354 feet MSL.

The elevation of any point on the conical surface is found by starting at the intersection of the horizontal surface and conical surfaces (where the elevation is approximately 1,154 feet MSL) and increasing one foot in elevation for every 20 feet measured laterally from the intersection.

Primary Surface

The primary surface is defined as being longitudinally centered on the runway, with a width dependent on the type of runway, and extending 200 feet beyond each end of the runway. The width of the primary surface for an airport with a non-precision instrument approach is 500 feet. However, a 250-foot wide primary surface has been historically applied at Whiteman and therefore the 250-foot width has been retained. The elevation of any point on the primary surface is the same as the closest point on the runway centerline.

Approach Surfaces

The slope and configuration of a runway approach surface varies as a function of the type of aircraft served and availability of instrument approach procedures. Approach surfaces terminate at the primary surface, where their width is equal to the width of the primary surface. The approach surface for Runways 12 and 30 is 2,000 feet wide at its beginning point, 5,200 feet from the runway end.

The elevation of any point on the approach surface is found by starting at the intersection of the approach and primary surface (where the elevation is approximately 1,004 feet MSL for Runway 12 and 964 feet MSL for Runway 30) and increasing one foot in elevation for every 20 feet measured laterally from the intersection. Once the approach surface elevation reaches the horizontal surface elevation (1,154 feet MSL), the horizontal surface is controlling.

Transitional Surfaces

The transitional surfaces extend outward and upward at right angles to the runway centerline (and the extended runway centerline) at a slope of 7:1 from the edges of the primary and approach surfaces.

The elevation of any point on a transitional surface is found by starting at the intersection of the transitional surface with the approach or primary surface and increasing one foot in elevation for every 7 feet measured laterally from the intersection. Once the transitional surface reaches the horizontal surface elevation (1,154 feet MSL), the horizontal surface is controlling.

Penetrations to FAR Part 77 Surfaces at Whiteman Airport

The airport imaginary surfaces shown on Figure 7-4 are superimposed on United States Geological Survey (USGS) topographic maps. Data sources referenced to determine obstacle location and potential obstructions were the USGS maps, Los Angeles and San Francisco aeronautical charts, topographic data obtained August 2008 for this master plan study, as well as the FAA's Digital Obstacle File. The following obstructions were identified.

Penetrations to the Horizontal and Conical Surfaces

There are no penetrations to the conical surface. The four stacks associated with the nearby power plant are located under the conical surface and are clear by approximately 31 feet. The hill on airport property penetrates the horizontal surface by approximately 140 feet. This obstruction will remain, but consideration may be given to locating an obstruction light on the peak of the hill.

Penetrations to Transitional Surfaces

- The airport traffic control tower penetrates the transitional surface by 53 feet. The tower will remain and there is an obstruction light on top of the tower.

- Two trees located near Runway 12 penetrate the transitional surface by approximately 5 feet. These trees should be trimmed or removed to remove the obstruction.

- The perimeter fence and railroad penetrate the transitional surface by 2 and 6 feet, respectively. These obstacles will remain.

- Two roads, the ATCT access road and the Airport Entrance Road, are obstructions. These roads penetrate the transitional surface by 3 and 10 feet, respectively. These will remain.

- Seven power poles located along San Fernando Road penetrate the transitional surface. Penetrations range from 5 to 13 feet. The power poles should be marked with red obstruction lights.

Penetrations to the Primary Surface

- Numerous navigational aids, such as the windsock, tetrahedron, and PAPIs penetrate the primary surface. Penetrations range from approximately 2 feet to approximately 6 feet. These objects will remain.

Penetrations to Runway 12 Approach Surface

- The perimeter fence and Pierce Street penetrate the Runway 12 approach surface. The fence penetrates by 6 feet and the road penetrates by 14 feet. These objects will remain.

- Nine trees located within the approach surface are penetrations. Tree penetrations vary from 1 to 11 feet. These trees should be trimmed or removed.

- Buildings located within the Runway 12 approach surface are also penetrations. Eight buildings penetrate the approach surface from 1 to 18 feet. Buildings should be marked with obstruction lights.

- Eight power poles and four light poles also penetrate the approach surface for Runway 12. Power pole penetrations vary from 1 to 27 feet and light pole penetrations range from 2 to ten feet. Power lines should be relocated underground or power poles lowered or marked with obstruction lights. Light poles should either be lowered or marked with obstruction lights.

- The Union Pacific Railroad tracks (with an assumed 23-foot tall rail car) penetrates the approach surface. These will remain.

Penetrations to Runway 30 Approach Surface

- Osborne Street penetrates the approach surface for Runway 30 by 4 feet. This street will remain.

- Three light poles penetrate the approach surface by 5 to 9 feet. These light poles should either be lowered or marked with obstruction lights.

- Similarly, two power poles represent 14 to 55-foot penetrations to the approach surface. Power lines should be located underground or power poles lowered or marked with obstruction lights.

Penetrations to Threshold Siting Surfaces

Threshold Siting Surfaces are imaginary inclined planes extending outward and upward from the ends of the runways that are used to establish the location of runway thresholds. At Whiteman, the future Runway 12 threshold is displaced 546 feet and Runway 30's future threshold is displaced 309 feet. The threshold siting surfaces are located with respect to these displaced thresholds. While the runway thresholds are recommended to be relocated in this master plan, the physical location of the landing thresholds have not changed, and therefore, the threshold siting surfaces are not affected.

Threshold siting standards are applied for the following runway uses:

- Runways 12 and 30: approach end of runways expected to support instrument night circling.

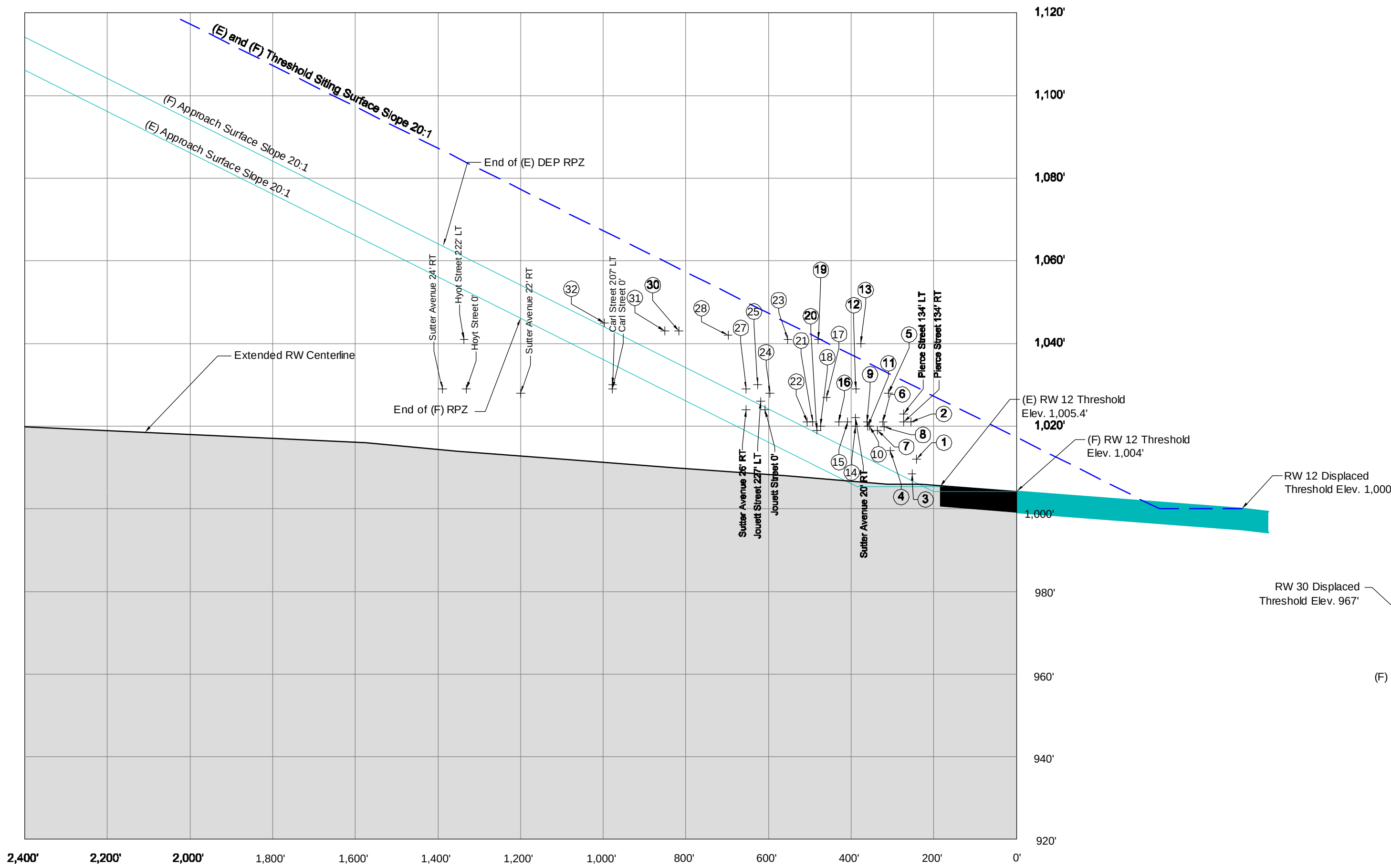
The airport perimeter fence, airport traffic control tower access road, and the railroad tracks penetrate the threshold siting surface applied to Runway 12. The fence penetrates by 4 feet, the road (with an assumed 10-foot tall vehicle) by 11 feet, and the railroad tracks (with assumed 23-foot tall rail car) by 14 feet. These penetrations are located along the side of the runway and further displacement of the runway landing threshold will not remove the penetrations. Therefore, these penetrations will remain and the Runway 12 displaced threshold will remain in its present location.

It appears as though a power pole (object number 13) penetrates the threshold siting surface by approximately 4 feet. The top elevation of the power pole is estimated to be 1,040 MSL (approximately 33 feet tall). Since this pole also obstructs the Runway 12 approach surface, it is recommended that the power lines be relocated underground or the power pole lowered.

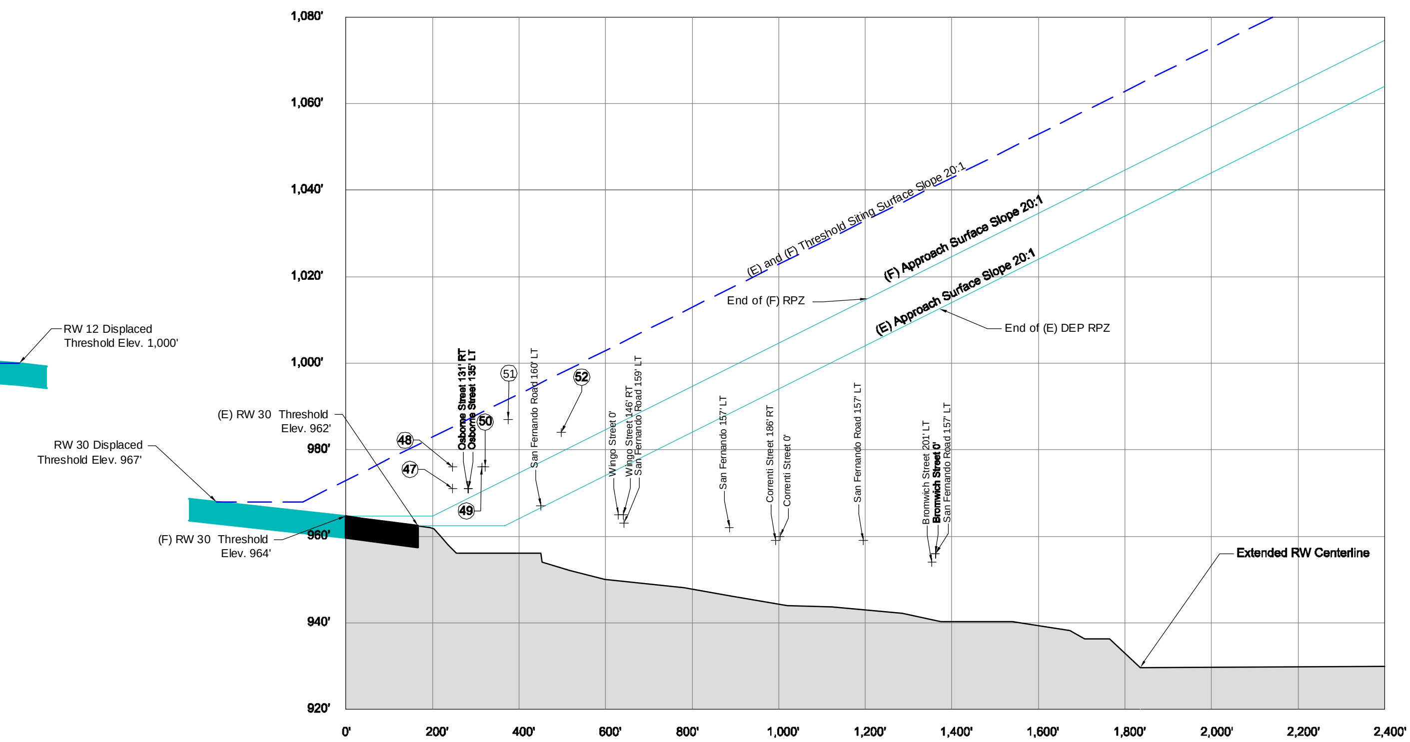
INNER PORTION APPROACH SURFACE DRAWING

The Inner Portion Approach Surface Drawing is depicted on Figure 7-6. This sheet is otherwise known as the Runway Protection Zone, or RPZ Plan. Also depicted on this figure are the land uses within the

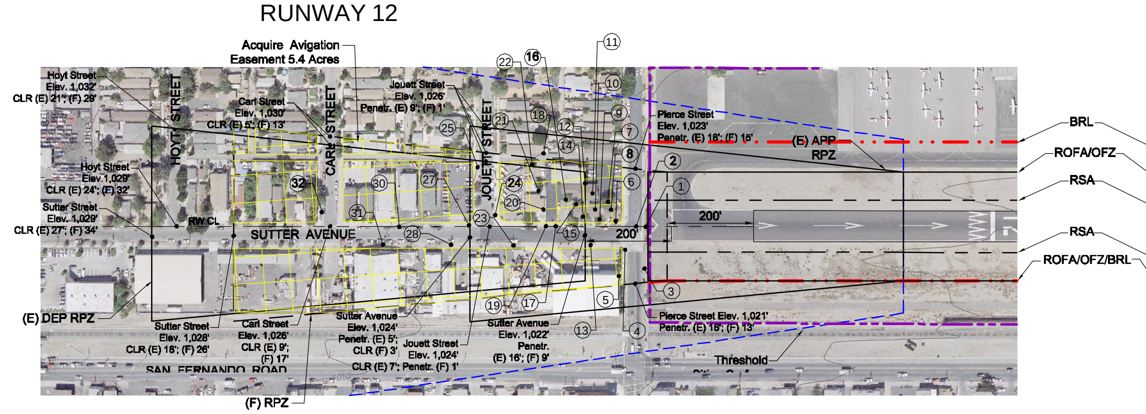
THRESHOLD SITING SURFACE PENETRATIONS				
#	DESCRIPTION	RW	PENETRATION	PROPOSED ACTION
1	PERIMETER FENCE	12	4'	TO REMAIN
13	POWER POLE	12	4'	VERIFY HEIGHT/LOWER POLE
36	ATCT ACCESS ROAD	12	11'	TO REMAIN
38	RAILROAD TRACKS	12	14'	TO REMAIN

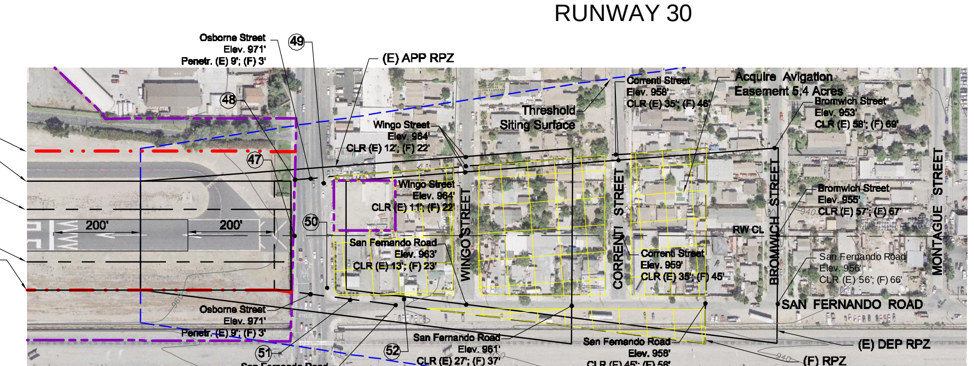


RUNWAY 12



RUNWAY 30





ABBREVIATIONS

APP	Approach
BRL	Building Restriction Line
CL	Centerline
CLR	Clear
DI	Distance
DEP	Departure
(E)	Existing
Elev.	Elevation
Est.	Estimated
(F)	Future
LT	Left
No.	Number
OBS.	Obstruction
OFZ	Obstacle Free Area
Penetr.	Penetration
ROFA	Runway Object Free Area
RPZ	Runway Protection Zone
RSA	Runway Safety Area
RT	Right
RW	Runway

PART 77 OBSTRUCTION IDENTIFICATION TABLE						
OBS. No.	DESCRIPTION	ELEV.	DI TO RW CL	(E) PENETR.	(F) PENETR.	PROPOSED ACTION
1	PERIMETER FENCE	1,012'	0'	7'	6'	TO REMAIN
2	PIERCE STREET	1,021'	0'	16'	14'	TO REMAIN
3	TREE	1,009'	101' RT	3'	2'	TRIM/REMOVE
4	TREE	1,014'	62' RT	9'	5'	TRIM/REMOVE
5	BUILDING	1,028'	101' RT	23'	18'	PROVIDE OL
6	TREE	1,021'	14' LT	16'	11'	TRIM/REMOVE
7	TREE	1,019'	62' LT	14'	8'	TRIM/REMOVE
8	BUILDING	1,020'	24' LT	14'	10'	PROVIDE OL
9	TREE	1,021'	13' LT	16'	9'	TRIM/REMOVE
10	BUILDING	1,020'	24' LT	15'	8'	PROVIDE OL
11	BUILDING	1,020'	65' LT	15'	8'	PROVIDE OL
12	BUILDING	1,029'	104' LT	23'	15'	PROVIDE OL
13	POWER POLE	1,040'	42' RT	35'	27'	LOWER POLE

PART 77 OBSTRUCTION IDENTIFICATION TABLE						
OBS. No.	DESCRIPTION	ELEV.	DI TO RW CL	(E) PENETR.	(F) PENETR.	PROPOSED ACTION
14	BUILDING	1,020'	24' LT	14'	6'	PROVIDE OL
15	TREE	1,021'	50' LT	14'	6'	TRIM/REMOVE
16	TREE	1,021'	67' LT	13'	5'	TRIM/REMOVE
17	LIGHT POLE	1,027'	7' RT	18'	10'	LOWER/PROVIDE OL
18	BUILDING	1,020'	169' LT	10'	2'	PROVIDE OL
19	POWER POLE	1,041'	0'	31'	23'	LOWER/PROVIDE OL
20	BUILDING	1,019'	41' RT	9'	1'	PROVIDE OL
21	TREE	1,021'	83' RT	10'	2'	TRIM/REMOVE
22	TREE	1,021'	139' LT	10'	1'	TRIM/REMOVE
23	POWER POLE	1,041'	43' RT	27'	19'	LOWER/PROVIDE OL
24	LIGHT POLE	1,028'	25' LT	12'	4'	LOWER/PROVIDE OL
25	LIGHT POLE	1,030'	138' LT	13'	5'	LOWER/PROVIDE OL
27	LIGHT POLE	1,029'	0'	10'	2'	LOWER/PROVIDE OL

PART 77 OBSTRUCTION IDENTIFICATION TABLE						
OBS. No.	DESCRIPTION	ELEV.	DI TO RW CL	(E) PENETR.	(F) PENETR.	PROPOSED ACTION
28	POWER POLE	1,042'	43' RT	21'	13'	LOWER/PROVIDE OL
30	POWER POLE	1,043'	1' RT	16'	8'	LOWER/PROVIDE OL
31	POWER POLE	1,043'	43' RT	14'	6'	LOWER/PROVIDE OL
32	POWER POLE	1,045'	27' LT	9'	1'	LOWER/PROVIDE OL
47	OSBORNE STREET	971'	0'	7'	4'	TO REMAIN
48	LIGHT POLE	976'	126' RT	12'	9'	LOWER/PROVIDE OL
49	LIGHT POLE	976'	118' RT	12'	6'	LOWER/PROVIDE OL
50	LIGHT POLE	976'	122' LT	12'	5'	LOWER/PROVIDE OL
51	POWER POLE	987'	147' LT	23'	14'	LOWER/PROVIDE OL
52	POWER POLE	984'	147' RT	26'	55'	LOWER/PROVIDE OL

NOTES:

1. All elevations are in feet above mean sea level (MSL).
2. Negative penetrations in the Obstruction Identification Table represent distance clear to specified surface.
3. Ten feet were added to alley/service roads, fifteen feet to non-interstate roads, and twenty-three feet to railroad track elevations.
4. Right and left designations of the runway centerline refer to direction of the object from runway centerline when approaching the runway.

Source of data for object elevations and locations: USGS maps Burbank, San Fernando, Sunland, and Van Nuys (1966) and Los Angeles and San Francisco Sectional Aeronautical Charts (December 18, 2008); Topographic Survey (August 2008); Aerial Photo (August 2008); Digital Obstacle File (2008).

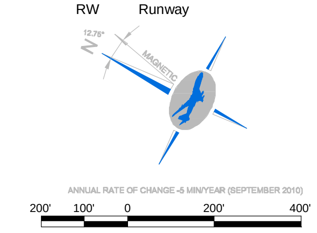


Figure 7-6
Inner Portion of the Approach Surface Plan

RPZs. The RPZs for Runways 12 and 30 have an inner width of 250 feet, an outer width of 450 feet, are 1,000 feet long, and encompass 8.035 acres.

Currently the County does not control the majority of the RPZs for Runway 12 or 30. The County does not control any of the Runway 12 RPZ beyond Pierce Street. The County owns approximately 0.37 acres of the RPZ on the southern side of Osborne Street. When the runway is shortened more of the RPZ will be within airport property, but as a percentage, most of the RPZ will still not be under County control. It is recommended that avigation easements be acquired to provide adequate protection. Approximately 5.4 acres of avigation easements be acquired for both RPZs (10.8 acres total).

Several roads traverse the RPZs including Pierce Street, Jouett Street, Carl Street, Hoytt Street, and Sutter Avenue (Runway 12 end) and Osborne Street, Wingo Street, Correnti Street, Bromwich Street, Montague Street, and San Fernando Road (Runway 30 end). Residences are located within the RPZs. These land uses have existed within the RPZ for many years and are assumed to remain.

LAND USE PLAN

The Land Use Plan illustrates applicable Caltrans Land Use Planning Handbook (Handbook) land use planning safety zones, as applied to Whiteman Airport. This plan reflects the future, shortened, runway configuration. Safety zones for Whiteman zones were developed using Example 1 – Short General Aviation Runway – in Figure 9K of the Handbook (see Appendix E). The following assumptions were made:

- Runway length of 3,768 feet
- Approach visibility minimums greater than or equal to 1 mile
- Runway protection zone dimensions are 250-foot inner width, 450-foot outer width, and 1,000 feet long
- Single sided traffic pattern (eastern side of airport only).

The Handbook includes six different zones which have varying degrees of risk and uses recommended within the zones. Table 7-4 lists the different safety zones and basic compatibility qualities of each zone.

The standard safety zones were adjusted to reflect that Whiteman's traffic pattern is on the eastern side of the airport. Therefore, no turning zones (Zone 3) are included west of the runway. The traffic pattern zone (Zone 6) is also only applicable east of the runway.

When applying criteria and compatibility guidelines as noted in the Handbook, several inconsistencies are noted. Whiteman Airport is surrounded by residential development. There are also four schools within Zone 6, which should be avoided (see Figure 7-7).

It should be noted that the Caltrans Handbook is meant to serve as a guide for development adjacent to an airport. The Handbook does not constitute State law and it is the responsibility of the local airport land use commission to decide if a development is compatible. Additionally, these guidelines should be used when re-development, or new development, of a parcel is proposed. Figure 7-7 can be used as a guide to supplement the current Whiteman Airport Compatible Land Use Plan (CLUP) when projects are presented to the Los Angeles County Airport Land Use Commission. It is recommended that the current CLUP be updated to reflect current Caltrans Handbook safety zone criteria. The current CLUP was adopted in 1991 and revised in 2004. The 2004 revision focused on putting noise contour and safety maps into a digital (GIS) format.

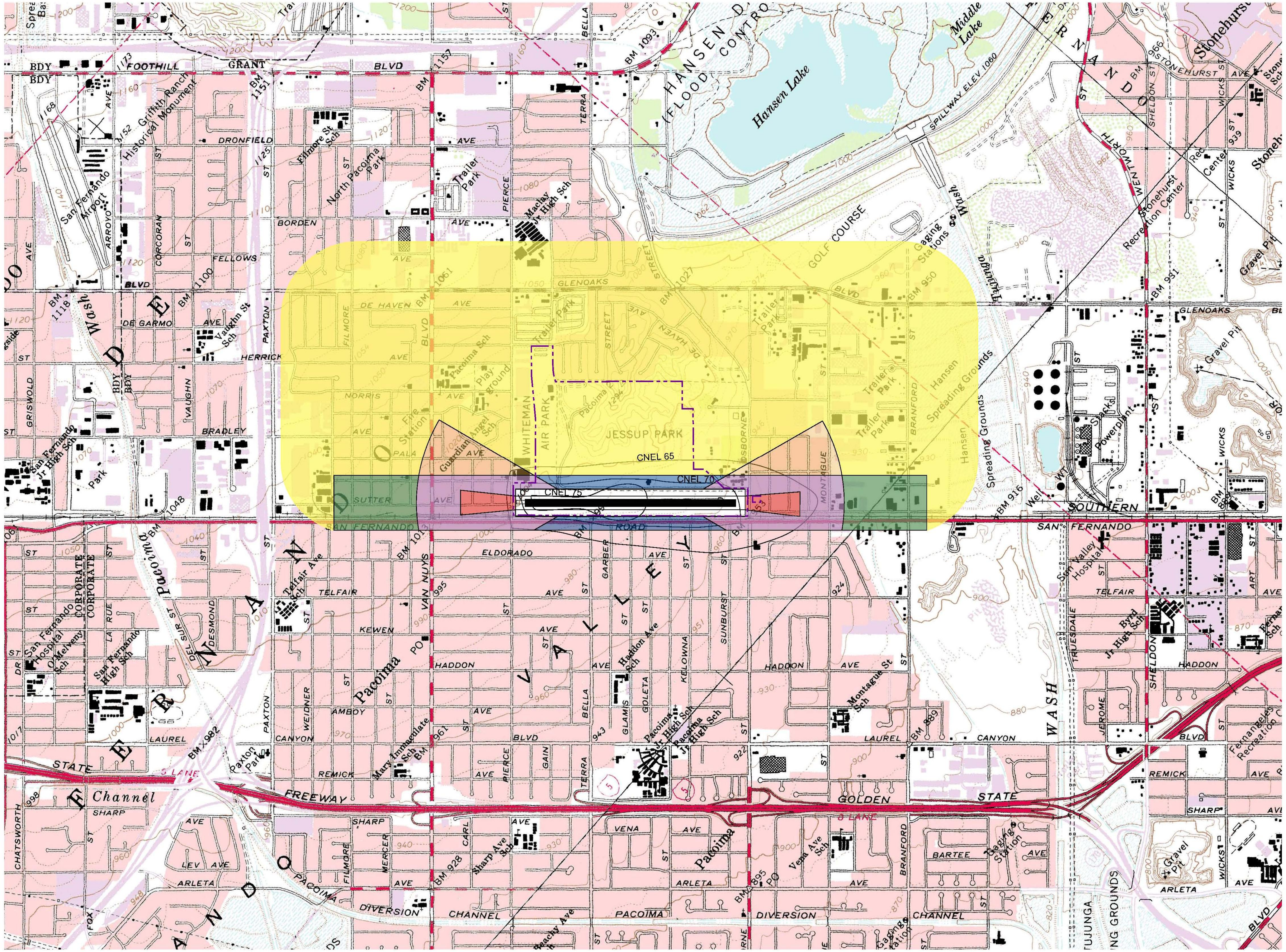
EXHIBIT "A" – PROPERTY MAP

The Exhibit "A" – Property Map depicts the various tracts of land within the airport boundary and indicates the parcel numbers and acreage of each tract and is illustrated in Figure 7-8. The County does not have any existing avigation easements. It is recommended that the County acquire 10.8 acres of avigation easements to protect the future approach/departure runway protection zones. As previously noted, most of the runway protection zones are not under airport control. No fee acquisitions are included within this master plan update. However, in researching assessor parcel maps for this exhibit, it was noted that the portion shown in purple on Figure 7-8 may be part of airport property. It is recommended that the County conduct title searches to discover actual ownership of these 6.97 acres. Acreage of existing and future County controlled land for the airport is noted in Table 7-5.

Table 7-4
CALTRANS LAND USE SAFETY ZONES
AND BASIC COMPATIBILITY QUALITIES

Zone		Basic Compatibility Qualities
1	Runway Protection Zone	• Airport ownership encourage • Prohibit all new structures • Prohibit residential land uses • Avoid nonresidential uses except if very low intensity character and confined to the sides and outer end of the area
2	Inner Approach/Departure Surface Zone	• Prohibit residential uses except on large, agricultural parcels • Limit nonresidential activities which attract few people • Prohibit children’s schools, day care centers, hospitals, nursing homes • Prohibit hazardous uses
3	Inner Turning Zone	• Limit residential use to very low densities • Avoid nonresidential uses having moderate or higher usage intensities • Prohibit children’s schools, large day care centers, hospitals, nursing homes • Avoid hazardous uses
4	Outer Approach/Departure Zone	• Limit nonresidential uses as in Zone 3 • Prohibit children’s schools, large day car centers, hospitals, nursing homes
5	Sideline Zone	• Avoid residential uses • Allow all common aviation-related activities provided that height-limit criteria are met • Limit other nonresidential uses similarly to Zone 3, but with slightly higher usage intensities • Prohibit children’s schools, large day care centers, hospitals, nursing homes
6	Traffic Pattern Zone	• Allow residential uses • Allow most nonresidential uses; prohibit outdoor stadiums and similar uses with very high intensities • Avoid children’s schools, large day care centers, hospitals, nursing homes

Source: California Airport Land Use Planning Handbook (January 2002).



Source of data for maps: USGS maps Burbank, San Fernando, Sunland, and Van Nuys (1966).

CALTRANS ZONES

Symbol	Zone	Maximum Residential Density[1] (Dwelling Units per Gross Acre)			Maximum Non-Residential Density (Average number of People per Gross Acre)		
		Rural Farmland/ Open Space	Rural/ Suburban	Urban	Rural Farmland/ Open Space	Rural/ Suburban	Urban
	1. Runway Protection Zone	0	0	0	0[3]	0[3]	0[3]
	2. Inner Approach/ Departure Zone	Maintain[5]	1 d.u. per 10-20 ac.	0	10-25	25-40	40-60
	3. Inner Turning Zone	Maintain[5]	1 d.u. per 2-5 ac.	Infill[2]	60-80	60-80	80-100
	4. Outer Approach/ Departure Zone	Maintain[5]	1 d.u. per 2-5 ac.	Infill[2]	60-80	60-80	80-100
	5. Sideline Zone	Maintain[5]	1 d.u. per 1-2 ac.	Infill[2]	80-100	80-100	100-150
	6. Traffic Pattern Zone	No Limit	No Limit	No Limit	150	150	No Limit[4]

[1] Clustering to preserve open land encouraged in all zones.
[2] Allow infill at up to average of surrounding residential area only if non-residential uses are not feasible.
[3] Exceptions can be permitted for agricultural activities, roads, and automobile parking provided that FAA criteria are satisfied.
[4] Large stadiums and similar uses should be prohibited.
[5] Maintain current zoning if less than density criteria for rural/suburban setting.

Source: California Airport Land Use Planning Handbook, State of California Department of Transportation Division of Aeronautics, January 2002.

Notes: 1. Safety zones are based on the proposed runway location.

