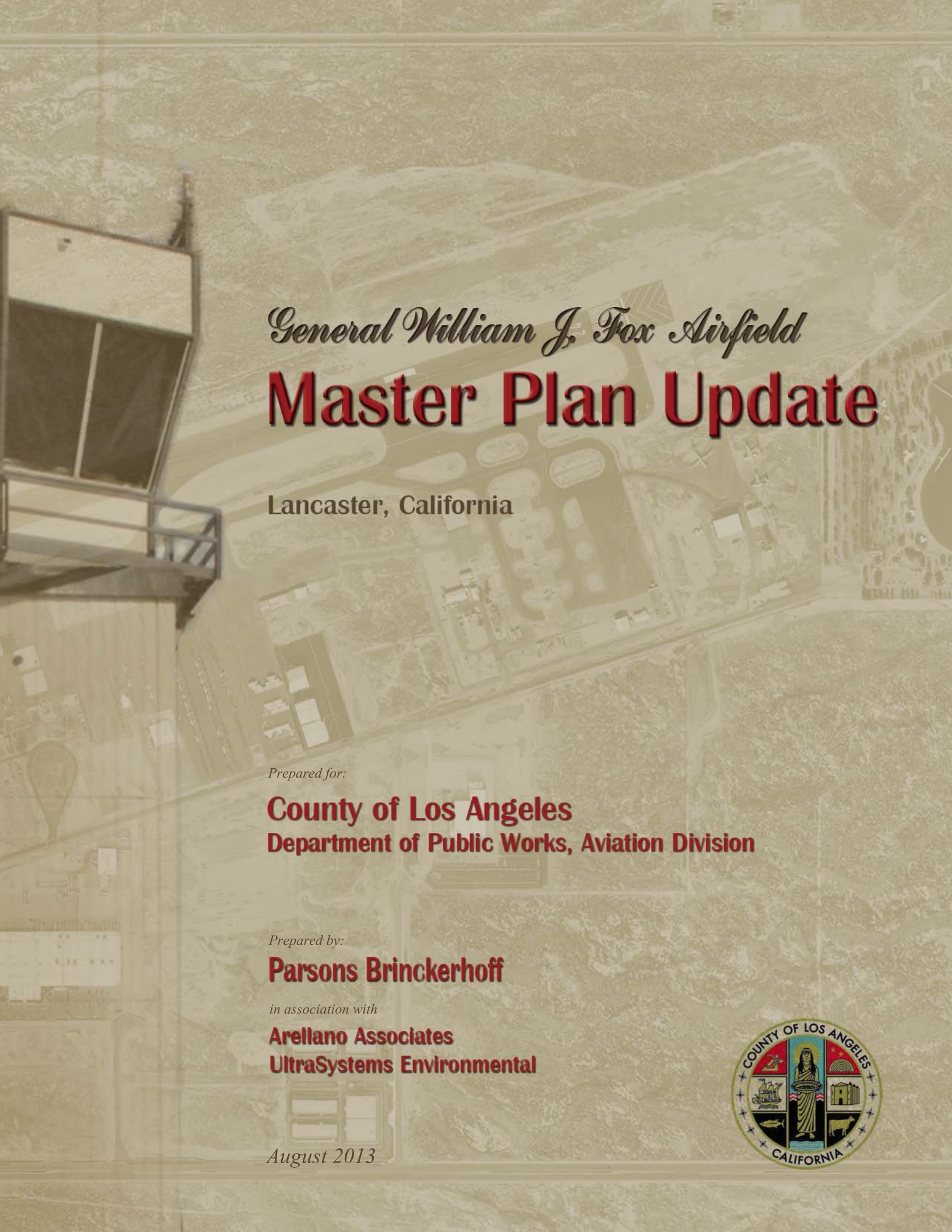


General William J. Fox Airfield

Master Plan Update

Lancaster, California

Prepared for:

County of Los Angeles
Department of Public Works, Aviation Division

Prepared by:

Parsons Brinckerhoff

in association with

Arellano Associates
UltraSystems Environmental

August 2013

GENERAL WILLIAM J. FOX AIRFIELD MASTER PLAN UPDATE

FINAL REPORT

Prepared for:
County of Los Angeles
900 South Fremont Ave. A-9 East
Alhambra, CA 91803-1331

Prepared by:
Parsons Brinckerhoff
451 E. Vanderbilt Way, Ste. 200
San Bernardino, California 92408
(909) 888-1106

August 2013

The preparation of this document was financed in part through a planning grant from the Federal Aviation Administration as provided under the Airport and Airways Improvement Act of 1982. The contents of this report reflect the views of Parsons Brinckerhoff, which is responsible for the facts and accuracy of the data presented herein. The contents do not necessarily reflect the views or policy of the FAA. Acceptance of this report 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.

TABLE OF CONTENTS

TABLE OF CONTENTS

TABLE OF CONTENTS

TABLE OF CONTENTS

LIST OF TABLES

PAGE

LIST OF TABLES

LIST OF TABLES

LIST OF FIGURES

PAGE

LIST OF FIGURES

Introduction

The objective of the General William J. Fox Airfield (Fox Airfield) Master Plan Update is to provide The County of Los Angeles with a sound, long-range planning document that presents the study's findings in a clear and concise format. The Master Plan Update shall include an Airport Layout Plan that provides the airport with a flexible tool that can be modified to respond to changes in the airport's growth over the 20-year planning period.

To accomplish these objectives, the PB Team has developed an airport master plan update that outlines the specific tasks required to meet the county's long-range operational needs for Fox Airfield. The PB Team approach incorporates each of the recommended elements identified in the Federal Aviation Administration's Advisory Circular 150/5060-6B (Airport Master Plans) and Advisory Circular 150/5300-13 Change 11 (Airport Design) for this airport master plan update. The William J. Fox Airfield Master Plan Update has been organized into the following seven chapters:

- Inventory
- Aviation Forecasts
- Demand/Capacity Analysis
- Facility Requirements
- Airport Alternatives
- Airport Plans
- Financial Plans

Chapter 1

Inventory

1.0 INVENTORY

The PB Team conducted an inventory of the General William J. Fox Airfield's, henceforth Fox Airfield or the Airport, existing airport facilities in December 2009. This site visit consisted of a complete review of the location, type, number, and general condition of each airport facility at Fox Airfield (WJF). These facilities included the airfield, terminal area, ground access, aircraft/vehicular parking, pavement conditions, utilities, and Navigational Aids (NAVAIDS). The information collected during the inventory of the Fox Airfield's existing facilities will be utilized throughout this master plan update to evaluate the Airport's capacity to accommodate future aircraft activity over the long-term planning period (20 years). Any deficiencies identified during this evaluation will be addressed during the development of the alternatives analysis. The following eight subsections identify the findings of the inventory of existing airport conditions:

- Airport History
- Existing Airport Conditions
- Physical Facilities
- Airspace and ATCT Conditions
- Utilities
- Airport Operations
- Local Land Use Plans and Regulations
- Environmental Resources
- NAVAIDS

1.1 Airport History

Fox Airfield was first developed in 1959 by the County of Los Angeles under a prior agreement with the Federal Government to buy the Palmdale Airport. The sale in 1954 required relocating commercial and general aviation operations from the Palmdale Airport to Fox Airfield in order to separate military and civilian aircraft operations. Fox Airfield was named for General William J. Fox who was the Director of Aviation for Los Angeles County during the same period. General Fox played a major role in the planning, design, and construction of the Airport.

1.2 Existing Airport Conditions

Fox Airfield is located approximately 45 miles north of downtown Los Angeles, California. As shown in **Figure 1.1**, Fox Airfield lies within the Antelope Valley and is in the City of Lancaster, California. Fox Airfield serves the general aviation needs of Palmdale, Rosamond, Quartz Hill and Lancaster. The Airport is owned by the County of Los Angeles and is administered by the Department of Public Works Aviation Division. The County of Los Angeles owns five airports: Brackett Field, Compton/Woodley, El Monte, Fox Airfield, and Whiteman Airport.

The County of Los Angeles Aviation Commission serves as an advisor to the County Board of Supervisors, Regional Planning Commission, and the Department of Public Works. The County of Los Angeles Aviation Commission consists of ten members, which are appointed by each of the five county supervisorial districts for a period of four years. The operation of Fox Airfield is managed by a private general aviation management company which also operates the four other County of Los Angeles owned airports mentioned above.

Vehicular or ground access is excellent. The Antelope Valley Freeway (Highway 14) is located approximately three miles east of the Airport and provides access to Avenue G, which connects to William J. Barnes Avenue. The main Airport entrance is located on William J. Barnes Avenue. The Airport can also be accessed using 50th Street West. The proximity of the Airport and the local ground access network are also depicted in Figure 1.1.

Fox Airfield is classified in the Federal Aviation Administration's National Plan of Integrated Airport Systems (NPIAS) as a General Aviation (GA) airport. A GA airport is defined as an airport that serves a community without scheduled commercial air service. By definition, GA airports enplane less than 2,500 annual passengers and are used primarily by private and business aircraft. There are more than 2,500 designated GA airports in the US.

Fox Airfield is classified a Regional General Aviation Airport in the California Aviation System Plan (CASP). This classification was developed by the State to categorize airports based on an airport's function, services provided, and role in the State aviation system. Fox Airfield is included in the Los Angeles Desert Region of the CASP. The desert region also includes the counties of Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura. It should be noted that while the official classification of Fox Airfield is Regional General Aviation, Fox Airfield meets all minimum standards for a Primary Commercial Non-Hub airport.

As identified in FAA Advisory Circular 150/5300-13, Airport Design, planning standards associated with Airplane Design Group (ADG) IV were applied throughout this airport master plan. ADG IV includes large aircraft having wingspans from 118 feet up to but not including 171 feet in width. Currently, the US Forest Service (USFS) operates Group IV aircraft from Fox Airfield to support fire-fighting operations along the west coast. Other typical Group IV aircraft include the Lockheed L-1011, Lockheed C-130, Boeing 707, Boeing 757, Boeing 767, McDonnell DC-8, and McDonnell MD-11. The design aircraft for the Airport is indentified in Chapter 4.0 Facility Requirements. Design standards for Group IV will be applied for all aircraft except in locations utilized by small aircraft only.

GENERAL WILLIAM J. FOX AIRFIELD
Lancaster, CA
Master Plan Update

AIRPORT VICINITY MAP

FIGURE
1.1

1.3 Physical Facilities

The Airport's physical facilities are categorized into two types of facilities: airside and landside. Airside facilities consist of runways, taxiways, runway approach areas, airfield lighting and signage, air traffic control tower, visual aids and navigational aids. Landside facilities include terminal buildings, Fixed Base Operators (FBO), hangars, fuel facilities vehicular parking areas, and other ancillary support facilities. The current airside and landside facilities are shown in **Figure 1.2**. A description of both facility types are provided below.

1.3.1 Airside Facilities

Fox Airfield has one runway that is 7,201 feet long by 150 feet wide. The Runway designation is 6-24 and has a true bearing of South 72° 24'02.45" W. Runway 6-24 is marked with non precision instrument runway markings that include delineation of the runway threshold, aiming point, runway centerline, pavement edge, and runway designation markings. As depicted in **Figure 1.3**, the current runway pavement strength as published in the US Government Flight Information Publication Airport/Facility Directory for Fox Airfield is 50,000 pounds single-wheel (S), 68,000 pounds dual-wheel (D) 86,000 single-tandem (ST), and 117,000 pounds dual-tandem (DT). Runway 24 is the preferred runway end and is used approximately 60 percent of the time. Runway 6 is used approximately 40 percent of the time. Both runways have published GPS approach procedures. **Table 1.1** depicts Runway 6-24 characteristics.

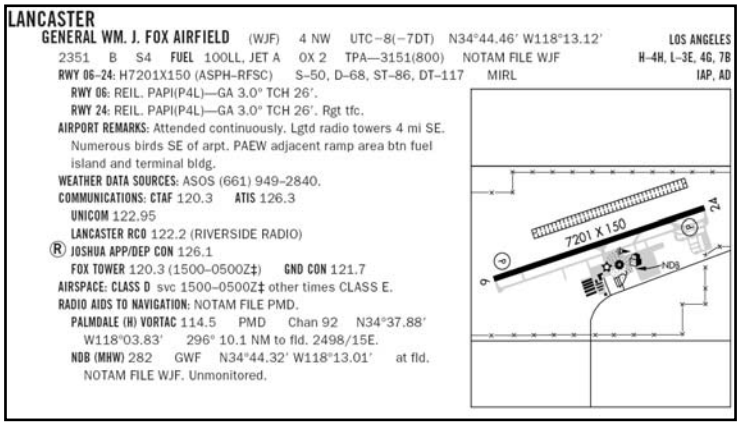

LANCASTER
GENERAL WM. J. FOX AIRFIELD (WJF) 4 NW UTC–8(–7DT) N34°44.46' W118°13.12' LOS ANGELES
2351 B S4 FUEL 100LL, JET A OX 2 TPA—3151(800) NOTAM FILE WJF H–4H, L–3E, 4G, 7B
RWY 06–24: H7201X150 (ASPH–RFSC) S–50, D–68, ST–86, DT–117 MIRL IAP, AD
RWY 06: REIL. PAPI(P4L)—GA 3.0° TCH 26'.
RWY 24: REIL. PAPI(P4L)—GA 3.0° TCH 26'. Rgt tfc.
AIRPORT REMARKS: Attended continuously. Lgtd radio towers 4 mi SE. Numerous birds SE of arpt. PAEW adjacent ramp area btn fuel island and terminal bldg.
WEATHER DATA SOURCES: ASOS (661) 949–2840.
COMMUNICATIONS: CTAF 120.3 ATIS 126.3
UNICOM 122.95
LANCASTER RCO 122.2 (RIVERSIDE RADIO)
Ⓡ JOSHUA APP/DEP CON 126.1
FOX TOWER 120.3 (1500–0500Z‡) GND CON 121.7
AIRSPACE: CLASS D svc 1500–0500Z‡ other times CLASS E.
RADIO AIDS TO NAVIGATION: NOTAM FILE PMD.
PALMDALE (H) VORTAC 114.5 PMD Chan 92 N34°37.88' W118°03.83' 296° 10.1 NM to fld. 2498/15E.
NDB (MHW) 282 GWF N34°44.32' W118°13.01' at fld. NOTAM FILE WJF. Unmonitored.
7201 X 150
24
9
NDB

Figure 1.3: WJF Flight Information

Table 1.1: Runway 6-24 Characteristics

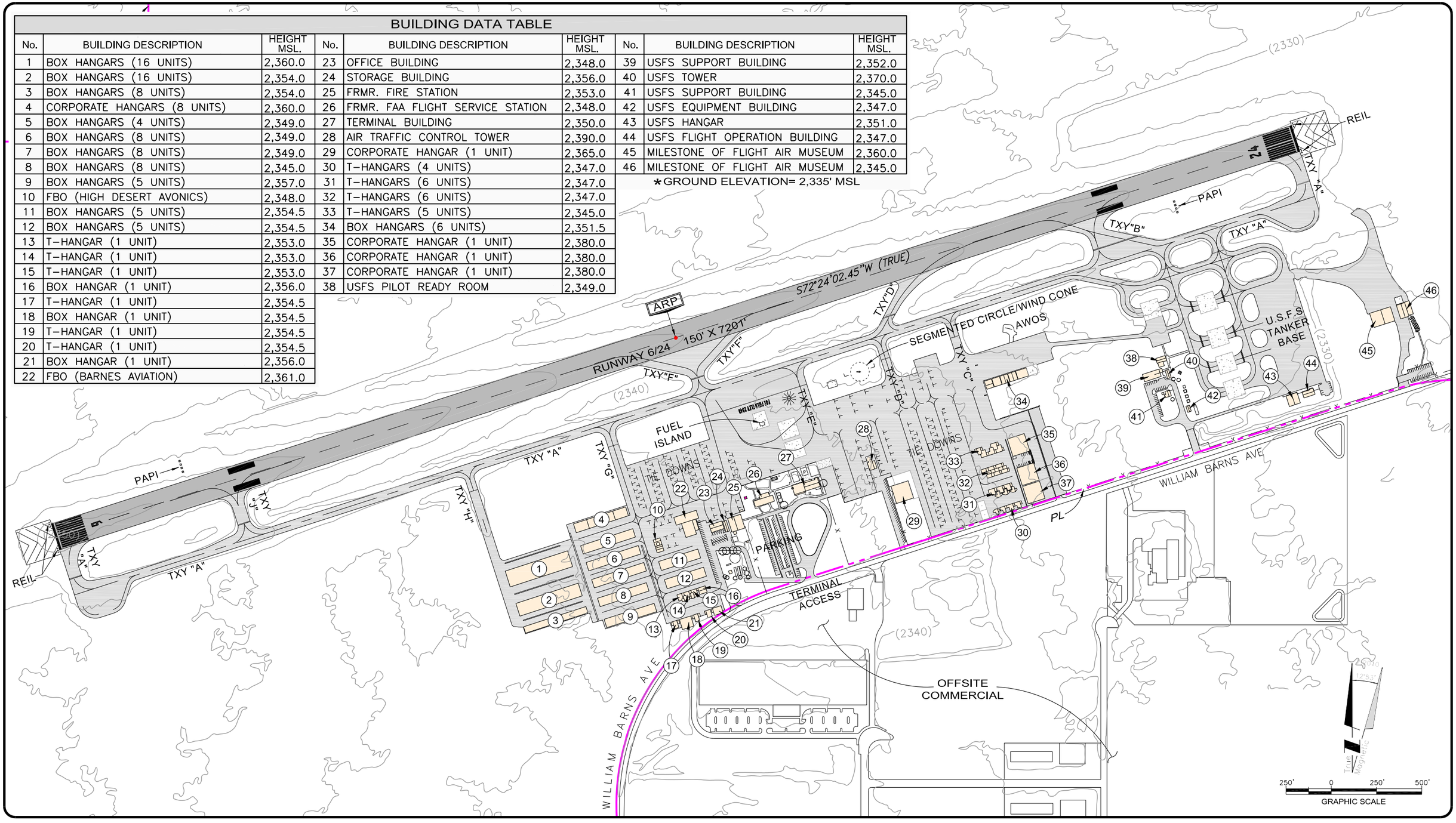
Runway	Elevation	Longitude	Latitude
RW 6	2,350.5' MSL	118° 13'48.1415" W	34° 44'16.8072" N
RW 24	2,334.8' MSL	118° 12'26.0652 W	34° 44'38.7410 N

Note: NAD83

BUILDING DATA TABLE

No.	BUILDING DESCRIPTION	HEIGHT MSL.
1	BOX HANGARS (16 UNITS)	2,360.0
2	BOX HANGARS (16 UNITS)	2,354.0
3	BOX HANGARS (8 UNITS)	2,354.0
4	CORPORATE HANGARS (8 UNITS)	2,360.0
5	BOX HANGARS (4 UNITS)	2,349.0
6	BOX HANGARS (8 UNITS)	2,349.0
7	BOX HANGARS (8 UNITS)	2,349.0
8	BOX HANGARS (8 UNITS)	2,345.0
9	BOX HANGARS (5 UNITS)	2,357.0
10	FBO (HIGH DESERT AVONICS)	2,348.0
11	BOX HANGARS (5 UNITS)	2,354.5
12	BOX HANGARS (5 UNITS)	2,354.5
13	T-HANGAR (1 UNIT)	2,353.0
14	T-HANGAR (1 UNIT)	2,353.0
15	T-HANGAR (1 UNIT)	2,353.0
16	BOX HANGAR (1 UNIT)	2,356.0
17	T-HANGAR (1 UNIT)	2,354.5
18	BOX HANGAR (1 UNIT)	2,354.5
19	T-HANGAR (1 UNIT)	2,354.5
20	T-HANGAR (1 UNIT)	2,354.5
21	BOX HANGAR (1 UNIT)	2,356.0
22	FBO (BARNES AVIATION)	2,361.0
23	OFFICE BUILDING	2,348.0
24	STORAGE BUILDING	2,356.0
25	FRMR. FIRE STATION	2,353.0
26	FRMR. FAA FLIGHT SERVICE STATION	2,348.0
27	TERMINAL BUILDING	2,350.0
28	AIR TRAFFIC CONTROL TOWER	2,390.0
29	CORPORATE HANGAR (1 UNIT)	2,365.0
30	T-HANGARS (4 UNITS)	2,347.0
31	T-HANGARS (6 UNITS)	2,347.0
32	T-HANGARS (6 UNITS)	2,347.0
33	T-HANGARS (5 UNITS)	2,345.0
34	BOX HANGARS (6 UNITS)	2,351.5
35	CORPORATE HANGAR (1 UNIT)	2,380.0
36	CORPORATE HANGAR (1 UNIT)	2,380.0
37	CORPORATE HANGAR (1 UNIT)	2,380.0
38	USFS PILOT READY ROOM	2,349.0
39	USFS SUPPORT BUILDING	2,352.0
40	USFS TOWER	2,370.0
41	USFS SUPPORT BUILDING	2,345.0
42	USFS EQUIPMENT BUILDING	2,347.0
43	USFS HANGAR	2,351.0
44	USFS FLIGHT OPERATION BUILDING	2,347.0
45	MILESTONE OF FLIGHT AIR MUSEUM	2,360.0
46	MILESTONE OF FLIGHT AIR MUSEUM	2,345.0

*GROUND ELEVATION= 2,335' MSL



GENERAL WILLIAM J. FOX AIRFIELD
Lancaster, CA
Master Plan Update

EXISTING AIRPORT

FIGURE 1.2

Runway 6-24 is equipped with Medium Intensity Runway Lighting (MIRL). Airport lighting on runway 6-24 also includes Runway End Identification Lighting (REIL) and Precision Approach Path Indicators Lighting (PAPI) P4L on both runway ends. Each PAPI P4L has a 3° glide slope and threshold crossing height of 26 feet Above Ground Level (AGL). The existing Fox Airfield Airport Reference Point (ARP) is located at 34° 44' 27.8000" north latitude and 118° 13'07.1000" west longitude. The Airport's published airport elevation is 2,351 above Mean Seal Level (MSL). Fox Airfield is impacted by magnetic declination at a rate of approximately five minutes per year resulting in a 12° 53' East difference between true north and magnetic north for year 2010.

Fox Airfield has one segmented circle with an illuminated windsock located on the south side of the runway near the midpoint of the Airport. As depicted in Figure 1.2, the Airport operates under a left-handed traffic pattern during Visual Flight Rule (VFR) conditions. Weather information is provided to pilots via an Automated Weather Observation Station (AWOS) also located on the south side of the runway. The AWOS-3 provides current wind speed and direction, wind gusts, variable wind direction, altimeter readings, temperature, dew point, visibility, variable visibility, precipitation, day/night, cloud height, sky condition, and density altitude. Fox Airfield AWOS information can be accessed via the Internet and telephone (661-949-2840). The information is also broadcast over the Airport Traffic Control Tower radio frequency when the Airport Traffic Control Tower is closed.

Runway 6-24 is supported by eight taxiways, labeled alphabetically A through H. As shown in Figure 1.2, Taxiway A is a full parallel taxiway located on the south side of Runway 6-24. Taxiway A is 7,201 feet long by 50 feet in width. Taxiways B, D, F, and J are exit taxiways that connect Runway 6-24 with Taxiway A. Taxiway F is located near the midpoint of the Airport and is used most frequently by aircraft exiting the runway. Finally, taxiways C, D, E, and H provide access from Taxiway A to the landside facilities located along the south side of the runway. All taxiways are 50 feet in width.

There are no deviations to FAA Airport Standards.

Information regarding meteorological considerations for Fox Airfield was obtained from the National Climatic Data Center (NCDC) located in Asheville, NC. Data provided by the NCDC was collected from the AWOS located on the Airport. Observations for Fox Airfield were taken over a ten-year period (1999 through 2009). These observations were used to develop the visual and instrument metrological conditions wind roses for the Airport. The results of the wind rose analysis indicate that the existing runway configuration provides 98.24 percent coverage for a crosswind component of 13 knots. The 13-knot crosswind component applies to ARC C-IV. The percentage of wind coverage provided for Runway 6-24 meets the FAA's recommendation of 95 percent crosswind coverage. No additional runways are required. According to data provided by the NCDC, visual meteorological weather conditions occur 99 percent of the time; whereas, instrument meteorological weather conditions occur less than one percent. Instrument meteorological weather conditions are classified as any weather conditions

when cloud ceilings are less than 1,000 feet AGL and/or visibility is less than 3 miles. Instrument meteorological weather conditions typically occur in the months of October through January as well as the months of March through May. Combined, this period of instrument metrological weather conditions total approximately three days (.01 percent) of a typical year. Fox Airfield's airport reference temperature, which is defined as the mean maximum temperature of the hottest month of the year, is 97 degrees and occurs during the month of July. This temperature is based on historical data collected from the AWOS located on the Airport. The average total annual rainfall is eight inches per year. Data used to determine these weather observations occurred between the dates of January 1, 2000, through December 31, 2009.

1.3.2 Landside Facilities

Landside facilities at Fox Airfield include aircraft parking aprons, terminal building, hangars, air museum, US Forest Service facilities, fuel facilities, vehicular parking, and restaurant. All landside facilities are located on the south side of the runway. Figure 1.2 depicts the location of Fox Airfield's landside facilities and vehicular access ways.

Fox Airfield aircraft parking aprons are conveniently located near the midpoint of the Airport near Taxiways G and D. The aircraft parking aprons are very large and can accommodate approximately 332 aircraft in a tie-down position. Of the 332 tie-downs, approximately 293 are County operated and 39 are leased to and operated by the Fixed Base Operators (FBO) at the Airport. Transient aircraft park immediately north of and adjacent to the terminal building. The transient aircraft apron is approximately 5,000 square yards in size. As of December 2009, aircraft tie-downs were 35 percent occupied.

The terminal and administration building is located at the midpoint of the Airport, which houses the airport management offices, restaurant, gift shop, public restrooms, and public lobby space including free Wi-Fi, public phones, custodial closet and pilot briefing room/lounge. The terminal building is approximately 6,400 square feet in size. The Airport's electronic vault and lighting controls are located in the basement of the building. Additional GA terminal use space is provided at Barnes Aviation FBO and includes facilities such as a pilot lounge and flight planning area.

There are approximately 100 aircraft hangar spaces available at Fox Airfield. The County operates 89 hangars (which include six end rooms) in three rows of hangars and six portable hangars. Two former FBOs previously owned storage hangars at Fox Airfield –Ca-Jon Hangars and Visco Hangars. Ca-Jon owned 35 hangars (two sizes) in three buildings. One building contains seven spaces that measure approximately 53 feet in width by 46 feet in length. Two buildings contain 28-smaller hangar spaces, which measure 40 feet in width by 31 feet in length. These buildings are approximately 18 years old. The Visco hangar building was constructed about 15 years ago, includes five hangar spaces, and is approximately 3,000 square feet in size. The County recently assumed control of both the Visco and Ca-Jon hangars. Barnes

Aviation, a major FBO at the Airport, owns 8,400 square feet of hangar with an additional 2,430 square feet of office space, and 900 square feet of shop area.

Barnes Aviation, High Desert Avionics, MH Aviation, Inc. and Exodus Maintenance Service are the primary providers of avionics and/or aircraft repair (maintenance) services at the Airport. Barnes Aviation has an 8,400 square foot hangar, which can accommodate up to five single or light twin-engine aircraft. High Desert Avionics has approximately 3,000 square feet of hangar space located behind their office facility. MH Aviation, Inc. is located on the west east side of the Airport and has approximately 5,000 square feet of hangar space devoted to maintenance. Exodus recently relocated from their facility near the ATCT to a corporate hangar located on the west side of the Airport. Currently, Exodus has approximately 4,000 square feet of hangar space designated for maintenance.

The total bulk fuel storage capacity at Fox Airfield is 80,000 gallons of which 40,000 gallons is 100 Low Lead (100LL) Avgas and 40,000 gallons is Jet A. The 40,000 gallons of Avgas is stored in two 20,000-gallon tanks. The 40,000 gallons of Jet A is stored in two 20,000-gallon tanks. The storage tanks are approximately 21 years old and are in good condition. All tanks have leakage detection equipment. The current fuel storage capacity is adequate for exiting demand. This includes the anticipated need for the US Forest Service's fire-fighting aircraft during peak seasons.

Vehicular parking at Fox Airfield consists of approximately 235 spaces at various locations surrounding the Airport. The following list provides an approximate count of these spaces:

- Terminal/Administration Building 35 spaces
- Main Parking Lot (near former FAA FSS) 115 spaces
- Barnes Aviation 24 spaces
- ATCT 10 spaces
- ATCT Frontage Road 34 spaces
- Corporate Hangar (near east tie down apron) 17 spaces

Aircraft owners also park their vehicles in their T-Hangars or tie-down area for convenience.

There are four primary Fixed Base Operators located at Fox Airfield. These include the following:

- **Barnes Aviation:** is a full-service FBO located on the west side of the Airport and is adjacent to the west tie-down apron. Barnes Aviation has been in continuous operation since 1940. Barnes Aviation provides flight training, aircraft rental, maintenance, ground power, weather/flight planning, rental cars, hangar space, catering, and aircraft washing.

- **High Desert Avionics:** specialize in avionics sales and repair. They have operated at Fox Airfield for more than 20 years. High Dessert Avionics is located on the west side of the Airport.

- **MH Aviation, Inc.:** specialize in aircraft inspection, parts modifications, and major repairs. MH Aviation, Inc. is located on the east side of the Airport.

- **Exodus Air Service:** has operated at Fox Airfield for approximately 18 years and conducts air annuals, engine repair, teardowns, collision repair, magneto diagnostics, and NDT testing. Exodus Air Service is located on the west side of the Airport.

There are other major tenants on the Airport that do not fit the category of FBO; however, they play an important part of the Airport's current role in the airport system. These include:

- **US Forest Service:** maintains an air tanker base that includes offices, control tower, rest/living quarters, storage, fire retardant storage tanks, apron, and loading pads. Present aircraft operations total approximately 750 per year with most conducted by P-3, P-4, and C-130 aircraft. Operations are anticipated to increase as land use restrictions at other US Forest Service bases become incompatible with USFS operations.

- **Milestone of Flight Air Museum:** is located on the east side of the Airport near Apollo Park. According to the current museum curator and a review of the visitor sign-in logs, approximately 850 people visit the museum annually. The museum has more than 100 exhibits and contains indoor and outdoor static displays of vintage aircraft.

1.4 Airspace and ATCT Conditions

The airspace surrounding Fox Airfield is comprised of volumes of air above airports within a 25 nautical mile radius, navigational aids, and enroute airways. **Figure 1.5** displays the airports and enroute airways with the 25-nautical mile radius. Including Fox Airfield, there are four airports within 25-nautical miles of the Airport. Of these four airports, three are publicly owned and include Palmdale, Aqua Dulce, and Mohave. **Table 1.2** provides a general description of these three public-use airports. Edwards AFB is located approximately 20-miles northeast of Fox Airfield and is owned and operated by the US Air Force.

Table 1.2 Airports Near William J. Fox Airfeild

Airport Name	Ownership Type	Distance from WJF	Runway Info	Runway Surface	Fuel	No. Based Aircraft	No. Hangars	ATCT
Agua Dulce	Private	15 nm S	RW 4-22 (4,600')	Asphalt	100LL	34	47	No
Palmdale	Public	11 nm SE	RW 7-25 (12,002')	Concrete	Unknown	0	Unknown	Yes
			RW 4-22 (12,001')	Concrete				
			RW 7L-25R (6,000')	Asphalt				
Mohave	Public	22 nm N	RW 12-30 (12,503')	Ashpalt	100LL/Jet A	149	Unknown	Yes
			RW 8-26 (7,049')	Ashpalt				
			RW 4-22 (3,946')	Ashpalt				
Edwards AFB	Air Force	22 NM NE	RW 4L-22R (12,000')	Asphalt	100B+	Unknown	Unknown	Yes
			RW 4R-22L (15,024')	Concrete				
			RW 6-24 (8,000')	Concrete				

Source: FAA Form 5010-1, California Aviation System Plan

There are two categories of airspace: regulatory and non regulatory. Regulatory airspace consists of Class A, B, C, D, and E airspace areas, restricted and prohibited areas. Non regulatory airspace includes military operating areas (MOAs), warning areas, alert areas, and controlled firing areas. Within these two categories of airspace, there are four types: controlled, uncontrolled, special use, and other airspace. The categories of airspace are dictated by the complexity or density of aircraft movements, the nature of the operations conducted with the airspace, the level of safety required, and the national and public interest.

Following are the classes of airspace surrounding Fox Airfield:

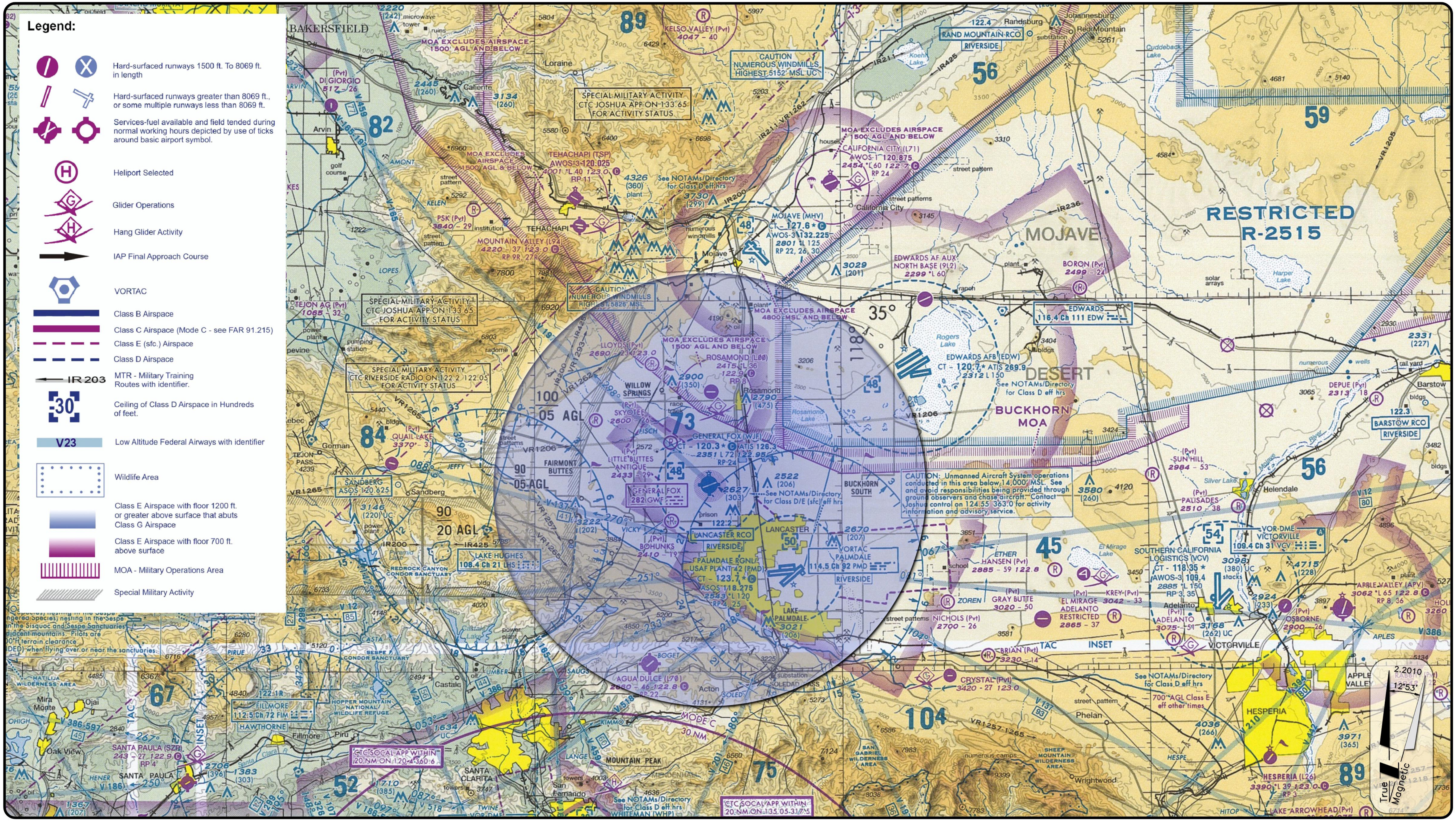
- Class C Airspace surrounds airports with an ATCT and is serviced by radar approach control. Class C airspace is developed according to airport specific conditions and typically has two layers of control. Pilots entering Class C airspace must have two-way radio contact with the ATCT and maintain contract throughout Class C airspace. Within Class C airspace, air traffic controllers are required to separate VRF aircraft from one another but not IFR traffic. The nearest Class C airspace to Fox Airfield is associated with Bob Hope Airport (BUR) in Burbank.

- Class D Airspace is circular in form and normally extends from the surface to 2,500 feet AGL and to a variable radius (generally five-statute miles) around airports with an operational ATCT and not otherwise in Class C or B airspace. Class D airspace reverts to Class E when the ATCT is closed or during special conditions. Two-way communication with ATC must be established before entering Class D airspace; however, no transponder is required. Class D airspace surrounds Palmdale Airport, which is located south of Fox Airfield.

- Class E Airspace is the less restrictive than Class A, B, and C controlled airspace classifications. Throughout much of the US, Class E airspace extends from 1,200 feet AGL up to 18,000 feet MSL which is the lower limit of Class A airspace. There are areas where Class E airspace begins at either the surface or 700 AGL. These areas are used to transition to and from terminal or enroute

environments. Class E airspace VFR visibility requirements are as they are for Class C and D airspace. There is one type of Class E airspace near Fox Airfield. This Class E airspace begins at 700 AGL and extends up to 18,000 MSL. This Class E airspace encompasses several airports including Fox Airfield, Mohave, and Edwards AFB.

- Class G Airspace Class G is airspace not otherwise classified below flight level 600 (FL 600). There are no entry or clearance requirements for Glass G airspace, even for IFR operations. Class G airspace typically starts very near the ground (1,200 feet or less) and lies under Class E airspace.



GENERAL WILLIAM J. FOX AIRFIELD
Lancaster, CA
Master Plan Update

AIRSPACE SECTIONAL MAP

FIGURE 1.5

There are several controlled and special use airspace areas located within 25 nautical miles of Fox Airfield. There are two airspace areas classified as Restricted (R) and are designated as R-2515 and R-2508, respectively. The R-2515 airspace is located around Edwards AFB and extends northeastward. The R-2508 airspace is located directly north of Fox Airfield and extends northward. Pilots must have prior authorization to enter restricted airspace. As shown in Figure 1.5, there is one special use airspace area within the 25 nautical mile radius of Fox Airfield. These areas are known as special use airspace areas and are located around Fox Airfield, Palmdale, and Edwards AFB. A control zone extends upward from the ground up to but not including 14,500 feet MSL. A control zone is regulatory in nature and may include one or more airports. Control Zones are typically circular in shape and have a radius of five statute miles.

Two Military Operations Areas (MOA) are located near Fox Airfield. The first MOA is known as Buckhorn and is associated with operations at Edwards AFB. The second MOA exists to the west of Fox Airfield and is known as the Isabella MOA. The Isabella MOA is used for military testing. MOA's have defined vertical and lateral dimensions, which separate certain military activities from IFR traffic, and indicate to VFR traffic where these activities are conducted. **Figure 1.5** shows the location of the MOA's near Fox Airfield.

Fox Airfield has four published instrument approach procedures. All of these procedures are classified as non precision instrument approaches. Instrument approach procedures are a series of predetermined maneuvers for an aircraft to transition from IFR conditions from the beginning of the initial approach to a point where a landing may be made visually. These procedures provide protection from obstacles that could jeopardize the safety of aircraft operations by providing a specific clearance over obstacles. For purposes of comparison, a precision instrument approach is one in which an electronic glide slope is provided that gives the pilot a glide path, or specific descent profile guidance. A non precision approach is a procedure in which no electronic glide slope is provided. **Table 1.3** provides the instrument approach procedures and navigational aids for Fox Airfield.

Table 1.3: Fox Airfield Approach Procedures

NAVAID	Location	Procedure	Lowest Minima
RNAV (GPS) RW 6	On-Airport	Straight In	300'/1 mile
RNAV (GPS) RW 24	On-Airport	Straight In	500'/1 mile
Palmdale VOR	10 nm SE	Circling	1,000'/ 1.25 miles
Fox NDB	On-Airport	Circling	800'/1 mile

Source: US Government Flight Information Publications, US FAA Terminal Procedures Publication, 3/2010

Figures 1.6 thru **1.9** depict the approach procedures available for Fox Airfield.

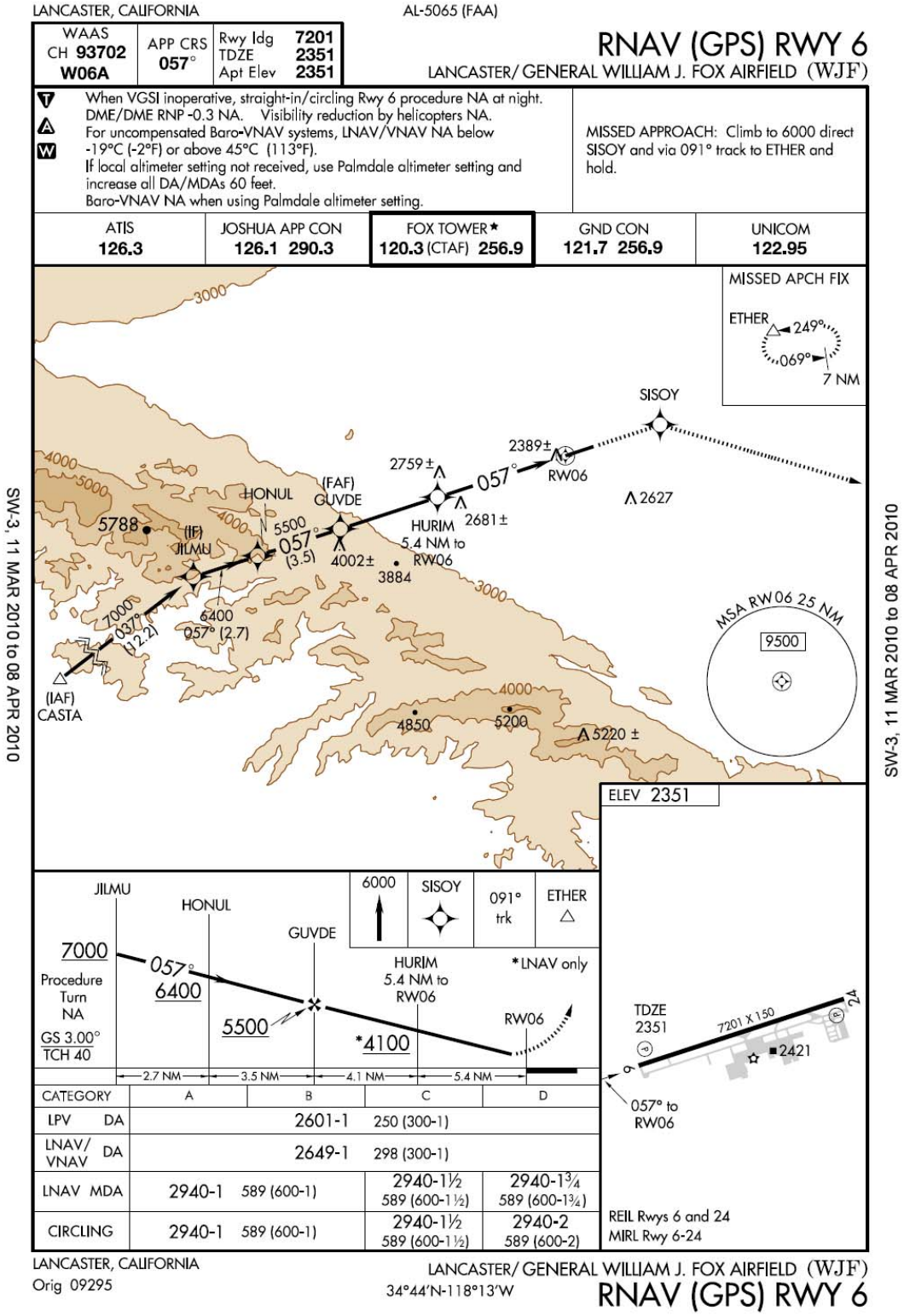


Figure 1.6: RNAV (GPS) RW 6

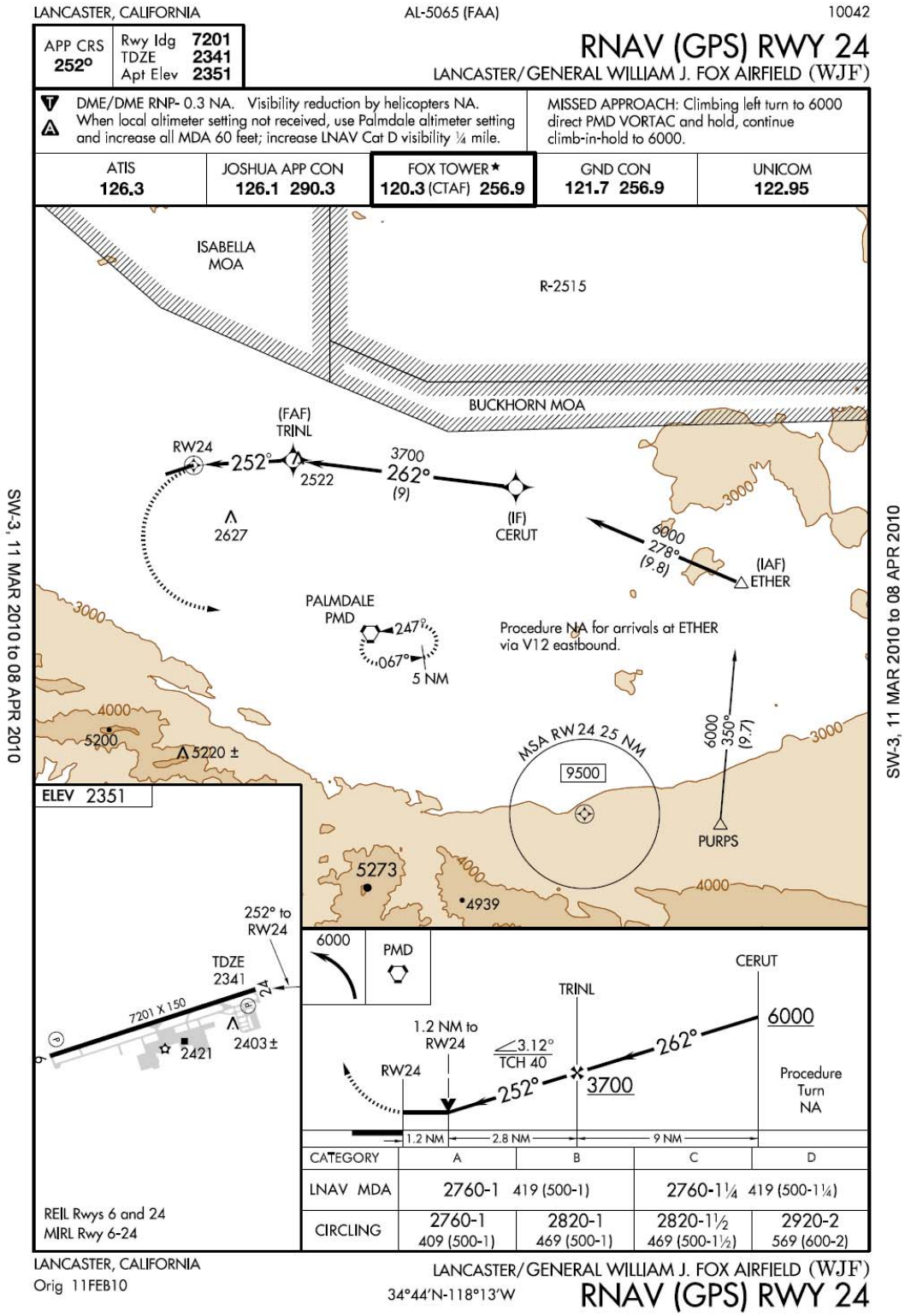


Figure 1.7: RNAV (GPS) RW 24

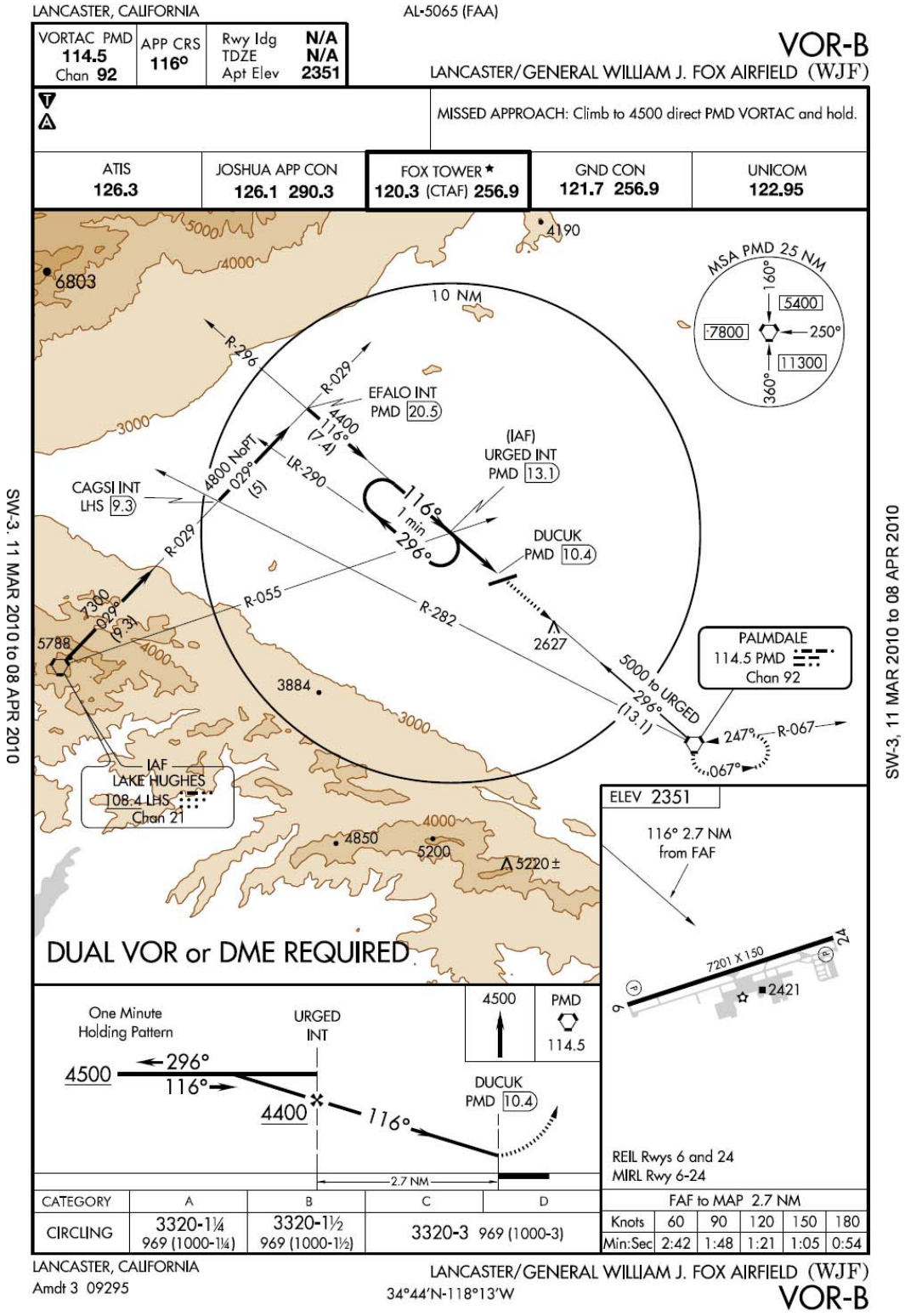


Figure 1.8: VOR-B

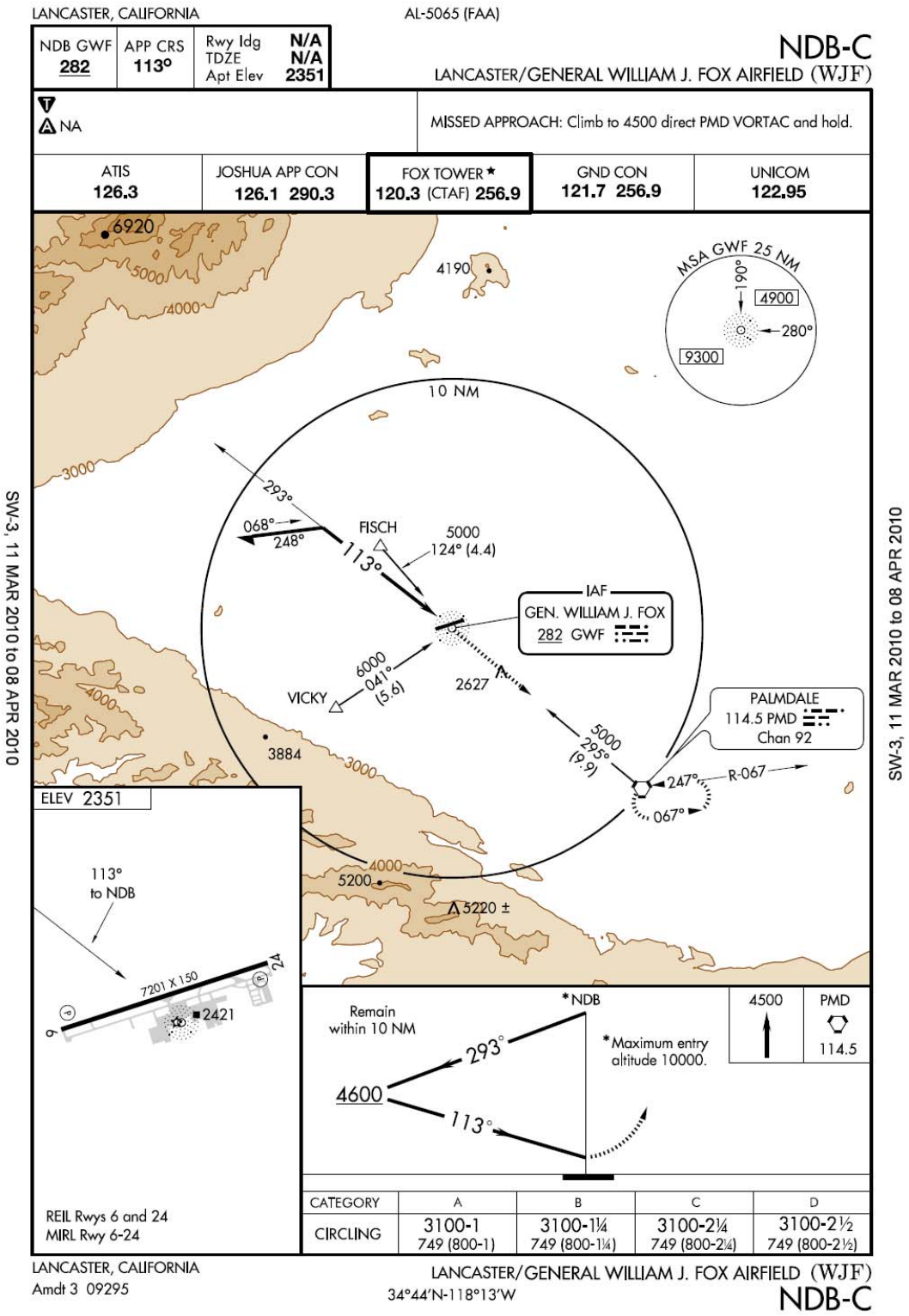


Figure 1.9: NDB-C

1.5 Utilities

The County of Los Angeles, Department of Public Works Waterworks Division (District No. 4) provides water to Fox Airfield. A nearby sewer treatment plant located east of the Airport provides the primary source of water needed for fire fighting. The airport sewer system is serviced by a 15-inch sanitary line, which is located along William Barnes Drive. The sewer is owned and maintained by the County of Los Angeles.

Natural gas is delivered to the Airport by the Southern California Gas Company through a 4-inch high-pressure gas main located along Avenue G. In addition, a 2.5-inch high-pressure gas line along William Barnes Drive at 50th Street West provides natural gas onto Airport property.

Southern California Edison Company supplies electricity through an electric line underneath William Barnes Drive. General Telephone Company provides telephone service to Fox Airfield using telephone lines located underneath William Barnes Drive.

1.6 Airport Operations

Since the previous Fox Airfield Master Plan Update was conducted in 1996, general aviation operations have significantly declined along with related activities including aircraft sales, certification of new pilots, and the increased cost of aircraft operation/maintenance. Nationally, the culmination of the tragic events of September 11, 2001 and an economy in recession have resulted in stagnate general aviation growth for nearly a 10-year period. Corporate and business aviation have experienced slight increases in growth over the same period. Fractional ownership and corporate flying continue to increase as the on-demand charter industry serves as a feasible alternative to companies owning their own aircraft. A summary of historical activity at Fox Airfield is discussed in detail in Chapter 2.0, Aviation Forecasts. These activities include the number of annual aircraft operations and the number of based aircraft.

A based aircraft is defined as one that is permanently stationed at an airport. For the purposes of this airport master plan update, a based aircraft is considered one that is under an agreement between the aircraft owner and airport management. To determine the number of based aircraft at Fox Airfield, the following FAA documents were reviewed: the Terminal Area Forecast, the FAA 5010-1 form; and additionally, there were conversations with airport management. The number of based aircraft at Fox Airfield has decreased from 258 in 1996 to approximately 163 in 2010. Chapter 2.0 provides a detailed discussion and table depicting the annual number of historical based aircraft.

The number of aircraft operations has also declined since the 1996 master plan. In 1996, Fox Airfield accommodated approximately 110,500 aircraft operations. By 2009,

Fox Airfield operations had declined to approximately 60,000 annually. An aircraft operation is defined at either a takeoff or landing. Aircraft operations are classified as either itinerant or local. A local operation is conducted by an aircraft operating in the local traffic pattern, known to be departing or arriving from flights in local practices areas located within a 20-mile radius of the airport, and/or executing a simulated instrument approach or low pass at the Airport. An itinerant operation is one that does not include any of the characteristics of a local operation. Chapter 2.0 discusses the historical and the anticipated future aircraft operations for Fox Airfield in detail.

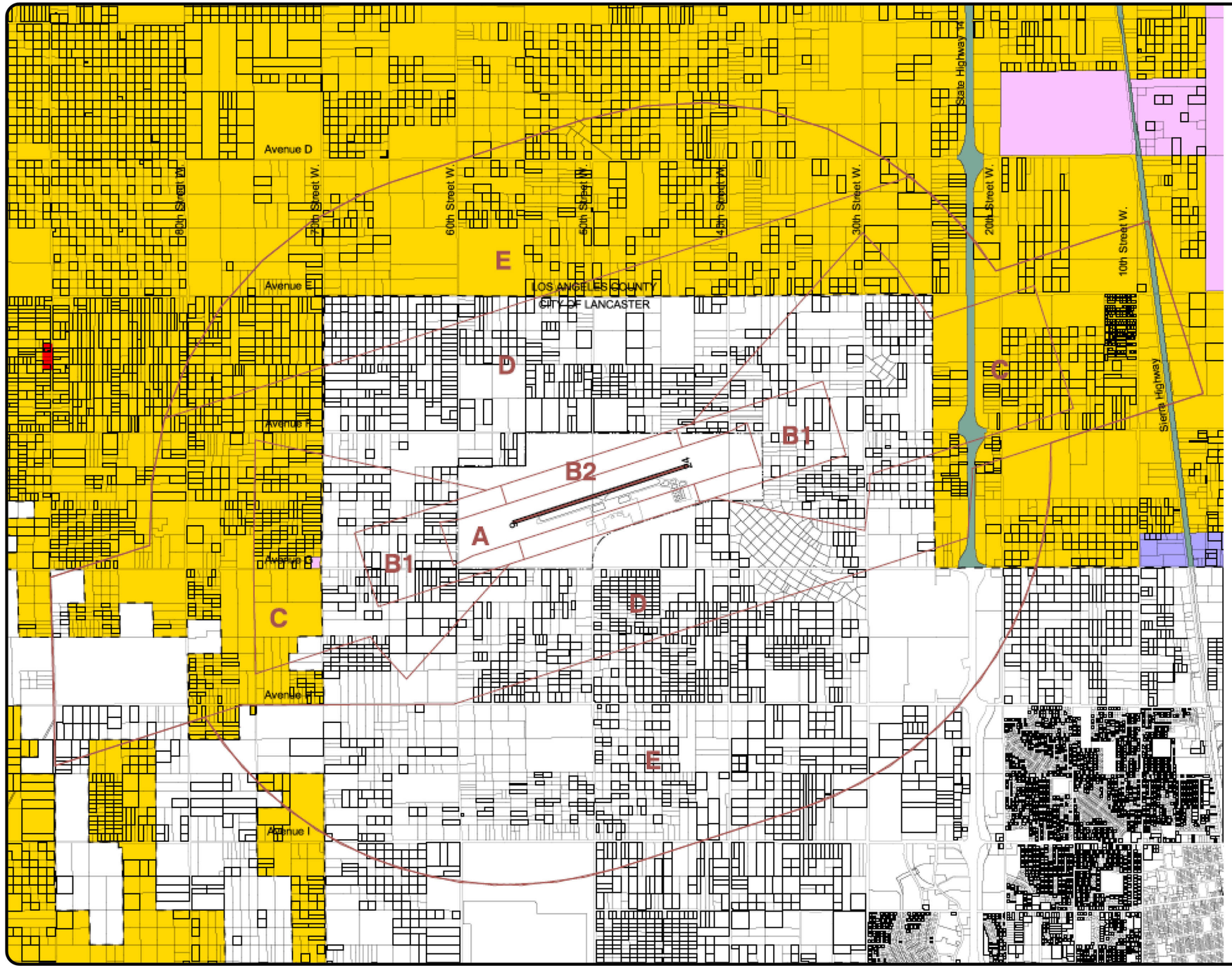
1.7 Local Land Use Plans and Regulations

The County of Los Angeles Airport Land Use Commission implements state law (Public Utilities Code) regarding public airports and surrounding land use compatibility. The *County of Los Angeles Airport Land Use Plan* applies to all airports in Los Angeles County, except for Fox Airfield, which is covered by the *Fox Airfield Land Use Compatibility Plan* (adopted December 1, 2004).[1] 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. Fox Airfield and vicinity land uses are designated by the *Antelope Valley Area Wide General Plan* (County of Los Angeles, adopted December 1986), the *City of Lancaster General Plan* (adopted October 1997; revised December 2001), and the Fox Airfield Industrial Corridor Specific Plan (City of Lancaster, adopted March 1996). Land surrounding Fox Airfield is currently characterized by undeveloped desert land divided into many small parcels with scattered rural residential and industrial uses. **Figure 1.10** depicts the Antelope Valley Area Wide General Plan Land Use Designations.[2]

Fox Airfield is generally located south of Avenue F, north of Avenue G, east of 60th Street, and west of 30th Street. The Airport is located within an area that is currently open space including a 56-acre park and recreation facility named Apollo Park located adjacent to the eastern limit of the Airport. A small church is located to the northeast of the Airport. The City of Lancaster General Plan characterizes land area directly adjacent to Fox Airfield as light industrial with small areas of land to the northeast and southwest designated as heavy industrial land use. Land to the north and the northwest of Fox Airfield is designated as non urban residential land use. Land to the south and the southeast of Fox Airfield is designated as urban residential. Small portions of the land to the southwest of Fox Airfield are also characterized as multifamily residential and commercial use. **Figure 1.11** refers to the City of Lancaster General Plan Land Use Designations.