LEGEND

DESCRIPTION	EXISTING
PROPOSED RUNWAY	
ZONE 1 - RUNWAY PROTECTION ZONE	
ZONE 2 - INNER APPROACH/DEPARTURE ZONE	
ZONE 3 - INNER TURNING ZONE	
ZONE 4 - OUTER APPROACH/DEPARTURE ZONE	
ZONE 5 - SIDELINE ZONE	
ZONE 6 - TRAFFIC PATTERN ZONE	
CNEL 65 dB	
CNEL 70 dB	
CNEL 75 dB	
PROPERTY LINE	

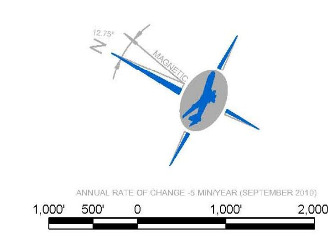


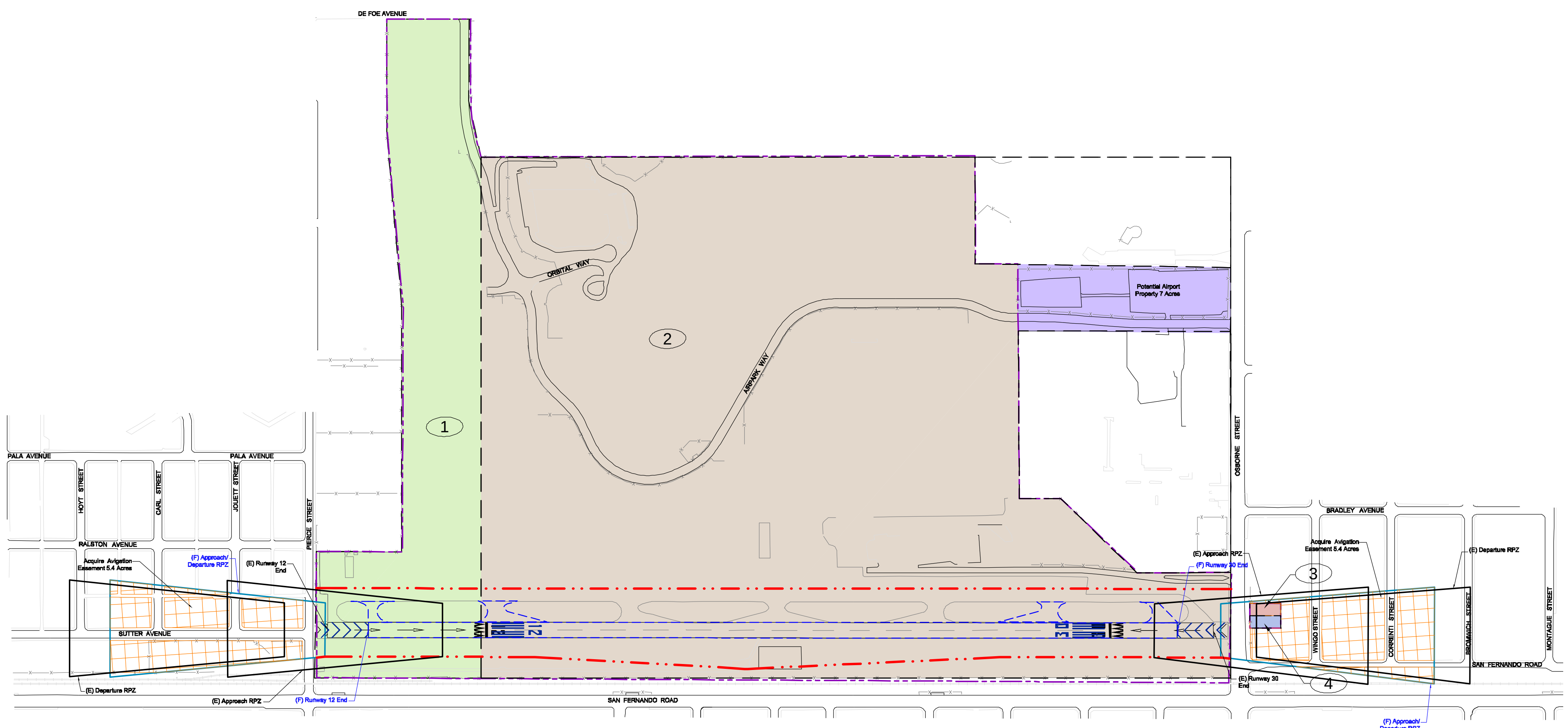
Figure 7-7
Land Use Plan

NOTES:

1. Boundary lines were established from: Office of the Assessor, Los Angeles County, California; 2001 2536:17 Sheet 1. Tract No. 43464.
2. Unless otherwise stated Book, Page, and Parcel information in the Property Table references Assessor Maps.
3. Proposed Acquisitions include Avigation Easements.
4. In researching assessor parcel maps for this exhibit, it was noted that the portion shown in purple may be part of airport property. It is recommended that the county conduct title searches to discover actual ownership of these 7 acres.

LEGEND

DESCRIPTION	EXISTING
FUTURE AIRFIELD PAVEMENT	
BUILDING RESTRICTION LINE (BRL)	
FUTURE AVIGATION EASEMENT	



#	TYPE OF INTEREST	BOOK/PAGE	PARCEL	ACREAGE	DATE OF RECORDING	COMMENTS
1	FEE	2536/17	904	32.3*	UNKNOWN	
2	FEE	2536/17	906	151.14	UNKNOWN	
3	FEE	2537/10	900	0.19	4/20/1999	AIP 03-06-0134-04 and -05
4	FEE	2537/10	901	0.19	4/20/1999	AIP 03-06-0134-04 and -05

PROPERTY TABLE

* ACREAGE IS CALCULATED

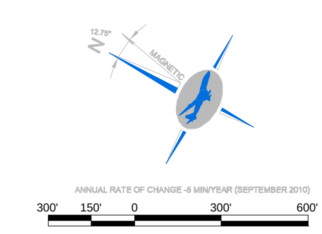


Figure 7-8
Exhibit "A" - Property Map

Table 7-5
COUNTY CONTROLLED LAND FOR
WHITEMAN AIRPORT (acres)

County Ownership	Existing	Future
Land in Fee	187.0	187.0
Potential Airport Land	0.0	7.0
Avigation Easement	0.0	10.8
Total	187.0	204.8

Source: AECOM.

The primary intent of the Exhibit "A" property map is to identify all land which is designated airport property and to provide an inventory of all parcels which make-up the airport.

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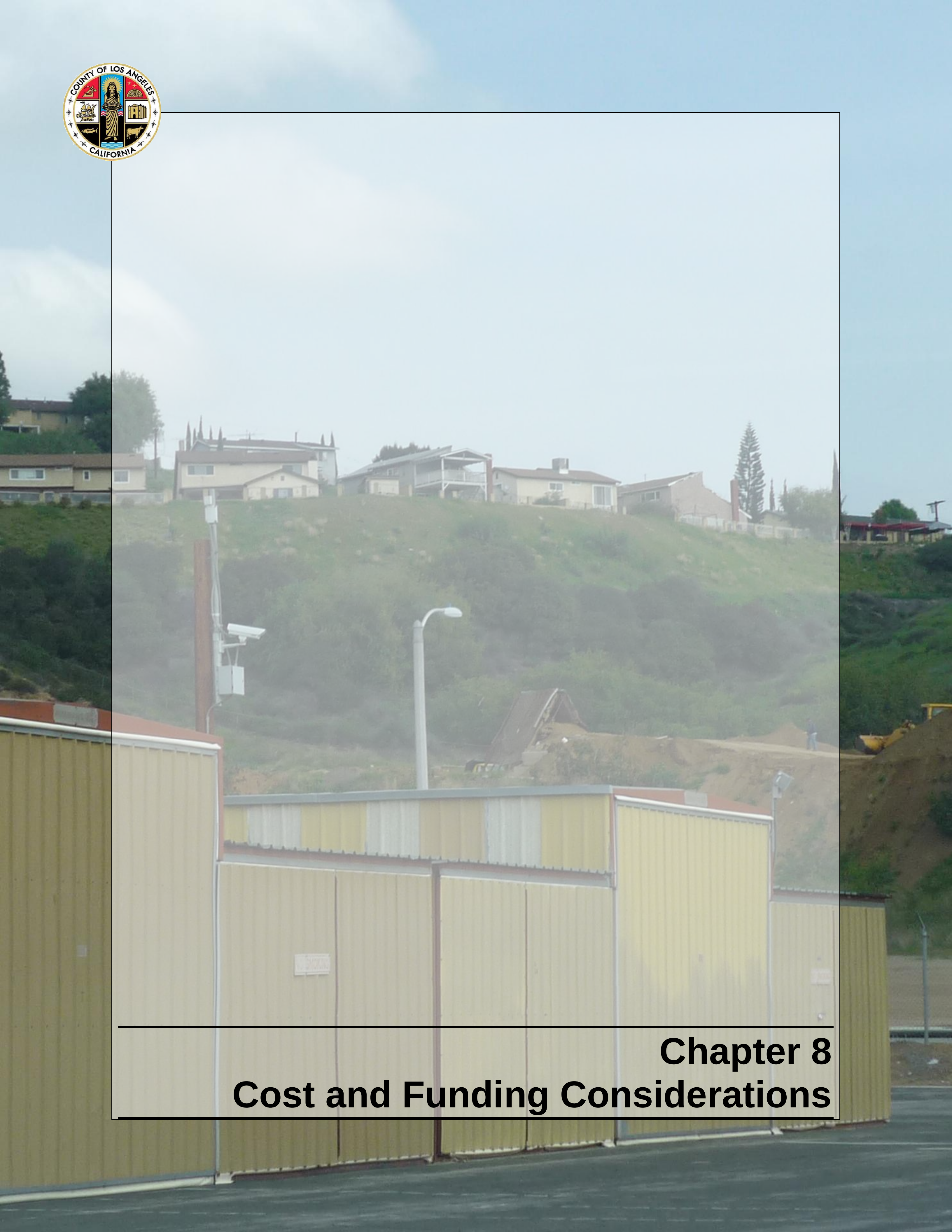


Chapter 8
Cost and Funding Considerations

Chapter 8
Cost and Funding Considerations

INTRODUCTION

This chapter presents financial information related to the recommended improvements of the Whiteman Airport Master Plan Update, as discussed in previous chapters of this report. It identifies the sequencing of costs and the financial obligations to be assumed by Federal, State, and local government. The financial data consists of two basic elements – the capital improvement costs associated with recommended development and the staging of development and improvement costs. As previously noted, Phase 1 is from 2009 to 2013, Phase 2 from 2014 to 2018, and Phase 3 from 2019 to 2030. The estimated costs for this study are stated in constant 2009 dollars.

CAPITAL COST ESTIMATES AND PHASING

A summary of capital improvements is presented in Table 8-1 and the schedule of capital improvements is included Table 8-2. Table 8-2 describes in detail the proposed investment in construction and expansion activities as described in Chapter 7 of this study. For each of the three development phases it presents the estimated development costs and the projected timing. These costs were developed based on recent construction costs at similar airports, contacting suppliers, and construction experience including recent projects developed by the County. Project costs include estimated architectural and engineering design fees, mobilization, and contingency allowances. Mobilization and contingency allowances are 30 percent and architectural/engineering allowances are 20 percent of project cost. For detailed cost information, reference Appendix F.

Table 8-1
SUMMARY OF CAPITAL COSTS (2009 Dollars)

Timing	Public Investment	Private Investment	Total Investment
Phase 1	$16,539,900	$0	$16,539,900
Phase 2	$6,393,350	$4,294,800	$10,688,150
Phase 3	$6,413,350	$8,402,700	$14,816,050
Total Plan	**$29,346,600**	**$12,697,500**	**$42,044,100**

Source: AECOM analysis.

As can be seen in Table 8-2, Phase 1 improvements total $16.5 million and focus on grading the hill and relocating the terminal, providing accommodations to develop the helicopter area. Phase 2 and 3 improvements total $10.7 and $14.8 million, respectively. Phase 2 constructs the terminal building, expands the helicopter area, and relocates the runway thresholds. The final phase of the master plan, Phase 3, emphasizes development of based aircraft facilities, primarily individual hangars and enhances the operational capacity of the runway. Figures 8-1 through 8-3 identify recommended improvement projects in each of the three development phases. The figures depict the location of each project along with the source of funding. Included on the graphics are tables identifying who will lead or fund the project, and project schedule. County costs can be funded through cash or borrowing.

Table 8-2
SCHEDULE OF IMPROVEMENTS
(2009 Dollars)

Project		Cost	Timing
	Phase 1 (2009 - 2013)		
1	WAAS/LPV Survey	$ 260,000	Underway
2	Slurry Seal Aircraft Parking Ramp	$ 500,000	2011
3	Perimeter Fencing Rehabilitation and "Penalty Box" Gate Access System	$ 1,313,000	2011
4	Grade Hill for Terminal Facility	$10,918,000	2011
5	Relocate Terminal Facility		2012-2014
5a	Reroute Airpark Way behind Terminal Facility	$ 1,594,500	2012
5b	Construct Transient Apron	$ 1,954,400	2013
	Phase 1 Total	**$16,539,900**	
	Phase 2 (2014 - 2018)		
5c	Construct Terminal Facility, Associated Parking, and Green Space	$ 2,917,400	2014
6	Relocate Runway Thresholds and Paint Non-Precision Markings	$ 678,750	2014
7	Construct Runway 30 Hold Apron	$ 335,250	2014
8	Demolish Existing Terminal Facility	$ 87,700	2015
9	Reroute Airport Entrance Road and Construct Automobile Parking Lot	$ 1,731,500	2015
10	Construct New Conventional Hangar in Helicopter Area	$ 1,428,400	2015
11	Construct Hangars	$ 658,600	2015
12	Construct Conventional Hangars	$ 1,437,800	2016
13	Stripe Zipper Lane	$ 30,000	2016
14	Enhance Blast Protection	$ 132,750	2017
15	Survey Underground Utilities - Develop Utility Map	$ 480,000	2018
16	Replace Northeast County T-Hangars	$ 770,000	2018
	Phase 2 Total	**$10,688,150**	
	Phase 3 (2019 - 2030)		
16	Upgrade Apron Lighting/Security Camera System	$ 1,723,000	Long-Term
17	Construct Second Conventional Hangar in Helicopter Area	$ 987,000	Long-Term
18	Construct Exit Taxiways	$ 764,000	Long-Term
19	Construct Hangars in Helicopter Area	$ 2,267,900	Long-Term
20	Reroute Airpark Way behind County Hangars	$ 3,242,550	Long-Term
21	Construct Additional Portable Hangars	$ 574,500	Long-Term
22	Construct Portable Hangars/Individual Hangars and Associated Auto Parking	$ 4,294,500	Long-Term
23	Construct Non-Airworthy Tie-Down Parking Area	$ 557,600	Long-Term
24	Acquire 10.8 Acres in Avigation Easements	$ 405,000	Long-Term
	Phase 3 Total	**$14,816,050**	
	Total All Phases	**$42,044,100**	

Source: AECOM analysis.

It is important to remember that the real determinant of the specific timing of demand-related improvements (capacity oriented) is the actual traffic experienced. Therefore, the schedule presented does not commit the sponsor to provide such development until traffic levels reach those projected in this study. The costs projected for each phase are divided into public and private sector portions. The public investment items outlined qualify for Federal AIP (Airport Improvement Program) and California Aid to

FUNDING SOURCES KEY

- 1.X FAA and Local Funds
- 1.X FAA, State, and Local Funds
- 1.X Local Funds
- 1.X Private Party Funds
- 1.X State and Local Funds
- 1.X Local and Private Party Funds

LEGEND

- Future Buildings
- Future Roads/Automobile Parking
- Future Airfield Pavement

Scale: 1" = 500'

	Project	County Cost	Project Cost	Timing
	Phase 1 (2009 - 2013)			
1.1	WAAS/LPV Survey	$ 13,000	$ 260,000	Underway
1.2	Slurry Seal Aircraft Parking Ramp	$ 25,000	$ 500,000	2011
1.3	Perimeter Fencing Rehabilitation and "Penalty Box" Gate Access System	$ 65,650	$ 1,313,000	2011
1.4	Grade Hill for Terminal Facility	$ 5,783,000	$ 10,918,000	2011
1.5	Reroute Airpark Way behind Terminal Facility	$ 159,450	$ 1,594,500	2012
1.6	Construct Transient Apron	$ 195,440	$ 1,954,400	2013
	Phase 1 Total	$ 6,228,540	$ 16,279,900	

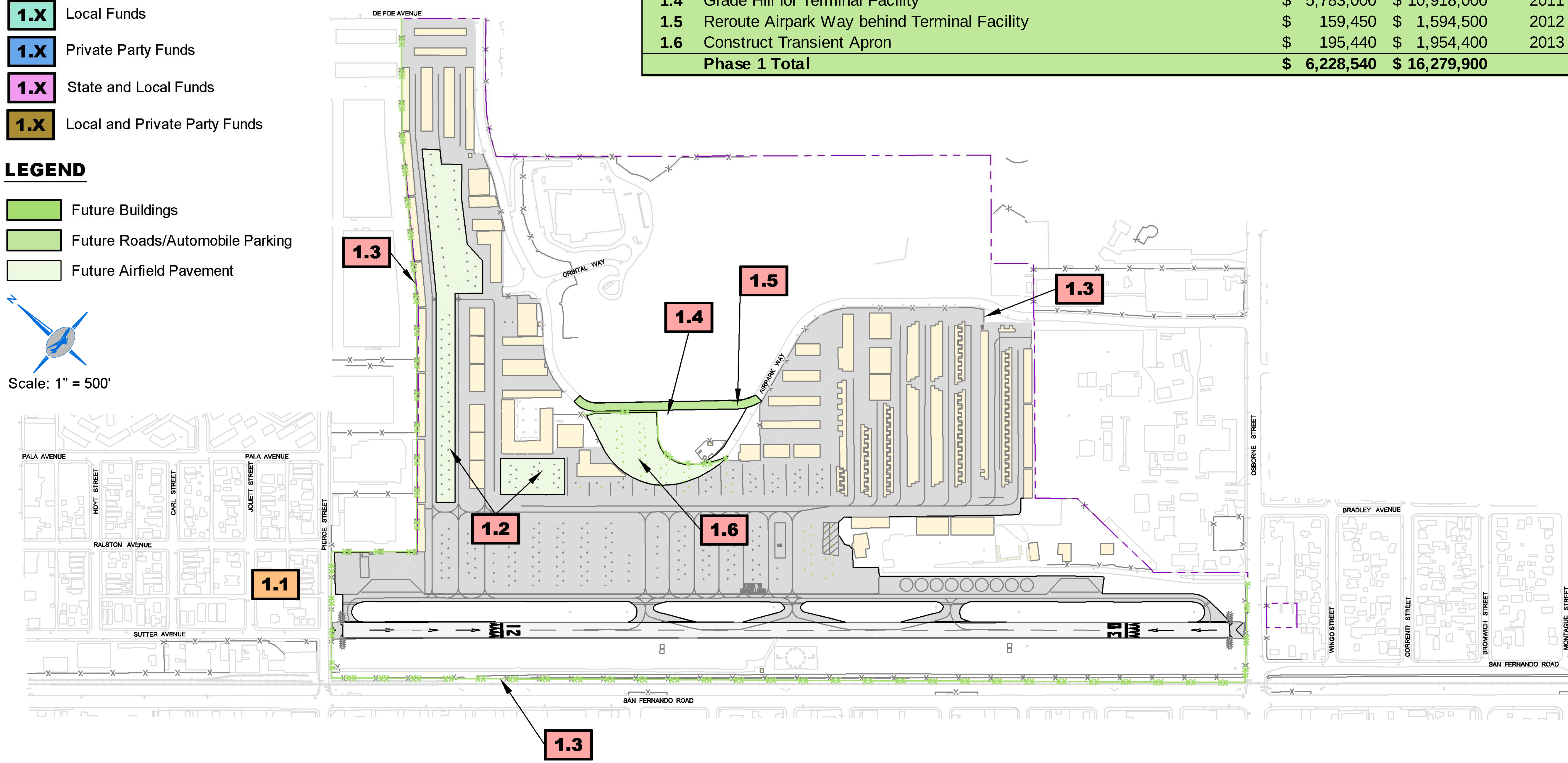


Figure 8-1
Phase 1 Improvements

PHASE 2 (2014 - 2018)

FUNDING SOURCES KEY

- 2.X FAA and Local Funds
- 2.X FAA, State, and Local Funds
- 2.X Local Funds
- 2.X Private Party Funds
- 2.X State and Local Funds
- 2.X Local and Private Party Funds

LEGEND

- Future Buildings
- Future Road/Automobile Parking
- Future Airfield Pavement

Scale: 1" = 500'

	Project	County Cost	Project Cost	Timing
	Phase 2 (2014 - 2018)			
2.1	Construct Terminal Facility, Associated Parking, and Green Space	$ 994,400	$ 2,917,400	2014
2.2	Relocate Runway Thresholds and Paint Non-Precision Markings	$ 67,875	$ 678,750	2014
2.3	Construct Runway 30 Hold Apron	$ 33,525	$ 335,250	2014
2.4	Demolish Existing Terminal Facility	$ 87,700	$ 87,700	2015
2.5	Reroute Airport Entrance Road and Construct Automobile Parking Lot	$ 143,150	$ 1,731,500	2015
2.6	Construct New Conventional Hangar in Helicopter Area	$ -	$ 1,428,400	2015
2.7	Construct Hangars	$ -	$ 658,600	2015
2.8	Construct Conventional Hangars	$ -	$ 1,437,800	2016
2.9	Stripe Zipper Lane	$ 20,000	$ 30,000	2016
2.10	Enhance Blast Protection	$ 122,750	$ 132,750	2017
2.11	Survey Underground Utilities - Develop Utility Map	$ 24,000	$ 480,000	2018
2.12	Replace Northeast County T-Hangars	$ -	$ 770,000	2018
	Phase 2 Total	**$ 1,493,400**	**$ 10,688,150**	

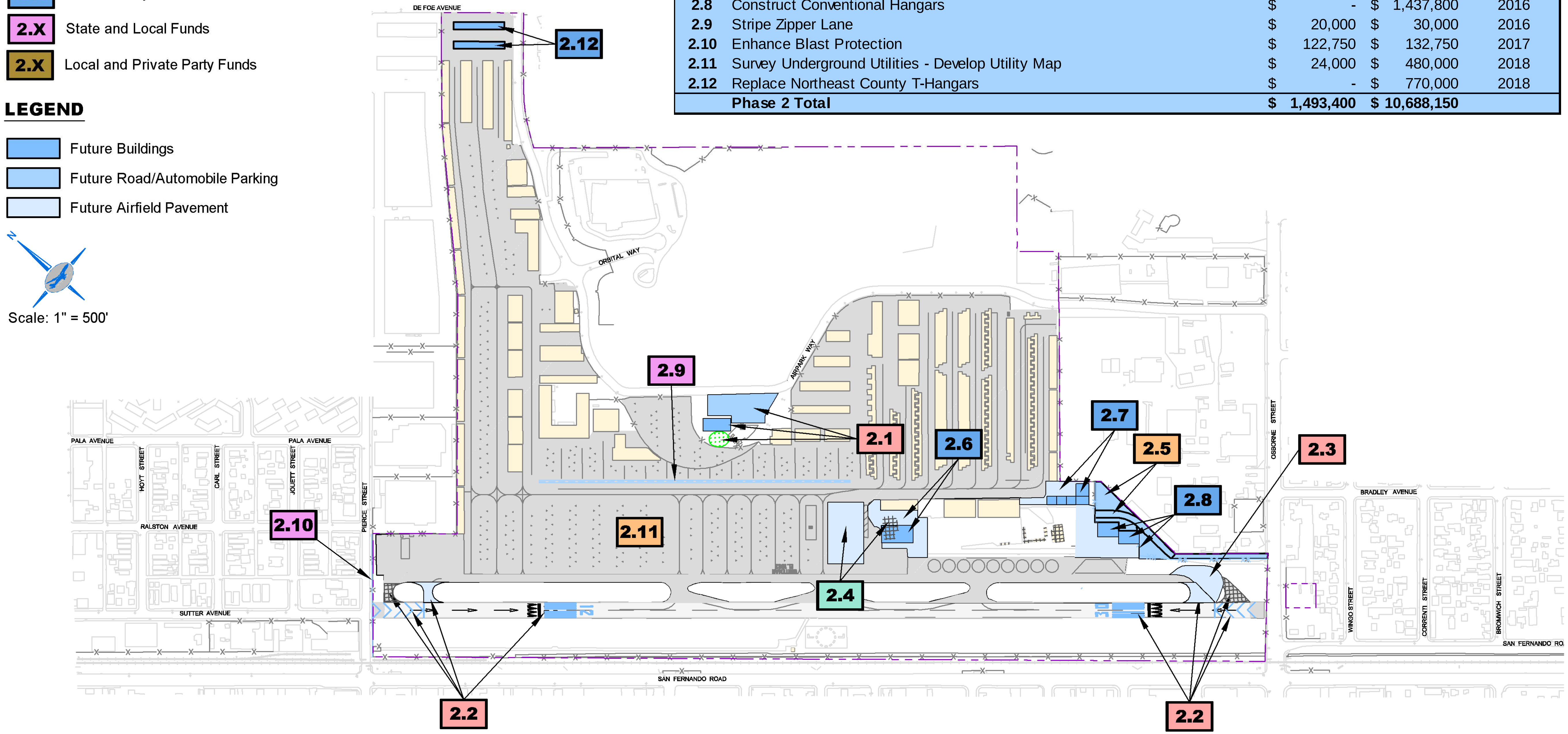


Figure 8-2
Phase 2 Improvements

PHASE 3 (2019 - 2030)

FUNDING SOURCES KEY

- **3.X** FAA and Local Funds
- **3.X** FAA, State, and Local Funds
- **3.X** Local Funds
- **3.X** Private Party Funds
- **3.X** State and Local Funds
- **3.X** Local and Private Party Funds

LEGEND

- Future Buildings
- Future Road/Parking
- Future Pavement/Avigation Easement

Scale: 1" = 500'

	Project	County Cost	Project Cost	Timing
	Phase 3 (2019 - 2030)			
3.1	Upgrade Apron Lighting/Security Camera System	$ 142,300	$ 1,723,000	Long-Term
3.2	Construct Second Conventional Hangar in Helicopter Area	$ -	$ 987,000	Long-Term
3.3	Construct Exit Taxiways	$ 46,400	$ 764,000	Long-Term
3.4	Construct Hangars in Helicopter Area	$ -	$ 2,267,900	Long-Term
3.5	Reroute Airpark Way behind County Hangars	$ 294,255	$ 3,242,550	Long-Term
3.6	Construct Additional Portable Hangars	$ -	$ 574,500	Long-Term
3.7	Construct Portable Hangars/Individual Hangars and Associated Auto Parking	$ -	$ 4,294,500	Long-Term
3.8	Construct Non-Airworthy Tie-Down Parking Area	$ 278,800	$ 557,600	Long-Term
3.9	Acquire 10.8 Acres in Avigation Easements	$ 20,250	$ 405,000	Long-Term
	Phase 3 Total	**$ 782,005**	**$ 14,816,050**	

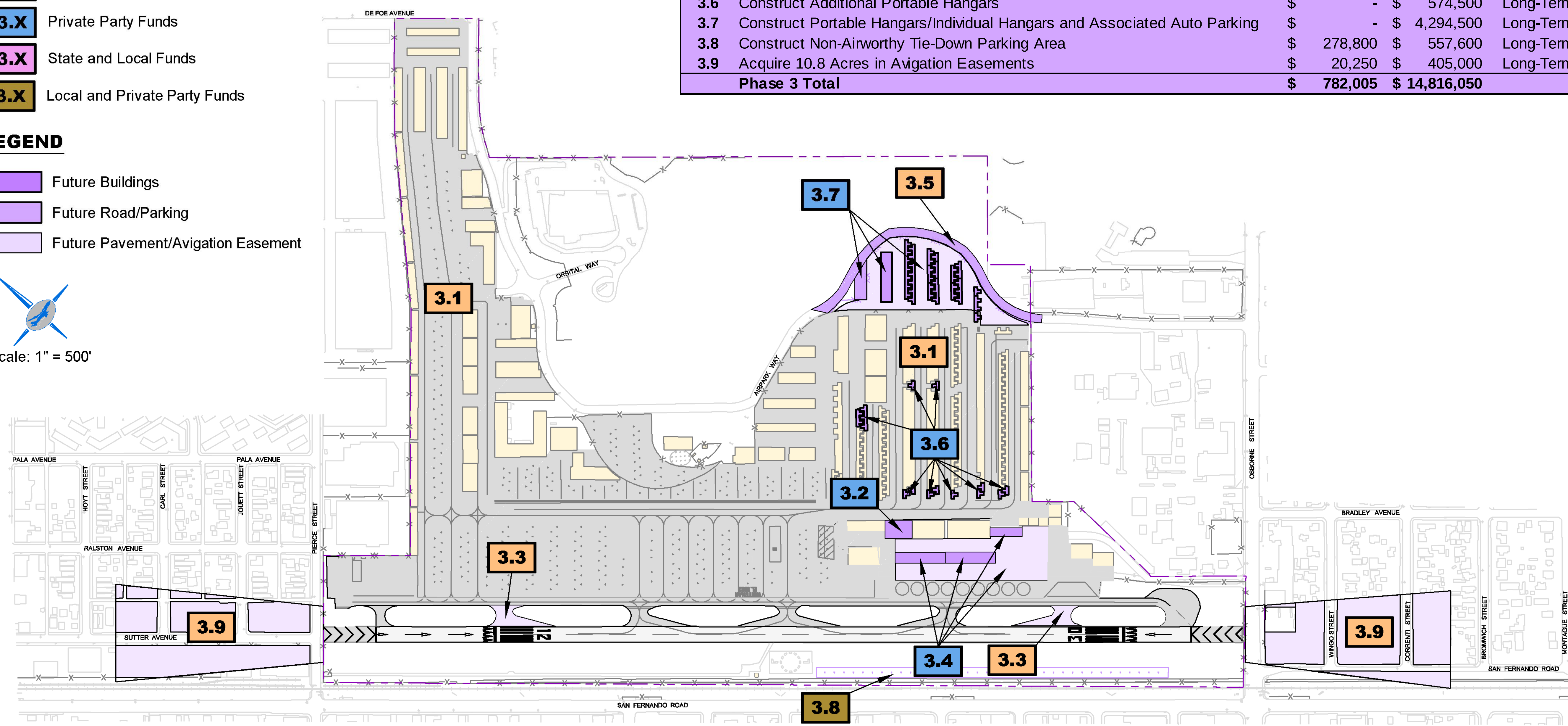


Figure 8-3
Phase 3 Improvements

Airports Program (CAAP) funding. All public investment construction is to be financed by the public sector. Various funding sources are described in the section below.

FUNDING SOURCES

Funding sources available to finance the master plan capital improvement program (CIP) include: the FAA's Airport Improvement Program (AIP), private capital, airport revenues, and County funds.

FAA Airport Improvement Program (AIP)

On the federal level, the FAA's Aid to Airports Program provides funding for planning, construction, or rehabilitation at any public airport. The current grant program, known as the AIP, was established by the Airport and Airway Improvement Act of 1982 and amended most recently by the Vision 100 – Century of Aviation Reauthorization Act of 2003. The AIP provides funding from the Airport and Airway Trust Fund for airport development, airport planning, noise compatibility planning and to carrying out noise compatibility programs.

The Trust Fund provides the revenues used to fund AIP projects. The Trust Fund concept guarantees a stable funding source whereby users pay for the services they receive. Taxes or user fees are collected from the various segments of the aviation community and placed in the Trust Fund.

The Airport and Airway Improvement Act of 1982, as amended, authorized the use of monies from the Airport and Airway Trust Fund to make grants under the Airport Improvement Program through fiscal year 2007, which ended on September 30, 2007. Since then, 17 short-term extensions have been authorized and provided AIP funding. Congress is in the process of reauthorizing FAA funding as reauthorization is necessary.

Under the Act, the authorization for funds not obligated in a fiscal year carries forward to future fiscal years unless the Congress takes specific action to limit such amounts. During the annual appropriations process, Congress may also limit the funding for grants to an amount that differs from the above authorization.

Projects eligible for AIP funding consist of: capital outlays for land acquisition; site preparation; construction, alteration, and repair of runways, taxiways, aircraft parking aprons, and roads within airport boundaries (except for access to areas providing revenue, such as parking lots and aviation industrial areas); construction and installation of lighting, some utilities, navigational aids, and aviation-related weather reporting equipment and safety equipment; security equipment required of the sponsor by the Secretary of Transportation; limited terminal development at commercial service airports; and equipment to measure runway surface tension. Grants may not be made for the construction of automobile parking facilities, buildings not related to the safety of persons in the airport, landscaping or art work, or routine maintenance and repair. Technical advisory services are also provided.

The Airport Improvement Program provides a maximum federal share of 90 percent for all eligible projects at Whiteman Airport. The recently expired reauthorization temporarily increased the maximum share to 95 percent through 2009. It is unknown if this share increase will be carried forward in future reauthorization bills and for purposes of this analysis it is assumed that the share will remain at 90 percent. Because of the large number of projects competing for AIP funds, not all eligible projects can be funded.

California Aid to Airports Program (CAAP)

The CAAP has an acquisition and development grant (A&D) program available to commercial service airports. Acquisition and development grants provide discretionary funds for airport projects included in the adopted State Capital Improvement Program (CIP). The CIP is an element of the California Aviation System Plan (CASP).

Acquisition and development grants can be used to fund any capital improvements on an airport and for aviation purposes with runway maintenance projects receiving the highest priority for funding. Additionally, funds can be used for servicing general obligation or revenue bonds issued to finance airport capital improvements. Funds cannot be used for operations or general maintenance. Grants range from $10,000 to $500,000.

On July 28, 2009 the State of California passed a budget that suspended state grant funding programs for fiscal years 2009 and 2010. There is speculation that this suspension may remain in affect after 2010. Therefore, for planning purposes, it is assumed that this program will resume by the intermediate-term (2016).

The California Transportation Commission annually established a local matching requirement which ranges from 10 to 50 percent of the non-Federal funded portion of the project cost. Since 1977/78, recipients have provided a minimum match of 10 percent of eligible project costs for acquisition and development projects.

In addition to A&D grants, the CAAP provides financial assistance in the form of low interest loans, repayable over a period not to exceed 25 years. Two types of loans are available: Revenue Generating Loans and Matching Funds loans. The interest rate for these loans is based on the most recent issue of State of California bonds sold prior to approval of the loan.

Funds from Revenue Generating Loans may be used for any projects not eligible for funding under other programs and which are designed to improve airport self-sufficiency. Loans of this type cannot be used for ‘land banks,’ automobile access roads, automobile parking facilities, and facilities to accommodate airlines. The loan amounts are based upon an analysis of each individual application and subject to availability of funds. Matching fund loans may be used for securing Federal AIP grants and the loan amount equals the sponsor’s share of project costs required to match a federal grant. Requests for matching fund loans are given highest priority.

For the purpose of this study, it is assumed that each eligible project will receive between $10,000 and $30,000. This represents historical minimum grant assistance for the state ($10,000). Maximum funding levels of $30,000 reflect historical funding levels and demands for funds for AIP matching.

Private Capital

Private funding is often available for certain airport improvements, including FBO site development, aviation industrial site development, and aircraft hangar construction.

Airport Revenues and County Funds

Finally, the County may fund some capital improvements with County funds. The airport generates revenue through leases, fuel sales, and hangar fees.

PROJECT COST SHARES

Project cost shares were allocated among various sources under the following assumptions and criteria: 1) all FAA AIP eligible projects will be funded at their maximum eligible level (generally 90 percent of project costs); 2) after 2013, eligible projects are also funded with state CAAP funds; and 3) the balance of project costs were assigned to local responsibility.