[1] Los Angeles County Department of Regional Planning, 2010. Los Angeles County Airport Land Use Commission webpage. Accessed at http://planning.lacounty.gov/aluc on March 15, 2010.

[2] Los Angeles County Airport Land Use Commission, 2004. *General William J. Fox Airfield Land Use Compatibility Plan*. Adopted December 1, 2004.



Legend

- C - Commercial
- M - Industry
- N1 - Non-Urban 1 (0.5 du/ac)
- P - Public Service Facilities
- TC - Transportation Corridor

- Airport Property Line
- Lancaster City Limts
- Compatibility Zones

Note: Map reflects County of Los Angeles land use designations.

N

4000 0 4000

Feet

Los Angeles County
Airport Land Use Commission

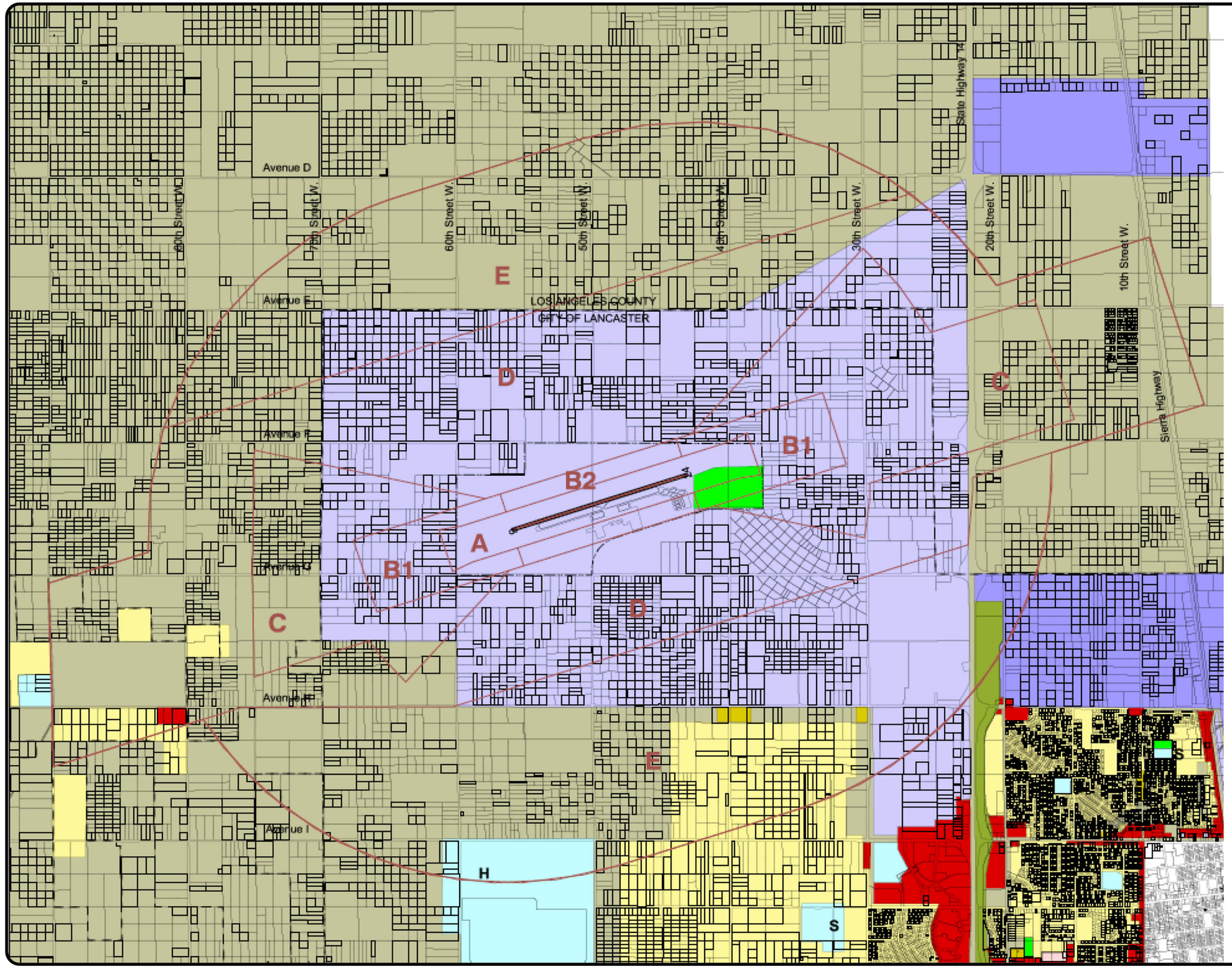
General William J. Fox Airfield
Land Use Compatibility Plan

(Adopted December 1, 2004)

GENERAL WILLIAM J. FOX AIRFIELD
Lancaster, CA
Master Plan Update

Antelope Valley Areawide General Plan Land Use

FIGURE
1.10



Legend

- Commercial
- Heavy Industry
- Light Industry
- Public
- Office / Professional
- Park
- Multi-Family Residential 2 (15.1-30.0 d.u./ac.)
- Urban Residential (2.1-6.5 d.u./ac.)
- Non-Urban Residential (0.4-2.0 d.u./ac.)
- Open Space

- Airport Property Line
- Lancaster City Limts
- Compatibility Zones

H Hospital
S School

Note: Map reflects City of Lancaster land use designations; all areas of map are within city sphere of influence.

N

4000 0 4000

Feet

Los Angeles County
Airport Land Use Commission

General William J. Fox Airfield
Land Use Compatibility Plan

(Adopted December 1, 2004)

GENERAL WILLIAM J. FOX AIRFIELD
Lancaster, CA
Master Plan Update

City of Lancaster General Plan Land Use Designations

FIGURE
1.11

1.8 Environmental Resources

The topics for the environmental resources overview are based on Federal guidelines contained in FAA Orders 1050.1E (June 8, 2004) and 5050.4B (April 28, 2006) and include 20 specific impact categories (similar to categories based on CEQA guidelines). The FAA Environmental Desk Reference for Airport Actions (October 2007) and FAA Advisory Circular 150/5070-6B, Change 1 to Airport Master Plans (May 1, 2007) were also consulted. Some of the following discussions are based on the County of Los Angeles' General Plan Draft Update (released in 2008). The impact categories discussed in the following environmental overview include:

- Air Quality
- Coastal Barriers
- Coastal Zone Management
- Compatible Land Use
- Construction Impacts
- Department of Transportation Act, Section 4(f)
- Farmlands
- Fish, Wildlife, and Plants
- Floodplains
- Greenhouse Gas Emissions
- 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

1.8.1 Air Quality

The United States Environmental Protection Agency (USEPA) establishes National Ambient Air Quality Standards (NAAQS) for six principle pollutants, commonly referred to as the criteria pollutants. These six criteria pollutants include carbon monoxide, lead, nitrogen dioxide, particulate matter, sulfur dioxide and ozone. The USEPA also determines whether an area is in attainment with NAAQS. Based on current information, no impacts to air quality are anticipated; however, an air quality review will be conducted during the development of the alternatives analysis stage of this master plan update.

1.8.2 Coastal Barriers

Impacts expected on coastal barriers are either non substantial or nonexistent because Fox Airfield is greater than 50 miles from the Pacific Ocean and is not located near a coastal barrier.

1.8.3 Coastal Zone Management

Impacts expected on coastal zone management are either non substantial or nonexistent because Fox Airfield is greater than 50 miles from the Pacific Ocean and is not located within a coastal zone.

1.8.4 Compatible Land Use

As noted in Section 1.7, land use surrounding the Airport is generally compatible with aviation activities at Fox Airfield. Both the Antelope Valley Area Wide General Land Use Plan and City of Lancaster General Plan have identified the need to protect land surrounding the Airport by zoning much of this area as light industrial or public (park) open space. See Figures 1.10 and 1.11. A review of compatible land use will also be conducted during the alternatives analysis to identify any potential impacts resulting from proposed improvements to Fox Airfield.

1.8.5 Construction Impacts

Construction impacts are yet to be determined. Once alternatives for future development at Fox Airfield have been developed, construction impacts can be assessed. It should be noted that Best Management Practices (BMPs) will be incorporated whenever practical to limit impacts resulting from construction.

1.8.6 Department of Transportation Act, Section 4(f)

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

Apollo Community Regional Park is located immediately east, adjacent to Fox Airfield. Apollo Park is a publicly owned park and is considered a Section 4(f) property.[3] Apollo Park is located north of West Avenue F-8 and approximately 0.75 miles west of 30th

[3] U.S. Federal Highway Administration, 2010. *Section 4(f) at a Glance* webpage. Accessed at http://www.environment.fhwa.dot.gov/4f/4fAtGlance.asp on March 9, 2010.

Street West at 4555 West Avenue G in the City of Lancaster, California. This 56-acre park is managed by the County of Los Angeles Parks and Recreation and is part of the Antelope Valley Waste Water Reclamation Project. Three recreation lakes (Aldrin, Armstrong and Collins) occupy 26 acres of the park while the other 30 acres are landscaped. The lakes are stocked with trout from November to April and with catfish in the warm months. A Fishing License is required for persons 16 years and older. Apollo Park has no structured program activities, but hosts a number of fishing derbies throughout the year. The park is open daily from 9 a.m. to Sunset.[4] Potential Section 4(f) impacts will be reviewed during the development of the alternatives analysis. Careful effort will be taken to avoid development that would affect the Apollo Community Regional Park.

1.8.7 Farmlands

Impacts expected on farmland are either non substantial or nonexistent, because no farmland is located in the immediate vicinity of Fox Airfield. **Figure 1.12, Los Angeles Important Farmland 2008**, shows that Airport property consists of land categorized as *Urban and Built-up Land* and *Other Land* by the California Farmland Mapping and Monitoring Program. Impacts associated with proposed development at the Airport are not anticipated but will be reexamined during development of the alternatives analysis.

1.8.8 Fish, Wildlife, and Plants

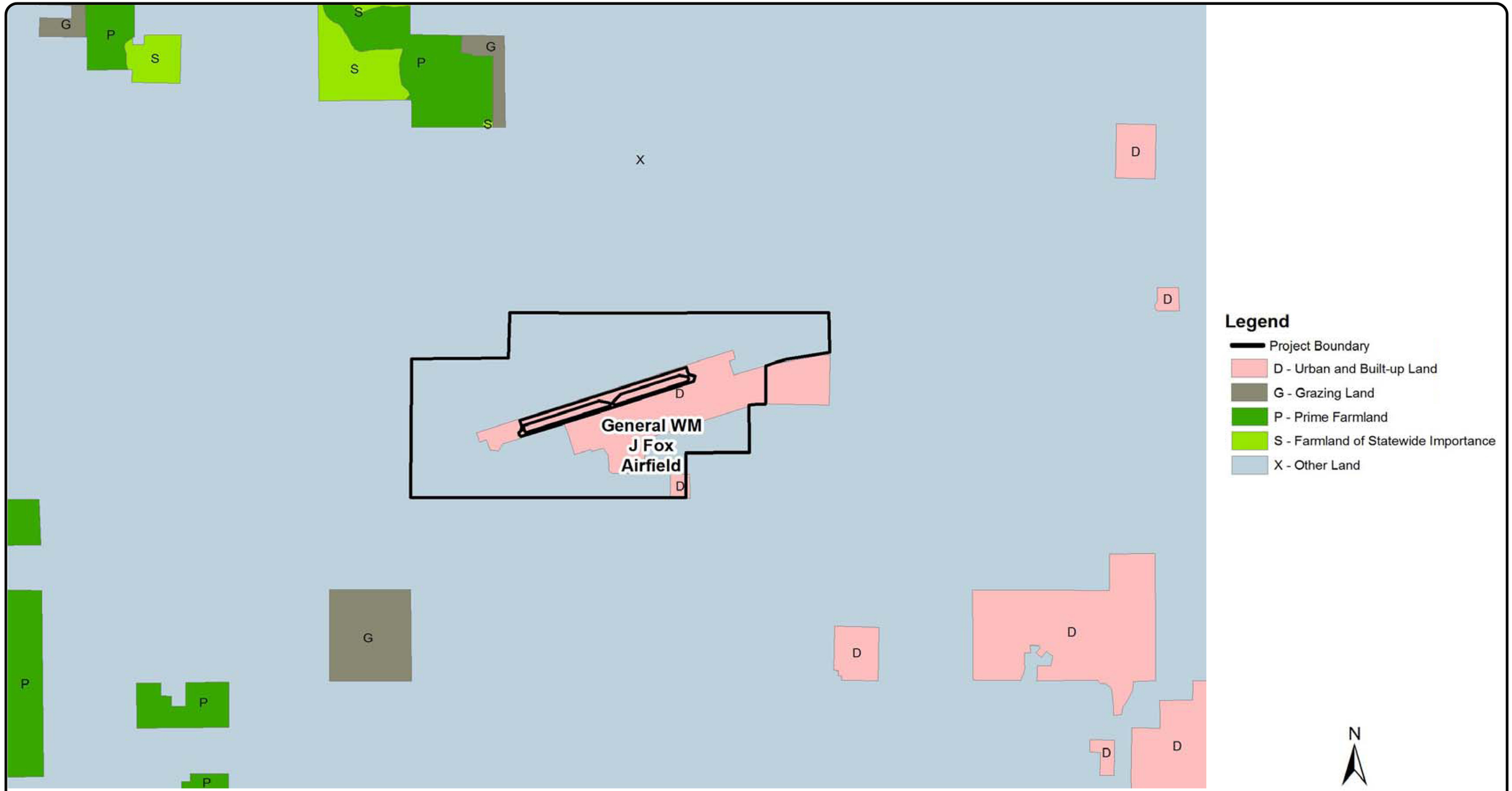
According to the California Natural Diversity Database (CNDDB), the following sensitive species are documented to occur in the quadrangle surrounding the Airport:

- Burrowing Owl (*Athene cunicularia*)
- Swainson's Hawk (*Buteo swainsoni*)
- Desert Tortoise (*Gopherus agassizii*)
- Mohave Ground Squirrel (*Xerospermophilus mohavensis*)
- Tricolored Blackbird (*Agelaius tricolor*)
- Silvery Legless Lizard (*Anniella pulchra pulchra*)
- Short-eared Owl (*Asio flammeus*)
- Mountain Plover (*Charadrius montanus*)
- Coast Horned Lizard (*Phrynosoma blainvillii*)
- American Badger (*Taxidea taxus*)
- Le Conte's Thrasher (*Toxostoma leconteri*)
- Short-joint Beavertail (*Opuntia basilaris* var*. brachyclada*)
- Horn's Milk-vetch (*Astragalus hornii* var*. hornii*)
- Lancaster Milk-vetch (*Astragalus preussii* var. *laxiflorus*)
- Alkali Mariposa-lily (*Calochortus striatus*)

[4] Los Angeles County Parks and Recreation, 2010. *Apollo Community Regional Park* webpage. Accessed at http://parks.lacounty.gov/Parkinfo.asp?URL=cms1_033245.asp&Title=Apollo on March 9, 2010.

- Parry's Spineflower (*Chorizanthe parryi var. parryi*)
- Barstow Woolly Sunflower (*Eriophyllum mohavense*)
- Red Rock Poppy (*Eschscholzia minutiflora* ssp. *twisselma*)
- Pale-yellow Layia (*Layia heterotricha*)

Based on the results of the CNDDB search, we recommend that the site be surveyed and evaluated for potential biological resources that may occur within areas planned for future development and to determine if future development could potentially affect any biological resources occurring within the defined limits of disturbance.



Source: Farmland Mapping and Monitoring Program, 2008; ESRI, 2008

GENERAL WILLIAM J.
FOX AIRFIELD
Lancaster, CA
Master Plan Update

Los Angeles Important Farmland 2008

FIGURE
1.12

1.8.9 Floodplains

Impacts on floodplains are expected to be non substantial. **Figure 1.13, Flood Insurance Rate Map 06037C0405F** shows the southwestern portion of Fox Airfield to be located in Zone X (shaded), described as a moderate flood hazard area between the limits of the base flood and the 0.2-percent-annual-chance (or 500-year) flood due to potential flooding from an unnamed creek located at the southwest portion. The majority of the Airport is located in Zone X (unshaded), described as an area of minimal flood hazard which are outside the Special Flood Hazard Area and higher than the elevation of the 0.2-percent-annual-chance flood.[5]

Potential flood hazards are not expected to cause extensive damage that would interrupt airport service or use of the runway or other proposed airport facilities for long periods. At most, interruption of services or use of facilities is expected to last for only a few hours. Airport improvements are not expected to result in a notable, adverse effect on the floodplain's natural and beneficial values.

1.8.10 Greenhouse Gas Emissions

Potential impacts resulting from an increase in greenhouse gas emissions are not anticipated because of proposed airport improvement projects at Fox Airfield. While these improvements, if any, have not yet been determined, any recommendation to develop or promote carbon generation facilities will be scrutinized to balance the needs of the Airport with the natural environment.

1.8.11 Hazardous Materials

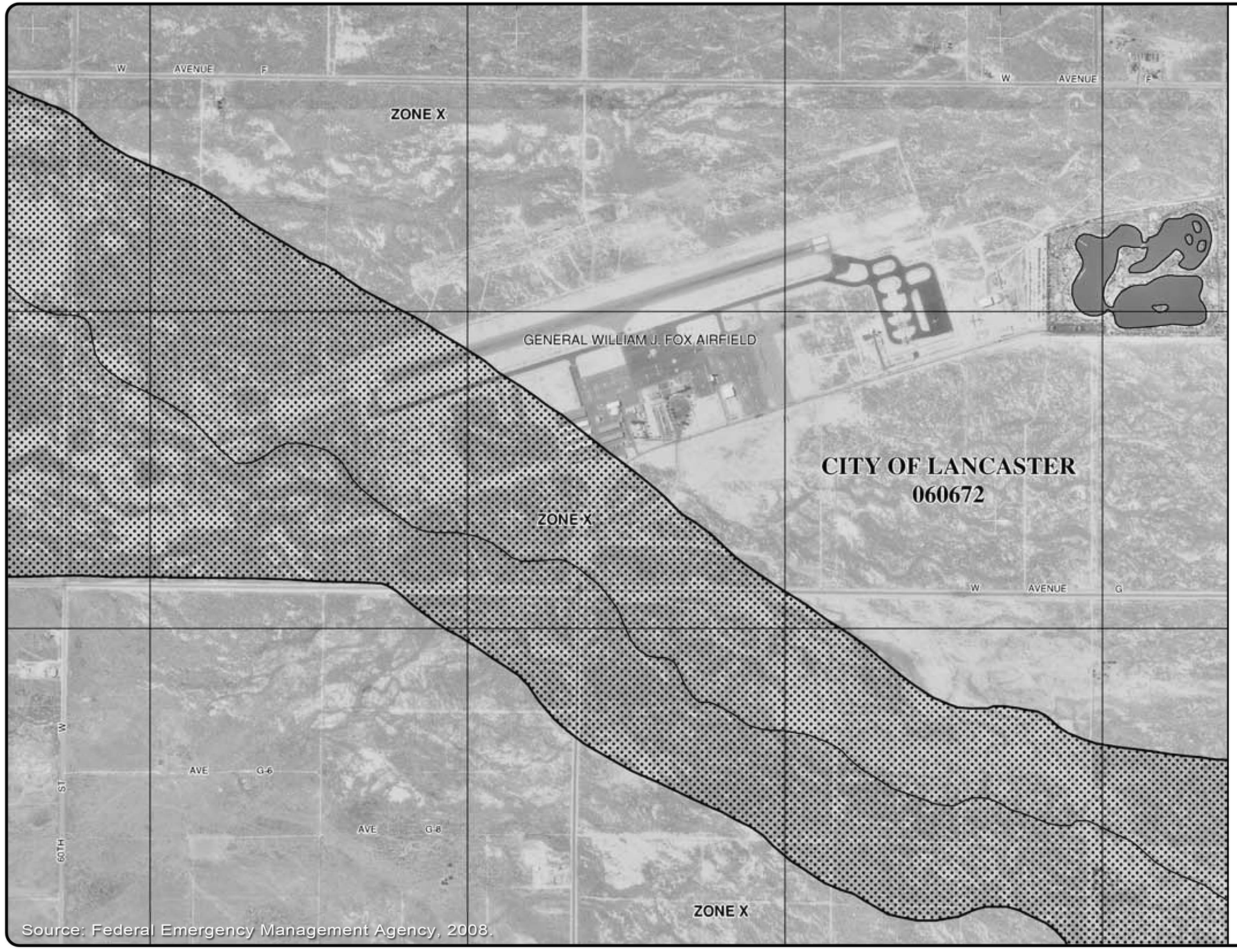
Fox Airfield is not listed on the Environmental Protection Agency's *National Priorities List* (NPL). The NPL is the "list of national priorities among the known releases or threatened releases of hazardous substances, pollutants, or contaminants throughout the United States and its territories. The NPL is intended primarily to guide the EPA in determining which sites warrant further investigation."[6] Additionally, the California Department of Toxic Substances Control's EnviroStor database does not show Fox Airfield to be a State Response or Voluntary Cleanup site.[7]

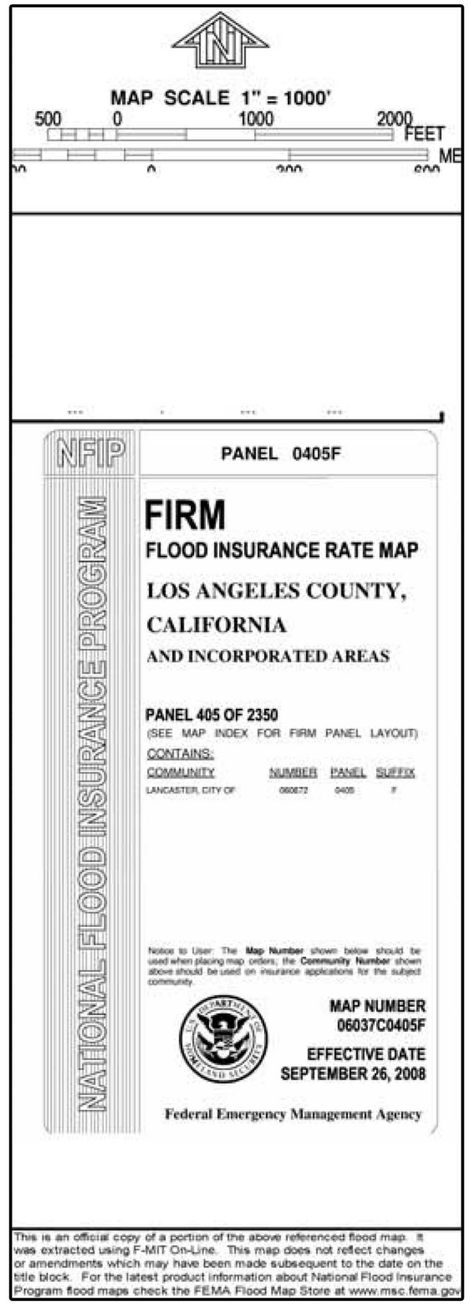
---

5 Federal Emergency Management Agency, 2010. *Flood Zones, Definition/Description*. Accessed at http://www.fema.gov/plan/prevent/floodplain/nfipkeywords/flood_zones.shtm on March 10, 2010.

6 United States Environmental Protection Agency, 2010. *National Priorities List (NPL)* webpage. Accessed at http://www.epa.gov/superfund/sites/npl/index.htm on March 10, 2010.

7 California Department of Toxic Substance Control, 2010. EnviroStor Database. Accessed at http://www.envirostor.dtsc.ca.gov/public/map.asp?global_id=&x=119.1357421875&y=37.82280243352756&zl=5&ms=640,480&mt=m&findaddress=True&city=LANCASTER&zip=&county=&federal_superfund=true&state_response=true&voluntary_cleanup=true&school_cleanup=true&corrective_action=true&permit_site=true&permit_and_ca_site=true on March 10, 2010.





GENERAL WILLIAM J. FOX AIRFIELD
Lancaster, CA
Master Plan Update

Flood Insurance Rate Map 06037C0405F

FIGURE 1.13

1.8.12 Historical, Architectural, Archaeological, and Cultural

Section 106 coordination with the appropriate Federal, State and local agencies is a requirement to determine potential impacts to historical, architectural, archaeological and/or cultural impacts resulting from the implementation of proposed airport improvements. Once alternatives for Fox Airfield have been developed, a review of these potential impacts will begin. Please note that an initial review of the local land use plans including Fox Airfield did not identify the presence of any known historical, architectural, archaeological, and/or cultural resource within the current airport property line.

1.8.13 Light Emissions and Visual Effects

Airport improvements at the Airport are not expected to create unusual lighting conditions that would be considered sufficient to warrant a special study. Normally, impacts of light improvements 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.

Construction and implementation of the master plan improvements will not substantially impede or block views of the east adjacent Apollo Community Regional Park or the Angeles National Forest, located more than seven miles south southwest of Fox Airfield. The Airport and vacant lands to the north, south, and west are relatively flat and do not contain substantial scenic resources.

1.8.14 Natural Resources and Energy Supply

No significant impacts to natural resources or energy supply are anticipated with future improvements to Fox Airfield. If any major changes to facilities and equipment increase utility usage, power companies or other suppliers shall be contacted to determine if projected demands can be met by existing and planned source facilities.

1.8.15 Noise

The effect of aircraft noise on people who live and work near airports is an issue of national concern. Expansion of U.S. airports to meet growing transportation demands combined with increased residential development in many communities has created the need to coordinate airport planning with community development. Potential impacts resulting from noise have yet to be determined; however, it is anticipated that any proposed improvements to the Airport would not create a substantial increase in noise to surrounding land use given the surrounding land use and sparse population. Noise contours will be developed for the recommended development alternative in preparation for the development of the on-Airport land use plan. Three noise contours will be

prepared for the 55 CNEL, 60 CNEL, and 65 CNEL noise levels over the 5-, 10-, and 20-year time periods.

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

Impacts on socioeconomic issues are expected to be non substantial or nonexistent because no residential areas are located near Fox Airfield. According to the Fox Airfield Industrial Corridor Specific Plan (May 31, 1996), the existing roadway system within the Specific Plan study area operates at a high Level of Service (LOS A) due to sparse development. A LOS A is described as conditions where traffic flows at or above the posted speed limit and all motorists have complete mobility between lanes. A traffic impact analyses may be required prior to the implementation of future improvements on the Airport site.

Airport improvements will not require relocation of any housing or community businesses. Airport improvements are not expected to reduce the LOS of roads serving the Airport or to result in a loss in community tax base. Improvements to the Airport may include new facilities such as new hangars and aircraft parking, which serve private businesses, are anticipated to increase the local tax base.

Impacts on environmental justice issues are expected to be non substantial or nonexistent because no residential areas that would have minority or low-income populations are located near the Airport.

Although Apollo Community Regional Park is adjacent to the Airport, health and safety impacts to children are expected to be non substantial because there have been no known aircraft accidents affecting Apollo Park in the past. Health and safety risks from aircraft are not expected to increase due to the proposed improvements to Fox Airfield.

1.8.17 Solid Waste

Solid waste generated at the Airport is taken to the nearby Chiquita Landfill located in the City of Lancaster. No landfills are located adjacent to the Airport; therefore, no impacts to birds or fowl are anticipated. Waste from construction activities may result in some additional solid waste; however, any such impact would be temporary.

1.8.18 Water Quality

Impacts to water quality are not yet known. Potential water quality impacts will be identified once the alternatives analysis has begun. It should be noted that potential impacts to existing waterways located on the Airport would be avoided if possible.

1.8.19 Wetlands, Jurisdictional or Non-Jurisdictional

Impacts expected on wetlands are either non substantial or nonexistent because no wetlands are located on or near Fox Airfield.

1.8.20 Wild and Scenic Rivers

An unnamed creek is located on the southwest portion of the Airport property, as shown in Figure 1.13, Flood Insurance Rate Map 06037C0405F. However, impacts expected on wild and scenic rivers are either non substantial or nonexistent because Fox Airfield is not located near any wild and scenic rivers.

1.9 NAVAIDS

Navigational aids (NAVAIDS) are any sort of marker that aids a pilot during navigation. An inventory of NAVAIDS and air traffic facilities located on or near the Airport are included below:

- **Airport Traffic Control Tower (ATCT):** Fox Airfield is equipped with an ATCT, which operates daily from 7:00 a.m. until 9:00 a.m. local time, 7 days per week. The ATCT is the central facility in the Fox Airfield air control system. Communication systems for air and ground, visual signaling, and other devices are used to provide safe and expeditious movement of all air traffic. Ground movement of aircraft and vehicles on the runway/taxiway system are also under the control of the ATCT. The Fox Airfield ATCT is classified as a contract tower as it is not staffed by FAA air traffic controllers, but rather a private company, which is certified by the FAA.

- **Non-Directional Beacon (NDB):** a low/medium frequency or ultrahigh frequency (UHF) radio beacon transmitting non directional signals, which the pilot of an aircraft equipped with directional finding equipment can determine the bearing to or from the radio beacon. The Fox Airfield NDB is located on the Airport and is used for the NDB approach for the Airport. The NDB approach is usable within a 25 nautical mile radius of the Airport.

- **Very-High Frequency Omni-Directional Range/Tactical Air Navigation (VORTAC):** A type of radio navigation system, which broadcasts a very-high frequency radio signals in which the pilot of an aircraft equipped with directional finding equipment can receive a magnetic bearing from a station. This navigational aid provides azimuth (direction) and distance information to the pilot. The Palmdale (PMD) VORTAC is located approximately 10 nautical miles southeast of Fox Airfield and is NAVAID used for the circling, VOR published approach. The VORTAC is also used for enroute navigation. The Palmdale VORTAC is designated as a High Altitude facility and is usable from 1,000 feet

AGL to 14,500 feet AGL. One other VORTAC facility near Fox Airfield is the Lake Hughes (LHS) located 19 nautical miles west.

- **Automated Surface Observation Station (ASOS):** is a system of weather reading instruments, which collects weather conditions at the Airport. This system provides information on altimeter setting, winds, temperature, dew point, density altitude, visibility, and cloud/ceiling. The ASOS at Fox Airfield provides Airport Traffic Control Tower personnel with weather information which is relayed to pilots either verbally or via the Automated Terminal Information System (ATIS) radio broadcast.

- **Automated Weather Observation Station (AWOS):** is a system of weather reading instruments, which collects weather conditions at the Airport and broadcasts such information to pilots. This system provides information on altimeter setting, winds, temperature, dew point, density altitude, visibility, and cloud/ceiling. The AWOS at Fox Airfield provides pilots with weather information, which is accessible via the telephone and Internet, or, when the Airport Traffic Control Tower is closed, the information is broadcast over the ATCT radio frequency.

The closest FAA Flight Service Station (FSS) is located at the Riverside Municipal Airport. The following services are provided by the Riverside FSS:

- VFR advisory service
- Pilot briefings
- Flight plan assistance
- Issuance of Notices to Airmen (NOTAMs)
- Dissemination of Pilot Reports (PIREPs)
- Issuance of weather data and National Airspace System (NAS) information

In addition to the aforementioned NAVAIDS, Fox Airfield is also equipped with the following visual aids. These visual aids assist pilots in locating the runway at night or during periods of low visibility:

- **Precision Approach Path Indicator (PAPI):** provides vertical visual glide path information to pilots approaching the runway. PAPIs consist of two, three or four boxes of lights that are typically located on the left side of the runway. Runway 6 and 24 are equipped with a four-box PAPI. The PAPI system can be seen for up to five miles during daylight hours and up to 20 miles during nighttime hours. Approach angles for both runway ends are set at 3.0 degrees.

- **Runway End Identifier Lights (REIL):** are two synchronized flashing lights, one on each side of the displaced runway threshold. REILs provide identification of the runway end to approaching pilots. Runways 6 and 24 are equipped with REILs.

- **Medium Intensity Runway Lights (MIRL):** are used to outline the edges of runways during periods of darkness or poor visibility. Runway 6-24 is equipped with MIRLs.

- **Rotating Beacon:** is a visual aid that indicates the location of an airport. Rotating beacons are electronic devices that emit alternating white and green beams of light in a 360-degree pattern. The rotating beacon for Fox Airfield is located just north of the former Flight Service Station and meets FAA specifications.

Chapter 2

Aviation Forecasts

2.0 AVIATION FORECASTS

In planning for the future growth of any airport, it is important to understand the context within which potential increases in aviation activity are likely to occur. Several indicators of aviation activity including regional and local trends in general aviation were used to develop an aviation activity forecast for Fox Airfield. The forecast period covers a 20-year period from 2010 to 2029 and the forecast elements include data at five-year intervals (2014, 2019, 2024, and 2029).

The aviation demand forecast's purpose is to provide one of the parameters for planning future aviation facilities. Aviation forecasting is not an "exact science" so experienced aviation judgment and practical considerations will influence the level of detail and effort required to establish reasonable forecasts and subsequent airport development decisions. Sections 2.1 and 2.2 include a discussion of the national and local general aviation activity historical trends and projections. These trends provide a basis for the projections of aviation activity developed for Fox Airfield.

The air traffic activity at Fox Airfield is comprised largely of general aviation and military activity. Therefore, the historic trends and projections are focused specifically on this type of activity. The forecasts were developed through analysis of recent trends in activity at Fox Airfield and trends in national general aviation activity. Historical growth rates were analyzed and compared to forecast growth rates to insure that the projections were reasonable. Trends in the national aviation forecasts developed by the Federal Aviation Administration (FAA) were used to provide the underlying assumptions for the projections of aviation activity and the other elements of the forecast contained herein. The FAA develops its estimates of such trends through conversations with various segments of the general aviation community.

It is important to recognize that for airports with greater than 100,000 total annual operations, or 100 based aircraft, the forecasts must be approved by the FAA prior to proceeding to the facility requirements analysis. The forecasts developed for Fox Airfield do not attain those activity levels; therefore, the FAA is not required to review and approve these forecasts.

2.1 National Economic & General Aviation Trends

The *FAA Aerospace Forecast, Fiscal Years 2010 – 2030* (FAA Forecasts)[1] includes a description of national factors that influence overall aviation demand including economic measures such as U.S. Gross Domestic Product (GDP) and the Consumer Price Index (CPI). In addition to the economic factors, trends related to the purchase of general aviation aircraft specifically influence the outlook related to the overall general aviation activity in the U.S. These factors coupled with local aviation trends will be the basis for the forecasts developed for Fox Airfield.

[1] This publication was released in March 2010. Fiscal year refers to the Federal fiscal year, which begins October 1st and ends September 30th each year.

Table 2.1 presents the historic and projected GDP and CPI. GDP is a measure of overall economic growth and CPI is a measure of economic inflation. As shown in the table, since 2004, the annual increases in GDP declined and from 2008 to 2009, GDP actually decreased 2.8 percent. This decrease was a result of the recession experienced in the U.S. that began in December 2007.

GDP is projected to increase 2.7 percent from 2009 to 2014. It is expected that the U.S. will slowly climb out of the current recession in the near term. As a result, year over year increases in GDP are modest from 2009 to 2011, with the greatest increase projected to occur from 2011 to 2012. After 2012, year over year GDP growth remains consistent for the remainder of the projection period indicating a stabilization of the economy.

Because of the recession, the unemployment rate in the U.S. increased from 5.0 percent in December 2007 to 9.8 percent in September 2009. This increase resulted in falling demand for oil and lower oil prices. As a result, the CPI declined 0.3 percent from 2008 to 2009. This was the first decline in this economic measure since 1955.

CPI is projected to increase at an annual compounded growth rate of 1.9 percent from 2009 to 2014. The year over year increases in CPI follow the same pattern as the increases in GDP, with the largest year over year increase (2.2 percent) anticipated to occur from 2011 to 2012.

Table 2.1
Historic and Projected
Gross Domestic Product and Consumer Price Index

	GDP		CPI	
Fiscal Year	(Billions, 2005$)	% Change	(1982-1984 = 100)	% Change
2000	11,145.9		170.7	
2001	11,335.8	1.7%	176.2	3.2%
2002	11,498.3	1.4%	178.9	1.5%
2003	11,729.7	2.0%	183.1	2.4%
2004	12,171.9	3.8%	187.3	2.3%
2005	12,553.8	3.1%	193.5	3.3%
2006	12,898.3	2.7%	200.6	3.7%
2007	13,171.4	2.1%	205.3	2.3%
2008	13,374.5	1.5%	214.4	4.4%
2009	12,995.9	-2.8%	213.8	-0.3%
2010	13,188.6	1.5%	216.8	1.4%
2011	13,533.9	2.6%	220.9	1.9%
2012	14,024.1	3.6%	225.7	2.2%
2013	14,469.8	3.2%	229.9	1.9%
2014	14,852.6	2.6%	234.4	1.9%
2015	15,233.2	2.6%	238.9	1.9%
2016	15,612.1	2.5%	243.6	2.0%
2017	15,995.2	2.5%	248.4	1.9%
2018	16,414.8	2.6%	253.2	1.9%
2019	16,876.8	2.8%	257.9	1.9%
2020	17,391.6	3.1%	262.4	1.7%
2021	17,858.1	2.7%	266.9	1.7%
2022	18,318.4	2.6%	271.6	1.7%
2023	18,794.2	2.6%	276.3	1.7%
2024	19,272.8	2.5%	281.4	1.8%
2025	19,783.0	2.6%	286.7	1.9%
2026	20,300.2	2.6%	292.1	1.9%
2027	20,802.1	2.5%	297.8	1.9%
2028	21,317.6	2.5%	303.5	1.9%
2029	21,832.4	2.4%	309.4	2.0%
Average Annual Growth				
2000-2009		1.7%		2.5%
2005-2009		0.9%		2.5%
2009-2014		2.7%		1.9%
2014-2029		2.6%		1.9%
2009-2029		2.6%		1.9%

Source: FAA Forecast, 2010-2030; Compiled by PB Americas, Inc.

The economic recession that began at the end of 2007 had a marked effect on the general aviation industry. **Table 2.2** presents the historical general aviation aircraft shipments from 2000 to 2009. According to the General Aviation Manufacturers Association (GAMA), delivery of general aviation aircraft was down nearly 50 percent in 2009 compared to 2008 and was the second year of declining shipments compared to the four previous years, which experienced increases.

Table 2.2
Historic General Aviation Aircraft Shipments

Year	Units Shipped	% Change
2000	2,816	
2001	2,634	-6.5%
2002	2,207	-16.2%
2003	2,137	-3.2%
2004	2,355	10.2%
2005	2,857	21.3%
2006	3,147	10.2%
2007	3,279	4.2%
2008	3,079	-6.1%
2009	1,587	-48.5%
Average Annual Growth		
2000-2009		-6.2%
2005-2009		-13.7%
2007-2009		-30.4%

Source: GAMA ; Compiled by PB Americas, Inc.

The FAA uses the economic forecasts and trends in general aviation aircraft deliveries to develop its forecast of active general aviation aircraft. **Table 2.3** presents the number of historic and FAA projected fixed wing piston and turbine aircraft. As shown in the table, the total number of active piston aircraft decreased since 2000, while the number of turbine aircraft has increased. The total number of piston and turbine aircraft has ranged from approximately 183,000 in 2002 and 2003 to a high of approximately 196,000 in 2007. Since 2007, the number of piston and turbine aircraft has decreased approximately 2 percent.

These aircraft are projected to increase slightly during the projection period at an average annual growth rate of 0.7 percent from 2009 to 2029. The main driver of the projected modest growth for these aircraft is generated by the turbine aircraft, which are projected to increase at an average annual rate of 3.0 percent during the projection period compared to 0.2 percent average annual growth for piston aircraft during the same period.

Table 2.3
Historic and Projected
Fixed Wing Piston and Turbine General Aviation Aircraft

Fiscal Year	Piston	% Change	Turbine	% Change	Total	% Change
2000	173,193		17,233		190,426	
2001	165,518	-4.4%	18,874	9.5%	184,392	-3.2%
2002	163,337	-1.3%	19,493	3.3%	182,830	-0.8%
2003	162,879	-0.3%	20,089	3.1%	182,968	0.1%
2004	167,397	2.8%	23,183	15.4%	190,580	4.2%
2005	170,645	1.9%	23,454	1.2%	194,099	1.8%
2006	167,005	-2.1%	24,337	3.8%	191,342	-1.4%
2007	169,675	1.6%	26,697	9.7%	196,372	2.6%
2008	166,514	-1.9%	26,327	-1.4%	192,841	-1.8%
2009	165,762	-0.5%	26,968	2.4%	192,730	-0.1%
2010	165,111	-0.4%	27,594	2.3%	192,705	0.0%
2011	164,548	-0.3%	28,318	2.6%	192,866	0.1%
2012	164,092	-0.3%	29,131	2.9%	193,224	0.2%
2013	163,732	-0.2%	30,053	3.2%	193,785	0.3%
2014	163,446	-0.2%	31,032	3.3%	194,478	0.4%
2015	163,230	-0.1%	32,060	3.3%	195,289	0.4%
2016	163,077	-0.1%	33,080	3.2%	196,157	0.4%
2017	162,979	-0.1%	34,108	3.1%	197,087	0.5%
2018	162,982	0.0%	35,128	3.0%	198,110	0.5%
2019	163,137	0.1%	36,166	3.0%	199,304	0.6%
2020	163,492	0.2%	37,242	3.0%	200,734	0.7%
2021	164,026	0.3%	38,357	3.0%	202,383	0.8%
2022	164,606	0.4%	39,499	3.0%	204,106	0.9%
2023	165,265	0.4%	40,674	3.0%	205,939	0.9%
2024	166,057	0.5%	41,883	3.0%	207,941	1.0%
2025	166,994	0.6%	43,128	3.0%	210,122	1.0%
2026	167,872	0.5%	44,412	3.0%	212,284	1.0%
2027	168,864	0.6%	45,730	3.0%	214,594	1.1%
2028	169,986	0.7%	47,084	3.0%	217,070	1.2%
2029	171,225	0.7%	48,469	2.9%	219,693	1.2%
Average Annual Growth						
2000-2009		-0.5%		5.1%		0.1%
2005-2009		-0.7%		3.6%		-0.2%
2009-2014		-0.3%		2.8%		0.2%
2014-2029		0.3%		3.0%		0.8%
2009-2029		0.2%		3.0%		0.7%

Source: FAA Forecast 2010-2030; Compiled by PB Americas, Inc.

Table 2.4 presents the historic and projected general aviation and military operations at FAA and contract air traffic control towers for the U.S. As shown in the table, the number of general aviation and military operations has decreased at an average annual rate of 3.7 percent from 2000 to 2009. General aviation and military operations are projected to decrease 3.0 percent from 2009 to 2010 followed by consistent increases ranging from 1.1 percent to 1.3 percent each year from 2011 to 2029, with an average annual growth rate of approximately 1.0 percent from 2009 to 2029. Military operations are projected to remain constant during the projection period, while general aviation operations are projected to increase at an average annual growth rate of 1.1 percent between 2009 and 2029. The modest increases in this type of activity during the projection period are a reflection of the modest increases in GA aircraft during the same period.

Table 2.4
Historic and Projected
U.S. General Aviation and Military Operations

Fiscal Year	General Aviation	% Change	Military	% Change	Total	% Change
2000	39,878.5		2,888.0		42,766.5	
2001	37,626.5	-5.6%	2,917.1	1.0%	40,543.6	-5.2%
2002	37,652.7	0.1%	3,063.4	5.0%	40,716.1	0.4%
2003	35,524.0	-5.7%	3,009.2	-1.8%	38,533.2	-5.4%
2004	34,967.7	-1.6%	2,979.3	-1.0%	37,947.0	-1.5%
2005	34,146.8	-2.3%	2,863.6	-3.9%	37,010.4	-2.5%
2006	33,072.5	-3.1%	2,775.8	-3.1%	35,848.3	-3.1%
2007	33,132.0	0.2%	2,719.6	-2.0%	35,851.5	0.0%
2008	31,668.0	-4.4%	2,501.4	-8.0%	34,169.4	-4.7%
2009	27,974.4	-11.7%	2,556.5	2.2%	30,530.9	-10.6%
2010	27,097.2	-3.1%	2,516.6	-1.6%	29,613.8	-3.0%
2011	27,432.7	1.2%	2,516.6	0.0%	29,949.3	1.1%
2012	27,774.5	1.2%	2,516.6	0.0%	30,291.1	1.1%
2013	28,120.2	1.2%	2,516.6	0.0%	30,636.8	1.1%
2014	28,469.1	1.2%	2,516.6	0.0%	30,985.7	1.1%
2015	28,833.4	1.3%	2,516.6	0.0%	31,350.0	1.2%
2016	29,202.3	1.3%	2,516.6	0.0%	31,718.9	1.2%
2017	29,575.5	1.3%	2,516.6	0.0%	32,092.1	1.2%
2018	29,954.4	1.3%	2,516.6	0.0%	32,471.0	1.2%
2019	30,338.6	1.3%	2,516.6	0.0%	32,855.2	1.2%
2020	30,728.9	1.3%	2,516.6	0.0%	33,245.5	1.2%
2021	31,124.4	1.3%	2,516.6	0.0%	33,641.0	1.2%
2022	31,525.7	1.3%	2,516.6	0.0%	34,042.3	1.2%
2023	31,945.4	1.3%	2,516.6	0.0%	34,462.0	1.2%
2024	32,371.8	1.3%	2,516.6	0.0%	34,888.4	1.2%
2025	32,805.0	1.3%	2,516.6	0.0%	35,321.6	1.2%
2026	33,243.5	1.3%	2,516.6	0.0%	35,760.1	1.2%
2027	33,689.1	1.3%	2,516.6	0.0%	36,205.7	1.2%
2028	34,140.3	1.3%	2,516.6	0.0%	36,656.9	1.2%
2029	34,598.8	1.3%	2,516.6	0.0%	37,115.4	1.3%
Average Annual Growth						
2000-2009		-3.9%		-1.3%		-3.7%
2005-2009		-4.9%		-2.8%		-4.7%
2009-2014		0.4%		-0.3%		0.3%
2014-2029		1.3%		0.0%		1.2%
2009-2029		1.1%		-0.1%		1.0%

Source: FAA Forecast 2010-2030; Compiled by PB Americas, Inc.

2.2 Regional General Aviation Trends

General aviation activity trends for the region surrounding Fox Airfield can also provide an indication of the projected future aviation activity for Fox Airfield. The FAA prepares the Terminal Area Forecast (TAF) each year that provides activity forecasts by aviation facility. The TAF provides information for several airports in the County of Los Angeles, which are as follows:

- Brackett
- Burbank
- Compton
- El Monte
- Fox Airfield
- Hawthorne
- Long Beach
- Los Angeles International
- Santa Monica
- Torrance/Zamperini Field
- Van Nuys
- Whiteman

Table 2.5 presents historical and projected general aviation and military operations for the County of Los Angeles airports included in the TAF compared to total U.S. general aviation and military operations. As shown in the table, the County of Los Angeles airports' general aviation operations have decreased by an annual rate of 5.4 percent from 2000 to 2009. This compares to a decrease of 3.7 percent for the nation. County of Los Angeles' share of total U.S. general aviation and military operations from 2000 to 2009 ranged from a high of 5.0 percent in 2000 and has decreased in recent years to a low of 4.3 percent in 2009. County of Los Angeles' share of U.S. general aviation operations is projected to range from 4.1 to 4.4 percent from 2010 to 2029, averaging at 4.2 percent for the entire projection period.

Table 2.5
Historic and Projected County of Los Angeles and U.S.
General Aviation and Military Operations

Year	County of Los Angeles	% Change	U.S. (in 000s)	% Change	County Share of U.S.
2000	2,152,510		42,766.5		5.0%
2001	1,914,951	-11.0%	40,543.6	-5.2%	4.7%
2002	1,925,424	0.5%	40,716.1	0.4%	4.7%
2003	1,887,484	-2.0%	38,533.2	-5.4%	4.9%
2004	1,810,652	-4.1%	37,947.0	-1.5%	4.8%
2005	1,716,005	-5.2%	37,010.4	-2.5%	4.6%
2006	1,664,996	-3.0%	35,848.3	-3.1%	4.6%
2007	1,646,862	-1.1%	35,851.5	0.0%	4.6%
2008	1,477,357	-10.3%	34,169.4	-4.7%	4.3%
2009	1,308,866	-11.4%	30,530.9	-10.6%	4.3%
2010	1,289,961	-1.4%	29,613.8	-3.0%	4.4%
2011	1,299,970	0.8%	29,949.3	1.1%	4.3%
2012	1,311,016	0.8%	30,291.1	1.1%	4.3%
2013	1,322,183	0.9%	30,636.8	1.1%	4.3%
2014	1,333,472	0.9%	30,985.7	1.1%	4.3%
2015	1,345,240	0.9%	31,350.0	1.2%	4.3%
2016	1,357,141	0.9%	31,718.9	1.2%	4.3%
2017	1,369,166	0.9%	32,092.1	1.2%	4.3%
2018	1,381,336	0.9%	32,471.0	1.2%	4.3%
2019	1,393,643	0.9%	32,855.2	1.2%	4.2%
2020	1,406,085	0.9%	33,245.5	1.2%	4.2%
2021	1,418,672	0.9%	33,641.0	1.2%	4.2%
2022	1,431,399	0.9%	34,042.3	1.2%	4.2%
2023	1,444,263	0.9%	34,462.0	1.2%	4.2%
2024	1,457,277	0.9%	34,888.4	1.2%	4.2%
2025	1,470,439	0.9%	35,321.6	1.2%	4.2%
2026	1,483,748	0.9%	35,760.1	1.2%	4.1%
2027	1,497,205	0.9%	36,205.7	1.2%	4.1%
2028	1,510,817	0.9%	36,656.9	1.2%	4.1%
2029	1,524,578	0.9%	37,115.4	1.3%	4.1%
Average Annual Growth					
2000-2009		-5.4%		-3.7%	
2005-2009		-6.5%		-4.7%	
2009-2014		0.4%		0.3%	
2014-2029		0.9%		1.2%	
2009-2029		0.8%		1.0%	

Sources: Terminal Area Forecast; FAA Forecast 2010-2030; Compiled by PB Americas, Inc.

The TAF also provides a forecast of based aircraft at the County of Los Angeles' airports. **Table 2.6** presents a comparison of the historic and projected based aircraft at the County of Los Angeles airports' compared to the projected general aviation aircraft in the U.S. The number of based aircraft at these airports has decreased at an average annual rate of 2.0 percent from 2000 to 2009 compared to a negligible average annual increase for the nation. As also shown, County of Los Angeles' share of U.S. general aviation aircraft has decreased since 2000 and is projected to stabilize and remain steady between 1.9 percent and 2.0 percent from 2010 to 2029.

Table 2.6
Historic and Projected
County of Los Angeles Based Aircraft &
U.S. Piston & Turbine Fixed Wing Aircraft

Fiscal Year	County of Los Angeles	% Change	U.S.	% Change	County Share of U.S.
2000	4,435		190,426		2.3%
2001	4,395	-0.9%	184,392	-3.2%	2.4%
2002	4,369	-0.6%	182,830	-0.8%	2.4%
2003	4,428	1.4%	182,968	0.1%	2.4%
2004	4,274	-3.5%	190,580	4.2%	2.2%
2005	4,388	2.7%	194,099	1.8%	2.3%
2006	4,418	0.7%	191,342	-1.4%	2.3%
2007	4,403	-0.3%	196,372	2.6%	2.2%
2008	3,668	-16.7%	192,841	-1.8%	1.9%
2009	3,712	1.2%	192,730	-0.1%	1.9%
2010	3,757	1.2%	192,705	0.0%	1.9%
2011	3,799	1.1%	192,866	0.1%	2.0%
2012	3,842	1.1%	193,224	0.2%	2.0%
2013	3,887	1.2%	193,785	0.3%	2.0%
2014	3,931	1.1%	194,478	0.4%	2.0%
2015	3,977	1.2%	195,289	0.4%	2.0%
2016	4,022	1.1%	196,157	0.4%	2.1%
2017	4,070	1.2%	197,087	0.5%	2.1%
2018	4,113	1.1%	198,110	0.5%	2.1%
2019	4,165	1.3%	199,304	0.6%	2.1%
2020	4,209	1.1%	200,734	0.7%	2.1%
2021	4,255	1.1%	202,383	0.8%	2.1%
2022	4,304	1.2%	204,106	0.9%	2.1%
2023	4,356	1.2%	205,939	0.9%	2.1%
2024	4,405	1.1%	207,941	1.0%	2.1%
2025	4,454	1.1%	210,122	1.0%	2.1%
2026	4,504	1.1%	212,284	1.0%	2.1%
2027	4,554	1.1%	214,594	1.1%	2.1%
2028	4,606	1.1%	217,070	1.2%	2.1%
2029	4,659	1.2%	219,693	1.2%	2.1%
Average Annual Growth					
2000-2009		-2.0%		0.1%	
2005-2009		-4.1%		-0.2%	
2009-2014		1.2%		0.2%	
2014-2029		1.1%		0.8%	
2009-2029		1.1%		0.7%	

Sources: Terminal Area Forecast; FAA Forecast 2010-2030; Compiled by PB Americas, Inc.

2.3 Base Case Forecast

In an effort to quantify the anticipated level of aircraft activity for Fox Airfield, a base case forecast was developed for the 20-year planning period (2010-2029). The forecast includes projections for aircraft operations, based aircraft and fleet mix at Fox Airfield. The primary methodology used to prepare this forecast was a review of historic growth rates in aviation activity and a comparison of Fox Airfield's aviation activity to the

general aviation activity of the region and the nation. Regression analyses were used to determine if there was a positive correlation between the aviation activity at Fox Airfield to certain local socioeconomic variables such as population, income, and/or employment. If the relationship between these data items is positive, an equation can be developed and applied to already prepared projections of the socioeconomic data to predict the aviation activity at Fox Airfield. However, the relationship of the data was not positively correlated; therefore, regression analysis was not used to develop these forecasts. Because regression analysis was not used, comparisons of historic aviation activity by type were closely examined to prepare the aviation forecasts contained herein. Section 2.3.1 and 2.3.2 provide additional details regarding the aviation activity forecasts.

2.3.1 Aircraft Operations

Table 2.7 presents historic airport operations by type. As shown in the table, total operations have decreased at an average annual rate of 3.4 percent from 2000 to 2009 and in recent years (2005 to 2009), the average annual rate of decrease has been 5.7 percent. Itinerant operations have decreased at a slower rate than local operations due to the increases in air taxi and military operations. Local operations have decreased at an average annual rate of 11.1 percent from 2005 to 2009 and the share of local operations has decreased from 52 percent to 41 percent of total operations during the same period.

Table 2.7
Historic Fox Airfield Operations by Type

	ITINERANT				LOCAL			TOTAL				
Year	Air Taxi	General Aviaton	Military	Total Itinerant	General Aviaton	Military	Total Local	Air Taxi	General Aviaton	Military	Total Operations	% Change
2000	1,933	33,812	315	36,060	43,894	440	44,334	1,933	77,706	755	80,394	
2001	2,815	32,349	469	35,633	40,596	447	41,043	2,815	72,945	916	76,676	-4.6%
2002	2,062	37,402	503	39,967	39,904	510	40,414	2,062	77,306	1,013	80,381	4.8%
2003	1,388	37,681	750	39,819	44,058	552	44,610	1,388	81,739	1,302	84,429	5.0%
2004	1,548	37,030	630	39,208	39,289	412	39,701	1,548	76,319	1,042	78,909	-6.5%
2005	1,707	33,877	520	36,104	38,063	571	38,634	1,707	71,940	1,091	74,738	-5.3%
2006	1,820	33,754	547	36,121	32,239	909	33,148	1,820	65,993	1,456	69,269	-7.3%
2007	1,762	30,906	480	33,148	32,029	1,028	33,057	1,762	62,935	1,508	66,205	-4.4%
2008	1,491	29,409	709	31,609	27,455	538	27,993	1,491	56,864	1,247	59,602	-10.0%
2009	1,706	31,552	649	33,907	25,024	328	25,352	1,706	56,576	977	59,259	-0.6%
Average Annual Growth												
2000-2009	-1.4%	-0.8%	8.4%	-0.7%	-6.1%	-3.2%	-6.0%	-1.4%	-3.5%	2.9%	-3.3%	
2005-2009	0.0%	-1.8%	5.7%	-1.6%	-10.0%	-12.9%	-10.0%	0.0%	-5.8%	-2.7%	-5.6%	

Source: Terminal Area Forecast; Compiled by PB Americas, Inc.

Table 2.8 presents a comparison of Fox Airfield's total operations to the County of Los Angeles airports and the U.S. from 2000 to 2009. As shown, the Fox Airfield's share of the County's operations has increased over time ranging from 3.73 percent in 2000 to 4.52 percent in 2009. Fox Airfield's share of U.S. general aviation operations has ranged from a low of 0.174 percent in 2008 to a high of 0.219 percent in 2003. The

increase in Fox Airfield's share of County of Los Angeles' activity versus the decrease in the share of U.S. activity indicates a stronger relationship to local traffic over the traffic of the nation.

Table 2.8
Historic Fox Airfield, County of Los Angeles, & U.S.
General Aviation Operations

Year	Fox Airfield	% Change	County of Los Angeles	% Change	U.S. (in 000s)	% Change	Fox Airfield Share of County	Fox Airfield Share of U.S.
2000	80,394		2,152,510		42,766.5		3.73%	0.188%
2001	76,676	-4.6%	1,914,951	-11.0%	40,543.6	-5.2%	4.00%	0.189%
2002	80,381	4.8%	1,925,424	0.5%	40,716.1	0.4%	4.17%	0.197%
2003	84,429	5.0%	1,887,484	-2.0%	38,533.2	-5.4%	4.47%	0.219%
2004	78,909	-6.5%	1,810,652	-4.1%	37,947.0	-1.5%	4.36%	0.208%
2005	74,738	-5.3%	1,716,005	-5.2%	37,010.4	-2.5%	4.36%	0.202%
2006	69,269	-7.3%	1,664,996	-3.0%	35,848.3	-3.1%	4.16%	0.193%
2007	66,205	-4.4%	1,646,862	-1.1%	35,851.5	0.0%	4.02%	0.185%
2008	59,602	-10.0%	1,477,357	-10.3%	34,169.4	-4.7%	4.03%	0.174%
2009	59,259	-0.6%	1,308,866	-11.4%	30,530.9	-10.6%	4.53%	0.194%
Average Annual Growth								
2000-2009		-3.3%		-5.4%		-3.7%		
2005-2009		-5.6%		-6.5%		-4.7%		

Source: Terminal Area Forecasts; FAA Forecasts; Compiled by PB Americas, Inc.

Projections of operations were determined by using Fox Airfield's share of County of Los Angeles and U.S. operations applied to the projected operations forecast by the FAA. Because the historical data indicated a stronger relationship to local traffic, projections of local traffic were weighted more heavily than national traffic in the preparation of the activity forecasts. **Table 2.9** presents the projected operations at the airport compared to that of the County of Los Angeles and the U.S. As shown, the average annual growth rate in Fox Airfield's operations is projected to be 0.7 percent from 2009 to 2014 and 1.7 percent from 2014 to 2029.

Table 2.9
Projected Fox Airfield, County of Los Angeles, & U.S.
General Aviation Operations

Year	Fox Airfield	% Change	County of Los Angeles	% Change	U.S. (in 000s)	% Change	Fox Airfield Share of County	Fox Airfield Share of U.S.
2009	59,259		1,308,866		30,530.9		4.53%	0.194%
2010	58,700	-0.9%	1,289,961	-1.4%	29,613.8	-3.0%	4.55%	0.198%
2011	59,300	1.0%	1,299,970	0.8%	29,949.3	1.1%	4.56%	0.198%
2012	59,900	1.0%	1,311,016	0.8%	30,291.1	1.1%	4.57%	0.198%
2013	60,600	1.2%	1,322,183	0.9%	30,636.8	1.1%	4.58%	0.198%
2014	61,400	1.3%	1,333,472	0.9%	30,985.7	1.1%	4.60%	0.198%
2015	62,200	1.3%	1,345,240	0.9%	31,350.0	1.2%	4.62%	0.198%
2016	63,100	1.4%	1,357,141	0.9%	31,718.9	1.2%	4.65%	0.199%
2017	64,000	1.4%	1,369,166	0.9%	32,092.1	1.2%	4.67%	0.199%
2018	65,000	1.6%	1,381,336	0.9%	32,471.0	1.2%	4.71%	0.200%
2019	66,000	1.5%	1,393,643	0.9%	32,855.2	1.2%	4.74%	0.201%
2020	67,000	1.5%	1,406,085	0.9%	33,245.5	1.2%	4.77%	0.202%
2021	68,100	1.6%	1,418,672	0.9%	33,641.0	1.2%	4.80%	0.202%
2022	69,300	1.8%	1,431,399	0.9%	34,042.3	1.2%	4.84%	0.204%
2023	70,600	1.9%	1,444,263	0.9%	34,462.0	1.2%	4.89%	0.205%
2024	71,900	1.8%	1,457,277	0.9%	34,888.4	1.2%	4.93%	0.206%
2025	73,300	1.9%	1,470,439	0.9%	35,321.6	1.2%	4.98%	0.208%
2026	74,700	1.9%	1,483,748	0.9%	35,760.1	1.2%	5.03%	0.209%
2027	76,200	2.0%	1,497,205	0.9%	36,205.7	1.2%	5.09%	0.210%
2028	77,700	2.0%	1,510,817	0.9%	36,656.9	1.2%	5.14%	0.212%
2029	79,400	2.2%	1,524,578	0.9%	37,115.4	1.3%	5.21%	0.214%
Average Annual Growth								
2009-2014		0.7%		0.4%		0.3%		
2014-2029		1.7%		0.9%		1.2%		
2009-2029		1.5%		0.8%		1.0%		

Source: Terminal Area Forecasts; FAA Forecasts; PB Americas, Inc.

The FAA TAF provides projections for Fox Airfield's activity by type of operation. The operations forecasts for this master plan update were allocated using the same share as those in the FAA TAF. **Table 2.10** presents the operations forecast by type of operation. As shown, air taxi and military operations are projected to remain constant during the projection period, with general aviation operations driving the operations growth. The share of local operations is projected to decrease slightly during the projection period from 41 percent in 2009 to 39 percent in 2029, with itinerant operations' share increasing from 59 percent to 61 percent during the same period.

Table 2.10
Projected Fox Airfield Operations by Type

Year	ITINERANT				LOCAL			TOTAL				% Change
	Air Taxi	General Aviaton	Military	Total Itinerant	General Aviaton	Military	Total Local	Air Taxi	General Aviaton	Military	Total Operations	
2009	1,706	31,552	649	33,907	25,024	328	25,352	1,706	56,576	977	59,259	
2010	2,120	34,140	770	37,030	21,340	330	21,670	2,120	55,480	1,100	58,700	-0.9%
2011	2,120	34,440	770	37,330	21,640	330	21,970	2,120	56,080	1,100	59,300	1.0%
2012	2,120	34,750	770	37,640	21,930	330	22,260	2,120	56,680	1,100	59,900	1.0%
2013	2,120	35,120	770	38,010	22,260	330	22,590	2,120	57,380	1,100	60,600	1.2%
2014	2,130	35,530	780	38,440	22,620	340	22,960	2,130	58,150	1,120	61,400	1.3%
2015	2,140	35,950	780	38,870	22,990	340	23,330	2,140	58,940	1,120	62,200	1.3%
2016	2,150	36,440	780	39,370	23,390	340	23,730	2,150	59,830	1,120	63,100	1.4%
2017	2,160	36,910	790	39,860	23,800	340	24,140	2,160	60,710	1,130	64,000	1.4%
2018	2,170	37,450	790	40,410	24,250	340	24,590	2,170	61,700	1,130	65,000	1.6%
2019	2,190	37,970	800	40,960	24,700	340	25,040	2,190	62,670	1,140	66,000	1.5%
2020	2,200	38,500	800	41,500	25,150	350	25,500	2,200	63,650	1,150	67,000	1.5%
2021	2,210	39,090	810	42,110	25,640	350	25,990	2,210	64,730	1,160	68,100	1.6%
2022	2,230	39,740	810	42,780	26,170	350	26,520	2,230	65,910	1,160	69,300	1.8%
2023	2,250	40,440	820	43,510	26,740	350	27,090	2,250	67,180	1,170	70,600	1.9%
2024	2,270	41,120	830	44,220	27,320	360	27,680	2,270	68,440	1,190	71,900	1.8%
2025	2,290	41,880	840	45,010	27,930	360	28,290	2,290	69,810	1,200	73,300	1.9%
2026	2,310	42,640	840	45,790	28,550	360	28,910	2,310	71,190	1,200	74,700	1.9%
2027	2,340	43,420	850	46,610	29,220	370	29,590	2,340	72,640	1,220	76,200	2.0%
2028	2,360	44,230	860	47,450	29,880	370	30,250	2,360	74,110	1,230	77,700	2.0%
2029	2,390	45,130	870	48,390	30,630	380	31,010	2,390	75,760	1,250	79,400	2.2%
Average Annual Growth												
2009-2014	4.5%	2.4%	3.7%	2.5%	-2.0%	0.7%	-2.0%	4.5%	0.6%	2.8%	0.7%	
2014-2029	0.8%	1.6%	0.7%	1.5%	2.0%	0.7%	2.0%	0.8%	1.8%	0.7%	1.7%	
2009-2029	1.7%	1.8%	1.5%	1.8%	1.0%	0.7%	1.0%	1.7%	1.5%	1.2%	1.5%	

Source: Terminal Area Forecast; Compiled by PB Americas, Inc.

2.3.2 Based Aircraft

As previously mentioned, the U.S. general aviation industry has experienced a marked decrease in aircraft shipments in the last 10 years. In addition, the FAA forecasts extremely modest growth in the number of based general aviation aircraft during the next 30 years. Based aircraft at Fox Airfield were forecast using an operations per based aircraft estimate, with Fox Airfield's share of based aircraft for the County of Los Angeles and the U.S. used as a check for reasonableness. **Table 2.11** presents the historic and forecast based aircraft statistics for Fox Airfield. As shown in the table, the number of operations per based aircraft has ranged from 307 in 2000 to a high of 422 in 2003. For the last five years, the average number of operations per based aircraft has been 350. In addition, Fox Airfield's share of the County of Los Angeles' based aircraft has remained consistent (between 4.4 percent and 4.8 percent). The number of based aircraft at Fox Airfield is projected to increase from 163 in 2009 to 227 in 2029 or an average of 3.2 aircraft each year. This increase results in Fox Airfield's share of the County of Los Angeles' based aircraft ranging from 4.4 percent to 4.9 percent, which is consistent with historical levels.

Table 2.11
Historic and Projected Based Aircraft
(Fox Airfield, County of Los Angeles, & U.S.)

Year	Operations	Based Aircraft	Ops per Based	County of Los Angeles	U.S.	Fox Airfield Share of County	Fox Airfield Share of U.S.
2000	80,394	262	307	4,435	190,426	5.9%	0.14%
2001	76,676	198	387	4,395	184,392	4.5%	0.11%
2002	80,381	198	406	4,369	182,830	4.5%	0.11%
2003	84,429	200	422	4,428	182,968	4.5%	0.11%
2004	78,909	198	399	4,274	190,580	4.6%	0.10%
2005	74,738	211	354	4,388	194,099	4.8%	0.11%
2006	69,269	211	328	4,418	191,342	4.8%	0.11%
2007	66,205	197	336	4,403	196,372	4.5%	0.10%
2008	59,602	161	370	3,668	192,841	4.4%	0.08%
2009	59,259	163	364	3,712	192,730	4.4%	0.08%
2010	58,700	167	351	3,757	192,705	4.4%	0.09%
2011	59,300	169	351	3,799	192,866	4.4%	0.09%
2012	59,900	171	350	3,842	193,224	4.5%	0.09%
2013	60,600	173	350	3,887	193,785	4.5%	0.09%
2014	61,400	175	351	3,931	194,478	4.5%	0.09%
2015	62,200	177	351	3,977	195,289	4.5%	0.09%
2016	63,100	180	351	4,022	196,157	4.5%	0.09%
2017	64,000	183	350	4,070	197,087	4.5%	0.09%
2018	65,000	185	351	4,113	198,110	4.5%	0.09%
2019	66,000	188	351	4,165	199,304	4.5%	0.09%
2020	67,000	191	351	4,209	200,734	4.5%	0.10%
2021	68,100	194	351	4,255	202,383	4.6%	0.10%
2022	69,300	198	350	4,304	204,106	4.6%	0.10%
2023	70,600	201	351	4,356	205,939	4.6%	0.10%
2024	71,900	205	351	4,405	207,941	4.7%	0.10%
2025	73,300	209	351	4,454	210,122	4.7%	0.10%
2026	74,700	213	351	4,504	212,284	4.7%	0.10%
2027	76,200	217	351	4,554	214,594	4.8%	0.10%
2028	77,700	222	350	4,606	217,070	4.8%	0.10%
2029	79,400	227	350	4,659	219,693	4.9%	0.10%

Sources: Terminal Area Forecasts, FAA Forecast, PB Americas, Inc.

2.3.3 Aircraft Fleet Mix (Based and Operational)

Table 2.12 presents a comparison of the historic aircraft fleet mix for 2001 and 2009. As shown, since 2001 there have been shifts in the fleet mix. The distribution of single engine aircraft has declined while the distribution of jets and helicopters has increased.

Table 2.12
Historic Aircraft Fleet Mix

	2001				2009			
	Airport	% Distr	U.S.	% Distr	Airport	% Distr	U.S.	% Distr
Single Engine	175	76.8%	145,034	78.7%	143	87.2%	144,745	75.1%
Multi Engine	40	17.5%	18,192	9.9%	14	8.5%	17,351	9.0%
Jet	12	5.3%	14,383	7.8%	4	2.4%	20,428	10.6%
Helicopter	1	0.4%	6,783	3.7%	3	1.8%	10,206	5.3%
TOTAL	**228**	**100.0%**	**184,392**	**100.0%**	**164**	**100.0%**	**192,730**	**100.0%**

Sources: FAA Forecast; SCAG Aviation Report, 2002; FAA Form 5010-1; Compiled by PB Americas, Inc.

The projected aircraft fleet mix for Fox Airfield was estimated by comparing the trends of the FAA's forecasted fleet mix to the trends at Fox Airfield. In general, the FAA forecast indicates decreases in the overall share of single-engine and multi-engine aircraft with increases in the share of jets and helicopters. These same trends were applied to determine the projected aircraft fleet mix, which is presented in **Table 2.13**. As shown, the combined percentage distribution for single-engine and multi-engine aircraft is projected to decrease from 95.7 percent in 2009 to 77.1 percent in 2029. The percentage distribution of jets and helicopters is projected to increase from 4.2 percent in 2009 to 22.9 percent in 2029.

Table 2.13
Projected Aircraft Fleet Mix

	Single Engine	Multi Engine	Jet	Helicopter	Total
2009	143	14	4	3	164
2014	142	15	9	9	175
2019	145	15	13	15	188
2024	150	15	18	21	205
2029	160	15	25	27	227
Percentage Distribution					
2009	87.2%	8.5%	2.4%	1.8%	100.0%
2014	81.3%	8.6%	5.0%	5.1%	100.0%
2019	77.0%	8.0%	7.0%	8.0%	100.0%
2024	73.4%	7.4%	9.0%	10.2%	100.0%
2029	70.4%	6.7%	11.0%	11.9%	100.0%

Source: PB Americas, Inc.

The forecast distribution of aircraft for Fox Airfield was applied to the projected local operations and the FAA's distribution of aircraft was applied to the itinerant operations to determine the distribution of operations by aircraft type during the projection period. **Table 2.14** presents the projected operations distribution for the forecast period. As shown, the distribution of single-engine and multi-engine operations decrease from 89.1 percent in 2009 to 75.6 percent in 2029, while the distribution of jet and helicopter operations increase from 10.9 percent in 2009 to 24.4 percent in 2029.

Table 2.14
Projected Operations Distribution

	Single Engine	Multi Engine	Jet	Helicopter	Total
2009	47,571	5,217	4,212	2,259	59,259
2014	46,780	5,259	5,788	3,573	61,400
2019	48,412	5,284	7,417	4,887	66,000
2024	51,033	5,290	9,357	6,221	71,900
2029	54,723	5,317	11,748	7,612	79,400
Percentage Distribution					
2009	80.3%	8.8%	7.1%	3.8%	100.0%
2014	76.2%	8.6%	9.4%	5.8%	100.0%
2019	73.4%	8.0%	11.2%	7.4%	100.0%
2024	71.0%	7.4%	13.0%	8.7%	100.0%
2029	68.9%	6.7%	14.8%	9.6%	100.0%

Source: PB Americas, Inc.

2.3.4 Peak Aircraft Operations

To plan for adequate handling of activity at an airport, a planning day incorporates the average day of the peak month. The peak hour activity on that day is also a significant planning criterion. **Table 2.15** presents a summary of the operations activity at Fox Airfield for 2009. As shown, September was the peak month for 2009, with a 10.3 percent share of total activity.

Table 2.15
2009 Fox Airfield Operations by Month

Month	Operations	Share
January	6,019	10.2%
February	3,718	6.3%
March	4,168	7.0%
April	3,125	5.3%
May	4,633	7.8%
June	5,302	8.9%
July	4,968	8.4%
August	5,758	9.7%
September	6,110	10.3%
October	5,504	9.3%
November	4,379	7.4%
December	5,575	9.4%
TOTAL	**59,259**	**100.0%**

Assuming a month has 30.5 days results in the average day, peak month estimates presented in **Table 2.16**. Average day peak month activity increases form 200 operations per day in 2009 to 237 operations per day in 2029.

Table 2.16
Summary of Peak Activity

	2009	2014	2019	2024	2029
Annual Operations	59,259	61,400	66,000	71,900	79,400
Peak Month @10.3%	6,110	6,331	6,805	7,413	8,187
Average Day Peak Month	200	208	223	243	268
Arrivals					
Itinerant	57	65	69	75	82
Local	43	39	42	47	52
Departures					
Itinerant	57	65	69	75	82
Local	43	39	42	47	52
By Operation Type					
Air Taxi	6	7	7	8	8
General Aviation	191	197	212	231	256
Military	3	4	4	4	4
Total	200	208	223	243	268
By Aircraft Type					
Single Engine	161	153	164	172	185
Multi Engine	18	17	18	18	18
Jet	14	23	25	32	40
Helicopter	8	15	17	21	26
Total	200	208	223	243	268

Source: PB Americas, Inc.

2.4 Potential Air Carrier Service

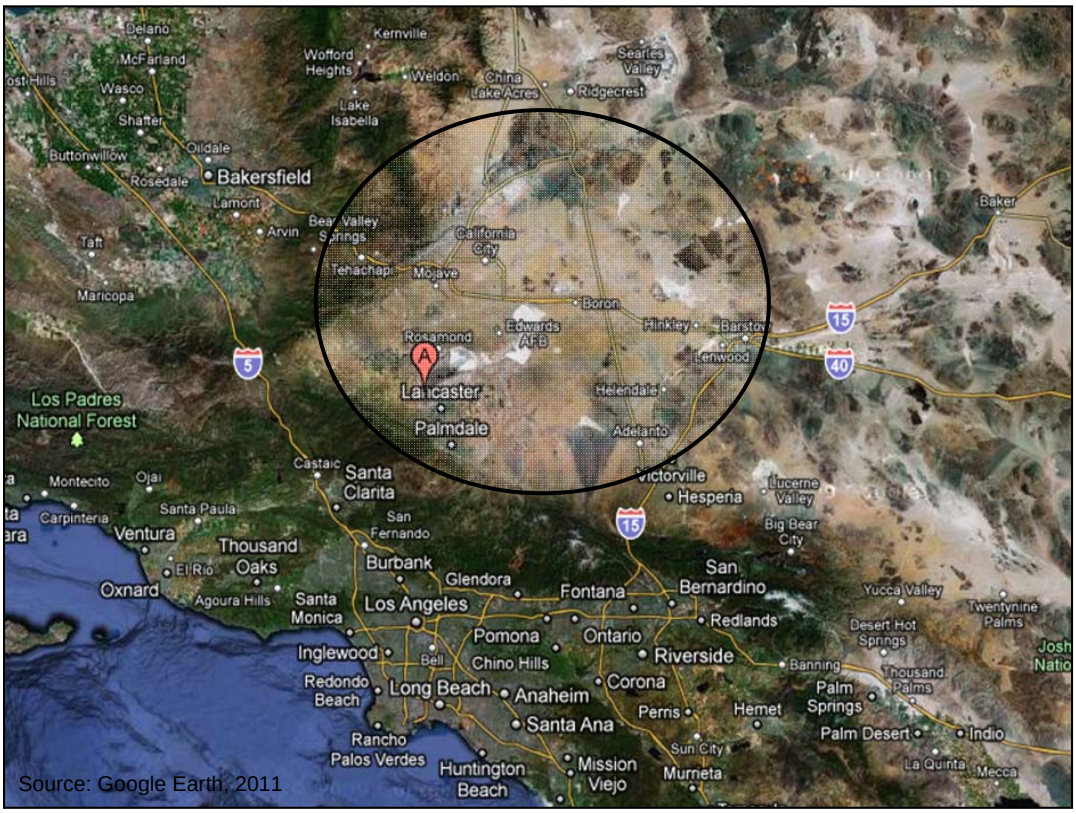
It is possible that sometime during the forecast period, a commercial carrier will approach airport management or the County of Los Angeles to provide air carrier service at the airport or the County of Los Angeles may decide to promote and develop the airport to accommodate air carrier service. Air carrier service is viable at Fox Airfield. In fact, a company in the top 50 Fortune Magazine's top 100 companies recently began utilizing the airport with a corporate charter rather than using commercial flights due to its convenient location and size that allows for the timely processing of flights. This section focuses on the activity that would be associated with potential air carrier service. Airport certification and facility requirements related to potential air carrier service are discussed in subsequent chapters.

Two benchmarking analyses were conducted to determine the characteristics of the potential air carrier service at Fox Airfield. The following sub sections provide the details of these analyses.

2.4.1 Potential Air Trade Area

Commercial air service is supported by the population in an airport's air trade area, which is the primary geographical area served by an airport. To determine the possibility and level of such air carrier service, the potential air trade area of Fox Airfield was determined, followed by a socioeconomic analysis of the potential air trade area. The potential air trade area is shown in F**igure 2.1**.

Figure 2.1
Potential Air Trade Area



The characteristics of Fox Airfield's air trade area were used to select commercial service airports with demographics similar to Fox Airfield. The levels of commercial air service at these airports were then used to determine the level of commercial air service that could be supported by the potential air trade area determined for Fox Airfield.

Fox Airfield is located in the northern part of the County of Los Angeles. The northern part of the County of Los Angeles is bordered by Kern County to the north, Ventura County to the east, and San Bernardino County to the west. The potential air trade area for Fox Airfield includes the northern part of the County of Los Angeles, portions of southern Kern County, northeastern Ventura County, and southwestern San Bernardino County.

The populations of the incorporated areas located in the potential air trade area are presented in **Table 2.17.** Because the incorporated areas do not include all of the potential air trade area, an additional allowance of 25 percent of the population of the incorporated areas was also included. As shown in the table, the estimated population of the potential air trade area is approximately 960,000.

Table 2.17
Population of Potential Air Trade Area

Area	2009 Population
Santa Clarita	169,000
Lancaster	146,000
Palmdale	144,000
Victorville	111,000
Hesperia	86,000
Apple Valley	70,000
Barstow	25,000
California City	15,000
Total	766,000
Unaccounted Areas [1]	192,000
TOTAL AIR TRADE AREA	***958,000***

[1] Allowance for areas not included in population statistics.

Source: U.S. Bureau of the Census; Complied by PB Americas, Inc.

There are many communities in the United States that have a population in its air trade area similar to the potential air trade area of Fox Airfield. **Table 2.18** presents a comparison of the commercial air service provided at airports with similar sized air trade areas.

Table 2.18
Comparison of Air Service
Airports with Similar Population

MSA	Primary Airport	Population	Daily Departures	Destinations	Airlines
Bakersfield, CA	Meadows Field Airport	807,407	9	4	United Express, USAirways Express
Baton Rouge, LA	Baton Rouge International	786,947	40	6	American Eagle, Continental, Delta, USAirways
Dayton, OH	Dayton International	835,063	60	15	Air Canada, AirTran, American, Continental, Delta, United, USAirways
Fresno, CA	Fresno Yosemite International	915,267	40	10	Alaska, Allegiant, American, Delta, United, USAirways
Grand Rapids-Wyoming, MI	Gerald R. Ford International	778,009	50	16	Air Canada, AirTran, American, Continental, Delta, United

Sources: Individual Airport Websites; Compiled by PB Americas, Inc.

As shown in the table, airports with similar sized air trade areas to the potential air trade area of Fox Airfield have the capability of supporting commercial air service at varying levels of destinations and departures. It is also important to note that several of the airports listed (Dayton, Grand Rapids, and Baton Rouge) are also part of the secondary air trade area for other larger airports that are nearby, which is also similar to Fox Airfield.

2.4.2 Comparable Airports Analysis

The type of airport is another characteristic that can determine the type of air service that is provided at an airport. Other smaller airports in California within relatively close proximity to larger airports were identified to serve as comparable airports to Fox Airfield. These airports were chosen because they have had less than 50,000 annual enplanements in the last five years and are located in California within a reasonable driving distance of another larger commercial service airport. **Table 2.19** presents the list of comparable airports and their proximity in terms of driving time to/from the nearest commercial service airports.

Table 2.19
Comparable Airports

Airport	Driving Time To/From (hrs:minutes)	
Fox Airfield	• Los Angeles International	1:30
	• Bob Hope (Burbank)	1:00
	• Ontario International	1:45
Palmdale Regional	• Los Angeles International	1:20
	• Bob Hope (Burbank)	1:00
	• Ontario International	1:30
Chico Municipal	• Sacramento International	1:40
Oxnard	• Los Angeles International	1:30
	• Bob Hope (Burbank)	1:10
	• Santa Barbara International	1:00
Stockton Metropolitan	• San Francisco International	1:30
	• Oakland International	1:00
McClellan-Palomar	• San Diego International	1:00

Source: Terminal Area Forecasts, www.mapquest.com; Compiled by PB Americas, Inc.

The following bullets present additional information regarding the history of commercial air service at the comparable airports selected.

- **Palmdale Regional Airport** is currently not served by a commercial service air carrier. Palmdale is located approximately 15 miles or 20 minutes driving time from Fox Airfield, making it an excellent comparable airport for the local market. Since 1990, several regional express carriers have initiated and subsequently discontinued service at the airport, providing service to Los Angeles, San Francisco, and Las Vegas. Enplanements at the airport were approximately 11,000 in 2008 and have been as high as 26,000 in 1990 Palmdale is operated by Los Angeles World Airports (LAWA); LAWA also operates Ontario and Los Angeles International Airports. Because of competing interest with these other LAWA airports, management has not been dedicated to the success of commercial service at Palmdale.

- **Chico Municipal Airport** is currently served by United Express carrier SkyWest providing four flights to San Francisco daily on Embraer Brasilia turbo prop commuter aircraft with 28 seats. In 2008 enplanements were approximately 25,000 resulting in an average load factor of approximately 60 percent. Enplanements have been as high as approximately 33,000 in 2000; however, since then have averaged about 20,000 each year.

- **Oxnard Airport** is currently not served by a commercial service air carrier. Enplanements have been as high as 64,000 in 1991, but decreased to 17,500 in 2008. The airport was been previously served by American Eagle, America West Express, California Air Shuttle and was most recently, was served by United Express, which terminated service to Los Angeles International in June 2010.

- **Stockton Metropolitan Airport** is currently served by Allegiant Air providing service to Long Beach (initiated July 2010) and Las Vegas (initiated June 2006) on McDonnell Douglas (MD) 80 aircraft. According to the airports most recent master

plan, Allegiant has experienced load factors between 70 percent and 85 percent since the initiation of service in 2006. Enplanements have fluctuated greatly at the airport, but the initiation of service by Allegiant Air has resulted in year over year increases since 2006.

- **McClellan-Palomar Airport** is currently served by United Express serving Los Angeles International with an average of five daily flights on Embraer Brasilia turbo prop commuter aircraft with 28 seats. With enplanements at approximately 39,000 in 2008, the load factor for this service is approximately 50 percent. Enplanements have been as high as 80,000 in 2000 but have decreased steadily to the current level of approximately 40,000.

As discussed in the comparable airport descriptions above, many airports that are not the primary airport in a particular region can sustain commercial air service. The primary characteristic of this type of air service includes nonstop flights to larger connecting hubs and destination markets. The aircraft for the destination markets are typically larger jet aircraft, while the aircraft used to serve the connecting hub markets are typically between 30 and 50 seat regional aircraft.

2.4.3 Potential Commercial Air Service Activity Forecast

Conclusions that can be drawn from these two benchmarking analyses presented above frame the assumptions used to develop the forecast for potential commercial air service at Fox Airfield. The primary conclusions are the following:

- Markets that are similar in size to the potential Fox Airfield air trade area sustain commercial air service at moderate levels; therefore, there is potential for commercial service at Fox Airfield.

- Airports that are not the primary airport in a region are capable of sustaining commercial air service that provides connections to larger hubs and direct flights to destination markets.

Given analyses presented earlier, any commercial air carrier service initiated at Fox Airfield will likely be on regional aircraft that has between 25 and 50 seats. The destinations for commercial air carrier service could include connections on regional aircraft to the international airports in Los Angeles, San Francisco, Seattle, Phoenix, and Denver. In addition, service to a destination market such as Las Vegas could also be provided on larger jet aircraft similar to service provided by Allegiant in Stockton.

It is assumed that air carrier service could potentially be initiated within two years. This would allow time to get the proper certification from the FAA, as well as develop the facilities that would be required to accommodate this type of commercial air service. The following lists the assumptions used to develop the air carrier forecast at Fox Airfield.

- **Daily Departures/Aircraft** - Frequencies will likely begin at two per day to test the viability of the market prior to a scheduled air carrier expanding service. In the beginning it is assumed that one flight will be on a regional jet and one flight on a turbo prop regional aircraft resulting in average seats per departure of 39. The number of these types of daily flights would increase to 10 over the forecast period with the turbo prop aircraft being gradually replaced by regional jet aircraft with more seats.

  In addition, in the third year, a daily flight on a 125 seat jet aircraft would be initiated to a destination market. The daily flights and aircraft utilized for this service would remain constant during the forecast period.

- **Load Factor** (The percentage of available seats that are occupied by passengers) – Load factors would be assumed at 50 percent during the first year of service increasing gradually to 70 percent, which is the industry standard, remaining constant until the number of daily flights reaches 10 regional jet flights and 1 jet flight a day. At that point, load factors gradually increase further to 80 percent for the remainder of the forecast period.

Given these assumptions, the first year of commercial air carrier service would result in approximately 1,500 additional operations per year. Given the assumed aircraft size and frequency, enplanements would be approximately 14,000 for the initial year of service at a 50 percent load factor.

Table 2.20 presents the potential air carrier service forecast of operations, daily departures, load factors, and enplanements associated with commercial air carrier activity.

Table 2.20
Projected Potential
Air Carrier Service Activity

Year	Operations	Average Daily Departures	Average Load Factor	Enplanements
2010	-	-	0%	-
2011	-	-	0%	-
2012	1,460	2	50%	14,000
2013	2,190	3	60%	23,200
2014	3,650	5	70%	70,500
2015	4,380	6	70%	77,700
2016	5,110	7	70%	84,800
2017	6,570	9	75%	112,200
2018	8,030	11	75%	133,600
2019	8,030	11	75%	139,600
2020	8,030	11	75%	145,600
2021	8,030	11	75%	151,700
2022	8,030	11	75%	157,700
2023	8,030	11	75%	163,700
2024	8,030	11	76%	172,000
2025	8,030	11	77%	174,300
2026	8,030	11	78%	176,500
2027	8,030	11	79%	178,800
2028	8,030	11	80%	181,000
2029	8,030	11	81%	183,300

Source: PB Americas, Inc.

The peak activity would be impacted by the initiation of air carrier service at Fox Airfield. **Table 2.21** presents the summary of peak activity for the air carrier service forecast.

Table 2.21
Summary of Peak Activity
Potential Air Carrier Service Forecast

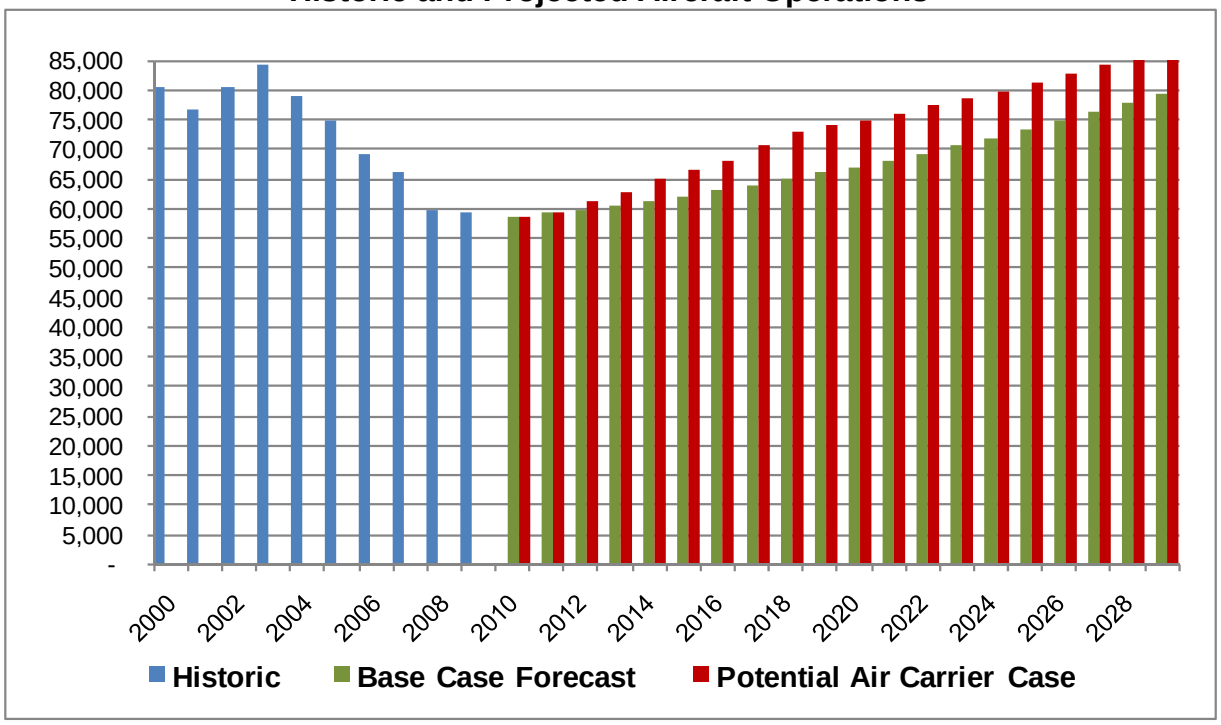
	2009	2014	2019	2024	2029
Annual Operations	59,259	65,050	74,030	79,930	87,430
Peak Month @10.3%	6,110	6,636	7,476	8,084	8,858
Average Day Peak Month	200	218	245	265	290
Arrivals					
Itinerant	57	70	80	86	93
Local	43	39	42	47	52
Departures					
Itinerant	57	70	80	86	93
Local	43	39	42	47	52
By Operation Type					
Air Carrier	-	10	22	22	22
Air Taxi	6	7	7	8	8
General Aviation	191	197	212	231	256
Military	3	4	4	4	4
Total	200	218	245	265	290
By Aircraft Type					
Single Engine	161	153	164	172	185
Multi Engine	18	17	18	18	18
Jet	14	33	47	54	62
Helicopter	8	15	17	21	26
Total	200	218	245	265	290

Source: PB Americas, Inc.

2.5 Forecast Summary

A summary of the historic and projected aviation demand for Fox Airfield is graphically presented in **Table 2.22**.

Table 2.22
Historic and Projected Aircraft Operations



A summary of the forecast, including operations, peak day operations, and based aircraft for each of the five year milestones of the forecast are presented in **Table 2.23**.

Table 2.23
Forecast Summary

	2009	2014	2019	2024	2029
Base Case					
Annual Operations	59,259	61,400	66,000	71,900	79,400
Average Day, Peak Month Ops	200	208	223	243	268
Based Aircraft	163	175	188	205	227
Potential Air Carrier Case					
Annual Operations	59,259	65,050	74,030	79,930	87,430
Average Day, Peak Month Ops	200	218	245	265	291
Based Aircraft	163	175	188	205	227

Source: PB Americas, Inc.

Based on the forecasts presented in this chapter, the future of Fox Airfield is optimistic. Fox Airfield has very good potential for air carrier service and is a desirable location for other aviation related operators such as a foreign airline and helicopter training centers. With these new operators comes the need to increase the landside and airside development, such as passenger processing/handling facilities, hangars, aircraft parking areas, classrooms, and dormitories. In conclusion, the projected forecasts for Fox Airfield indicated a steady annual increase in aircraft activity throughout the planning period. Chapter 4.0 Facility Requirements will translate the forecasts presented in this chapter into the number, type and location of future facilities necessary to support the anticipated demand described in Chapter 3.0 Demand/Capacity Analysis.

Chapter 3

Demand/Capacity Analysis

3.0 DEMAND/CAPACITY ANALYSIS

The process of determining Fox Airfield's capacity requires the use of FAA planning standards. For purposes of this evaluation, capacity refers to the ability for the runway and associated taxiways to accommodate the anticipated level of aircraft activity throughout the 20-year planning period. It should be noted that the projected demand does not drive the development of facilities at the Fox Airfield. Instead, it will be the actual demand that determines when new facilities are required. Should aircraft activity increase faster than forecasted, then facility improvements should be accelerated. Likewise, should aircraft activity lag, facility improvements may be deferred or even removed from planned improvements. The use of the forecast of aviation activity indentified in Chapter 2.0 does not commit the County of Los Angeles to build facilities associated with demand, but it does provide the County of Los Angeles with a schedule of proposed development projects for planning purposes.

This chapter is organized in five sections, including:

- Airfield Capacity Requirements
- Hourly and Annual Capacity
- Annual Service Volume
- Demand vs. Capacity

3.1 Airfield Capacity Requirements

Airfield capacity is a measure of the maximum number of aircraft operations that can be accommodated on the airport or airport component within one hour. Capacity of other airport components could be calculated separately; however, for purposes of the Fox Airfield Master Plan Update, the existing airfield configuration will be used to determine the airfield capacity. Hourly airfield capacity is used to evaluate the need and timing of airport development projects. Airfield capacity is typically measured using the throughput capacity method. Throughput capacity is derived from computer models used by the FAA to analyze airport capacity and aircraft delay (for larger commercial airports).

To calculate both Visual Flight Rules (VFR) and Instrument Flight Rules (IFR) capacity for the Fox Airfield, the FAA's Airport Design for Microcomputers Software (version 4.2D) was used. This program is particularly useful for airports the size and configuration of Fox Airfield. Airports having a complex airfield often require simulation to determine the actual VFR and IFR capacities for each runway configuration. **Table 3.1** provides a breakdown of the FAA's aircraft classifications for airport capacity and delay. Aircraft class is separated into four categories, A through D to represent the level of wake turbulence generated for each category.

Table 3.1: Aircraft Classifications			
Aircraft Class	**Maximum Certified Takeoff Weight (lbs.)**	**No. Engines**	**Wake Turbulence Classifications**
A and B	12,500 or less	Single	Small (S)
C	12,500 – 300,000	Multi	Large (L)
D	Over 300,000	Multi	Heavy (H)
Source: FAA AC 150/5060-5, Airport Capacity and Delay			

Aircraft fleet mix estimates must included VFR and IFR conditions to adjust for the decrease in demand during IFR conditions. To develop peak hour fleet mix estimates for VFR and IFR, the following assumptions were made:

- All Class C aircraft were assumed to have instrument capability; therefore, IFR and VFR demands are the same for Class C aircraft, resulting in an increased fleet mix percentage during IFR conditions
- The effect of weather on small general aviation aircraft traffic is assumed to vary for the different aircraft classifications. Seventy-five percent of Class A and 50 percent of Class B operations are expected to drop out during IFR conditions.

3.2 Hourly and Annual Capacity

Hourly capacity is calculated for each operating condition at Fox Airfield. Fox Airfield is a single runway airport with a supporting parallel taxiway and multiple taxiway exits. Since the Fox Airfield has only one runway, operations occur on either Runway 6 or Runway 24 and capacity is the same for each. Fox Airfield can operate under two conditions: VFR and IFR. A third condition would include airport closure or impact of weather on landing minimums. Using the FAA's model, the calculated hourly capacity for the Fox Airfield is 74 operations for VFR conditions and 57 operations for IFR conditions. The input data includes the percentage of aircraft weighing between 12,500 pounds and 300,000 pounds, the annual demand for the forecast year, and that general aviation dominates the number of annual operations.

3.3 Annual Service Volume

Annual Service Volume (ASV) is defined as the number of annual aircraft operations that may be accommodated by the runway system at an airport. ASV is often used as a reference in long-range airport capacity and delay planning. The results of an airport's ASV include variations in runway use, aircraft fleet mix, and weather conditions over a one-year period. ASV may be calculated using two methods, a determination of weighted-hourly capacity for each runway configuration or the use of the FAA's Airport Design for Microcomputers program version 4.2D. The FAA's Airport Design for Microcomputers program was used to determine the ASV for the Fox Airfield. Inputs and outputs for the computer program are summarized below.

INPUT

C = Percent of airplanes over 12,500 lbs but not over 300,000 lbs	30%
D = Percent of airplanes over 300,000 lbs	0%
Mix Index (C+3D)	30%
Runway Use Configuration	(Sketch No.)1
Annual demand (2029 Forecasted Operations)	87,000
General aviation operations dominate	

OUTPUT

Capacity	VFR Operations per hour 74
	IFR Operations per hour 57
Annual Service Volume (ASV)	195,000 Operations
Ration of Annual Demand to ASV	0.45
Average Delay per Aircraft	Minutes (Low) 0.2
	Minutes (High) 0.4
Minutes of Annual Delay (All operations)	Low 17
	High 35

As identified above, the ASV for the Fox Airfield is 195,000. As compared to the ASV identified in the 1996 Fox Airfield Master Plan Update (230,000), this estimate reflects a lower and more conservative estimate. The difference in ASV is a result of a change in the mix index as well as the reduction in the number of forecasted annual operations. The 1996 plan determined the ASV for the Fox Airfield by using the instructions identified in the FAA AC 150/5060-5 entitled Airport Capacity and Delay which was last updated in 1983 and required the use of antiquated charts to identify specific inputs necessary to determine the weighted-hourly runway capacity and ASV. Using the AC 150/5060-5 to determine weighted-hourly capacity can often result in inconsistencies as human interpretation plays a large role in these results. Given the potential flaws associated with using the AC 150/5060-5, the FAA's Airport Design for Microcomputers program version 4.2D was used. As a result, an ASV of 195,000 operations will be used as the recommended annual capacity. It is important to note that airport capacity is not constant and will likely change over time depending airfield and airspace geometry, ATC procedures, weather, fleet mix, and airport improvements.

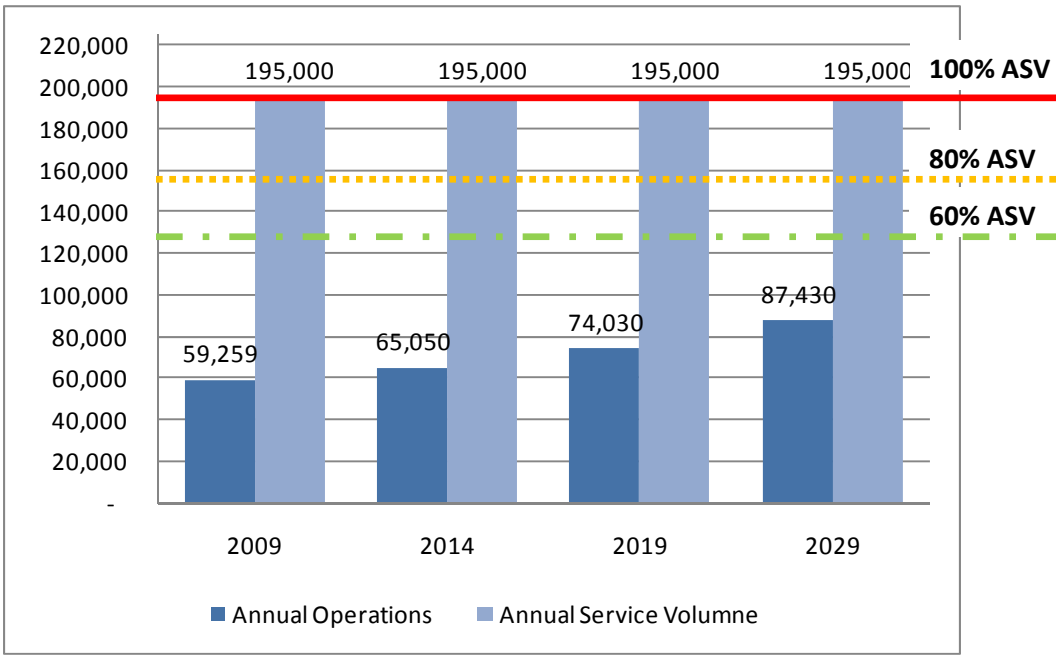
3.4 Demand vs. Capacity

When ASV and hourly capacities are compared to the forecast annual and peak hour demand, a more clear understanding of demand and capacity can be made. **Table 3.2** displays the comparisons of demand versus capacity as well as the anticipated percentage of capacity utilized.

Table 3.2: Demand vs. Capacity

Capacity		Demand			
Period	Capacity	2009	2014	2019	2029
Hourly Operations (ADPM)	74	8	9	10	12
Annual Operations	195,000	59,259	65,050	74,030	87,430
Percent of Hourly Capacity		**10.8%**	**12.2%**	**13.5%**	**16.2%**
Percent of Annual Capacity		**30.4%**	**33.4%**	**38.0%**	**44.8%**

Source: PB Americas, Inc.



According to the analysis, capacity at Fox Airfield is considered adequate throughout the 20-year planning period. However, should airport activity reach 60 percent of the Airport's runway capacity, planning for a new runway should be initiated or demand management strategies should be analyzed to provide additional runway capacity. If airport activity reaches 80 percent of runway capacity, a new runway should be constructed or demand management strategies should be in place. As shown in Table 3-5, the forecasted demand does not exceed the aforementioned 60 percent threshold; therefore, no capacity-enhancing improvements are planned at this time. Hourly capacity is forecasted to utilize less than 20 percent throughout the 20-year planning period. For purposes of comparison, annual capacity is used more predominately than hourly capacity, primarily because hourly capacity incorporates the use of peaking factors. Based on the forecasted demand/capacity for the Fox Airfield over the 20-year planning period, no airfield improvements are needed at this time to achieve additional runway capacity.

Chapter 4

Facility Requirements

4.0 FACILITY REQUIREMENTS

4.1 Introduction

This chapter is intended to identify the deficiencies of the Airport's existing facilities and recommend those facilities needed to support the aviation demand over the 5-, 10- and 20-year planning periods. Using the aviation forecasts developed in Chapter 2.0 combined with the annual capacity identified in Chapter 3.0, an estimate of facilities needed to support the next 20 years of anticipated aircraft activity can be made for Fox Airfield. These facilities will accommodate the future demand and be within an acceptable level of delay, if any. It should be noted that the facility requirements developed in the 1994 Fox Airfield Master Plan where reviewed prior to developing these facility requirements. In addition, the facilities recommended throughout the planning period are not necessarily a goal for the County of Los Angeles. The implementation of facilities may occur when adequate growth in traffic is achieved and the County of Los Angeles elects to pursue the associated projects.

The long-range facility requirements for Fox Airfield are based on an analysis of the following five primary elements. These include:

- Airport Classification
- Airside Facility Requirements
- Landside Facility Requirements
- Ground Access
- Airport Security

The actual level of aircraft demand will determine the development of the facilities identified in this chapter, not the forecasted aircraft activity presented in Chapter 2.0. Moreover, if aircraft activity should occur faster than forecasted, then the implementation of facility requirements should be accelerated to meet demand. Likewise, should aircraft activity occur slower than forecasted, implementation of facility development could be delayed. Use of the forecast of aviation activity does not commit the County of Los Angeles to construct facilities associated with projected demand; however, it does provide the County of Los Angeles with a schedule of identified projects for planning purposes.

4.2 Airport Classification

Fox Airfield is classified as a general aviation airport within the National Plan of Integrated Airport Systems (NPIAS). This NPIAS designation means the Airport enplanes less than 2,500 passengers annually and is used exclusively by private and business aircraft that do not provide common-carrier passenger service. Fox Airfield is also classified as a regional general aviation airport within the California Aviation System Plan (CASP). Regional general aviation airports, as defined by the CASP, are airports that primarily serve approach A and B category aircraft. It is important to note that Fox Airfield currently accommodates significant approach category C aircraft

ranging from business jets to USFS fire-fighting aircraft. Over the 20-year planning period, the introduction of air passenger service is anticipated to begin at Fox Airfield. Over time as the level of passengers exceeds 10,000, the FAA will reclassify the Airport as a Non Hub Primary Airport. Non Hub Primary airports have more than 10,000 annual enplanements and less than 0.05 percent of the total US enplanements.

4.2.1 Airport Reference Code

The FAA Advisory Circular (AC) 150/5300-13, Airport Design, has developed an Airport Reference Code (ARC) which is a coding system that refers to airport design criteria and planning standards associated with airports. The ARC is composed of two components; the operational and physical characteristics of aircraft currently operating or anticipated to operate at the airport. The ARC is an alphanumeric code with the numeric component consisting of a Roman numeral. The letter component of the ARC is the aircraft approach category and refers to the operational characteristics of an aircraft. The aircraft approach category is a grouping of aircraft that is based on 1.3 times the stalling speed. The second component of the ARC is the airplane design group (ADG) and refers to the wingspan and tail height of an aircraft. The aircraft approach speed element of the ARC will generally include runways and runway related facilities whereas the airplane design group refers to required separations between airfield elements such as runway-taxiway separations, and taxilane and apron clearances. Fox Airfield currently accommodates many itinerant business jets including the Lear 24/25, BAe 125s, and the Gulfstream G-300, 400 and G-550. Given the existing frequency of Category C aircraft and the anticipated use of Category C aircraft, Category C was selected as the approach speed component of the ARC. **Table 4.1** reflects the FAA's approach category and airplane design group classifications.

Table 4-1: FAA Aircraft Classifications

FAA Aircraft Approach Category Classification		
Approach Category	Approach Speed	Typical Aircraft
A	Less than 91	Cessna 210, Dash 8
B	91 – 120	Citation BII, King Air B100, Cessna
C	121 – 140	C-130, P-3, B737, B757, Lear 25
D	141 – 165	GII, GV, B747, Lear 35A
E	166 or greater	
FAA Airplane Design Group Classification		
Airplane Design Group	Wingspan (feet)	Typical Aircraft
I	Less than 49	King Air B100, Cessna 421, Cesnna
II	49 but less than 79	GII, Citation BII
III	79 but less than 118	B737, Dash 8, F27, DC9, GV
IV	118 but less than 171	C-130, P-3, B-757, B-767
V	171 but less than 214	B-747, A330, A340
VI	214 but less than 262	Antonov AN-124, A380, C5A

Source: FAA Advisory Circular 150/1500-13, *Airport Design*

As identified in FAA Advisory Circular 150/5300-13, Airport Design, planning standards associated with Airplane Design Group (ADG) IV were applied throughout this airport master plan update. ADG IV includes large aircraft having wingspans from 118 feet up to but not including 171 feet in width. Currently, the USFS operates both Group III and Group IV aircraft from Fox Airfield to provide aerial fire-fighting support throughout California.

4.2.2 Critical Aircraft

The USFS owns and operates 44 aircraft and contracts with more than 800 aircraft annually, including fixed-wing and helicopters. Many of these aircraft utilize the facilities at Fox Airfield. In particular, the USFS operates several Category C aircraft including the P3 and P4 aerial tankers, as well as the C-130 which has four turboprop engines, a wingspan of 137 feet, and an approach speed of 130 knots. The design aircraft for the Airport identified in this Master Plan Update is the C-130 as it is the most demanding aircraft operating to and from Fox Airfield. The USFS's operation at Fox Airfield continues to play a vital role in aerial firefighting throughout the western U.S. It is anticipated that the number of annual operations by the C-130 will grow steadily resulting in more than 500 annual aircraft operations during the 20-year planning period. Design standards for Group IV will be applied for all aircraft except in locations utilized by small aircraft only, if any. **Table 4.2** depicts the airport planning standards for Group IV aircraft.

Table 4.2: Airport Design Standards for Airport Reference Code C-IV

Airport Design Airplane and Airport Data	
Aircraft Approach Category C	
Airplane Wingspan	132.7’
All runway approach minimums are not lower than one mile	
Airplane undercarriage with (1.15 X main gear track)	14.25’
Airport Elevation	2,351’ MSL
Airplane Tail Height	38.3’
Runway centerline to parallel runway centerline	700’
Runway centerline line to parallel taxiway centerline	400’
Runway centerline to edge of aircraft parking	500’
Taxiway centerline to parallel taxiway/taxilane centerline	152’
Taxiway centerline to fixed or movable object	129.5’
Separation Standards	
Runway Protection Zone	
Runway protection zone (Runway 6-24) Length	2,500’
Width 200 feet from runway end	1,000’
Width 1,200 feet from runway end	1,750’

Obstacle Free Zones	
Runway obstacle fee zone (OFZ) width	400’
Runway obstacle free zone beyond each runway end	200’
Inner-approach obstacle free zone width	400’
Inner-approach obstacle free zone length beyond approach light system	200’
Inner-approach obstacle zone slope from 200 feet beyond threshold	50:1
Inner transitional obstacle free zone	3:1
Runway Design Standards	
Runway width	150’
Runway shoulder width	25’
Runway blast pad width	200’
Runway blast pad length	200’
Runway safety area width	500’
Runway safety area length beyond each runway end or stopway end	1,000’
Runway object free area width	800’
Runway object free area length beyond runway end or stopway	1,000’
Clearway width	500’
Stopway width	1,000’
Threshold Siting Surface (Runway 6-24)	
Distance out from threshold to start of surface	200’
Width of surface at start of trapezoidal section	600’
Width of surface at end of trapezoidal section	3,400’
Length of trapezoidal surface	10,000’
Length of rectangular section	0’
Slope of section	20:1
Taxiway Design Standards	
Taxiway Width	75’
Taxiway edge safety margin	15’
Taxiway shoulder width	25’
Taxiway object free area width	171’
Taxilane object free area width	259’
Taxiway wingtip clearance	44’
Taxilane wingtip clearance	27’

Source: FAA Advisory Circular 150,5300-13, Airport Design, Change, Change 14

4.3 Airside Facility Requirements

Airside facility requirements include the runway and taxiway system, the runway approach areas, airfield lighting, visual aids, and navigational aids. Airside facility requirements were made using a comparison of the Airport’s actual capacity versus the forecasted level of aviation demand developed in Chapter 3.0. In general, airside

facility requirements refer to those areas of the Airport where aircraft operations occur. The ability for the existing airside facilities to accommodate existing and future demand throughout the 20-year planning period is examined in the following subsections.

4.3.1 Runway System

The existing runway system at the Airport was described previously in Section 1.1. This section identifies the runway requirements needed to meet the forecast demand for runway length, pavement strength, crosswind coverage and safety areas. Planning and design standards set forth in FAA AC 150/5300-13, Airport Design, for airport reference code C-IV were applied to this analysis. Additionally, it is important to account for the type of approach or the potential for a new approach the Airport may expect to have in the future. Runways having lower visibility minimums have requirements that are more restrictive than those with higher minimums. At Fox Airfield, Runway 6-24 is equipped for non-precision instrument approaches on both ends with visibility minimums lower than one mile. For purposes of this analysis, these instrument approach capabilities are assumed to exist in the future.

4.3.1.1. Runway Length

Determining the appropriate runway length is a critical component of airport planning and design. Aircraft require specific runway lengths to operate under various conditions including wind, temperature, and takeoff weight. FAA Advisory Circular 150/5325-4B contains criteria used in developing runway length for both general aviation and transport airports. Runway lengths are recommended based on performance information from individual aircraft flight manuals, which are in accordance with the Federal Aviation Regulations (FAR) Part 23, Airworthiness Standards; Normal Utility, and Acrobatic Category Airplanes, and FAR Part 91, General Operating and Flight Rules.

Aircraft performance and specific site characteristics including airport elevation; mean maximum temperature of hottest month; runway gradient, and wind conditions are used to determine runway length. The FAA Airport Design (Version 4.2d) software package contains a program that calculates typical runway requirements for various classes of aircraft. This model was used to calculate the results for Fox Airfield. The airport site characteristics used in this runway length analysis include:

- Elevation 2,351 feet Mean Sea Level (MSL)
- Temperature 98.8° F mean daily maximum temperature of hottest month
- Maximum difference in runway centerline elevation 15.7 feet
- Surface winds calm

As noted in Section 4.2.2, the critical aircraft for Fox Airfield is the C-130 which has a maximum takeoff weight of 155,000 pounds. As shown in **Table 4-3**, the recommend runway length for large airplanes weighing more than 60,000 pounds is approximately 5,840 feet. Runway 6-24's current length of 7,201 feet is anticipated to meet the 20-year runway length requirements for the critical aircraft. In addition, an increased use

by business jets is anticipated to occur at Fox Airfield; therefore, it should be noted that the current runway length also meets the requirements for large airplanes weighing 60,000 pounds or less with 100 percent of large business jet aircraft at 60 percent useful load.

Table 4.3: Runway Length Analysis

Airport and Runway Data	
Airport Elevation	2,351 feet MSL
Mean daily maximum temperature of hottest month	98.8° F
Maximum difference in runway centerline elevation	15.7 feet
Runway Lengths Recommended for Airport Design	
Small airplanes with approach speeds of less than 30 knots	370 feet
Small airplanes with approach speeds of less than 59 knots	990 feet
Small airplanes with less than 10 passenger seats:	
75 percent of these small airplanes	3,430 feet
95 percent of these small airplanes	4,190 feet
100 percent of these small airplanes	4,760 feet
Small airplanes with 10 or more passenger seats	4,910 feet
Large airplanes of 60,000 pounds or less	
75 percent of these large airplanes at 60% useful load	5,560 feet
75 percent of these large airplanes at 90% useful load	8,250 feet
100 percent of these large airplanes at 60% useful load	7,200 feet
100 percent of these large airplanes at 90% useful load	10,320 feet
Airplanes of more than 60,000 pounds	5,840 feet
Source: FAA Advisory Circular 150/5325-4B, Runway Length Requirements for Airport Design. FAA Airport Design Software.	

4.3.1.2. Runway Width

Runway width is a dimensional standard that is based on the physical and performance characteristics of aircraft using the airport or runway. These characteristics include wingspan and approach speeds. For Fox Airfield, FAA Airplane Design Group IV--aircraft with wingspans of 118 feet up to but not including 171 feet, and approach category C were used. The current runway at Fox Airfield will provide adequate width and separation for existing and proposed aircraft operations as it is 150 feet wide. FAA AC 150/5300-13 specifies a runway width of 150 feet for an airport reference code of C-IV.

4.4 Runway Grades

Runway grades are determined by aircraft approach categories. For Fox Airfield, approach categories C and D have been applied. As identified in FAA AC 150/5300-13, longitudinal grades are limited to 1.5 percent slope. In addition, longitudinal grades may not exceed 0.8 percent within the first and last quarter of the runway. Runway 6-24

meets the longitudinal grade requirements. The current gradient on the runway is 0.02 percent.

4.5 Pavement Strength

As published in the U.S. Government Flight Information Publication/Facility Directory, the runway pavement strength for Runway 6-24 is 50,000 pounds for single wheel, 68,000 pounds for dual wheel, 86,000 pounds for single tandem wheel, and 117,000 pounds for dual tandem wheel loads. As mentioned, the design aircraft used to determine runway and taxiway pavement strength is the C-130, which is frequently used by the USFS for firefighting support throughout California and Arizona. The C-130 weighs approximately 155,000 pounds and is equipped with dual tandem landing gear. Under the current pavement strength rating, a 38,000-pound pavement strength deficit exists for Runway 6-24 in order to accommodate routine C-130 aircraft operations. Based on historical data and future USFS operations projections, the C-130 is expected to have a minimum of 500 annual operations by the end of the 20-year planning period. It should be noted that the number of annual USFS C-130 operations could increase significantly based on a number of factors including an extremely active fire season, consolidation of one or more USFS fire fighting facilities at Fox Airfield, and/or the addition of new C-130 aircraft based at Fox Airfield. Should one or more of these events come to fruition, the potential increase of C-130 operations is likely to result in a significant impact to Runway 6-24's existing pavement strength capacity. Given the existing C-130 pavement strength deficit and the potential for increasing C-130 operations, the County of Los Angeles Department of Public Works, Aviation Division initiated a geotechnical study to determine the potential impact to pavement strength capacity. The results of this 2010 geotechnical study prepared by RMA Group indicated that an aircraft with a gross weight of 164,000 pounds could operate up to 50 annual operations without significant impact to the useful life of the pavement which is estimated to be 11 years. Based on the results of this study, the County of Los Angeles is concerned that the actual life span of the runway will further erode as C-130 and other heavy aircraft operations will likely exceed the 50 operation threshold established in the study during the 20-year planning period.

The pavement strength of Runway 6-24 and associated taxiway system is anticipated to be a critical issue over the 20-year planning period and beyond. As noted in the Airport Plans chapter (chapter 8), the level of future development on both the north and south side of the airfield reflects significant development over the 20-year planning period. The development of many of these facilities is expected to attract heavier aircraft which would likely exceed the current pavement strength at the Fox Airfield. In addition, the potential for an increase in C-130 annual operations further impacts the runway's ability to support the critical aircraft over the 20-year period. Annual pavement maintenance costs at Fox Airfield have increased each year since 2008. Much of these costs are a result of the climate at the Airport. Each year the change in temperature causes extreme pavement contraction and expansion which results in cracking along the runway. Based on information provided by the County of Los Angeles, each year the County spends approximately $50,000 on repairing the current asphalt runway and

taxiway system. These repairs include crack filling, joint repair, slurry sealing and pavement overlay (as needed). Based on history repair costs, it is anticipated that the County could spend more than $1 million dollars over the next 20-year period maintaining the asphalt runway and taxiway system.

Based on the potential increase in heavy aircraft activity, the remaining life span of the pavement and the projected costs to maintain the existing asphalt pavements, the County of Los Angeles Department of Public Works, Aviation Division is seeking to replace the existing asphalt runway with a concrete runway. The benefits of converting to a concrete runway include: accommodating heavier aircraft (those exceeding 117,000 pounds); extending the life span of the runway pavement beyond the planning period and reducing the annual runway and taxiway pavement maintenance costs over the 20-year period. It is recommended that the pavement strength be increased to 175,000 pounds for dual tandem land gear.

4.6 Runway Signage

Information collected from the Fox Airfield ATCT indicated that additional runway signage is needed to inform pilots of the best use of Taxiway F. Taxiway F is configured as a bi-directional 45-degree taxiway exit without a paved island separating east and west flows. The current challenges facing the ATCT are the use of Taxiway F as an access point for midfield departures by small general aviation aircraft and the convergence of head-to-head aircraft entering and exiting Taxiway F. Because Taxiway F is single lane, small GA aircraft may mistakenly hold short at the wrong point creating a hazard for aircraft exiting the Runway at Taxiway F. In lieu of removing pavement to form an island separator, it is recommended that Taxiway F signage be installed on the south side of the runway before each exit point. Incorporating additional signage indicating the prohibition of midfield departures as well as guidance to pilots exiting the runway to maintain right of way is recommended. All other signage meets FAA standards.

4.7 Runway Blast Pads

Runway blast pads provide erosion protection for areas located beyond the pavement of each runway end. The runway blast pads at Fox Airfield meet FAA design standards for Airplane Design Group IV. Both blast pads measure 200 feet in width by 200 feet in length. No improvements to the blast pads are required.

4.8 Runway Safety Areas

A Runway Safety Area (RSA) is a rectangular-shaped area centered along a runway at the same elevation. The purpose of an RSA is to provide a protective area around the runway that is capable of supporting an occasional aircraft veering off the paved area along the runway. An RSA must remain clear of non-frangible objects, and be properly compacted, drained and graded. The RSA at Fox Airfield measures 500 feet in width

and extends 1,000 feet beyond each runway end. The RSA meets design standards associated with Airplane Design Group IV.

4.9 Runway Obstacle Free Zones

A Runway Obstacle Free Zone (OFZ) is a defined volume of airspace centered above the runway centerline and the elevation at any point is the same as the elevation of the nearest point on the runway centerline. The FAA's OFZ clearing standards preclude taxiing, parked airplanes, and/or any other penetrations within the OFZ. Visual NAVAIDS may be located in the OFZ since they are fixed in their location by their function so long as they are mounted on frangible couplings no higher than three inches above the finished surface grade. FAA design standards for an ARC of C-IV require an OFZ to extend 200 feet beyond each runway end and be 400 feet wide. Fox Airfield's current OFZ dimensions meet current FAA design standards for an ARC of C-IV.

4.10 Runway Object Free Areas

The runway Object Free Area (OFA) is centered along the runway centerline. The OFA clearing standard requires clearing the OFA of above ground objects protruding above the runway safety area edge elevation. The OFA may contain objects necessary for air navigation or ground maneuvering purposes; however, all other non-essential objects may not be located within the OFA, including parked airplanes and agricultural operations. Fox Airfield's current OFA dimensions are by 800 feet wide and extend 1,000 feet beyond each runway end. All ROFA dimensions meet current FAA design standards for an ARC of C-IV.

4.11 Approach Surface and Runway Protection Zones

Approach surfaces and Runway Protection Zones (RPZs) are critical elements used during the runway design process. The purpose of approach surfaces and RPZs are to increase safety and promote efficiency for aircraft operating at an airport. An approach surface is an imaginary plane that begins at the end of the primary surface and extends outward and upward up to a distance of approximately ten miles. The width and slope of this surface is based on the type of runway usage. Approach surfaces determine the allowable height of objects located on or near the airport. Any penetration to the approach surface is classified as an obstruction. Federal Aviation Regulations Part 77 requires that the approach surface be kept free of obstructions to accommodate unrestricted flight near an airport. Should an obstruction occur, these objects must be either be removed or marked and lighted.

A Runway Protection Zone (RPZ) is a trapezoidal shaped area which is centered along the extended runway centerline. This area provides unobstructed passage of landing aircraft through the airspace located directly above the RPZ. The RPZ's primary purpose is to protect people and property located on the ground which lies underneath the boundary of the RPZ. FAA design standards require the RPZ to begin 200 feet beyond the runway end and extend outward to a length determined by the type of

runway. In addition, the FAA discourages specific types of land uses within an RPZ, including residential, places of public assembly, schools, churches, hospitals and uses that contain hazardous materials such as fuel. The RPZ is the most critical safety area located underneath the approach path and should be free of obstructions. The County of Los Angeles owns 100 percent of the area designated as a RPZ. In addition, several local land use plans, including the Antelope Valley Areawide General Plan (1986), City of Lancaster General Plan (2001) and Fox Field Industrial Corridor Plan (1996) include land use controls prohibiting non-compatible land uses within the RPZ. The existing RPZ dimensions for Runways 6 and 24 are 1,700 feet x 1,000 feet x 1,510 feet. It should be noted that the Airport has plans to pursue an approach procedure which provides visibility minimums lower than ¾ mile; therefore, a future RPZ measuring 2,500 feet x 1,000 feet x 1,750 feet shall be depicted on the Airport Layout Plan for future implementation. The current and future RPZ dimensions meet the 20-year facility requirements.

FAR Part 77 requires that the approach surface to a runway be kept free from obstructions in order to provide unrestricted flight for aircraft near an airport. As the instrument approach for each runway end increases in precision, the approach surface increases in size and the required approach slope becomes more restrictive. Likewise, the RPZ dimensions are dependent on the type of approach for each runway. **Table 4-4** provides a description for the various types of runways and associated RPZ dimensions.