At the local level, project cost shares were further allocated among two funding sources: private capital and County/airport contributions.

Summary of Funding Program

The schedule of master plan improvement costs (in constant 2009 dollars) by phase and source under these assumptions and criteria are summarized in Table 8-3. In summary, of the $42.0 million, in constant 2009 dollars, master plan capital improvement program is anticipated to be funded by FAA AIP grants ($20.6 million – 49.1 percent of the total); state ($197,000 thousand – 0.5 percent of the total); private capital ($12.7 million – 30.2 percent of the total); and County/airport contributions ($8.5 million – 20.3 percent of the total). Detailed allocations of project costs by funding source are shown in Table 8-4.

Table 8-3
SUMMARY OF CAPITAL IMPROVEMENT PLAN FUNDING
BY PHASE AND SOURCE
(thousands of 2009 Dollars)

Phase	FAA	State	Local	Private	Total	% Total
1 (2009 - 2013)	$10,285	$13	$6,242	$0	$16,540	39.3%
2 (2014 - 2018)	$4,826	$74	$1,493	$4,295	$10,688	25.4%
3 (2019 - 2030)	$5,521	$110	$782	$8,403	$14,816	35.2%
Total	$20,632	$197	$8,517	$12,698	$42,044	100.0%
% Total	49.1%	0.5%	20.3%	30.2%	100.0%	

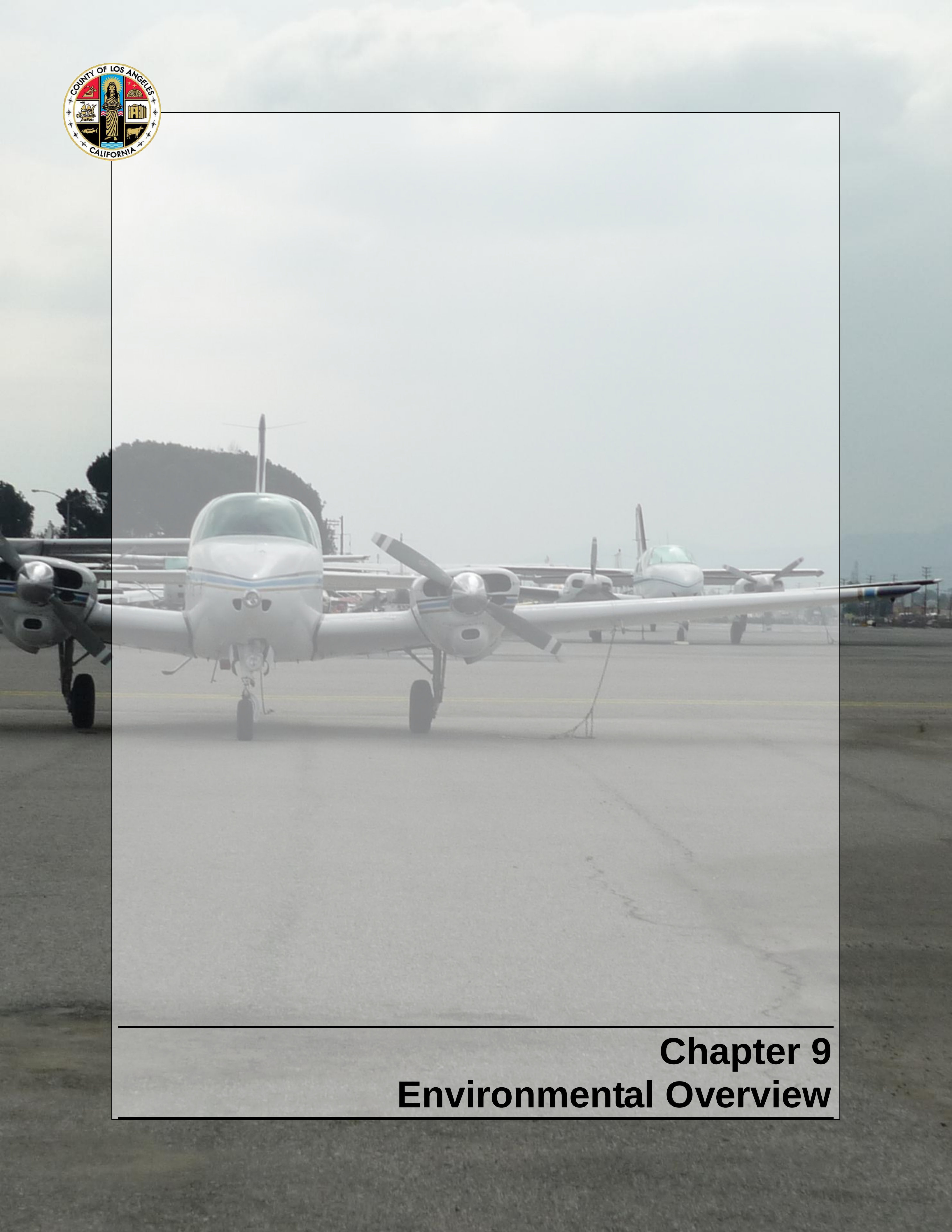
Source: AECOM analysis.

The costs to grade the hill and relocate construct the transient apron are approximately $14.5 million. This represents approximately 88 percent of Phase 1 costs. Phase 1 represents approximately 39 percent of capital improvement program costs. Relocation of the terminal facility continues into Phase 2, when the terminal is constructed. In total, the cost to grade the hill and relocate the terminal facility is $17.4 million, or 41 percent of the total program cost. These projects are enabling projects; allowing for development of the consolidated helicopter operating area and additional based aircraft facilities. The consolidated helicopter operating area enhances safety and operations at the airport. Increased based aircraft facilities will allow increased revenues to help create a financially sustainable airport.

Table 8-4
SCHEDULE OF MASTER PLAN IMPROVEMENTS AND ESTIMATED COSTS BY FUNDING SOURCE
(2009 Dollars)

Year	Project	FAA	State	Local	Private	Total
Underway	WAAS/LPV Survey	$ 234,000	$ 13,000	$ 13,000	$ -	$ 260,000
2011	Slurry Seal Aircraft Parking Ramp	$ 475,000	$ -	$ 25,000	$ -	$ 500,000
2011	Perimeter Fencing Rehabilitation and "Penalty Box" Gate Access System	$ 1,247,350	$ -	$ 65,650	$ -	$ 1,313,000
2011	Grade Hill for Terminal Facility	$ 5,135,000	$ -	$ 5,783,000	$ -	$10,918,000
2012	Reroute Airpark Way behind Terminal Facility	$ 1,435,050	$ -	$ 159,450	$ -	$ 1,594,500
2013	Construct Transient Apron	$ 1,758,960	$ -	$ 195,440	$ -	$ 1,954,400
2014	Construct Terminal Facility, Associated Parking, and Green Space	$ 1,923,000	$ -	$ 994,400	$ -	$ 2,917,400
2014	Relocate Runway Thresholds and Paint Non-Precision Markings	$ 610,875	$ -	$ 67,875	$ -	$ 678,750
2014	Construct Runway 30 Hold Apron	$ 301,725	$ -	$ 33,525	$ -	$ 335,250
2015	Demolish Existing Terminal Facility	$ -	$ -	$ 87,700	$ -	$ 87,700
2015	Reroute Airport Entrance Road and Construct Automobile Parking Lot	$ 1,558,350	$ 30,000	$ 143,150	$ -	$ 1,731,500
2015	Construct New Conventional Hangar in Helicopter Area	$ -	$ -	$ -	$ 1,428,400	$ 1,428,400
2015	Construct Hangars	$ -	$ -	$ -	$ 658,600	$ 658,600
2016	Construct Conventional Hangars	$ -	$ -	$ -	$ 1,437,800	$ 1,437,800
2016	Stripe Zipper Lane	$ -	$ 10,000	$ 20,000	$ -	$ 30,000
2017	Enhance Blast Protection	$ -	$ 10,000	$ 122,750	$ -	$ 132,750
2018	Survey Underground Utilities - Develop Utility Map	$ 432,000	$ 24,000	$ 24,000	$ -	$ 480,000
2018	Replace Northeast County T-Hangars	$ -	$ -	$ -	$ 770,000	$ 770,000
Long-Term	Upgrade Apron Lighting/Security Camera System	$ 1,550,700	$ 30,000	$ 142,300	$ -	$ 1,723,000
Long-Term	Construct Second Conventional Hangar in Helicopter Area	$ -	$ -	$ -	$ 987,000	$ 987,000
Long-Term	Construct Exit Taxiways	$ 687,600	$ 30,000	$ 46,400	$ -	$ 764,000
Long-Term	Construct Hangars in Helicopter Area	$ -	$ -	$ -	$ 2,267,900	$ 2,267,900
Long-Term	Reroute Airpark Way behind County Hangars	$ 2,918,295	$ 30,000	$ 294,255	$ -	$ 3,242,550
Long-Term	Construct Additional Portable Hangars	$ -	$ -	$ -	$ 574,500	$ 574,500
Long-Term	Construct Portable Hangars/Individual Hangars and Associated Auto Parking	$ -	$ -	$ -	$ 4,294,500	$ 4,294,500
Long-Term	Construct Non-Airworthy Tie-Down Parking Area	$ -	$ -	$ 278,800	$ 278,800	$ 557,600
Long-Term	Acquire 10.8 Acres in Avigation Easements	$ 364,500	$ 20,250	$ 20,250	$ -	$ 405,000
	Total All Phases	**$20,632,405**	**$ 197,250**	**$ 8,516,945**	**$12,697,500**	**$42,044,100**

Source: AECOM analysis.



Chapter 9
Environmental Overview

Chapter 9

Environmental Overview

INTRODUCTION

This environmental overview is based on the aviation activity forecasts and recommended improvements presented in preceding chapters of this report. The analysis covers the 20-year planning period of the master plan (2009 through 2030). It consists of an overview of the environmental constraints for the purposes of facilitating the preparation of environmental documentation under the National Environmental Policy Act (NEPA).[1] This program will develop in three phases: Phase 1 (2009-2013); Phase 2 (2014-2018); and Phase 3 (2019-2030).

Whiteman Airport is located in the City of Pacoima in Los Angeles County. 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 County of Los Angeles Department of Public Works, Aviation Division owns the airport and a private management company by way of an agreement with the County operates it.

SUMMARY OF IMPROVEMENTS

The proposed improvements identified in the master plan consist of the following 3 phases of development:

Phase 1 Projects (2009 to 2013)

- WAAS/LPV survey
- Slurry seal aircraft parking ramp
- Perimeter fencing rehabilitation and “penalty box” gate access system
- Grade hill for terminal facility
- Relocate terminal facility
  - Reroute Airpark Way behind terminal facility
  - Construct transient apron

Phase 2 Projects (2014 to 2018)

- Relocate terminal facility (continued)
  - Construct terminal facility, associated parking, and green space
- Relocate runway thresholds and paint non-precision markings
- Construct Runway 30 hold apron

[1] It will also facilitate the preparation of an Initial Study (IS) pursuant to the California Environmental Quality Act (“CEQA,” California Public Resources Code 21000 et seq.).

- Demolish existing terminal facility
- Reroute airport entrance road and construct automobile parking lot
- Construct new conventional hangar in helicopter area
- Construct hangars
- Construct conventional hangars
- Stripe zipper lane
- Enhance blast protection
- Survey underground utilities – develop utility map
- Replace northeast county T-hangars

Phase 3 Projects (2019 to 2030)

- Upgrade apron lighting/security camera system
- Construct second conventional hangar in helicopter area
- Construct exit taxiways
- Construct hangars in helicopter area
- Reroute Airpark Way behind County hangars
- Construct additional portable hangars
- Construct portable hangars/individual hangars and associated auto parking
- Construct non-airworthy tie-down parking area
- Acquire 10.8 acres in avigation easements

AIRCRAFT ACTIVITY

The most current FAA Terminal Area Forecast (TAF) was used as the basis for the forecasts presented in this section. It was deemed an efficient means to develop forecasts as previously defined during the scoping phase of the project. The 2007 TAF was used and includes data from 2006.

In 2030, the number of general aviation aircraft based at Whiteman is forecasted to be 874, an increase of existing levels (2008) by 262 aircraft (43 percent). The majority (89.6 percent) of aircraft operations in 2030 are expected to be by single engine piston aircraft. Aircraft operations are forecast to increase from 93,200 in 2008 to 143,500 operations in 2030. Sales of 100-octane fuel are projected to increase from the 2007 level of 245,931 to 372,600 gallons in 2030. Jet fuel sales are projected to increase from the 2007 level of 109,673 to 221,000 gallons in 2030.

TOPICS FOR ENVIRONMENTAL ANALYSIS

The topics for the environmental overview are based on federal guidelines contained in FAA Orders 1050.1E and 5050.4B, effective April 28, 2006, "Airport Environmental Handbook" (FAA, 1985) and include a total of 19 specific impact categories (these impact categories are similar to CEQA guidelines). The FAA Environmental Desk Reference for Airport Actions (October 2007) and the FAA Environmental Handbook were also consulted. Some of the following discussions are based on the Los Angeles County General Plan, Draft Update released in 2008.

- Air Quality
- Coastal Barriers
- Coastal Zone
- Compatible Land Use
- Construction Impacts
- DOT Act, Section 4(f)
- Farmlands
- Fish, Wildlife and Plants
- Floodplains
- Hazardous Materials
- Historical, Architectural, Archaeological, and Cultural
- Light Emissions and Visual Effects
- Natural Resources and Energy Supply
- Noise
- Socioeconomic Environmental Justice, and Children's Health and Safety Risks
- Solid Waste
- Water Quality
- Wetlands, Jurisdictional or Non-Jurisdictional
- Wild and Scenic Rivers

Air Quality

Whiteman Airport is located in the South Coast Air Basin, which is classified as a “severe-17” non-attainment area for federal ambient 8-hour ozone air quality standard. The *Air Quality Procedures For Civilian Airports & Air Force Bases* outlines the air quality assessment process for non-attainment areas, which is consistent with FAA Orders 1050.1E and 5050.4B. According to this document, if the action is exempt or presumed to conform, then an air quality assessment is not applicable. It is unlikely that the project’s pollutant concentrations would exceed the National Ambient Air Quality Standards (NAAQS). For airports not located in non-attainment or maintenance areas, if aircraft activity is less than 180,000, an air quality assessment is not required. While forecasted operations are less than 180,000 operations (143,500 in 2030), since the airport is within a non-attainment area, an air quality assessment may be required.

The South Coast Air Quality Management District, which is under a legal obligation to enforce federal and state air pollution regulations, updated the Air Quality Management Plan (AQMP) in 2007 in conjunction with the California Air Resources Board (CARB), Southern California Association of Governments (SCAG), and the U.S. Environmental Protection Agency (EPA). This plan established a strategy to achieve emission reduction targets for nitrogen dioxide (NOx), sulfur dioxide (SOx), volatile organic compounds (VOC), and particulate matter 2.5 (PM2.5).

According to the AQMP, aircraft is currently included in the top ten list for SOx emissions. Along with several other mobile sources, regulation of aircraft emissions have not kept pace with other source categories and represent a significant and growing portion of emissions. Some of the proposed strategies to reduce aircraft emissions are to lower engine emission standards, reformulate jet fuel, and install retrofit kits.

It is anticipated that the increase in airport operations will not result in any violation of State or regional air quality standards. According to SCAG, there is not an air quality conformity requirement for aircraft. The 1991 Whiteman Airport Master Plan expected aircraft operations to reach 285,000 by the year 2010. This master plan study expects operations to reach 143,500 by the year 2030, which is well below the level anticipated in the previous master plan. It is noted that forecasts used for the AQMP projected 163,000 operations in 2030. An assessment of the airport’s potential future emissions should be conducted in order to confirm compliance with federal, state, and regional standards.

Coastal Barriers

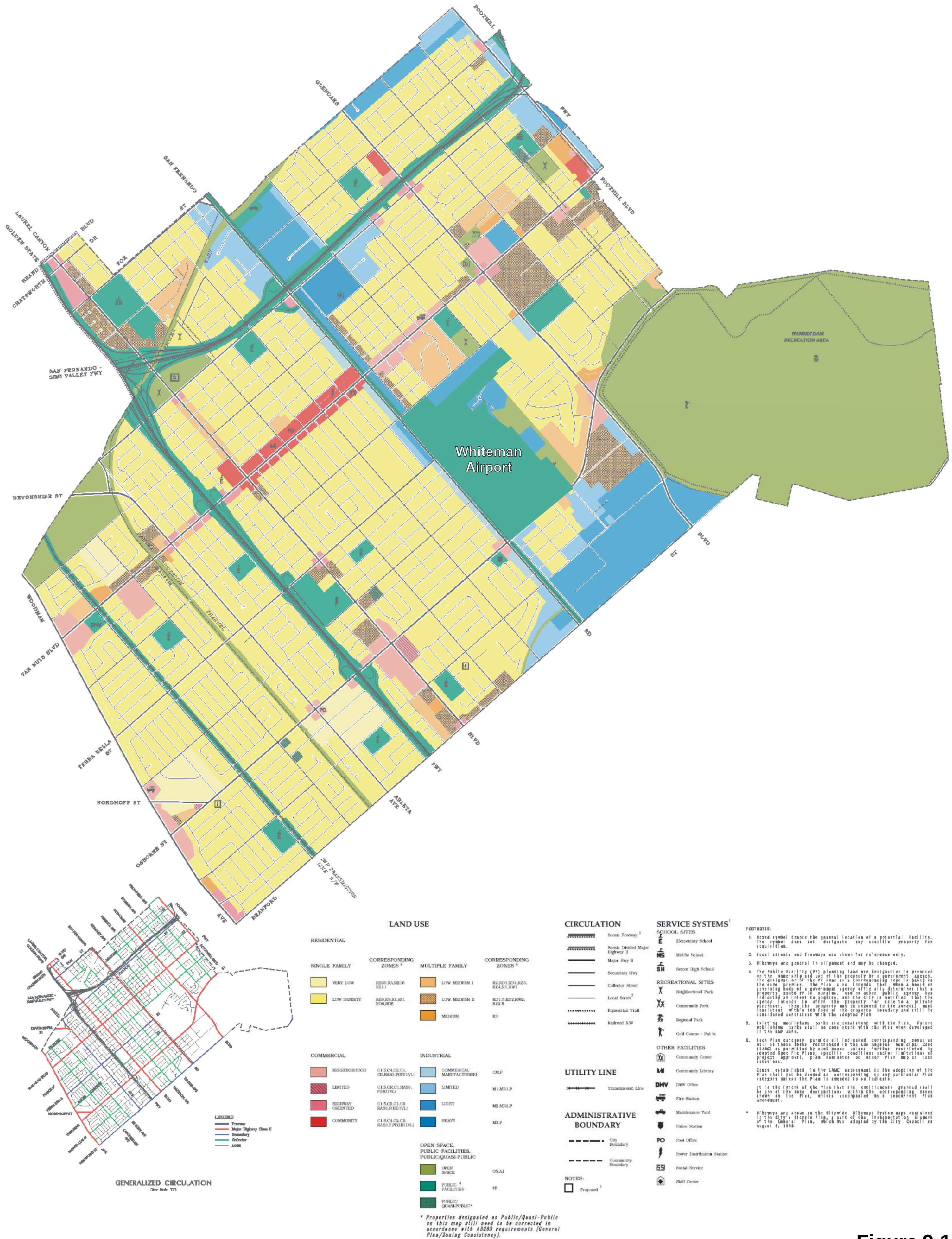
Impacts expected on coastal barriers are either non-substantial or non-existent because Whiteman Airport is located approximately 17 miles inland.

Coastal Zone Management Program

Impacts expected on coastal zone management are either non-substantial or non-existent because Whiteman Airport is located approximately 17 miles inland.

Compatible Land Use

According to the City of Los Angeles’ planning maps, the airport is located within an area surrounded by existing land uses such as industrial, commercial, and residential. The planned land uses, shown in Figure 9-1, designates the airport area as “Open Space/Public and Quasi-Public Lands”, which is consistent with airport operations. Planned land use designations include light industry immediately surrounding the airport site. Other land uses in the vicinity include light and medium density housing.



Source: VRPA Technologies, Inc.

Figure 9-1
Land Use Map

The Los Angeles City General Plan's Noise Element, adopted in 1999, indicates the City, County, and neighbors collaborated during the 1996 update of the Arleta-Pacoima Community Plan. At that time, the airport site was rezoned in an effort to "maintain the airport in a low intensity use and to provide land use buffers between the community and airport uses."

The Los Angeles County Airport Land Use Plan, adopted in 1991 and revised in 2004, establishes procedures and criteria that allow the County to address compatibility issues when making planning decisions regarding airports and the land use around them. State aeronautics law requires all airport-vicinity land use designations specified in local plans to be consistent with the airport land use compatibility criteria to the extent that the affected areas are not already developed. The Airport Land Use Compatibility Plan outlines compatibility criteria that are to be applied to development proposals in the vicinity of Los Angeles County airports, including Whiteman Airport. According to results of the noise assessment contained in this chapter, the 2009 and 2030 CNEL 65 dB contours extend into residential areas, which is not a compatible land use. These homes have historically been located adjacent to the airport, and as recently as 1998, aircraft operations exceeded forecasted 2030 levels.

Construction Impacts

Construction impacts are either non-substantial or non-existent. Specific efforts during construction may create impacts that are subject to local, State, or federal ordinances or regulations. For example, the Noise Element of the City's General Plan states a means to control construction noise and maintenance equipment is through regulation of hours of use. As discussed under noise, there are relatively few sensitive uses within sensitive receptors on site near the areas of construction. Construction activities may also temporarily increase the amount of fine particulate matter (PM10 and PM2.5), for which Los Angeles County is a serious non-attainment area. As discussed in the air quality section above, an air quality assessment is recommended to establish compliance with federal, state, and regional standards, which would include an analysis of construction impacts.

In addition, construction plans should be reviewed for sensitive receptors near the construction area and where they are present, hours of construction where noise is typically high may be scheduled to lessen the impact.

Department of Transportation Act, Section 4(f)

Section 4(f), as part of the 1966 Department of Transportation Act, requires that special efforts be made "to preserve the natural beauty of the countryside and public park and recreations lands, wildlife and waterfowl refuges, and historic sites." As a result, a review of the impacts that the proposed airport improvements may have on these uses is required.

David M. Gonzales Park and Roger Jessup Recreation Center are both located near Whiteman Airport. Originally named Pacoima Park, it was renamed to David M. Gonzales Park in 1990, in honor of Private First Class David M. Gonzales who was posthumously awarded the Medal of Honor for his heroic actions during World War II. Located on Herrick Avenue to the north of Whiteman Airport, the park includes an auditorium, baseball diamond, basketball courts, community room, gyms, soccer field, picnic tables, and barbeque pits and is utilized by various sports and recreational programs. Roger Jessup Recreation Center is located on Osborne Street bordering Whiteman Airport to the east. The center includes picnic tables, barbeque pits, children's play area, and community room.

Impacts on wetlands and other biological resources are discussed in other sections of this chapter.

Farmlands

Impacts expected on prime farmland, farmland of statewide importance, or unique farmland is either non-substantial or non-existent, because there are no known prime farmlands, farmland of statewide importance, or unique farmland occurring on the site based upon information provided in the State of California Department of Conservation's "Important Farmland in California, 2006" map (see Figure 9-2).

Source: VRPA Technologies, Inc.

Figure 9-2
Important Farmland in California - 2006

Fish, Wildlife, and Plants

According to the California Natural Diversity Database (CNDD) several habitat types and species are present in the quadrangle surrounding the airport site:

- Athene cunivularia, or burrowing owl
- Empidonax traillii extimus, or southwestern willow flycatcher
- Polioptila californica californica, or coastal California gnatcatcher
- Lasiurus cinereus, or hoary bat
- Lasiurius xanthinus, or western yellow bat
- Antrozous pallidus, or pallid bat
- Eumops perotis californicas, or western mastiff bat
- Nyctinomops macrotis, or big free-tailed bat
- Onychomys torridus ramona, or southern grasshopper mouse
- Neotoma lepida intermedia, or San Diego desert woodrat
- Taxidea taxus, or American badger
- Actinemys marmorata pallida, or southwestern pond turtle
- Southern Coast Live Oak Riparian Forest
- Southern Cottonwood Willow Riparian Forest
- Southern Sycamore Alder Riparian Woodland
- California Walnut Woodland
- Pseudoognaphalium leucocephalum, or white rabbit-tobacco
- Berberis nevinii, or Nevin's barberry
- Atriplex parishii, or Parish's brittlescale
- California macrophylla, or round-leaved filaree
- Malacothamnus davidsonii, or Davidson's bush-mallow
- Chorizanthe parryi var. Fernandina, or San Fernando Valley spineflower
- Dodecahema leptoceras, or slender-horned spineflower

- Horkelia cuneata ssp. Puberula, or mesa horkelia
- Calochortus clavatus var. gracilis, or slender mariposa-lily

Based on the results of the California National Diversity Database search, it is recommended that the site be surveyed and evaluated for potential biological resources that may occur within areas planned for future development and to determine if that future development could potentially impact any biological resources occurring within the defined limits of disturbance. Areas of the hill recommended to be graded for aviation uses are of specific concern as most of the airport is paved. These areas have previously been or are currently being disturbed.

Floodplains

Impacts expected on floodplains are either non-substantial or non-existent because Whiteman Airport is not located within any floodplain.

Hazardous Materials

The Environmental Protection Agency (EPA) has designated portions of the San Fernando Valley as superfund sites, locations of toxic waste contamination that require clean up. Testing done in 1980 revealed that there was volatile organic compound (VOC) contamination in the groundwater in four areas in the San Fernando Valley including Burbank and North Hollywood, Glendale/Crystal Springs, Verdugo, and Pollock/Los Angeles. The primary contaminants of concern were the solvents trichloroethylene (TCE) and perchloroethylene (PCE). The drinking water standards for both the Federal and State Maximum Contaminant Level (MCL) is 5 parts per billion (ppb) for both TCE and PCE.

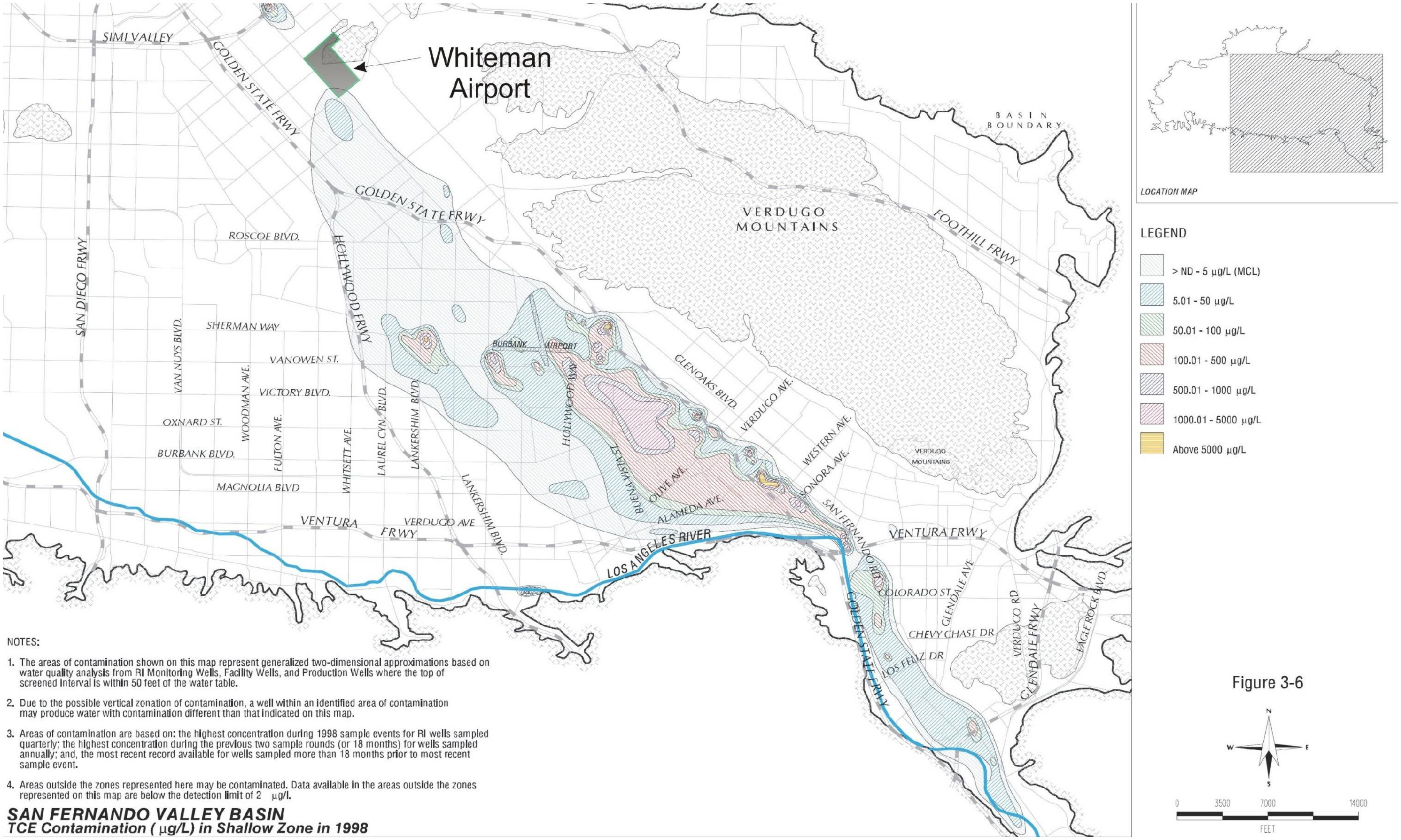
Portions of the Burbank and North Hollywood area are close to Whiteman Airport. Figure 9-3 shows the levels of contamination in the San Fernando Valley Basin as tested in 1998. As shown in the figure, part of Whiteman Airport is located in the contamination zone experiencing less than 5 ppb and the zone experiencing 5.01 to 50 ppb. A special study may be necessary to determine the extent to which proposed master plan improvements may be affected by or affect the contamination area.

Construction and maintenance activities associated with the implementation of master plan improvements could potentially result in solvent and architectural coating activities that may be considered hazardous if not used, stored, or disposed of properly. Any excesses in these materials, which exist upon completion of specific projects, could be considered hazardous materials or wastes that may need to be disposed of properly. While this is a potential impact, these left over materials can likely be stored properly and used for other similar projects or purposes. Such use or re-use would reduce the amount of excess materials that would require disposal. Additionally, steps can be taken to minimize the risk associated with handling hazardous materials in the process of facility construction. Therefore, the potential impact is considered less than significant.

Historic, Architectural, Archeological and Cultural Resources

There are no known historic, architectural, archaeological, or cultural sites located near the airport. Much of the project site has been previously disturbed with the development of the existing airport. However, there is a possibility that these resources may exist in the area. Such resources could be uncovered during project construction due to the grading and excavation of the site.

During development of the Mitigated Negative Declaration, mitigation measures during construction activity can be identified to eliminate or reduce the impacts to any uncovered artifacts and/or additional research can be conducted to determine if any resources exist near the airport. The South Central Coastal Information Center (SCCIC) is one of the twelve regional information centers that comprise the California Historical Resources Information System (CHRIS) and is responsible for the local management of the California Historical Resources Inventory.



Source: VRPA Technologies, Inc.

Figure 9-3
TCE Contamination (ug/L) in Shallow Zone - 1998

The Center has cultural resources site files for Los Angeles County. These files include known and recorded archaeological and historic sites, inventory, and excavation reports and properties listed on the National Register of Historic Places, the California Historical Landmarks, the California Inventory of Historic Resources, and the California points of Historic Interest. A historic and cultural resources database search of these files can be conducted to establish what, if any, historic resources or cultural resources of value exist on the site. The Gabrielino/Tongva Tribe and the Native American Heritage Commission can also be consulted to establish if any known resources exist near the project site.

In addition to the database search, a preliminary Phase I archaeological study can be prepared to identify the potential for valuable resources in the project area.

Light Emissions and Visual Effects

Airport improvements are not expected to create unusual lighting conditions that would be considered sufficient to warrant a special study. Normally, impacts of light improvements at airports are not substantial. Lighting improvements related to runways or taxiways, are identified as categorical exclusions under FAA Order 5050.4B and do not require any formal environmental assessment. Lighting associated with relocation of the terminal area is not expected to be significant.

Construction and implementation of the master plan improvements will not impede or block views of scenic resources.

Natural Resources and Energy Supply

The improvements recommended in the master plan do not have the potential to result in a demand for services and significant expansion of the urban service network. The increased demand is not expected to contribute to a cumulative regional impact on the energy supply or natural resources. To insure that energy supply and resources are available to accommodate the airport improvements, it is recommended that prior to the design of airport improvements, power companies or other suppliers of energy be contacted to determine whether the demand can be met by existing or planned source facilities.

Noise

The noise contours developed in this study were developed using the latest version of FAA's Integrated Noise Model (INM), Version 7.01. This latest version of INM includes helicopter noise modeling. Previously, the Helicopter Noise Model (HNM) was required to model the affects of helicopter noise. The INM is designed to estimate the effects of aircraft noise surrounding an airport for an average annual day. This is accomplished by taking a full year of data and averaging it into a 24-hour period. The INM then uses this data to compute the community noise equivalent level, or CNEL, and identify areas of varying levels of airport noise exposure. The CNEL represents the average of a 24-hour period with a penalty added to evening and nighttime noise events to account for increased noise sensitivity in the evening and nighttime periods. These penalties are +3 dB for the evening hours of 7:00 p.m. to 10:00 p.m. and +10 dB for the nighttime hours of 10:00 p.m. to 7:00 a.m.

The INM has been the FAA's standard tool used in determining aircraft noise levels generated by specific characteristics of aircraft operations at an airport. Its origins were for the purpose of compatible land use planning around airports and it has been continuously updated through years of research to better define the propagation of aircraft noise.