Table 4.4 Runway Protection Zone Dimensions

Approach Visibility Minimums		RPZ Dimensions			
	RUNWAY TYPE	Length	Inner Width	Outer Width	Area (Acres)
Visual and Not lower than 1 mile	Small Aircraft Exclusively	1,000’	250’	450’	8.035
	Aircraft Approach Categories A and B	1,000’	500’	700’	13.770
	Aircraft Approach Categories C and 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

4.12 Building Restriction Line

The Building Restriction Line (BRL) is defined in FAA AC 150/5300-13 as a line identifying suitable building area locations on an airport. The BRL includes the RPZ, ROFA, runway and taxiway visibility zone critical areas, areas required for terminal instrument approach procedures, and line of sight for the ATCT, which is defined as the

as a line from the ATCT to the midpoint of both RPZs. The BRL for Fox Airfield is located 760 feet from the runway centerline on the north and south side of the Airport. These distances mark the edge of the taxiway OFA on the north and south side of Runway 6-24.

4.13 Taxiways

Runway 6-24 is served by a full-length parallel taxiway on the south side of the runway with one midfield high-speed taxiway exit, three 90 degree angled taxiway exits, and one 45 degree angled taxiway exit. FAA design standards for an ARC of C-IV recommend a taxiway width of 75 feet. All taxiways on the Airport are currently 50 feet wide. To meet FAA design standards, all taxiways should be widened to 75 feet. Taxiway run-up aprons are located on each runway end to provide space for engine run-ups and departure holds. The critical aircraft (C-130) identified in Section 4.2.2 has a narrow landing gear undercarriage width (14.25 feet) which requires a taxiway width of 50 feet for maneuverability. It should also be noted that P-3 aircraft are used frequently at Fox Airfield by the USFS. The P-3 has an undercarriage width of 31.2 feet and requires a taxiway width of 56 feet to achieve full maneuverability. The existing taxiways at Fox Airfield can accommodate the P-3's undercarriage; however, the required taxiway edge safety margin for the P-3 (Group III) is 10 feet in width. Currently, the taxiway edge safety margins are 7 feet wide.

FAA AC 150\5300-13 recommends a 400 feet separation from the runway centerline to the parallel taxiway for Group IV aircraft. At Fox Airfield, the separation between the Runway 6-24 centerline and the Taxiway A centerline is 325 feet. The intent of this recommendation is to prevent any part of an aircraft (tail tip, wing tip) on a taxiway or taxilane to penetrate the RSA or the runway OFZ. While the critical aircraft (C-130) tail and wing measurements will not penetrate these areas while operating on a taxiway or taxilane at Fox Airfield, Taxiway A does not meet FAA Design Standards for runway/taxiway separation for Group IV aircraft. As a result, Taxiway A should ultimately be relocated 50 feet south of its current position to achieve the 400 foot separation requirement. Previous Fox Airfield master plans have identified the Taxiway A deficiency and recommended a request for a modification of standards from the FAA to maintain the 325 foot separation. However, the FAA is normally reluctant to approve a modification to their design standards without demonstrating a clear justification on how the modification benefits aviation safety.

A second high-speed taxiway exit is planned 2,200 feet from the approach end of Runway 6. The previous Fox Airfield Master Plan Update identified the need for this high-speed exit in order to increase runway capacity and provide a means for smaller aircraft to exit the runway sooner, reducing runway occupancy time. Implementation of this high-speed exit has been incorporated into the Airport's Capital Improvement Plan for fiscal year 2012.

4.14 Airspace and Navigational Aids

As identified in Section 1.4, airspace surrounding Fox Airfield is composed of Class C, D, E and G airspace. During VFR conditions, pilots are able to maneuver through the airspace without restriction. During IFR conditions, pilots have a number of restrictions including the presence of special use airspace and Military Operating Areas. Aircraft operating under an IFR flight plan must avoid restricted airspace R-2515 and R-2508 located northeastward from Fox Airfield. As shown in **Table 4.5**, Fox Airfield has four published instrument approach procedures.

Table 4.5: Fox Airfield Approach Procedures

NAVAID	Location	Procedure	Lowest Minima
RNAV (GPS) RW 6	On-Airport	Straight In	300'/1 mile
RNAV (GPS) RW 24	On-Airport	Straight In	500'/1 mile
Palmdale VOR	10 nm SE	Circling	1,000'/ 1.25 miles
Fox NDB	On-Airport	Circling	800'/1 mile

Source: US Government Flight Information Publications, US FAA Terminal Procedures Publication, 3/2010

All of these procedures are classified as non-precision instrument approaches. Implementation of an instrument approach procedure using a straight-in ILS approach to Runway 24 is not currently feasible given the required encroachment to R-2515. As described in Section 1.4, this restricted airspace is associated with Edwards Air Force Base and prohibits unauthorized aircraft from entering R-2515 without prior approval. Fortunately, the presence of a GPS approach to Runway 24 provides IFR pilots with the ability to land using a straight-in non-precision instrument approach with a 500 feet ceiling and 1-mile visibility. While the presence of a precision instrument approach to Runway 24 is desirable, the challenges in resolving the conflict with R-2515 are considered a matter of national security and will unlikely be amended. Furthermore, the number of IFR days (<1 percent) makes it difficult to justify implementation. It is anticipated that the GPS approach to Runway 24 will continue to meet the need of general aviation, corporate, and business aircraft throughout the 20-year planning period.

Runway 6 and Runway 24 are equipped with Precision Approach Path Indicator (PAPI) system lights. PAPIs are the standard approach lighting system for general aviation airports. Runway End Identifier Lights (REILs) are located at the end of each runway and identify the end of the paved runway surface.

4.15 Landside Facility Requirements

Landside facility requirements include all of the facilities that support the movement of people and goods between the airside facilities and the ground transportation network. Landside facilities also include those facilities that are used to maintain and protect the airport. For Fox Airfield, these facilities include the general aviation terminal/administration building, aircraft hangars, vehicular parking, fuel farm, aircraft parking apron/tie downs, and access roadways. Combined, these landside facility

requirements serve as facilities needed to support the anticipated level of demand over the 20-year planning period.

As identified in Chapter 2.0, the level of aircraft operations is projected to be 79,400 (base) or 83,540 (optimistic) and approximately 227 based aircraft by 2029. Careful attention is given when developing facilities for the 20-year planning period in order to create a balance between airside and landside facilities. For purposes of planning, the 20-year planning period has been separated into three distinct time-periods including the short-term (2010-2014), the intermediate (2015-2019) and the long-term (2020-2029). The sections below include a description of the future landside facility requirements.

4.15.1 General Aviation Terminal

Terminal facilities at Fox Airfield support general aviation operations. The existing terminal building at Fox Airfield is approximately 6,500 square feet in size. The amount of space needed to support general aviation terminal space is determined by the anticipated level of peak hour activity, which includes pilots and passengers using the terminal. Using a planning assumption of 45 square feet per peak hour passenger, a 1,500 square foot terminal building would be adequate. However, airport planners rarely suggest that facilities be downsized unless there is a drastic reason to do so. Therefore, it is recommended that the terminal building remain in its present location and at its present size throughout the planning period. An estimated 2.5 pilot/passengers are assumed per peak hour operation. **Table 4.6** provides a breakdown of the individual uses within the terminal building.

Table 4.6: General Aviation Terminal Building Assumptions

Type of Use	Recommend Peak Hour Pilot/Passenger (SF)
Circulation, Mechanical, Maintenance	**23**
Administration/Office Space	**5**
Pilots Lounge, Waiting Area	**12**
Public Space	**5**
Restaurant	**5**
TOTAL (SF)	**50**

Currently, the Fox Airfield terminal building is approximately 6,500 square feet in size. Of the 6,500 SF, there is approximately 2,700 SF of lobby area/pilots lounge, 1,100 SF of restaurant, 1,500 SF of administration/office space, 350 SF of public space and 850 SF of circulation, mechanical and maintenance. **Table 4.7** depicts the general aviation terminal requirements for the 5-, 10- and 20-year planning periods.

Table 4.7: General Aviation Terminal Requirements

Description	2014	2019	2029
Peak Hour Operations	8	9	12
Total Peak Occupants (2.5)	20	22.5	30
Area/Occupant (SF)	50	50	50
Total Building Area (SF)	**1,000**	**1,125**	**1,500**

Peak hour operations were determined based on 10.3 percent of the Average Day Peak Month operation levels. It should also be noted that much of the peak hour activity at Fox Airfield is the result of touch-and-go operations. The Fox Airfield terminal building size is adequate throughout the 20-year planning period.

4.16 Air Passenger Service Terminal

As discussed in Chapter 2.0, air passenger service at Fox Airfield may occur during the 20-year planning period; therefore, adequate space must be identified to accommodate the activities associated with both scheduled and non-scheduled air passenger service. Such activities include passenger processing, security, ticketing, baggage check, baggage claim, and hold rooms. The size of the air passenger service terminal was determined using an area/occupant sizing factor of 0.03 square feet per enplaned passenger. **Table 4.8** displays the total square feet of building area required to meet the forecasted number of 2029 enplanements at Fox Airfield. As a result, the development of a new terminal building located on the north side of the Airport should contain a minimum of 5,500 square feet of useable space. This space will include a dedicated area for the Transportation Safety Administration (TSA) screening, baggage systems, hold rooms, ticketing, and airport administration.

Table 4.8: Air Carrier Terminal Requirements

Description	2014	2019	2029
Enplanements	70,500	139,600	183,300
Area/Occupant (SF per enplanment)	0.03	0.03	0.03
Total Building Area (SF)	**1,763**	**4,188**	**5,499**

4.17 Itinerant Aircraft Parking Apron

The itinerant aircraft parking area at Fox Airfield is located mid-field immediately north of the terminal area and includes an area approximately 5,000 square yards in size. Itinerant aircraft parking is used primarily by aircraft that are not based at Fox Airfield. Itinerant aircraft parking requirements are determined by using the average day peak month (ADPM) forecasts identified in Chapter 2.0 and applying a series of assumptions about the characteristics of itinerant operations. The following assumptions were used to determine the number of itinerant aircraft parking spaces for Fox Airfield.

- Of the total number of operations, approximately 62 percent are assumed to be itinerant operations (those operations originating from another airport and departing to another airport)
- Of the total number of itinerant operations, 50 percent are assumed to require an itinerant aircraft parking position on the itinerant aircraft apron.
- The remaining 50 percent of itinerant operations are assumed to do one of the following:
    - Depart on the same day (thus not requiring an itinerant parking position)
    - Park in a location other than the itinerant parking apron. This may include the FBOs, restaurant/terminal building, museum, and/or USFS.
- The split between each of these options was assumed to be even (50/50)
- Therefore, our analysis shows that approximately 50 percent of itinerant aircraft arrivals will be temporarily parked on the itinerant aircraft apron.

The size of the tie-down space is related to the type of aircraft using the space. Single Engine Piston Aircraft require 300 square yards per tie-down; Multi Engine Piston and helicopters require 625 square yards per tie-down and turbo props and small jets require 1,800 square yards per tie down. **Table 4.9** summarizes the itinerant aircraft parking area requirements for long range planning at Fox Airfield.

Table 4.9: Itinerant Aircraft Parking Area Requirements

	Existing	2014	2019	2029
Forecasted Annual Itinerant Operations	33,907	38,440	40,960	48,390
Peak Month Itinerant Operations	3,492	3,959	4,219	4,984
Average Day Peak Month Itinerant Operations	115	130	138	163
No. Itinerant Aircraft to be parked on apron	57	65	69	82
Single Engine Piston (SEP)				
No. of Itinerant SEP Aircraft (forecasted)	47	54	57	68
Recommended apron area for SEP aircraft (SY)	300	300	300	300
Total apron area for SEP aircraft (SY)	14,100	16,200	17,100	20,400
Multi Engine Piston (MEP)				
No. of Itinerant MEP Aircraft (forecasted)	6	6	7	8
Recommended apron area for MEP aircraft (SY)	625	625	625	625
Total apron area for MEP aircraft (SY)	3,750	3,750	4,375	5,000
Small Jets/Turbo Props				
No. of Itinerant Jet Aircraft/Turbo Props (forecasted)	3	3	3	4
Recommended apron area for Jet/Turbo Prop aircraft (SY	1600	1600	1600	1600
Total apron area for Jet aircraft (SY)	4,581	5,192	5,533	6,536
Helicopters				
No. of Itinerant Helicopters (forecasted)	1	2	2	2
Recommended apron area for Helicopters (SY)	625	625	625	625
Total apron area for Helicopters (SY)	625	1,250	1,250	1,250
Summary of Itinerant Aircraft Parking				
Total Itinerant Aircraft	57	65	69	82
Total Itinerant Aircraft Parking Area (SY)	23,056	26,392	28,258	33,186
Total Itinerant Aircraft Parking Area (SF)	207,502	237,528	254,320	298,674
			Deficiency	
Description	**Existing**	**2014**	**2019**	**2029**
No. of Itinerant Aircraft Parking Spaces Required	17	48	4	13
Total Itinerant Aircraft Parking Area (SY)	5,100	21,292	1,866	4,928
Total Itinerant Aircraft Parking Area (SF)	45,900	191,628	16,792	44,354
Source: Parsons Brinckerhoff 2011				

As identified in Table 4.9, approximately 33,000 square yards of itinerant aircraft parking is required to the meet the 2029 level of demand. Of the 33,000 SY of itinerant aircraft parking area required, 20,400 SY will support SEP aircraft, 5,000 SY will support Multi Engine Piston (MEP) aircraft, 6,500 SY will support small jets/turbo props and 1,250 SY will support helicopters. These estimates include the physical area used to store the aircraft as well as the area required to maneuver the aircraft in and out of the space. Approximately 82 itinerant aircraft are anticipated to occupy the itinerant parking apron at any given time by 2029. Of the 332 current paved aircraft tie-down positions at the Airport, approximately 17 are identified as itinerant aircraft parking. An additional 65 itinerant tie-downs (28,000 SY) are required to meet the projected demand.

4.18 Based Aircraft Storage

Based aircraft at Fox Airfield are stored in one of two ways, a paved aircraft tie-down position or in a hangar. The determination of the number of aircraft stored on an aircraft tie-down position or in a hangar is made based on several conditions including weather conditions, economics, and historical patterns of owners of based aircraft. As identified in Chapter 2.0, the number of based aircraft at Fox Airfield is projected to increase from 164 to 227-based aircraft by 2029. Currently, there are 332 total tie-down positions located on Fox Airfield. As shown below in **Table 4.10**, the number of tie-down positions required to meet the 2029 demand is approximately 81. This equates to approximately 24,600 SY of tie-down area. Given the available number of tie-downs for based aircraft use, no additional tie-down positions are needed through 2029 in order to meet the projected demand.

Section 4.20 Itinerant Aircraft Parking identifies the need for 65 additional tie-down positions to accommodate itinerant operations through 2029. It is recommended that 65 of the 332 tie-down positions designated for based aircraft storage be converted into itinerant aircraft parking positions. Converting based aircraft tie-downs into itinerant parking tie-downs requires a minimal investment from the County of Los Angeles and provides an important convenience to itinerant aircraft pilots utilizing the Airport's facilities. The location for tie-down conversion shall be identified in the alternatives analysis chapter and displayed within each development alternative.

Table 4.10: Based Aircraft Storage Requirements (Tie Downs)

	2009	2014	2019	2029
Single Engine Piston (SEP)				
No. of Based SEP Aircraft (forecasted)	143	142	145	160
Assumed No. of SEP aircraft to be tied down (35%)	50	50	51	56
Assumed size of SEP tie down (SY)	300	300	300	300
Total SEP tie down space required (SY)	15,015	14,938	15,203	16,782
Multi Engine Piston (MEP)				
No. of Based MEP Aircraft (forecasted)	14	15	15	15
Assumed No. of MEP aircraft to be hangared (25%)	4	4	4	4
Assumed size of MEP hangar space (SY)	625	625	625	625
Total MEP tie down space required (SY)	2,188	2,342	2,352	2,375
Turbo Prop/Small Jets				
No. of Based Turbo Prop/Small Jet Aircraft (forecasted)	4	9	13	25
Assumed No. of Turbo Prop/Small Jet aircraft to be tied down (0%)	0	0	0	0
Assumed size of Turbo Prop/Small Jet tie down space (SY)	1,600	1,600	1,600	1,600
Total Turbo Prop/Small Jet tie down space required (SY)	-	-	-	-
Helicopters				
No. of Based Helicopters (forecasted)	3	9	15	27
Assumed No. of Helicopters to be hangared (50%)	2	5	8	22
Assumed size of Helicopter tie down space (SY)	625	625	625	625
Total Helicopter tie down space required (SY)	938	2,813	4,688	13,500
Total Based Aircraft	**164**	**175**	**188**	**227**
Total Aircraft tied down	**55**	**58**	**62**	**81**
No. of Individual tie down Spaces Required	**55**	**58**	**62**	**81**
Required Individual tie down Spaces (SY)	**18,140**	**20,092**	**22,242**	**32,657**
Required Individual tie down Spaces (SF)	**163,260**	**180,827**	**200,178**	**293,914**
			Deficiency	
Description	**Existing (SF)**	**2009-2013**	**2014-2019**	**2020-2029**
No. of Individual tie down Spaces Required	332	(274)	(212)	(131)
Square Yards of tie down space required	99,600	(79,508)	(57,266)	(24,609)
Square Feet of tie down space required	896,400	(715,573)	(515,395)	(221,480)
Source: Parsons Brinckerhoff 2011				

Two types of aircraft hangars are utilized at Fox Airfield; these include individual and conventional hangars. Individual hangars may include a T-Hangar, rectangular hangar or box hangar and have the capacity of only one aircraft per unit. Conventional hangars are large open-bay type hangars that accommodate multiple aircraft. Conventional hangars also include corporate hangars. For purposes of analysis, based aircraft storage requirements will be identified as either an individual hangar or conventional hangar.

In order to provide storage for the anticipated number of based aircraft, the following planning assumptions were made:

- Currently 65 percent of the total number of aircraft based at Fox Field is stored in a hangar. As of 2011, there is an aircraft hangar waiting list of five people.

- Approximately 65 percent of SEP and 75 percent of MEP aircraft will be stored in an individual aircraft hangar
- All turbo props and jet aircraft will be stored in a conventional hangar
- Approximately 50 percent of helicopters will be stored in a conventional hangar

SEP aircraft based at Fox Airfield are projected to increase from 143 to 160 by 2029. Assuming 65 percent of all based SEP aircraft are stored in an individual hangar, a total of 104 spaces will be required by the end of the planning period. Each SEP hangar space is assumed to require a minimum of 1,650 SF of floor area. As a result, 171,417 SF of SEP hangar space is needed by 2029. MEP aircraft based at Fox Airfield are forecast to reach 15 aircraft by 2029. Approximately 75 percent of MEP based aircraft are presumed to be stored in an individual hangar. As a result, 11 individual hangar spaces are needed by the end of the planning period. At 3,200 SF per space, approximately 36,481 SF of individual MEP hangar space is required. Currently, the Airport has 192,150 SF of individual hangar space; therefore, an additional 15,748 SF of individual hangar space should be developed during the last ten years of the planning period (2020-2029) to support based SEP and MEP aircraft.

Turbo prop/small jet aircraft based at Fox Airfield are forecast to increase from four aircraft to 25 by 2029. It is presumed that all turbo prop/small jet aircraft are stored in a conventional hangar. Each turbo prop/small jet space is assumed to require a minimum of 1,650 SF of floor area resulting in 43,698 SF of turbo prop/small jet conventional hangar space. Currently, Fox Airfield has 55,000 SF of conventional hangar space; therefore, an additional 10,973 SF of conventional hangar space should be developed during the last ten years of the planning period (2020-2029) to support the storage of turbo prop/small jet aircraft based at Fox Airfield. The results of the based aircraft storage are depicted in **Table 4.11**.

Table 4.11: Based Aircraft Storage Requirements				
	2009	**2014**	**2019**	**2029**
Single Engine Piston (SEP)				
No. of Based SEP Aircraft (forecasted)	143	142	145	160
Assumed No. of SEP aircraft to be hangared (65%)	93	92	94	104
Assumed size of SEP hangar space (SF)	1,225	1,650	1,650	1,650
Total SEP hangar space required (SF)	113,864	152,576	155,287	171,417
Multi Engine Piston (MEP)				
No. of Based MEP Aircraft (forecasted)	14	15	15	15
Assumed No. of MEP aircraft to be hangared (75%)	11	11	11	11
Assumed size of MEP hangar space (SF)	3,200	3,200	3,200	3,200
Total MEP hangar space required (SF)	33,600	35,971	36,120	36,481
Turbo Prop/Small Jets				
No. of Based Turbo Prop/Small Jet Aircraft (forecasted)	4	9	13	25
Assumed No. of Turbo Prop/Small Jet aircraft to be hangared (100%)	4	9	13	25
Assumed size of Turbo Prop/Small Jet hangar space (SF)	1,750	1,750	1,750	1,750
Total Turbo Prop/Small Jet conventional hangar space required (SF)	7,000	15,313	23,030	43,698
Helicopters				
No. of Based Helicopters (forecasted)	3	9	15	27
Assumed No. of Helicopters to be hangared (80%)	2	5	8	22
Assumed size of Helicopter hangar space (SF)	1,650	1,650	1,650	1,650
Total Helicopter conventional hangar space required (SF)	2,475	7,425	12,375	35,640
Total Based Aircraft	**164**	**175**	**188**	**227**
Total Aircraft Hangared	**109**	**117**	**126**	**162**
No. of Individual Hangar Spaces Required	**103**	**104**	**105**	**115**
Required Individual Hangar Spaces (SF)	**147,464**	**188,547**	**191,407**	**207,898**
Require Conventional Hangar Area (SF)	**9,475**	**22,738**	**35,405**	**79,338**
			Deficiency	
Description	**Existing (SF)**	**2009-2013**	**2014-2019**	**2020-2029**
No. of Individual Hangar Spaces Required	105	(1)	2	10
Square Footage of Individual Hangar Required	192,150	(3,603)	(743)	15,748
Square Footage of Conventional Hangar Space Required	55,000	(32,263)	(19,595)	24,338
Source: Parsons Brinckerhoff 2011				

4.19 Aircraft Maintenance Facilities

Aircraft maintenance facilities at Fox Airfield include Barnes Aviation, Exodus, MH Aviation, and High Desert Avionics. These facilities provide general repair and maintenance, avionics repair and installation, modifications, annual inspections, and aircraft restoration. Combined, these maintenance facilities provide based and itinerant aircraft access to the most common services required for the maintenance and operations of the aircraft that utilize Fox Airfield. Currently, these maintenance facilities total approximately 75,000 square feet. Assuming a factor of 75 square feet of aircraft maintenance area per based aircraft, approximately 17,000 square feet of maintenance area is required to meet facility maintenance requirements throughout the 20-year planning period. Given the anticipated development of air passenger service within the 20-year planning period, the need for a regional airline maintenance facility is warranted. This facility is anticipated to serve turbo prop and small jet aircraft.

4.20 Vehicular Parking

Vehicular parking areas are required to support the facilities located at Fox Airfield. This includes future air passengers, airport employees, rental car space, and visitors. Currently, there are approximately 250 vehicular parking spaces located on the south side of the Airport. Vehicular parking spaces are determined using peak activity levels. A planning value of 1.3 spaces per peak hour passenger was applied to determine the number of general aviation parking spaces needed at the Airport. Each parking space was assumed to be 350 square feet, which includes circulation and clearances. **Table 4-12** summarizes the anticipated number of vehicular parking spaces needed to support general aviation activities throughout the 20-year planning period.

Table 4-12: Vehicular Parking Requirements				
Description	**2,009**	**2,014**	**2,019**	**2,029**
Peak Hour Operations	8	9	10	12
Total Occupants	21	23	26	31
Spaces per Occupant	1.3	1.3	1.3	1.3
Total Parking Spaces (each)	27	30	34	40
Area per Parking Space (DF)	350	350	350	350
Total Parking Area (SF)	**9,485**	**10,412**	**11,849**	**13,994**

As shown in Table 4-12, a total of 40 vehicular parking positions are needed to support general aviation activity. Many of the general aviation aircraft owners/pilots park their personal vehicles at their hangars, therefore, given the number of existing vehicular parking spaces and parking at the hangar, no additional parking positions are needed to support general aviation facilities. It should be noted that some additional general aviation parking may be required if development occurs on the north side of the Airport. All of the existing 250 vehicular parking spaces are located on the south side of the Airport.

In order to determine the number of vehicular parking spaces needed to support air passenger service, the number of annual enplanements was categorized by weekdays and weekend days. A planning factor of .61 vehicles per daily enplanement was applied for all weekdays. A factor of 1.48 vehicles per daily enplanement was applied to all Saturdays and .92 vehicles per daily enplanement were applied to all Sundays. As shown in **Table 4-13**, approximately 500 new vehicular parking spaces are needed to support air passenger service throughout the 20-year planning period. Information published by the Institute of Transportation Engineers (ITE) was used to develop the parking assumptions used in this analysis.

Table 4-13: Air Passenger Service Parking Requirements				
Description	**2,009**	**2,014**	**2,019**	**2,029**
Annual Enplanements	-	70,500	139,600	183,300
Weekday Enplanements	-	50,760	100,512	131,976
Saturday Enplanements	-	9,870	19,544	25,662
Sunday Enplanements	-	9,870	19,544	25,662
Enplanements per Weekday	-	194	385	506
Weekday Average Peak Period Parking Demand		119	235	308
Area per Parking Space (SF)		350	350	350
Total Weekday Parking Area (SF)		41,522	82,220	107,957
Enplanements per Saturday		190	376	494
Saturday Average Peak Period Parking Demand		281	556	730
Area per Parking Space (SF)		350	350	350
Total Saturday Parking Area (SF)		98,320	194,688	255,633
Enplanements per Sunday		190	376	494
Saturday Average Peak Period Parking Demand		175	346	454
Area per Parking Space (SF)		350	350	350
Total Sunday Parking Area (SF)		61,118	121,022	158,907
Average Parking Area (SF)		66,987	132,643	174,166
Grand Total Parking (spaces)		191	379	498
Source: Parsons Brinckerhoff 2011				

In summary, the overall number of existing vehicular parking positions are adequate to support those activities associated with general aviation; however, when development begins to occur on the north side of the airfield, additional vehicular parking will be needed. The establishment of air passenger service will require approximately 500 new vehicular parking spaces by 2029. It is anticipated that the development of these vehicular parking spaces will be developed as demand requires.

4.21 Aircraft Rescue and Fire Fighting (ARFF) Facilities

FAA requires airports that receive scheduled service with aircraft with more 10 passenger seats of more to hold a current certificate meeting the requirements of Title 14 Code of Federal Regulations (CFR), Part 139. Once of the requirements from Title 14 CFR Part 139 is to have an operation Aircraft Rescue and Fire Fighting (ARFF) Facility. Currently, Fox Airfield is not served by scheduled air carrier operations; therefore, the Airport is not required to comply with the requirements set in place by Title 14 CFR Part 139. However, aircraft rescue and fire fighting services are provided by the local Los Angeles County fire station, which is located four miles south of the Airport. Additionally, two other fire stations are located southeast of the Airport and are within a ten minute drive. Both the Los Angeles County Fire Department and airport staff are trained to be the first responders.

As identified in Chapter 2.0, the Airport may establish commercial air service within the first five years of the planning period. As a result, the Airport will be required to develop ARFF facilities which meet the requirements set forth in Title 14 CFR Part 139. FAA AC 150/5210-6D Aircraft Fire and Rescue Facilities and Extinguishing Agents refers to the Standard for Aircraft Rescue and Fire Fighting Services at Airports (NFPA 403). The NFPA 403 recommends an index of fire fighting protection for general aviation and commercial airports. The NFPA 403 includes ten index levels with corresponding levels of protection. Each index level is based on the overall length of the critical aircraft. Based on the aviation forecasts developed in Chapter 2.0, the Airport will be categorized as an Index A for the first five years, Index B for the second five years, and Index C for the last ten years. **Table 4-14** indentifies the recommended levels of protection for each index level anticipated to occur at Fox Airfield.

Table 4-14: Aircraft Rescue and Fire Fighting Requirements

	Primary Agents				Supplemental Agents	
	AFFF		Protein Foam			
	Water for Foam Production (gallons)	Solution Application Rate (gpm)	Water for Foam Production (gallons)	Solution Application Rate (gpm)	Dry Chemical Powders (lbs.)	Number of Vehicles
Index Level						
A* (Category 1)	120	120	180	180	100	1
A* (Category 2)	200	157	300	236	200	1
A* (Category 3)	670	285	870	438	300	1
A (Category 4)	1,340	468	1,730	715	300	1
A (Category 5)	2,760	865	3,580	1,331	450	2
B (Category 6)	3,740	1,245	5,090	1,920	450	2
C (Category 7)	4,880	1,585	6,830	2,437	450	3

* Rounded off to the nearest gallon. Actual water requirements should be adjusted to coincide with conventional water ranging from 200 to 500 gallons in size.

* Overall length of aircraft up to but not included 30, 39, and 59 feet. FAA category A is used if the airport has scheduled service with aircraft that having more than nine passenger seats.

Source: FAA AC 150/5210-6C, Aircraft Fire and Rescue Facilities and Extinguishing Agents

4.22 Airport Maintenance

Fox Airfield has three primary fixed based operators which provide major airframe, power plant, and avionics repair. These include Barnes Aviation, Exodus Aviation and High Desert Avionics. Aircraft maintenance provided at Fox Airfield includes general repair, structural maintenance, preventative maintenance, annual inspections, interior services, and aircraft restoration. While the number and type of existing airport maintenance facilities are adequate throughout the planning period, development on the north side of the airfield will require additional aircraft maintenance and repair facilities. While these facilities will be implemented as demand warrants, it is anticipated that an additional fixed base operator will be needed to support activities associated with development on the north side of the airfield.

4.23 Aviation Fuel Storage

Fuel storage requirements for Fox Airfield were determined using historic fuel flowage data provided by the County of Los Angeles Department of Public Works, Aviation

Division. As shown in **Table 4-15**, fuel flowage varied for the years 2007 through 2010. During this time period, the sale of 100 Low Lead (LL) fuel peaked in 2009 but declined back to average levels in 2010. The sale of Jet A increased steadily from 2007 to 2010. The peak month fuel flowage rate for 100LL was determined assuming 17.3 percent of 100 Low Lead sales occurred during the busiest month of the year (August). Similarly, the average day/peak month rate for Jet A was assumed to be 15 percent. For the purposes of planning, an average day was assumed to be 30.5 days for all average day/peak month fuel flowage calculations.

Table 4-15: Aviation Fuel Storage Requirements

Description	Historical Fuel Flowage (year)				Future Flow Flowage (year)		
	2007	2008	2009	2010	2014	2019	2029
100 Low Lead							
Annual Fuel Flowage (g)	240,597	163,992	354,282	150,581	143,052	150,205	168,980
Peak Month Fuel Flowage (g)	41,623	28,371	61,291	26,051	24,748	25,985	29,234
Average Day/Peak Month Fuel Flowage (g	1,365	930	2,010	854	811	852	958
Storage Capacity (14 day reserve)	19,106	13,023	28,133	11,958	11,360	11,928	13,419
Jet A							
Annual Fuel Flowage (g)	239,611	239,502	300,377	393,368	472,042	519,246	649,057
Peak Month Fuel Flowage (g)	36,181	36,165	45,357	59,399	71,278	78,406	98,008
Average Day/Peak Month Fuel Flowage (g	1,186	1,186	1,487	1,947	2,337	2,571	3,213
Storage Capacity (14 day reserve)	16,608	16,600	20,820	27,265	32,718	35,990	44,987
Source: AAC Fuel Flowage and Fuel Revenue							

As shown in Table 4-12, fuel sales are expected to increase for both 100LL and Jet A over the 20-year planning period. The total existing fuel storage capacity is 80,000 gallons and consists of four 20,000 gallon tanks. Currently, the Airport has two 20,000 gallon tanks for 100LL and two 20,000 gallon tanks for Jet A. The largest increase in fuel storage capacity will be for Jet A. Given the estimate of approximately 45,000 gallons for a typical 14 day reserve, the Airport should install an additional 5,000 gallon fuel tank for Jet A to serve those aircraft anticipated to provide air passenger service. A final decision to install additional Jet A fuel storage capacity will likely be contingent on the level of fuel sales occurring near the end of the planning period.

4.24 Ground Access

As identified in Chapter 1.0, the Airport is located 45 minutes north of Los Angeles and lies within the city limits of Lancaster. Ground access to the Airport is considered excellent. The Airport is located one mile west of State Highway 14. Avenues G, F, 60th Street, and 30th Street surround the airport and provide direct access to William J. Barnes Avenue, which is the main entrance way to the Airport. The capacity of Avenues G, F, 60th Street and 30th Street is 1,480 vehicles per lane, per hour and consist of two-way traffic. Each roadway is 24 feet in width.

The existing roadway system will accommodate the anticipated level of general aviation activity throughout the 20-year planning period. When development occurs on the north side of the Airport, a new entrance roadway will be needed to provide access for new aviation and non-aviation facilities. The timing of this new roadway is contingent on the level of demand for north airfield development.

4.25 Airport Security

The Transportation Security Administration's (TSA) Security Guidelines for General Aviation Airports indentifies guidelines to enhance security at general aviation airports. To evaluate the security needs at a specific airport, the TSA has developed an Airport Characteristics Measurement Tool. **Table 4-16** displays the Airport Characteristics Measurement Tool along with Fox Airfield's ranking. The overall risk is measured on a scale from 0 (lowest risk) to 5 (highest risk), and grouped into four different levels.

Table 4-16: Airport Characteristics Measurement Tool

Security Characteristics	Assessment Scale for Public Use Airports	Assessment Scale for Fox Airfield
Location		
Within 30nm of mass population areas	5	5
Within 30nm of a sensitive site	4	0
Falls within outer perimeter of class B airspace	3	0
Falls within the boundaries of restricted airspace	3	3
Based Aircraft		
Greater than 101 based aircraft	3	3
26-100 based aircraft	2	0
11-25 based aircraft	1	0
10 or fewer based aircraft	\	\
Based aircraft over 12,500 lbs	3	3
Runways		
Runway length equal to or greater than 5000 feet	5	5
Runway length less than 5000 feet, greater than 2001 feet	4	0
Runway length 2000 feet or less	2	0
Asphalt or concrete runway	1	1
Operations		
Over 50,000 annual aircraft operations	4	4
Part 135 operations	3	3
Part 137 operations	3	0
Part 125 operations	3	3
Flight training	3	3
Flight training in aircraft over 12,500 lbs	4	0
Rental aircraft	4	4
Maintenance, Repair, and Overhaul facilities conducting long term storage of aircraft over 21,500 lbs	4	4
Total	**55**	**41**

Source: Parsons Brinckerhoff 2011

An analysis of Fox Airfield's security characteristics was conducted. The Airport received a score of 41 points which ranks it in the second highest risk level. These characteristics are shown in **Exhibit 4-1** below.

Exhibit 4-1: Suggested Airport Security Requirements

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

A detailed description of each suggested guideline is provided below.

Access Controls: Boundary measures around the airport property should be considered in order to protect security areas from unauthorized access. Physical barriers, such as fencing and walls, electronic barriers, and natural barriers should be considered. Physical barriers, such as fencing or a runway, can be used to delay the access of unauthorized persons onto sensitive areas of the airport.

Lighting System: Protective lighting provides a means of continuing a degree of protection from theft, vandalism, or other illegal activity at night. Security lighting

systems should be connected to an emergency power source. Outdoor area lighting is important to help improve the security of aircraft parking and hangar areas, fuel storage areas, airport access points, and other appropriate areas.

Personnel Identification System: Identification of personnel should be considered to identify airport employees or authorized tenant access to various areas of the airport. Elements that are part of an identification system include a full face image, the individual's full name, the airport name, the employer, a unique identification number, the scope of the individual access and movement privileges, and a clear expiration date.

Vehicle Identification System: a system of vehicle identification can assist airport personnel and law enforcement in identifying authorized vehicles. Vehicles can be identified through the use of decals, stickers, or hang tags.

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 Support: It is imperative that the airport operator establishes and maintains a liaison with appropriate law enforcement agencies including local, state, and federal. The airport operator should communicate and educate local law enforcement agencies on operational and security procedures at the airport

Security Committee: The airport management should consider establishing an airport security committee composed of airport tenants and users drawn from all segments of the airport community. The main goal of this group is to involve airport stakeholders in developing effective and reasonable security measures and disseminating timely security information.

Itinerant Pilot Sign-In/Sign-Out Procedures: Sign in and out procedures can help identify non-based (itinerant) pilots and aircraft using the airport.

Signs: Signs should be posted to warn against unlawful activity.

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 William J. Fox Airfield.

Positive Passenger/Cargo/Baggage ID: In order to enhance the security of the airport and of the surrounding community; prior to boarding, the pilot in command should ensure that the identity of all occupant is verified, all occupant are aboard at the invitation of the owner/operator, and all baggage and cargo is known to the occupants.

All aircraft secured: Proper securing of aircraft is the most basic method of enhancing General Aviation Airport security. Pilots should employ multiple methods of securing their aircraft to make it as difficult as possible for an unauthorized person to gain access to it.

Community Watch Program: The vigilance of airport users is one of the most prevalent methods of enhancing security at general Aviation airports. Typically, the user population is familiar with those individuals who have a valid purpose for being on the airport property. Teaching an airport's users and tenants what to look for with regard to unauthorized and potentially illegal activities is essential to effectively utilizing this resource.

Contact List: Including law enforcement and other emergency contacts.

As identified in Chapter 2.0, the Airport may establish air passenger service within the first five years of the planning period. As a result, the airport will be required to develop security measures which meet the requirements set forth in 14 CFR Part 1542. The airport will have to develop an Airport Security Program (ASP), in which the measures taken by the airport to comply with 14 CFR Part 1542 will be detailed. It is the responsibility of the airport operator to write the Airport Security Program detailing how the airport will meet the 14 CFR part 1542 requirements.

The Airport Security Program will be written and signed by the airport operator and will be approved by the TSA. The items detailed in the full security program include:

- The Airport Security Coordinator's name, means of contacts, duties, and training requirements
- A description of the secured areas, including a map detailing boundaries and pertinent features
- Measures used to perform access control
- Procedures to control movement in the secured areas
- Description of the Air Operations Area (AOA)
- Description of the Security Identification Display Area (SIDA)
- Description of the Sterile Areas
- Procedures used to comply with finger-based criminal history checks
- Description of the personnel identification systems
- Description of the escort procedures
- Description of the challenge procedures
- Description of law enforcement support
- Procedures to maintain the records
- Procedures and descriptions of facilities and equipment used to support TSA inspection of individuals and property
- Contingency plan
- Procedures for the distribution, storage, and disposal of security programs, Security Directives, Information Circulars, implementing instructions, and classified information

- Description of alternate security procedures
- Airport tenants security program

Chapter 5

Alternatives Analysis

5.0 ALTERNATIVES ANALYSIS

General William J. Fox Airfield is a general aviation airport with significant corporate activity. The Airport has two Fixed Based Operators (FBO), an avionics repair facility, restaurant, museum and the United States Forest Service's (USFS) Fox Air Tanker Base. As identified in Chapter 1.0, a Fixed Based Operator is a commercial business who is granted the right the right by the airport sponsor to operate on an airport and provide aeronautical services. Over the 20-year planning period (2009-2029), these facilities are anticipated to continue operations and new facilities associated with FAR Part 139 passenger service, air cargo/logistics support, aircraft maintenance, new FBO, aircraft storage, aircraft training/instruction and the expansion of the USFS operation are planned as part of the improvements and development in this Master Plan Update. This chapter analyzes four alternatives. Three of these alternatives are known as build alternatives, because they accommodate the anticipated changes in activity at Fox Airfield over the planning period. The fourth no build alternative does not meet the long-term needs of the Airport; however, it does include the projects on the Airport's current Airport Capital Improvement Plan (ACIP) on file with the FAA. The no build alternative is recommended for consideration in order to evaluate the impacts of not implementing the Airport's long-term needs. Each of the build alternatives meets the facility requirements identified in Chapter 4.0; however, the level of development beyond these requirements varies from one alternative to the next. The purpose of these incremental levels of development is to provide the County of Los Angeles, Department of Public Works, Aviation Division with plausible scenarios that meet the long term requirements of Fox Airfield but also create new revenue generating uses and/or opportunities on airport-owned property. These uses include both aviation and non-aviation related facilities. The development of any facilities at the Airport are demand driven rather than by schedule (specific year) although for planning purposes, a 20-year development schedule is presented.

5.1 Introduction

This alternatives analysis examines both the airside (airfield) and landside components of the Airport. The objective of the alternatives analysis is to identify a set of development alternatives that will accommodate the needs at Fox Airfield over the 20-year planning period. The process of conducting this alternatives analysis includes four primary tasks, these include:

- Identification of Alternatives
- Identification of Evaluation Criteria
- Alternatives Evaluation
- Recommendation of Preferred Alternative

Table 5.1 summarizes the recommended facility requirements from Chapter 4.0. Each of the build alternatives was developed to meet these needs for the 20-year planning period. Key additions to the existing facilities at Fox Airfield include the development of additional conventional and individual hangar space (i.e. T-, Corporate and box

hangars), itinerant tie down positions, carrier passenger terminal building, and vehicular parking for the air carrier terminal.

Table 5.1: Recommended Facility Requirements

Description	Existing	Proposed
Conventional Hangars SF (Fixed Wing & Helicopter)	55,000	80,000
Based Aircraft Tie downs *	332	0
Individual Hangars (Spaces)	105	115
Itinerant Tie downs	17	27
General Aviation Terminal *	5,000	0
Air Carrier Terminal (SF)	0	5,500
Vehicular Parking (GA Parking Spaces) *	233	0
Vehicular Parking (Air Carrier Parking Spaces)	0	500
Fuel Storage Capacity (JET A) - gallons *	40,000	0
Fuel Storage Capacity (100 LL)- gallons *	40,000	0
** Requirement adequate for planning period*		

A brief summary of each alternative is provided below in **Table 5.2**. Section 5.2 provides a detailed description of each alternative considered for this analysis.

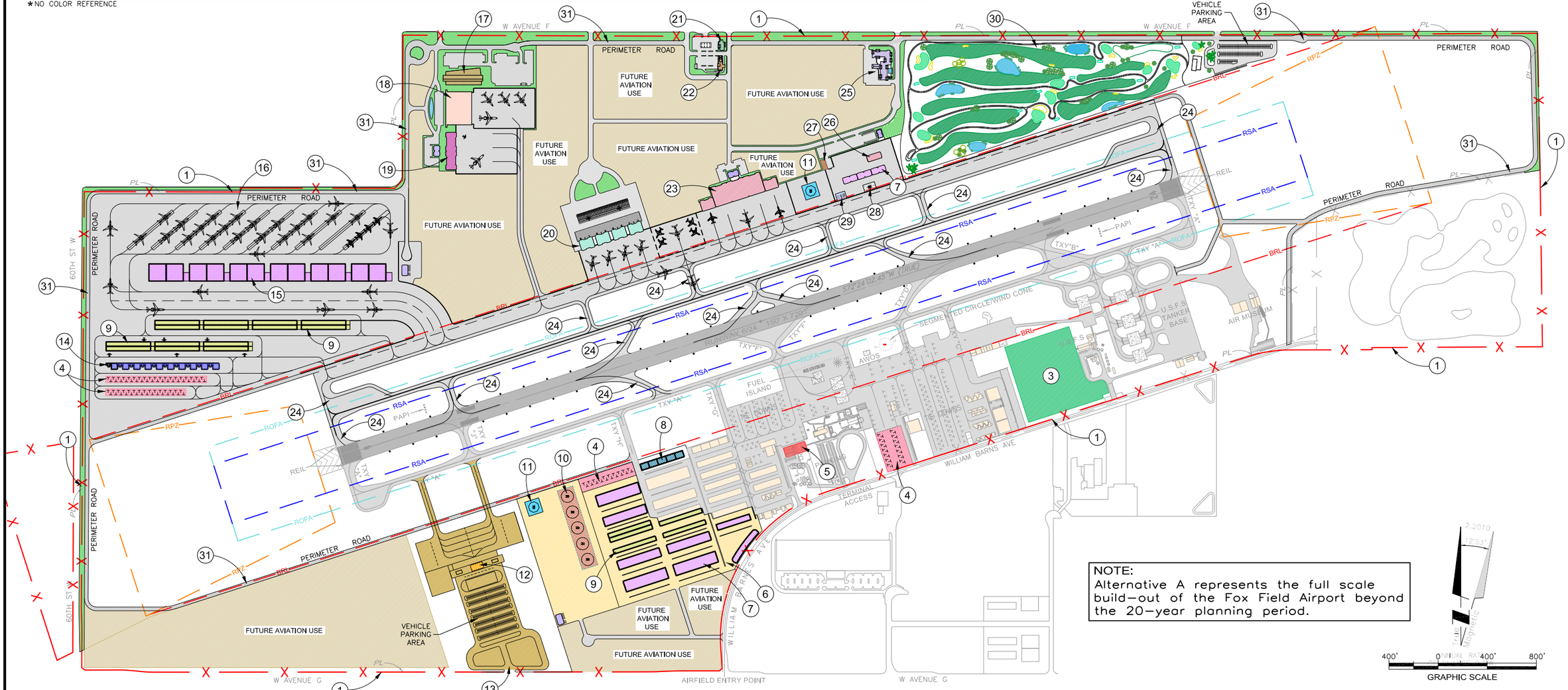
Table 5.2: Fox Airfield Alternatives Overview

Alternative	Description	Projects
Alternative A: FAR Part 139 Commercial Service with Full Airport Build Out	Alternative A assumes that Fox Airfield becomes a commercial service airport with scheduled airline(s) operating in a separate, new terminal building. General aviation will continue to comprise the majority of aircraft operations.	All projects in the No Build alternative
		New 5,500 square foot terminal building that meets TSA requirements
		New 500-space automobile parking area to serve the new terminal building
		New Aircraft Rescue and Fire Fighting (ARFF) station
		New entrance road to the terminal building
		Construction of a helipad with additional helicopter parking places
		Consolidation of helicopter operations with a new access road and gate
		Expanded general aviation apron which extends to the west with additional individual hangars
		New individual hangars west of the existing general aviation area
		New aircraft tie downs on apron east of the existing fuel island
		Expansion capability for the United States Forrest Service (USFS) to the west of their existing facilities
		Development of an air cargo complex on the north side
		Development of a new helipad on the north side
		Development of a new parallel taxiway on the north side of Runway 6-24
		Development of a new or expanded high-end FBO on the north side
Alternative B: Established FAR Part 135 Commuter/On Demand Service	In Alternative B, Fox Airfield remains a general aviation facility except with regularly scheduled charter service. This alternative includes renovations to the existing terminal building to accommodate regularly scheduled charter service. Alternative B assumes a minimum of one flight per day.	All projects contained in the No Build alternative
		Moving airport management and other tenants (to be identified later) to the former FSDO building (vacant)
		Construction of a helipad with additional helicopter parking places to the west of the existing general aviation hangar area
		Consolidation of helicopter operations with a new access road and gate
		Expansion of the general aviation apron to the west with 10 additional individual hangars
		Construction of 4 new conventional hangars
		Designation of 27 new aircraft tie downs on apron east of the existing fuel island
Alternative C: Expanded Commercial / Charter Service	For Alternative C, Fox Airfield remains a general aviation facility with limited charter service using the existing terminal building. Current airport management activities are moved to the former Flight Standards District Office (FSDO) building, which is currently vacant. Alternative C assumes two to four charter flights per week using turboprop or jet aircraft.	All projects contained in the No Build (Alternative A)
		Fosters charter activity by moving the airport management functions out of the terminal into the former FSDO building (vacant)
		Construction of a helipad with additional helicopter parking places to the west of existing general aviation hangar area
		Consolidation of helicopter operations with a new access road and gate
		Expansion of the general aviation apron to the west with 10 additional individual hangars
		Construction of four new conventional hangars
		Designation of 27 new aircraft tie downs on apron east of the existing fuel island
Alternative D:– No Action	In Alternative D, Fox Airfield remains a general aviation facility as it is today with limited charter activity using the Airport's existing facilities. Projects previously indentified in the Fox Airfield Airport Capital Improvement Plan (ACIP) are included in Alternative D.	A high speed exit from Runway 6 between Taxiways J and F
		Improved signage for Taxiway F
		A two-phased replacement of existing perimeter fence
		Routine pavement maintenance

LEGEND

#	DESCRIPTION	SYMBOL / COLOR	#	DESCRIPTION	SYMBOL / COLOR	#	DESCRIPTION	SYMBOL / COLOR
1	PERIMETER FENCE REPLACEMENT	X	13	NEW PART 139 SERVICE AREA		25	CONFERENCE CENTER	
2	RESERVED	*	14	PORTABLE HANGARS		26	CONVENTIONAL MAINTENANCE HANGAR	
3	U.S.F.S FUTURE EXPANSION AREA		15	STORAGE AND MAINTENANCE HANGARS		27	FUEL FARM	
4	TIE-DOWNS TRANSIENT		16	AIRCRAFT STORAGE AREA	*	28	AIRCRAFT FUELING STATION	*
5	ARFF STATION		17	AERONAUTICAL COLLEGE		29	WASH RACK	
6	EXPANDED GENERAL AVIATION AREA		18	AERONAUTICAL COLLEGE HANGAR		30	9 HOLE GOLF COURSE WITH CLUBHOUSE	*
7	CONVENTIONAL HANGARS		19	AIR TRANSPORTATION TRAINING CENTER		31	PERIMETER ROAD	
8	CORPORATE HANGARS		20	AIR CARGO AND LOGISTICS HANGARS				
9	INDIVIDUAL HANGARS		21	GAS STATION				
10	HELICOPTER PARKING		22	FAST FOOD				
11	HELIPAD		23	AIRCRAFT MAINTENANCE FACILITY			FUTURE AVIATION USE	
12	NEW 5,500 SF TERMINAL		24	NEW TAXIWAYS, APRONS AND RAMPS	*		EXISTING BUILDINGS	

*NO COLOR REFERENCE

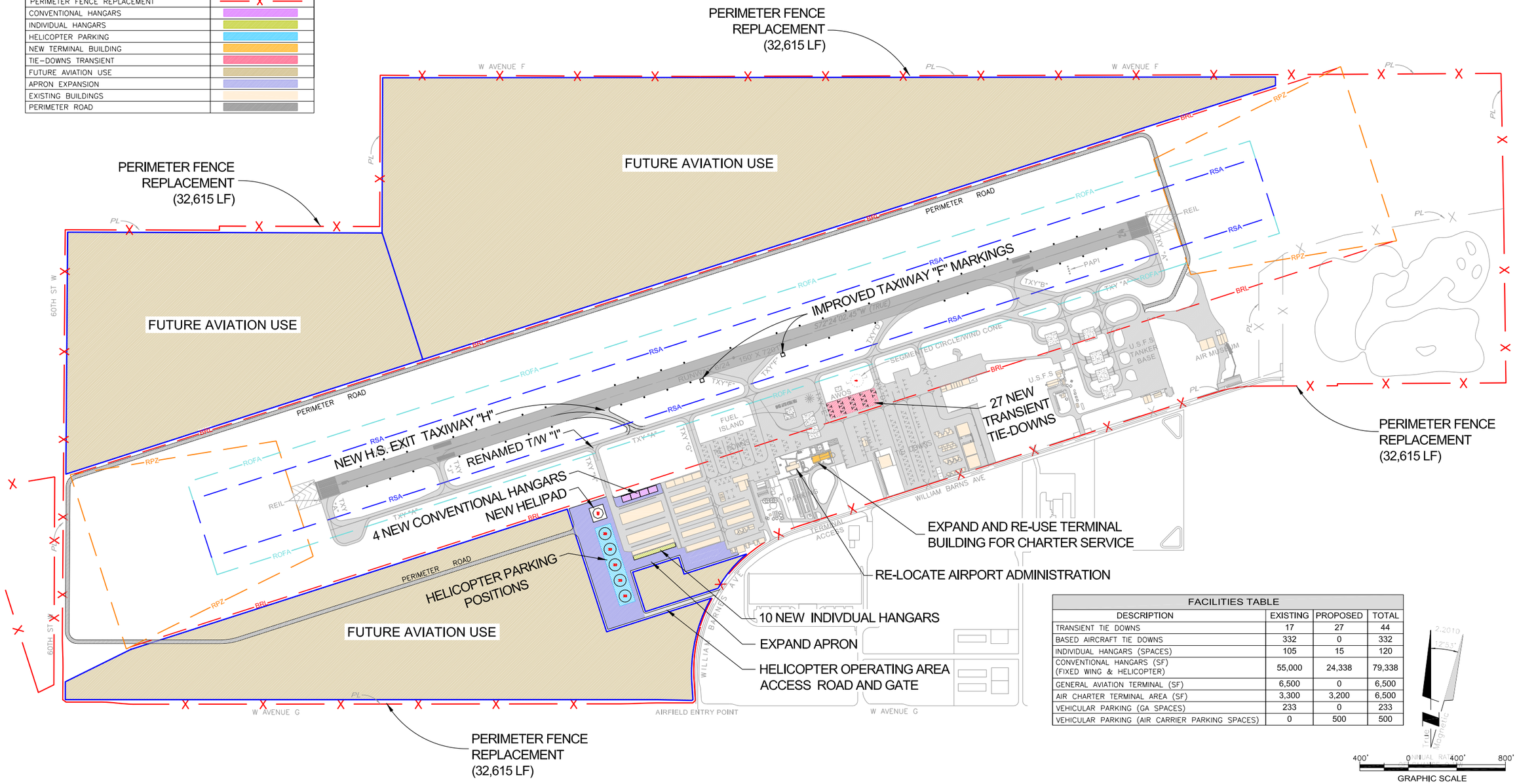


GENERAL WILLIAM J.
FOX AIRFIELD
Lancaster, CA
Master Plan Update

ALTERNATIVE "A"

FIGURE

LEGEND	
DESCRIPTION	SYMBOL / COLOR
PERIMETER FENCE REPLACEMENT	
CONVENTIONAL HANGARS	
INDIVIDUAL HANGARS	
HELICOPTER PARKING	
NEW TERMINAL BUILDING	
TIE-DOWNS TRANSIENT	
FUTURE AVIATION USE	
APRON EXPANSION	
EXISTING BUILDINGS	
PERIMETER ROAD	



FACILITIES TABLE			
DESCRIPTION	EXISTING	PROPOSED	TOTAL
TRANSIENT TIE DOWNS	17	27	44
BASED AIRCRAFT TIE DOWNS	332	0	332
INDIVIDUAL HANGARS (SPACES)	105	15	120
CONVENTIONAL HANGARS (SF) (FIXED WING & HELICOPTER)	55,000	24,338	79,338
GENERAL AVIATION TERMINAL (SF)	6,500	0	6,500
AIR CHARTER TERMINAL AREA (SF)	3,300	3,200	6,500
VEHICULAR PARKING (GA SPACES)	233	0	233
VEHICULAR PARKING (AIR CARRIER PARKING SPACES)	0	500	500

GENERAL WILLIAM J. FOX AIRFIELD
Lancaster, CA
Master Plan Update

ALTERNATIVE "B"

FIGURE

LEGEND	
DESCRIPTION	SYMBOL / COLOR
PERIMETER FENCE REPLACEMENT	X
CONVENTIONAL HANGARS	
INDIVIDUAL HANGARS	
HELICOPTER PARKING	
TERMINAL RE-USE	
TIE-DOWNS TRANSIENT	
FUTURE AVIATION USE	
APRON EXPANSION	
EXISTING BUILDINGS	
PERIMETER ROAD	

PERIMETER FENCE REPLACEMENT (32,615 LF)

PERIMETER FENCE REPLACEMENT (32,615 LF)

FUTURE AVIATION USE

FUTURE AVIATION USE

IMPROVED TAXIWAY "F" MARKINGS

NEW H.S. EXIT TAXIWAY "H"

RENAMED T/W "I"

4 NEW CONVENTIONAL HANGARS

NEW HELIPAD

HELICOPTER PARKING POSITIONS

FUTURE AVIATION USE

27 NEW TRANSIENT TIE-DOWNS

RE-USE TERMINAL

RE-LOCATE AIRPORT ADMINISTRATION

10 NEW INDIVIDUAL HANGARS

EXPAND APRON

HELICOPTER OPERATING AREA ACCESS ROAD AND GATE

PERIMETER FENCE REPLACEMENT (32,615 LF)

PERIMETER FENCE REPLACEMENT (32,615 LF)

FACILITIES TABLE			
DESCRIPTION	EXISTING	PROPOSED	TOTAL
TRANSIENT TIE DOWNS	17	27	44
BASED AIRCRAFT TIE DOWNS	332	0	332
INDIVIDUAL HANGARS (SPACES)	105	15	120
CONVENTIONAL HANGARS (SF) (FIXED WING & HELICOPTER)	55,000	24,338	79,338
GENERAL AVIATION TERMINAL (SF)	6,500	0	6,500
VEHICULAR PARKING (GA SPACES)	233	0	233

400' 0 400' 800'

GRAPHIC SCALE

GENERAL WILLIAM J. FOX AIRFIELD
Lancaster, CA
Master Plan Update

ALTERNATIVE "C"

FIGURE

LEGEND	
DESCRIPTION	SYMBOL / COLOR
PERIMETER FENCE REPLACEMENT	
EXISTING BUILDINGS	
SLURRY SEAL SOUTH PARKING RAMPS	

PERIMETER FENCE REPLACEMENT (32,615 LF)

PERIMETER FENCE REPLACEMENT (32,615 LF)

FUTURE AVIATION USE

FUTURE AVIATION USE

IMPROVED TAXIWAY "F" MARKINGS

NEW H.S. EXIT TAXIWAY "H"

RENAMED T/W "I"

FUTURE AVIATION USE

PERIMETER FENCE REPLACEMENT (32,615 LF)

W AVENUE F

W AVENUE G

60TH ST W

WILLIAM BARNES AVE

AIRFIELD ENTRY POINT

TERMINAL ACCESS

U.S.F.S. TANKER BASE

AIR MUSEUM

SEGMENTED CIRCLE/WIND CONE

AWOS

FUEL ISLAND

TOWER

PAPI

REIL

RSA

ROFA

RPZ

BRL

PL

TXY "A"

TXY "B"

TXY "F"

TXY "G"

TXY "I"

2.2010

2°53'

True

Magnetic

ANNUAL RATE OF CHANGE 0.1°W

400' 0 400' 800'

GRAPHIC SCALE

GENERAL WILLIAM J. FOX AIRFIELD
Lancaster, CA
Master Plan Update

ALTERNATIVE "D"

FIGURE

5.2 Identification of Alternatives

As noted above, four alternatives – a no build plus three additional build alternatives were developed to meet the needs of Fox Airfield for the 20-year planning period. The scope of each alternative is identified below:

- **Alternative A:** Fox Airfield transitions into a commercial service FAR Part 139 airport. This includes the development of a new terminal building on the south airfield to accommodate future passenger service. General aviation will continue to make up the majority of aircraft operations and activity at the Airport. Aviation and non aviation revenue generating facilities are included in Alternative A.

- **Alternative B:** Fox Airfield remains a general aviation airport. FAR Part 135 Commuter or On Demand Service occurs on a regular basis (minimum of 1 flight per day). The existing terminal building is retrofitted to serve and support the Part 135 operations. Current airport administrative functions are relocated to the former Flight Inspection Safety District Office FISDO building located directly west of the existing terminal building.

- **Alternative C**: Fox Airfield remains a general aviation airport. Occasional FAR Part 135 Commuter or On Demand Service occurs on a non scheduled basis. The existing terminal and former Flight Inspection Safety District Office (FISDO) buildings as well as their functions remain unchanged.

- **Alternative D:** Fox Airfield remains a general aviation airport. Facility requirements identified in Chapter 4.0 are not achieved over 20-year planning period. Future development includes only those projects identified on Fox Airfield's current ACIP. This includes new high speed taxiway exist, perimeter fence replacement, and general pavement maintenance.

5.2.1 Alternative A: FAR Part 139 Commercial Service with Full Airport Build Out

Alternative A includes implementation of commercial passenger service under FAR Part 139. Implementing commercial passenger service would require significant capital improvements including: an AARF station; new terminal building and supporting apron; new parallel taxiway, expanded fuel capabilities, vehicular parking, and landside roadway access. As shown in **Alternative A**, a new terminal passenger facility is located in the southwest corner of the Airport. One of the key objectives of Alternative A is to create separation between the different aircraft utilizing the Airport as well as the type of operations those aircraft perform. Because smaller general aviation aircraft are slower moving and require more time to enter and exit the runway and taxiways, the Airport can gain operational efficiencies by reducing the confluence of small and large aircraft. In Alternative A, smaller GA aircraft activities are co-located to avoid interaction with larger aircraft which operate near the existing USFS base and the proposed passenger terminal facility. The use of two right-angle taxiways enable air passenger aircraft the ability to enter and exit Runway 6-24 without encroaching the general

aviation area located on the south airfield. Alternative A also includes a dedicated helicopter operating area with both helipad and five helicopter parking positions to support future helicopter activity.

Alternative A allows for expansion of both general aviation and USFS facilities located on the south airfield. In addition, this alternative reflects significant development on the north airfield including the construction of new aircraft storage facilities (i.e. T-, corporate and box hangars); long-term aircraft parking/storage; aeronautical college; ATP training facility; air cargo logistics facility; new FBO; maintenance facility; 18-hole golf course; gas station and restaurant. Most of these aviation related facilities are served by the development a new parallel taxiway directly north Runway 6-24. Overall, Alternative A maximizes the development of aviation related uses as well as non aviation uses which are anticipated to contribute significantly to revenue generation at Fox Airfield.

5.2.2 Alternative B: – Established FAR Part 135 Commuter/On Demand Service

Alternative B assumes implementation of daily FAR Part 135 Commuter/On Demand Service at Fox Airfield during the planning period. These commuter/on demand operations are supported by the development of a new 5,000 SF terminal building located within the existing terminal building footprint. The projects recommended in Alternative B were developed to support Part 135 Commuter/On Demand Service; however, FAR Part 139 Commercial Service could be achieved in the future using the same facilities. This new terminal facility would also include a 100 space vehicular parking lot, new aircraft frontage apron, with passenger loading equipment. As shown in **Alternative B**, a dedicated helicopter operations area with one helipad and five helicopter parking positions is included to accommodate future helicopter activity. One of the key benefits of Alternative B is the flexibility to accommodate future general aviation facilities on the west general aviation ramp area.

Alternative B includes the preservation of approximately 20 acres of undeveloped land directly west of the USFS tanker base. This parcel of land is planned for the future expansion of the USFS facility. In addition, 27 new aircraft tie-down positions are shown just east of the existing fuel island. As part of the Fox Airfield ACIP, a high speed taxiway exit is planned on the south side of the runway approximately 2,100 feet from the end of Runway 6. Finally, Alternative B includes new and/or improved signage at the confluence of Runway 6-24 and Taxiway F. Such signage is needed to enhance situational awareness of pilots exiting from the runway to Taxiway F.

5.2.3 Alternative C: – Expanded Commercial / Charter Service

As shown in **Alternative C**, Fox Airfield is upgraded to support FAR Part 135 Commuter/On Demand service over the 20-year planning period. Facilities planned for Alternative C were based on approximately two to four flights per week using turbine and/or jet aircraft. Alternative C assumes the existing terminal building is retrofitted to accommodate ticketing, security, and baggage handling. Airport administrative

functions are relocated to the former FAA FSDO building located directly to the west of the existing terminal building. This alternative also includes the development of new individual aircraft hangars (i.e. T-Hangars) along the west general aviation ramp area. Alternative C includes the development of a dedicated helicopter operations area with one helipad and five helicopter parking positions. One of the key benefits of Alternative C is the flexibility to accommodate future general aviation facilities on the west general aviation ramp area. In addition, 27 new aircraft tie-down positions are shown just east of the existing fuel island. As part of the Fox Airfield ACIP, a high speed taxiway exit is planned on the south side of the runway approximately 2,100 feet from the end of Runway 6. Finally, Alternative C includes new and/or improved signage at the confluence of Runway 6-24 and Taxiway F. Such signage is needed to enhance situational awareness of pilots exiting from the runway to Taxiway F.

5.2.4 Alternative D: – No Action

For Alternative D (the no action alternative) Fox Airfield remains a general aviation airport without Commuter/On Demand Service. As shown in **Alternative D**, this scenario includes those projects on Fox Airfield's 5-year ACIP as well as improved airport signage located at Taxiway F. These 5-year ACIP projects include: a high speed taxiway exit, perimeter fence replacement and general pavement maintenance. Alternative D does not meet the 20-year facility requirements indentified in Chapter 4.0.

5.3 Identification of Evaluation Criteria

Four evaluation criteria were developed to analyze each of the alternatives for Fox Airfield. Quantitative measures were used to evaluate the alternatives as much as possible; however, some qualitative measures were substituted where qualitative measures could not accurately compare alternatives. The four evaluation criteria include:

- Long Term Aviation Needs and Future Flexibility
- Operational Efficiency
- Cost Effectiveness
- Community and Environmental Compatibility

5.3.1 Long Term Aviation Needs and Future Flexibility

Long Term Aviation Needs and Future Flexibility refers to the ability of each alternative to meet the 20-year facility requirements identified in Chapter 4.0 as well as their individual ability to satisfy the needs of the Airport beyond the year 2029. In addition, this criterion considers the ability for each alternative to provide flexibility resulting from unforeseen change(s) at the Airport.

5.3.2 Operational Efficiency

As mentioned in Section 4.2.1, FAA Design Group IV (wing span 118 feet up to 171 feet) and Approach Category C (121 knots to 141 knots) were used to determine the optimum operating conditions for Fox Airfield throughout the 20-year planning period. Operational efficiency refers to each alternative's ability to maximize runway capacity, decrease runway crossings, and maintain unobstructed visibility of all runway approach zones, runways and taxiways for ATC. In addition, this criterion considers the relationship between future development and the design aircraft's operating requirements.

5.3.3 Cost Effectiveness

The cost effectiveness criterion compares the anticipated development costs of each alternative. Major development projects and order of magnitude costs were evaluated for each alternative using a qualitative based analysis. For purposes of this analysis, development costs include only those aviation-related projects that are typically eligible for FAA funding through the current Airport Improvement Program (AIP) grant program. These projects include obstruction removal, project site preparation, surface water drainage, runways, taxiways, terminal area aprons, public parking, land acquisition, NAVAIDS, access roads, airfield service road tunnels, airfield maintenance facilities, and noise mitigation projects within the design year 65 CNEL noise contour. The intent of this criterion is to evaluate the financial feasibility and cost-effectiveness associated with each alternative.

5.3.4 Community and Environmental Compatibility

The Community and Environmental Compatibility criterion refers to each alternative's potential impact to the surrounding environment as well as the ability for future development to occur without a significant impact on the operation of the Airport. The following criteria were analyzed to determine potential impacts to community and environmental compatibility.

- Aircraft Noise
- Compatible Land Use
- Induced Socioeconomic Impacts
- Air Quality
- Water Quality
- DOT 4(f)
- Historic, Architectural, Archaeological and Cultural Resources
- Biotic Communities
- Endangered and Threatened Species
- Wetlands
- Floodplains
- Coastal Zone Management
- Prime and Unique Farmland
- Energy Supply and Natural Resources
- Construction Impacts
- Light Emissions
- Solid Waste
- Wild and Scenic Rivers
- Visual Impacts
- Hazardous Waste

5.4 Evaluation of Alternatives

Alternatives A, B, C, and D were evaluated using the four criteria described in Section 5.3. As shown below in **Table 5.3**, Alternative A ranked best among all alternatives considered. Alternative A received a ranking for Good for its ability to meet future aviation needs, improve operational efficiency, and compatibility with the local community/environment; however, it received a ranking of poor based on cost. Alternatives B and C received an equal ranking of Poor based on the level of flexibility and efficiency they provide as compared to Alternative A. Alternative D does not meet the long term needs of the Airport or improve efficiency on the airfield. Alternative D was ranked Fair.

Table 5.3: Overall Alternatives Evaluation

Resource Areas	Alternative A	Alternative B	Alternative C	Alternative D
Long Term Aviation Needs and Future Flexibility	●	●	●	○
Operational Efficiency	●	◗	◗	○
Cost Effectiveness	○	◗	◗	●
Community and Environmental Compatibility	●	●	●	●
Rating	**Good (3.0)**	**Good (3.0)**	**Good (3.0)**	**Fair (2.0)**

Legend: ●= Good (1) ◗ = Fair (.5) ○ = Poor (0) NR = No Rating

Sections 5.3.1 thru 5.3.4 provide an in-depth description of all alternatives considered based on each individual evaluation criteria.

5.4.1 Long Term Aviation Needs and Future Flexibility

The long term aviation needs of Fox Airfield require each alternative under consideration the opportunity for future expansion of general aviation facilities such as aircraft storage space, a helicopter operations area and itinerant ramp parking. In addition, each alternative must provide the ability for the USFS to expand if necessary. Given the potential for unforeseen changes in activity at Fox Airfield, each alternative must also provide future flexibility for the development of those facilities planned as well as those not yet known. Each alternative's ability to achieve future flexibility hinges on the type, location and long term need for development over the 20-year planning period. **Table 5.3.1** depicts the results of the Long Term Aviation Needs and Future Flexibility Evaluation.

Table 5.3.1: Long Term Aviation Needs and Future Flexibility Evaluation

Resource Area	Alternative A	Alternative B	Alternative C	Alternative D
Long Term Aviation Needs and Future Flexibility	●	●	●	○
Rating	**Good (1.0)**	**Good (1.0)**	**Good (1.0)**	**Poor (0)**

Legend: ●= Good (1) ◗ = Fair (.5) ○ = Poor (0) NR = No Rating

As shown above, Alternative A, B and C were rated Good for their individual ability accommodate the long term needs of Fox Airfield as well as provide for future flexibility. Alternative's A, B and C included significant levels of development which supported the

facility requirements developed in Chapter 4.0 while also including revenue generating opportunities for the Airport. Alternative D was rated Poor for its inability to meet facility requirements and provide for future growth over the 20-year planning period.

5.4.2 Operational Efficiency

Each alternative under consideration was evaluated based on its individual ability to maximize runway capacity, decrease runway crossings, and maintain unobstructed visibility of all runway approach zones, runways and taxiways for air traffic control throughout the planning period. Using the FAA Design Group IV and Approach Category C standards, each alternative was examined to determine the relationship between future development and the design aircraft's operating requirements. **Table 5.3.2** depicts the results of the operational efficiency evaluation.

Table 5.3.2: Operational Efficiency Evaluation

Resource Area	Alternative A	Alternative B	Alternative C	Alternative D
Operational Efficiency	●	◗	◗	○
Rating	**Good (1.0)**	**Fair (0.5)**	**Fair (0.5)**	**Poor (0)**

Legend: ●= Good (1) ◗ = Fair (.5) ○ = Poor (0) NR = No Rating

Alternative A was rated Good for Operational Efficiency based on its ability to provide for maximum runway capacity through the implementation of a new taxiway system located on the north side of the Airport. In addition, the separation of future commuter/on demand service from the south side of the Airport further strengthens Alternative A's ability to create efficiency, promote safety and minimize the number of runway crossings over the 20-year planning period. Finally, Alternative A best meets the long-term use of Group IV aircraft at Fox Airfield. Alternatives B and C were rated Fair as each one provides some benefit to operational efficiency during the same period. One of the primary reasons these alternatives received a rating of Fair was based on their limited ability to separate smaller aircraft from larger aircraft. Alternative D was rated Poor as it made no improvements to operational efficiency.

5.4.3 Cost Effectiveness

Alternatives A, B, C and D were evaluated based on their individual costs in order of magnitude. The costs considered as part of this evaluation are those aviation-related projects that are typically eligible for FAA funding through the current Airport Improvement Program (AIP) grant program. Individual cost estimates were not prepared for each alternative; however, a detailed preliminary cost estimate will be shown for the preferred alternative once selected. **Table 5.3.3** depicts the qualitative ratings for Alternatives A, B, C and D.

Table 5.3.3: Cost Effectiveness Evaluation

Resource Area	Alternative A	Alternative B	Alternative C	Alternative D
Cost Effectiveness	○	◗	◗	●
Rating	**Poor (0)**	**Fair (0.5)**	**Fair (0.5)**	**Good (1.0)**

Legend: ●= Good (1) ◗ = Fair (.5) ○ = Poor (0) NR = No Rating

Considering the infrastructure necessary to support those facilities shown on the north side of the Airport, Alternative A was rated Poor based on its high order of magnitude cost. While the level of development shown in Alternatives B and C reflects modest growth, it is significantly less than Alternative A. Alternatives B and C were rated Fair. Alternative D reflects significantly less growth and development than any other alternative under consideration, it was rated Good.

5.4.4 Community and Environmental Compatibility

Alternatives A, B, C and D were evaluated based on 20 community and environmental compatibility criteria identified in Section 5.3.4. These 20 criteria make up the National Environmental Policy Act (NEPA) impact categories required for all federal funded projects. **Table 5.3.4** displays the results of the community and environmental compatibility evaluation.

Table 5.3.4: Community and Environmental Compatibility Evaluation

Resource Areas	Alternative A	Alternative B	Alternative C	Alternative D
Aircraft Noise	●	●	●	●
Compatible Land Use	●	●	●	●
Induced Socioeconomic Impacts	●	●	●	●
Air Quality	●	●	●	●
Water Quality	◗	◗	◗	◗
Department of Transportation Act, Section 4(f)	●	●	●	●
Historical, Architectural, Archaeological, and Cultural	●	●	●	●
Biotic Communities	◗	◗	◗	●
Threatened and Endangered Species	NR	NR	NR	NR
Wetlands, Jurisdictional or Non-Jurisdictional	●	●	●	●
Floodplains	◗	●	●	●
Coastal Zone Management	●	●	●	●
Prime Farmland	●	●	●	●
Natural Resources and Energy Supply	○	●	●	●
Light Emissions	●	●	●	●
Solid Waste	●	●	●	●
Construction Impacts	◗	●	●	●
Wild and Scenic Rivers	●	●	●	●
Visual Impacts	●	●	●	●
Hazardous Materials	●	●	●	●
Rating	**Good (16.0)**	**Good (18.0)**	**Good (18.0)**	**Good (18.0)**

Legend: ●= Good (1) ◗ = Fair (.5) ○ = Poor (0) NR = No Rating

For the overall community and environmental compatibility evaluation, Alternative A was rated Fair based on its increased potential for environmental impacts resulting from proposed development. Alternatives B, C and D were rated Good as they had few impacts to community and environmental resources. A brief summary of each category is provided below.

5.4.4.1. Aircraft Noise

Based on the anticipated increase in aircraft activity at Fox Airfield, aircraft noise has the potential to increase over the 20-year planning period. To determine the level of noise predicated over the planning period, the FAA's Integrated Noise Model (INM) version 7.01 (b) was used to model Community Noise Exposure Levels (CNEL) for the 5-, 10- and 20-year time periods. The decibel levels used for this noise analysis include the 55, 60 and 65 CNEL. As shown on **Exhibit 5.4,** these contours extend to the east and west in the same orientation as Runway 6-24. The 65 CNEL noise contour remains on airport owned property for Alternatives A, B and C. Alternative D assumes commuter/on-demand service does not develop during the planning period; therefore, the noise contours also remain on airport property. Alternatives A, B, C, and D were ranked Good. A detailed description of the noise modeling process for Fox Airfield is located in Appendix D.

5.4.4.2. Compatible Land Use

The Fox Airfield Land Use Compatibility Plan ("LUC Plan"), adopted by the County of Los Angeles Airport Land Use Commission in 2004, was written to provide guidance for future land use applications, both on and around Fox Airfield. Through the use of different compatibility "zones", the Commission can evaluate the compatibility of future expansion and site structures and uses accordingly. The LUC Plan is all applicable land use regulations, including the 2002 *California Airport Land Use Planning Handbook* published by the California Division of Aeronautics which is the basic guiding document for preparation of airport land use compatibility plans. These zones identify the locations most susceptible to aircraft accidents.

Alternatives A thru D were evaluated based on their individual ability to achieve compatibility with surrounding land uses. Based on the standards within the LUC Plan, Alternatives A, B, C, and D are compatible with local, state and federal land use guidelines. As a result, Alternatives A, B, C and D were ranked Good. Planned land uses would be either aviation related or low-density recreational, and sited within the applicable zone. Likewise, much of the noise generated from aviation activities is expected to remain on airport owned property or fall over property compatible with aviation use. Drawing 8 and 9 of 14 depicts the on- and off-airport land use for Fox Airfield. It should be noted that no residential acquisitions and relocations will be required during the 20-year planning period for Fox Airfield.

5.4.4.3. Induced Socioeconomic Impacts

Based on 2011 demographic estimates, there are approximately 109 persons residing within a two-mile radius of Fox Airfield.[1] Of these 109 persons, approximately 15 percent are of Hispanic or Latino origin and more than 81 percent are white alone. The median household is $32,778, which is well above the federal poverty level for a family

[1] Pop-Facts: Demographic Snapshot 2011 Report. Prepared By Nielsen Solution Center. August 9, 2011

of four.[2] The majority of the population is between ages 45 and 84. While Apollo Community Regional Park is adjacent to the Airport, health and safety impacts to children are expected to be non substantial because there have been no known aircraft accidents affecting Apollo Park in the past. It is not expected that implementation of Alternatives A, B, C, or D would result in any impacts to Socioeconomic, Environmental Justice, or Children's Health and Safety Risks. None of the alternatives under consideration will require relocation of any housing or community businesses. As a result Alternatives A, B, C and D were rated Good.

5.4.4.4. Air Quality

The Antelope Valley Air Quality Management District is in non-attainment for the state standards of PM-10, as well as in non-attainment for both the state and federal standards for ozone. Based on the non-attainment status within the District, Alternatives A, B, and C would all generate significant amounts of PM-10 and ozone during construction activities, most notably during earth-moving and grading activity. With standard mitigation measures, such as dust suppression and emission controls on vehicles, impacts will be reduced to a level below significant. Operational impacts should be less than significant. Alternative D would result in less than significant impacts for both construction and operations, as minimal increases in activity would occur. Alternatives A, B, C and D were ranked Good.

5.4.4.5. Water Quality

Alternatives A, B and C would require more than one acre of new development and would therefore require a National Pollutant Discharge Elimination System (NPDES) construction storm water permit, as well as the preparation of a Storm Water Pollution Prevention Plan (SWPPP). As part of a SWPPP, Best Management Practices (BMPs) would be identified that are measures taken to reduce pollutants from runoff during project construction. Alternative D does not include development of more than one acre and therefore are not required to attain a NPDES permit or prepare a SWPPP. All alternatives would comply with all existing City drainage requirements; however, a more detailed analysis of water quality will be required prior to development. As a result, each alternative under consideration was rated FAIR.

5.4.4.6. Section 4(f) Transportation

The nearest Section 4(f) property is Apollo Community Regional Park, located south-east of Runway 24. Apollo Park is 56 acres in size and has several recreational opportunities including fishing and walking trails. The anticipation of air passenger service identified in Alternative A would result in an increase of aircraft flying overhead; however, this increase would not directly impact the usage of Apollo Park. Alternatives A, B, C, and D are not anticipated to impact activities at Apollo Park; therefore, each was rated Good.

[2] U.S. Department of Health and Human Services, 2011 HHS Poverty Guidelines. Accessed at http://aspe.hhs.gov/poverty/11poverty.shtml on August 9, 2011.

5.4.4.7. Historic, Architectural, Archaeological and Cultural Resources

A review of relevant land use plans including the City of Lancaster General Plan (July 14, 2009), General William J. Fox Airfield Land Use Compatibility Plan (December 1, 2004), and Fox Field Industrial Corridor Specific Plan (May 31, 1996) did not identify the presence of any known historical, architectural, archaeological, and/or cultural resource on Airport owned property. Section 106 of the National Historic Preservation Act (NHPA) requires coordination with the appropriate Federal, State and local agencies to determine potential impacts to historical, architectural, archaeological and/or cultural impacts as the result of proposed airport improvements. This coordination will occur during the preparation of an Environmental Impact Statement (EIS), Environmental Assessment (EA) and/or Environmental Impact Report (EIR) required under California State Law. Based on the current information, Alternatives A, B, C, and D were rated Good.

5.4.4.8. Biotic Communities

Coordination with the US Fish and Wildlife shall take place during the preparation of an Environmental Impact Statement (EIS), Environmental Assessment (EA) and/or Environmental Impact Report (EIR) to determine the potential for impacts to biotic communities within the project area. Based on the level of grading required, Alternatives A, B, and C were rated Fair based on the potential for impacts to biological resources resulting from the creation of a new helicopter parking area. Alternative D will not require extensive grading and earthwork; therefore, it was rated Good.

5.4.4.9. Endangered and Threatened Species

Based on a review of current threatened and endangered species known to exist within the region, a biological assessment of the north airfield is necessary to determine potential impacts to threatened and/or endangered species on or near Fox Airfield. According to the California Natural Diversity Database (CNDDB), the following sensitive species are documented to occur in the quadrangle surrounding the airfield site:

- Burrowing Owl (*Athene cunicularia*)
- Swainson's Hawk (*Buteo swainsoni*)
- Desert Tortoise (*Gopherus agassizii*)
- Mohave Ground Squirrel (*Xerospermophilus mohavensis*)
- Tricolored Blackbird (*Agelaius tricolor*)
- Silvery Legless Lizard (*Anniella pulchra pulchra*)
- Short-eared Owl (*Asio flammeus*)
- Mountain Plover (*Charadrius montanus*)
- Coast Horned Lizard (*Phrynosoma blainvillii*)
- American Badger (*Taxidea taxus*)
- Le Conte's Thrasher (*Toxostoma leconteri*)
- Short-joint Beavertail (*Opuntia basilaris* var*. brachyclada*)

- Horn's Milk-vetch (*Astragalus hornii* var*. hornii*)
- Lancaster Milk-vetch (*Astragalus preussii* var. *laxiflorus*)
- Alkali Mariposa-lily (*Calochortus striatus*)
- Parry's Spineflower (*Chorizanthe parryi var. parryi*)
- Barstow Woolly Sunflower (*Eriophyllum mohavense*)
- Red Rock Poppy (*Eschscholzia minutiflora* ssp. *twisselma*)
- Pale-yellow Layia (*Layia heterotricha*)

Given the number of identified sensitive species, biological field survey and site assessments are necessary to determine potential impacts to biological resources as a result of future development at the Airport. Coordination with U.S. Fish and Wildlife Service, California Fish and Game Commission, and Environmental & Geographic Information Center shall be completed during the preparation of an Environmental Impact Statement (EIS), Environmental Assessment (EA) and/or Environmental Impact Report (EIR) to determine these impacts. Since impacts to threatened and endangered species cannot be determined, no rating was made for Alternatives A, B, C and D.

5.4.4.10. Wetlands

No jurisdictional or non-jurisdictional wetlands are located near the Airport. No impacts to wetlands are anticipated as a result of future planned development at Fox Airfield. Alternatives A, B, C and D were rated Good.

5.4.4.11. Floodplains

A known floodplain is located near southwest corner of the Airport. Described by the Federal Emergency Management Agency (FEMA) as a Zone X flood hazard area, this floodplain exists based on the presence of an unnamed creek near the Airport. The limits of this extend up to the 500-year floodplain level. Alternative was rated Fair due to the creation of significant impervious surfaces associated with its development. Alternatives B, C and D were rated Good as they do not require development to occur near the location of the Zone X floodplain.

5.4.4.12. Coastal Zone Management

The nearest coastline is more than 50 miles from Fox Airfield. No impacts to local coastal plains or coastal zone management are anticipated. Alternatives A, B, C and D were rated Good.

5.4.4.13. Prime and Unique Farmland

No prime or unique farmland exists on airport owned property. As a result, no impacts to prime or unique farmland are anticipated. Alternatives A, B, C, and D were rated Good.

5.4.4.14. Energy Supply and Natural Resources

Utilities including water, sewer, electric, telephone, data, and natural gas will have to be extended from the south side of the Airport to the north side of the Airport in order to support the new passenger terminal, FBO, and other planned facilities shown in Alternative A. In addition, the development of FAR Part 139 service under Alternative A will undoubtedly result in an increase in aircraft operations which will result in additional fuel consumption by aircraft and ground support equipment. Alternative A was rated Poor based on its anticipated use of energy. Because Alternatives B, C, and D will be served by existing utilities and not result in a significant increase in aircraft activity, they were rated Good.

5.4.4.15. Light Emissions

The proposed improvements at Fox Airfield are not expected to create unusual lighting conditions that would be considered sufficient to warrant a special study. It should be noted that 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. Alternatives A, B, C, and D were rated Good. In addition, new lighting technologies will be utilized when possible to reduce energy and channel light only where intended.

5.4.4.16. Solid Waste

No significant amounts of solid waste are anticipated as a result of the proposed development identified in Alternatives A, B, C and D. Solid waste generated at Fox Airfield is taken to the nearby Lancaster Landfill and Recycling Center. The landfill has sufficient capacity to handle any additional solid waste generated during short-term construction activities or long-term operations associated with Alternatives A, B, C, or D. Each alternative was rated Good.

5.4.4.17. Construction Impacts

While none of the alternatives under consideration are anticipated to result in the long-term closure and/or reduction of aircraft activity at the Airport, Alternative A has the highest potential for construction impacts. Alternative A would require the greatest earthwork/grading activity and would require construction phasing to minimize emissions, dust, noise, and vibration. As a result, Alternative A was rated Fair. Alternatives B, C and D would have short-term construction impacts, particularly with the planned new high-speed taxiway. Mitigation measures to suppress dust, vibration and noise will be implemented during construction activities. Alternatives B, C and D were rated Good.

5.4.4.18. Wild and Scenic Rivers

No wild or scenic rivers are located on or near Fox Airfield. Alternatives A, B, C and D were rated good.

5.4.4.19. Visual Impacts

The proposed development shown in Alternatives A, B, C, and D are not anticipated to result in impacts to views or vistas surrounding the Airport. This includes views associated with Apollo Community Regional Park and the Angeles National Forest, which is located more than seven miles south southwest of Fox Airfield. The airport and vacant lands to the north, south, and west are relatively flat and do not contain substantial scenic resources. As a result, Alternatives A, B, C, and D were rated Good.

5.4.4.20. Hazardous Waste

Fox Airfield is not listed on the Environmental Protection Agency's *National Priorities List* (NPL). The NPL is the "list of national priorities among the known releases or threatened releases of hazardous substances, pollutants, or contaminants throughout the United States and its territories. The NPL is intended primarily to guide the EPA in determining which sites warrant further investigation."[3] Additionally, the California Department of Toxic Substances Control's EnviroStor database does not show Fox Airfield to be a State Response or Voluntary Cleanup site.[4]

Construction activities may involve the short-term transportation, use, and disposal of limited quantities of hazardous materials. The operation of Fox Airfield as proposed in Alternative A or continued operation as a GA facility as proposed in Alternatives B, C and D would involve the long-term transportation, use, and disposal of hazardous materials such as paint, solvents, fuel, and oil. During short-term construction and long-term operations these materials would be properly stored when not in use and would be disposed of according to applicable requirements. Assuming hazardous materials are transported and stored properly, Alternatives A, B, C, and D were rated Good.

5.5 Recommended Alternative

The selection of a recommended or preferred alternative was made using the feedback of the Technical Advisory Committee (TAC), results of the alternatives evaluation analysis as well as the ability to meet the goals and objectives set early in the planning process. Results of the alternatives evaluation indicated that Alternatives A, B and C were rated Good as they all had similar characteristics. On the other hand, Alternative D received a lower rating of Fair because it did not meet the future needs of the Airport and did little to improve efficiency on the airfield. As a result, Alternative D was dismissed from further consideration.

Alternatives A, B and C included the development of facilities that would meet the long-term period as well as offer future efficiency in airport operations. Among Alternatives A, B and C, only Alternative A exceeded the long-term requirements in order to meet the

[3] United States Environmental Protection Agency, 2010. *National Priorities List (NPL)* webpage. Accessed at http://www.epa.gov/superfund/sites/npl/index.htm on March 10, 2010.
[4] California Department of Toxic Substance Control, 2010. EnviroStor Database. Accessed at http://www.envirostor.dtsc.ca.gov/public/map.asp?global_id=&x=119.1357421875&y=37.82280243352756&zl=5&ms=640,480&mt=m&findaddress=True&city=LANCASTER&zip=&county=&federal_superfund=true&state_response=true&voluntary_cleanup=true&school_cleanup=true&corrective_action=true&permit_site=true&permit_and_ca_site=true on March 10, 2010.

Airport's goal of new creating new aviation and non aviation revenue generating facilities. Alternative A was also the only alternative that included development on the north side of the Airport which is owned by the Airport. Development on the north side of the Airport is also consistent with the goals of the Los Angeles County Department of Public Works, Aviation Division for Fox Airfield. While Alternative B and C offer modest levels of new development, they do not assume the overall level of revenue generation and aircraft activity as does Alternative A, since Alternative A assumes regularly scheduled air carrier activity. Given the long-term goals of the Airport combined with the revenue generating opportunities associated with Alternative A, Alternative was selected as the preferred alternative for this analysis.

Members of the TAC and Aviation Division supported the selection of Alternative A; however, there were two key elements of Alternative A which they expressed concern over. Those elements included the presence of a golf course located on the north side of the Airport and the proposed location of the new FAR Part 139 passenger terminal on the south side. Based on feedback from the Airport, the presence of a golf course on airport owned property is not supported by the FAA. In addition, many of the TAC members suggested that the location of the new passenger terminal be developed on the north side of the Airport instead of the south side.

In addition, the County of Los Angeles Public Works Department, Aviation Division sought to incorporate additional aviation related development on both the south and north side of the airfield. While many of these proposed facilities are beyond the 20-year planning period, the intent of incorporating additional development was to depict the William J. Fox Airfield's long range potential as both an air carrier airport and corporate/business facility. Based on the level of support for both of these requested changes, a new hybrid alternative was developed- Alternative A-1. As shown in **Alternative A-1**, the golf course was removed and the passenger terminal was relocated to the eastern most corner of the north side of the Airport. Alternative A-1 includes 63 proposed development projects. These include:

- Perimeter Fence Replacement High Speed Exit
- Slurry Seal South Parking Ramps
- Construction of Itinerant Tie Down Positions*
- Construction of Individual Hangars (Phase I)
- General Aviation Expansion Area
- Construction of Conventional Hangars
- Training Center Office
- Training Center Apron
- Air Cargo and Logistics Hangars
- Gas Station
- Conventional Maintenance Hangar
- Fast Food Restaurant
- Fuel Farm

- Helipad, Helicopter Parking and Maintenance Hangars
- Construction of Corporate Hangars
- ARFF Station
- Public Utilities
- North Airfield Access Roadways
- New Parallel Taxiway
- High Speed Exits (2)
- Construction of New Terminal Building
- Air Carrier Terminal Parking
- Stomwater Drainage Basin
- Construction of new Part 139 Service Area (Apron)
- Helipad
- Helicopter Parking Area
- General Office Building
- Aeronautical College
- Aeronautical College Parking
- Aeronautical College Hangar
- College hangar Parking
- College Hangar Apron
- Air Transport Training Center
- Training Center Parking
- Corporate Aircraft Sales & Service Center Apron
- Conventional Hangars (Phase II)
- New Fixed Based Operator (FBO)
- Individual Box Hangars
- New Fixed Based Operator (FBO) Parking
- General Office Building
- Replace RW 6-24 (Concrete)
- Aircraft Fueling Station
- Portable Aircraft Hangars
- Individual Hangars (Nested T-Hangars)
- Storage and Maintenance Hangars
- General Office Building
- Aircraft Wash Rack
- Aircraft Storage Area
- Aircraft Maintenance Facility
- Aircraft Maintenance Facility Office Building
- Logistics Center Parking Area
- USFS Expansion
- Tie-downs Transient
- Aircraft Testing Facility Hangar
- Aircraft Testing Facility Office Building
- Aircraft Testing Facility Parking
- Conventional Maintenance Hangar (Phase II):
- Maintenance Queuing and Storage Hangars
- General Office Building
- General Office Building Parking
- Corporate Aircraft Sales & Service Center Building
- Corporate Aircraft Sales & Service Center Parking

Chapter 6.0 Airport Plans provides a detailed overview of the scope, time period and cost for each recommended project in Alternative A-1.

LEGEND

#	DESCRIPTION	SYMBOL / COLOR
1	HIGH SPEED EXIT	*
2	PERIMETER FENCE REPLACEMENT	
3	INDIVIDUAL HANGARS	
4	PAVEMENT REHABILITATION PH. 4	
5	TIE–DOWNS TRANSIENT	
6	EXPANDED GENERAL AVIATION AREA	
7	CONVENTIONAL HANGARS	
8	HELIPAD	
9	HELICOPTER PARKING	
10	HELICOPTER MAINTENANCE HANGARS	
11	HELECOPTER GENERAL OFFICE BUILDING	
12	CORPORATE HANGARS	
13	ARFF STATION	
14	NEW PARALLEL TAXIWAY	*
15	HIGH SPEED EXIT (2)	*
16	NEW 42,000 SF TERMINAL	
17	DETENTION BASIN	*
18	NEW PART 139 SERVICE AREA	
19	HELIPAD	
20	HELICOPTER PARKING	
21	PART 139 OFFICE BUILDING	
22	AERONAUTICAL COLLEGE	
23	AERONAUTICAL COLLEGE PARKING	*
24	AERONAUTICAL COLLEGE HANGAR	

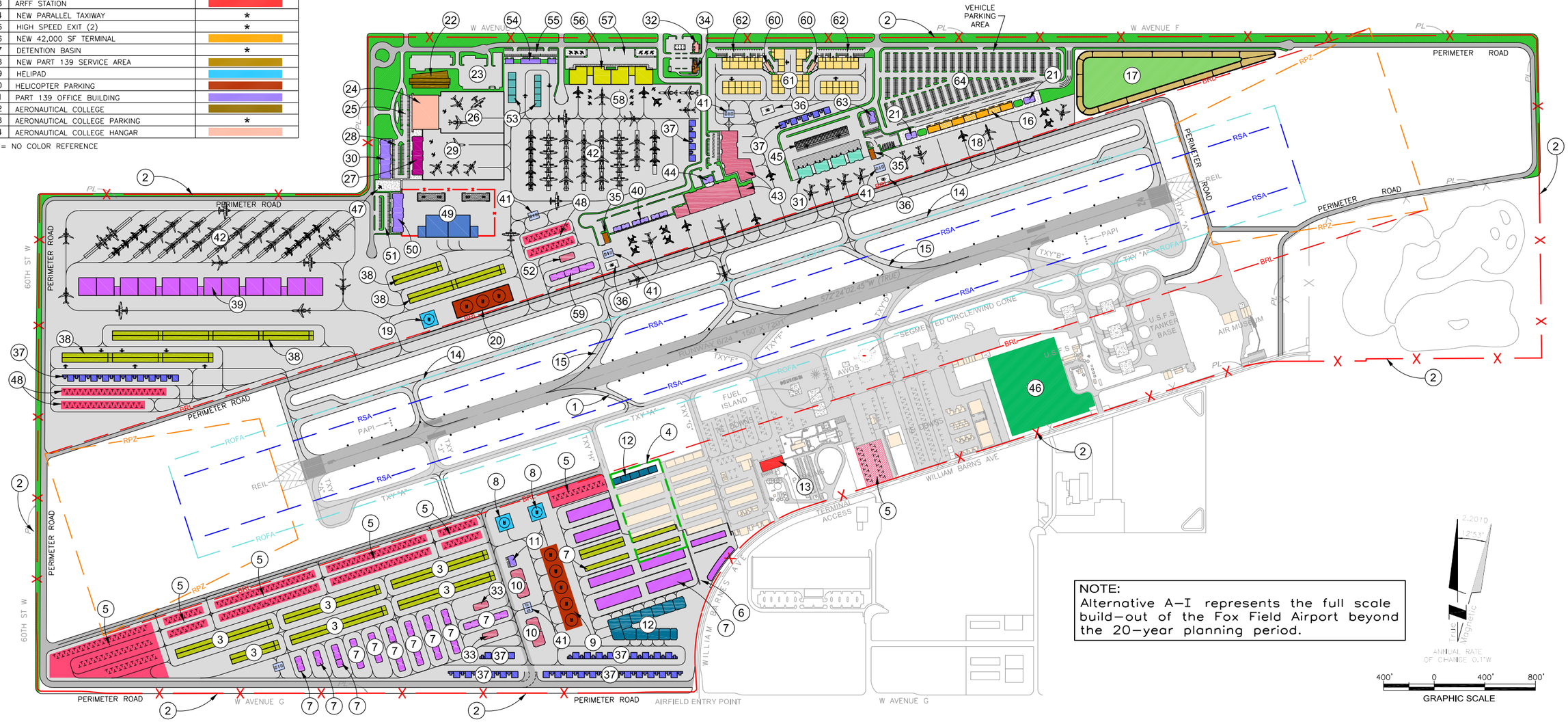
#	DESCRIPTION	SYMBOL / COLOR
25	COLLEGE HANGAR PARKING	*
26	COLLEGE HANGAR APRON	*
27	AIR TRANSPORTATION TRAINING CENTER	
28	TRAINING CENTER PARKING	*
29	TRAINING CENTER APRON	*
30	TRAINING CENTER OFFICE	
31	AIR CARGO AND LOGISTICS HANGARS	
32	GAS STATION	
33	CONVENTIONAL MAINTENANCE HANGAR	
34	FAST FOOD RESTRAUNT	
35	FUEL FARM	
36	AIRCRAFT FUELING STATION	*

#	DESCRIPTION	SYMBOL / COLOR
37	PORTABLE HANGARS	
38	INDIVIDUAL HANGARS PH. 2	
39	STORAGE AND MAINTENANCE HANGARS	
40	GENERAL OFFICE BUILDINGS	
41	WASH RACK	
42	AIRCRAFT STORAGE AREA	*
43	AIRCRAFT MAINTENANCE FACILITY	
44	AIRCRAFT MAINTENANCE OFFICE BUILDING	
45	LOGISTICS CENTER PARKING	*
46	U.S.F.S FUTURE EXPANSION AREA	
47	AIRCRAFT DISPLAY AREA	*
48	TIE–DOWNS TRANSIENT PH. 2	

#	DESCRIPTION	SYMBOL / COLOR
49	AIRCRAFT TESTING FACILITY HANGAR	
50	AIRCRAFT TESTING FACILITY OFFICE BUILDING	
51	AIRCRAFT TESTING FACILITY PARKING	*
52	CONVENTIONAL MAINTENANCE HANGAR PH. 2	
53	MAINTENANCE HANGAR QUEING AND STORAGE	
54	GENERAL OFFICE BUILDING	
55	GENERAL OFFICE BUILDING PARKING	*
56	CORPORATE AIRCRAFT SALES AND SERVICE CENTER. BUILDING AND HANGAR	
57	CORPORATE AIRCRAFT SALES CENTER PARKING	*
58	CORPORATE AIRCRAFT SALES CENTER APRON	*
59	CONVENTIONAL HANGARS PH. 2	

#	DESCRIPTION	SYMBOL / COLOR
60	NEW FIXED BASE OPERATOR OFFICES	
61	INDIVIDUAL BOX HANGARS	
62	FIXED BASE OPERATOR PARKING	*
63	GENERAL OFFICE BUILDING	
64	AIR CARRIER TERMINAL PARKING	*
	EXISTING BUILDINGS	

*= NO COLOR REFERENCE



GENERAL WILLIAM J. FOX AIRFIELD
Lancaster, CA
Master Plan Update

ALTERNATIVE "A-I"

FIGURE

Chapter 6

Airport Plans

6.0 AIRPORT PLANS

This Chapter provides a detailed description of the proposed expansion of General William J. Fox Airfield which includes the introduction of commercial air passenger service. The airport plans package is the graphic presentation of existing and ultimate development proposed for the Airport over the 20-year planning period. This package includes the Airport Layout Plan (ALP), which is an official planning document used by the FAA and others to review and approve future airport development projects. The airport plans package was prepared in AutoCAD making it a useful tool for the County of Los Angeles Department of Public Works, Aviation Division in preparing updates and incorporating changes in future years. In addition, this plans package was prepared in accordance with the guidelines outlined in FAA Advisory Circular 150/5070-6B, "Airport Master Plans," Advisory Circular 150/5300-13, "Airport Design", and the FAA's Western Pacific Region Airport Layout Plan Checklist. This airport plans package includes the following 14 drawings:

- Cover Sheet
- Airport Data Sheet
- Airport Layout Plan
- Future Airport Layout Plan
- Terminal Area Plan (North)
- Terminal Area Plan (South)
- Building Facilities Plan
- Approach Plan (FAR Part 77)
- Airspace Obstruction and Runway Approach Plan (Runway 6)
- Airspace Obstruction and Runway Approach Plan (Runway 24)
- On-Airport Land Use Plan
- Off-Airport Land Use Plan
- Airport Property Map (Exhibit A)
- Airport Photograph

A full size set (24" x 36") of these 14 drawings will accompany this master plan update. For purposes of convenience, a smaller 11" x 17" set of plans is included at the end of this Chapter.

6.1 Cover Sheet

The cover sheet includes the airport name and index of drawings for the ALP package. The cover sheet is drawing 1 of 14.

6.2 Airport Data Sheet

The airport data sheet provides a summary of important existing and planned airport information. The data sheet is an extension of the Airport Layout Plan sheet and is drawing 2 of 14. It includes:

- Location and Vicinity Map
- Airport elevation
- Airport reference point
- Mean maximum temperature
- Airport and terminal NAVAIDs
- Runway gradient
- Runway lighting
- Pavement strength
- Runway lengths and widths (existing and ultimate)
- Approach slopes
- Instrumentation
- Runway Wind Coverage
- Wind roses
- Safety Areas

6.3 Airport Layout Plan (ALP)

Drawing 3 of 14 reflects the existing ALP for Fox Airfield. This drawing was developed from the previous 1996 ALP developed for Fox Airfield and updated using the aerial photography taken from above the Airport in February 2010. The existing ALP depicts the conditions at the Airport prior to any proposed developed.

6.4 Future Airport Layout Plan (ALP)

A future airport layout plan (drawing 4 of 14) was developed under the guidelines identified in Advisory Circular 150/5300-13, Airport Design, Change 16. Features on the ALP drawing include prominent airport facilities such as runways, taxiways, aprons, extended runway safety areas, buildings, parking areas, roads, lighting, runway marking, fences, major drainage facilities, tie-down areas, and any facilities that are to be phased out or added. In addition, prominent natural and manmade features such as trees, streams, ponds, ditches, railroads, power lines, pipelines, oil wells, towers, buildings, and existing ground contours are shown. Areas reserved for existing and future aviation development and services such as general aviation, helicopter operating areas, and airport maintenance are defined on the ALP. Areas available for non-aviation development, such as industrial or commercial areas, hotels, and recreational areas are also indicated on the ALP. The ALP depicts proposed airport boundaries and/or areas to be owned or controlled by the Airport, including aviation easements. Pertinent dimensional data such as runway and taxiway widths and lengths, taxiway/runway apron clearances, apron dimensions, building clearance lines, and other pertinent dimensions are identified. A legend depicting each element on the ALP provides a graphic and descriptive form with symbols that differentiate between existing and proposed development.

The design year 2029 airport development program indicated on the ALP is intended to be implemented in three phases, but can be refined to adjust to changes in aviation activity. The first phase, which encompasses five years, is proposed to support projects

that have been identified to meet an established need. The second phase encompasses the succeeding five years and includes projects that meet a high probability of occurrence. The third phase is known as the long-range aviation development phase and includes the years 2019 through 2029. Phase three depicts airfield and landside development projects that are related to aviation activity demands described in Chapter 2.0. Therefore, the three development phases included in the ALP are:

- Phase I: 2009-2013
- Phase II: 2014-2018
- Phase III: 2019-2029

The assignment of projects to each development phase is flexible, as a number of factors influence whether a project will take place at a specific time. For example, some items in Phase I may actually occur in the Phase II timeframe. This could be due to project approval delays, federal and local funding issues, shifts in the market demand, aircraft operational activity levels that differ from forecasts, policy issues, and other operational considerations that are unique to the development of a public airport.

The three development phases are carried into and discussed in the financial feasibility plan (Chapter 7.0) following this chapter. This chapter presents a description of the 63 capital improvement projects that are depicted on **Exhibit 6.1.** The estimated construction costs and phasing of each of the projects are shown below in **Table 6.1**.

6.4.1 Development Phase I (2009 - 2013)

The five Phase I development projects are intended to enhance the operational safety of the Airport and to increase the Airport's based aircraft capacity.

1. **Perimeter Fence Replacement** The existing perimeter fence at Fox Airfield is in poor condition in many locations. A complete replacement of the perimeter fence is a scheduled project in the Fox Airfield ACIP.

2. **High Speed Taxiway Exit:** The existing Airport Capital Improvement Plan (ACIP) for Fox Airfield includes the development of a high speed taxiway exit located approximately 2,100' from Runway 6. The purpose of this high speed taxiway exit is to enable aircraft to exit the runway more quickly. This improvement also increases the runway capacity at the Airport.

6.4.2 Development Phase II (2014 – 2018)

The objectives of the following Phase II development projects are to accommodate increased general aviation activity and initiate the construction of revenue generating facilities.

3. **Individual Hangars (Project Phase I):** The construction of new individual hangars (T-hangars and box hangars) is also recommended in the general

aviation expansion area. This project consists of two phases. Phase I includes the construction of 68,000 SF of new individual hangars. These hangars would support the projected increase in based aircraft requiring individual hangar space.

4. **Pavement Rehabilitation Phase 4:** As part of a scheduled pavement maintenance program, this project includes the repair and/or replacement of damaged pavements located on the southwest side of Runway 6-24. This area encompasses many of the individual hangars located just south of Barnes Aviation.

5. **Itinerant Tie-Down Positions:** Approximately 65 new tie-down positions would be needed to support the forecasted general aviation activity level at the airport. It should be noted that these itinerant parking positions may be delayed/canceled if spaces from other tie-down areas can be reassigned to accommodate the need for additional itinerant parking.

6. **General Aviation Expansion Area:** This project includes the construction of approximately 843,000 SF of pavement dedicated to support general aviation activities located on the southwest side of Runway 6-24.

7. **Conventional Hangars:** Approximately 152,000 SF of new conventional hangar space is recommended to meet the aircraft storage requirements identified in Chapter 4.0. These new hangars would be built in the general aviation expansion area identified in project number six.

8. **Helipad, Helicopter Parking and Maintenance Hangars:** The construction of approximately 100,000 SF of helipad and helicopter parking area is recommended to accommodate the anticipated increase in helicopter activity over the 20-year planning period. The helipad and associated parking area would be constructed directly north of the new expanded general aviation area. This area includes the actual helipad, surrounding apron, five helicopter parking positions, vehicular access/parking, and an area for the construction of an office building. It is envisioned that helicopters will arrive and depart from the helipad, then be towed to an individual parking position for storage. Hover-taxing is not planned for this facility. Approximately 40,000 SF of helicopter hangar space is included in this project to support helicopter repair, maintenance and storage. A 30,000 SF office building located south of the proposed helipads will provide office space for helicopter operators based at the Airport.

9. **Replace Runway 6-24 (Concrete):** Based on the potential increase in heavy aircraft activity, the remaining life span of the pavement and the projected costs to maintain the existing asphalt pavements, the County of Los Angeles Department of Public Works, Aviation Division is seeking to replace the existing asphalt runway with a concrete runway. The benefits of converting to a concrete runway include: accommodating heavier aircraft (those exceeding 117,000 pounds); extending the life span of the runway pavement beyond the planning

period and reducing the annual runway and taxiway pavement maintenance costs over the 20-year period. Based on communication with the FAA ADO, the County of Los Angeles intends to replace the existing asphalt runway with concrete using federal AIP funds.

10. **Corporate Hangars:** This project includes the construction of approximately 19,000 SF of new corporate hangars located on the east side of the new expanded general aviation area. These hangars support the need for additional revenue producing facilities at the Airport.

11. **ARFF Station:** In anticipation of future air passenger service at Fox Airfield, the development of an ARFF station is needed to comply with FAR Part 139 certificated airport requirements. This 14,000 SF facility is recommended on the south side of the existing terminal building in order to facilitate the response to emergencies throughout the Airport in a timely manner.

12. **Public Utilities:** The proposed development located on the north side of Fox Airfield will require the extension of public utilities throughout the site. Currently public utilities including water, sewer, telephone and electricity are not located in the north area of Fox Airfield. The nearest connection point for these utilities is located east of the Airport near Highway 14. The extension of these services is anticipated to be funded at the local level.

13. **North Airfield Access Roadways (Project Phase I):** The development of the north side of the Airport will require multiple new access roadways to serve the facilities proposed along the north side of the runway. These new roadways will be constructed in two phases. Phase I of the project will provide access to those facilities planned for the new terminal building (project 15) and an ARFF station (project 10). All roadways are envisioned as two-lane roads allowing ingress and egress from each individual facility.

6.4.3 Development Phase III (2019-2029)

The objectives of the Phase III development projects are to support the development of air passenger service at the Airport. In addition, revenue generating facilities are included in this phase.

14. **New Parallel Taxiway:** The development of a new parallel taxiway directly north of Runway 6-24 is needed to provide access to the facilities proposed on the north side of the Airport.

15. **High Speed Taxiway Exits:** Two additional high speed taxiway exits are recommended from Runway 6-24 to the new parallel taxiway. These high speed taxiway exists will aid in increasing runway capacity and allow aircraft the ability to expeditiously exit northward to access facilities located on the north side of the Airport. In addition, these high speed taxiway exits enhance operational safety

and efficiency on the Airport. Both high speed taxiway exits mirror the high speed exits located on the south side of Runway 6-24.

16. **New Terminal Building:** A new 42,000 SF terminal building is recommended on the north side of the airfield in order to support the anticipated implementation of air passenger service at the Airport. The new terminal building will include a TSA passenger security check point, airline check-in kiosks, a general holding room, baggage make-up and claim, concessions, restrooms, jet bridges as well as office space for the TSA, Airlines and airport administration. The new terminal building is positioned on the north airfield to allow for future expansion beyond the 20-year planning period.

17. **Terminal Area Parking:** Approximately 70,000 SF of new vehicular parking is needed to support the development of a new air carrier terminal building (project 15). This parking area will consist of approximately 2,000 parking spaces.

18. **Detention Basin:** A 40,000 SF detention (drainage) basin is required to support the development of the north airfield. This basin shall be located in the upper north east corner of the Airport.

19. **New FAR Part 139 Service Area:** Approximately 843,000 SF of new FAR Part 139 service area is needed to support air passenger service at Fox Airfield. This area will consist of a paved area used for aircraft taxiing, maneuvering, baggage loading/unloading, aircraft fueling, overnight aircraft parking, and passenger boarding. This area will surround the new terminal building identified in project 15.

20. **North Airfield Access Roadways (Phase II):** Phase II of the North Airfield Access Roadways project is recommended for the development of the north side of the Airport. This project is a continuation of construction of new access roadways to serve the facilities proposed along the north side of the runway. These roadways are envisioned as two-lane roads allowing ingress and egress from each individual facility.

21. **Helipad and Helicopter Parking Area:** A second 14,000 SF helipad is recommended for the north airfield. This 14,000 SF area includes the helipad, surrounding apron and vehicular access. It is envisioned that helicopters will arrive and depart from the helipad. No hover-taxiing is planned for this facility. Three additional helicopter parking positions are located east of the proposed helipad. The helipad and support helicopter parking positions will support the anticipated increase in helicopter activity during the 20-year planning period.

22. **General Office Building:** The development of a new general office building is proposed near the new air carrier terminal building located on the north airfield. This building is envisioned to support terminal building activities such as maintenance, security, cleaning and provide space for employees. The estimated size of this building is 32,000 SF.

23. **Aeronautical College:** The development of an aeronautical college located on the north side of the Airport is an example of an aviation use which would could generate additional revenue for the Airport as well as provide a desired service to the region. This 211,000 SF joint-use facility will be capable of providing classrooms, office space, instructional hangar space, sleeping quarters, and food service and research laboratories. It is anticipated that this aeronautical college would provide courses in flight training, aviation management, and aircraft repair/maintenance.

24. **Aeronautical College Parking:** To support the development of the aeronautical college identified in project 22, a vehicular parking lot is needed to provide short-term parking for students and employees of the college. The approximate size of this parking lot is 117,000 SF in size which equates to approximately 500 parking spaces.

25. **Aeronautical College Hangar:** The construction of a 57,000 SF hangar is a key component of the aeronautical college's campus. This hangar is anticipated to include classrooms and laboratories as well as an open bay style hangar capable of parking a narrow body passenger aircraft.

26. **College Hangar Vehicular Parking:** Vehicular parking for the hangar is needed for employees and guests of the college. This parking lot consists of approximately 20,000 SF (75 parking spaces).

27. **College Hangar Apron:** A frontage apron is required to support aircraft parking at the college. This apron is envisioned to consist of approximately 167,000 SF along the eastern side of the hangar.

28. **Air Transportation Training Center**: Fox Airfield is used frequently by Airline Transport Pilot (ATP) schools located in Long Beach and Riverside for training purposes. In addition, general flight training is an important component of activity at the Airport both now and in the future. This air transport training center is located adjacent to the aeronautical college in order to utilize some of the same facilities including the college hangar to provide training and support to ATP students. The air transport training center is approximately 25,000 SF in size.

29. **Training Center Parking:** A 23,000 SF vehicular parking lot is needed to support employees, students and guests for the air transportation training center. The parking lot can accommodate up to 50 parking spaces.

30. **Training Center Office:** A dedicated training center office is needed to house administration functions associated with the air transportation training center. This facility is estimated to be approximately 4,000 SF in size.

31. **Training Center Apron:** A separate 187,000 SF aircraft apron is needed for the air transportation training center. This apron will provide parking for aircraft used for ATP flight training.

32. **Air Cargo and Logistic Hangar:** The development of an air cargo and logistics hangar is recommended on the north side of the Airport. This facility is anticipated to provide space for air cargo sorting and distribution activities associated with time sensitive packaging. An attached logistics hangar is also part of this complex. The logistics hangar will provide space dedicated for aircraft to interface with the loading and unloading of cargo. Overall, this facility is estimated to be approximately 38,000 SF.

33. **Gas Station:** The development of a standard vehicular gas station is recommended to serve the employees, students and guests associated with the development along the north side of the Airport. This non-aviation project is anticipated to provide both lease and gross sales income on a consistent basis for the Airport.

34. **Conventional Maintenance Hangar:** A 6,000 SF maintenance hangar is recommended on the north side of the Airport. This hangar will provide general repair and inspection for air passenger aircraft providing service to and from Fox Airfield.

35. **Fast Food Restaurant:** A fast food restaurant is recommended on the North side of the Airport property, along West Avenue F, near the planned new access road. This restaurant will provide students, employees and guests with meal options while located on airport property. This non-aviation development project is an additional source of lease revenue envisioned for the Airport.

36. **Fuel Farm:** An additional fuel farm located on the north side of the Airport is needed to support the growth in aircraft activity. It is envisioned that this facility would be centrally located to provide fuel service to aircraft on the north side of the runway. The fuel farm shall provide the ability for fuel storage and dispensing.

37. **Aircraft Fueling Stations:** Two 6,000 SF aircraft fueling stations are needed to support to the development of the fuel farm (project 32). In addition, the development of two fueling stations will provide safe and convenient access for those aircraft operating on the north airfield. These fuel stations should provide the ability to sell Jet A and 100LL (avgas).

38. **Portable Hangars:** Approximately 34,000 SF of portable hangar space is needed to meet the aircraft storage requirement identified in Chapter 4.0. These new portable hangars would be constructed on the southeast side of the Airport. In addition, the development of more than 100,000 SF of portable hangar space is shown in the preferred alternative to provide additional storage capacity and increase airport revenues.

39. **Individual Nested T-Hangars (Phase II):** This project includes the development of approximately 20,000 SF of new individual hangars (i.e. T-hangars) which is designed to support the expansion of the general aviation area.

40. **Storage and Maintenance Hangars:** Approximately 250,000 SF of new storage/maintenance hangar space is recommended to generate addition aviation related revenue for the Airport. This 12 unit complex is designed to support the aircraft storage area located directly to the north. These units are envisioned to serve as temporary storage and/or aircraft weatherizing facilities for aircraft secured on the aircraft storage area apron.

41. **General Office Building:** The development of a new general office building is proposed near the new helicopter parking located on the north airfield. This building is envisioned to serve an aviation business requiring airfield access. The estimated size of this building is 32,000 SF but may be changed to meet the needs of the future tenant.

42. **Aircraft Wash Rack:** Three 5,000 SF aircraft wash racks are proposed on the north side of Runway 6-24. This facility will provide pilots with the ability to pressure wash airplanes.

43. **Aircraft Storage Area:** The development of an aircraft storage area is recommended in two separate areas on the north airfield. Area one is located directly north of the storage/maintenance hangars (project 36). This 1.4 million SF area is dedicated to the long term storage of aircraft temporarily taken out of service by the airlines or require short-term storage. Area two is envisioned for the area located directly south of the corporate aircraft sales and service center (project 55). This project is anticipated to result in a significant source of aviation related revenue for the Airport. This facility could be leased or managed by the Airport.

44. **Aircraft Maintenance Facility:** The development of air passenger service at Fox Airfield creates the opportunity for an aircraft maintenance facility to service passenger aircraft. This facility is proposed near the center of the airfield, north of RW 6-24.

45. **Aircraft Maintenance Facility Office Building:** The development of a 6,500 SF office building is recommended to support activities associated with the aircraft maintenance facility (project 43).

46. **Logistics Center Parking Area:** The development of a 30,000 SF parking area is needed to support the Air Cargo and Logistics Hangars noted in project 31. This parking area is envisioned to support the vehicular parking needs associated with the Air Cargo and Logistics Hangars.

47. **USFS Expansion:** Approximately 374,000 SF of space located directly to the west of the existing USFS facility is designated for future expansion.

48. **Tie-Downs Transient (Phase II):** Approximately 40,000 SF of additional transient tie-down positions will provide overflow space for those transient aircraft requiring tie-down parking on the north airfield.

49. **Aircraft Testing Facility Hangar:** The development of 65,000 SF aircraft testing facility is recommended for the north airfield. This facility is envisioned to support aircraft engine testing and acoustical retrofitting (noise reduction) activities.

50. **Aircraft Testing Facility Office Building:** A 25,000 SF office building is located west of the proposed aircraft testing facility hangar. This office building is envisioned to support project 48.

51. **Aircraft Testing Facility Parking Area:** A 30,000 SF vehicular parking area will provide adequate parking for the employees, guests and clients of the aircraft testing facility.

52. **Conventional Maintenance Hangar (Phase II):** The second phase of the conventional maintenance hangar development is located directly south of the transient tie-downs (project 47). This conventional hangar is envisioned to provide additional space to conduct aircraft maintenance activities for aircraft operating on the north airfield. The overall size of this facility is approximately 45,000 SF.

53. **Maintenance Hangar Queuing and Storage:** Approximately 24,000 SF maintenance/storage hangars are proposed near the northern border of West Avenue F. These traditional box hangars will provide short-tem storage for aircraft seeking temporary over-night parking who have business on the north airfield. These hangars are anticipated to provide short-term parking for clients and/or VIPs associated with the corporate aircraft sales and service center (project 55), general office buildings (project 53) and aeronautical college facility (project 22).

54. **General Office Building:** The development of a new general office building is proposed near West Avenue F on the north airfield. This building is envisioned to serve an aviation business requiring airfield access. The estimated size of this building is 100,000 SF but may be changed to meet the needs of the future tenant.

55. **General Office Building Parking:** A 30,000 SF vehicular parking lot is needed to provide adequate parking for the employees, guests and clients of the general office building (project 53).

56. **Corporate Aircraft Sales and Service (Building and Hangar):** The development of an aircraft sales and service center will provide the region with

an aircraft dealership that will provide aircraft sales as well as service. Furthermore, this proposed facility will provide the airport with an additional key airport tenant as well as help generate additional lease revenue for the Airport.

57. **Corporate Aircraft Sales and Service (Parking):** Approximately 30,000 SF of vehicular parking is proposed to support the corporate aircraft sales and service center (project 55).

58. **Corporate Aircraft Sales and Services (Apron):** A 250,000 SF aircraft apron is proposed to support the corporate aircraft sales and service center (project 55).

59. **Conventional Hangars (Phase II):** Approximately 34,000 SF of conventional hangar space is proposed to provide additional aircraft storage capacity. These hangars are to be located directly south of the conventional maintenance queuing hangars identified in project 52.

60. **New Fixed Based Operator Office:** A 6,000 SF new Fixed Based Operator (FBO) is proposed for the north airfield. This FBO consists of two 3,000 SF buildings located along West Avenue F. A new FBO is anticipated to provide hangar rental, manage fuel sales on the north airfield and provide pilot facilities for transient aircraft operations.

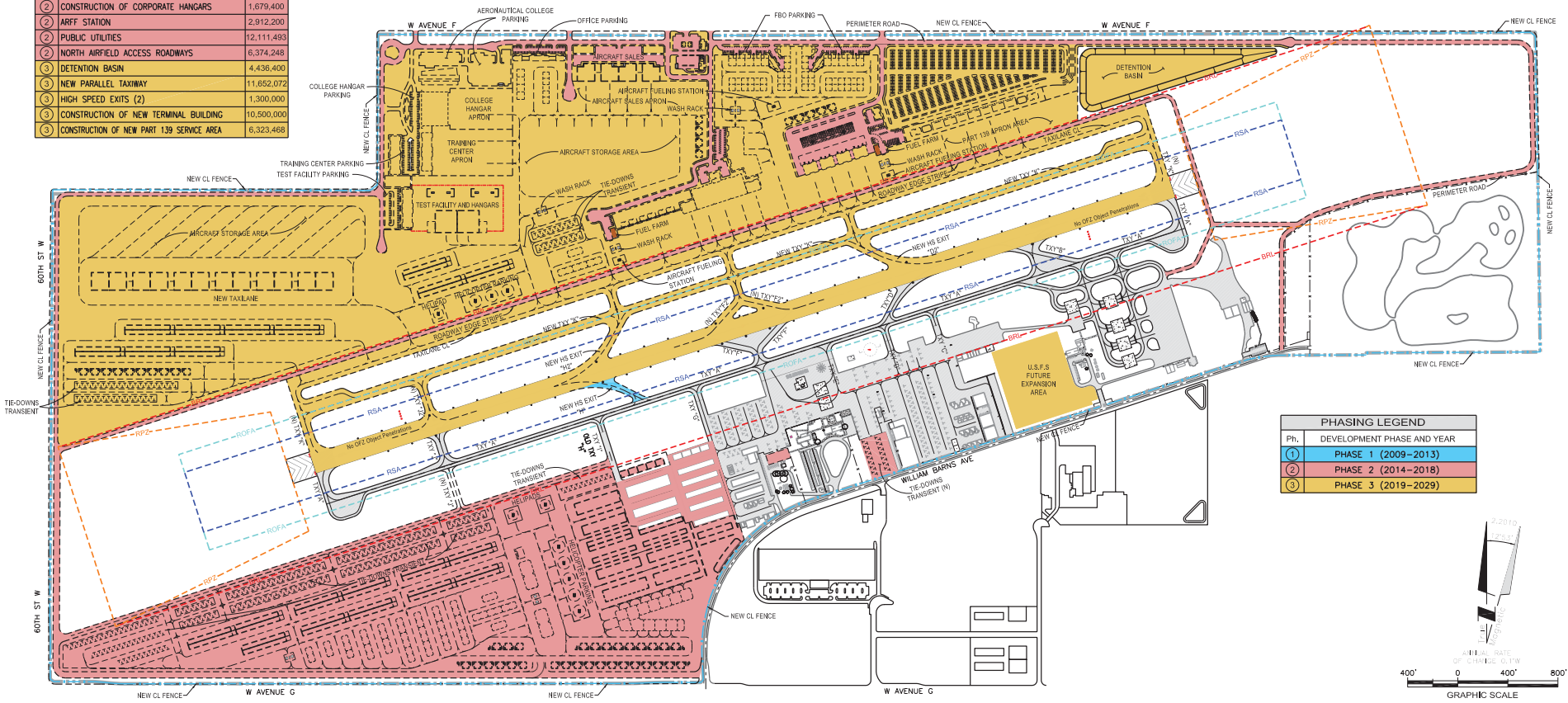
61. **Individual Box Hangars:** Approximately 100,000 SF of standard box hangars are proposed for FBO management. These hangars are anticipated to provide covered hangar space for small single and multi-engine piston aircraft and are located directly in front of the new FBO.

62. **New Fixed Based Operator Parking Area:** A 40,000 SF vehicular parking lot is needed to support a new FBO. This lot is located along West Avenue F.

63. **General Office Building:** The development of a new general office building is proposed near the Air Carrier Terminal Parking lot (project 17) on the north airfield. This building is envisioned to serve an aviation business not requiring airfield access. The estimated size of this building is 40,000 SF but may be changed to meet the needs of the future tenant.