The INM requires the following data to be compiled as input to the program:

- A description of the airport layout; specifically the location, length and width of the active runways at the airport;

- Runway utilization assignments of aircraft arrivals and departures;
- The various arrival and departure flight tracks to and from each runway and the frequency that each track is used; and
- The number and time of day of operations, as well as the type of aircraft operating at the airport and the stage lengths of departing aircraft. Stage length information is necessary to identify aircraft takeoff weights.

The INM generates a grid surrounding the airport, the size and complexity of which is based on user input, and calculates the noise level at each point within the grid based on input data described above. The INM then connects the grid points of those having the same noise level value through a curve drawing algorithm to create a noise contour. The more points included within the grid and the less separation between each of the points, the more precise and sharper the contour line. Detailed technical analysis of the above data items are provided in Appendix G and summarized below.

The recommended development concept shortens the runway from 4,120 feet to 3,768 feet. The runway is presently 75 feet wide and will remain 75 feet wide in the future. Runway coordinates used in the INM are shown in Table 9-1.

Table 9-1
RUNWAY END COORDINATES USED IN INM

Runway End		Existing	Future
12	Latitude	34° 15' 48.70"N	34° 15' 47.34"N
	Longitude	118° 25' 04.53"W	118° 25' 03.10"W
30	Latitude	34° 15' 18.36"N	34° 15' 19.33"N
	Longitude	118° 24' 32.15"N	118° 24' 33.49"W

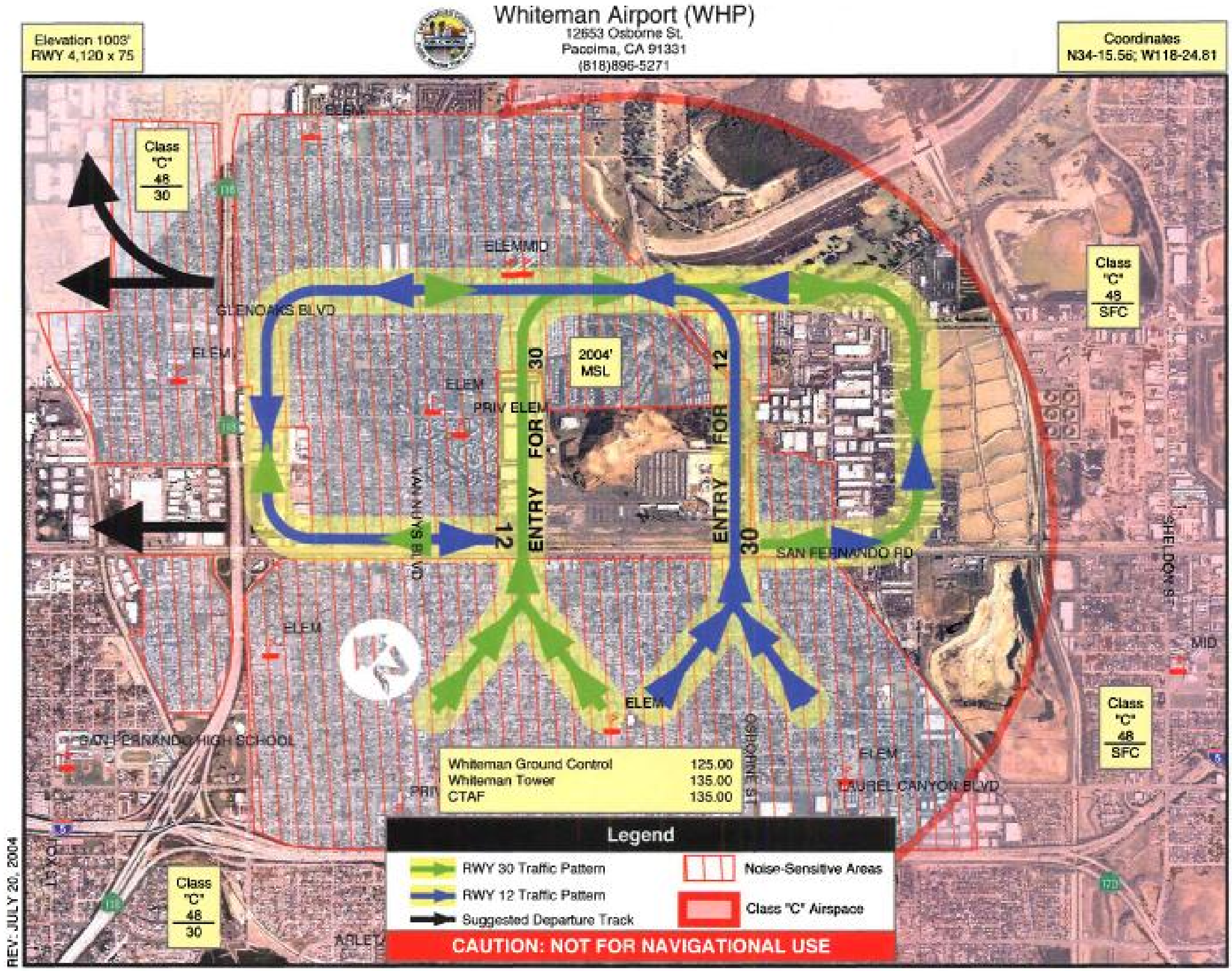
Source: AECOM.

Runway 12 is the predominately used runway. This runway is used approximately 90 percent of the time. The remaining 10 percent Runway 30 is used. As discussed earlier in this report, Runway 30 is primarily used during IFR conditions.

A flight track is the path over the ground flown by an aircraft while heading to or from a particular runway at the airport. Whiteman has recommended flight track patterns to prevent aircraft from entering Burbank's Class C airspace and to minimize impact to noise sensitive areas surrounding the airport. Figure 9-4 depicts the flight tracks used at Whiteman Airport.

Appendix G presents detailed information about the aircraft operations used to develop the noise contours for Whiteman Airport. The majority of operations are by fixed wing aircraft; with single engine aircraft comprising most fixed wing operations. The percentage of fixed wing and helicopter operations remains constant throughout the planning period. However, it was assumed that touch and go operations would increase from about 5 percent of operations to 50 percent (which is typical for a general aviation airport). Figure 9-5 shows the touch and go flight tracks for the airport.

Figures 9-6 and 9-7 present the noise contours for 2009 and 2030, respectively. All land within the 75 dB contour should be owned by the airport. As seen in the figures the 75 dB contour is primarily on airport land, with small portions extending over Pierce Street and San Fernando Road. The 65 dB contour is the threshold by which the FAA determines where residential land uses are compatible with an airport. The 2009 and 2030 65 dB contour extends into residential areas, which is not a compatible land use. These homes have historically been located adjacent to the airport, and as recently as 1998 aircraft operations exceeded forecasted 2030 levels.



Recommended Traffic Pattern unless directed otherwise by ATCT

Figure 9-4
Approach and Departure
Flight Tracks

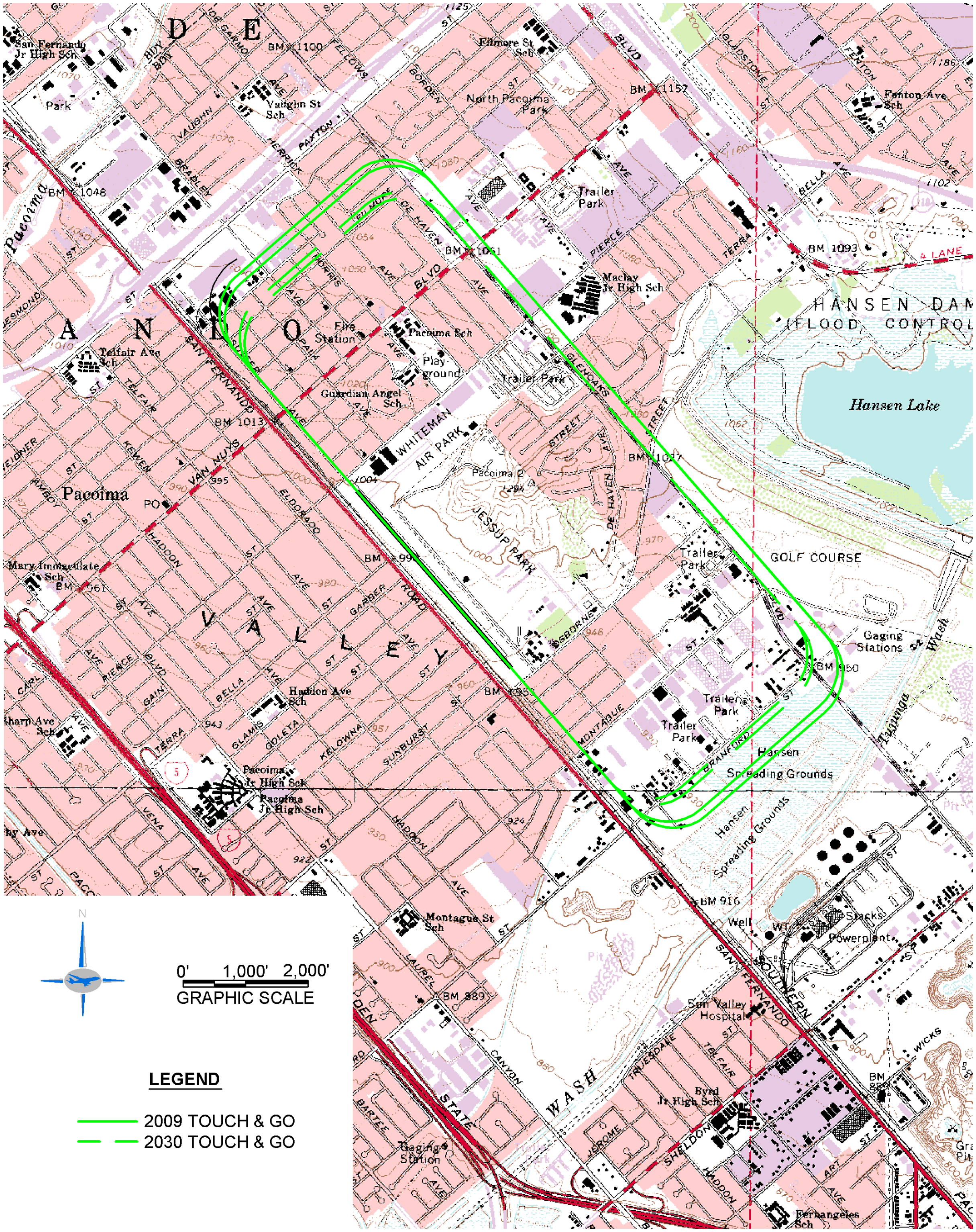


**Figure 9-5
Touch and Go
Flight Tracks**

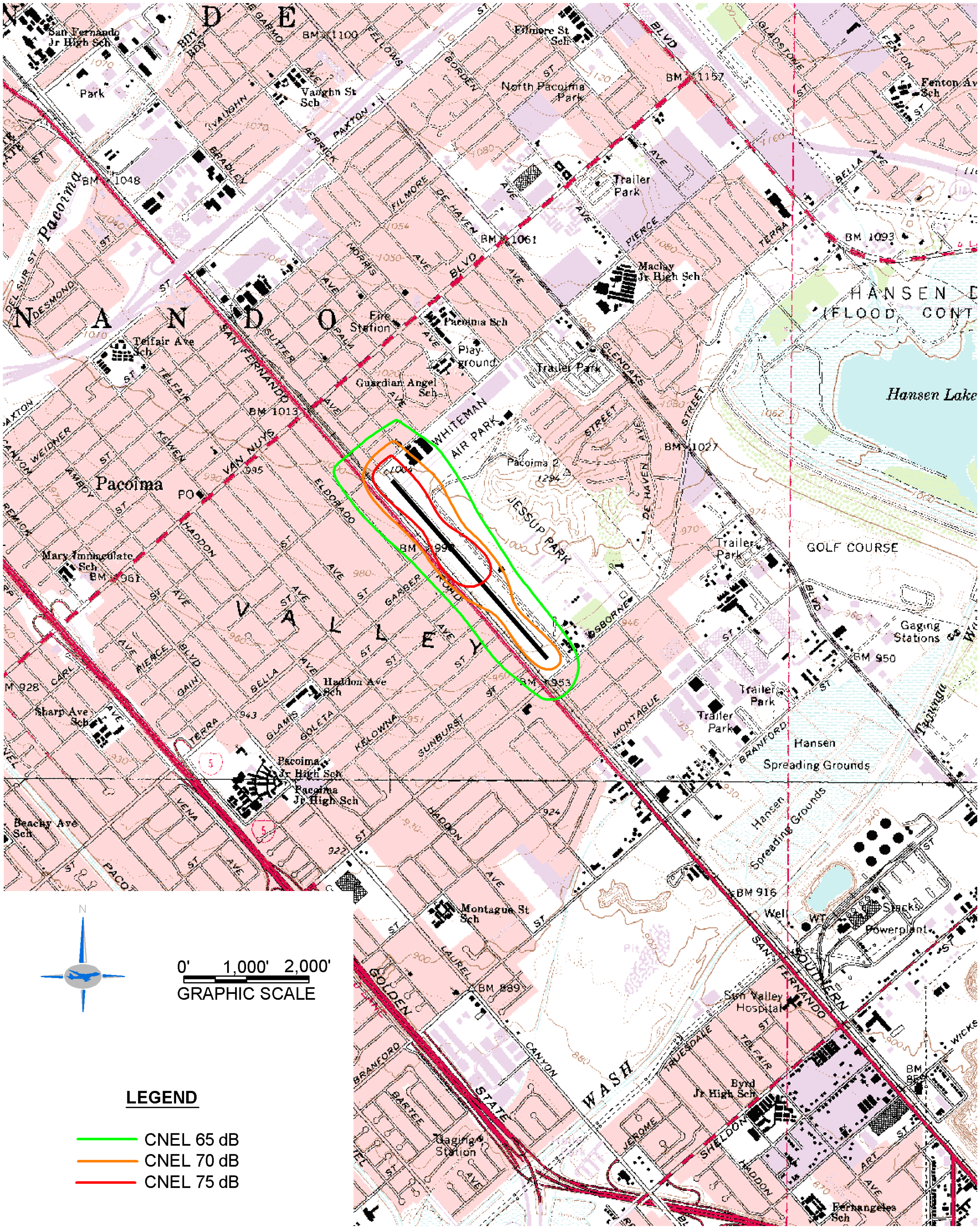


Figure 9-6
2009 CNEL Noise Contours

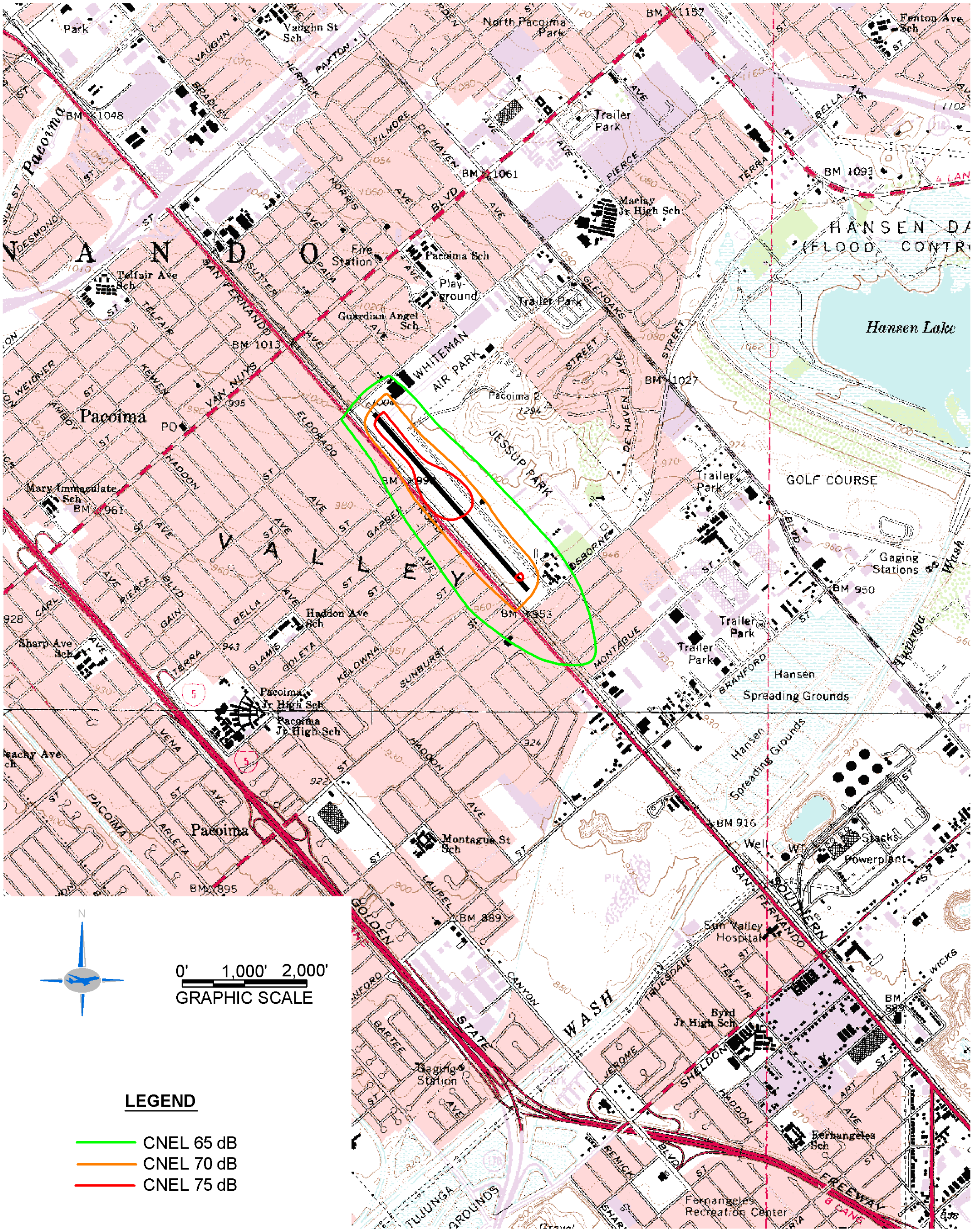


Figure 9-7
2030 CNEL Noise Contours

Socioeconomic Impacts, Environmental Justice, and Children's Environmental Health and Safety Risks

The principal social impacts considered are those associated with relocation or other community disruption, such as dividing an established community or altering surface transportation patterns. The airport improvements recommended in the master plan do not create such impacts. The transportation routes surrounding the airport will not be affected by the proposals contained in the master plan. The existing streets and roads will not be directly affected by master plan improvements and the increase in traffic expected over the next 20-years as a result of the increases in operations and based aircraft will not affect the operations of those facilities in terms of levels of service or safety.

Osborne Street and San Fernando Road are both four-lane undivided roadways. According to the Los Angeles Department of Transportation (LADOT) website, traffic counts along Osborne Street numbered 21,987 average daily traffic (ADT) in 2003 and along San Fernando Road numbered 21,215 in 2006. Based on these counts and the ADT capacity shown in the Modified Highway Capacity Manual (HCM)-Based Level of Service Tables, segment level of service (LOS) for both roadways is at LOS D with a threshold of 29,545 ADT. Using trip generation rates found in the ITE Trip Generation Manual, 8th Edition, the trip generation for an increase of 267 based aircraft is 1,310 ADT. Even with the addition of 1,310 ADT to the existing traffic volumes, the roadways are under capacity.

Roger Jessup Recreation Center is located on Osborne Street bordering Whiteman Airport to the east. The rerouting of Airport Entrance Road will relocate this roadway slightly closer to the Center on its northwest boundary. However, the Airport land use closest to the Center will still be designated non-aviation land use. Therefore, the master plan improvements are not expected to significantly impact the Roger Jessup Recreation Center.

Based on information from the National Transportation Safety Board, a total of 80 accidents have occurred at Whiteman Airport since January 1, 1970 of which 26 occurred off airport. None of the off-airport accidents involved fatalities or serious injury to people on the ground. Three off-airport accidents resulted in minor injuries to eight persons on the ground.

Master plan improvements are not expected to create disproportionate health and safety risks to children.

Solid Waste Impacts

Airport improvements that relate only to airfield development such as runways, taxiways, and related items will not directly impact solid waste collection, control, or disposal other than that associated with the construction. As additional improvements occur under the master plan, the amount of solid waste generated will increase, placing an additional burden on the local landfill. This waste may contribute to the cumulative regional impacts on landfill capacity. Therefore, it must be determined if there are any potential constraints associated with the capacity of available disposal facilities or location of solid waste that may violate any local, State, or federal regulations. In addition, special attention should be given to the control of hazardous waste.

Water Quality

The proposed airport improvements may have the potential to alter the existing drainage pattern of the site which would result in erosion or siltation on- or off-site, interfere with groundwater discharge, or contribute to runoff water which may exceed the capacity of existing or planned storm water drainage systems. In addition, the storm water runoff may contain contaminants.

Currently, storm water runoff in the form of a sheet flow drains toward existing storm runoff facilities.

Demand for potable water and increases in wastewater in the airport area could be affected by master plan improvements. Several of the projects have the potential to generate wastewater during construction through grading and excavation activities; however, the increases are expected to be minimal. The Los Angeles County Watershed Management Division of the Public Works Department is responsible for addressing flood risk management, water quality, water conservation, open space, and recreational needs. This Division is also responsible for periodic inspection of Whiteman Airport for compliance with water regulations.

Master plan improvements will require additional public services and utilities to handle increased demand for wastewater and increased demand for potable water, and, in some cases, increased demand for reclaimed water for landscaping purposes. These increases would need to be evaluated.

According to the County's website, the City of Los Angeles is the water provider for Whiteman Airport. The City has accounted for increases in the public needs throughout the City. In most cases, wastewater and potable water infrastructures function well below their capacities. Based on the demand for public services and utilities for similar projects, and on the current capacities of existing public services and utilities, the local projected demand for the project is not anticipated to be significant.

The City public works department should ensure that the existing public services and utilities would be able to handle the increase. If the current infrastructure is found to be inadequate, infrastructure improvements for the appropriate public service utility should be identified in the subsequent CEQA documentation.

Wetlands, Jurisdictional or Non-Jurisdictional

Impacts expected on wetlands are either non-substantial or non-existent because Whiteman Airport is not located near any wetlands.

Wild and Scenic Rivers

Impacts expected on wild and scenic rivers are either non-substantial or non-existent because Whiteman Airport is not located near any wild or scenic rivers.

CONCLUSION

Based on the findings contained in the environmental constraints analysis, additional studies pursuant to the National Environmental Policy Act (NEPA) and/or the California Environmental Quality Act (CEQA) are recommended related to five environmental affects, which may occur as a result of the master plan improvements.

- An air quality assessment is recommended to establish compliance with federal, state, and regional standards.

- While there are no known historical, architectural, archeological, or cultural sites located near the airport, an archeological study and field review is recommended to establish what, if any, historic resources or cultural resources of value exist on the site. A specific area of concern is the hill, which has been and is currently being disturbed.

- A biological site assessment and biological database search is recommended to establish what, if any, wildlife or plants of value exist on site.

- A hazardous waste study is recommended to establish whether Master Plan improvements will impact or be affected by the contamination area.

- Review historical accidents at the airport and determine risk probabilities of an accident occurring near Whiteman Airport.

In addition, prior to approval of airport improvements, public service providers (energy supply, natural resources, solid waste) should be contacted to determine whether the demand can be met through existing or planned service facilities. If additional residential or other uses are affected by proposed improvements, appropriate mitigation as described in this overview should be addressed. Finally, when a potential drainage issue is known, a drainage study should be conducted. The necessary environmental documentation should be prepared according to FAA, State and County of Los Angeles standards and regulations.

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Appendix A
Meeting Minutes

DMJM AVIATION | AECOM

APPENDIX A

DMJM Aviation
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T 714.648.2098 F 714.285.0740 www.dmjmaviation.com

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

Whiteman Airport Master Plan Update

Presentation Topics

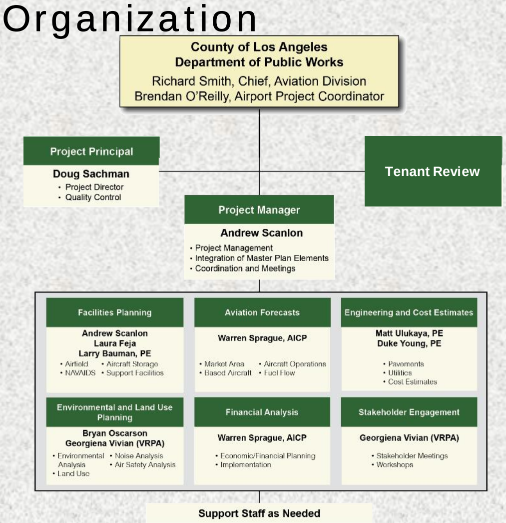
- **Purpose of Master Plan Update**
- **Project Organization**
- **Project Approach, Schedule and Status**
- **Existing Facilities**
- **Issues, Goals and Objectives**
- **Preliminary Forecast Findings**
- **Next Steps**

Purpose of Master Plan Update

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

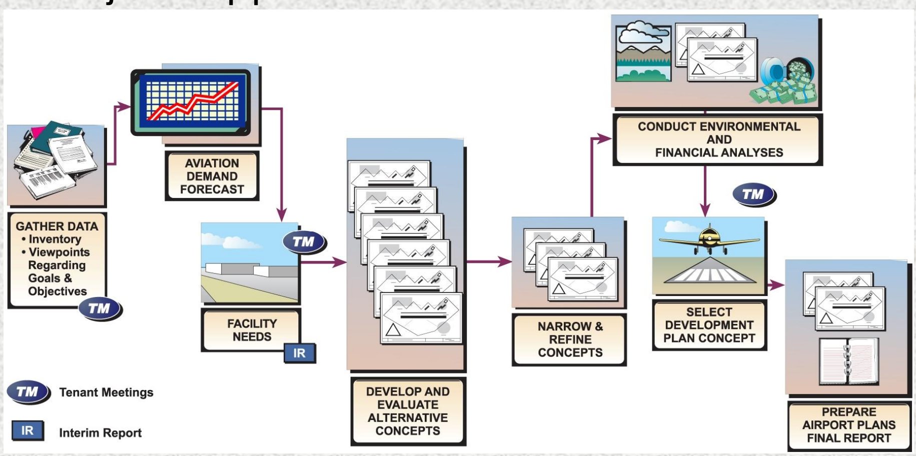
FAA Order 5100.38A, AIP Handbook

Project Organization



Whiteman Airport Master Plan Update

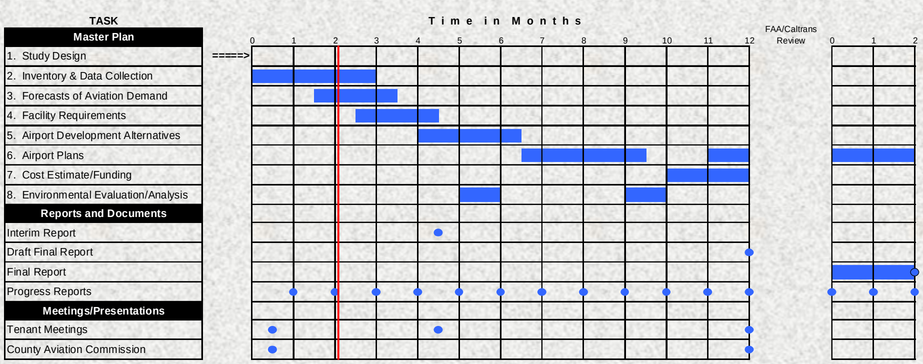
Project Approach



DMJM AVIATION | AECOM

Whiteman Airport Master Plan Update

Project Schedule



DMJM AVIATION | AECOM

Whiteman Airport Master Plan Update

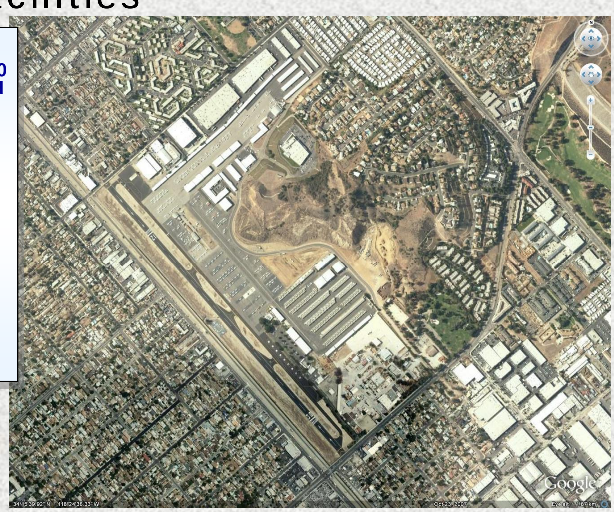
Project Status

- **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**

Whiteman Airport Master Plan Update

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

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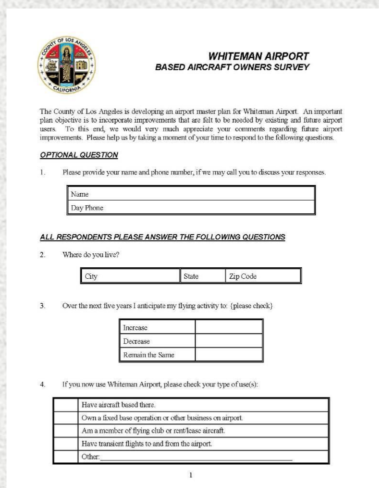
9

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:_______________

1

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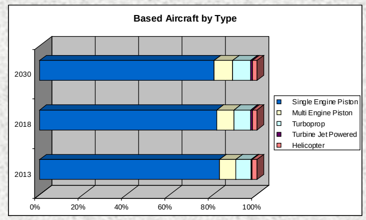
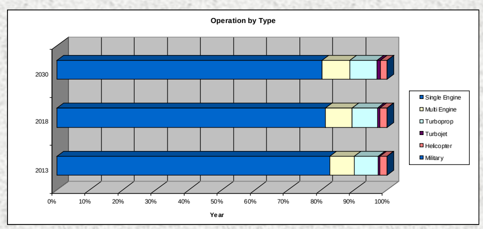
10

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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11

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

12

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	818-8464664
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	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	SR.Landscape@verizon.net	818 249.0111
Jose Torres	29124 Highplains ct Castaic, Ca 91384	tmcranges@yahoo.com	661 510-3360
Linda Worden	4527 Lenta 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?

Whiteman Airport Master Plan Update

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

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[illegible]	[illegible]		818 314 [illegible]
Doug & Marlene Rankin	20514 Miranda Pl Woodland Hills		818 883 1153
Dusty Rhodes	12653 Osborne St Pacoima		818-896-6442
Nick Tucker	" "		897 0596
R.W. Hutchings	27635 Irig Pl Castaic, CA 91384		661 294 5257
J. Negrido	10205 Vanalden Ave Northridge 91324		818-262-3616
Ron Usbeth	13408 Egbert St Sylmar CA 91342		818 266 6598
Wade Robinson	6533 Murietta Van Nuys CA 91401		818 781 6452

Whiteman Airport Master Plan Update

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

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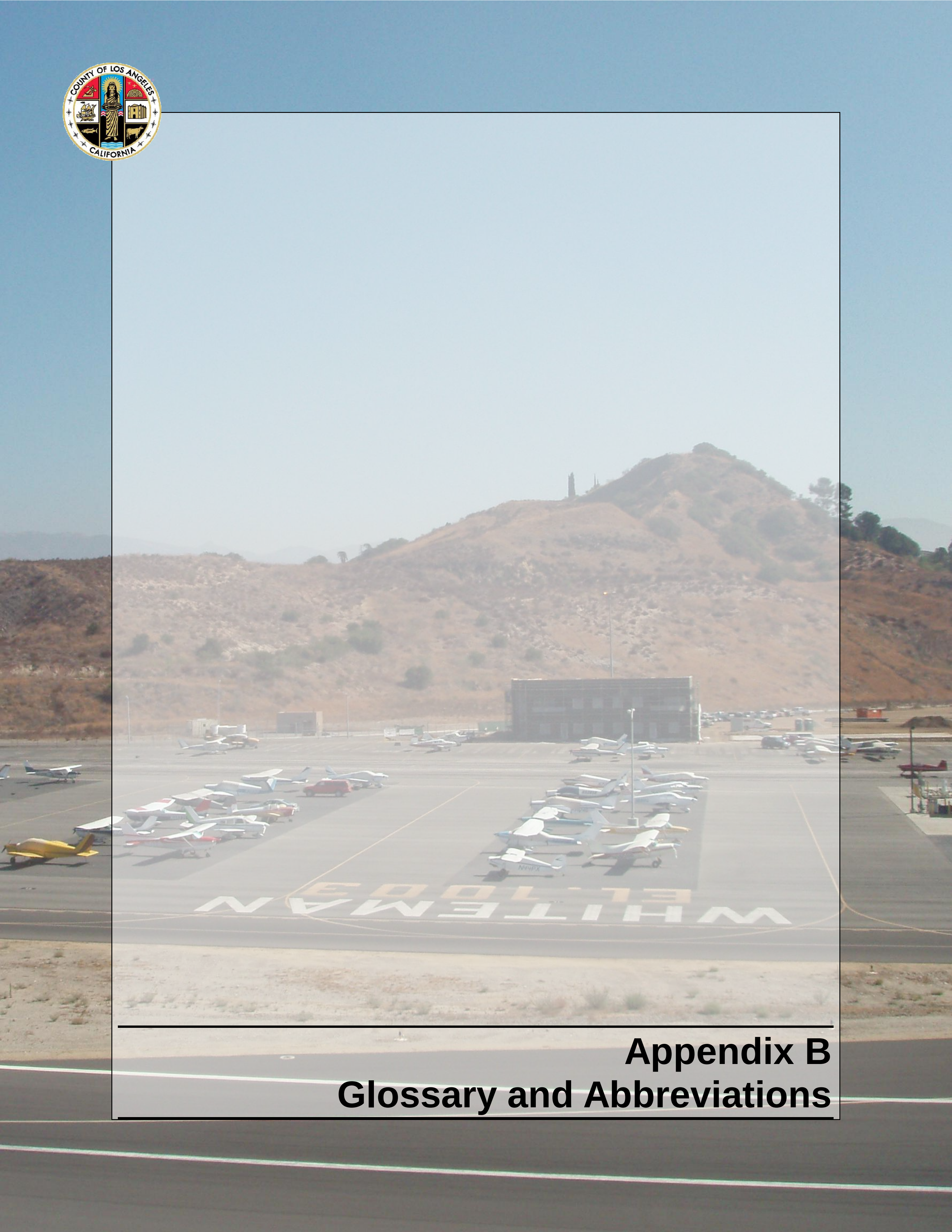
Roger Bourke	Box 8083, Alta, UT 84092	rbourke@earthlink.net	818-890-0903
LEIGH V NICHOLSON	26553 OAKDALE CYN LN Canyon Country		661 250-2689
JOHN CRITTENDEN	6702 SANDALWOOD DR Simi VALLEY CA		818/400-7033
MICHAEL STROMBECK	1805 WILLIAMS, SIMI VALLEY 93065		818 422-5586
JOHN JEFFERIES	15847 McKEEVER ST. GRANADA HILLS.		818-366-[illegible]
Victoria Rose Hewton	28029 N Eddie Ln Santa Clarita CA 91350		661 360-9242
RON ELLISON	3610 GLENRIDGE DR	FLYIDRON@AOL.COM	818-[illegible]-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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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

ADT - Average Daily Traffic

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.

AOA - Aircraft Operating Area

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.

AQMP - Air Quality Management Plan

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.

ASDA – Accelerate Stop Distance Available

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.

AWOS - Automated Weather Observing System

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

BRL - Building Restriction Line

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

CAAP - California Aid to Airport Program

CARB - California Air Resources Board

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).

CIP - Capital Improvement Program

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

CLUP - Compatible Land Use Plan

CNDD - California Natural Diversity Database

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.

CY - Calendar Year

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.

EPA - U.S. Environmental Protection Agency

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.

IS - Initial Study

J

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

L

LADOT - Los Angeles Department of Transportation

LAT – Latitude

LAX - Three letter identifier for Los Angeles International Airport

LDA - Localizer Type Directional Aid; Landing Distance Available

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.

LPV – Lateral Precision Performance with Vertical Guidance

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

NAAQS - National Ambient Air Quality Standards

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

PA - Percent Arrival

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

SASO – Specialized Aviation Service Operator

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.

TODA – Takeoff Distance Available

TORA – Takeoff Run Available

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.

TSA – Transportation Security Administration or Taxiway Safety Area

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

VCP – Vitrified Clay Pine

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

VLJ – Very Light Jet

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

WAAS – Wide Area Augmentation System

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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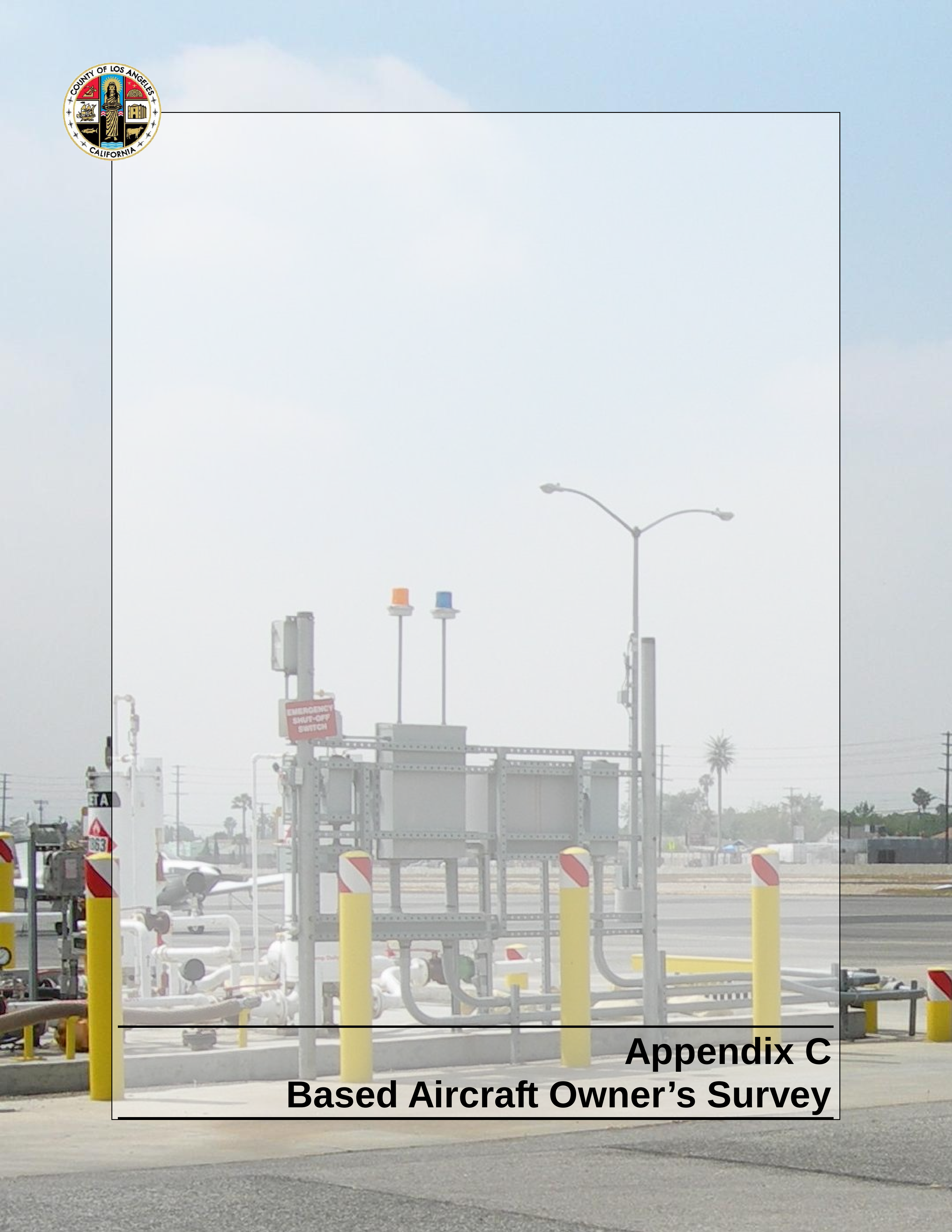

Appendix C
Based Aircraft Owner's Survey

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.

<u>OPTIONAL QUESTION</u>

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

Name
Day Phone

<u>ALL RESPONDENTS PLEASE ANSWER THE FOLLOWING QUESTIONS</u>

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.

DMJM Aviation
999 Town & Country Road
Orange, CA 92868
Fax: (714) 567 2441 - Attn: Laura Feja

DMJM AVIATION | AECOM

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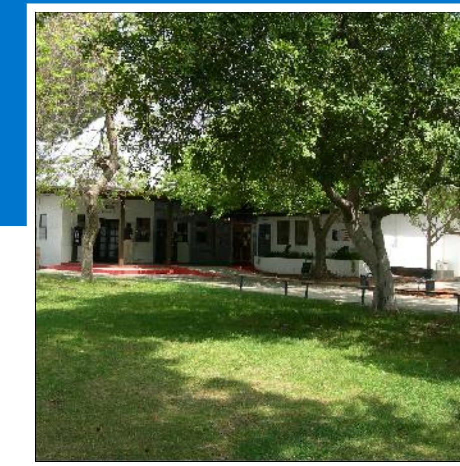
Appendix D
Airport Layout Plans



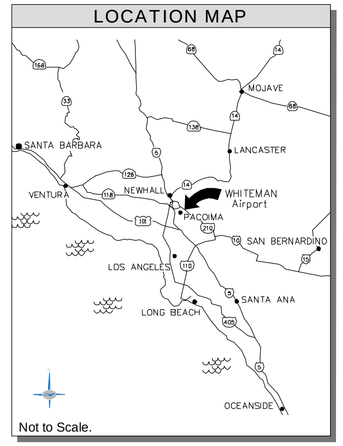



WHITEMAN AIRPORT
COUNTY OF LOS ANGELES

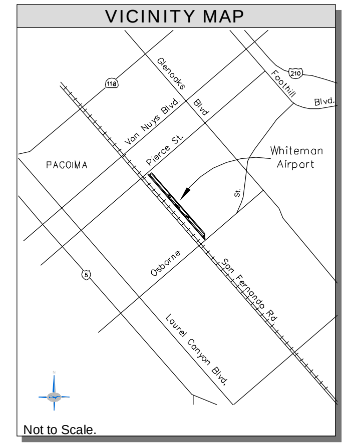
Master Plan
Funded by the Federal Aviation Administration
AIP Nos. 03-06-0134-10/11

Prepared by:
AECOM

LOCATION MAP



VICINITY MAP



DRAWING INDEX

ABBREVIATIONS:

- APP Approach
- ARP Airport Reference Point
- ATCT Airport Traffic Control Tower
- AWOS Automated Weather Observing System
- BRL Building Restriction Line
- DEP Departure
- Disp. Displaced
- (E) Existing
- Elev. Elevation
- ENTR. Entrance
- Est. Estimated
- (A) Future
- LOS Line of Sight
- NDB Non-Directional Beacon
- OFZ Obstacle Free Zone
- PAPI Precision Approach Path Indicator
- Pt. Point
- REIL Runway End Identifier Lights
- ROFA Runway Object Free Area
- RPZ Runway Protection Zone
- RSA Runway Safety Area
- RW Runway
- TDZE Touchdown Zone Elevation
- TSS Threshold Siting Surface
- TW Taxiway

OBSTACLE FREE ZONE (OFZ) PENETRATIONS

#	DESCRIPTION	REQUIRED	EXISTING	ACTION
1	AIRPORT PROPERTY FENCE/ PIERCE STREET	200'	55'	RELOCATE RUNWAY THRESHOLD 183'/ ELIMINATE DECLARED DISTANCES
2	AIRPORT PROPERTY FENCE/ OSBORNE STREET	200'	73'	RELOCATE RUNWAY THRESHOLD 169'/ ELIMINATE DECLARED DISTANCES

DEVIATIONS FROM FAA DESIGN STANDARDS

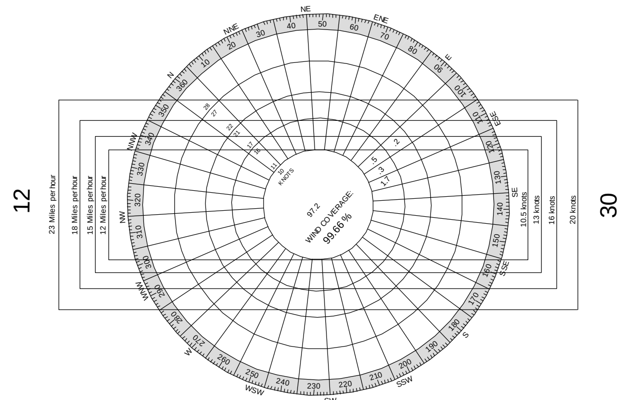
	DESCRIPTION	REQUIRED	EXISTING	ACTION
A	RSA LENGTH¹	240'	55'	RELOCATE RUNWAY THRESHOLD 183'/ ELIMINATE DECLARED DISTANCES
	ROFA LENGTH¹	240'	55'	
	OFZ LENGTH¹	200'	55'	
B	RSA LENGTH¹	240'	73'	RELOCATE RUNWAY THRESHOLD 169'/ ELIMINATE DECLARED DISTANCES
	ROFA LENGTH¹	240'	73'	
	OFZ LENGTH¹	200'	73'	

¹ Beyond runway end

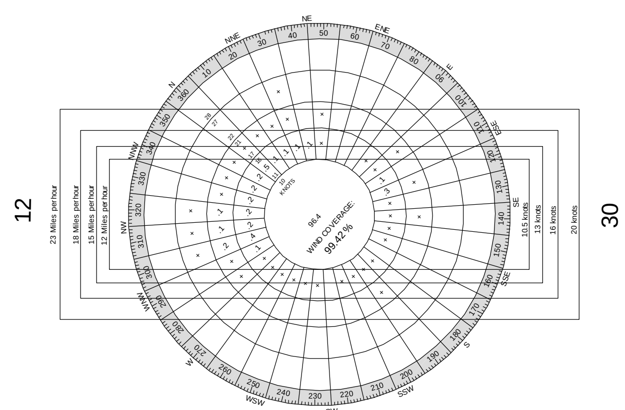
WIND COVERAGE

	CROSSWIND COVERAGE							
	ALL WEATHER				IFR			
RUNWAY	10.5 Kts.	13 Kts.	16 Kts.	20 Kts.	10.5 Kts.	13 Kts.	16 Kts.	20 Kts.
12	59.34%	59.63%	59.80%	59.83%	70.68%	70.68%	70.68%	70.68%
30	87.45%	87.48%	87.50%	87.51%	98.76%	98.90%	98.94%	98.94%
12-30	99.42%	99.74%	99.93%	99.97%	99.66%	99.80%	99.83%	99.83%

Source: National Climatic Data Center Asheville, NC. Based on 14,435 observations (1999 - 2007) taken at Whiteman, CA.



IFR WIND ROSE



ALL WEATHER WIND ROSE

NOTES:

1. California Coordinate System, Zone 5 NAD 83.
2. All elevations are in NAVD 88. All future elevations are estimated.
3. Threshold Siting Surfaces are shown in plan view on Sheet 4 and in profile view on Sheet 5. There are penetrations to the Runway 12 Threshold Siting Surface.
4. Hangar layouts shown are conceptual to depict potential future capacities. The ultimate configurations may vary based on actual demand.
5. The airport is part of Lot 37 San Fernando Road and has not been sectioned. The nearest section corner is over two miles northeast of the airport.
6. Declared distances published in the Airport/Facility Directory (23 September 2010 - 18 November 2010) will not apply after the relcoation of runway thresholds. Approval date of existing declared distances are unknown.
7. Future tie-downs parallel to San Fernando are only for non-airworthy aircraft. Movement of aircraft in this area requires closure of the runway.
8. Monuments are either protected by a 4" brass disk embedded in 12 square inches of concrete mass or by a monument well.

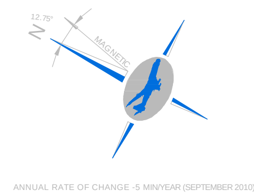
AIRPORT DATA

DESCRIPTION		EXISTING	FUTURE
AIRPORT ELEVATION (MSL)		1,005'	1,004'
AIRPORT REFERENCE POINT (ARP) COORDINATES (NAD 83)	LATITUDE	34°15'33.57"N	34°15'33.33"N
	LONGITUDE	118°24'48.36"W	118°24'48.30"W
NAVAIDS (i.e. ILS, BEACON)		BEACON, NDB	SAME
MEAN MAX. TEMP. OF HOTTEST MONTH		89.1°(July)	SAME
AIRPORT REFERENCE CODE		B-I, SMALL	SAME
GPS AT AIRPORT		YES	SAME

DECLARED DISTANCES

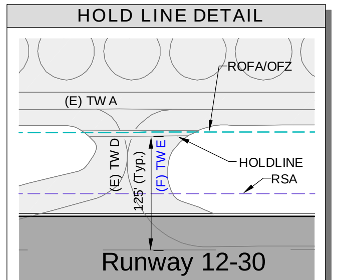
	RUNWAY 12	RUNWAY 30
TAKEOFF RUN AVAILABLE (TORA)	3,442'	3,191'
TAKEOFF DISTANCE AVAILABLE (TODA)	4,120'	4,120'
ACCELERATE-STOP DISTANCE AVAILABLE (ASDA)	3,910'	3,940'
LANDING DISTANCE AVAILABLE (LDA)	3,181'	3,462'

See Note 6.



GRAPHIC SCALE

HOLD LINE DETAIL



Scale: 1" = 100'

LEGEND

DESCRIPTION	EXISTING	FUTURE
AIRPORT BOUNDARY		SAME
AIRFIELD PAVEMENT		
AIRFIELD PAVEMENT TO BE REMOVED	NONE	
BUILDING RESTRICTION LINE (BRL)		SAME
RUNWAY OBJECT FREE AREA (ROFA)/ OBSTACLE FREE ZONE (OFZ)		SAME
RUNWAY SAFETY AREA (RSA)		SAME
RUNWAY PROTECTION ZONE (RPZ)		
BUILDINGS		
BUILDINGS TO BE REMOVED	NONE	
GROUND CONTOURS	1000'	SAME
AIRPORT REFERENCE POINT (ARP)		
HELIPADS		SAME
THRESHOLD SITING SURFACE		SAME
FENCE		
ROAD/PARKING		
ROTATING BEACON		SAME
MONUMENT		SAME
HOLDLINE		
RUNWAY LIGHTS/PAPI		NOT SHOWN
HELICOPTER OPERATING AREA	NOT SHOWN	
AVIGATION EASEMENT	NONE	
ATCT LOS		NOT SHOWN
GATE/TO BE REMOVED		

FACILITY TABLE

#	DESCRIPTION
1	PRIVATELY OWNED HANGARS
2	LA COUNTY OWNED HANGARS
3	FUEL ISLAND
4	TERMINAL (to be relocated)
5	AIRPORT TRAFFIC CONTROL TOWER
6	FUTURE HANGARS
7	FUTURE AWOS
8	FUTURE TERMINAL/RESTAURANT
9	WASH RACK

For more details see Sheet 3 - Building Area Plan.

RUNWAY END DATA

RUNWAY		EXISTING	FUTURE
12	LATITUDE	34°15'48.70"N	34°15'47.34"N
	LONGITUDE	118°25'04.53"W	118°25'03.10"W
	ELEVATION¹	1,005.4'	1,004.0'¹
30	LATITUDE	34°15'18.06"N	34°15'19.33"N
	LONGITUDE	118°24'32.15"W	118°24'33.49"W
	ELEVATION¹	962.0'	964.0'¹

¹ See Note 2.

TAXIWAY DETAILS

DESIGNATOR EXISTING	DESIGNATOR FUTURE	WIDTH
TAXIWAY A PARALLEL	TAXIWAY A PARALLEL	35'
TAXIWAY A ENTR.	-	41'
-	TAXIWAY A ENTR.	41'
-	TAXIWAY B	80'
TAXIWAY B	TAXIWAY C	80'
TAXIWAY C	TAXIWAY D	80'
TAXIWAY D	TAXIWAY E	80'
-	TAXIWAY F	80'

MONUMENT DATA

	LATITUDE	LONGITUDE
1	34°15'47.84"N	118°25'03.34"N
2	34°15'43.01"N	118°24'58.24"N
3	34°15'43.09"N	118°25'00.73"N
4	34°15'33.29"N	118°24'47.96"N
5	34°15'23.57"N	118°24'37.69"N
6	34°15'19.03"N	118°24'35.58"N
7	34°15'18.42"N	118°24'32.24"N
8	34°15'48.83"N	118°24'29.87"N

For monument protection see note 8.

RUNWAY DATA

DESCRIPTION			RUNWAY 12 - 30 EXISTING	RUNWAY 12 - 30 FUTURE
EFFECTIVE GRADIENT (IN %)			1.04	1.10
MAXIMUM GRADIENT (IN %)			2.04	SAME
RUNWAY BEARING			N 41° 16' 04.94" W	SAME
WIND COVERAGE % (10.5 KNOTS)			99.42	SAME
APPROACH VISIBILITY MINIMUMS			1 MILE	SAME
DESIGN AIRCRAFT	MAKE AND MODEL		BEECH KING AIR B100	SAME
	WINGSPAN (FEET)		45.8	SAME
	UNDERCARRIAGE WIDTH		14.92	SAME
	APPROACH SPEED (KNOTS)		111	SAME
	MAX. TAKEOFF WEIGHT (LBS)		11,800	SAME
RUNWAY MARKING			VISUAL	NON-PRECISION
APPROACH CATEGORY (FAR PART 77)	RUNWAY 12		NON-PRECISION	SAME
	RUNWAY 30		NON-PRECISION	SAME
RUNWAY ℄ TO PARALLEL TAXIWAY ℄			150'	SAME
TAXIWAY ℄ TO FIXED OR MOVABLE OBJECT			44.5'	SAME
TAXIWAY OBJECT FREE AREA WIDTH			89'	SAME
TAXIWAY SAFETY AREA WIDTH			49'	SAME
TAXIWAY WINGTIP CLEARANCE			20'	SAME
RUNWAY ELEVATIONS (NAVD 88) (See Note 2)	TOUCHDOWN ZONE (TDZ)		1,000'	SAME
	HIGH POINT		1,005.4'	1,004.0'
	LOW POINT		962.0'	964.0'
	END POINT (RUNWAY 12/30)		1,005.4'/962.0'	1,004.0'/964.0'
BLAST PAD (ASPHALT) (WIDTH X LENGTH)	RUNWAY 12		78' x 48'	80' x 60'
	RUNWAY 30		77 x 60'	80 x 60'
LINE OF SIGHT REQUIREMENT MET			YES	SAME
RUNWAY LENGTH			4,120'	3,768'
RUNWAY WIDTH			75'	SAME
RUNWAY/TAXIWAY PAVEMENT MATERIAL			ASPHALT	SAME
APPROACH SLOPE			20:1	SAME
PAVEMENT STRENGTH (S) (000 LBS)			12.5	SAME
RUNWAY LIGHTING			MIRL	SAME
NAVIGATIONAL AIDS			Beacon/GPS	SAME
VISUAL AIDS	RUNWAY 12		REIL, PAPI	SAME
	RUNWAY 30		REIL, PAPI	SAME
RUNWAY SAFETY AREA	LENGTH¹		55/73'	240'
	WIDTH		120'	SAME
RUNWAY OBJECT FREE AREA	LENGTH¹		55/73'	240'
	WIDTH		250'	SAME
OBSTACLE FREE ZONE	LENGTH¹		55/73'	200'
	WIDTH		250'	SAME
RUNWAY CENTERLINE TO HOLD LINE			125'	SAME

¹Length from runway end

FAA APPROVAL

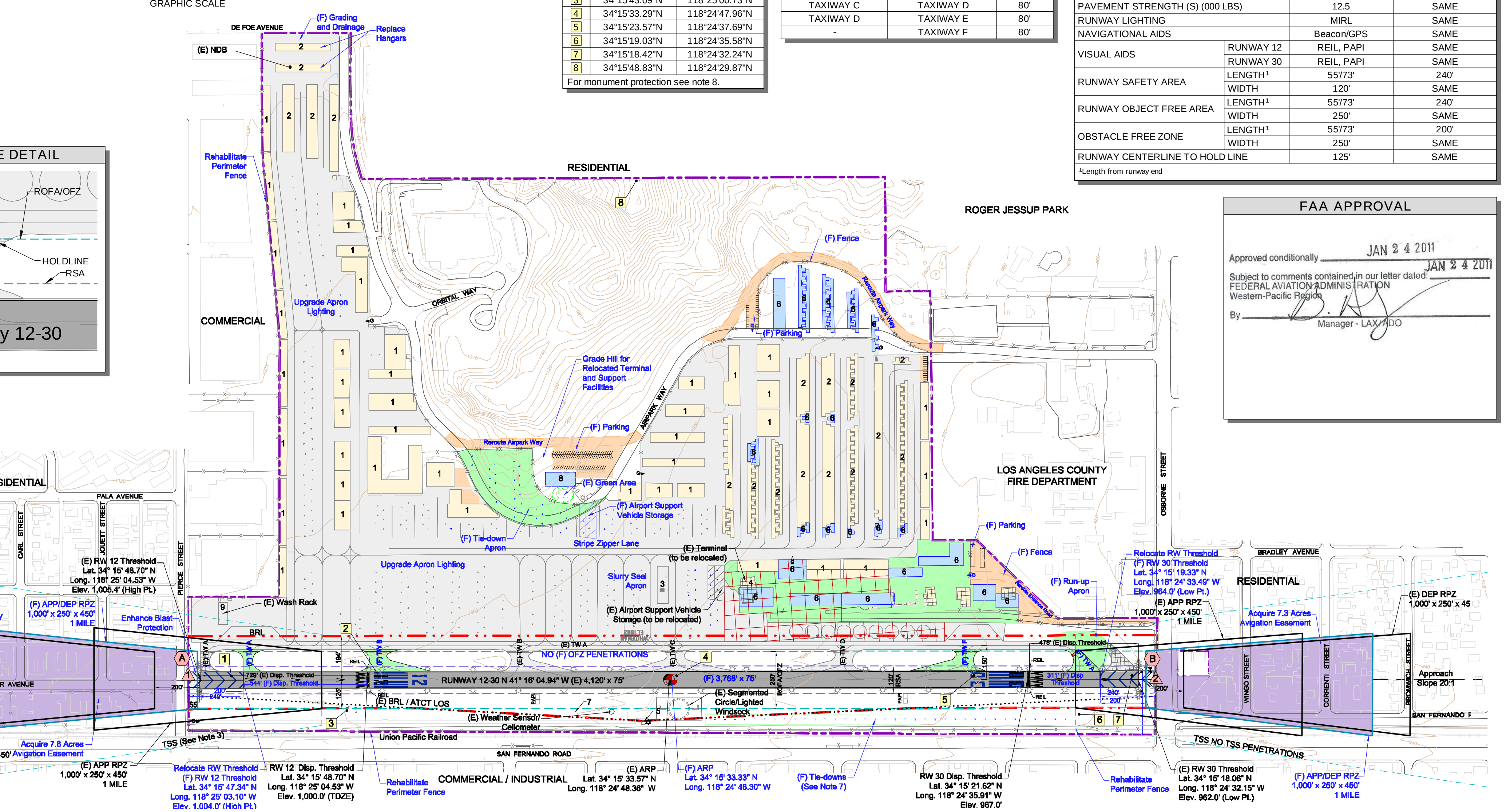
Approved conditionally JAN 2 4 2011

Subject to comments contained in our letter dated: JAN 2 4 2011

FEDERAL AVIATION ADMINISTRATION Western-Pacific Region

By

Manager - LAX/ADO



AECOM

999 Town and Country Road
Orange, CA 92868
Tel: 714.567.2400
Fax: 714.567.2441

Designed By:	LDF
Drafted By:	LDF
Checked By:	AWS
Approved By:	DPS

No.	Revision	By	App.	Date
1	1990 Master Plan	Hodges & Shutt		December 1990
2	Update and Revise Per FAA Letter Dated Jan. 29, 1996	P&D	TAG	October 21, 1996
3	Added Proposed Acquisition and Fuel Pit, and New Hangars	P&D	TAG	May 26, 1999
4	ALP Revalidation	P&D	TAG	June 2002
5	2009 Master Plan	AECOM	RLS	October 2010

Approved: County of Los Angeles

Richard L. Smith, Chief, Aviation Division — Date 10-20-10

The preparation of this plan was financed in part through a planning grant from the Federal Aviation Administration as provided under Section 505 of the Airport and Airway Improvement Act of 1982, as amended. The contents do not necessarily reflect the official views or policy of the FAA. Acceptance of this plan by the FAA does not in any way constitute a commitment on the part of the United States to participate in any development depicted therein nor does it indicate that the proposed development is environmentally acceptable in accordance with appropriate public laws.

Whiteman Airport
Pacoima, California

Airport Layout Plan

County of Los Angeles
Department of Public Works

AIP Project Nos. 03-06-0134-10/11

Scale 1" = 300'

October 2010

Sheet No. 2 of 7

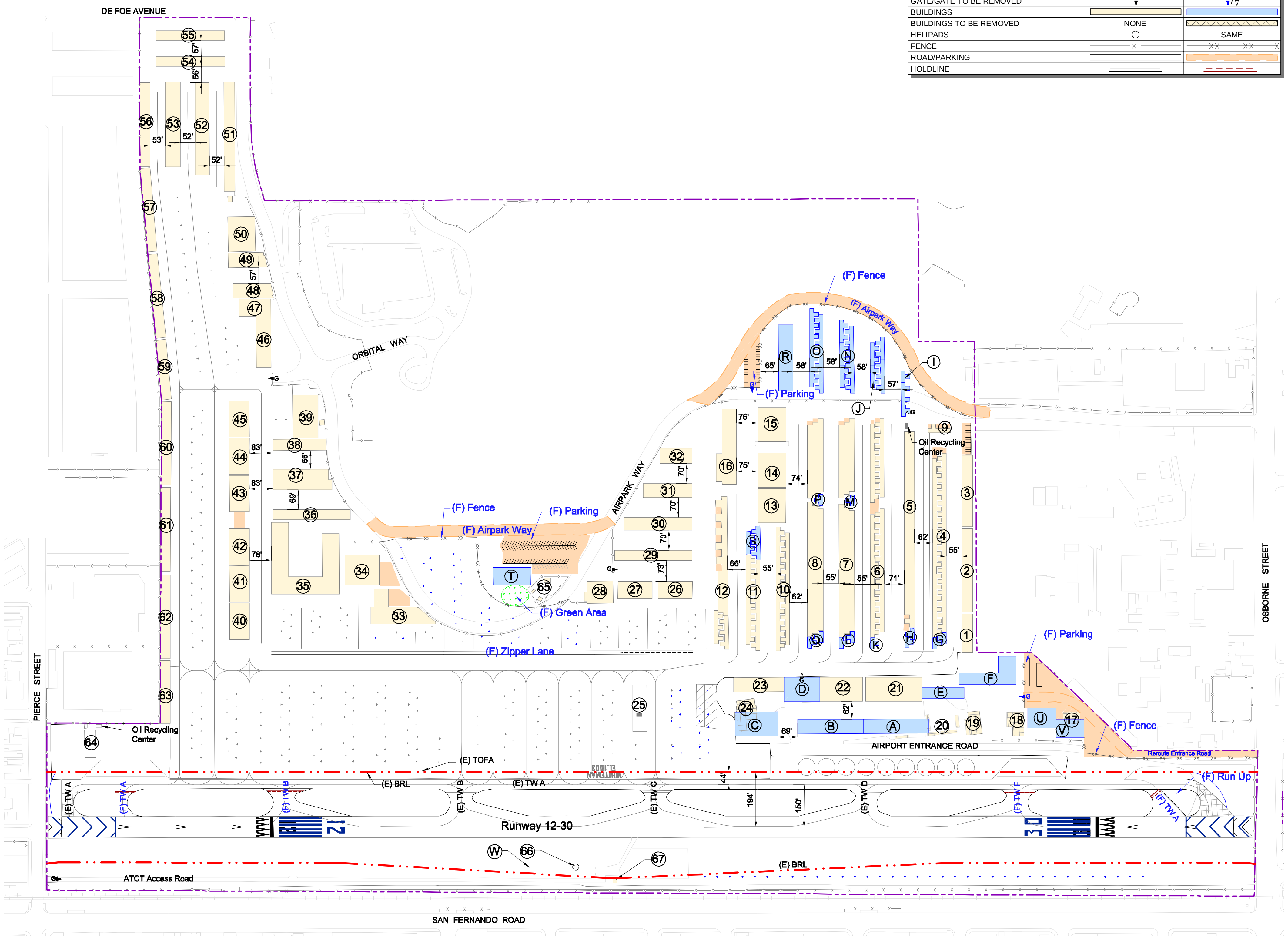
LEGEND		
DESCRIPTION	EXISTING	FUTURE
AIRPORT BOUNDARY		SAME
AIRFIELD PAVEMENT		SAME
AIRFIELD PAVEMENT TO BE REMOVED	NONE	
BUILDING RESTRICTION LINE (BRL)		SAME
TAXIWAY OBJECT FREE AREA (TOFA)		SAME
GATE/GATE TO BE REMOVED	G	G / G
BUILDINGS		
BUILDINGS TO BE REMOVED	NONE	
HELIPADS		SAME
FENCE		
ROAD/PARKING		
HOLDLINE		

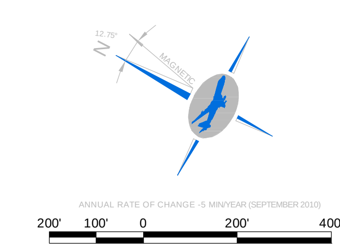
FUTURE BUILDING TABLE		
#	DESCRIPTION	TOP ELEVATION
A	NESTED T-HANGARS	993'*
B	NESTED T-HANGARS	997'*
C	CONVENTIONAL HANGAR	1,023'*
D	CONVENTIONAL HANGAR	1,021'*
E	BOX HANGARS	993'*
F	PRIVATE 4-HANGAR DEVELOPMENT	993'*
G	HANGAR ROW B EXTENSION	995'*
H	HANGAR ROW C EXTENSION	999'*
I	T-HANGARS	1,005'*
J	NESTED T-HANGARS	1,007'*
K	HANGAR ROW D EXTENSION	999'*
L	HANGAR ROW E EXTENSION	1,001'*
M	HANGAR ROW E INFILL	1,007'*
N	NESTED T-HANGARS	1,007'*
O	NESTED T-HANGARS	1,009'*
P	HANGAR ROW F INFILL	1,009'*
Q	HANGAR ROW F EXTENSION	1,003'*
R	NESTED T-HANGARS	1,011'*
S	HANGAR ROW J INFILL	1,011'*
T	TERMINAL/RESTAURANT (2 STORY)	1,038'*
U	CONVENTIONAL HANGAR	1,007'*
V	CONVENTIONAL HANGAR	1,005'*
W	AWOS	1,020'*
* Estimated		

NOTES:

1. All elevations are in NAVD 88. All future elevations are estimated.
2. Building elevations are based on the Topographical Survey conducted in August 2008.
3. Hangar layouts shown are conceptual to depict potential future capacities. Future configurations will be determined based on actual demand.