AIRPORT CAPITAL IMPROVEMENT PROGRAM

Ph.	DEVELOPMENT TITLE	PROJECT $ COST $
1	PERIMETER FENCE	1,500,000
1	HIGH SPEED EXIT	650,000
2	PAVEMENT REHAB	2,000,000
2	CONSTRUCTION OF ITINERANT TIE DOWN POSITIONS	1,331,490
2	GENERAL AVIATION EXPANSION AREA	6,762,537
2	CONSTRUCTION OF CONVENTIONAL HANGARS	8,341,850
2	CONSTRUCTION OF INDIVIDUAL HANGARS (Ph1)	4,081,380
2	HELIPAD AND HELICOPTER PARKING AREA (5 SPACES)	1,160,654
2	CONSTRUCTION OF CORPORATE HANGARS	1,679,400
2	ARFF STATION	2,912,200
2	PUBLIC UTILITIES	12,111,493
2	NORTH AIRFIELD ACCESS ROADWAYS	6,374,248
3	DETENTION BASIN	4,436,400
3	NEW PARALLEL TAXIWAY	11,652,072
3	HIGH SPEED EXITS (2)	1,300,000
3	CONSTRUCTION OF NEW TERMINAL BUILDING	10,500,000
3	CONSTRUCTION OF NEW PART 139 SERVICE AREA	6,323,468
3	HELIPAD	158,279
3	HELICOPTER PARKING AREA (3 SPACES)	685,000
3	GENERAL OFFICE BUILDING	250,000
3	AERONAUTICAL COLLEGE	9,214,250
3	AERONAUTICAL COLLEGE PARKING	585,000
3	AERONAUTICAL COLLEGE HANGAR	3,733,080
3	COLLEGE HANGAR PARKING	100,425
3	COLLEGE HANGAR APRON	1,841,213
3	AIR TRANSPORT TRAINING CENTER	3,750,000
3	TRAINING CENTER PARKING	115,000
3	TRAINING CENTER APRON	2,060,388
3	TRAINING CENTER OFFICE	660,000
3	AIR CARGO AND LOGISTICS HANGARS	2,280,000
3	GAS STATION	2,191,185
3	CONVENTIONAL MAINTENANCE HANGAR	460,200
3	FAST FOOD RESTRAUNT	1,217,325
3	FUEL FARM	2,851,750
3	AIRCRAFT FUELING STATION	3,900,000
3	CONSTRUCTION OF PORTABLE HANGARS	1,352,800
3	INDIVIDUAL NESTED T-HANGARS	1,200,000
3	STORAGE AND MAINTENANCE HANGARS	19,442,700
3	GENERAL OFFICE BUILDING	250,000
3	CONSTRUCTION OF INDIVIDUAL HANGARS (Ph II)	12,224,140
3	AIRCRAFT WASH RACK	240,000
3	AIRCRAFT STORAGE AREA	9,070,890
3	AIRCRAFT MAINTENANCE FACILITY	6,682,725
3	AIRCRAFT MAINTENANCE FACILITY OFFICE BUILDING	975,000
3	GENERAL OFFICE BUILDING	1,500,000
3	USFS EXPANSION	2,242,710
3	LARGE CORPORATE HANGARS	19,141,306
3	TIE-DOWNS TRANSIENT	250,000
3	AIRCRAFT TEST FACILITY AND HANGAR	4,550,000
3	AIRCRAFT TEST FACILITY OFFICE	3,750,000
3	AIRCRAFT TEST FACILITY PARKING	175,000
3	GENERAL OFFICE BUILDING AND PARKING	125,000
3	CORPORATE AIRCRAFT SALES AND SERVICE CENTER BUILDING	12,000,000
3	CORPORATE AIRCRAFT SALES AND SERVICE CENTER PARKING	350,000
3	CORPORATE AIRCRAFT SALES AND SERVICE CENTER APRON	1,452,000
3	NEW FIXED BASE OPERATOR (FBO) OFFICES	7,200,000
3	NEW FIXED BASE OPERATOR (FBO) HANGARS	12,244,140
3	NEW FIXED BASE OPERATOR (FBO) PARKING	3,750,000
3	AIRCRAFT TEST FACILITY PARKING	105,000
3	GENERAL OFFICE BUILDING	250,000
3	AIR CARRIER TERMINAL PARKING	350,000



PHASING LEGEND	
Ph.	DEVELOPMENT PHASE AND YEAR
1	PHASE 1 (2009-2013)
2	PHASE 2 (2014-2018)
3	PHASE 3 (2019-2029)

ANNUAL RATE OF CHANGE: 0.1%

400' 0 400' 800'

GRAPHIC SCALE

GENERAL WILLIAM J. FOX AIRFIELD
Lancaster, CA
Master Plan Update

Recommended Airport Capital Improvement Projects

EXHIBIT 6.1

File: T:\27973AFoxFieldAirportMasterPlan\CAD\DWG\EXHIBITS\Exhibit 6.1.dwg Dec 16, 2011 - 8:27am witten

Table 6.1: Airport Capital Improvement Program

Number	Title	Target Year	Units	Quantity	Unit Cost	Total Project Cost
Phase I Development (2009-2013)						
1	Perimeter Fence Replacement	2013	LF	50,000	$ 30	$ 1,500,000
2	High Speed Exit	2013	SF	3,250	$ 200	$ 650,000
						$ 2,150,000
Phase II Development (2014-2018)						
3	Slurry Seal South Parking Ramps	2015	LS	1	$ 800,000	$ 800,000
4	Itinerant Tie Down Positions*	2015	SF	266,298	$ 5	$ 1,331,490
5	Individual Hangars (Phase I)	2015	SF	68,023	$ 60	$ 4,081,380
6	General Aviation Expansion Area	2015	SF	1,502,786	$ 5	$ 6,762,537
7	Conventional Hangars	2015	SF	151,670	$ 55	$ 8,341,850
8	Helipad, Helicopter Parking and Maintenance Hangars	2015	SF	105,514	$ 11	$ 1,160,654
9	Replace RW 6-24 (Concrete)	2016	SF	1,000,000	$ 15	$ 15,000,000
10	Corporate Hangars	2016	SF	18,660	$ 90	$ 1,679,400
11	ARFF Station	2017	SF	14,561	$ 200	$ 2,912,200
12	Public Utilities	2018	LF	148,304	$ 82	$ 12,111,493
13	North Airfield Access Roadways	2018	SF	2,549,699	$ 3	$ 6,374,248
						$ 60,555,252
Phase III Development (2019-2029)						
14	New Parallel Taxiway	2019	SF	1,456,509	$ 8	$ 11,652,072
15	High Speed Exits (2)	2019	SF	6,500	$ 200	$ 1,300,000
16	New Terminal Building	2020	SF	42,000	$ 250	$ 10,500,000
17	Air Carrier Terminal Parking	2029	SF	70,000	$ 5	$ 350,000
18	Stomwater Drainage Basin	2020	SF	36,970	$ 120	$ 4,436,400
19	New Part 139 Service Area (Apron)	2020	SF	843,129	$ 8	$ 6,323,468
20	Helipad	2020	SF	14,389	$ 11	$ 158,279
21	Helicopter Parking Area	2020	SF	100,000	$ 11	$ 1,100,000
22	General Office Building	2020	SF	32,000	$ 125	$ 4,000,000
23	Aeronautical College	2021	SF	36,857	$ 250	$ 9,214,250
24	Aeronautical College Parking	2021	SF	117,000	$ 5	$ 585,000
25	Aeronautical College Hangar	2021	SF	57,432	$ 65	$ 3,733,080
26	College hangar Parking	2021	SF	20,085	$ 5	$ 100,425
27	College Hangar Apron	2021	SF	167,383	$ 11	$ 1,841,213
28	Air Transport Training Center	2022	SF	25,000	$ 125	$ 3,125,000
29	Training Center Parking	2022	SF	23,000	$ 5	$ 115,000
30	Training Center Office	2022	SF	4,400	$ 125	$ 550,000
31	Training Center Apron	2022	SF	187,308	$ 11	$ 2,060,388
32	Air Cargo and Logistics Hangars	2023	SF	38,000	$ 60	$ 2,280,000
33	Gas Station	2024	SF	48,693	$ 45	$ 2,191,185
34	Conventional Maintenance Hangar	2024	SF	6,136	$ 75	$ 460,200
35	Fast Food Restaurant	2025	SF	48,693	$ 25	$ 1,217,325
36	Fuel Farm	2025	SF	6,710	$ 425	$ 2,851,750
37	Aircraft Fueling Station	2025	SF	12,000	$ 325	$ 3,900,000
38	Portable Aircraft Hangars	2026	SF	33,820	$ 40	$ 1,352,800
39	Individual Hangars (Nested T-Hangars)	2026	SF	20,000	$ 60	$ 1,200,000
40	Storage and Maintenance Hangars	2026	SF	1,080,150	$ 18	$ 19,442,700
41	General Office Building	2027	SF	150,000	$ 125	$ 18,750,000
42	Aircraft Wash Rack	2027	SF	4,000	$ 60	$ 240,000
43	Aircraft Storage Area	2027	SF	1,511,815	$ 6	$ 9,070,890
44	Aircraft Maintenance Facility	2028	SF	89,103	$ 75	$ 6,682,725
45	Aircraft Maintenance Facility Office Building	2028	SF	6,500	$ 125	$ 812,500
46	Logistics Center Parking Area	2028	SF	30,000	$ 5	$ 150,000
47	USFS Expansion	2029	SF	373,785	$ 6	$ 2,242,710
48	Tie-downs Transient	2029	SF	50,000	$ 5	$ 250,000
49	Aircraft Testing Facility Hangar	2029	SF	70,000	$ 65	$ 4,550,000
50	Aircraft Testing Facility Office Building	2029	SF	25,000	$ 125	$ 3,125,000
51	Aircraft Testing Facility Parking	2029	SF	35,000	$ 5	$ 175,000
52	Conventional Maintenance Hangar (Phase II):	2029	SF	45,000	$ 65	$ 2,925,000
53	Maintenance Queing and Storage Hangars	2029	SF	37,000	$ 65	$ 2,405,000
54	General Office Building	2029	SF	10,000	$ 125	$ 1,250,000
55	General Office Building Parking	2029	SF	30,000	$ 5	$ 150,000
56	Corporate Aircraft Sales & Service Center Building	2029	SF	80,000	$ 125	$ 10,000,000
57	Corporate Aircraft Sales & Service Center Parking	2029	SF	70,000	$ 5	$ 350,000
58	Corporate Aircraft Sales & Service Center Apron	2029	SF	132,000	$ 11	$ 1,452,000
59	Conventional Hangars (Phase II)	2029	SF	34,000	$ 75	$ 2,550,000
60	New Fixed Based Operator (FBO)	2029	SF	48,000	$ 125	$ 6,000,000
61	Individual Box Hangars	2029	SF	100,000	$ 60	$ 6,000,000
62	New Fixed Based Operator (FBO) Parking	2029	SF	40,000	$ 5	$ 200,000
63	General Office Building	2029	SF	40,000	$ 125	$ 5,000,000
						$ 180,371,360
					TOTAL 20-Year ACIP	**$ 243,076,611**

6.5 Terminal Area Plan

The terminal area plan for Fox Airfield is shown on two individual drawings in order to depict the new north terminal area as well as the existing terminal area located on the south side of the runway. Combined, these drawings consist of sheets 5 of 14 and 6 of 14. Both terminal area plans depict aircraft parking/tied down areas, fueling facilities, aircraft storage (hangars), FBO buildings, vehicular parking areas, and security. A scale of 1"=100' was used for both drawings. The runway and taxiway clearances, safety areas and other detailed dimensional separation criteria are shown on each terminal area drawing.

6.6 Facilities Area Plan

Drawing 7 of 14 identifies the existing and proposed facilities at Fox Airfield. This plan was created to reduce the amount of extraneous information shown on the ALP. In addition, because the terminal area plan was shown on two individual drawings (north and south), the facilities area plan was used to identify existing and new buildings on one drawing. This plan also identifies the estimated elevation of each structure on the Airport.

6.7 Airspace Plan (FAR Part 77)

Drawing 8 of 14 reflects the airspace (FAR Part 77) plan for Fox Airfield. This drawing is depicted on 7.5 quadrangle USGS topographic map at a scale of 1"=2,000'. This plan depicts penetrations (obstructions) of the FAR Part 77 imaginary surfaces including the Horizontal, Conical and Approach Surfaces. Obstructions to these imaginary surfaces are shown in both plan and profile view on the airspace plan. In addition, actions for addressing the obstructions are documented as part of the airport plans. Obstruction data was obtained from a variety of sources including the National Geodetic Survey (NGS), County of Los Angeles and observations at the Airport. As shown in Drawing 8, there are approximately 15 identified objects surrounding the Airport. Of these, six are obstructions to airspace. Each of the six obstructions are utility poles which require obstruction lighting at their highest peak.

6.8 Airspace Obstruction and Runway Approach Plans

Drawings 9 and 10 of 14 graphically depict the airspace obstructions and runway approach plans for Runways 6 and 24. These approach plans identify the physical objects and obstructions that exist in the navigable airspace surrounding General William J. Fox Airfield using a plan and profile view. The criteria used to define objects that constitute obstructions to the safety of approaching and departing aircraft are contained in the Federal Aviation Regulations (FAR) Part 77, *Object Affecting Navigable Airspace.*

Both drawings include a 34:1 non precision instrument approach slope which represents the type of approach for each runway. In addition, these plans also depict the Runway

Protection and Object Free Zone (RPZ and OFZ) for each runway end. These approach plans include all physical features such as trees, roads, utility lines, topography, buildings and/or other structures impacting FAR Part 77 surfaces. Any obstruction identified is described on each drawing as well as the proposed action for each object penetrating the affected surface. These recommendations comply with the FAA's obstruction identification standards.

6.9 Land Use Plan

Two land use plans were developed as part of this plans package. These include the on-airport and off-airport land use plans, drawing 11 and 12 of 14, respectfully. Both the on and off-airport land use plans are depicted using an aerial photo or USGS topographic maps which reflect existing and recommend land uses. Key safety areas such as the RPZ, Runway Safety Area (RSA), and OFZ are shown. . The on-airport land use plan identifies the Airport's aviation-related functional areas. These include airfield, FBO areas and passenger handling facilities, tie downs and hangars, and other aviation and non-aviation related uses. The on-airport land plan also shows the areas on the Airport that are identified for future aviation use. These land use areas are to be preserved for future development. A scale of 1" = 400' was used for the on-airport land use plan.

The off-airport land use plan identifies the existing and future land uses surrounding the Airport. Areas of potential noise impact are shown based on the noise exposure contours developed using the FAA's Integrated Noise Model (INM) version 7.01b. Noise contours are shown for the 5, 10 and 20-year planning periods. These noise contours where developed using the Community Noise Equivalent Level (CNEL) methodology which is required by California State Law. CNEL contour intervals 55, 60, 65, and 70 dB were developed using American Standard Code for Information Interchange **(**ASCII) flight plan data, information collected from the Air Traffic Control Tower (ATCT), and the airport manager. As shown in drawing 12 of 14, the 65 CNEL noise contour remains within airport property. Only one land use type (light industrial) lies within the 65 CENL contour. The off-airport land use plan is shown using a scale of 1"=2,000'.

6.10 Airport Property Map

Drawing 13 of 14 depicts the airport property map. This drawing identifies the boundary of the Airport as well as any navigation easements owned by the County. A property table is included on this drawing which identifies the following information: type of interest in the property (i.e. fee simple, leased fee); title book/page, parcel number, acreage, recording date, owner and comments.

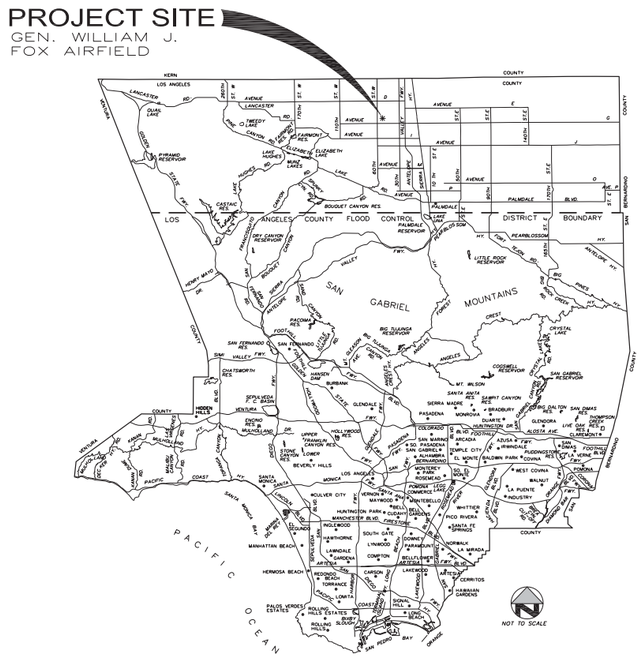
6.11 Airport Photo

Drawing 14 of 14 displays a current aerial image of the General William J. Fox Airfield. This aerial image was taken in February 2010. This aerial image was used as the base drawing for many of the sheets making up the ALP plans package.

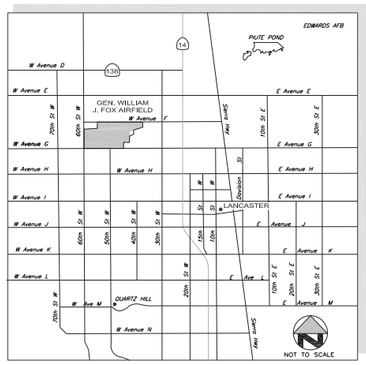
GENERAL WILLIAM J. FOX AIRFIELD
Lancaster, California

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS
AVIATION DIVISION

AIRPORT MASTER PLAN UPDATE
AIP No.03-06-0118-13



VICINITY MAP



LOCATION MAP

DRAWING INDEX

SHEET No.	DRAWING TITLE
1	COVER SHEET
2	AIRPORT DATA SHEET
3	AIRPORT LAYOUT PLAN
4	FUTURE AIRPORT LAYOUT PLAN
5	TERMINAL AREA PLAN (NORTH)
6	TERMINAL AREA PLAN (SOUTH)
7	BUILDING FACILITIES PLAN
8	APPROACH PLAN (FAR Part 77)
9	AIRSPACE OBSTRUCTION AND RUNWAY APPROACH PLAN (RW 6)
10	AIRSPACE OBSTRUCTION AND RUNWAY APPROACH PLAN (RW 24)
11	ON-AIRPORT LANDUSE PLAN
12	OFF-AIRPORT LAND USE PLAN
13	AIRPORT PROPERTY MAP (EXHIBIT A)
14	AIRPORT PHOTOGRAPH

PARSONS BRINCKERHOFF
451 E. Vanderbilt Way Suite 200, San Bernardino CA
TEL: 909.888.1106 FAX: 909.889.1884

PCA No. G67840411

File: T:\27973AFoxFieldAirportMasterPlan\CAD\DWG\SHEET\SHT01-COVERSHEET.dwg May 03, 2012 - 10:13am witten

DECLARED DISTANCES		
	RUNWAY 6	RUNWAY 24
TAKEOFF RUN AVAILABLE (TORA)	7,201'	7,201'
TAKEOFF DISTANCE AVAILABLE (TODA)		
ACCELERATE–STOP DISTANCE AVAILABLE (ASDA)		
LANDING DISTANCE AVAILABLE (LDA)		
NO DECLARED DISTANCES EXIST AT FOX AIRFIELD		

RUNWAY END DATA			
RUNWAY	EXISTING	PROPOSED	
6	LATTITUDE	34°44'16.8072"N	*NO CHANGE*
	LONGITUDE	118°13'48.1415"W	*NO CHANGE*
	ELEVATON	2350.5 (HIGH)	*NO CHANGE*
24	LATTITUDE	34°44'38.7410"N	*NO CHANGE*
	LONGITUDE	118°12'26.0652"W	*NO CHANGE*
	ELEVATON	2334.8 (LOW)	*NO CHANGE*

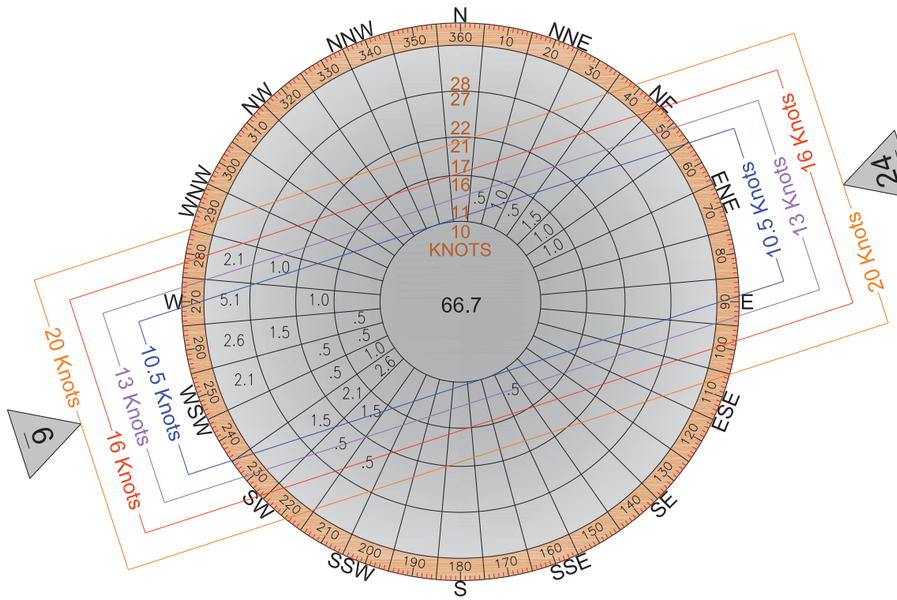
TAXIWAY DETAILS		
DESIGNATOR		WIDTH
EXISTING	FUTURE	
TXY "A" PARALLEL	NO CHANGE	50'
TXY "A" RW 6 PERP.	NO CHANGE	70'
TXY "A" RW 24 PERP.	NO CHANGE	74'
TAXIWAY "B"	TAXIWAY "A1"	104'
TAXIWAY "C"	TAXIWAY "A2"	50'
TAXIWAY "D"	TAXIWAY "A3"	54'
TAXIWAY "E"	TAXIWAY "A4"	50'
TAXIWAY "F"	TAXIWAY "A5"	80'
TAXIWAY "G"	TAXIWAY "A6"	60'
TAXIWAY "H"	TAXIWAY "A8"	50'
	TAXIWAY "A9"	50'
TAXIWAY "J"	TAXIWAY "A10"	50'
	TAXIWAY "A7"	50'
	TAXIWAY "B7"	50'
	TAXIWAY "B3"	50'
	TAXIWAY "B5"	80'
	TAXIWAY "B10"	50'
TAXIWAY "B"	NO CHANGE	50'
TXY "B" RW 6 PERP	NO CHANGE	70'
TXY "B" RW 24 PERP	NO CHANGE	74'

AIRPORT DATA		
DESCRIPTION	EXISTING	ULTIMATE
AIRPORT ELEVATION	2,335' MSL	*NO CHANGE*
AIRPORT REFERENCE POINT (ARP) LAT	34°44'27.8000"	*NO CHANGE*
COORDINATES (NAD 83) ZONE 5 CA LONG	118°13'07.1000"	*NO CHANGE*
NAVAIDS	BEACON, ATCT GPS, WIND CONE	*NO CHANGE*
MEAN MAX. TEMP. OF HOTTEST MONTH	(99.4F) AUG.	*NO CHANGE*
AIRPORT REFERENCE CODE	C–IV	*NO CHANGE*
GPS AT AIRPORT	RW 6 RNAV 19117 RW 24 RNAV 25381	*NO CHANGE*

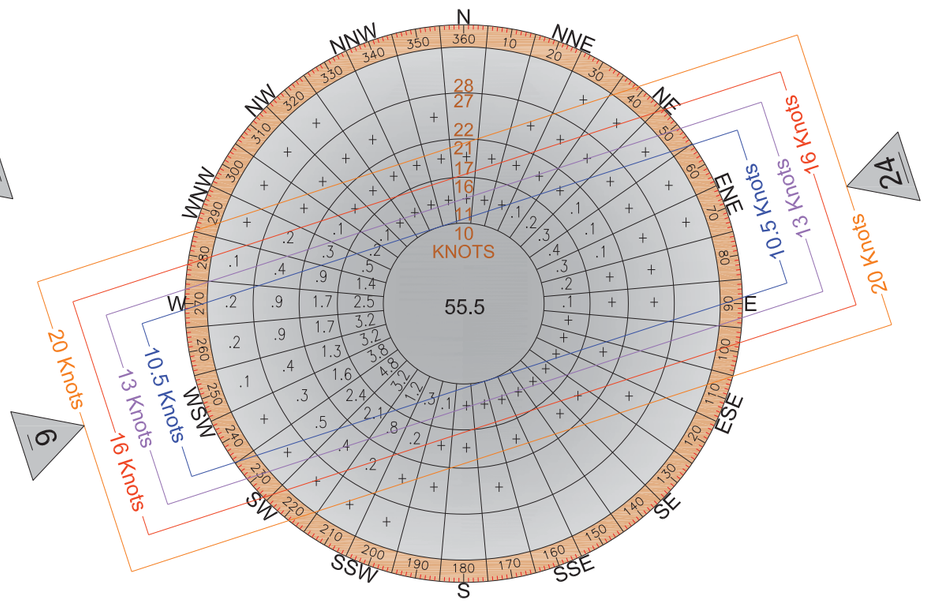
FAA NON STANDARD CONDITIONS
DESCRIPTION
1. TAXIWAY WIDTHS ON THE SOUTH SIDE OF RW 6/24 ARE LESS THAN C–IV REQUIREMENTS (75')

LEGEND		
DESCRIPTION	EXISTING	ULTIMATE
AIRPORT BOUNDARY		*NO CHANGE*
RUNWAY PAVEMENT		*NO CHANGE*
AIRFIELD PAVEMENT		
PERIMETER ROAD	*N/A*	
WIND CONE		*NO CHANGE*
DEVELOPMENT		
HELIPADS	*N/A*	H
BUILDING RESTRICTION LINE (BRL)		*NO CHANGE*
RUNWAY OBJECT FREE AREA (ROFA)		*NO CHANGE*
OBSTACLE FREE ZONE (OFZ)		*NO CHANGE*
RUNWAY SAFETY AREA (RSA)		*NO CHANGE*
RUNWAY PROTECTION ZONE (RPZ)		
STRUCTURE/FACILITIES		
GROUND CONTOURS		*NO CHANGE*
AIRPORT REFERENCE POINT (ARP)		*NO CHANGE*
FENCING		
ROTATING BEACON		*NO CHANGE*
HOLDLINE		
RUNWAY LIGHTS/PAPI		*NO CHANGE*
RUNWAY LIGHTS (BASE MOUNTED)		*NO CHANGE*
RUNWAY LIGHTS (FLUSH MOUNT)	*N/A*	
RUNWAY LIGHTS REIL		*NO CHANGE*
TAXIWAY STRIPING		
SECTION CORNERS		*NO CHANGE*
COMPASS ROSE		*NO CHANGE*

RUNWAY DATA TABLE			
DESCRIPTION		RUNWAY 6-24	
		EXISTING	ULTIMATE
DESIGN/CRITICAL AIRCRAFT	LOCKHEED MARTIN C–130J	C–130	*C–130J*
	WINGSPAN (FEET)	132'–7"	*NO CHANGE*
	UNDERCARRAGE WIDTH	14'–3"	*NO CHANGE*
	APPROACH SPEED (KNOTS)	129 KNOTS	*NO CHANGE*
	MAX. TAKEOFF WEIGHT	155,000 LBS	*175,000 LBS*
EFFECTIVE GRADIENT (IN %)		0.02	*NO CHANGE*
PAVEMENT DESIGN STRENGTH (LBS)	SW 50,000	SW 50,000	*NO CHANGE*
	DW 86,000	DW 86,000	*NO CHANGE*
	DTW 117,000	DTW 175,000	
APPROACH VISIBILITY MINIMUMS RUNWAY 6/24		RW 6 250' 1–MILE	*NO CHANGE*
		RW 24 419' 1–MILE	*NO CHANGE*
RSA LENGTH BEYOND STOP END OR RUNWAY		1000'	*NO CHANGE*
RSA WIDTH		500'	*NO CHANGE*
ROFA LENGTH BEYOND STOP END OF RUNWAY		1000'	*NO CHANGE*
ROFA WIDTH		700'	*800'*
OFZ LENGTH BEYOND STOP END OF RUNWAY		1000'	*NO CHANGE*
OFZ WIDTH		700'	*800'*
DISTANCE FROM RUNWAY CL TO HOLD BARS		250'	*NO CHANGE*
END MARKINGS RUNWAY 6/24		NON–PERCISION/ NON–PERCISION	*NO CHANGE*
RW CL TO PARALLEL TW "A" CL (E)		337.5'	*NO CHANGE*
RW CL TO PARALLEL TW "B" CL (N)		DID NOT EXIST	*400'*
TXY CL "A"/"B" TO FIXED OR MOVEABLE OBJECT		254'/NONE	*SAME/398'*
TXY "A"/"B" OBJECT FREE AREA WIDTH		259'/259'	*SAME/SAME*
TXY "A"/"B" SAFETY AREA WIDTH		171'/171'	*SAME/SAME*
TXY "A"/"B" WINGTIP CLEARANCE		44'/44'	*SAME/SAME*
RUNWAY END ELEVATIONS 6/24		2350.5'/2334.8'	*NO CHANGE*
RUNWAY TOUCHDOWN ZONE ELEVATION (TDZ)		RW 6 2,350.5	*NO CHANGE*
		RW 24 2,340.6	*NO CHANGE*
RUNWAY HIGH POINT ELEVATION		RW 6 2350.5'	*NO CHANGE*
RUNWAY LOW POINT ELEVATION		RW 24 2334.8'	*NO CHANGE*
RUNWAY 6/24 LENGTH		7201'	*NO CHANGE*
RUNWAY 6/24 WIDTH		150'	*NO CHANGE*
RUNWAY SURFACE TYPE		ASPHALT–GROOVED	*NO CHANGE*
TAXIWAY SURFACE TYPE		ASPHALT–GROOVED	*NO CHANGE*
APPROACH SLOPE		34:1 (NON PRECISION)	50:1 (PRECISION)
RUNWAY LIGHTING		MIRL	*NO CHANGE*
VISUAL AIDS	RUNWAY 6	REIL,PAPI	*NO CHANGE*
	RUNWAY 24	REIL,PAPI	*NO CHANGE*
NAVIGATIONAL AIDS	RUNWAY 6	BEACON, GPS ATCT, WINDCONE	*NO CHANGE*
	RUNWAY 24	BEACON, GPS ATCT, WINDCONE	*NO CHANGE*



IFR WIND ROSE



ALL WEATHER WIND ROSE

NOTES:

1. California Coordinate System NAD 83 Zone 5
2. All elevations are In NAVD 88. All future elevations are ESTIMATED.
3. Hangar and aircraft parking position layouts are conceptual to depict potential future capacities. The ultimate configurations may vary based on actual demand.

WIND COVERAGE								
SUMMARY	ALL WEATHER				IFR			
KNOTS	10.5	13	16	20	10.5	13	16	20
RW 6/24	95.44%	98.24%	99.5%	99.92%	64.89%	65.94%	66.45%	99.56%

Source: *Wind Coverage Provided Under All Weather Condition*
NOAA, NCDC Station Number 72381, Lancaster CA Period of record from 2000–2009 Total number of observations: 79,754
IFR–
CEILING is less than 1,000 feet, and equal to or greater than 200 or VISIBILITY is less than three miles and equal to or greater than one–half mile with a tailwind component of 5 Knots.

FAA APPROVAL

PARSONS BRINCKERHOFF
451 E. Vanderbilt Way Suite 200, San Bernardino CA
TEL: 909.888.1106 FAX: 909.889.1884

No.	DATE	REVISION	BY	APPROVED

Approved: County of Los Angeles

Richard L Smith, Chief, Aviation Division — Date

The preperation 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 refelect the offical 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 therin nor does it indicate that the proposed development is environmentally acceptable in accordance with appropriate public laws.

COUNTY OF LOS ANGELES CALIFORNIA

GENERAL WILLIAM J. FOX AIRFIELD
Lancaster, California
AIRPORT DATA SHEET
FUTURE ALP
County of Los Angeles Department of Public Works

Designed: BFG, CM	AIP PROJECT No. 03-06-0118-13
Drawn: Witten, J	Scale: AS SHOWN May 2012
Checked: CCI, CM	SHEET No. 2 OF 14
Approved:	DRAWING No.

PCA No. G6784041

File: T:\27973AFoxFieldAirportMasterPlan\CAD\DWG\SHEET\SHT02–AIRPORT DATA SHEET.dwg May 03, 2012 – 10:20am witten

LEGEND	
DESCRIPTION	EXISTING
AIRPORT BOUNDARY	
RUNWAY PAVEMENT	
AIRFIELD PAVEMENT	
WIND CONE	
DEVELOPMENT	
HELIPADS	N/A
BUILDING RESTRICTION LINE (BRL)	
RUNWAY OBJECT FREE AREA (ROFA)/	
OBSTICLE FREE ZONE (OFZ)	
RUNWAY SAFETY AREA (RSA)	
RUNWAY PROTECTION ZONE (RPZ)	
STRUCTURE/FACILITIES	
GROUND CONTOURS	XXX
AIRPORT REFERENCE POINT (ARP)	
FENCING	x x
ROTATING BEACON	
HOLDLINE	
RUNWAY LIGHTS/PAPI	
RUNWAY LIGHTS (BASE MOUNTED)	
RUNWAY LIGHTS REIL	
TAXIWAY STRIPING	
SECTION CORNERS	
COMPASS ROSE	

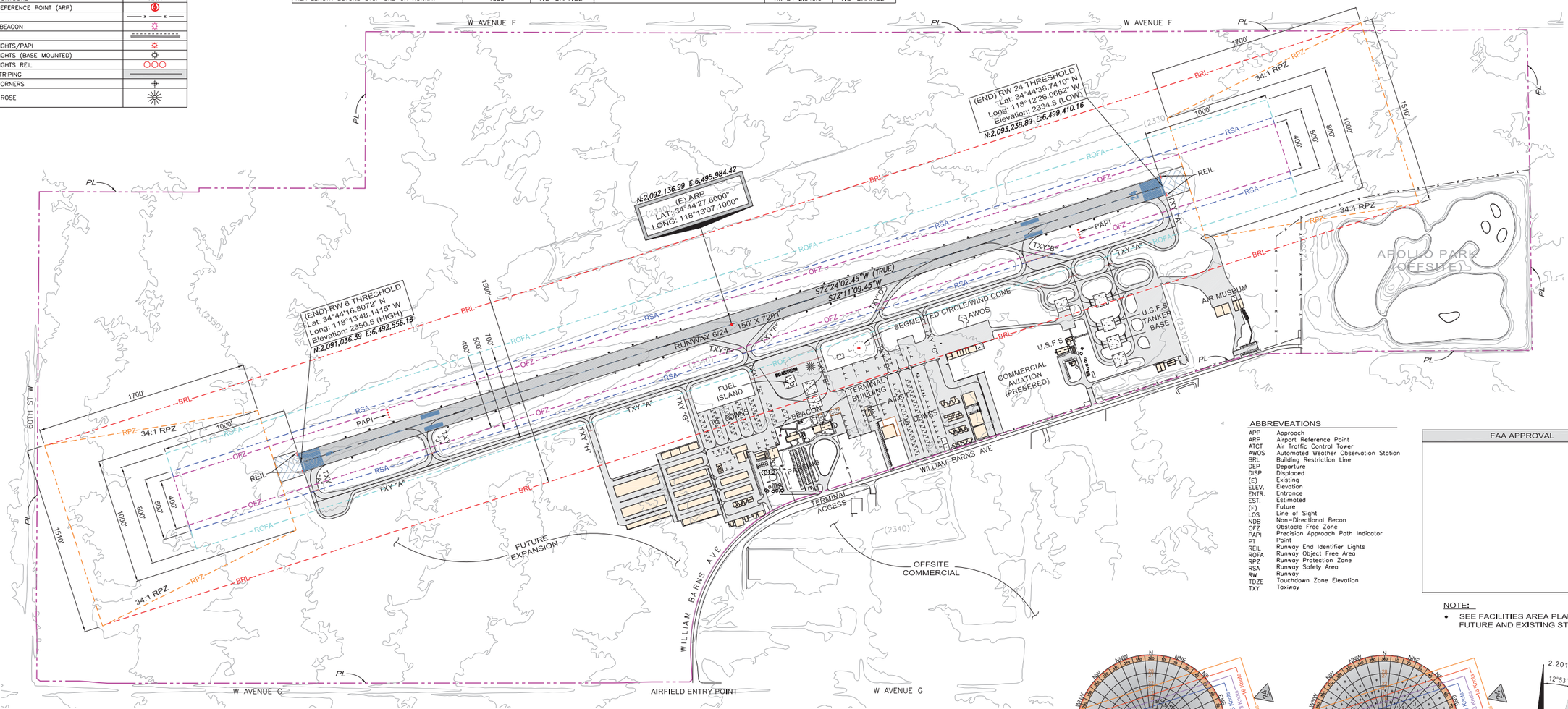
RUNWAY DATA TABLE

DESCRIPTION		RUNWAY 6-24 EXISTING	RUNWAY 6-24 ULTIMATE
DESIGN/CRITICAL AIRCRAFT	LOCKHEED MARTIN C-130J	C-130	C-130J
	WINGSPAN (FEET)	132'-7"	NO CHANGE
	UNDERCARRAGE WIDTH	14'-3"	NO CHANGE
	APPROACH SPEED (KNOTS)	129 KNOTS	NO CHANGE
	MAX. TAKEOFF WEIGHT	155,000 LBS	175,000 LBS
EFFECTIVE GRADIENT (IN %)		0.02	NO CHANGE
PAVEMENT DESIGN STRENGTH		SW 50,000	NO CHANGE
		DW 86,000	NO CHANGE
		DTW 117,000	DTW 175,000
APPROACH VISIBILITY MINIMUMS RUNWAY 6/24		RW 6 250' 1-MILE	NO CHANGE
		RW 24 419' 1-MILE	NO CHANGE
RSA LENGTH BEYOND STOP END OR RUNWAY		1000'	NO CHANGE

DESCRIPTION	RUNWAY 6-24 EXISTING	RUNWAY 6-24 ULTIMATE
RSA WIDTH	500'	NO CHANGE
RUNWAY LENGTH BEYOND STOP END OF RUNWAY	1000'	NO CHANGE
ROFA WIDTH	700'	800'
OFZ LENGTH BEYOND STOP END OF RUNWAY	1000'	NO CHANGE
OFZ WIDTH	700'	800'
DISTANCE FROM RUNWAY CL TO HOLD BARS	250'	NO CHANGE
END MARKINGS RUNWAY 6/24	NON-PERCISION/ NON-PERCISION	NO CHANGE
RW CL TO PARALLEL TW "A" CL (E)	337.5'	NO CHANGE
RUNWAY END ELEVATIONS 6/24	2350.5'/2334.8'	NO CHANGE
RUNWAY TOUCHDOWN ZONE ELEVATION (TDZ)	RW 6 2,350.5	NO CHANGE
	RW 24 2,340.6	NO CHANGE

DESCRIPTION		RUNWAY 6-24 EXISTING	RUNWAY 6-24 ULTIMATE
RUNWAY HIGH POINT ELEVATION		RW 6 2350.5'	NO CHANGE
RUNWAY LOW POINT ELEVATION		RW 24 2334.8'	NO CHANGE
RUNWAY 6/24 LENGTH		7201'	NO CHANGE
RUNWAY 6/24 WIDTH		150'	NO CHANGE
RUNWAY SURFACE TYPE		ASPHALT-GROOVED	NO CHANGE
TAXIWAY SURFACE TYPE		ASPHALT-GROOVED	NO CHANGE
APPROACH SLOPE		34:1	NO CHANGE
RUNWAY LIGHTING		MIRL	NO CHANGE
PAVEMENT STRENGTH IN (000LBS)		50(S) 68(D) 117(DT)	NO CHANGE
VISUAL AIDS	RUNWAY 6	REIL,PAPI	NO CHANGE
	RUNWAY 24	REIL,PAPI	NO CHANGE

DESCRIPTION		RUNWAY 6-24 EXISTING	RUNWAY 6-24 ULTIMATE
NAVIGATIONAL AIDS	RUNWAY 6	BEACON, GPS ATCT, WINDCONE	NO CHANGE
	RUNWAY 24	BEACON, GPS ATCT, WINDCONE	NO CHANGE



ABBREVEATIONS

APP	Approach
ARP	Airport Reference Point
ATCT	Air Traffic Control Tower
AWOS	Automated Weather Observation Station
BRL	Building Restriction Line
DEP	Departure
DISP	Displaced
(E)	Existing
ELEV.	Elevation
ENTR.	Entrance
EST.	Estimated
(F)	Future
LOS	Line of Sight
NDB	Non-Directional Becon
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
TXY	Taxiway

FAA APPROVAL

NOTE:

- SEE FACILITIES AREA PLAN FOR FUTURE AND EXISTING STRUCTURES

AIRPORT DATA	
DESCRIPTION	EXISTING
AIRPORT ELEVATION	2,335' MSL
AIRPORT REFERENCE POINT (ARP) LAT	34°44'27.8000"
COORDINATES (NAD 83) ZONE 5 CA LONG	118°13'07.1000"
NAVAIDS	BEACON, ATCT GPS, WIND CONE
MEAN MAX. TEMP. OF HOTTEST MONTH	(99.4F) AUG.
AIRPORT REFERENCE CODE	C-IV
GPS AT AIRPORT	RW 6 RNAV 19117 RW 24 RNAV 25381

TAXIWAY DETAILS	
DESIGNATOR	WIDTH
TXY "A" PARALLEL	50'
TXY "A" RW 6 PERP.	70'
TXY "A" RW 24 PERP.	74'
TAXIWAY "B"	104'
TAXIWAY "C"	50'
TAXIWAY "D"	54'
TAXIWAY "E"	50'
TAXIWAY "F"	80'
TAXIWAY "G"	60'
TAXIWAY "H"	50'
TAXIWAY "J"	50'

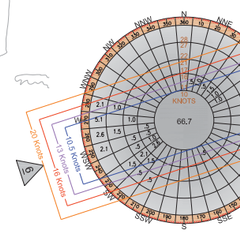
RUNWAY END DATA		
RUNWAY		EXISTING
6	LATTITUDE	34°44'16.8072"N
	LONGITUDE	118°13'48.1415"W
	ELEVATON	2350.5 (HIGH)
24	LATTITUDE	34°44'38.7410"N
	LONGITUDE	118°12'26.0652"W
	ELEVATON	2334.8 (LOW)

DECLARED DISTANCES	RUNWAY 6	RUNWAY 24
TAKEOFF RUN AVAILABLE (TORA)	7,201'	7,201'
TAKEOFF DISTANCE AVAILABLE (TODA)		
ACCELERATE-STOP DISTANCE AVAILABLE (ASDA)		
LANDING DISTANCE AVAILABLE (LDA)		

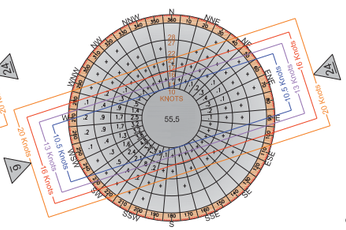
NO DECLARED DISTANCES EXIST AT FOX AIRFIELD

WIND COVERAGE								
SUMMARY	ALL WEATHER				IFR			
KNOTS	10.5	13	16	20	10.5	13	16	20
RW 6/24	95.44%	98.24%	99.5%	99.92%	64.89%	65.94%	66.45%	99.56%

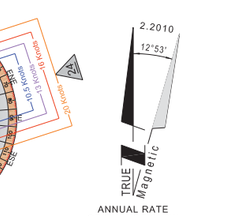
Source: *Wind Coverage Provided Under All Weather Condition*
NOAA, NCDC Station Number 72381, Lancaster CA Period of record from 2000-2009 Total number of observations: 79,754
IFR-CEILING is less than 1,000 feet, and equal to or greater than 200 or VISIBILITY is less than three miles and equal to or greater than one-half mile with a tailwind component of 5 Knots.



IFR WIND ROSE



ALL WEATHER WIND ROSE



PARSONS BRINCKERHOFF
451 E. Vanderbilt Way Suite 200, San Bernardino CA
TEL: 909.888.1106 FAX: 909.889.1884

No.	DATE	REVISION	BY	APPROVED

Approved: County of Los Angeles

Richard L Smith, Chief, Aviation Division — Date

The preperation 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 offical 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 therin nor does it indicate that the proposed development is environmentally acceptable in accordance with appropriate public laws.

GENERAL WILLIAM J. FOX AIRFIELD
Lancaster, California

EXISTING AIRPORT LAYOUT PLAN

County of Los Angeles Department of Public Works

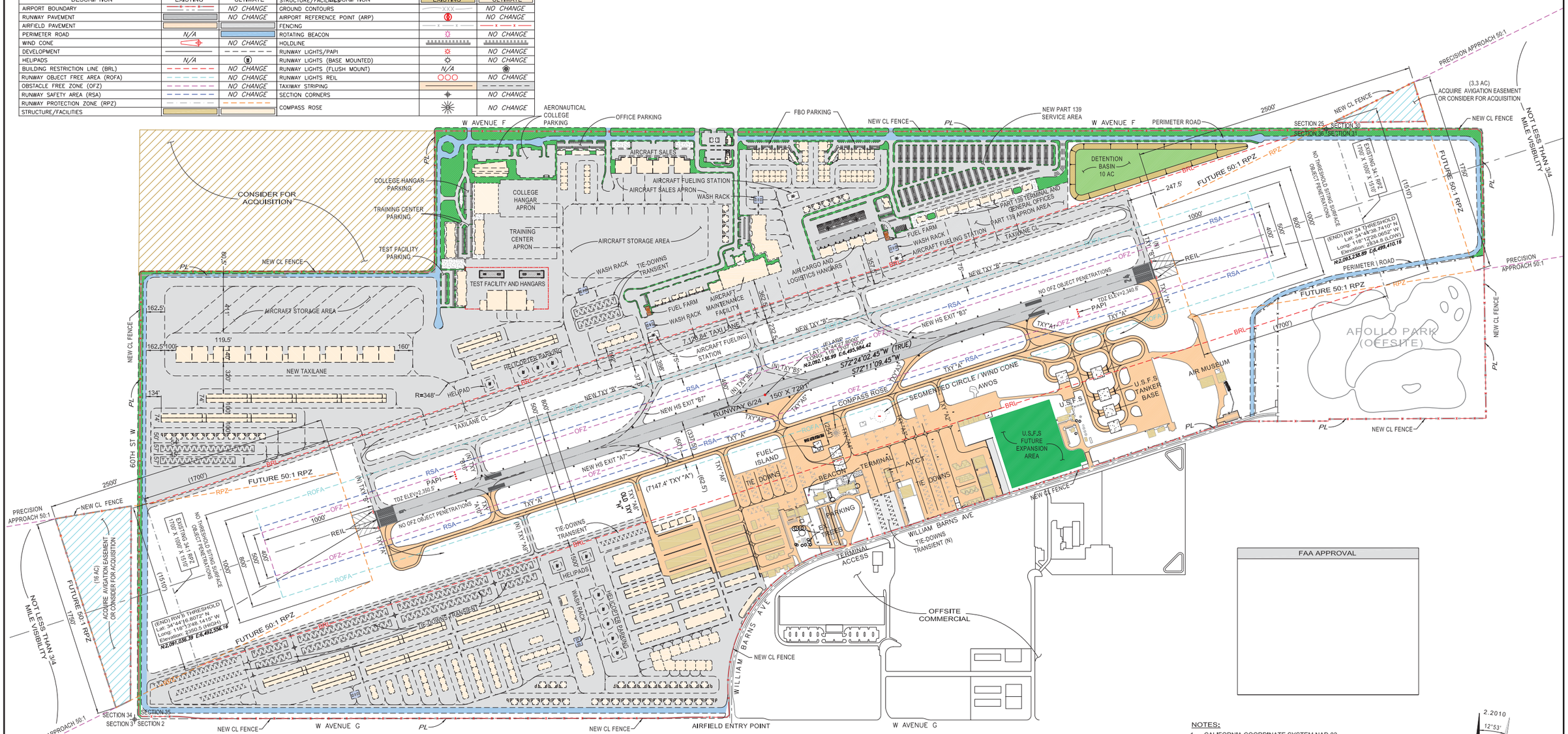
Designed: BFG, CM	AIP PROJECT No. 03-06-0118-13
Drawn: Witten, J	Scale: AS SHOWN May 2012
Checked: CCI, CM	SHEET No. 3 OF 14
Approved:	DRAWING No.

PCA No. G67840.41

File: T:\27973AFoxFieldAirportMasterPlan\CAD\DWG\SHEET\SHT03-AIRPORT LAYOUT PLAN.dwg May 03, 2012 - 10:24am witten

LEGEND		
DESCRIPTION	EXISTING	ULTIMATE
AIRPORT BOUNDARY		NO CHANGE
RUNWAY PAVEMENT		NO CHANGE
AIRFIELD PAVEMENT		NO CHANGE
PERIMETER ROAD	N/A	
WIND CONE		NO CHANGE
DEVELOPMENT		
HELIPADS	N/A	
BUILDING RESTRICTION LINE (BRL)		NO CHANGE
RUNWAY OBJECT FREE AREA (ROFA)		NO CHANGE
OBSTACLE FREE ZONE (OFZ)		NO CHANGE
RUNWAY SAFETY AREA (RSA)		NO CHANGE
RUNWAY PROTECTION ZONE (RPZ)		
STRUCTURE/FACILITIES		

LEGEND		
DESCRIPTION	EXISTING	ULTIMATE
STRUCTURE/FACILITIES		
GROUND CONTOURS	XXX	NO CHANGE
AIRPORT REFERENCE POINT (ARP)		NO CHANGE
FENCING		
ROTATING BEACON		NO CHANGE
HOLDLINE		
RUNWAY LIGHTS/PAPI		NO CHANGE
RUNWAY LIGHTS (BASE MOUNTED)		NO CHANGE
RUNWAY LIGHTS (FLUSH MOUNT)	N/A	
RUNWAY LIGHTS REIL		NO CHANGE
TAXIWAY STRIPING		
SECTION CORNERS		NO CHANGE
COMPASS ROSE		NO CHANGE



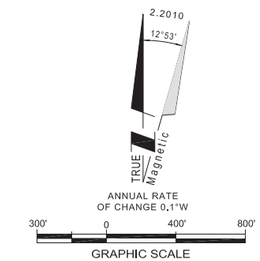
FAA APPROVAL

NOTES:

1. CALIFORNIA COORDINATE SYSTEM NAD 83 ZONE 5.
2. ALL ELEVATIONS ARE IN NAVD 88.
3. ALL FUTURE ELEVATIONS ARE ESTIMATED.
4. HANGAR LAYOUTS SHOWN ARE CONCEPTUAL TO DEPICT FUTURE POSSIBLE CAPABILITIES. THE ULTIMATE CONFIGURATIONS MAY VARY BASED ON ACTUAL DEMAND.
5. SEE AIRPORT DATA SHEET FOR TABLE DATA
6. SEE FACILITIES AREA PLAN FOR FUTURE AND EXISTING STRUCTURES
7. ATCT ELEVATION 2,377 MSL

ABBREVIATIONS

APP	Approach	(N)	New
ARP	Airport Reference Point	OFZ	Obstacle Free Zone
ATCT	Air Traffic Control Tower	PAPI	Precision Approach Path Indicator
AWOS	Automated Weather Observation Station	PT	Point
BRL	Building Restriction Line	REIL	Runway End Identifier Lights
DEP	Departure	ROFA	Runway Object Free Area
DISP	Displaced	RPZ	Runway Protection Zone
(E)	Existing	RSA	Runway Safety Area
ELEV.	Elevation	RW	Runway
ENTR.	Entrance	TDZE	Touchdown Zone Elevation
EST.	Estimated	TXY	Taxiway
(F)	Future		
HS	High Speed Exit		
LOS	Line of Sight		
NDB	Non-Directional Becon		



PARSONS BRINCKERHOFF
451 E. Vanderbilt Way Suite 200, San Bernardino CA
TEL: 909.888.1106 FAX: 909.889.1884

No.	DATE	REVISION	BY	APPROVED

Approved: County of Los Angeles

Richard L Smith, Chief, Aviation Division — Date

The preperation 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 reflelect the offical 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 therin nor does it indicate that the proposed development is environmentally acceptable in accordance with appropriate public laws.

GENERAL WILLIAM J. FOX AIRFIELD
Lancaster, California

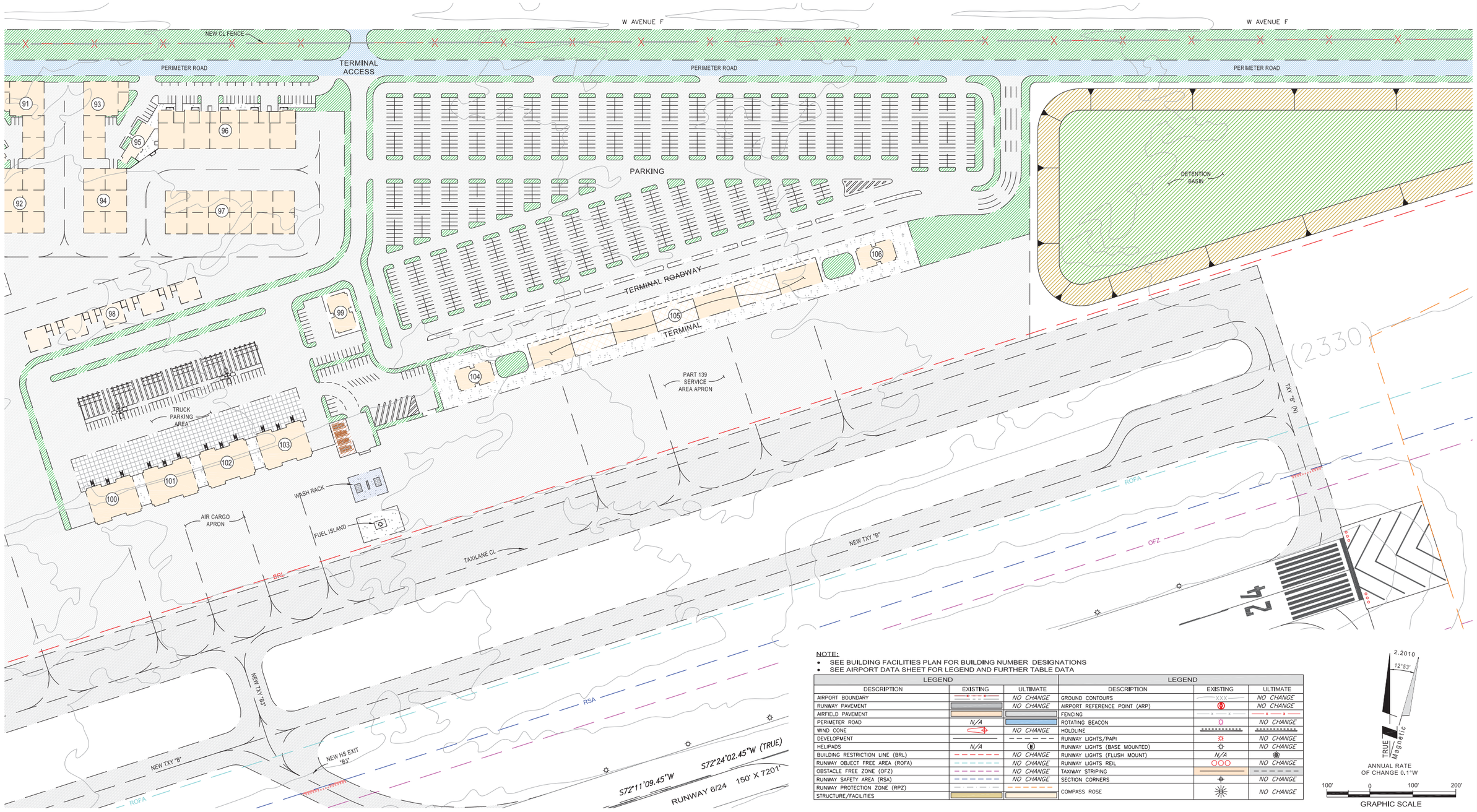
FUTURE AIRPORT LAYOUT PLAN

County of Los Angeles
Department of Public Works

Designed: BFG, CM	AIP PROJECT No. 03-06-0118-13
Drawn: Witten, J	Scale: AS SHOWN May 2012
Checked: CCI, CM	SHEET No. 4 OF 14
Approved:	DRAWING No.

PCA No. G67840.41

File: T:\27973AFoxFieldAirportMasterPlan\CAD\DWG\SHEET\SHT04-FUTURE AIRPORT LAYOUT PLAN.dwg May 03, 2012 - 10:26am witten



NOTE:
- SEE BUILDING FACILITIES PLAN FOR BUILDING NUMBER DESIGNATIONS
- SEE AIRPORT DATA SHEET FOR LEGEND AND FURTHER TABLE DATA

LEGEND			LEGEND		
DESCRIPTION	EXISTING	ULTIMATE	DESCRIPTION	EXISTING	ULTIMATE
AIRPORT BOUNDARY		NO CHANGE	GROUND CONTOURS	XXX	NO CHANGE
RUNWAY PAVEMENT		NO CHANGE	AIRPORT REFERENCE POINT (ARP)		NO CHANGE
AIRFIELD PAVEMENT			FENCING		
PERIMETER ROAD	N/A		ROTATING BEACON		NO CHANGE
WIND CONE		NO CHANGE	HOLDLINE		
DEVELOPMENT			RUNWAY LIGHTS/PAPI		NO CHANGE
HELIPADS	N/A		RUNWAY LIGHTS (BASE MOUNTED)		NO CHANGE
BUILDING RESTRICTION LINE (BRL)		NO CHANGE	RUNWAY LIGHTS (FLUSH MOUNT)	N/A	
RUNWAY OBJECT FREE AREA (ROFA)		NO CHANGE	RUNWAY LIGHTS REIL		NO CHANGE
OBSTACLE FREE ZONE (OFZ)		NO CHANGE	TAXIWAY STRIPING		
RUNWAY SAFETY AREA (RSA)		NO CHANGE	SECTION CORNERS		NO CHANGE
RUNWAY PROTECTION ZONE (RPZ)			COMPASS ROSE		NO CHANGE
STRUCTURE/FACILITIES					

ANNUAL RATE OF CHANGE 0.1°W

100' 0 100' 200'

GRAPHIC SCALE

PARSONS BRINCKERHOFF
451 E. Vanderbilt Way Suite 200, San Bernardine CA
TEL: 909.888.1106 FAX: 909.889.1884

No.	DATE	REVISION	BY	APPROVED

Approved: County of Los Angeles

Richard L Smith, Chief, Aviation Division — Date

The preperation 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 reflelect the offical 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 therin nor does it indicate that the proposed development is environmentally acceptable in accordance with appropriate public laws.

GENERAL WILLIAM J. FOX AIRFIELD
Lancaster, California

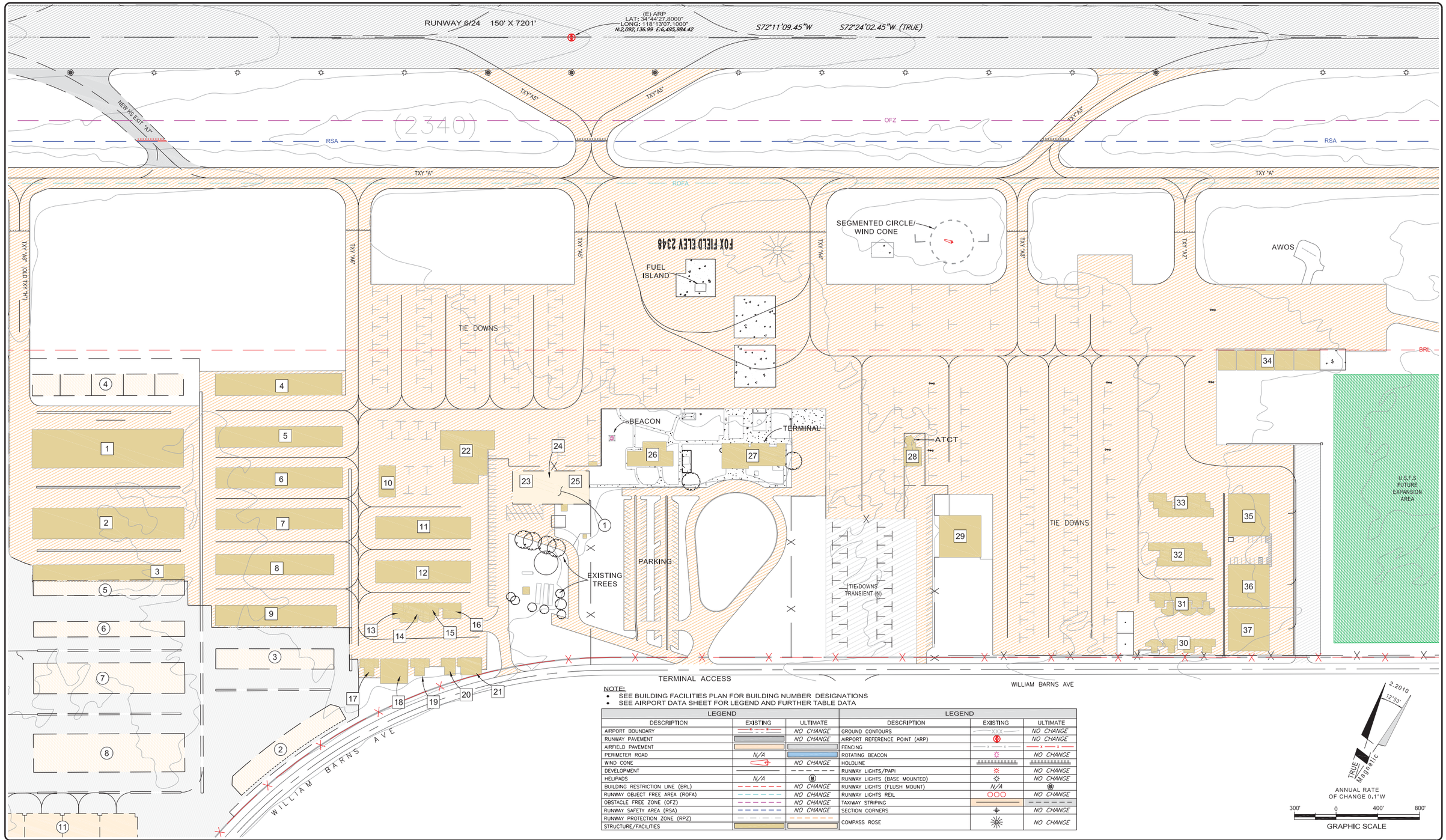
TERMINAL AREA PLAN (NORTH)

County of Los Angeles
Department of Public Works

Designed: BFG, CM	AIP PROJECT No. 03-06-0118-13
Drawn: Witten, J	Scale: AS SHOWN May 2012
Checked: CCI, CM	SHEET No. 5 OF 14
Approved:	DRAWING No.