EXISTING BUILDING TABLE		
#	DESCRIPTION	TOP ELEVATION
1	HANGARS A1-3	995'
2	HANGARS A4-8	996'
3	HANGARS A9-16	992'
4	LA COUNTY HANGARS ROW B	988'
5	LA COUNTY HANGARS ROW C	994'
6	LA COUNTY HANGARS ROW D	997'-998'
7	LA COUNTY HANGARS ROW E	1,003'
8	LA COUNTY HANGARS ROW F	1,0005'
9	LA COUNTY HANGARS G18-19	985'
10	LA COUNTY HANGARS ROW G	1,000'
11	LA COUNTY HANGARS ROW H	1,002'
12	LA COUNTY HANGARS ROW J	1,001'-1,010'
13	HANGAR GM	1,018'
14	HANGAR GM	1,018'
15	HANGAR AVIATION	1,019'
16	HANGAR JM	1,018'
17	FBO HANGAR/OFFICE BUILDING	984'
18	FBO HANGAR/OFFICE BUILDING	988'
19	FBO HANGAR/OFFICE BUILDING	992'
20	OFFICE BUILDING	987'
21	HANGARS 544-547	1,000'
22	HANGARS 541-543	1,001'
23	HANGARS 651-653	1,009'
24	TERMINAL/RESTAURANT	998.5'
25	FUEL ISLAND	1,003'
26	FBO MAINTENANCE HANGAR	1,013'*
27	FBO MAINTENANCE HANGAR	1,015'*
28	FBO OFFICE	1,029.3'
29	FBO BASED AIRCRAFT HANGARS	1,017'*
30	FBO BASED AIRCRAFT HANGARS	1,017'*
31	FBO BASED AIRCRAFT HANGARS	1,017'*
32	FBO BASED AIRCRAFT HANGARS	1,017'*
33	PRIVATE 5-HANGAR DEVELOPMENT	1,029'*
34	MARSHALLS HANGAR	1,031.1'
35	HANGARS M1-8	1,030.4'
36	HANGARS 5115-5120	1,029'
37	HANGARS 5105-5114	1,032.5'
38	HANGARS 5101-5104	1,033.2'
39	HANGAR 31	1,035.7'
40	MD HANGARS 1-4	1,030'
41	MD HANGARS 5-8	1,031.7'
42	MD HANGARS 9-12	1,033'
43	MD HANGARS 13-18	1,030.4'
44	MD HANGARS 19-24	1,032.1'
45	MD HANGARS 25-30	1,033.0'
46	HANGARS 654-656	1,039.5'
47	HANGAR 657	1,039.5'
48	FBO BASED AIRCRAFT HANGARS	1,047.8'
49	FBO BASED AIRCRAFT HANGARS	1,047.8'
50	FBO BASED MAINTENANCE HANGAR	1,035.2'
51	LA COUNTY HANGARS ROW BB	1,043.1'
52	LA COUNTY HANGARS ROW CC	1,042.0'
53	LA COUNTY HANGARS ROW DD	1,044.8'
54	LA COUNTY HANGARS ROW T	1,044.7'
55	LA COUNTY HANGARS ROW U	1,045.3'
56	HANGARS HH 1-7	1,044.2'
57	HANGARS HH 8-14	1,042.0'
58	HANGARS HH 15-21	1,040.5'
59	HANGARS HH 22-26	1,038.1'
60	HANGARS HH 27-33	1,034.4'
61	HANGARS HH 34-40	1,030.5'
62	HANGARS HH 41-47	1,027.2'
63	HANGARS HH 48-52	1,023.9'
64	WASH RACK	1,008'
65	ELECTRICAL VAULT	1,017'*
66	WEATHER EQUIPMENT	1,025'
67	AIRPORT TRAFFIC CONTROL TOWER	1,047.2'
* Estimated		





AECOM	Designed By: LDF	No.	Revision	By	App.	Date	Approved: County of Los Angeles
999 Town and Country Road	Drafted By: LDF	1	1990 Master Plan	Hodges & Shutt		December 1990	
Orange, CA 92868	Checked By: AWS	2	2009 Master Plan	AECOM	RLS	October 2010	
Tel: 714.567.2400	Approved By: DPS						
Fax: 714.567.2441							

Richard L. Smith, Chief, Aviation Division Date

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Whiteman Airport
Pacoima, California

Building Area Plan

County of Los Angeles
Department of Public Works

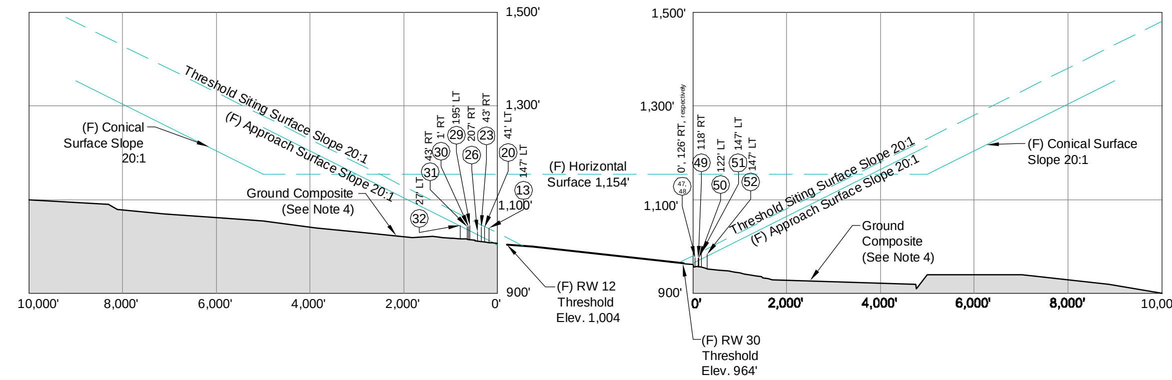
AIP Project Nos.
03-06-0134-10/11

Scale 1" = 200'
October 2010

Sheet No.
3 of 7

ABBREVIATIONS:

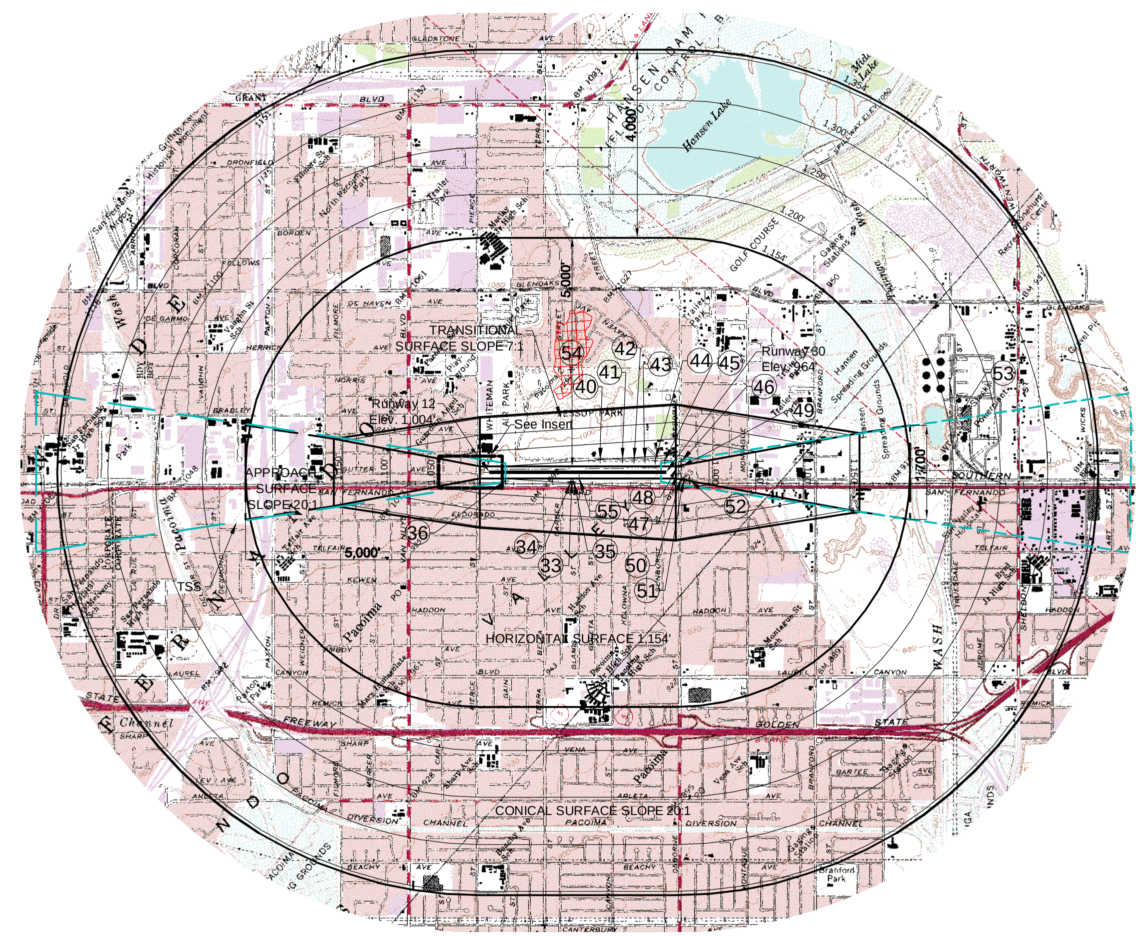
ATCT Airport Traffic Control Tower
(F) Future
FAR Federal Aviation Regulations
OL Obstruction Light
RW Runway
TSS Threshold Siting Surface



RUNWAY 12-30
Vertical Scale: 1" = 200"
Horizontal Scale 1" = 2,000"

RUNWAY 12 INSERT

Scale 1" = 100'



PART 77 OBSTRUCTION IDENTIFICATION TABLE

OBS. No.	DESCRIPTION	ELEV.	PENETR.	SURFACE	PROPOSED ACTION
1	PERIMETER FENCE	1,012'	6'	APPROACH	TO REMAIN
2	PIERCE STREET	1,021'	14'	APPROACH	TO REMAIN
3	TREE	1,009'	2'	APPROACH	TRIM/REMOVE
4	TREE	1,014'	5'	APPROACH	TRIM/REMOVE
5	BUILDING	1,028'	18'	APPROACH	PROVIDE OL
6	TREE	1,021'	11'	APPROACH	TRIM/REMOVE
7	TREE	1,019'	8'	APPROACH	TRIM/REMOVE
8	BUILDING	1,020'	10'	APPROACH	PROVIDE OL
9	TREE	1,021'	9'	APPROACH	TRIM/REMOVE
10	BUILDING	1,020'	8'	APPROACH	PROVIDE OL
11	BUILDING	1,020'	8'	APPROACH	PROVIDE OL
12	BUILDING	1,029'	15'	APPROACH	PROVIDE OL
13	POWER POLE	1,040'	27'	APPROACH	PROVIDE OL
14	BUILDING	1,020'	6'	APPROACH	PROVIDE OL
15	TREE	1,021'	6'	APPROACH	TRIM/REMOVE
16	TREE	1,021'	5'	APPROACH	TRIM/REMOVE
17	LIGHT POLE	1,027'	10'	APPROACH	LOWER/PROVIDE OL
18	BUILDING	1,020'	2'	APPROACH	PROVIDE OL
19	POWER POLE	1,041'	23'	APPROACH	LOWER/PROVIDE OL
20	BUILDING	1,019'	1'	APPROACH	PROVIDE OL
21	TREE	1,021'	2'	APPROACH	TRIM/REMOVE
22	TREE	1,021'	1'	APPROACH	TRIM/REMOVE
23	POWER POLE	1,041'	19'	APPROACH	LOWER/PROVIDE OL
24	LIGHT POLE	1,028'	4'	APPROACH	LOWER/PROVIDE OL
25	LIGHT POLE	1,030'	5'	APPROACH	LOWER/PROVIDE OL
26	RAILROAD	1,032'	6'	APPROACH	TO REMAIN
27	LIGHT POLE	1,029'	2'	APPROACH	LOWER/PROVIDE OL
28	POWER POLE	1,042'	13'	APPROACH	LOWER/PROVIDE OL
29	POWER POLE	1,045'	11'	APPROACH	LOWER/PROVIDE OL
30	POWER POLE	1,043'	8'	APPROACH	LOWER/PROVIDE OL
31	POWER POLE	1,043'	6'	APPROACH	LOWER/PROVIDE OL
32	POWER POLE	1,045'	1'	APPROACH	LOWER/PROVIDE OL
33	ATCT	1,047'	53'	TRANSITIONAL	TO REMAIN
34	TREE	1,003'	4'	TRANSITIONAL	TRIM/REMOVE
35	TREE	1,004'	5'	TRANSITIONAL	TRIM/REMOVE
36	ACCESS ROAD	1,013'	3'	TRANSITIONAL	TO REMAIN
37	PERIMETER FENCE	1,014'	2'	TRANSITIONAL	TO REMAIN
38	RAILROAD	1,025'	6'	TRANSITIONAL	TO REMAIN
39	POWER POLE	1,037'	9'	TRANSITIONAL	PROVIDE OL
40	AIRPORT ROAD	1,010'	10'	TRANSITIONAL	TO REMAIN
41	POWER POLE	1,009'	13'	TRANSITIONAL	PROVIDE OL
42	POWER POLE	1,005'	11'	TRANSITIONAL	PROVIDE OL
43	POWER POLE	1,001'	10'	TRANSITIONAL	PROVIDE OL
44	POWER POLE	998'	12'	TRANSITIONAL	PROVIDE OL
45	POWER POLE	994'	9'	TRANSITIONAL	PROVIDE OL
46	POWER POLE	989'	5'	TRANSITIONAL	PROVIDE OL
47	OSBORNE STREET	971'	4'	APPROACH	TO REMAIN
48	LIGHT POLE	976'	9'	APPROACH	LOWER/PROVIDE OL
49	LIGHT POLE	976'	6'	APPROACH	LOWER/PROVIDE OL
50	LIGHT POLE	976'	5'	APPROACH	LOWER/PROVIDE OL
51	POWER POLE	987'	14'	APPROACH	LOWER/PROVIDE OL
52	POWER POLE	984'	55'	APPROACH	LOWER/PROVIDE OL
53	FOUR STACKS	1,180'	-31'	CONICAL	TO REMAIN
54	TERRAIN	1,294'	140'	HORIZONTAL	TO REMAIN
55	WIND SOCK	993'	6'	PRIMARY	TO REMAIN

THRESHOLD SITING SURFACE PENETRATIONS

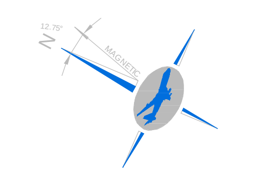
#	DESCRIPTION	RW	PENETRATION	PROPOSED ACTION
1	PERIMETER FENCE	12	4'	TO REMAIN
13	POWER POLE	12	4'	VERIFY HEIGHT/LOWER POLE
36	ATCT ACCESS ROAD	12	11'	TO REMAIN
38	RAILROAD TRACKS	12	14'	TO REMAIN

SURFACE ELEVATION

SURFACE	ELEV.
END OF RUNWAY 12	1,004.0'
END OF RUNWAY 30	964.0'
HORIZONTAL SURFACE	1,154'
CONICAL SURFACE (UPPER LIMIT)	1,354'
APPROACH SURFACE (12)-UPPER LIMIT	1,254.2'
APPROACH SURFACE (30)-UPPER LIMIT	1,214.5'

USGS MAPS USED FOR BASE

7.5 MIN. QUAD
BURBANK (1966)
SAN FERNANDO (1966)
SUNLAND (1966)
VAN NUYS (1966)



GRAPHIC SCALE

NOTES:

1. All elevations are in feet above mean sea level (MSL).
2. Negative penetrations in the Obstruction Identification Table represent distance clear to specified surface.
3. The existing width of the FAR Part 77 Primary Surface and inner widths of the Approach Surfaces, which are 250 feet, have been applied to the airport historically and therefore have been retained. This is a deviation from the Part 77 standard of 500 feet for runways serving small aircraft only with a non-precision instrument approach procedure.
4. A composite ground profile is created by using the highest point at any given distance from the runway within the approach and threshold siting surface.
5. Ten feet were added to alley, fifteen feet to non-interstate road, and twenty-three feet to railroad track elevations.
6. For additional close in obstruction information for Runway 12 see Sheet 5.
7. Runway 12 insert is provided to enhance clarity of obstruction locations. no insert is provided for Runway 30 because there are only six obstructions within the approach surface.

Source of data for object elevations and locations: USGS maps Burbank, San Fernando, Sunland, and Van Nuys (1966) and Los Angeles and San Francisco Sectional Aeronautical Charts (December 18, 2008); Topographic Survey (August 2008); Digital Obstacle File (2008).

AECOM
999 Town and Country Road
Orange, CA 92868
Tel: 714.567.2400
Fax: 714.567.2441

Designed By: LDF
Drafted By: LDF
Checked By: AWS
Approved By: DPS

No.	Revision	By	App.	Date
1	1990 Master Plan	Hodges		December 1990
2	2009 Master Plan	AECOM	RLS	October 2010

Approved: County of Los Angeles

Richard L. Smith, Chief, Aviation Division   Date

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Whiteman Airport
Pacoima, California

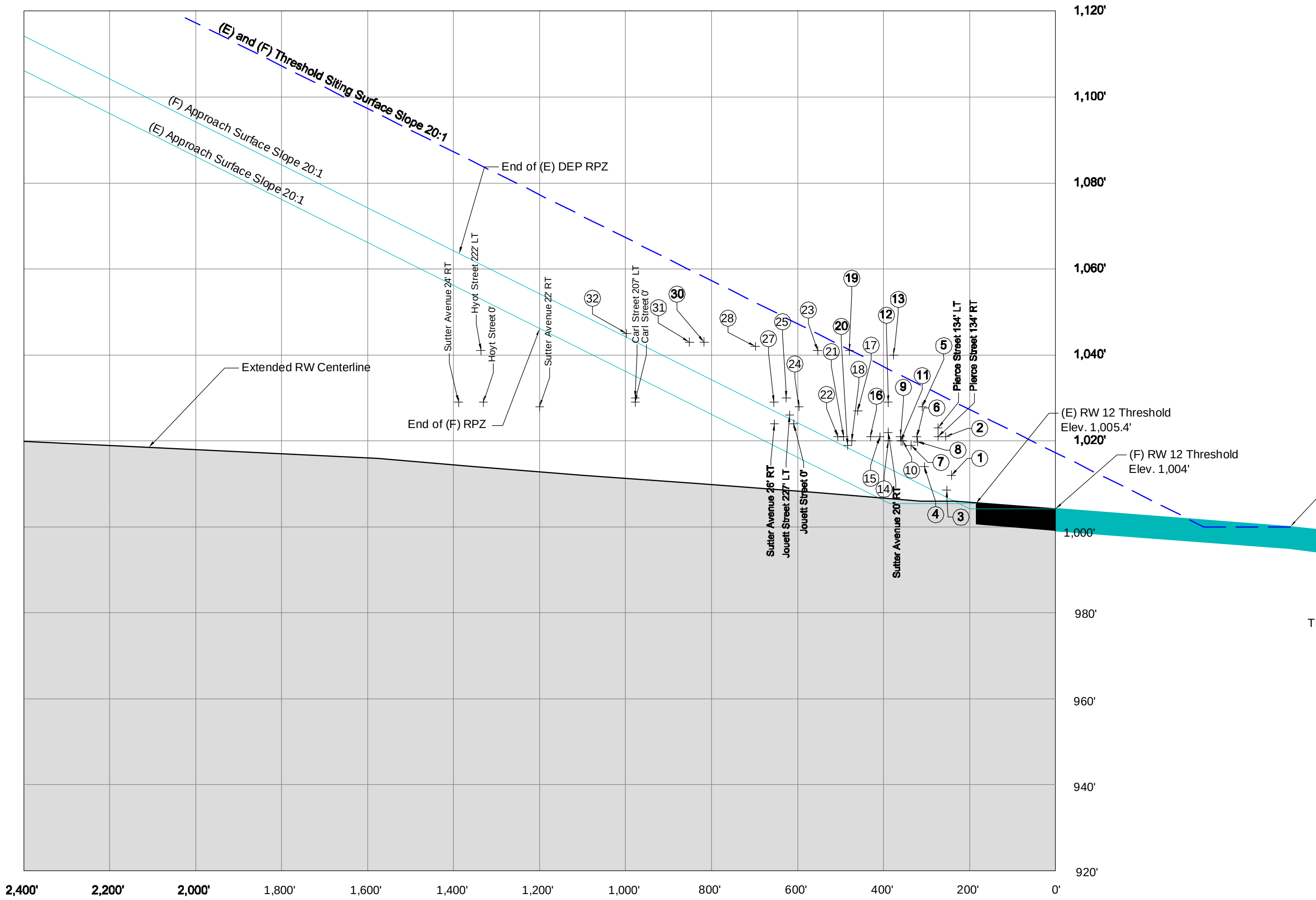
FAR Part 77 Airspace Plan

County of Los Angeles
Department of Public Works

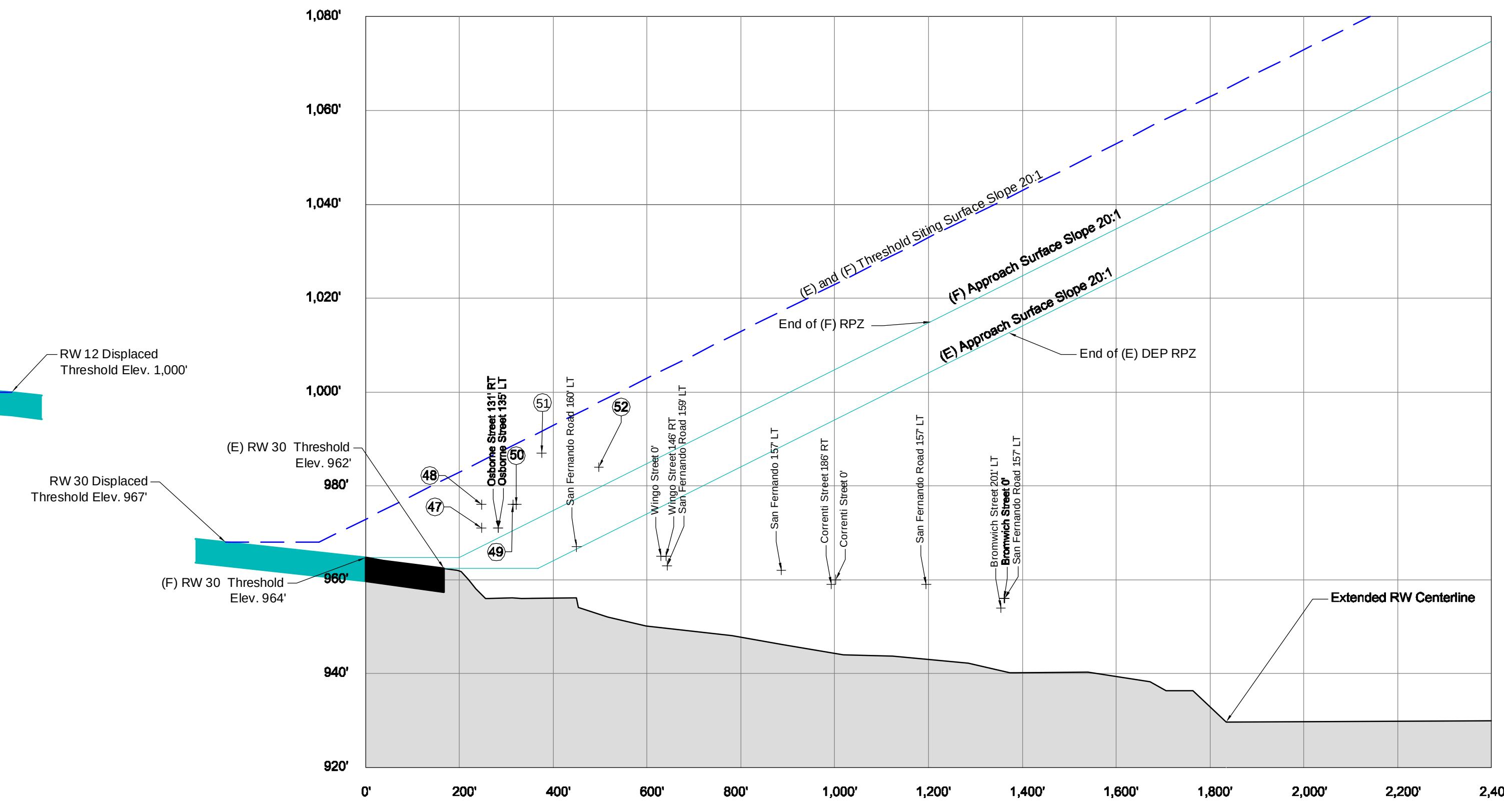
AIP Project Nos.
03-06-0134-10/11

Scale 1" = 2,000'
October 2010

Sheet No.
4 of 7

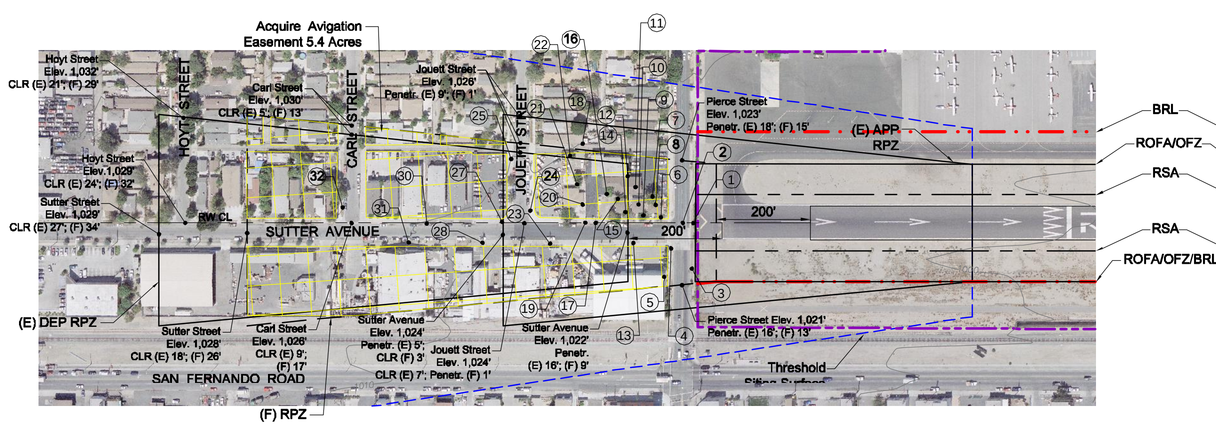


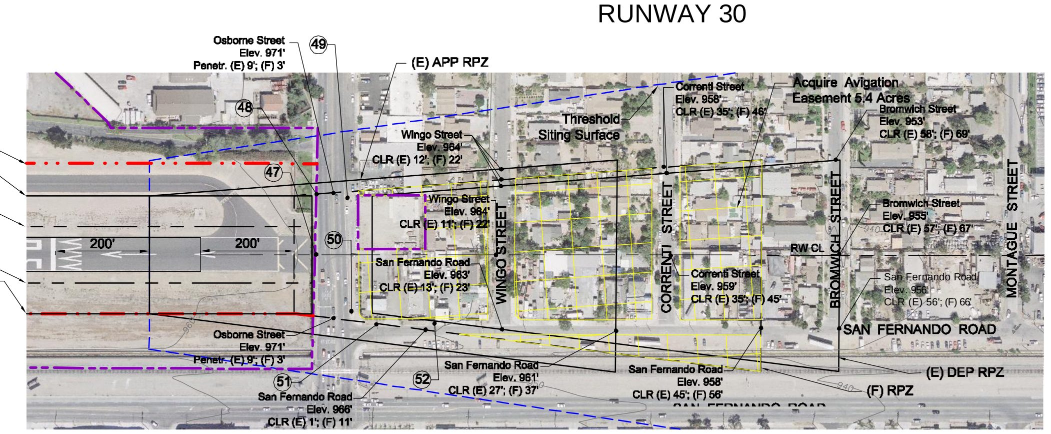
RUNWAY 12



RUNWAY 30

THRESHOLD SITING SURFACE PENETRATIONS				
#	DESCRIPTION	RW	PENETRATION	PROPOSED ACTION
1	PERIMETER FENCE	12	4'	TO REMAIN
13	POWER POLE	12	4'	VERIFY HEIGHT/LOWER POLE
36	ATCT ACCESS ROAD	12	11'	TO REMAIN
38	RAILROAD TRACKS	12	14'	TO REMAIN





ABBREVIATIONS

APP	Approach
BRL	Building Restriction Line
CL	Centerline
CLR	Clear
DI	Distance
DEP	Departure
(E)	Existing
Elev.	Elevation
Est.	Estimated
(F)	Future
LT	Left
No.	Number
OBS.	Obstruction
OFZ	Obstacle Free Area
Penetr.	Penetration
ROFA	Runway Object Free Area
RPZ	Runway Protection Zone
RSA	Runway Safety Area
RT	Right
RW	Runway

PART 77 OBSTRUCTION IDENTIFICATION TABLE						
OBS. No.	DESCRIPTION	ELEV.	DI TO RW CL	(E) PENETR.	(F) PENETR.	PROPOSED ACTION
1	PERIMETER FENCE	1,012'	0'	7'	6'	TO REMAIN
2	PIERCE STREET	1,021'	0'	16'	14'	TO REMAIN
3	TREE	1,009'	101' RT	3'	2'	TRIM/REMOVE
4	TREE	1,014'	62' RT	9'	5'	TRIM/REMOVE
5	BUILDING	1,028'	101' RT	23'	18'	PROVIDE OL
6	TREE	1,021'	14' LT	16'	11'	TRIM/REMOVE
7	TREE	1,019'	62' LT	14'	8'	TRIM/REMOVE
8	BUILDING	1,020'	24' LT	14'	10'	PROVIDE OL
9	TREE	1,021'	13' LT	16'	9'	TRIM/REMOVE
10	BUILDING	1,020'	24' LT	15'	8'	PROVIDE OL
11	BUILDING	1,020'	65' LT	15'	8'	PROVIDE OL
12	BUILDING	1,029'	104' LT	23'	15'	PROVIDE OL
13	POWER POLE	1,040'	42' RT	35'	27'	LOWER POLE

PART 77 OBSTRUCTION IDENTIFICATION TABLE						
OBS. No.	DESCRIPTION	ELEV.	DI TO RW CL	(E) PENETR.	(F) PENETR.	PROPOSED ACTION
14	BUILDING	1,020'	24' LT	14'	6'	PROVIDE OL
15	TREE	1,021'	50' LT	14'	6'	TRIM/REMOVE
16	TREE	1,021'	67' LT	13'	5'	TRIM/REMOVE
17	LIGHT POLE	1,027'	7' RT	18'	10'	LOWER/PROVIDE OL
18	BUILDING	1,020'	169' LT	10'	2'	PROVIDE OL
19	POWER POLE	1,041'	0'	31'	23'	LOWER/PROVIDE OL
20	BUILDING	1,019'	41' RT	9'	1'	PROVIDE OL
21	TREE	1,021'	83' RT	10'	2'	TRIM/REMOVE
22	TREE	1,021'	139' LT	10'	1'	TRIM/REMOVE
23	POWER POLE	1,041'	43' RT	27'	19'	LOWER/PROVIDE OL
24	LIGHT POLE	1,028'	25' LT	12'	4'	LOWER/PROVIDE OL
25	LIGHT POLE	1,030'	138' LT	13'	5'	LOWER/PROVIDE OL
27	LIGHT POLE	1,029'	0'	10'	2'	LOWER/PROVIDE OL

PART 77 OBSTRUCTION IDENTIFICATION TABLE						
OBS. No.	DESCRIPTION	ELEV.	DI TO RW CL	(E) PENETR.	(F) PENETR.	PROPOSED ACTION
28	POWER POLE	1,042'	43' RT	21'	13'	LOWER/PROVIDE OL
30	POWER POLE	1,043'	1' RT	16'	8'	LOWER/PROVIDE OL
31	POWER POLE	1,043'	43' RT	14'	6'	LOWER/PROVIDE OL
32	POWER POLE	1,045'	27' LT	9'	1'	LOWER/PROVIDE OL
47	OSBORNE STREET	971'	0'	7'	4'	TO REMAIN
48	LIGHT POLE	976'	126' RT	12'	9'	LOWER/PROVIDE OL
49	LIGHT POLE	976'	118' RT	12'	6'	LOWER/PROVIDE OL
50	LIGHT POLE	976'	122' LT	12'	5'	LOWER/PROVIDE OL
51	POWER POLE	987'	147' LT	23'	14'	LOWER/PROVIDE OL
52	POWER POLE	984'	147' RT	26'	55'	LOWER/PROVIDE OL

NOTES:

1. All elevations are in feet above mean sea level (MSL).
2. Negative penetrations in the Obstruction Identification Table represent distance clear to specified surface.
3. Ten feet were added to alley/service roads, fifteen feet to non-interstate roads, and twenty-three feet to railroad track elevations.
4. Right and left designations of the runway centerline refer to direction of the object from runway centerline when approaching the runway.

Source of data for object elevations and locations: USGS maps Burbank, San Fernando, Sunland, and Van Nuys (1966) and Los Angeles and San Francisco Sectional Aeronautical Charts (December 18, 2008); Topographic Survey (August 2008); Aerial Photo (August 2008); Digital Obstacle File (2008).

200' 100' 0 200' 400'

GRAPHIC SCALE

AECOM

999 Town and Country Road
Orange, CA 92868
Tel: 714.567.2400
Fax: 714.567.2441

Designed By:	LDF
Drafted By:	LDF
Checked By:	AWS
Approved By:	DPS

No.	Revision	By	App.	Date
1	1990 Master Plan	Hodges		December 1990
2	2009 Master Plan	AECOM	RLS	October 2010

Approved: County of Los Angeles

Richard L. Smith, Chief, Aviation Division   Date

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Whiteman Airport
Pacoima, California

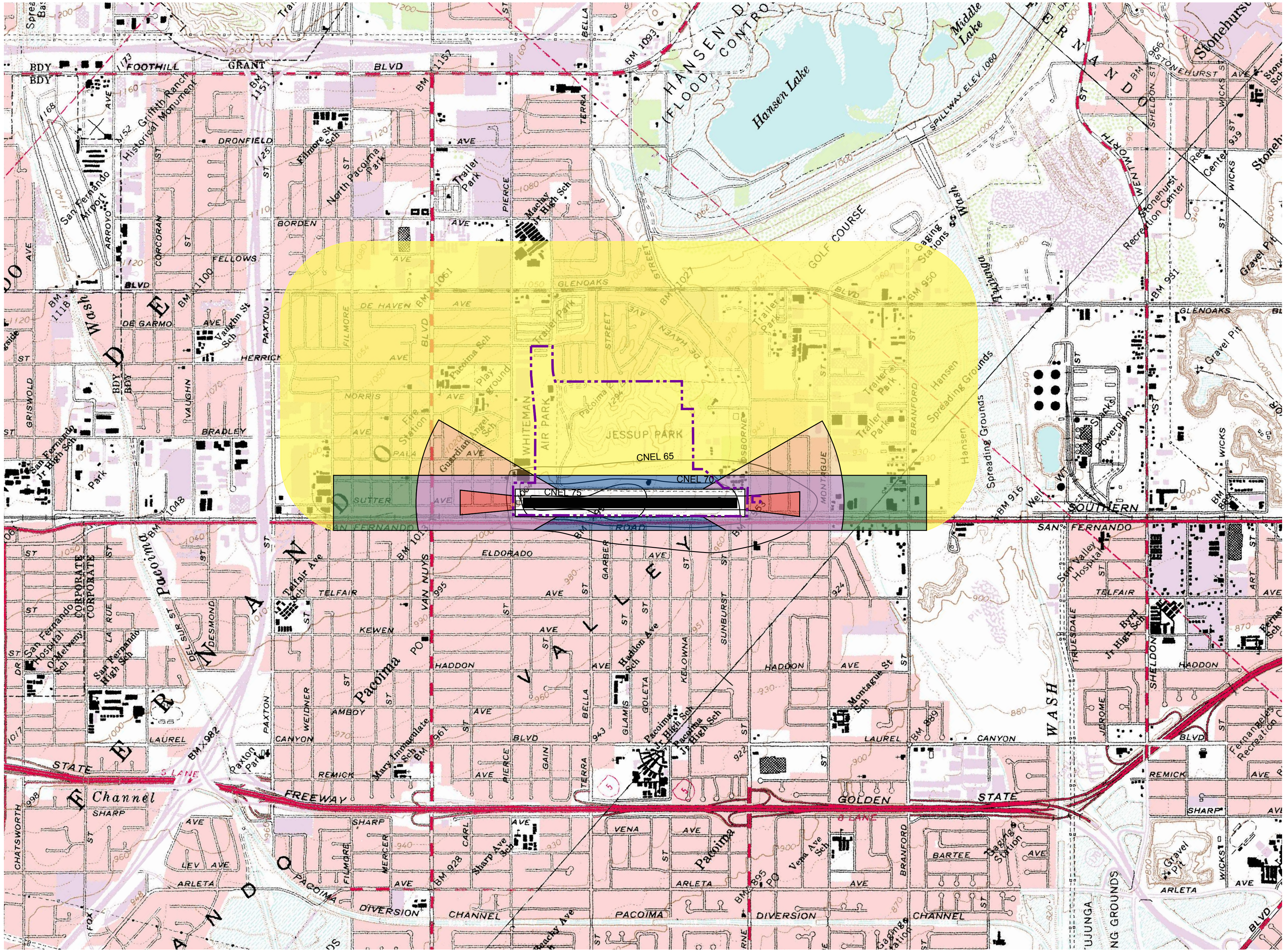
AIP Project Nos.
03-06-0134-10/11

Inner Portion of the Approach Surface Plan

Vertical Scale: 1" = 20"
Horizontal Scale 1" = 200"
October 2010

County of Los Angeles
Department of Public Works

Sheet No.
5 of 7



Source of data for maps: USGS maps Burbank, San Fernando, Sunland, and Van Nuys (1966).

CALTRANS ZONES							
		Maximum Residential Density[1] (Dwelling Units per Gross Acre)			Maximum Non-Residential Density (Average number of People per Gross Acre)		
Symbol	Zone	Rural Farmland/ Open Space	Rural/ Suburban	Urban	Rural Farmland/ Open Space	Rural/ Suburban	Urban
	1. Runway Protection Zone	0	0	0	0[3]	0[3]	0[3]
	2. Inner Approach/ Departure Zone	Maintain[5]	1 d.u. per 10-20 ac.	0	10-25	25-40	40-60
	3. Inner Turning Zone	Maintain[5]	1 d.u. per 2-5 ac.	Infill[2]	60-80	60-80	80-100
	4. Outer Approach/ Departure Zone	Maintain[5]	1 d.u. per 2-5 ac.	Infill[2]	60-80	60-80	80-100
	5. Sideline Zone	Maintain[5]	1 d.u. per 1-2 ac.	Infill[2]	80-100	80-100	100-150
	6. Traffic Pattern Zone	No Limit	No Limit	No Limit	150	150	No Limit[4]

[1] Clustering to preserve open land encouraged in all zones.
[2] Allow infill at up to average of surrounding residential area only if non-residential uses are not feasible.
[3] Exceptions can be permitted for agricultural activities, roads, and automobile parking provided that FAA criteria are satisfied.
[4] Large stadiums and similar uses should be prohibited.
[5] Maintain current zoning if less than density criteria for rural/suburban setting.

Source: California Airport Land Use Planning Handbook, State of California Department of Transportation Division of Aeronautics, January 2002.

Notes: 1. Safety zones are based on the proposed runway location.

LEGEND	
DESCRIPTION	EXISTING
PROPOSED RUNWAY	
ZONE 1 - RUNWAY PROTECTION ZONE	
ZONE 2 - INNER APPROACH/DEPARTURE ZONE	
ZONE 3 - INNER TURNING ZONE	
ZONE 4 - OUTER APPROACH/DEPARTURE ZONE	
ZONE 5 - SIDELINE ZONE	
ZONE 6 - TRAFFIC PATTERN ZONE	
CNEL 65 dB	
CNEL 70 dB	
CNEL 75 dB	
PROPERTY LINE	

1,000' 500' 0 1,000' 2,000'

GRAPHIC SCALE

AECOM

999 Town and Country Road
Orange, CA 92868
Tel: 714.567.2400
Fax: 714.567.2441

Designed By: LDF
Drafted By: LDF
Checked By: AWS
Approved By: DPS

No.	Revision	By	App.	Date
1	2009 Master Plan	AECOM	RLS	October 2010

Prepared For: The County of Los Angeles

Richard L. Smith, Chief, Aviation Division — Date

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Whiteman Airport
Pacoima, California

Land Use Plan

County of Los Angeles
Department of Public Works

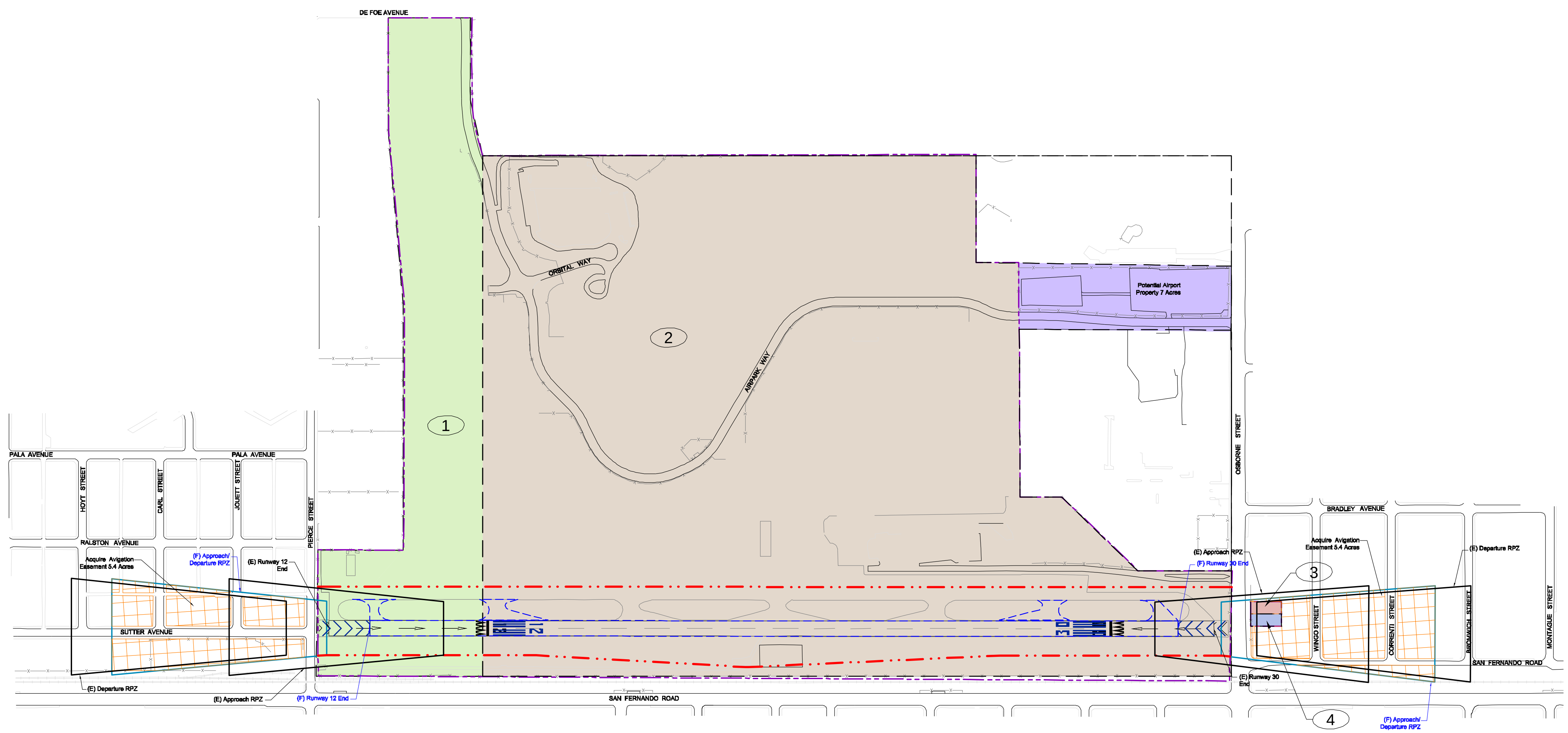
AIP Project No.
03-06-0134-10

Scale 1" = 1,000'
October 2010

Sheet No.
6 of 7

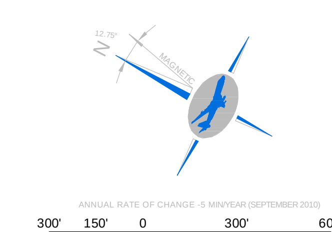
NOTES:
1. Boundary lines were established from: Office of the Assessor, Los Angeles County, California; 2001 2536:17 Sheet 1. Tract No. 43464.
2. Unless otherwise stated Book, Page, and Parcel information in the Property Table references Assessor Maps.
3. Proposed Acquisitions include Avigation Easements.
4. In researching assessor parcel maps for this exhibit, it was noted that the portion shown in purple may be part of airport property. It is recommended that the County conduct title searches to discover actual ownership of these 7 acres.

LEGEND	
DESCRIPTION	EXISTING
FUTURE AIRFIELD PAVEMENT	
BUILDING RESTRICTION LINE (BRL)	
FUTURE AVIGATION EASEMENT	



PROPERTY TABLE						
#	TYPE OF INTEREST	BOOK/PAGE	PARCEL	ACREAGE	DATE OF RECORDING	COMMENTS
1	FEE	2536/17	904	32.3*	UNKNOWN	
2	FEE	2536/17	906	151.14	UNKNOWN	
3	FEE	2537/10	900	0.19	4/20/1999	AIP 03-06-0134-04 and -05
4	FEE	2537/10	901	0.19	4/20/1999	AIP 03-06-0134-04 and -05

* ACREAGE IS CALCULATED



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No.	Revision	By	App.	Date
1	2009 Master Plan	AECOM	RLS	October 2010

Approved: County of Los Angeles

Richard L. Smith, Chief, Aviation Division   Date

The preparation of this plan was financed in part through a planning grant from the Federal Aviation Administration as provided under Section 505 of the Airport and Airway Improvement Act of 1982, as amended. The contents do not necessarily reflect the official views or policy of the FAA. Acceptance of this plan by the FAA does not in any way constitute a commitment on the part of the United States to participate in any development depicted therein nor does it indicate that the proposed development is environmentally acceptable in accordance with appropriate public laws.

Whiteman Airport
Pacoima, California

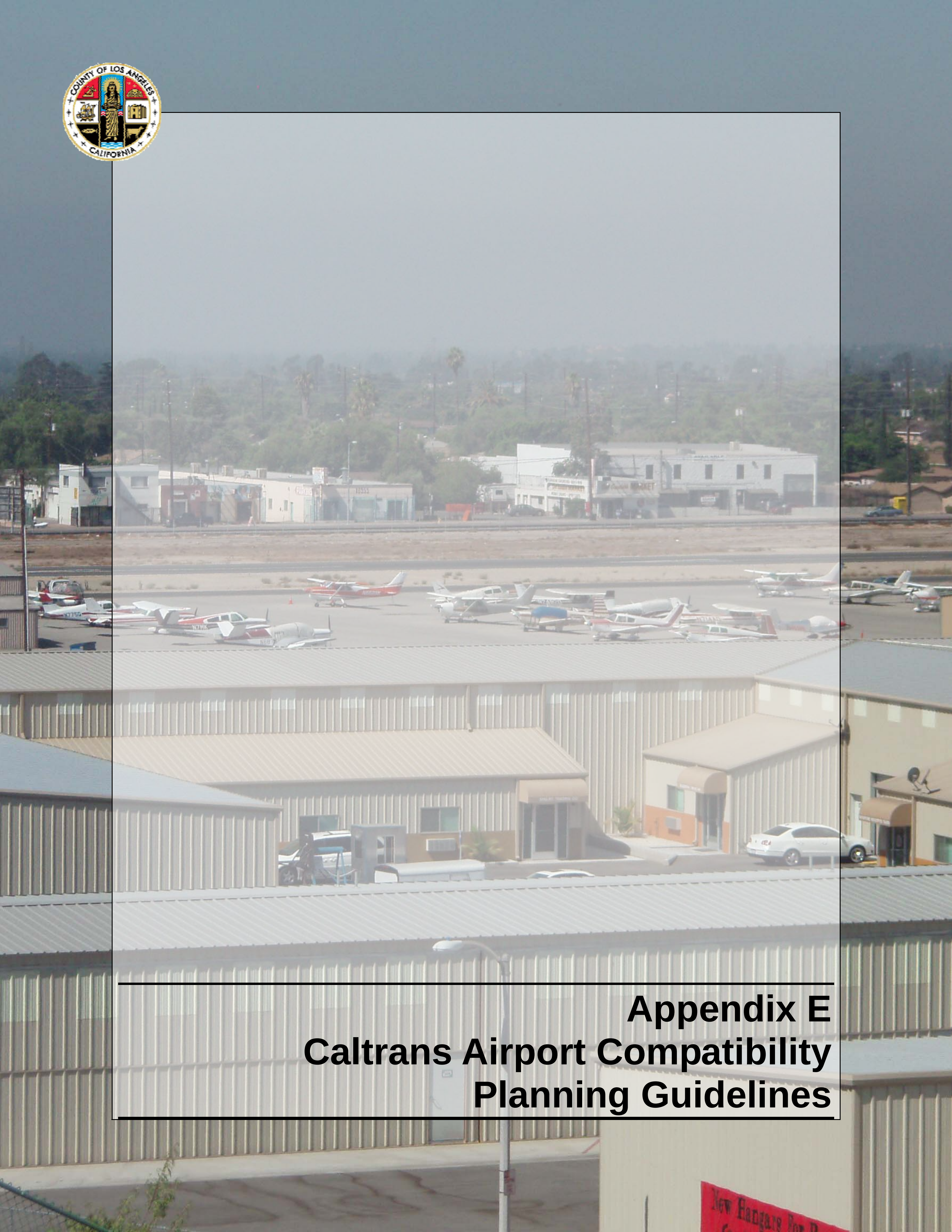
AIP Project Nos.
03-06-0134-10/11

Exhibit "A" - Property Map

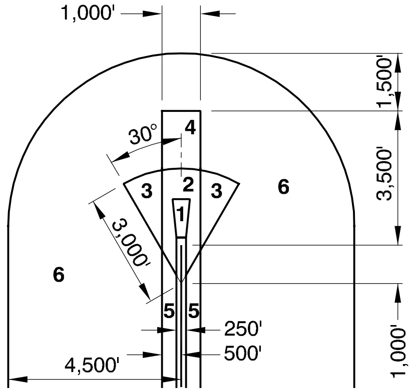
Scale 1" = 300'
October 2010

County of Los Angeles
Department of Public Works

Sheet No.
7 of 7

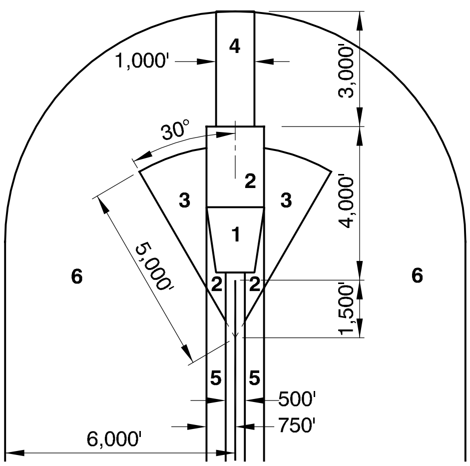


Appendix E
Caltrans Airport Compatibility Planning Guidelines



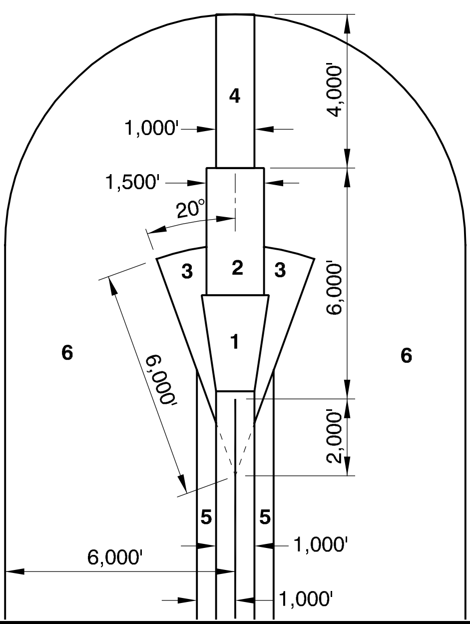
Example 1:
Short General Aviation Runway

Assumptions:
- Length less than 4,000 feet
- Approach visibility minimums ≥ 1 mile or visual approach only
- Zone 1 = 250' x 450' x 1,000'



Example 2:
Medium General Aviation Runway

Assumptions:
- Length 4,000 to 5,999 feet
- Approach visibility minimums ≥ 3/4 mile and < 1 mile
- Zone 1 = 1,000' x 1,510' x 1,700'



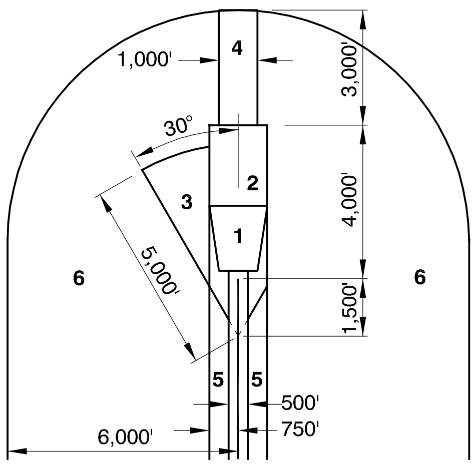
Example 3:
Long General Aviation Runway

Assumptions:
- Length 6,000 feet or more
- Approach visibility minimums < 3/4 mile
- Zone 1 = 1,000' x 1,750' x 2,500'

FIGURE 9K

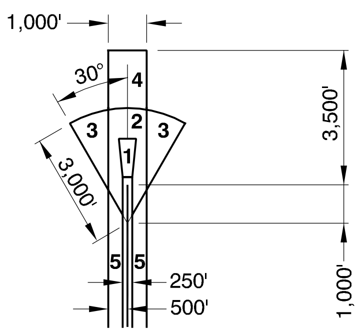
Safety Compatibility Zone Examples

General Aviation Runways



Example 4:
General Aviation Runway with Single-Sided Traffic Pattern

Assumptions:
- No traffic pattern on right
- Length 4,000 to 5,999 feet
- Approach visibility minimums ≥ 3/4 mile and < 1 mile
- Zone 1 = 1,000' x 1,510' x 1,700'



Example 5:
Low-Activity General Aviation Runway

Assumptions:
- Less than 2,000 takeoffs and landings per year at individual runway end.
- Length less than 4,000 feet
- Approach visibility minimums ≥ 1 mile or visual approach only
- Zone 1 = 250' x 450' x 1,000'

Legend

1. Runway Protection Zone
2. Inner Approach/Departure Zone
3. Inner Turning Zone
4. Outer Approach/Departure Zone
5. Sideline Zone
6. Traffic Pattern Zone

Notes:

- RPZ (Zone 1) size in each example is as indicated by FAA criteria for the approach type assumed. Adjustment may be necessary if the approach type differs.
- See Table 9A for factors to consider regarding other possible adjustments to these zones to reflect characteristics of a specific airport runway.
- See Tables 9B and 9C for guidance on compatibility criteria applicable with each zone.

These examples are intended to provide general guidance for establishment of airport safety compatibility zones. They do not represent California Department of Transportation standards or policy.

FIGURE 9K *CONTINUED*

The generic sets of compatibility zones shown in Figures 9K and 9L may need to be adjusted to take into account various operational characteristics of a particular airport runway. Among these characteristics are the following:

- **Instrument Approach Procedures**—At least within the final two to three miles which are of greatest interest to land use compatibility planning, the flight paths associated with precision instrument approach procedures are highly standardized from airport to airport. Other types of instrument approach procedures are less uniform, however. If such procedures are available at an airport, ALUCs should identify the flight paths associated with them and the extent to which they are used. Procedures which are regularly used should be taken into account in the configuration of safety zones (and in setting height limits for airspace protection). Types of procedures which may warrant special consideration include:
  - *Circling Approaches:* Most instrument approach procedures allow aircraft to circle to land at a different runway rather than continue straight-in to a landing on the runway for which the approach is primarily designed. When airports which have straight-in approaches to multiple runway ends, circling approaches are seldom necessary. However, when only one straight-in approach procedure is available and the wind direction precludes landings on that runway, aircraft may be forced to circle to land on at another runway end. Pilots must maintain sight of the runway while circling, thus turns are typically tight. Also, the minimum circling altitude is often less than the traffic pattern altitude. At airports where circling approaches are common, giving consideration to the associated risks when setting safety zone boundaries is appropriate.
  - *Nonprecision Approaches at Low Altitudes:* Nonprecision instrument approach procedures often involve aircraft descending to a lower altitude farther from the runway than occurs on either precision instrument or visual approaches. An altitude of 300 to 400 feet as much as two to three miles from the runway is not unusual. The safety (and noise) implications of such procedures need to be addressed at airports where they are in common use. (A need for corresponding restrictions on the heights of objects also exists along these routes.)
  - *Nonprecision Approaches not Aligned with the Runway:* Some types of nonprecision approaches bring aircraft toward the runway along a path that is not aligned with the runway. In many cases, these procedures merely enable the aircraft to reach the airport vicinity at which point they then proceed to land under visual conditions. In other instances, however, transition to the runway alignment occurs close to the runway and at a low altitude.
- **Other Special Flight Procedures or Limitations**—Single-sided traffic patterns represent only one type of special flight procedures or limitations which may be established at some airports. Factors such as nearby airports, high terrain, or noise-sensitive land uses may affect the size of the airport traffic pattern or otherwise dictate where and at what altitude aircraft fly when using the airport. These procedures may need to be taken into account in the design of safety compatibility zones.
- **Runway Use by Special-Purpose Aircraft**—In addition to special flight procedures which most or all aircraft may use at some airports, certain special-purpose types of aircraft often have their own particular flight procedures. Most common among these aircraft are fire attack, agricultural, and military airplanes. Helicopters also typically have their own special flight routes. The existence of these procedures needs to be investigated and, where warranted by the levels of usage, may need to be considered in the shaping of safety zones.
- **Small Aircraft Using Long Runways**—When small airplanes take off from long runways (especially runways in excess of 8,000 feet length), it is common practice for them to turn toward their intended direction of flight before passing over the far end of the runway. When mishaps occur, the resulting pattern of accident sites will likely be more dispersed around the runway end than is the case with shorter runways. With short runways, accident sites tend to be more tightly clustered around the runway end and along the extended runway centerline because aircraft are still following the runway heading as they begin their climb.
- **Runways Used Predominantly in One Direction**—Most runways are used sometimes in one direction and, at other times, in the opposite direction depending upon the direction of the wind. Even when used predominantly in one direction, a busy runway may experience a significant number of operations in the opposite direction (for example, a runway with 100,000 total annual operations, 90% of which are in one direction, will still have 10,000 annual operations in the opposite direction). Thus, in most situations, the generic safety zones—which take into account both takeoffs and landings at a runway end—are applicable. However, when the number of either takeoffs or landings at a runway end is less than approximately 2,000 per year, then adjustment of the safety compatibility zones to reflect those circumstances may be warranted.
- **Displaced Landing Thresholds**—A displaced threshold moves the landing location of aircraft down the runway from where they would land in the absence of the displacement. The distribution pattern of landing accident sites as shown in Appendix F would thus shift a corresponding amount. The pattern of accident locations for aircraft taking off toward that end of the runway does not necessarily shift, however. Whether the runway length behind the displaced threshold is usable for takeoffs toward that end of the runway is a key factor in this regard. The appropriateness of making adjustments to safety zone locations in response to the existence of a displaced threshold needs to be examined on a case-by-case basis. The numbers of landings at and takeoffs toward the runway end in question should be considered in making this determination.

TABLE 9A

Safety Zone Adjustment Factors

Airport Operational Variables

Zone 1: Runway Protection Zone

Risk Factors / Runway Proximity	*Basic Compatibility Qualities*
➤ Very high risk ➤ Runway protection zone as defined by FAA criteria ➤ For military airports, clear zones as defined by AICUZ criteria	➤ Airport ownership of property encouraged ➤ Prohibit all new structures ➤ Prohibit residential land uses ➤ Avoid nonresidential uses except if very low intensity in character and confined to the sides and outer end of the area

Zone 2: Inner Approach/Departure Zone

Risk Factors / Runway Proximity	*Basic Compatibility Qualities*
➤ Substantial risk: RPZs together with inner safety zones encompass 30% to 50% of near-airport aircraft accident sites (air carrier and general aviation) ➤ Zone extends beyond and, if RPZ is narrow, along sides of RPZ ➤ Encompasses areas overflown at low altitudes — typically only 200 to 400 feet above runway elevation	➤ Prohibit residential uses except on large, agricultural parcels ➤ Limit nonresidential uses to activities which attract few people (uses such as shopping centers, most eating establishments, theaters, meeting halls, multi-story office buildings, and labor-intensive manufacturing plants unacceptable) ➤ Prohibit children's schools, day care centers, hospitals, nursing homes ➤ Prohibit hazardous uses (e.g. aboveground bulk fuel storage)

Zone 3: Inner Turning Zone

Risk Factors / Runway Proximity	*Basic Compatibility Qualities*
➤ Zone primarily applicable to general aviation airports ➤ Encompasses locations where aircraft are typically turning from the base to final approach legs of the standard traffic pattern and are descending from traffic pattern altitude ➤ Zone also includes the area where departing aircraft normally complete the transition from takeoff power and flap settings to a climb mode and have begun to turn to their en route heading	➤ Limit residential uses to very low densities (if not deemed unacceptable because of noise) ➤ Avoid nonresidential uses having moderate or higher usage intensities (e.g., major shopping centers, fast food restaurants, theaters, meeting halls, buildings with more than three aboveground habitable floors are generally unacceptable) ➤ Prohibit children's schools, large day care centers, hospitals, nursing homes ➤ Avoid hazardous uses (e.g. aboveground bulk fuel storage)

TABLE 9B

Basic Safety Compatibility Qualities

Zone 4: Outer Approach/Departure Zone

Risk Factors / Runway Proximity

- Situated along extended runway centerline beyond Zone 3
- Approaching aircraft usually at less than traffic pattern altitude
- Particularly applicable for busy general aviation runways (because of elongated traffic pattern), runways with straight-in instrument approach procedures, and other runways where straight-in or straight-out flight paths are common
- Zone can be reduced in size or eliminated for runways with very-low activity levels

Basic Compatibility Qualities

- In undeveloped areas, limit residential uses to very low densities (if not deemed unacceptable because of noise); if alternative uses are impractical, allow higher densities as infill in urban areas
- Limit nonresidential uses as in Zone 3
- Prohibit children's schools, large day care centers, hospitals, nursing homes

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Zone 5: Sideline Zone

Risk Factors / Runway Proximity

- Encompasses close-in area lateral to runways
- Area not normally overflown; primary risk is with aircraft (especially twins) losing directional control on takeoff
- Area is on airport property at most airports

Basic Compatibility Qualities

- Avoid residential uses unless airport related (noise usually also a factor)
- Allow all common aviation-related activities provided that height-limit criteria are met
- Limit other nonresidential uses similarly to Zone 3, but with slightly higher usage intensities
- Prohibit children's schools, large day care centers, hospitals, nursing homes

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Zone 6: Traffic Pattern Zone

Risk Factors / Runway Proximity

- Generally low likelihood of accident occurrence at most airports; risk concern primarily is with uses for which potential consequences are severe
- Zone includes all other portions of regular traffic patterns and pattern entry routes

Basic Compatibility Qualities

- Allow residential uses
- Allow most nonresidential uses; prohibit outdoor stadiums and similar uses with very high intensities
- Avoid children's schools, large day care centers, hospitals, nursing homes

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Definitions

As used in this table, the follow meanings are intended:

- *Allow:* Use is acceptable
- *Limit:* Use is acceptable only if density/intensity restrictions are met
- *Avoid:* Use generally should not be permitted unless no feasible alternative is available
- *Prohibit:* Use should not be permitted under any circumstances
- *Children's Schools:* Through grade 12
- *Large Day Care Centers:* Commercial facilities as defined in accordance with state law; for the purposes here, family day care homes and noncommercial facilities ancillary to a place of business are generally allowed.
- *Aboveground Bulk Storage of Fuel:* Tank size greater than 6,000 gallons (this suggested criterion is based on Uniform Fire Code criteria which are more stringent for larger tank sizes)

TABLE 9B *CONTINUED*

Maximum Residential Density

Current Setting	(1) Runway Protection Zone	(2) Inner Approach/ Departure Zone	(3) Inner Turning Zone	(4) Outer Approach/ Departure Zone	(5) Sideline Zone	(6) Traffic Pattern Zone
	Safety Compatibility Zones[a]					
Average number of dwelling units per gross acre						
Rural Farmland / Open Space (Minimal Development)	0	Maintain current zoning if less than density criteria for rural / suburban setting				No limit
Rural / Suburban (Mostly to Partially Undeveloped)	0	1 d.u. per 10 – 20 ac.	1 d.u. per 2 – 5 ac.	1 d.u. per 2 – 5 ac.	1 d.u. per 1 – 2 ac.	No limit
Urban (Heavily Developed)	0	0	Allow infill at up to average of surrounding residential area[b]			No limit

[a] Clustering to preserve open land encouraged in all zones.
[b] See Chapter 3 for discussion of infill development criteria; infill is appropriate only if nonresidential uses are not feasible.

Maximum Nonresidential Intensity

Current Setting	(1) Runway Protection Zone	(2) Inner Approach/ Departure Zone	(3) Inner Turning Zone	(4) Outer Approach/ Departure Zone	(5) Sideline Zone	(6) Traffic Pattern Zone
	Safety Compatibility Zones					
Average number of people per gross acre[a]						
Rural Farmland / Open Space (Minimal Development)	0[b]	10 – 25	60 – 80	60 – 80	80 – 100	150
Rural / Suburban (Mostly to Partially Undeveloped)	0[b]	25 – 40	60 – 80	60 – 80	80 – 100	150
Urban (Heavily Developed)	0[b]	40 – 60	80 – 100	80 – 100	100 – 150	No limit[c]
Multipliers for above numbers[d]						
Maximum Number of People per Single Acre	x 1.0	x 2.0	x 2.0	x 3.0	x 2.0	x 3.0
Bonus for Special Risk-Reduction Bldg. Design	x 1.0	x 1.5	x 2.0	x 2.0	x 2.0	x 2.0

[a] Also see Table 9B for guidelines regarding uses which should be prohibited regardless of usage intensity
[b] Exceptions can be permitted for agricultural activities, roads, and automobile parking provided that FAA criteria are satisfied.
[c] Large stadiums and similar uses should be prohibited.
[d] Multipliers are cumulative (e.g., maximum intensity per single acre in inner safety zone is 2.0 times the average intensity for the site, but with risk-reduction building design is 2.0 x 1.5 = 3.0 times the average intensity).

TABLE 9C

Safety Compatibility Criteria Guidelines

Land Use Densities and Intensities

Appendix F
Detailed Cost Information

Appendix F
Detailed Cost Information

INTRODUCTION

Detailed cost information, including unit costs and quantities, is included in this appendix. This information was used to create the summary table found in Chapter 8 (Table 8-2).