PCA No. G6784041

File: T:\27973AFoxFieldAirportMasterPlan\CAD\DWG\SHEET\SHT05-TERMINAL AREA PLAN-NORTH.dwg May 03, 2012 - 10:29am witten



NOTE:
- SEE BUILDING FACILITIES PLAN FOR BUILDING NUMBER DESIGNATIONS
- SEE AIRPORT DATA SHEET FOR LEGEND AND FURTHER TABLE DATA

LEGEND			LEGEND		
DESCRIPTION	EXISTING	ULTIMATE	DESCRIPTION	EXISTING	ULTIMATE
AIRPORT BOUNDARY		NO CHANGE	GROUND CONTOURS	XXX	NO CHANGE
RUNWAY PAVEMENT		NO CHANGE	AIRPORT REFERENCE POINT (ARP)		NO CHANGE
AIRFIELD PAVEMENT			FENCING		
PERIMETER ROAD	N/A		ROTATING BEACON		NO CHANGE
WIND CONE		NO CHANGE	HOLDLINE		
DEVELOPMENT			RUNWAY LIGHTS/PAPI		NO CHANGE
HELIPADS	N/A		RUNWAY LIGHTS (BASE MOUNTED)		NO CHANGE
BUILDING RESTRICTION LINE (BRL)		NO CHANGE	RUNWAY LIGHTS (FLUSH MOUNT)	N/A	
RUNWAY OBJECT FREE AREA (ROFA)		NO CHANGE	RUNWAY LIGHTS REIL		NO CHANGE
OBSTACLE FREE ZONE (OFZ)		NO CHANGE	TAXIWAY STRIPING		
RUNWAY SAFETY AREA (RSA)		NO CHANGE	SECTION CORNERS		NO CHANGE
RUNWAY PROTECTION ZONE (RPZ)			COMPASS ROSE		NO CHANGE
STRUCTURE/FACILITIES					

2-2010
12°53'
TRUE
Magnetic
ANNUAL RATE OF CHANGE 0.1°W

300' 0 400' 800'
GRAPHIC SCALE

PARSONS BRINCKERHOFF
451 E. Vanderbilt Way Suite 200, San Bernardino CA
TEL: 909.888.1106 FAX: 909.889.1884

No.	DATE	REVISION	BY	APPROVED

Approved: County of Los Angeles

Richard L Smith, Chief, Aviation Division — Date

The preperation 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 refelect the offical 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 therin nor does it indicate that the proposed development is environmentally acceptable in accordance with appropriate public laws.

GENERAL WILLIAM J. FOX AIRFIELD
Lancaster, California

TERMINAL AREA PLAN (SOUTH)

County of Los Angeles
Department of Public Works

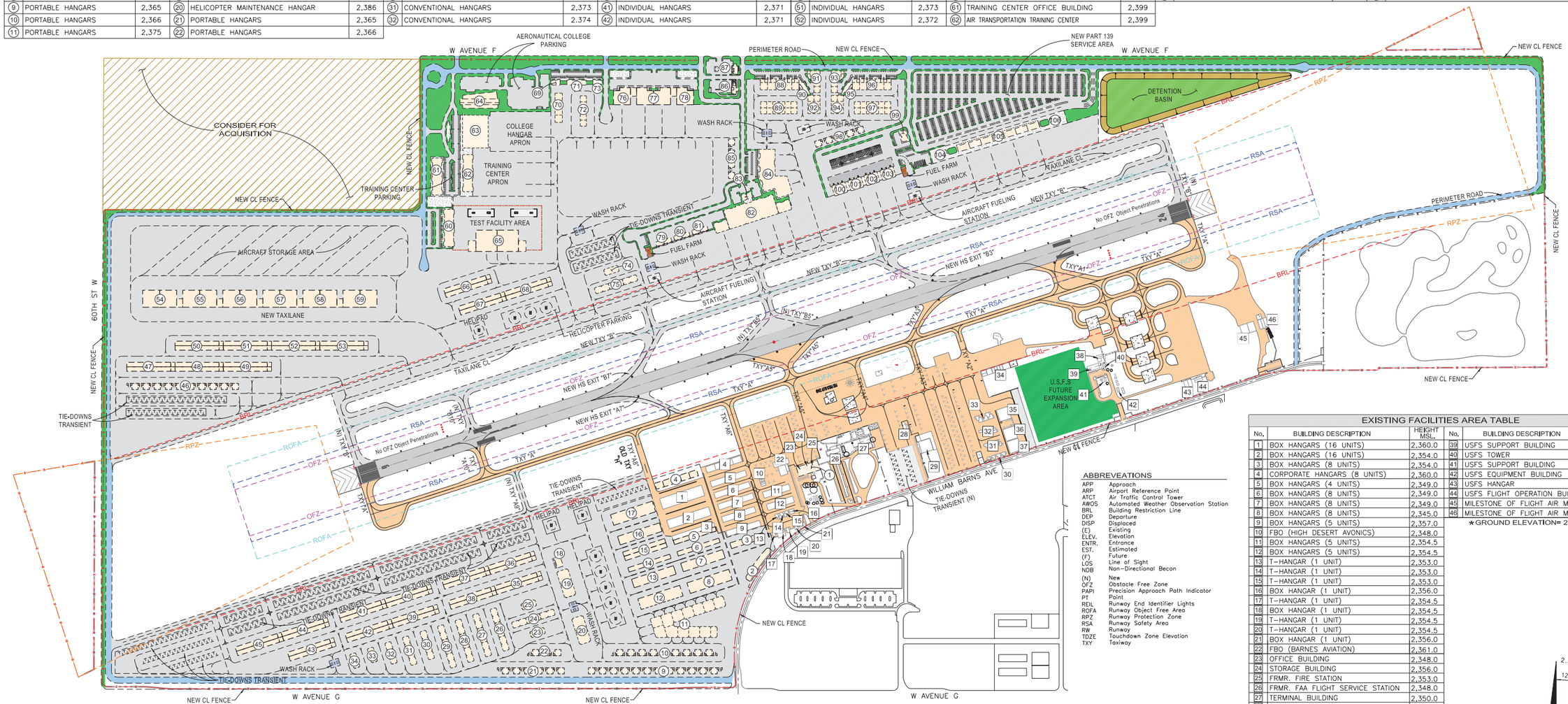
Designed: BFG, CM	AIP PROJECT No. 03-06-0118-13
Drawn: Witten, J	Scale: AS SHOWN May 2012
Checked: CCI, CM	SHEET No. 6 OF 14
Approved:	DRAWING No.

PCA No. G6784041

File: T:\27973AFoxFieldAirportMasterPlan\CAD\DWG\SHEET\SHT06-TERMINAL AREA PLAN-SOUTH.dwg May 03, 2012 - 10:31am witten

FUTURE FACILITIES AREA TABLE

No.	BUILDING DESCRIPTION	TOP ELEV
1	ARFF STATION	2,353
2	CONVENTIONAL HANGARS	2,357
3	CONVENTIONAL HANGARS	2,356
4	COORPORATE HANGARS	2,360
5	INDIVIDUAL HANGARS	2,354
6	INDIVIDUAL HANGARS	2,356
7	CONVENTIONAL HANGARS	2,352
8	CONVENTIONAL HANGARS	2,353
9	PORTABLE HANGARS	2,365
10	PORTABLE HANGARS	2,366
11	PORTABLE HANGARS	2,375
12	CONVENTIONAL HANGARS	2,352
13	CONVENTIONAL HANGARS	2,353
14	INDIVIDUAL HANGARS	2,354
15	INDIVIDUAL HANGARS	2,355
16	CONVENTIONAL HANGARS	2.375
17	CONVENTIONAL HANGARS	2,375
18	HELICOPTER GENERAL OFFICE BUILDING	2,332
19	HELICOPTER MAINTENANCE HANGAR	2,386
20	HELICOPTER MAINTENANCE HANGAR	2,386
21	PORTABLE HANGARS	2,365
22	PORTABLE HANGARS	2,366
23	CONVENTIONAL MAINTENANCE HANGAR	2,367
24	CONVENTIONAL HANGARS	2.367
25	CONVENTIONAL MAINTENANCE HANGAR	2,368
26	CONVENTIONAL HANGARS	2,368
27	CONVENTIONAL HANGARS	2,368
28	CONVENTIONAL HANGARS	2,370
29	CONVENTIONAL HANGARS	2,371
30	CONVENTIONAL HANGARS	2,372
31	CONVENTIONAL HANGARS	2,373
32	CONVENTIONAL HANGARS	2,374
33	CONVENTIONAL HANGARS	2,373
34	CONVENTIONAL HANGARS	2.367
35	INDIVIDUAL HANGARS	2,368
36	INDIVIDUAL HANGARS	2,368
37	INDIVIDUAL HANGARS	2,369
38	INDIVIDUAL HANGARS	2,369
39	INDIVIDUAL HANGARS	2,370
40	INDIVIDUAL HANGARS	2,370
41	INDIVIDUAL HANGARS	2,371
42	INDIVIDUAL HANGARS	2,374
43	INDIVIDUAL HANGARS	2,372
44	INDIVIDUAL HANGARS	2,372
45	INDIVIDUAL HANGARS	2,373
46	PORTABLE HANGARS	2,374
47	INDIVIDUAL HANGARS	2,375
48	INDIVIDUAL HANGARS	2,374
49	INDIVIDUAL HANGARS	2,373
50	INDIVIDUAL HANGARS	2,372
51	INDIVIDUAL HANGARS	2,373
52	INDIVIDUAL HANGARS	2,372
53	INDIVIDUAL HANGARS	2,371
54	STORAGE AND MAINTENANCE HANGAR	2,406
55	STORAGE AND MAINTENANCE HANGAR	2,405
56	STORAGE AND MAINTENANCE HANGAR	2,404
57	STORAGE AND MAINTENANCE HANGAR	2,403
58	STORAGE AND MAINTENANCE HANGAR	2,402
59	STORAGE AND MAINTENANCE HANGAR	2,400
60	AIRCRAFT TEST FACILITY OFFICE BUILDING	2,400
61	TRAINING CENTER OFFICE BUILDING	2,399
62	AIR TRANSPORTATION TRAINING CENTER	2,399
63	AERONAUTICAL COLLEGE HANGAR	2,449
64	AERONAUTICAL COLLEGE	2,399
65	AIRCRAFT TESTING FACILITY HANGAR	2,423
66	INDIVIDUAL HANGARS	2,469
67	INDIVIDUAL HANGARS	2,469
68	INDIVIDUAL HANGARS	2,470
69	GENERAL OFFICE BUILDING	2,361
70	MAINTENANCE HANGAR QUEUING AND STORAGE	2,371
71	GENERAL OFFICE BUILDING	2,365
72	MAINTENANCE HANGAR QUEUING AND STORAGE	2,371
73	GENERAL OFFICE BUILDING	2,361
74	CONVENTIONAL MAINTENANCE HANGAR	2,364
75	CONVENTIONAL HANGARS	2,364
76	CORPORATE AIRCRAFT SALES AND SERVICE HANGAR	2,395
77	CORPORATE AIRCRAFT SALES OFFICE AND HANGAR	2,395
78	CORPORATE AIRCRAFT SALES AND SERVICE HANGAR	2,395



ABBREVEATIONS

APP	Approach
ARP	Airport Reference Point
ATCT	Air Traffic Control Tower
AWOS	Automated Weather Observation Station
BRL	Building Restriction Line
DEP	Departure
DISP	Displaced
(E)	Existing
ELEV.	Elevation
ENTR.	Entrance
EST.	Estimated
(F)	Future
LOS	Line of Sight
NDB	Non-Directional Becon
(N)	New
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
TXY	Taxiway

EXISTING FACILITIES AREA TABLE

No.	BUILDING DESCRIPTION	HEIGHT MSL.
1	BOX HANGARS (16 UNITS)	2,360.0
2	BOX HANGARS (16 UNITS)	2,354.0
3	BOX HANGARS (8 UNITS)	2,354.0
4	CORPORATE HANGARS (8 UNITS)	2,360.0
5	BOX HANGARS (4 UNITS)	2,349.0
6	BOX HANGARS (8 UNITS)	2,349.0
7	BOX HANGARS (8 UNITS)	2,349.0
8	BOX HANGARS (8 UNITS)	2,345.0
9	BOX HANGARS (5 UNITS)	2,357.0
10	FBO (HIGH DESERT AVONICS)	2,348.0
11	BOX HANGARS (5 UNITS)	2,354.5
12	BOX HANGARS (5 UNITS)	2,354.5
13	T-HANGAR (1 UNIT)	2,353.0
14	T-HANGAR (1 UNIT)	2,353.0
15	T-HANGAR (1 UNIT)	2,353.0
16	BOX HANGAR (1 UNIT)	2,356.0
17	T-HANGAR (1 UNIT)	2,354.5
18	BOX HANGAR (1 UNIT)	2,354.5
19	T-HANGAR (1 UNIT)	2,354.5
20	T-HANGAR (1 UNIT)	2,354.5
21	BOX HANGAR (1 UNIT)	2,356.0
22	FBO (BARNES AVIATION)	2,361.0
23	OFFICE BUILDING	2,348.0
24	STORAGE BUILDING	2,356.0
25	FRMR. FIRE STATION	2,353.0
26	FRMR. FAA FLIGHT SERVICE STATION	2,348.0
27	TERMINAL BUILDING	2,350.0
28	AIR TRAFFIC CONTROL TOWER	2,377.0
29	CORPORATE HANGAR (1 UNIT)	2,365.0
30	T-HANGARS (4 UNITS)	2,347.0
31	T-HANGARS (6 UNITS)	2,347.0
32	T-HANGARS (6 UNITS)	2,347.0
33	T-HANGARS (5 UNITS)	2,345.0
34	BOX HANGARS (6 UNITS)	2,351.5
35	CORPORATE HANGAR (1 UNIT)	2,380.0
36	CORPORATE HANGAR (1 UNIT)	2,380.0
37	CORPORATE HANGAR (1 UNIT)	2,380.0
38	USFS PILOT READY ROOM	2,349.0
39	USFS SUPPORT BUILDING	2,352.0
40	USFS TOWER	2,370.0
41	USFS SUPPORT BUILDING	2,345.0
42	USFS EQUIPMENT BUILDING	2,347.0
43	USFS HANGAR	2,351.0
44	USFS FLIGHT OPERATION BUILDING	2,347.0
45	MILESTONE OF FLIGHT AIR MUSEUM	2,360.0
46	MILESTONE OF FLIGHT AIR MUSEUM	2,345.0

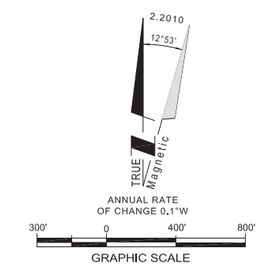
★GROUND ELEVATION= 2,335' MSL

FUTURE FACILITIES AREA TABLE *CONTINUED*

No.	BUILDING DESCRIPTION	TOP ELEV
79	GENERAL OFFICE BUILDING	2,358
80	GENERAL OFFICE BUILDING	2,358
81	GENERAL OFFICE BUILDING	2,358
82	AIRCRAFT MAINTENANCE FACILITY	2,412
83	AIRCRAFT MAINTENANCE FACILITY OFFICE	2,358
84	AIRCRAFT MAINTENANCE FACILITY	2,412
85	PORTABLE HANGARS	2,358
86	FAST FOOD RESTAURANT	2,367
87	GAS STATION	2,368
88	FIXED BASE OPERATOR INDIVIDUAL BOX HANGARS	2,385
89	FIXED BASE OPERATOR INDIVIDUAL BOX HANGARS	2,385
90	FIXED BASE OPERATOR OFFICE	2,375
91	FIXED BASE OPERATOR INDIVIDUAL BOX HANGARS	2,385
92	FIXED BASE OPERATOR INDIVIDUAL BOX HANGARS	2,385
93	FIXED BASE OPERATOR INDIVIDUAL BOX HANGARS	2,385
94	FIXED BASE OPERATOR INDIVIDUAL BOX HANGARS	2,385
95	FIXED BASE OPERATOR OFFICE	2,375
96	FIXED BASE OPERATOR INDIVIDUAL BOX HANGARS	2,385
97	FIXED BASE OPERATOR INDIVIDUAL BOX HANGARS	2,385
98	PORTABLE HANGARS	2,377
99	GENERAL OFFICE BUILDING	2,365
100	AIR CARGO AND LOGISTICS HANGAR	2,390
101	AIR CARGO AND LOGISTICS HANGAR	2,391
102	AIR CARGO AND LOGISTICS HANGAR	2,390
103	AIR CARGO AND LOGISTICS HANGAR	2,391
104	TERMINAL AREA GENERAL OFFICE	2,363
105	42,000 SF TERMINAL	2,378
106	TERMINAL AREA GENERAL OFFICE	2,363

NOTES:

1. CALIFORNIA COORDINATE SYSTEM NAD 83 ZONE 5.
2. ALL ELEVATIONS ARE IN NAVD 88.
3. ALL FUTURE ELEVATIONS ARE ESTIMATED.
4. HANGAR LAYOUTS SHOWN ARE CONCEPTUAL TO DEPICT FUTURE POSSIBLE CAPABILITIES. THE ULTIMATE CONFIGURATIONS MAY VARY BASED ON ACTUAL DEMAND.
5. SEE AIRPORT DATA SHEET FOR TABLE DATA
6. SEE FACILITIES AREA PLAN FOR FUTURE AND EXISTING STRUCTURES
7. ATCT ELEVATION 2,377 MSL



PARSONS BRINCKERHOFF
451 E. Vanderbilt Way Suite 200, San Bernardino CA
TEL: 909.888.1106 FAX: 909.889.1884

No.	DATE	REVISION	BY	APPROVED

Approved: County of Los Angeles

Richard L Smith, Chief, Aviation Division — Date

The preperation 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 refelect the offical 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 therin nor does it indicate that the proposed development is environmentally acceptable in accordance with appropriate public laws.

GENERAL WILLIAM J. FOX AIRFIELD
Lancaster, California

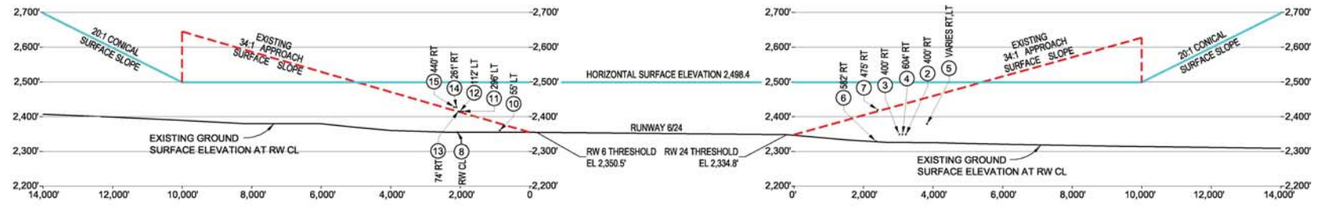
BUILDING FACILITIES PLAN

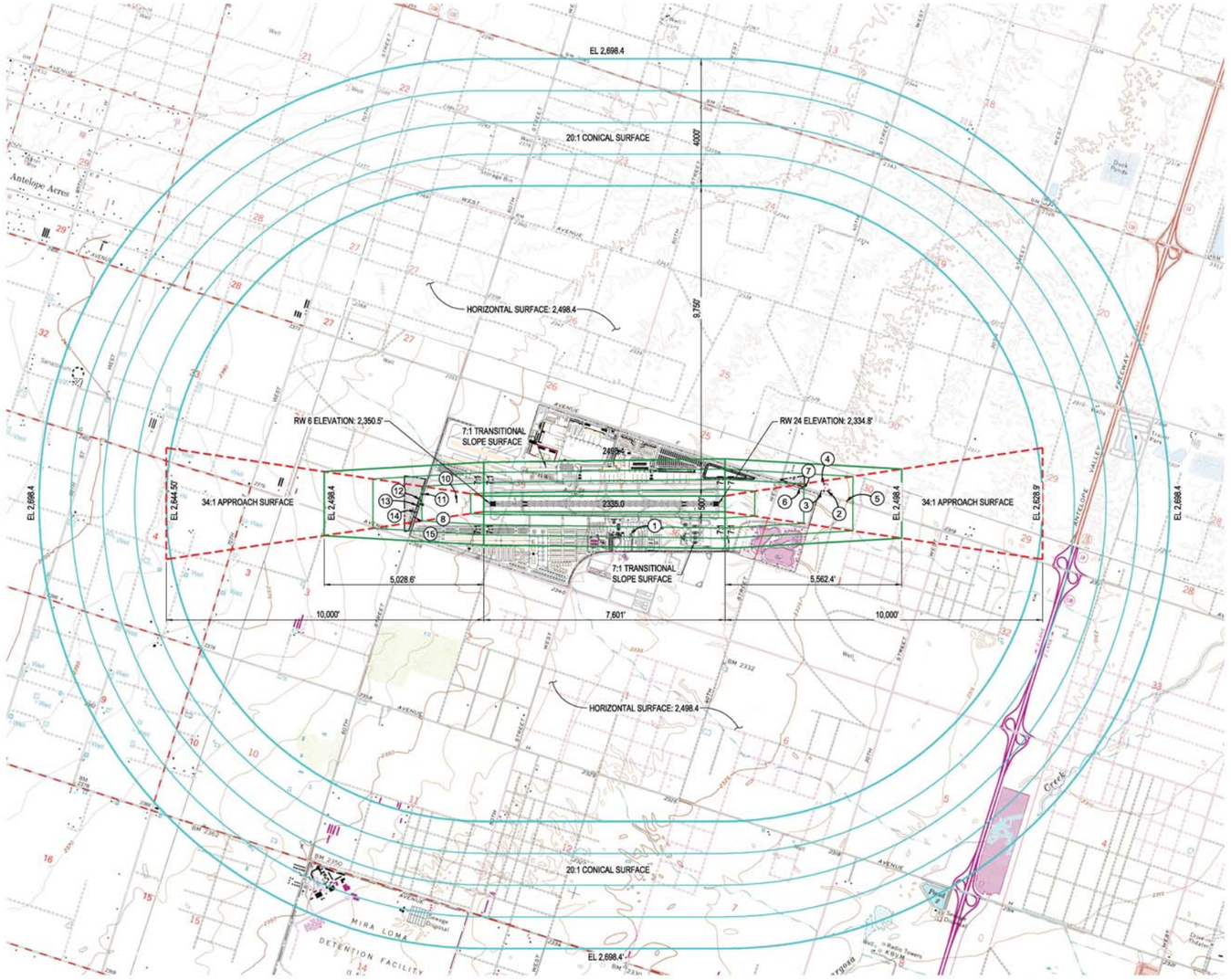
County of Los Angeles
Department of Public Works

Designed: BFG, CM	AIP PROJECT No. 03-06-0118-13
Drawn: Witten, J	Scale: AS SHOWN May 2012
Checked: CCI, CM	SHEET No. 7 OF 14
Approved:	DRAWING No.

PCA No. G6784041

File: T:\27973AFoxFieldAirportMasterPlan\CAD\DWG\SHEET\SHT07-BUILDING FACILITIES PLAN.dwg May 03, 2012 - 10:33am witten





PART 77 OBSTRUCTION IDENTIFICATION TABLE					
OBS. No.	DESCRIPTION	ELEV.	PENETR.	SURFACE	PROPOSED ACTION
1	ATCT	2,390'	N/A	TRANSITIONAL	NONE
2	BUILDING	2,349'	-83.4'	APPROACH	NONE
3	BUILDING	2,349'	-83.4'	APPROACH	NONE
4	BUILDING	2,349'	-83.4'	APPROACH	NONE
5	MISC. UTIL POLES	2,379'	-75.4'	APPROACH	NONE
6	WEST AVE F	2,328'	-84'	APPROACH	NONE
7	POLE	2,415'	10'	APPROACH	PROVIDE OL
8	60TH ST. WEST	2,353'	-51.9'	APPROACH	NONE
9	ITEM NOT USED	–	–	–	–
10	BUSH	2,361'	-19.5'	APPROACH	NONE
11	POLE	2,415'	4'	APPROACH	PROVIDE OL
12	POLE	2,415'	2.2'	APPROACH	PROVIDE OL
13	POLE	2,415'	0.5'	APPROACH	PROVIDE OL
14	POLE	2,421'	3.3'	APPROACH	PROVIDE OL
15	POLE	2,421'	2.8'	APPROACH	PROVIDE OL

ELEV=ITEM DESCRIPTION TOP ELEVATION

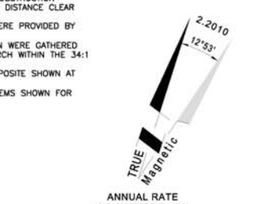
SURFACE ELEVATION	
SURFACE	ELEVATION
END OF RUNWAY 6	2,350.5
END OF RUNWAY 24	2,334.8
HORIZONTAL SURFACE	2,498.4
CONICAL SURFACE (UPPER LIMIT)	2,698.4
APPROACH SURFACE (6) UPPER LIMIT	2,644.5
APPROACH SURFACE (12) UPPER LIMIT	2,628.9

USGS MAPS USED FOR BASE
7.5 MIN. QUAD
DEL SUR, 1995
LANCASTER, 1958
LITTLE BUTTES, 1974
ROSAMOND, 1974

NOTES:
1. CALIFORNIA COORDINATE SYSTEM NAD 83 ZONE 5.
2. ALL ELEVATIONS ARE IN NAVD 88.
3. ALL ELEVATIONS ARE ESTIMATED.
4. ALL ELEVATIONS ARE ABOVE MEAN SEA LEVEL (MSL)
5. NEGATIVE PENETRATIONS IN THE OBSTRUCTION IDENTIFICATION TABLE REPRESENT DISTANCE CLEAR TO SPECIFIED SURFACE.
6. OBS. No. 7,10,11,12,13,14,15 WERE PROVIDED BY NDS FAA (ANA-LPV) [3492005]
7. ADDITIONAL PENETRATIONS SHOWN WERE GATHERED BY AERIAL PHOTOGRAPHY RESEARCH WITHIN THE 34:1 APPROACH ZONES
8. EXISTING GROUND SURFACE COMPOSITE SHOWN AT RUNWAY CENTER LINE (CL)
9. ADDITIONAL NON-PENETRATING ITEMS SHOWN FOR CLARITY

ABBREVEATIONS

ATCT	Air Traffic Control Tower
CL	Center Line
LT	Left
OL	Obstruction Light
RW	Runway
RT	Right



PARSONS BRINCKERHOFF
451 E. Vanderbilt Way Suite 200, San Bernardino CA
TEL: 909.888.1106 FAX: 909.889.1884

No.	DATE	REVISION	BY	APPROVED

Approved: County of Los Angeles

Richard L Smith, Chief, Aviation Division — Date

The preperation 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 refelect the offical 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 therin nor does it indicate that the proposed development is environmentally acceptable in accordance with appropriate public laws.

GENERAL WILLIAM J. FOX AIRFIELD
Lancaster, California

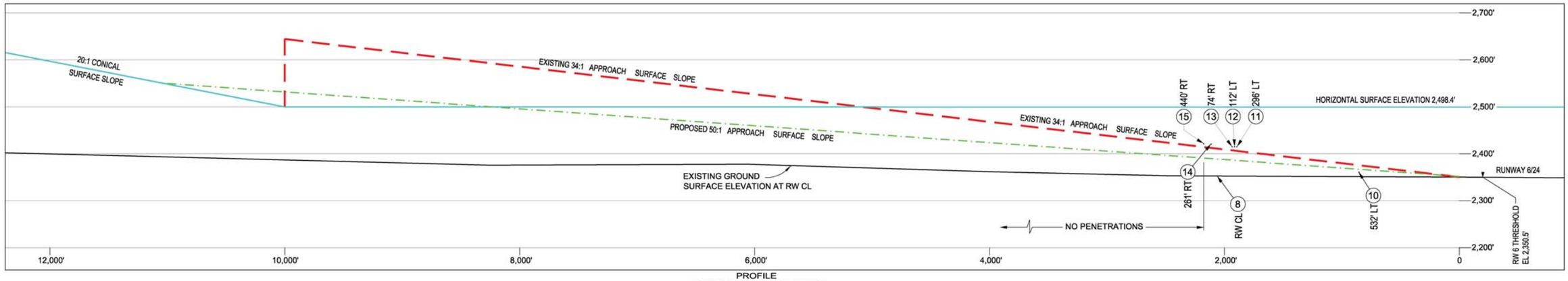
AIRSPACE PLAN (FAR Part 77)

County of Los Angeles
Department of Public Works

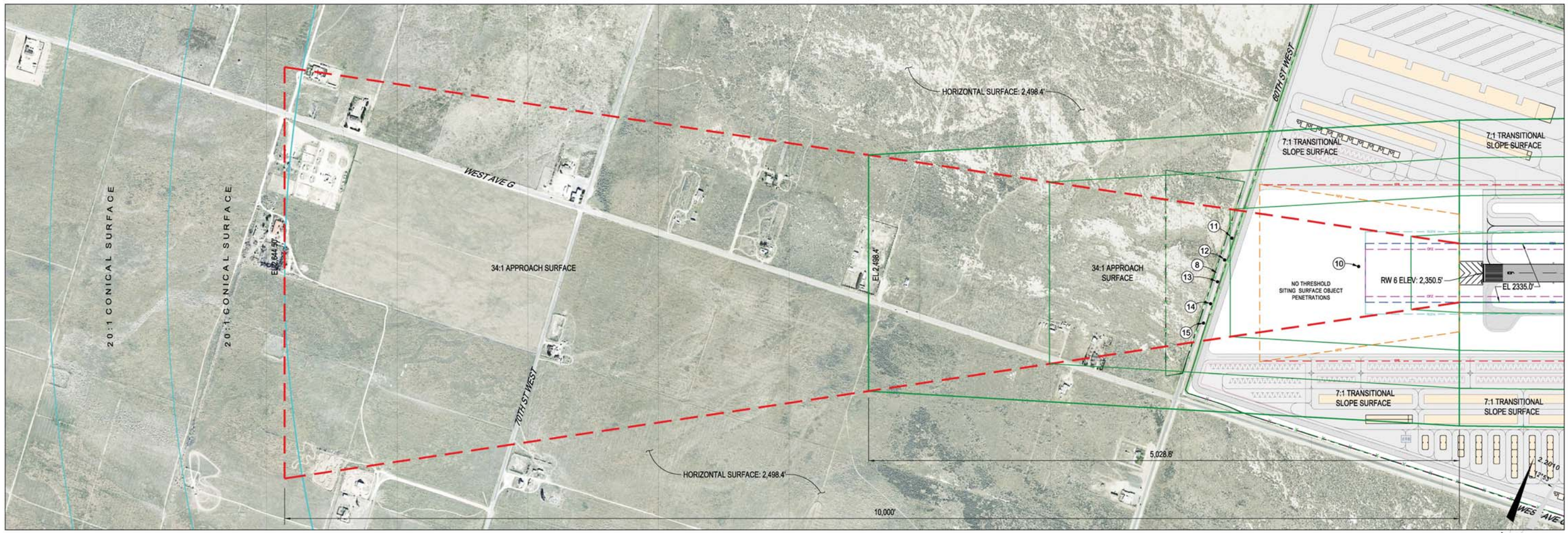
Designed: BFG, CM	AIP PROJECT No. 03-06-0118-13
Drawn: Witten, J	Scale: AS SHOWN May 2012
Checked: CCI, CM	SHEET No. 8 OF 14
Approved:	DRAWING No.

PCA No. G6784041

File: T:\27973AFoxFieldAirportMasterPlan\CAD\DWG\SHEET\SHT08-APPROACH PLAN FAR Part 77.dwg May 03, 2012 - 10:37am witten



PROFILE
HORIZONTAL SCALE: 1"=400'
VERTICAL SCALE: 1"=100'



PLAN

NOTES:
SEE FAR PART 77 AIRSPACE PLAN SHEET 7 FOR FURTHER INFORMATION

PART 77 OBSTRUCTION IDENTIFICATION TABLE

OBS. No.	DESCRIPTION	ELEV.	PENETR.	SURFACE	PROPOSED ACTION
8	60TH ST. WEST	2,353'	-51.9'	APPROACH	NONE
10	BUSH	2,361'	-19.5'	APPROACH	TO BE REMOVED
11	POLE	2,415'	4'	APPROACH	PROVIDE OL
12	POLE	2,415'	2.2'	APPROACH	PROVIDE OL
13	POLE	2,415'	0.5'	APPROACH	PROVIDE OL
14	POLE	2,421'	3.3'	APPROACH	PROVIDE OL
15	POLE	2,421'	2.8'	APPROACH	PROVIDE OL

ELEV=ITEM DESCRIPTION TOP ELEVATION

PARSONS BRINCKERHOFF
451 E. Vanderbilt Way Suite 200, San Bernardino CA
TEL: 909.888.1106 FAX: 909.889.1884

No.	DATE	REVISION	BY	APPROVED

Approved: County of Los Angeles

Richard L Smith, Chief, Aviation Division — Date

The preperation 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 refelect the offical 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 therin nor does it indicate that the proposed development is environmentally acceptable in accordance with appropriate public laws.

GENERAL WILLIAM J. FOX AIRFIELD
Lancaster, California

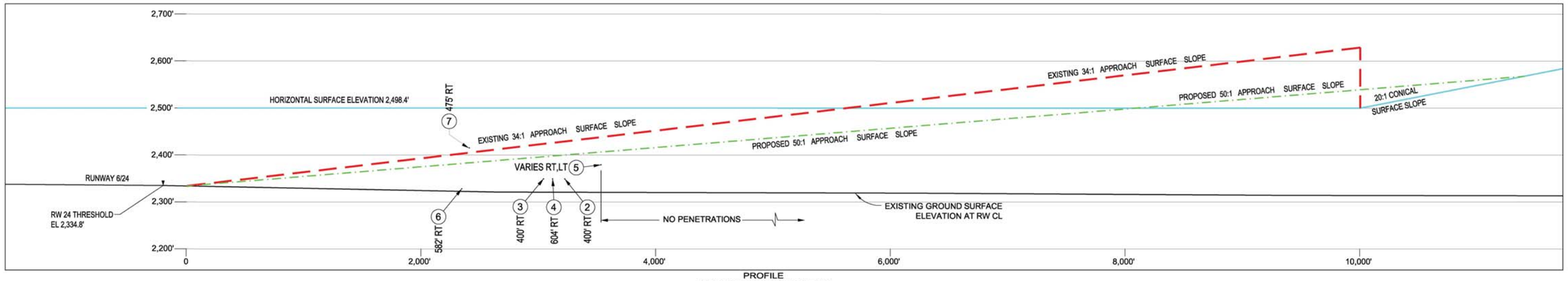
AIRSPACE OBSTRUCTION AND RUNWAY APPROACH PLAN (RW 6)

County of Los Angeles
Department of Public Works

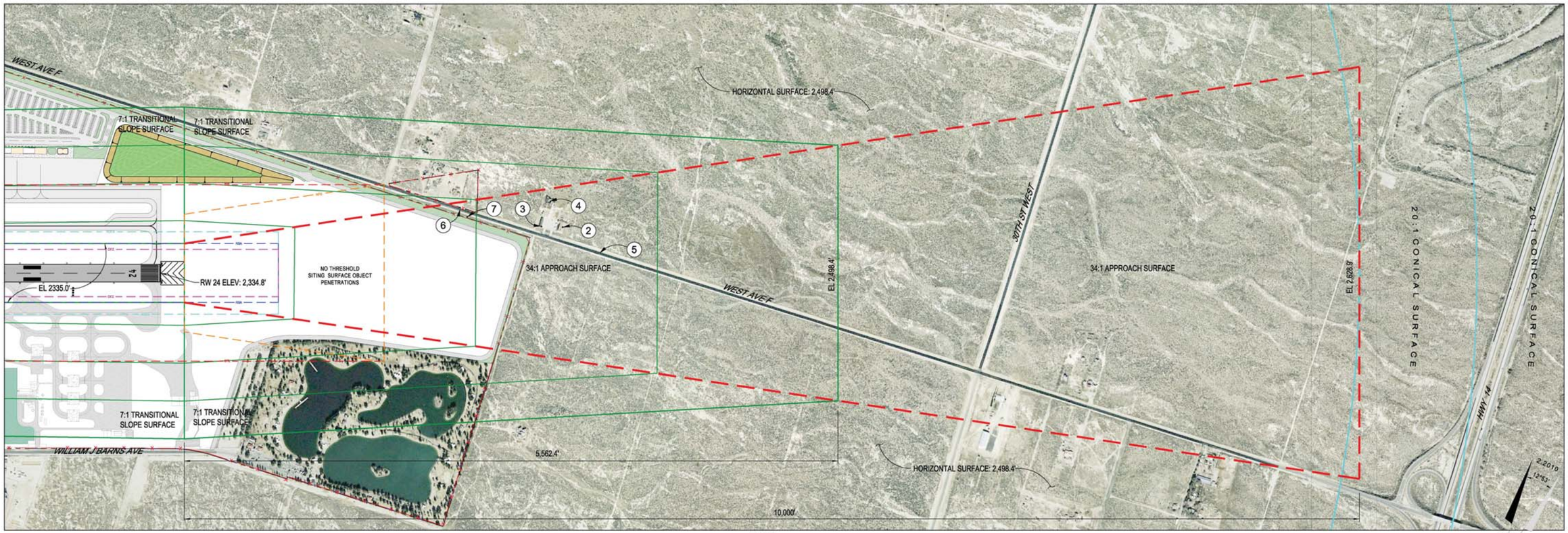
Designed: BFG, CM	AIP PROJECT No. 03-06-0118-13
Drawn: Witten, J	Scale: AS SHOWN May 2012
Checked: CCI, CM	SHEET No. 9 OF 14
Approved:	DRAWING No.

PCA No. G6784041

File: T:\27973AFoxFieldAirportMasterPlan\CAD\DWG\SHEET\SHT09-APPROACH PLAN RW6.dwg May 03, 2012 - 11:32am witten



PROFILE
HORIZONTAL SCALE: 1"=400'
VERTICAL SCALE: 1"=100'



PLAN

NOTES:
SEE FAR PART 77 AIRSPACE PLAN SHEET 7 FOR FURTHER INFORMATION

PART 77 OBSTRUCTION IDENTIFICATION TABLE

OBS. No.	DESCRIPTION	ELEV.	PENETR.	SURFACE	PROPOSED ACTION
2	BUILDING	2,349'	-83.4'	APPROACH	NONE
3	BUILDING	2,349'	-83.4'	APPROACH	NONE
4	BUILDING	2,349'	-83.4'	APPROACH	NONE
5	MISC. UTIL POLES	2,379'	-75.4'	APPROACH	NONE
6	WEST AVE F	2,328'	-84'	APPROACH	NONE
7	POLE	2,415'	10'	APPROACH	PROVIDE OL

ELEV=ITEM DESCRIPTION TOP ELEVATION

TRUE Magnetic
ANNUAL RATE OF CHANGE 0.1°W

400' 0 400' 800'
GRAPHIC SCALE

PARSONS BRINCKERHOFF
451 E. Vanderbilt Way Suite 200, San Bernardino CA
TEL: 909.888.1106 FAX: 909.889.1884

No.	DATE	REVISION	BY	APPROVED

Approved: County of Los Angeles

Richard L Smith, Chief, Aviation Division — Date

The preperation 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 offical 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 therin nor does it indicate that the proposed development is environmentally acceptable in accordance with appropriate public laws.

GENERAL WILLIAM J. FOX AIRFIELD
Lancaster, California

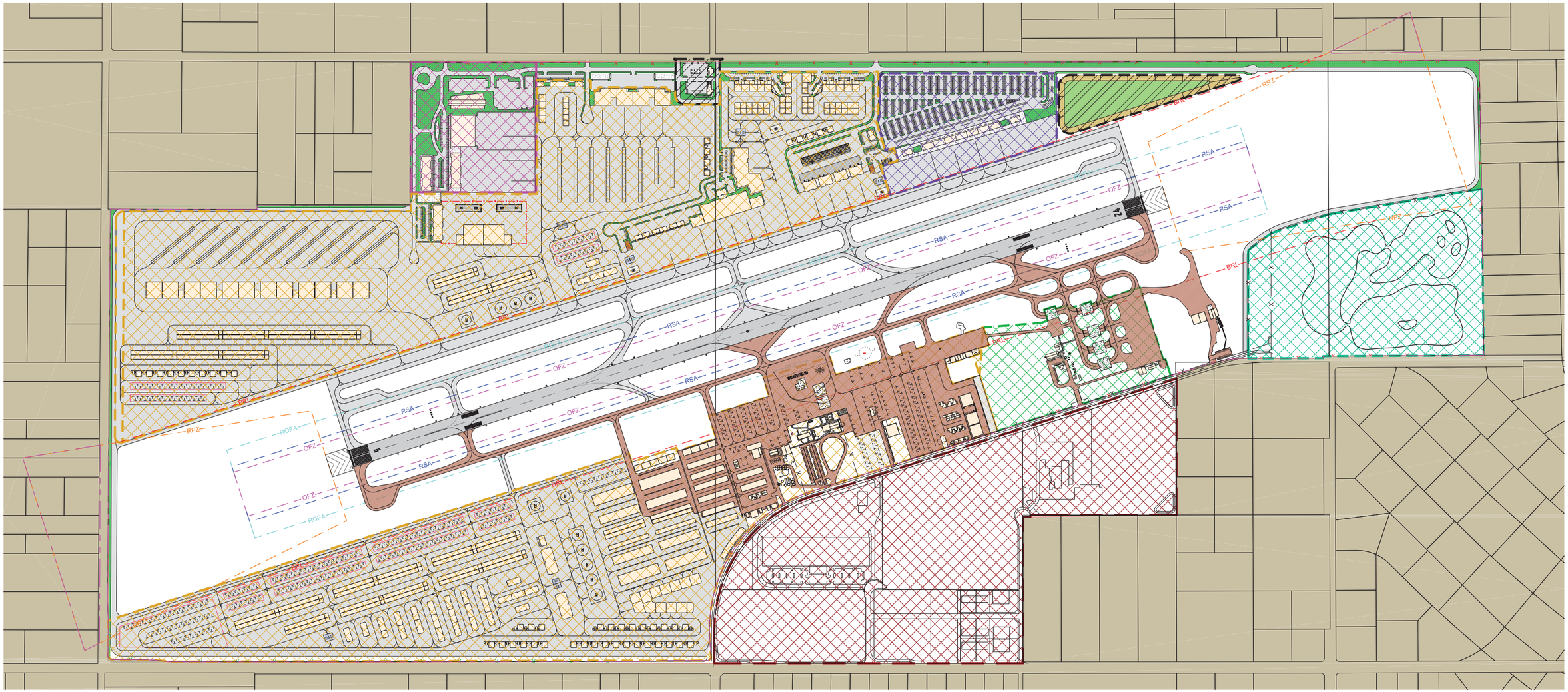
AIRSPACE OBSTRUCTION AND RUNWAY APPROACH PLAN (RW 24)

County of Los Angeles
Department of Public Works

Designed: BFG, CM	AIP PROJECT No. 03-06-0118-13
Drawn: Witten, J	Scale: AS SHOWN May 2012
Checked: CCI, CM	SHEET No. 10 OF 14
Approved:	DRAWING No.

PCA No. G67784041

File: T:\27973AFoxFieldAirportMasterPlan\CAD\DWG\SHEET\SHT10-APPROACH PLAN RW24.dwg May 03, 2012 - 11:35am witten



LEGEND

- FAR PART 39 AREA
- GENERAL AVIATION
- RECREATIONAL USE
- FOX AIRFIELD INDUSTRIAL PARK
- EDUCATIONAL USE / INSTRUCTIONAL USE
- NON AVIATION
- UNITED STATES FOREST SERVICE
- SURROUNDING PROPERTY MIXED COMMERCIAL/RESIDENTIAL
- EXISTING PAVMENT
- PROPOSED PAVMENT
- EXISTING RW 6/24 PAVEMENT

2.2010
12°53'
TRUE
Magnetic
ANNUAL RATE
OF CHANGE 0.1°W

400' 0 400' 800'
GRAPHIC SCALE

PARSONS BRINCKERHOFF
451 E. Vanderbilt Way Suite 200, San Bernardino CA
TEL: 909.888.1106 FAX: 909.889.1884

No.	DATE	REVISION	BY	APPROVED

Approved: County of Los Angeles

Richard L Smith, Chief, Aviation Division — Date

The preperation 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 offical 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 therin nor does it indicate that the proposed development is environmentally acceptable in accordance with appropriate public laws.

GENERAL WILLIAM J. FOX AIRFIELD
Lancaster, California

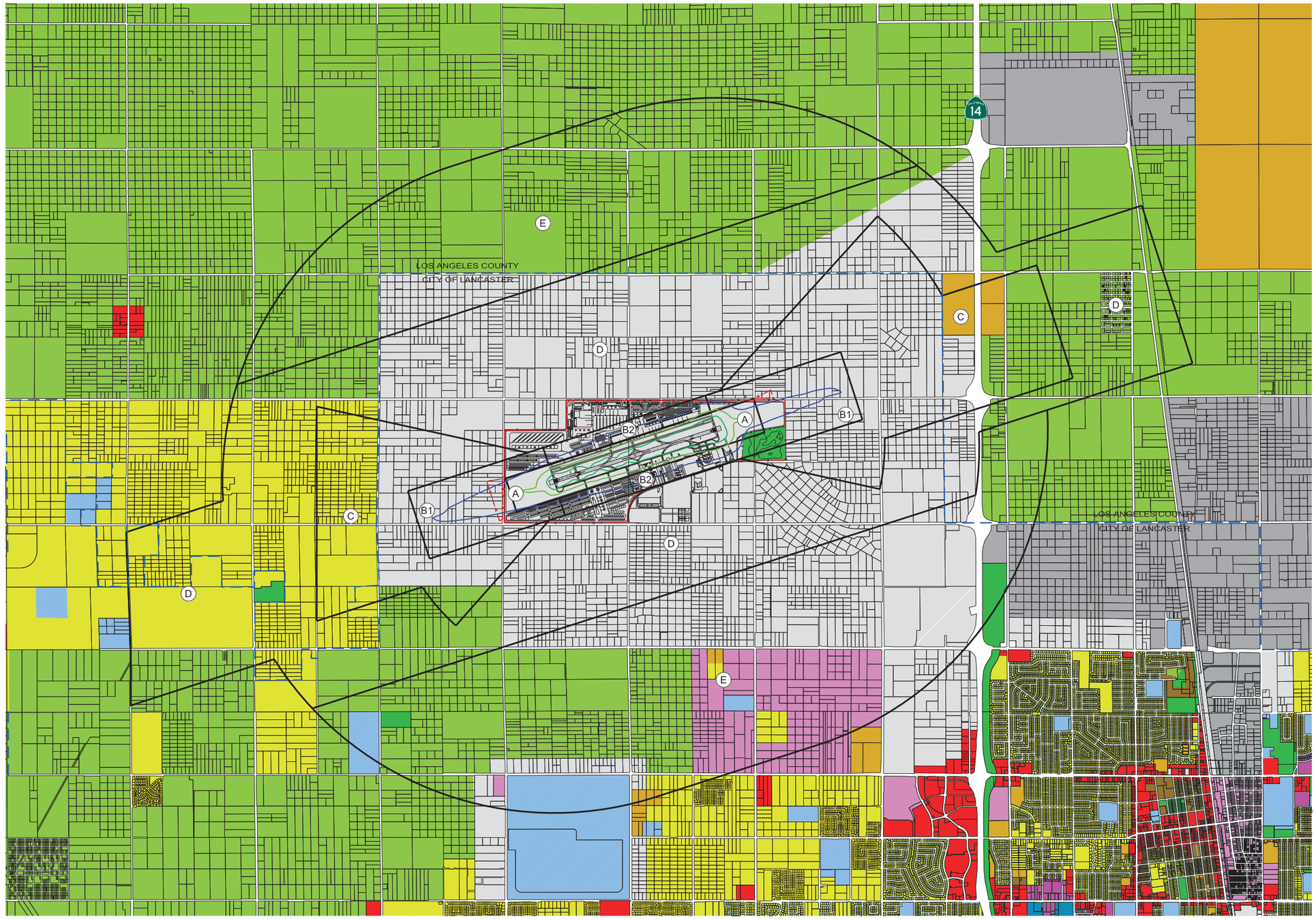
ON-AIRPORT LANDUSE PLAN

County of Los Angeles
Department of Public Works

Designed: BFG, CM	AIP PROJECT No. 03-06-0118-13
Drawn: Witten, J	Scale: AS SHOWN May 2012
Checked: CCI, CM	SHEET No. 11 OF 14
Approved:	DRAWING No.

PCA No. G6784041

File: T:\27973AFoxFieldAirportMasterPlan\CAD\DWG\SHEET\SHT11-ON AIRPORT LAND USE PLAN.dwg May 03, 2012 - 11:20am witten



LAND USE LEGEND

- NON-URBAN RESIDENTIAL
- URBAN RESIDENTIAL
- MR1 MULTI- RESIDENTIAL (6.6-15.0 DU/AC)
- MR2 MULTI- RESIDENTIAL (15.1-30.0 DU/AC)
- MIXED USE
- COMMERCIAL
- OFFICE/PROFESSIONAL
- LIGHT INDUSTRIAL
- HEAVY INDUSTRIAL
- HEALTH CARE
- PUBLIC USE
- OPEN SPACE

DATA SOURCE: THE CITY OF LANCASTER, GENERAL PLAN USE MAP. JULY 14, 2009 REVISED RESOLUTION No. 09-73

- LANCASTER CITY LIMITS
- AIRPORT PROPERTY LINE
- AIRPORT INFULENCE AREA

COMPATIBILITY ZONES

- (A) RUNWAY PROTECTION ZONE WITHIN BUILDING RESTRICTION LINE
- (B1) INNER APPROACH DEPARTURE ZONE
- (B2) ADJACENT TO RUNWAY
- (C) EXTENDED APPROACH / DEPARTURE ZONE
- (D) PRIMARY TRAFFIC PATTERNS
- (E) OTHER AIRPORT ENVIRONMENTS

2029 CNEL CONTOURS

- 60 CNEL
- 65 CNEL
- 70 CNEL

2.2010
12°53'
TRUE
Magnetic

ANNUAL RATE OF CHANGE 0.1°W

2000' 0 2000' 4000'

GRAPHIC SCALE

PARSONS BRINCKERHOFF
451 E. Vanderbilt Way Suite 200, San Bernardino CA
TEL: 909.888.1106 FAX: 909.889.1884

No.	DATE	REVISION	BY	APPROVED

Approved: County of Los Angeles

Richard L Smith, Chief, Aviation Division — Date

The preperation 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 refelect the offical 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 therin nor does it indicate that the proposed development is environmentally acceptable in accordance with appropriate public laws.

GENERAL WILLIAM J. FOX AIRFIELD
Lancaster, California

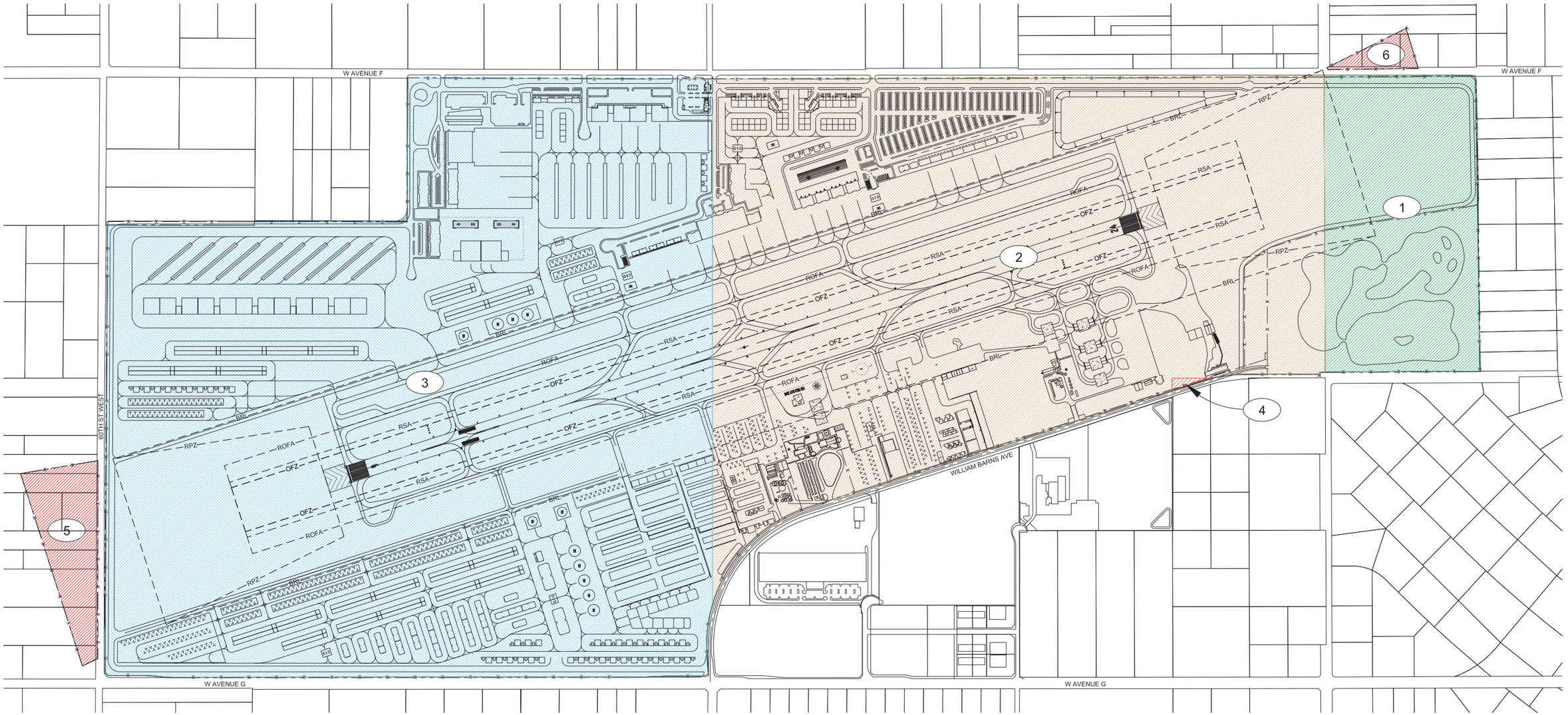
OFF-AIRPORT LANDUSE PLAN

County of Los Angeles
Department of Public Works

Designed: BFG, CM	AIP PROJECT No. 03-06-0118-13
Drawn: Witten, J	Scale: AS SHOWN May 2012
Checked: CCI, CM	SHEET No. 12 OF 14
Approved:	DRAWING No.

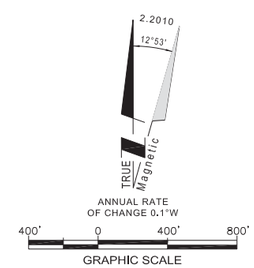
PCA No. G6784041

File: T:\27973AFoxFieldAirportMasterPlan\CAD\DWG\SHEET\SHT12-OFF AIRPORT LAND USE PLAN.dwg May 03, 2012 - 11:23am witten



PROPERTY TABLE							
No.	TYPE OF INTREST	BOOK/PAGE	PARCEL	ACERAGE	RECORDING DATE	COMMENTS	OWNER
1	FEE SIMPLE	3105-001	905	77.18	10.01.1956	INDUSTRIAL USE	LA COUNTY
2	FEE SIMPLE	3105-001	923	392.9	03.15.2000	AIRPORT USE	LA COUNTY
3	FEE SIMPLE	3269-002	903	547.8*	N/A	AIRPORT USE	LA COUNTY
4	FEE SIMPLE	3105-001	922	0.82	05.13.1969	INDUSTRIAL USE	LA COUNTY
5	ACQUIRE AVIGATION EASEMENT						
6	ACQUIRE AVIGATION EASEMENT						

* CALCULATED SOURCE: Win2Data March 2010



PARSONS BRINCKERHOFF
451 E. Vanderbilt Way Suite 200, San Bernardino CA
TEL: 909.888.1106 FAX: 909.889.1884

No.	DATE	REVISION	BY	APPROVED

Approved: County of Los Angeles

Richard L. Smith, Chief, Aviation Division — Date

The preperation 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 refelect the offical 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 therin nor does it indicate that the proposed development is environmentally acceptable in accordance with appropriate public laws.

GENERAL WILLIAM J. FOX AIRFIELD
Lancaster, California

AIRPORT PROPERTY MAP (EXHIBIT A)

County of Los Angeles
Department of Public Works

Designed: BFG, CM	AIP PROJECT No. 03-06-0118-13
Drawn: Witten, J	Scale: AS SHOWN May 2012
Checked: CCI, CM	SHEET No. 13 OF 14
Approved:	DRAWING No.

PCA No. G6784041

File: T:\27973AFoxFieldAirportMasterPlan\CAD\DWG\SHEET\SHT13-AIRPORT PROPERTY MAP.dwg May 03, 2012 - 11:25am witten

PARSONS BRINCKERHOFF
451 E. Vanderbilt Way Suite 200, San Bernardino CA
TEL: 909.888.1106 FAX: 909.889.1884

No.	DATE	REVISION	BY	APPROVED

Approved: County of Los Angeles

Richard L Smith, Chief, Aviation Division — Date

The preperation 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 refelect the offical 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 therin nor does it indicate that the proposed development is environmentally acceptable in accordance with appropriate public laws.

GENERAL WILLIAM J. FOX AIRFIELD
Lancaster, California

AIRPORT PHOTOGRAPH

County of Los Angeles
Department of Public Works

Designed: BFG, CM	AIP PROJECT No. 03-06-0118-13
Drawn: Witten, J	Scale: AS SHOWN May 2012
Checked: CCI, CM	SHEET No. 14 OF 14
Approved:	DRAWING No.

PCA No. G6784041

File: T:\27973AFoxFieldAirportMasterPlan\CAD\DWG\SHEET\SHT14-AIRPORT PHOTOGRAPH.dwg May 03, 2012 - 11:38am witten

Chapter 7

Financial

7.0 FINANICAL

This chapter analyzes the financial feasibility of the phased Airport Capital Improvement Program (ACIP) presented in Chapter 6.0 of this document and summarized in Section 7.2 of this chapter. Specifically, this chapter examines the financial structure of Fox Airfield and proposes a financial plan that identifies potential sources of funds for the ACIP. The chapter also assesses the impacts on the County of Los Angeles' operating funds related to undertaking the proposed ACIP.

Capital projects at Fox Airfield will be undertaken when demand warrants, rather than in accordance with a projected schedule developed in advance in the Master Plan Update. Further, the actual financing of capital expenditures will be a function of Airport financial circumstances at the time of project implementation. For example, a bond issuance would only be used if the actual level of Fox Airfield earnings and reserves, as well as federal entitlement and discretionary grants available at that particular time were insufficient to meet project costs.

The assumptions and analyses prepared for the Master Plan Update must be reviewed in the context of their primary purpose, which is to examine whether there is a reasonable expectation that the recommended capital improvements will be financially feasible and implementable. Based upon these analyses, which include certain timing and financing assumptions, the recommended Master Plan Update ACIP is projected to be financially feasible within the financial structure of Fox Airfield as a self-sufficient enterprise fund within the County of Los Angeles' Department of Public Works. Fox Airfield has historically been financially self-sufficient and the ACIP contained herein is projected to positively impact the financial operation of Fox Airfield.

To present the results of these analyses, this chapter is organized as follows:

- Fox Airfield Financial Structure
- ACIP Costs and Phasing
- ACIP Funding
- Operating Expenses
- Revenues
- Application of Revenues
- Summary and Recommendations

7.1 Fox Airfield Financial Structure

The County of Los Angeles owns and operates Fox Airfield as a part of the Aviation Enterprise Fund within its financial structure. Generally, an enterprise fund is a fund that has been established to finance and account for the acquisition, operation, and maintenance of governmental facilities and services, which are entirely or predominantly self-supporting by user charges.

The annual budget for the Aviation Enterprise Fund and subsequently, Fox Airfield is approved by the County of Los Angeles' Board of Supervisors. The revenue side of the budget includes fuel flowage fees, revenues received pursuant to leases, and the minimum contract payment received from the airport management company at Fox Airfield. The County of Los Angeles records its financial data on an accrual basis in accordance with Generally Accepted Accounting Principles (GAAP).

As part of an enterprise fund of the County of Los Angeles, Fox Airfield is financially self-sustaining and does not receive any support in the form of tax dollars for its operating costs. Fox Airfield has historically received grants from the FAA and the State of California Department of Transportation (CalTrans) to fund Fox Airfield's capital improvements and it is likely that Fox Airfield will continue receiving grants from Federal or other resources for its capital program in the future.

The financial information presented in this chapter is based on the County of Los Angeles' fiscal year, which begins each year on July 1.

7.2 ACIP Costs and Phasing

The phasing plan and cost estimates, based on a planning level of detail, were prepared to illustrate the timing and relative magnitude of the ACIP expenditures. Approximately $243.1 million (in 2011 dollars) in phased capital improvements are projected to be needed at Fox Airfield through 2029. **Table 7.1** lists the capital improvements projects that are recommended in the Master Plan Update for Fox Airfield. These projects are also depicted on Exhibit 6-1, contained in Chapter 6.0. In addition, detailed project descriptions for the projects contained in the ACIP are presented in Section 6.1 of this Study.