Table F-1
SCHEDULE OF IMPROVEMENTS – DETAILED

Project		Quantity	Unit	Unit Cost	Total Cost	Timing
	Phase 1 (2009 - 2013)					
1	**WAAS/LPV Survey**					**Underway**
	a. Survey	1	LS	$200,000.00	$200,000.00	
	Sub Total				$200,000.00	
	b. Mobilization / Contingency				$60,000.00	
	Total Project				**$260,000.00**	
2	**Slurry Seal Aircraft Parking Ramp**					**2011**
	a. Slurry Seal Aircraft Parking Ramp	1	LS	$500,000.00	$500,000.00	
	Total Project				**$500,000.00**	
3	**Perimeter Fencing Rehabilitation and "Penalty Box" Gate Access System**					**2011**
	a. Replace Perimeter Fencing	1	LS	$700,000.00	$700,000.00	
	b. New Access Gates with Penalty Box	5	EA	$35,000.00	$175,000.00	
	Sub Total				$875,000.00	
	c. Design and Engineering				$175,000.00	
	d. Mobilization / Contingency				$263,000.00	
	Total Project				**$1,313,000.00**	
4	**Grade Hill for Terminal Facility**					**2011**
	a. Clearing and Grubbing	6.0	AC	$8,000.00	$48,000.00	
	b. Excavation and Hauling	174,000	CY	$40.00	$6,960,000.00	
	c. Hydroseeding	90,000	SF	$3.00	$270,000.00	
	Sub Total				$7,278,000.00	
	d. Design and Engineering				$1,456,000.00	
	e. Mobilization / Contingency				$2,184,000.00	
	Total Project				**$10,918,000.00**	
5	**Relocate Terminal Facility**					**2012-2014**
5a	**Reroute Airpark Way behind Terminal Facility**					**2012**
	a. Demolish Pavement & Misc	48,000	SF	$2.50	$120,000.00	
	b. AC Pavement / Striping	40,000	SF	$6.00	$240,000.00	
	c. Earthwork	1,500	CY	$35.00	$52,500.00	
	d. Storm Drain Improvements	1,000	LF	$200.00	$200,000.00	
	e. Relocation of Utilities	1,000	LF	$250.00	$250,000.00	
	f. Lighting Improvements	1,000	LF	$115.00	$115,000.00	
	g. Perimeter Fencing	1,000	LF	$35.00	$35,000.00	
	h. Landscaping	1	LS	$50,000.00	$50,000.00	
	Sub Total				$1,062,500.00	
	i. Design and Engineering				$213,000.00	
	j. Mobilization / Contingency				$319,000.00	
	Sub Total Project				**$1,594,500.00**	
5b	**Construct Transient Apron**					**2013**
	a. Airfield AC Pavement / Striping	105,000	SF	$6.00	$630,000.00	
	b. Earthwork	4,000	CY	$35.00	$140,000.00	
	c. Storm Drain Improvements	1,000	LF	$200.00	$200,000.00	
	d. Apron Flood Lights	3	EA	$100,000.00	$300,000.00	
	e. Aircraft Tie-downs	108	EA	$300.00	$32,400.00	
	Sub Total				$1,302,400.00	
	f. Design and Engineering				$261,000.00	
	g. Mobilization / Contingency				$391,000.00	
	Sub Total Project				**$1,954,400.00**	
	Phase 1 Total				**$16,539,900.00**	

Table F-1 (cont'd)
SCHEDULE OF IMPROVEMENTS – DETAILED

Project		Quantity	Unit	Unit Cost	Total Cost	Timing
		Phase 2 (2014 - 2018)				
5	**Relocate Terminal Facility (continued)**					**2012-2014**
5c	**Construct Terminal Facility, Associated Parking, and Green Space**					**2014**
	a. Terminal Facility	16,000	SF	$80.00	$1,280,000.00	
	b. Site Work / Utilities	1	LS	$192,000.00	$192,000.00	
	c. Parking Lot Pavement / Striping	40,000	SF	$6.00	$240,000.00	
	d. Earthwork	1,500	CY	$35.00	$52,500.00	
	e. Storm Drain Improvements	500	LF	$200.00	$100,000.00	
	f. Lighting Improvements	500	LF	$115.00	$57,500.00	
	g. Landscape and Green Space	5,600	SF	$4.00	$22,400.00	
	Sub Total				$1,944,400.00	
	h. Design and Engineering				$389,000.00	
	i. Mobilization / Contingency				$584,000.00	
	Sub Project Total				$2,917,400.00	
	Relocate Terminal Facility Total Project				**$6,466,300.00**	
6	**Relocate Runway Thresholds and Paint Non-Precision Markings**					**2014**
	a. Remove Existing Striping	30,000	SF	$3.00	$90,000.00	
	b. Paint Non-precision Markings	40,000	SF	$2.00	$80,000.00	
	c. Demolish Pavement & Misc	12,700	SF	$2.50	$31,750.00	
	d. Airfield AC Pavement / Striping	15,000	SF	$6.00	$90,000.00	
	e. Storm Drain Improvements	1	LS	$60,000.00	$60,000.00	
	f. Airfield Lighting	800	LF	$125.00	$100,000.00	
	Sub Total				$451,750.00	
	g. Design and Engineering				$91,000.00	
	h. Mobilization / Contingency				$136,000.00	
	Total Project				**$678,750.00**	
7	**Construct Runway 30 Hold Apron**					**2014**
	a. Airfield AC Pavement / Striping	22,000	SF	$6.00	$132,000.00	
	b. Earthwork	1,000	CY	$35.00	$35,000.00	
	c. Airfield Lighting	450	LF	$125.00	$56,250.00	
	Sub Total				$223,250.00	
	d. Design and Engineering				$45,000.00	
	e. Mobilization / Contingency				$67,000.00	
	Total Project				**$335,250.00**	
8	**Demolish Existing Terminal Facility**					**2015**
	a. Demolish Terminal	7,100	SF	$7.00	$49,700.00	
	b. Site Work / Cap Utilities	1	LS	$8,000.00	$8,000.00	
	Sub Total				$57,700.00	
	c. Design and Engineering				$12,000.00	
	d. Mobilization / Contingency				$18,000.00	
	Total Project				**$87,700.00**	

Table F-1 (cont'd)
SCHEDULE OF IMPROVEMENTS – DETAILED

Project		Quantity	Unit	Unit Cost	Total Cost	Timing
		Phase 2 (2014 - 2018)				
9	**Reroute Airport Entrance Road and Construct Automobile Parking Lot**					**2015**
	a. Demolish Pavement & Misc	27,600	SF	$2.50	$69,000.00	
	b. AC Pavement & Striping	57,000	SF	$6.00	$342,000.00	
	c. Earthwork	2,500	CY	$35.00	$87,500.00	
	d. Storm Drain Improvements	950	LF	$200.00	$190,000.00	
	e. Relocation of Utilities	950	LF	$250.00	$237,500.00	
	f. Lighting Improvements	950	LF	$115.00	$109,250.00	
	g. Perimeter Fencing	950	LF	$35.00	$33,250.00	
	h. Access Gate with Penalty Box	1	EA	$35,000.00	$35,000.00	
	i. Landscaping and Relocate Trees	1	LS	$50,000.00	$50,000.00	
	Sub Total				$1,153,500.00	
	j. Design and Engineering				$231,000.00	
	k. Mobilization / Contingency				$347,000.00	
	Total Project				**$1,731,500.00**	
10	**Construct New Conventional Hangar in Helicopter Area**					**2015**
	a. Conventional Hangar	12,600	SF	$50.00	$630,000.00	
	b. AC Pavement	36,900	SF	$6.00	$221,400.00	
	c. Site Work / Utilities	1	LS	$100,000.00	$100,000.00	
	Sub Total				$951,400.00	
	d. Design and Engineering				$191,000.00	
	e. Mobilization / Contingency				$286,000.00	
	Total Project				**$1,428,400.00**	
11	**Construct Hangars**					**2015**
	a. Hangars	11,800	SF	$25.00	$295,000.00	
	b. AC Pavement	15,600	SF	$6.00	$93,600.00	
	c. Site Work / Utilities	1	LS	$50,000.00	$50,000.00	
	Sub Total				$438,600.00	
	d. Design and Engineering				$88,000.00	
	e. Mobilization / Contingency				$132,000.00	
	Total Project				**$658,600.00**	
12	**Construct Conventional Hangars**					**2016**
	a. Conventional Hangar	13,200	SF	$50.00	$660,000.00	
	b. AC Paving	41,800	SF	$6.00	$250,800.00	
	c. Site Work / Utilities	1	LS	$47,000.00	$47,000.00	
	Sub Total				$957,800.00	
	d. Design and Engineering				$192,000.00	
	e. Mobilization / Contingency				$288,000.00	
	Total Project				**$1,437,800.00**	
13	**Stripe Zipper Lane**					**2016**
	a. Remove Existing Striping	1,000	SF	$3.00	$3,000.00	
	b. Pavement Markings / Striping	8,500	SF	$2.00	$17,000.00	
	Sub Total				$20,000.00	
	c. Design and Engineering				$4,000.00	
	d. Mobilization / Contingency				$6,000.00	
	Total Project				**$30,000.00**	

Table F-1 (cont'd)
SCHEDULE OF IMPROVEMENTS – DETAILED

Project		Quantity	Unit	Unit Cost	Total Cost	Timing
		Phase 2 (2014 - 2018)				
14	**Enhance Blast Protection**					**2017**
	a. 8 ft Block Wall with Barbed Wire	585	LF	$150.00	$87,750.00	
	Sub Total				$87,750.00	
	b. Design and Engineering				$18,000.00	
	c. Mobilization / Contingency				$27,000.00	
	Total Project				**$132,750.00**	
15	**Survey Underground Utilities - Develop Utility Map**					**2018**
	a. Utility Survey	1	LS	$300,000.00	$300,000.00	
	b. GIS Mapping System	1	LS	$100,000.00	$100,000.00	
	Sub Total				$400,000.00	
	c. Contingency				$80,000.00	
	Total Project				**$480,000.00**	
16	**Replace Northeast County T-Hangars**					**2018**
	a. Demolish Building & Misc.	16,400	SF	$2.50	$41,000.00	
	b. Hangar	16,400	SF	$25.00	$410,000.00	
	c. Site Work / Utilities	1	LS	$62,000.00	$62,000.00	
	Sub Total				$513,000.00	
	d. Design and Engineering				$103,000.00	
	e. Mobilization / Contingency				$154,000.00	
	Total Project				**$770,000.00**	
	Phase 2 Total				**$10,688,150.00**	

Table F-1 (cont'd)
SCHEDULE OF IMPROVEMENTS – DETAILED

Project		Quantity	Unit	Unit Cost	Total Cost	Timing
		Phase 3 (2019 - 2030)				
17	**Upgrade Apron Lighting/Security Camera System**					**Long-Term**
	a. Lighting Improvements	8,000	LF	$115.00	$920,000.00	
	b. Apron / Hangar Camera System	12	EA	$15,000.00	$180,000.00	
	c. Access Gate Camera System	6	EA	$8,000.00	$48,000.00	
	Sub Total				$1,148,000.00	
	d. Design and Engineering				$230,000.00	
	e. Mobilization / Contingency				$345,000.00	
	Total Project				**$1,723,000.00**	
18	**Construct Second Conventional Hangar in Helicopter Area**					**Long-Term**
	a. Conventional Hangar	10,500	SF	$50.00	$525,000.00	
	b. Paving / Site Work / Utilities	1	LS	$132,000.00	$132,000.00	
	Sub Total				$657,000.00	
	c. Design and Engineering				$132,000.00	
	d. Mobilization / Contingency				$198,000.00	
	Total Project				**$987,000.00**	
19	**Construct Exit Taxiways**					**Long-Term**
	a. Airfield AC Pavement / Striping	29,000	SF	$6.00	$174,000.00	
	b. Storm Drain Improvements	1	LS	$60,000.00	$60,000.00	
	c. Airfield Lighting	2,200	LF	$125.00	$275,000.00	
	Sub Total				$509,000.00	
	d. Design and Engineering				$102,000.00	
	e. Mobilization				$153,000.00	
	Total Project				**$764,000.00**	
20	**Construct Hangars in Helicopter Area**					**Long-Term**
	a. Demolish Buildings & Misc.	1,500	SF	$7.00	$10,500.00	
	b. Hangars	29,400	SF	$25.00	$735,000.00	
	c. AC Paving	118,900	SF	$6.00	$713,400.00	
	d. Site Work / Utilities	1	LS	$52,000.00	$52,000.00	
	Sub Total				$1,510,900.00	
	e. Design and Engineering				$303,000.00	
	f. Mobilization / Contingency				$454,000.00	
	Total Project				**$2,267,900.00**	
21	**Reroute Airpark Way behind County Hangars**					**Long-Term**
	a. Demolish Pavement & Misc	40,700	SF	$2.50	$101,750.00	
	b. AC Pavement & Striping	51,800	SF	$6.00	$310,800.00	
	c. Earthwork / Grade Hill	20,200	CY	$40.00	$808,000.00	
	d. Storm Drain Improvements	1,400	LF	$200.00	$280,000.00	
	e. Relocation of Utilities	1,400	LF	$250.00	$350,000.00	
	f. Lighting Improvements	1,400	LF	$115.00	$161,000.00	
	g. Perimeter Fencing	1,400	LF	$35.00	$49,000.00	
	h. Landscaping	1	LS	$100,000.00	$100,000.00	
	Sub Total				$2,160,550.00	
	i. Design and Engineering				$433,000.00	
	j. Mobilization / Contingency				$649,000.00	
	Total Project				**$3,242,550.00**	
22	**Construct Additional Portable Hangars**					**Long-Term**
	a. Hangar	13,300	SF	$25.00	$332,500.00	
	b. Site Work / Utilities	1	LS	$50,000.00	$50,000.00	
	Sub Total				$382,500.00	
	c. Design and Engineering				$77,000.00	
	d. Mobilization / Contingency				$115,000.00	
	Total Project				**$574,500.00**	

Table F-1 (cont'd)
SCHEDULE OF IMPROVEMENTS – DETAILED

Project		Quantity	Unit	Unit Cost	Total Cost	Timing
		Phase 3 (2019 - 2030)				
23	**Construct Portable Hangars/Individual Hangars and Associated Auto Parking**					**Long-Term**
	a. Hangars	50,000	SF	$25.00	$1,250,000.00	
	b. Site Work / Utilities	1	LS	$188,000.00	$188,000.00	
	d. Paving and Striping	140,000	SF	$6.00	$840,000.00	
	e. Earthwork	10,000	CY	$35.00	$350,000.00	
	f. Storm Drain Improvements	1,000	LF	$200.00	$200,000.00	
	g. Lighting Improvements	300	LF	$115.00	$34,500.00	
	Sub Total				$2,862,500.00	
	h. Design and Engineering				$573,000.00	
	i. Mobilization / Contingency				$859,000.00	
	Total Project				**$4,294,500.00**	
24	**Construct Non-Airworthy Tie-Down Parking Area**					**Long-Term**
	a. Site Work	2.1	AC	$8,000.00	$16,800.00	
	b. Earthwork	4,000	CY	$35.00	$140,000.00	
	c. Storm Drain Improvements	1,000	LF	$200.00	$200,000.00	
	d. Privacy Fencing	500	LF	$6.00	$3,000.00	
	e. Aircraft Tie-downs	36	EA	$300.00	$10,800.00	
	Sub Total				$370,600.00	
	f. Design and Engineering				$75,000.00	
	g. Mobilization / Contingency				$112,000.00	
	Total Project				**$557,600.00**	
25	**Acquire 10.8 Acres in Avigation Easements**					
	a. Acquire Avigation Easement	10.8	AC	$25,000.00	$270,000.00	**Long-Term**
	Sub Total				$270,000.00	
	b. Design and Engineering				$54,000.00	
	c. Mobilization / Contingency				$81,000.00	
	Total Project				**$405,000.00**	
	Phase 3 Total				**$14,816,050.00**	
	Total All Phases				**$42,044,100.00**	

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Appendix G
Noise Study

AECOM
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Memorandum

Date:	October 14, 2009
To:	Andrew Scanlon
From:	Mike McNerney
Subject:	Whiteman Airport Noise Analysis
Distribution:	

An analysis of aircraft noise was performed for Whiteman Airport using the FAA sponsored Integrated Noise Model. The INM software is required by FAA and conforms to ICAO international standards for calculating noise contours near airports. The analysis was performed with INM version 7.01a which includes the analysis of helicopter noise. Prior to version 7 of INM, a separate analysis using the helicopter noise model (HNM) would have been required, but now both fixed wing aircraft and helicopters are fully included in the INM software.

The noise modeling was performed by Dr. Michael McNerney, who is both a Professional Engineer and a pilot with commercial and airline transport ratings. Dr. McNerney has 14 years of experience with INM and teaches short courses on using INM at The University of Texas at Austin.

The quality of the noise analysis is dependent upon the software used, the capability of the modeler and the most importantly the quality of the input data. The input data consists of the number and type of aircraft operations; the flight tracks including altitudes and speeds the aircraft fly, and the time of day of flight operations. The noise analysis for Whiteman Airport was performed using the best software, with a highly experienced modeler, and using the best input data available.

Input Data

Whiteman Airport is a towered airport and airport tower traffic counts are the best source of current airport operations. Most general aviation airports do not have air traffic control towers and the airport traffic counts are matter of educated speculation. The tower at Whiteman airport between the hours of 0800 and 2000 and the amount of traffic that occurs during hours in which the tower is closed has been estimated at 2 percent of operations.

The noise contours were calculated for Whiteman Airport both for current year of 2009 (based upon traffic counts from September 2007 to July 2008) and for a forecast level of demand that represents aircraft operations in the year 2030. The tower count in those 335 days was 83,739 operations for an average day of 250 operations.

The noise modeling for FAA requirements is that the annualized average day is used for modeling. This means that the annual 90% of operations on Runway 12 and ten percent of Runway 30 must be split on a single modeling day. The input for modeling was 255 daily operations for 2009 and a forecast of 393 daily operations for 2030. The assumption for modeling was that 80 percent of operations were fixed wing aircraft and 20% were helicopters. Another assumption was that 5% of operations in 2009 were touch and go operations and 50% of future operations in 2030 would be touch and go operations.

The air traffic control manager and the airport manager were consulted as to the type of aircraft operations, the actual aircraft based, and the ground tracks flown. As a result of discussions the actual aircraft modeled were reviewed by the tower manager and the airport manager. INM uses substitute aircraft rather than have a noise curve for every aircraft produced. For example the Cessna 172 aircraft is the substitute aircraft for the Cessna 150, 152, 170, and 177 aircraft. The Beechcraft Model 58 Barron (BEC58P) is the INM substitute aircraft for about 28 models of Beechcraft, Cessna, and Piper light twin engine aircraft. The INM standard substitution has created a general aviation single engine variable-pitch propeller aircraft (GASEPV) and fixed pitch propeller aircraft (GASEPF) were are standard substitutions for about 17 different aircraft models each.

The aircraft using Whiteman Airport were divided into groups of single engine propeller, multiengine propeller and light jet and percentages were assigned to each. Likewise the most common helicopters using the airport were grouped into four typical helicopters in the INM database: Astar 350D, Bell 206L Long Ranger, Hughes 500D, and Robinson R22/R44.

Table 1 shows the number of daily operations of each aircraft type using the airport on an average day in the year 2009 and the percentage assigned to each runway. The numbers are a daily average of a typical year and therefore decimal percentages have meaning when running the model even if the actual number of operations is less than one.

Whiteman Airport Fleet Mix 2009				
	INM	Total Ops	Runway 12	Runway 30
Fixed Wing Aircraft	203.2			
Cessna 172 family	CNA172	54.8640	49.3776	5.4864
GA Single Engine Fixed Pitch Prop	GASEPF	54.8640	49.3776	5.4864
Cessna 206 Family	CNA206	9.1440	8.2296	0.9144
Cessna 206Turbo	CNA20T	9.1440	8.2296	0.9144
GA Single Engine Variable Pitch Prop	GASEPV	54.8640	49.3776	5.4864
Cessna 441 Turbine Twin	CNA441	2.6416	2.3774	0.2642
Beech Barron Piston Twin	BEC58P	17.6784	15.9106	1.7678
Cessna Citation I or II	CNA500	1.00	1.00	0
Helicopters	50.8			
Astar 350D	SA350D	12.7000	11.4300	1.2700
Bell 206L Long Ranger	B206L	12.7000	11.4300	1.2700
Hughes 500D	H500D	12.7000	11.4300	1.2700
Robinson R22/R44	R22	12.7000	11.4300	1.2700
total		255	229.6	25.4

Table 2 shows the number of daily operations for the year 2030 used in the INM input.

Whiteman Airport Fleet Mix 2030				
	INM	Total Ops	Runway 12	Runway 30
Fixed Wing Aircraft	312			
Cessna 172 family	CNA172	84.2400	75.8160	8.4240
GA Single Engine Fixed Pitch Prop	GASEPF	84.2400	75.8160	8.4240
Cessna 206 Family	CNA206	14.0400	12.6360	1.4040
Cessna 206Turbo	CNA20T	14.0400	12.6360	1.4040
GA Single Engine Variable Pitch Prop	GASEPV	84.2400	75.8160	8.4240
Cessna 441 Turbine Twin	CNA441	4.0560	3.6504	0.4056
Beech Barron Piston Twin	BEC58P	27.1440	24.4296	2.7144
Cessna Citation I or II	CNA500	3	2	0
Helicopters	78			
Astar 350D	SA350D	19.5000	17.5500	1.9500
Bell 206L Long Ranger	B206L	19.5000	17.5500	1.9500
Hughes 500D	H500D	19.5000	17.5500	1.9500
Robinson R22/R44	R22	19.5000	17.5500	1.9500
total		393	353	39

Ground Tracks

The Ground tracks were provided by the airport. The airport being constrained in airspace with nearby airports of Bob Hope Burbank Airport and Van Nuys Airport and to limit noise to the surrounding neighborhood, has a prescribed ground track that it asks the local based pilots fly when using Whiteman Airport. As shown if Figure 1, all patterns are flown on the north side of the runway which means left traffic on Runway 12 and right traffic on Runway 30. All entrys to the pattern are from the south and all exits to the pattern are to the west. From our experience this is one of the smallest or tightest traffic patterns we had ever tried to model. In fact we had to extend the ground track about 200 feet for the touch and go ground track to keep the standard touch and go profile in the model from having an error message for having too short of a ground track for the profile. Helicopters use the same traffic pattern as the fixed wing aircraft at Whiteman Airport but require separate tracks in the INM model.

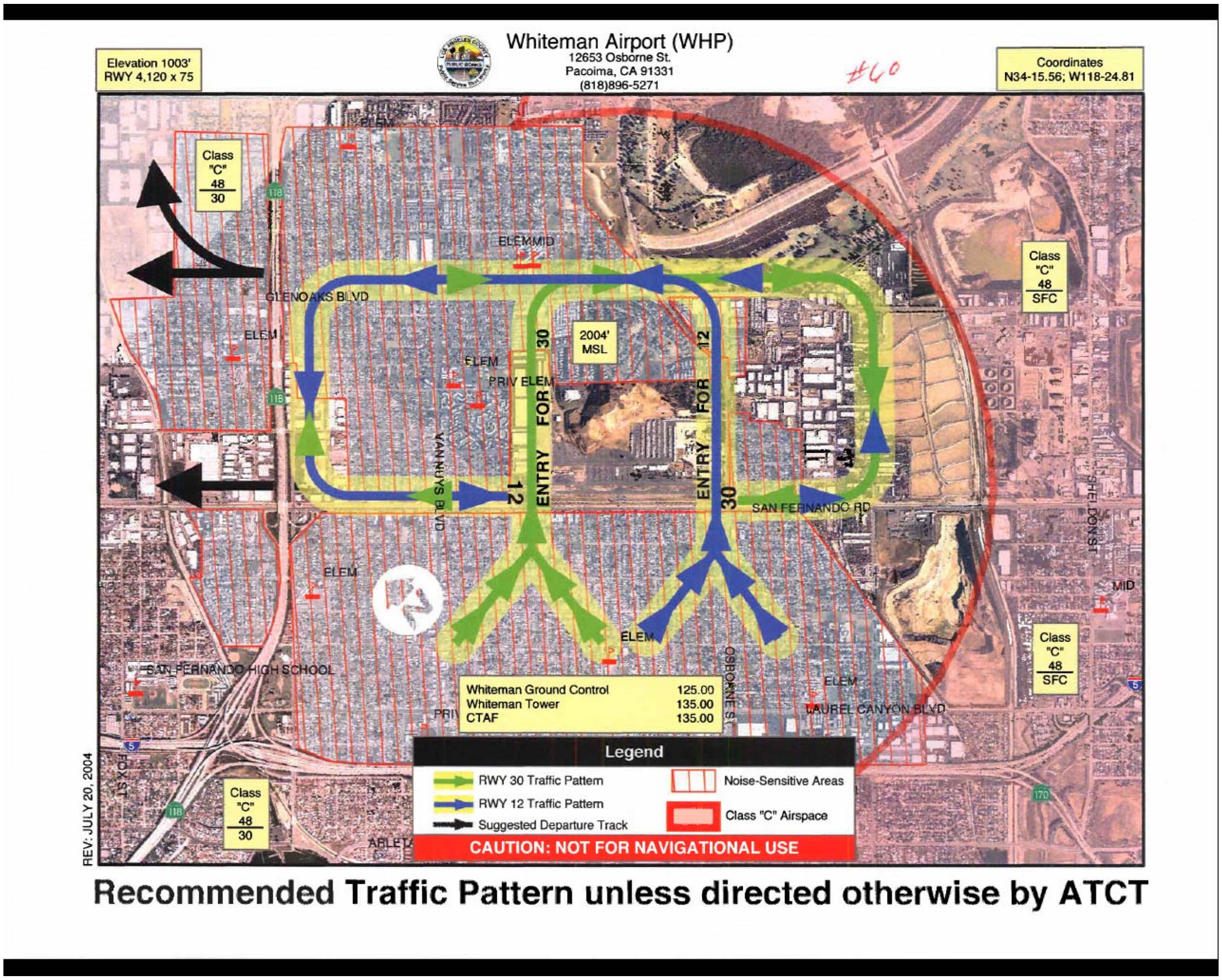

Figure 1 Whiteman Airport Traffic Pattern.

Noise Metric

INM Model has several noise metrics that can be used to evaluate the noise produced by the aircraft at an airport. FAA requires the use of the Day Night Level (DNL) for all airports except in California. The DNL is an equivalent sound level calculated by averaging the sound energy produced from aircraft passes over a 24 hour day. The DNL assesses a 10 dB penalty for all sounds produced at night time defined as 10pm to 7am.

The Community Noise Equivalent Level (CNEL) is required by State Law in California as the required sound metric for evaluating aircraft noise. The CNEL is calculated exactly like the DNL with the exception that there is a 3 dB penalty for all sound produced during the evening hours which is defined as from 7pm to 10pm. The CNEL noise contour by definition cannot be less than the DNL contour, but the relative increase could be imperceptible. The difference is dependent upon the contribution of evening flights relative to the number of night flights, and total flights.

The INM was input was prepared using the distribution of 86% day flights, 10% evening flights and 4% night flight. Although no tower counts exist when the tower is closed after 8pm, this percentage was agreed upon by the airport manager for the noise analysis. Although the actual night and evening percentage may be lower than these numbers, a conservative approach that would calculate larger contours was used.

The INM noise model was used and CNEL contours were produced. The results of the Noise contours are shown in Figure 2 for 2009 and Figure 3 for 2030. The results of the noise contours show that the 65 CNEL noise contour for all practical purposes does not leave the airport.

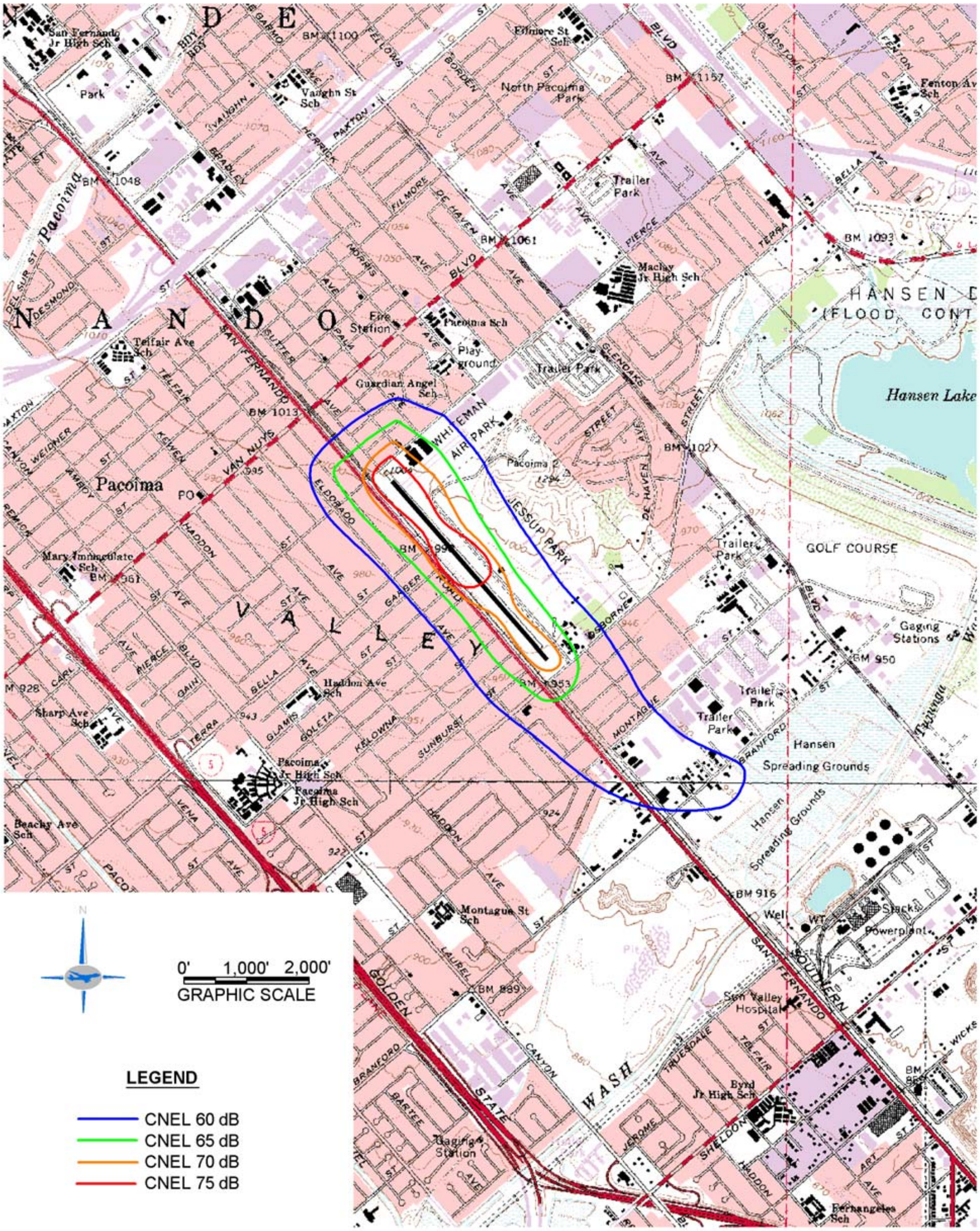

Figure 1
2009 CNEL Noise Contours

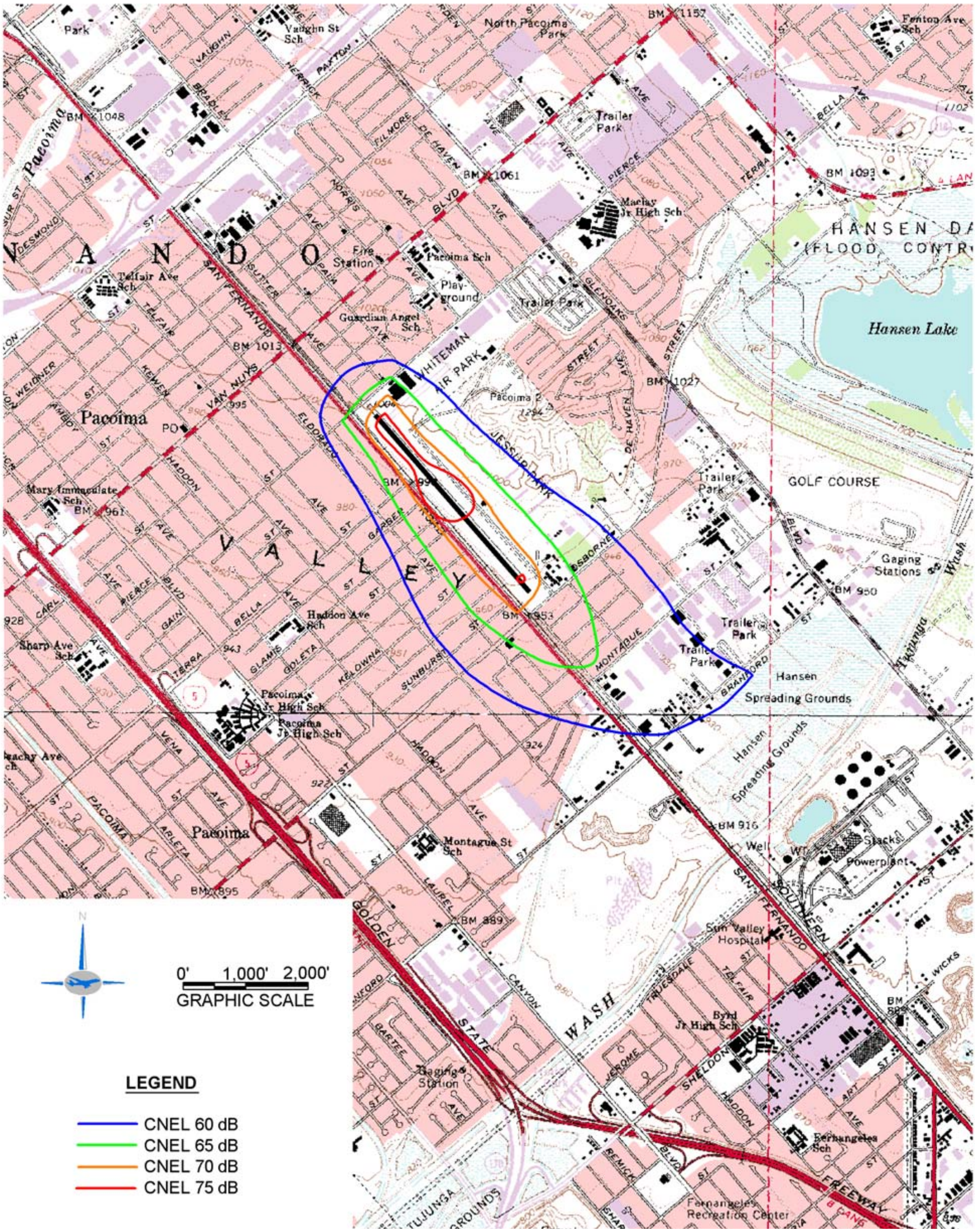

Figure 2
2030 CNEL Noise Contours