Table 7.1
Airport Capital Improvement Program

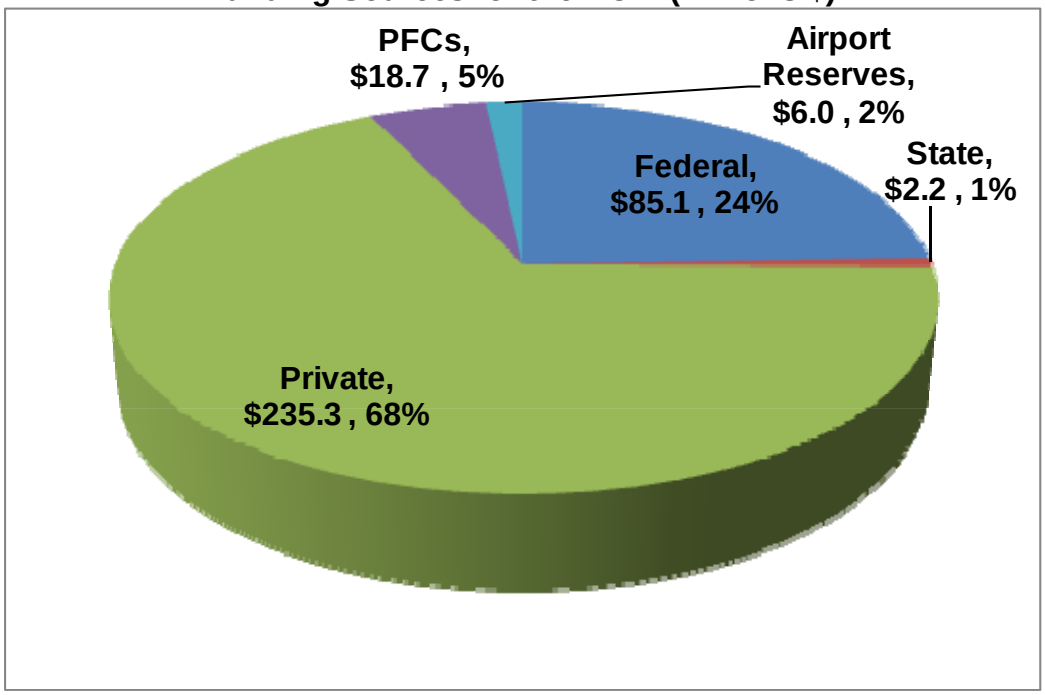
Number	Title	Target Year	Units	Quantity	Unit Cost	Total Project Cost (2011$)
	Phase I Development (2009-2013)					
1	Perimeter Fence Replacement	2011	LF	50,000	$ 30	$ 1,500,000
2	High Speed Exit	2011	SF	3,250	$ 200	$ 650,000
					Phase I Subtotal	**$ 2,150,000**
	Phase II Development (2014-2018)					
3	Slurry Seal South Parking Ramps	2015	LS	1	$ 800,000	$ 800,000
4	Itinerant Tie Down Positions*	2015	SF	266,298	$ 5	$ 1,331,490
5	Individual Hangars (Phase I)	2015	SF	68,023	$ 60	$ 4,081,380
6	General Aviation Expansion Area	2015	SF	1,502,786	$ 5	$ 6,762,537
7	Conventional Hangars	2015	SF	151,670	$ 55	$ 8,341,850
8	Helipad, Helicopter Parking and Maintenance Hang	2015	SF	105,514	$ 11	$ 1,160,654
9	Corporate Hangars	2016	SF	18,660	$ 90	$ 1,679,400
10	Replace RW 6-24 (Concrete)	2016	SF	1,000,000	$ 15	$ 15,000,000
11	ARFF Station	2017	SF	14,561	$ 200	$ 2,912,200
12	Public Utilities	2018	LF	148,304	$ 82	$ 12,111,493
13	North Airfield Access Roadways	2018	SF	2,549,699	$ 3	$ 6,374,248
					Phase II Subtotal	**$ 60,555,252**
	Phase III Development (2019-2029)					
14	New Parallel Taxiway	2019	SF	1,456,509	$ 8	$ 11,652,072
15	High Speed Exits (2)	2019	SF	6,500	$ 200.00	$ 1,300,000
16	New Terminal Building	2020	SF	42,000	$ 250	$ 10,500,000
17	Air Carrier Terminal Parking	2020	SF	70,000	$ 5	$ 350,000
18	Stomwater Drainage Basin	2020	SF	36,970	$ 120	$ 4,436,400
19	New Part 139 Service Area (Apron)	2020	SF	843,129	$ 8	$ 6,323,468
20	Helipad	2020	SF	14,389	$ 11.00	$ 158,279
21	Helicopter Parking Area	2020	SF	100,000	$ 11.00	$ 1,100,000
22	General Office Building	2020	SF	32,000	$ 125.00	$ 4,000,000
23	Aeronautical College	2021	SF	36,857	$ 250.00	$ 9,214,250
24	Aeronautical College Parking	2021	SF	117,000	$ 5.00	$ 585,000
25	Aeronautical College Hangar	2021	SF	57,432	$ 65.00	$ 3,733,080
26	College Hangar Parking	2021	SF	20,085	$ 5.00	$ 100,425
27	College Hangar Apron	2021	SF	167,383	$ 11.00	$ 1,841,213
28	Air Transport Training Center	2022	SF	25,000	$ 125.00	$ 3,125,000
29	Training Center Parking	2022	SF	23,000	$ 5.00	$ 115,000
30	Training Center Office	2022	SF	4,400	$ 125.00	$ 550,000
31	Training Center Apron	2022	SF	187,308	$ 11.00	$ 2,060,388
32	Air Cargo and Logistics Hangars	2023	SF	38,000	$ 60.00	$ 2,280,000
33	Gas Station	2024	SF	48,693	$ 45.00	$ 2,191,185
34	Conventional Maintenance Hangar	2024	SF	6,136	$ 75.00	$ 460,200
35	Fast Food Restaurant	2025	SF	48,693	$ 25.00	$ 1,217,325
36	Fuel Farm	2025	SF	6,710	$ 425	$ 2,851,750
37	Aircraft Fueling Station	2025	SF	12,000	$ 325	$ 3,900,000
38	Portable Aircraft Hangars	2026	SF	33,820	$ 40.00	$ 1,352,800
39	Individual Hangars (Nested T-Hangars)	2026	SF	20,000	$ 60	$ 1,200,000
40	Storage and Maintenance Hangars	2026	SF	1,080,150	$ 18.00	$ 19,442,700
41	General Office Building	2027	SF	150,000	$ 125.00	$ 18,750,000
42	Aircraft Wash Rack	2027	SF	4,000	$ 60.00	$ 240,000
43	Aircraft Storage Area	2027	SF	1,511,815	$ 6	$ 9,070,890
44	Aircraft Maintenance Facility	2028	SF	89,103	$ 75	$ 6,682,725
45	Aircraft Maintenance Facility Office Building	2028	SF	6,500	$ 125	$ 812,500
46	Logistics Center Parking Area	2028	SF	30,000	$ 5	$ 150,000
47	USFS Expansion	2029	SF	373,785	$ 6	$ 2,242,710
48	Tie-downs Transient	2029	SF	50,000	$ 5	$ 250,000
49	Aircraft Testing Facility Hangar	2029	SF	70,000	$ 65	$ 4,550,000
50	Aircraft Testing Facility Office Building	2029	SF	25,000	$ 125	$ 3,125,000
51	Aircraft Testing Facility Parking	2029	SF	35,000	$ 5	$ 175,000
52	Conventional Maintenance Hangar (Phase II):	2029	SF	45,000	$ 65	$ 2,925,000
53	Maintenance Queing and Storage Hangars	2029	SF	37,000	$ 65	$ 2,405,000
54	General Office Building	2029	SF	10,000	$ 125	$ 1,250,000
55	General Office Building Parking	2029	SF	30,000	$ 5	$ 150,000
56	Corporate Aircraft Sales & Service Center Building	2029	SF	80,000	$ 125	$ 10,000,000
57	Corporate Aircraft Sales & Service Center Parking	2029	SF	70,000	$ 5	$ 350,000
58	Corporate Aircraft Sales & Service Center Apron	2029	SF	132,000	$ 11	$ 1,452,000
59	Conventional Hangars (Phase II)	2029	SF	34,000	$ 75	$ 2,550,000
60	New Fixed Based Operator (FBO)	2029	SF	48,000	$ 125	$ 6,000,000
61	Individual Box Hangars	2029	SF	100,000	$ 60	$ 6,000,000
62	New Fixed Based Operator (FBO) Parking	2029	SF	40,000	$ 5	$ 200,000
63	General Office Building	2029	SF	40,000	$ 125	$ 5,000,000
					Phase III Subtotal	**$ 180,371,360**
					Total Capital Project Costs	**$ 243,076,611**

* Itinerant parking positions may be delayed/canceled if other parking positions are removed from leasehold
Source: Parsons Brinckerhoff, 2011

7.3 ACIP Funding

Section 7.2 of this chapter summarized the staged future ACIP identified by the Master Plan Update. These future capital expenditures were then categorized according to potential funding sources, with the Airport-responsible projects (i.e., versus tenant funded projects) being the only focus of the feasibility analyses. **Table 7.2** presents the overall funding for the ACIP by funding source and **Table 7.3** contains the projected funding plan for the Master Plan ACIP by project expressed in year-of-expenditure (YOE) dollars.

Table 7.2
Funding Sources for the ACIP (Millions $)



A description of estimated funding sources is presented in greater detail in the following paragraphs.

7.3.1 Federal Grants

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 Airport Improvement Program (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 (Vision 100). 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.

Historically, Federal grants have played a central role in the funding of Fox Airfield's capital expenditures. This is expected to continue in the future. Historically, most airfield projects have been eligible for 90 percent AIP participation. This analysis increases this amount to 95 percent as a result of the higher participation level for non-

Table 7.3
Airport Capital Improvement Program Funding Plan

Number	Title	Target Year	Total Project Cost (2011$)	Allowances	Total Project Costs (YOE$)	POTENTIAL FUNDING SOURCES									
						Federal		State		Private		PFCs		Airport Reserves	
						%	Share	%	Share	%	Share	%	Share	%	Share
Phase I Development (2009-2013)															
1	Perimeter Fence Replacement	2011	$ 1,500,000	$ -	$ 1,500,000	95.0%	$ 1,425,000	2.5%	$ 37,500	0.0%	$ -	0.0%	$ -	2.5%	$ 37,500
2	High Speed Exit	2011	$ 650,000	$ -	$ 650,000	95.0%	$ 617,500	2.5%	$ 16,250	0.0%	$ -	0.0%	$ -	2.5%	$ 16,250
	Phase I Subtotal		**$ 2,150,000**	**$ 2,150,000**	**$ 2,150,000**		**$ 2,042,500**		**$ 53,750**		**$ -**		**$ -**		**$ 53,750**
Phase II Development (2014-2018)															
3	Slurry Seal South Parking Ramps	2015	$ 800,000	$ 100,407	$ 900,407	95.0%	$ 855,387	2.5%	$ 22,510	0.0%	$ -	0.0%	$ -	2.5%	$ 22,510
4	Itinerant Tie Down Positions*	2015	$ 1,331,490	$ 167,114	$ 1,498,604	95.0%	$ 1,423,674	2.5%	$ 37,465	0.0%	$ -	0.0%	$ -	2.5%	$ 37,465
5	Individual Hangars (Phase I)	2015	$ 4,081,380	$ 512,249	$ 4,593,629	0.0%	$ -	0.0%	$ -	100.0%	$ 4,593,629	0.0%	$ -	0.0%	$ -
6	General Aviation Expansion Area	2015	$ 6,762,537	$ 848,758	$ 7,611,295	95.0%	$ 7,230,730	2.5%	$ 190,282	0.0%	$ -	0.0%	$ -	2.5%	$ 190,282
7	Conventional Hangars	2015	$ 8,341,850	$ 1,046,976	$ 9,388,826	0.0%	$ -	0.0%	$ -	100.0%	$ 9,388,826	0.0%	$ -	0.0%	$ -
8	Helipad, Helicopter Parking and Maintenance Hangars	2015	$ 1,160,654	$ 145,672	$ 1,306,326	95.0%	$ 1,241,010	2.5%	$ 32,658	0.0%	$ -	0.0%	$ -	2.5%	$ 32,658
9	Corporate Hangars	2016	$ 1,679,400	$ 267,485	$ 1,946,885	95.0%	$ 1,849,541	2.5%	$ 48,672	0.0%	$ -	0.0%	$ -	2.5%	$ 48,672
10	Replace RW 6-24 (Concrete)	2016	$ 15,000,000	$ 2,389,111	$ 17,389,111	95.0%	$ 16,519,656	2.5%	$ 434,728	0.0%	$ -	0.0%	$ -	2.5%	$ 434,728
11	ARFF Station	2017	$ 2,912,200	$ 565,119	$ 3,477,319	0.0%	$ -	0.0%	$ -	100.0%	$ 3,477,319	0.0%	$ -	0.0%	$ -
12	Public Utilities	2018	$ 12,111,493	$ 2,784,116	$ 14,895,609	95.0%	$ 14,150,829	2.5%	$ 372,390	0.0%	$ -	0.0%	$ -	2.5%	$ 372,390
13	North Airfield Access Roadways	2018	$ 6,374,248	$ 1,465,273	$ 7,839,520	95.0%	$ 7,447,544	2.5%	$ 195,988	0.0%	$ -	0.0%	$ -	2.5%	$ 195,988
	Phase II Subtotal		**$ 60,555,252**	**$ 10,292,280**	**$ 70,847,531**		**$ 50,718,370**		**$ 1,334,694**		**$ 17,459,774**		**$ -**		**$ 1,334,694**
Phase III Development (2019-2029)															
14	New Parallel Taxiway	2019	$ 11,652,072	$ 3,108,424	$ 14,760,496	95.0%	$ 14,022,471	2.5%	$ 369,012	0.0%	$ -	0.0%	$ -	2.5%	$ 369,012
15	High Speed Exits (2)	2019	$ 1,300,000	$ 346,801	$ 1,646,801	95.0%	$ 1,564,461	2.5%	$ 41,170	0.0%	$ -	0.0%	$ -	2.5%	$ 41,170
16	New Terminal Building	2020	$ 10,500,000	$ 3,200,118	$ 13,700,118	0.0%	$ -	0.0%	$ -	0.0%	$ -	85.0%	$ 11,645,101	15.0%	$ 2,055,018
17	Air Carrier Terminal Parking	2020	$ 350,000	$ 106,671	$ 456,671	0.0%	$ -	0.0%	$ -	0.0%	$ -	0.0%	$ -	100.0%	$ 456,671
18	Stomwater Drainage Basin	2020	$ 4,436,400	$ 1,352,096	$ 5,788,496	95.0%	$ 5,499,071	2.5%	$ 144,712	0.0%	$ -	0.0%	$ -	2.5%	$ 144,712
19	New Part 139 Service Area (Apron)	2020	$ 6,323,468	$ 1,927,223	$ 8,250,691	0.0%	$ -	0.0%	$ -	0.0%	$ -	85.0%	$ 7,013,087	15.0%	$ 1,237,604
20	Helipad	2020	$ 158,279	$ 48,239	$ 206,518	95.0%	$ 196,192	2.5%	$ 5,163	0.0%	$ -	0.0%	$ -	2.5%	$ 5,163
21	Helicopter Parking Area	2020	$ 1,100,000	$ 335,251	$ 1,435,251	95.0%	$ 1,363,488	2.5%	$ 35,881	0.0%	$ -	0.0%	$ -	2.5%	$ 35,881
22	General Office Building	2020	$ 4,000,000	$ 1,219,093	$ 5,219,093	0.0%	$ -	0.0%	$ -	100.0%	$ 5,219,093	0.0%	$ -	0.0%	$ -
23	Aeronautical College	2021	$ 9,214,250	$ 3,168,931	$ 12,383,181	0.0%	$ -	0.0%	$ -	100.0%	$ 12,383,181	0.0%	$ -	0.0%	$ -
24	Aeronautical College Parking	2021	$ 585,000	$ 201,191	$ 786,191	0.0%	$ -	0.0%	$ -	100.0%	$ 786,191	0.0%	$ -	0.0%	$ -
25	Aeronautical College Hangar	2021	$ 3,733,080	$ 1,283,867	$ 5,016,947	0.0%	$ -	0.0%	$ -	100.0%	$ 5,016,947	0.0%	$ -	0.0%	$ -
26	College Hangar Parking	2021	$ 100,425	$ 34,538	$ 134,963	0.0%	$ -	0.0%	$ -	100.0%	$ 134,963	0.0%	$ -	0.0%	$ -
27	College Hangar Apron	2021	$ 1,841,213	$ 633,223	$ 2,474,436	0.0%	$ -	0.0%	$ -	100.0%	$ 2,474,436	0.0%	$ -	0.0%	$ -
28	Air Transport Training Center	2022	$ 3,125,000	$ 1,200,731	$ 4,325,731	0.0%	$ -	0.0%	$ -	100.0%	$ 4,325,731	0.0%	$ -	0.0%	$ -
29	Training Center Parking	2022	$ 115,000	$ 44,187	$ 159,187	0.0%	$ -	0.0%	$ -	100.0%	$ 159,187	0.0%	$ -	0.0%	$ -
30	Training Center Office	2022	$ 550,000	$ 211,329	$ 761,329	0.0%	$ -	0.0%	$ -	100.0%	$ 761,329	0.0%	$ -	0.0%	$ -
31	Training Center Apron	2022	$ 2,060,388	$ 791,671	$ 2,852,059	0.0%	$ -	0.0%	$ -	100.0%	$ 2,852,059	0.0%	$ -	0.0%	$ -
32	Air Cargo and Logistics Hangars	2023	$ 2,280,000	$ 970,735	$ 3,250,735	0.0%	$ -	0.0%	$ -	100.0%	$ 3,250,735	0.0%	$ -	0.0%	$ -
33	Gas Station	2024	$ 2,191,185	$ 1,026,644	$ 3,217,829	0.0%	$ -	0.0%	$ -	100.0%	$ 3,217,829	0.0%	$ -	0.0%	$ -
34	Conventional Maintenance Hangar	2024	$ 460,200	$ 215,619	$ 675,819	0.0%	$ -	0.0%	$ -	100.0%	$ 675,819	0.0%	$ -	0.0%	$ -
35	Fast Food Restaurant	2025	$ 1,217,325	$ 623,988	$ 1,841,313	0.0%	$ -	0.0%	$ -	100.0%	$ 1,841,313	0.0%	$ -	0.0%	$ -
36	Fuel Farm	2025	$ 2,851,750	$ 1,461,778	$ 4,313,528	95.0%	$ 4,097,851	2.5%	$ 107,838	0.0%	$ -	0.0%	$ -	2.5%	$ 107,838
37	Aircraft Fueling Station	2025	$ 3,900,000	$ 1,999,100	$ 5,899,100	95.0%	$ 5,604,145	2.5%	$ 147,477	0.0%	$ -	0.0%	$ -	2.5%	$ 147,477
38	Portable Aircraft Hangars	2026	$ 1,352,800	$ 754,818	$ 2,107,618	0.0%	$ -	0.0%	$ -	100.0%	$ 2,107,618	0.0%	$ -	0.0%	$ -
39	Individual Hangars (Nested T-Hangars)	2026	$ 1,200,000	$ 669,561	$ 1,869,561	0.0%	$ -	0.0%	$ -	100.0%	$ 1,869,561	0.0%	$ -	0.0%	$ -
40	Storage and Maintenance Hangars	2026	$ 19,442,700	$ 10,848,393	$ 30,291,093	0.0%	$ -	0.0%	$ -	100.0%	$ 30,291,093	0.0%	$ -	0.0%	$ -
41	General Office Building	2027	$ 18,750,000	$ 11,338,246	$ 30,088,246	0.0%	$ -	0.0%	$ -	100.0%	$ 30,088,246	0.0%	$ -	0.0%	$ -
42	Aircraft Wash Rack	2027	$ 240,000	$ 145,130	$ 385,130	0.0%	$ -	0.0%	$ -	100.0%	$ 385,130	0.0%	$ -	0.0%	$ -
43	Aircraft Storage Area	2027	$ 9,070,890	$ 5,485,226	$ 14,556,116	0.0%	$ -	0.0%	$ -	100.0%	$ 14,556,116	0.0%	$ -	0.0%	$ -
44	Aircraft Maintenance Facility	2028	$ 6,682,725	$ 4,362,801	$ 11,045,526	0.0%	$ -	0.0%	$ -	100.0%	$ 11,045,526	0.0%	$ -	0.0%	$ -
45	Aircraft Maintenance Facility Office Building	2028	$ 812,500	$ 530,439	$ 1,342,939	0.0%	$ -	0.0%	$ -	100.0%	$ 1,342,939	0.0%	$ -	0.0%	$ -
46	Logistics Center Parking Area	2028	$ 150,000	$ 97,927	$ 247,927	0.0%	$ -	0.0%	$ -	100.0%	$ 247,927	0.0%	$ -	0.0%	$ -
47	USFS Expansion	2029	$ 2,242,710	$ 1,575,354	$ 3,818,064	0.0%	$ -	0.0%	$ -	100.0%	$ 3,818,064	0.0%	$ -	0.0%	$ -
48	Tie-downs Transient	2029	$ 250,000	$ 175,608	$ 425,608	0.0%	$ -	0.0%	$ -	100.0%	$ 425,608	0.0%	$ -	0.0%	$ -
49	Aircraft Testing Facility Hangar	2029	$ 4,550,000	$ 3,196,070	$ 7,746,070	0.0%	$ -	0.0%	$ -	100.0%	$ 7,746,070	0.0%	$ -	0.0%	$ -
50	Aircraft Testing Facility Office Building	2029	$ 3,125,000	$ 2,195,103	$ 5,320,103	0.0%	$ -	0.0%	$ -	100.0%	$ 5,320,103	0.0%	$ -	0.0%	$ -
51	Aircraft Testing Facility Parking	2029	$ 175,000	$ 122,926	$ 297,926	0.0%	$ -	0.0%	$ -	100.0%	$ 297,926	0.0%	$ -	0.0%	$ -
52	Conventional Maintenance Hangar (Phase II):	2029	$ 2,925,000	$ 2,054,617	$ 4,979,617	0.0%	$ -	0.0%	$ -	100.0%	$ 4,979,617	0.0%	$ -	0.0%	$ -
53	Maintenance Queing and Storage Hangars	2029	$ 2,405,000	$ 1,689,352	$ 4,094,352	0.0%	$ -	0.0%	$ -	100.0%	$ 4,094,352	0.0%	$ -	0.0%	$ -
54	General Office Building	2029	$ 1,250,000	$ 878,041	$ 2,128,041	0.0%	$ -	0.0%	$ -	100.0%	$ 2,128,041	0.0%	$ -	0.0%	$ -
55	General Office Building Parking	2029	$ 150,000	$ 105,365	$ 255,365	0.0%	$ -	0.0%	$ -	100.0%	$ 255,365	0.0%	$ -	0.0%	$ -
56	Corporate Aircraft Sales & Service Center Building	2029	$ 10,000,000	$ 7,024,331	$ 17,024,331	0.0%	$ -	0.0%	$ -	100.0%	$ 17,024,331	0.0%	$ -	0.0%	$ -
57	Corporate Aircraft Sales & Service Center Parking	2029	$ 350,000	$ 245,852	$ 595,852	0.0%	$ -	0.0%	$ -	100.0%	$ 595,852	0.0%	$ -	0.0%	$ -
58	Corporate Aircraft Sales & Service Center Apron	2029	$ 1,452,000	$ 1,019,933	$ 2,471,933	0.0%	$ -	0.0%	$ -	100.0%	$ 2,471,933	0.0%	$ -	0.0%	$ -
59	Conventional Hangars (Phase II)	2029	$ 2,550,000	$ 1,791,204	$ 4,341,204	0.0%	$ -	0.0%	$ -	100.0%	$ 4,341,204	0.0%	$ -	0.0%	$ -
60	New Fixed Based Operator (FBO)	2029	$ 6,000,000	$ 4,214,598	$ 10,214,598	0.0%	$ -	0.0%	$ -	100.0%	$ 10,214,598	0.0%	$ -	0.0%	$ -
61	Individual Box Hangars	2029	$ 6,000,000	$ 4,214,598	$ 10,214,598	0.0%	$ -	0.0%	$ -	100.0%	$ 10,214,598	0.0%	$ -	0.0%	$ -
62	New Fixed Based Operator (FBO) Parking	2029	$ 200,000	$ 140,487	$ 340,487	0.0%	$ -	0.0%	$ -	100.0%	$ 340,487	0.0%	$ -	0.0%	$ -
63	General Office Building	2029	$ 5,000,000	$ 3,512,165	$ 8,512,165	0.0%	$ -	0.0%	$ -	100.0%	$ 8,512,165	0.0%	$ -	0.0%	$ -
	Phase III Subtotal		**$ 180,371,360**	**$ 93,899,592**	**$ 274,270,952**		**$ 32,347,680**		**$ 851,255**		**$ 217,813,282**		**$ 18,658,188**		**$ 4,600,547**
	Total Capital Project Costs		**$ 243,076,611**	**$ 106,341,872**	**$ 347,268,483**		**$ 85,108,550**		**$ 2,239,699**		**$ 235,273,056**		**$ 18,658,188**		**$ 5,988,991**

* Itinerant parking positions may be delayed/canceled if other parking positions are removed from leasehold
Source: Parsons Brinckerhoff, 2011

primary non-hub airports included in Vision 100. As shown in Table 7.2, the CIP contains approximately $85.1 million in project costs to be funded by Federal grants.

The Federal funding for these projects is either non-primary entitlement grants or discretionary grants. As non-primary general aviation airport, Fox Airfield receives entitlement grants of $150,000 each Federal fiscal year under the AIP program. When passenger service commences at Fox Airfield and enplanements exceed 10,000 annually, entitlements will be awarded each Federal fiscal year based on a formula for the number of enplanements. Based on the enplanement forecast presented in Chapter 2.0: Aviation Forecasts, this amount ranges from approximately $220,000 to $1.8 million during the forecast period. Entitlement funds can be carried over for three federal fiscal years and can be used for any AIP eligible project.

In the last five Federal fiscal years (FY 2006 through FY 2010), Fox Airfield has received an average of approximately $600,000 annually in AIP funding (entitlement and discretionary). These grant awards have ranged from $66,900 to $1,677,725, varying depending on annual project requirements. It is difficult to predict the actual levels of AIP discretionary grants that may be received by Fox Airfield. Historically, the County of Los Angeles has received discretionary grants in order to make improvements at Fox Airfield that were viewed as priority projects by the FAA.

7.3.2 State Financial Assistance

The Division of Aeronautics for the California Department of Transportation (CalTrans Aeronautics Division) administers three state aid programs for airports. The sole funding source for these grants is excise tax revenues on general aviation (GA) gasoline and for jet fuel.

- ***AIP Matching Funds:*** These funds assist General Aviation (GA) airports in meeting the local match for federal Airport Improvement Program (AIP) grants. The state grant is 2.5% of the AIP amount. Eligible projects must benefit GA and be included in the Capital Improvement Program (CIP) element of the California Aviation System Plan.

- ***Annual Credit:*** The Annual Credit provides a $10,000 per year entitlement to eligible publicly-owned, public-use airports for expenditure at the sponsor's discretion.

- ***Acquisition and Development (A&D) Grants:*** These grants are for eligible projects subject to programming and allocation by the California Transportation Commission. A&D 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.

- ***Local Airport Loan Program:*** CalTrans Aeronautics Division provides financial assistance in the form of low interest loans. 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.

  Fox Airfield is eligible to receive all of the types of funding programs provided by CalTrans. For purposes of this analysis, it is assumed that Fox Airfield receives the matching AIP fund grants for all AIP-funded projects in the ACIP.

7.3.3 Private Funds

Certain projects in the capital development program may not be eligible for Federal participation and have been identified as projects to be funded with other sources. These sources may include third-party developers or grants from sources other than the FAA. These projects might include projects that are not eligible for AIP funds such as hangars, aircraft parking and tie downs, automobile parking facilities, as well as other non-aeronautical developments such as hotels, restaurants, and educational facilities. It is assumed that private funds will contribute approximately $235.3 million to the ACIP through the 2029 planning period.

7.3.4 Local Funds

The balance of project costs (i.e., after consideration of Federal grants) must be funded using local funds. These funds are comprised of Airport resources, such as passenger facility charges (PFCs) and airport reserves. The remainder of this section discusses these funding sources and the assumptions used in applying these funds to the Master Plan Update CIP funding plan.

- ***Passenger Facility Charges***: In 1990, the U.S. Congress passed the Aviation System Capacity Act (Act). This Act permitted public agencies controlling commercial service airports to apply to the FAA for approval to collect a PFC at levels of $1.00, $2.00, or $3.00 per enplaned passenger. In 2000, the Act was amended under Wendell H. Ford Aviation Investment and Reform Act for the 21st Century (AIR-21). Public agencies are currently permitted to apply to impose a PFC at the previously approved levels, as well as $4.00 or $4.50 as a result of the

enactment of AIR-21. As a trade-off for imposing a PFC, there is a reduction in the amount of AIP entitlement grants at large and medium hub airports. This reduction is 50 percent for airports imposing a $1.00, $2.00, or $3.00 PFC and 75 percent for airports imposing a $4.00 or $4.50 PFC. As a non-primary airport, Fox Airfield is not subject to this reduction.

As discussed in Chapter 2.0: Aviation Forecasts, it is possible in the future for Fox Airfield to have some type of air carrier passenger service. If so, PFCs would be a viable funding source to provide the local share of AIP funded projects or to assist in the development of terminal projects associated with passenger service. It is assumed that PFCs will begin to be collected in 2018 to use to fund debt service associated with the development of a new passenger terminal building and Part 139 Service area projects that are planned to be implemented in 2020. To be conservative, the maximum PFC that is able to be collected remains at $4.50 for the projection period.

- ***Airport Reserves:*** Fox Airfield enterprise fund earnings, reserves and accumulated cash balances are assumed to fund the balance of project costs after any Federal or other funds are applied. This practice is expected to continue in the future and is assumed for this analysis. The local share of the ACIP and capital development plan is approximately $5.6 million during the projection period. As previously mentioned, to the extent that sufficient funds are not available, the phasing of certain projects would be adjusted to meet the availability of funds. **Table 7.4** presents the projected amounts of annual local funding required for the Master Plan Update ACIP.

Table 7.4
Local Share of Airport Capital Improvement Program

2011	$53,750
2012	$0
2013	$0
2014	$0
2015	$282,916
2016	$483,400
2017	$0
2018	$568,378
2019	$410,182
2020	$3,935,049
2021	$0
2022	$0
2023	$0
2024	$0
2025	$255,316
2026	$0
2027	$0
2028	$0
2029	$0
TOTAL	**$5,988,991**

7.4 Sources & Uses of Funds

This section presents projections of operating revenues and operating expenses for Fox Airfield combined with the sources and uses of funds to show the overall financial impact of the ACIP. **Table 7.5** presents the combined sources and uses of funds for the Master Plan Update.

7.4.1 Operating Revenue

The primary sources of revenue for Fox Airfield consist of guaranteed minimum contract payments from the airport management company and fuel flowage fees. An inflation rate of 2.7 percent was applied to actual FY 2010 operating revenues and each year thereafter to develop projections of operating revenues. The inflation rate used is the 10-year annual average historical consumer price index (CPI) for the Los Angeles Combined Metropolitan Statistical Area (CMSA) published by the State of California Department of Finance. In addition to inflation, the following assumptions were applied to develop the revenue projections:

- Fuel flowage fees were also increased at the same rate of increase as aircraft operations projected in Chapter 2.0: Aviation Forecasts.

- Passenger fees and concessions fees will be received from any airline providing scheduled service at Fox Airfield. As a result, a fee of $6.00 per enplanement collected from the airlines providing service was assumed beginning at the initiation of passenger service in 2012. The $6.00 fee is projected to increase with inflation and is in addition to any PFCs that would be approved for eligible projects.

  As the private developments take place in Phase III, it is assumed additional revenue will be received for land leases where those developments will occur. The current average lease rate of $0.50 was increased at 3 percent annually and applied to the additional amounts of land leased each year to determine the amount of additional revenue annually.

7.4.2 Operating Expenses

The primary categories of operating expenses for Fox Airfield are services provided by other County of Los Angeles divisions, contract administration, and fuel credits. The average annual growth rate for the CPI (2.7 percent) was applied to FY 2010 actual operating expenses and to each year thereafter to develop the projections. In addition, it is assumed that additional operating expenses will occur when passenger service is initiated at the airport. The amount of expenses is anticipated to be approximately 75 percent of the passenger fees received.

7.4.3 Combined Sources and Uses

Projected operating revenue and operating expenses were combined with the projected sources of funding for the ACIP described in Section 7.3 and the projected capital expenditures described in Section 7.2, respectively to develop the combined sources and uses of funds. As shown, overall the revenue funding sources for the ACIP are sufficient to fund operating expenses and the ACIP projects.

Table 7.5
Combined Sources and Uses of Funds

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Sources										
Contract Minimums	$121,677	$124,962	$128,336	$131,801	$135,360	$139,015	$142,768	$146,623	$150,582	$154,647
Fuel Flowage	224,523	226,818	241,034	253,311	269,514	283,301	298,073	316,713	336,602	350,424
Passenger Fees	-	-	84,000	142,958	446,150	504,991	566,016	769,124	940,547	1,009,322
Add'l Land Lease Revenue	-	-	-	-	-	-	-	-	-	-
Federal Grants	-	2,042,500	-	-	-	10,750,800	18,369,196	-	21,598,373	15,586,932
State Financial Assistance	73,734	53,750	-	-	-	282,916	483,400	-	568,378	410,182
Private Funds	-	-	-	-	-	13,982,455	-	3,477,319	-	-
Bond Funds	-	-	-	-	-	-	-	-	-	-
PFCs	-	-	-	-	-	-	-	-	601,200	628,200
TOTAL SOURCES	$419,934	$2,448,030	$453,370	$528,071	$851,024	$25,943,478	$19,859,454	$4,709,779	$24,195,682	$18,139,708
Uses										
Services by Other Divisions	$41,648	$42,772	$43,927	$45,113	$46,331	$47,582	$48,867	$50,187	$51,542	$52,933
Contract Administration	17,037	17,497	17,969	18,455	18,953	19,465	19,990	20,530	21,084	21,653
Fuel Credit to AAC	42,740	43,894	45,079	46,296	47,546	48,830	50,148	51,502	52,893	54,321
Other	29,932	30,740	31,570	32,423	33,298	34,197	35,120	36,069	37,042	38,043
Additional Expenses	-	-	63,000	107,219	334,613	378,743	424,512	576,843	705,410	756,992
Bond Interest	-	-	-	-	-	-	-	-	-	-
ACIP Projects	103,744	2,150,000	-	-	-	25,299,087	19,335,996	3,477,319	22,735,130	16,407,297
TOTAL USES	$235,101	$2,284,904	$201,546	$249,506	$480,741	$25,827,904	$19,914,634	$4,212,449	$23,603,101	$17,331,239
Beginning Balance	$0	$184,833	$347,960	$599,784	$878,349	$1,248,632	$1,364,206	$1,309,025	$1,806,355	$2,398,936
Net Change in Funds	$184,833	$163,127	$251,824	$278,565	$370,283	$115,574	($55,180)	$497,329	$592,581	$808,469
Ending Balance	$184,833	$347,960	$599,784	$878,349	$1,248,632	$1,364,206	$1,309,025	$1,806,355	$2,398,936	$3,207,405

	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Sources										
Contract Minimums	$158,823	$163,111	$167,515	$172,038	$176,683	$181,453	$186,353	$191,384	$196,552	$201,858
Fuel Flowage	364,747	380,087	396,502	414,053	432,263	451,710	471,892	493,420	515,766	540,196
Passenger Fees	1,081,126	1,156,833	1,235,058	1,316,664	1,420,774	1,478,647	1,537,737	1,599,836	1,663,248	1,729,861
Add'l Land Lease Revenue	-	267,948	441,892	482,239	536,965	589,900	1,464,596	1,628,887	1,781,555	2,512,570
Federal Grants	7,058,751	-	-	-	-	9,701,996	-	-	-	-
State Financial Assistance	185,757	-	-	-	-	255,316	-	-	-	-
Private Funds	5,219,093	20,795,719	8,098,305	3,250,735	3,893,648	1,841,313	34,268,272	45,029,491	12,636,392	82,780,314
Bond Funds	21,950,809	-	-	-	-	-	-	-	-	-
PFCs	655,200	682,650	709,650	736,650	774,000	784,350	794,250	804,600	814,500	824,850
TOTAL SOURCES	$36,674,305	$23,446,349	$11,048,923	$6,372,378	$7,234,333	$15,284,686	$38,723,100	$49,747,618	$17,608,013	$88,589,649
Uses										
Services by Other Divisions	$54,362	$55,830	$57,338	$58,886	$60,476	$62,108	$63,785	$65,508	$67,276	$69,093
Contract Administration	22,238	22,839	23,455	24,088	24,739	25,407	26,093	26,797	27,521	28,264
Fuel Credit to AAC	55,788	57,294	58,841	60,430	62,061	63,737	65,458	67,225	69,040	70,904
Other	39,070	40,125	41,208	42,321	43,463	44,637	45,842	47,080	48,351	49,656
Additional Expenses	810,844	867,625	926,294	987,498	1,065,581	1,108,985	1,153,303	1,199,877	1,247,436	1,297,396
Bond Interest	1,691,759	1,670,360	1,647,677	1,623,633	1,598,147	1,571,131	1,542,494	1,512,140	1,479,964	1,445,857
ACIP Projects	35,056,837	20,795,719	8,098,305	3,250,735	3,893,648	12,053,941	34,268,272	45,029,491	12,636,392	82,780,314
TOTAL USES	$37,730,898	$23,509,791	$10,853,117	$6,047,590	$6,748,114	$14,929,946	$37,165,248	$47,948,117	$15,575,980	$85,741,484
Beginning Balance	$3,207,405	$2,150,813	$2,087,370	$2,283,176	$2,607,964	$3,094,184	$3,448,923	$5,006,776	$6,806,276	$8,838,309
Net Change in Funds	($1,056,593)	($63,443)	$195,806	$324,788	$486,219	$354,740	$1,557,853	$1,799,501	$2,032,033	$2,848,165
Ending Balance	$2,150,813	$2,087,370	$2,283,176	$2,607,964	$3,094,184	$3,448,923	$5,006,776	$6,806,276	$8,838,309	$11,686,475

7.5 Summary and Recommendations

This section summarizes the principle findings with respect to the financial implications of the ACIP presented in Section 7.2. Based upon the assumptions and limitations underlying this feasibility analyses, the following findings are presented.

- The Master Plan Update improvements are projected to be financially feasible. Fox Airfield is projected to be financially self-sufficient and adequate funds are projected to be available to complete the ACIP.

- The proposed improvements are assumed to be completed with a portion of the funding being provided with FAA discretionary grants. Should the projected level of discretionary funding not be received, the County of Los Angeles may have to re-evaluate the phasing of the ACIP.

Appendix A

Public Involvement

The William J. Fox Airfield Master Plan Update

Aviation Commission Meeting
November 25, 2009

Key Issues

- Cities of Palmdale and Lancaster have grown nearly 12 times their size
- Antelope Valley Region forecast to grow to one million people by 2020
- Rise in fuel prices coupled with economic decline have led to a reduction in recreational and corporate activity
- Significant need for revenue generation
- Land available for future airport development
- Stakeholder participation

Project Approach

- Inventory
  - An assessment of the airport's current facilities
- Aviation Demand Forecasts
  - Key economic and demographic data as well as historic aviation activity
- Demand/Capacity Analysis
  - Determination of the airport's airside and landside capacity
- Facility Requirements
  - Airside and landside facility requirements
    - runway length, width and alignment
    - aircraft parking
    - fuel storage and location
    - security, access
    - NAVAIDS and utilities

Project Approach

- Airport Alternatives
  - Three feasible alternatives, including a no build/do nothing alternative
  - Evaluation criteria will be developed to analyze each alternative
  - Identification of one recommended or "preferred" alternative
- Airport Plans
  - Includes the Airport Layout Plan (ALP), which is an official drawing used by the FAA and others to review and approve airport development projects
- Financial
  - Includes a financial evaluation of the benefits and costs associated with the recommended development plan
  - Includes the development of an Airport Capital Improvement Plan (ACIP)
- Meetings and Presentations
  - The PB Team will conduct three meetings with the airport tenants/stakeholders
  - A Technical Advisory Committee (TAC) will be formed to provide valuable insight on technical issues
  - One additional "open house" meeting will be held near project completion

The PB Project Team

- Parsons Brinckerhoff
  - Prime consultant
- Arellano & Associates, Inc
  - Sub consultant
    - Public Involvement
- UltraSystems, Inc.
  - Sub consultant
    - Environmental Analysis

The William J. Fox Airfield Master Plan Update

Tenant Committee Meeting
October 26, 2010

Agenda

- Introduction
- The PB team
- What is an airport master plan
- Project approach
- Key project issues
- Strengths, Weaknesses, Opportunities and Threats Analysis
- Next steps

The PB Project Team

- Parsons Brinckerhoff
  - Prime consultant
- Arellano & Associates, Inc
  - Sub consultant
    - Public Involvement
- UltraSystems, Inc.
  - Sub consultant
    - Environmental Analysis

What is an airport master plan

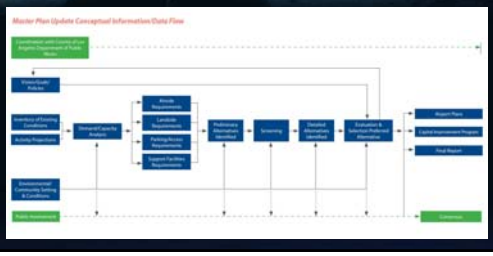
- The objective of the General William J. Fox Airfield Master Plan Update is to provide the County of Los Angeles with a sound, long-range planning document that presents the study's findings in a clear and concise format.
- The Master Plan Update includes an Airport Layout Plan that provides the airport with a flexible tool that can be modified to respond to changes in the airport's growth over the 20-year planning period.

Project Approach

- Inventory
  - Assessment of the airport's current facilities
- Aviation Demand Forecasts
  - Key economic and demographic data
  - Historic aviation activity
- Demand/Capacity Analysis
  - Determination of the airport's airside and landside capacity
- Facility Requirements
  - Airside and landside facility requirements
    - runway length, width and alignment
    - aircraft parking
    - fuel storage and location
    - security, access
    - NAVAIDS and utilities

Project Approach

- Airport Alternatives
  - Three feasible alternatives
  - Evaluation criteria
  - One recommended or "preferred" alternative
- Airport Plans
  - Airport Layout Plan (ALP)
- Financial
  - Evaluation of the benefits and costs
  - Airport Capital Improvement Plan (ACIP)
- Meetings and Presentations
  - Three meetings with the airport tenants/stakeholders
  - Technical Advisory Committee (TAC)
  - One additional "open house" meeting



Key Issues

- The population of the cities Palmdale and Lancaster have grown over 50 percent size since 2000
- Antelope Valley Region forecast to grow to one million people by 2020
- Rise in aviation fuel prices coupled with economic decline have led to a reduction in recreational and corporate aircraft activity
- Significant need for revenue generation
- Land available for future airport development
- Stakeholder participation

Existing Conditions

- Airport history
- Physical facilities
- Airspace and ATCT conditions
- Utilities
- Airport operations
- Local Land Use Plans and Regulations
- Environmental resources
- Navigational Aids

Airport Conditions and Physical Facilities

- Existing Airport Conditions
  - Location
  - Ownership
  - Ground access
  - NPIAS designation
  - FAA Advisory Circular 150/5300-13, Airport Design, planning standards
- Physical facilities
  - Airside (runways, taxiways)
  - Landside (aircraft parking aprons, terminal building, hangars, air museum, US Forest Service facilities, fuel facilities, vehicular parking and restaurant)
  - Fixed Base Operators

Airspace and Utilities

- Airspace and ATCT Conditions
  - Classes: C, D, E and G
  - Restricted and special use near Fox
  - Military operating areas (MOA)
- Utilities
  - Water & sewer
  - Natural gas
  - Electric
  - Telephone

Airport Operations

- Airport Operations
  - Significant decline since 1996 master plan
  - Types of operations

Local Land Use Plans and Regulations

- The County of Los Angeles Airport Land Use Commission implements state law (Public Utilities Code) regarding public airports and surrounding land use compatibility.
- The *County of Los Angeles Airport Land Use Plan* applies to all airports in Los Angeles County, except for Fox Airfield, which is covered by the *Fox Airfield Land Use Compatibility Plan* (adopted December 1, 2004).
- Land surrounding Fox Airfield is currently characterized by undeveloped desert land divided into many small parcels with scattered rural residential and industrial uses.

Environmental Resources

- Air Quality
- Coastal Barriers
- Coastal Zone Management
- Compatible Land Use
- Construction Impacts
- Department of Transportation Act, Section 4(f)
- Farmlands
- Fish, Wildlife and Plants
- Floodplains
- Greenhouse Gas Emissions
- Hazardous Materials

Environmental Resources

- 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

Navigational Aids

- **Airport Traffic Control Tower (ATCT):** Fox Airfield is equipped with an ATCT which operates 24 hours per day, 7 days per week. The ATCT is the central facility in the Fox Airfield air control system.
- **Non-Directional Beacon (NDB):** a low/medium frequency or ultra-high frequency (UHF) radio beacon transmitting non-directional signals which the pilot of an aircraft equipped with directional finding equipment can determine the bearing to or from the radio beacon.

Navigational Aids

- **Very-High Frequency Omni-Directional Range/Tactical Air Navigation (VORTAC):** A type of radio navigation system which broadcasts a very-high frequency radio signals in which the pilot of an aircraft equipped with directional finding equipment can receive a magnetic bearing from a station.
- **Automated Surface Observation Station (ASOS):** is a system of weather reading instruments which collects weather conditions at the Airport and broadcasts such information to pilots. This system provides information on altimeter setting, winds, temperature, dew point, density altitude, visibility and cloud/ceiling.

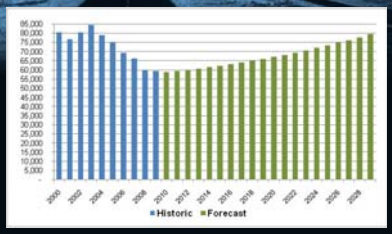
Existing Airport

Aviation Forecasts

- These forecasts will include a projection of based aircraft, aircraft fleet mix and the number of anticipated operations during the planning period
- The forecasts will be used to help determine the size and number of facilities needed to support an airport through the five-year planning period
- The overall product of this task will be a chapter describing the forecasts and methodology used to develop a 5, 10 and 20 year activity forecast

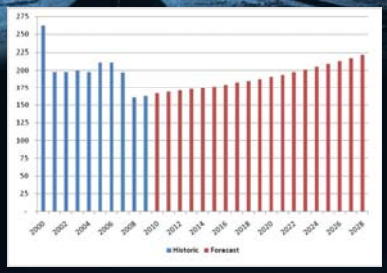
Aviation Forecasts

- Historic and future operations



Aviation Forecasts

- Based Aircraft



Aviation Forecasts

- Fleet mix

	Single Engine	Multi Engine	Jet	Helicopter	Total
2009	143	14	4	3	164
2014	146	15	9	5	175
2019	153	15	13	7	188
2024	162	15	18	9	205
2029	176	15	25	11	227
Percentage Distribution					
2009	87.2%	8.5%	2.4%	1.8%	100.0%
2014	83.6%	8.6%	5.0%	2.9%	100.0%
2019	81.3%	8.0%	7.0%	3.7%	100.0%
2024	79.3%	7.4%	9.0%	4.4%	100.0%
2029	77.5%	6.7%	11.0%	4.8%	100.0%

Source: PB Americas, Inc.

SWOT Analysis

- Strengths

- Available Affordable Land
- Partnership with City of Lancaster
- Noise Friendly Airport
- Compatibility to surrounding area
- Runway length/NAVAIDS
- Location and access of the Airport
- Weather Conditions
- Management structure/team
- Ability to implement Federally funded projects

SWOT Analysis

- Weaknesses
- Lack of Water/Utilities
- Economic sensitivity to the ups and downs in the governmental industry
  Adjacent land parcels are too small for significant development
-

SWOT Analysis

- Opportunities
- Developable Land
- Proximity to the LA basin
- Intermodal facility potential
- Facilities to accommodate future development
- Business park proximity
- Ability to attract corporate aviation and law enforcement
- Potential expansion of current tenants

SWOT Analysis

- Threats
- Vacancy of existing facilities
- Non aeronautical development on the airside
- Price of fuel
- Regulatory changes including security
- Continued funding of future projects (changes in the AIP)
- User Fees
- Age of existing facilities

Demand/Capacity Analysis

- Demand/Capacity refers to the ability for the runway and associated taxiways to accommodate the anticipated level of aircraft activity throughout the 20-year planning period
- The projected demand does not drive the development of facilities at Fox Airfield. Instead, it will be the actual demand that determines when new facilities are required
- The use of the forecast of aviation activity indentified in Chapter 2.0 does not commit the County of Los Angeles to build facilities associated with demand, but it does provide the County of Los Angeles with a schedule for planning purposes.
-
- Demand/Capacity is organized in five sections, including:
  - Airfield Capacity Requirements
  - Hourly and Annual Capacity
  - Annual Service Volume
  - Demand vs. Capacity

Airfield Capacity Requirements

- Airfield capacity is a measure of the maximum number of aircraft operations that can be accommodated on the airport within one hour
- Calculations of hourly capacities are needed to determine average aircraft delay. FAA Advisory Circular 150/5060-5, Airport Capacity and Delay, identifies the procedures for determine throughput capacity using the FAA model

Airfield Capacity Requirements

Table 3.1 provides breakdown of the FAA's aircraft classifications for airport capacity and delay. Aircraft class is separated into four categories, A through D to represent the level of wake turbulence generated for each category.

Table 3.1: Aircraft Classifications

Aircraft Class	Maximum Certified Takeoff Weight (lbs.)	No. Engines	Wake Turbulence Classifications
A and B	12,500 or less	Single	Small (S)
C	12,500 – 300,000	Multi	Large (L)
D	Over 300,000	Multi	Heavy (H)

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

Hourly and Annual Capacity

- Hourly capacity is calculated for each configuration Fox Airfield operates under
- Fox Airfield is a single runway airport with a supporting parallel taxiway and multiple taxiway exits; therefore, the airport can operate under three conditions
  - VFR,
  - IFR and
  - when the airport is closed or when landing minimums are impacted by weather
- FAA AC 150/5060-5 identifies the procedures for determining hourly runway capacity.

Hourly and Annual Capacity

- Table here

Annual Service Volume

- ASV is calculated as: ASV = (Cw)*(D)*(H), where:
  - C_w = weighted hourly capacity
  - D = ration of annual to average day of peak month (ADPM) demand
  - H = ration of ADPM to peak hour demand
- Demand ratios were developed using 2009 aircraft operations data documented by the Fox Airfield ATCT
  - These ratios include daily demand (D) of 290 and an hourly ratio (H) of 16.2
- For purposes of long range planning,
  - peaking capacity estimates of (D=290, H=9) were used to reflect more realistic and conservative peaking factors identified in AC 150/5060-5
- Using the peaking capacities identified above, the ASV was determined to be approximately 219,000 operations per year
- The AC listed an estimate of 230,000 annual operations per year

Demand vs. Capacity

- Table 3-5 displays the comparisons of demand versus capacity as well as the anticipated percentage of capacity utilized.

Table 3-5: Demand vs. Capacity

	2009	2014	2019	2029
Annual				
Demand	59,259	61,400	66,000	79,400
Capacity	230,000	230,000	230,000	230,000
Capacity Utilized	26%	27%	29%	35%
Weighted Hourly				
Demand	200	208	223	268
Capacity				
Capacity Utilized				

Source: PB Americas, Inc.

Facility Requirements

- Facility requirements are intended to identify the deficiencies and/or omissions of the Airport's existing facilities and recommend the facilities those facilities needed to support over the 5-, 10- and 20-year planning periods
- The long-range facility requirements for Fox Airfield are based on an analysis of the following six primary elements. These include:
  - Airport Classification
  - Airside Facility Requirements
  - Landside Facility Requirements
  - Ground Access
  - Airport Security
  - Land Area Requirements

Airport Classification

- Fox Airfield is classified as a general aviation airport within the National Plan of Integrated Airport Systems (NPIAS).
- Fox Airfield is also classified as a regional general aviation airport within the California Aviation System Plan (CASP).

Airport Classification

- The FAA Advisory Circular (AC) 150/5300-13, Airport Design, has developed an airport reference code (ARC) which is a coding system that refers to airport design criteria and planning standards associated with airports
- ARC C-IV standards were applied throughout this airport master plan update.
  - ARC C- IV includes large aircraft with approach speeds of knots or more but less than 141 knots and having wingspans from 118 feet up to but not including 171 feet in width.

Airside Facility Requirements

Airside facility requirements include:

- **runway system**
- taxiway system
- **runway approach areas**
- airfield lighting
- visual aids
- navigational aids

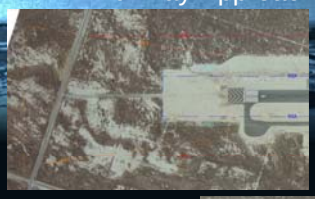
Runway Length and Width

- The airport site characteristics used in this runway length analysis include:
  - Elevation 2,351 feet Mean Sea Level (MSL)
  - Temperature 92° F mean daily maximum temperature of hottest month
  - Maximum difference in runway centerline elevation 15.2 feet
  - Surface winds calm
- The critical aircraft for Fox Airfield multi engine aircraft that primarily weigh more than 60,000 pounds
- The recommend runway lengths for large airplanes weighing more than 60,000 pounds are 5,410 to 9,450.
- Runway 6-24's current length of 7,201' is anticipated to meet the 20-year runway length requirements for 100 percent of large airplanes at 60% useful load
- FAA AC 150/5300-13 specifies a runway width of 150 feet for an airport reference code of C-IV

Runway Approach Areas

- Approach surfaces and Runway Protection Zones (RPZs) are critical elements used during the runway design process. The purpose of approach surfaces and RPZs are to increase safety and promote efficiency for aircraft operating at an airport. Both elements are described in further detail below.
- An approach surface is an imaginary plane that begins at the end of the primary surface and extends outward and upward up to a distance of ten miles. The width and slope of this surface is based on the type of runway usage.
- A Runway Protection Zone (RPZ) is an area located at ground level that provides unobstructed passage of landing aircraft through the airspace directly above and is used to protect the people and property located on the ground.

Runway Approach Areas



Landside Facility Requirements

- Landside Facility Requirements include:
  - **General Aviation Terminal**
  - **Aircraft Apron and Parking**
  - **Based Aircraft Storage**
  - **Aviation Fuel Storage Facilities**
  - Aircraft Maintenance Facilities
  - Vehicular Parking
  - Aircraft Rescue and Fire Fighting (ARFF) Support
  - Airport Maintenance

General Aviation Terminal

- The existing terminal building at Fox Airfield is approximately 5,000 square feet in size.
- Using a planning assumption of 40 square feet per peak hour passenger, the terminal building at Fox Airfield should be approximately 10,000 square feet.
- An estimated 2.5 pilot/passengers are assumed per peak hour operation

General Aviation Terminal

Table 4.9: General Aviation Terminal Requirements

Name	2014	2019	2029
Peak Hour Operations	21	23	28
Total Peak Occupants (2.5)	53	58	70
Area/Occupant (SF)	45	45	45
Total Building Area (SF)	**2,385**	**2,610**	**3,150**

Other Facility Requirements

- Ground Access
  - Need for additional access points
- Airport Security
  - Additional/Replacement perimeter fencing
  - Electronic gate upgrades
  - Local police patrol agreement
- Land Area Requirements
  - Current airport acreage (50 acres) sufficient throughout 20-year planning period

Fox Airfield Master Plan Update

Sign up here to stay informed about the study!

Name	Street Address	City	State	Zip	Email Address
Comments					
Comments					
Comments					
Comments					
Comments					

Next Steps

- Submit aviation forecasts to client
- Upload approved draft inventory and aviation forecast chapters to Fox Airfield Project Solve Website
- Complete Facility Requirements, Demand/Capacity, and Alternatives
- Identify time for next TAC meeting

FOX AIRFIELD MASTER PLAN

Technical Advisory Committee Meeting
General William J. Fox Airfield, Lancaster
Tuesday, October 26, 2010 – 9 am

NAME ORGANIZATION / AFFILIATION	ADDRESS	MOBILE PHONE / EMAIL
Name CHRIS LUDLUM	*Address* 44933 FERN AVENUE	*Mobile Phone* (661) 510. 3854
Organization/Affiliation CITY OF LANCASTER	*City & Zip* LANCASTER 93534	*Email* cludlum@cityoflancasterca.org
Name LUIS GARIBAY	*Address* 44933 FERN AVENUE	*Mobile Phone* 661. 916. 4603
Organization/Affiliation CITY OF LANCASTER	*City & Zip* LANCASTER 93534	*Email* lgaribay@colra.org
Name Patrick DiLeva	*Address* 900 S. Fremont	*Mobile Phone* 626-614-4196
Organization/Affiliation County of LA - Dept. of PW	*City & Zip* Alhambra, CA. 91803	*Email* pdileva@dpw.lacounty.gov
Name JASON MORGAN	*Address* SAME	*Mobile Phone* 626-262-2565
Organization/Affiliation COUNTY OF LA - DEPT OF PW	*City & Zip*	*Email* jmorgan@dpw.lacounty.gov
Name Richard Smith	*Address*	*Mobile Phone* 626-300 4600 (office)
Organization/Affiliation County of Los Angeles - Public Works	*City & Zip*	*Email* rsmith@dpw.lacounty.gov

FOX AIRFIELD MASTER PLAN

Technical Advisory Committee Meeting
General William J. Fox Airfield, Lancaster
Tuesday, October 26, 2010 – 9 am

NAME ORGANIZATION / AFFILIATION	ADDRESS	MOBILE PHONE / EMAIL
Name: Steve Irving	Address: 4555 W Ave G	Mobile Phone: (661) - 917-1446
Organization/Affiliation: American Airports	City & Zip: LANCASTER CA 93536	Email: SIrving@americanairports.net
Name: Scott Wardle	Address: 16461 Sherman Way Suite 170a	Mobile Phone: 310-699-3569
Organization/Affiliation: American Airports Corp.	City & Zip: Van Nuys, CA 91406	Email: swardle@americanairports.net
Name: Bart Gover	Address:	Mobile Phone:
Organization/Affiliation: PB	City & Zip:	Email:
Name: Chester Britt	Address:	Mobile Phone:
Organization/Affiliation: Arellano Associates	City & Zip:	Email:
Name: Esa Angomanz	Address:	Mobile Phone:
Organization/Affiliation: Arellano Associates	City & Zip:	Email:

FOX AIRFIELD MASTER PLAN

Technical Advisory Committee Meeting
General William J. Fox Airfield, Lancaster
Tuesday, October 26, 2010 – 9 am

NAME ORGANIZATION / AFFILIATION	ADDRESS	MOBILE PHONE / EMAIL
Name Harvey Holloway	*Address*	*Mobile Phone* (661) 609 8123
Organization/Affiliation Aviation commission	*City & Zip*	*Email* harvey@cbcvalleyrealty.com
Name Peter Amundson	*Address* 275 W Longden Ave	*Mobile Phone* 626 664-3433
Organization/Affiliation Aviation Commission	*City & Zip* Arcadia Ca 91007	*Email* Peter@KeepArcadiaGreat.com
Name Vern Lawson	*Address*	*Mobile Phone*
Organization/Affiliation	*City & Zip*	*Email*
Name	*Address*	*Mobile Phone*
Organization/Affiliation	*City & Zip*	*Email*
Name	*Address*	*Mobile Phone*
Organization/Affiliation	*City & Zip*	*Email*

FOX AIRFIELD MASTER PLAN

Tenant Committee Meeting
General William J. Fox Airfield, Lancaster
Tuesday, October 26, 2010 – 10:30 am

NAME ORGANIZATION / AFFILIATION	ADDRESS	MOBILE PHONE / EMAIL
Name Bruce Allan Bell	Address 4555 West Ave G Suite 10	Mobile Phone 661 718 9671
Organization/Affiliation Exodus Air Service Corp	City & Zip Lancaster CA 93536	Email aircrfixr@aol.com
Name RAY KEECH	Address 38650 2ND ST E	Mobile Phone 661-219-1425
Organization/Affiliation American Airports	City & Zip Palmdale 93550	Email
Name MARK NEUFELD	Address 7145 DANA DR. PALMDALE 93551	Mobile Phone mneufeld@verizon.net 661-714-2402
Organization/Affiliation	City & Zip	Email
Name JEFF HANEY	Address 4555 W AVE G SUITE 6	Mobile Phone (661)400-1149
Organization/Affiliation MH AVIATION INC	City & Zip LANCASTER 93536	Email
Name MIKE HANEY	Address 4535 W. AVE "G", SUITE 6	Mobile Phone 805 341 2025
Organization/Affiliation MH AVIATION, INC	City & Zip LANCASTER 93536	Email MHAVIATIONINC@SBCGLOBAL.NET

FOX AIRFIELD MASTER PLAN

Tenant Committee Meeting
General William J. Fox Airfield, Lancaster
Tuesday, October 26, 2010 – 10:30 am

NAME ORGANIZATION / AFFILIATION	ADDRESS	MOBILE PHONE / EMAIL
Name Steve Irving	*Address*	*Mobile Phone*
Organization/Affiliation American Airports	*City & Zip*	*Email*
Name Scott Wadke	*Address*	*Mobile Phone*
Organization/Affiliation American Airports Corp	*City & Zip*	*Email*
Name Bart Gover	*Address*	*Mobile Phone*
Organization/Affiliation PB	*City & Zip*	*Email*
Name Chuck	*Address*	*Mobile Phone*
Organization/Affiliation PB	*City & Zip*	*Email*
Name Chester Britt	*Address*	*Mobile Phone*
Organization/Affiliation Arellano Associates	*City & Zip*	*Email*

FOX AIRFIELD MASTER PLAN

Tenant Committee Meeting
General William J. Fox Airfield, Lancaster
Tuesday, October 26, 2010 – 10:30 am

NAME ORGANIZATION / AFFILIATION	ADDRESS	MOBILE PHONE / EMAIL
Name Erin Arpmaniz	*Address*	*Mobile Phone*
Organization/Affiliation Arellano Associates	*City & Zip*	*Email*
Name	*Address*	*Mobile Phone*
Organization/Affiliation	*City & Zip*	*Email*
Name	*Address*	*Mobile Phone*
Organization/Affiliation	*City & Zip*	*Email*
Name	*Address*	*Mobile Phone*
Organization/Affiliation	*City & Zip*	*Email*
Name	*Address*	*Mobile Phone*
Organization/Affiliation	*City & Zip*	*Email*
Name	*Address*	*Mobile Phone*
Organization/Affiliation	*City & Zip*	*Email*

The William J. Fox Airfield Master Plan Update

Technical Advisory Committee Meeting
March 8, 2011

The William J. Fox Airfield Master Plan Update

Tenant Committee Meeting
March 8, 2011

Agenda

- Introduction
- Project Update
- Alternatives Analysis Objective
- Alternatives Introduction
- Alternative Evaluation Criteria
- TAC Feedback
- Next Steps
- Adjourn

Project Update

- Since our last meeting:
  - Finalized the aviation forecasts
  - Finalized the Demand/Capacity Analysis
  - Refined facility requirements
  - Developed preliminary alternatives

Alternatives Analysis Objective

- To identify a set of development alternatives that will accommodate the needs of the Airport over a 20-year period (2009-2029)

Alternatives Introduction

- Four alternatives
  - Three development
    - Alternatives A, B and C
  - One no-build (limited development)
    - Alternative D
- Preview

Alternative A

- Assumes commercial service airport with scheduled airline(s)
- Separate new terminal building
- GA continues as majority of aircraft activity
- ULTIMATE BUILD-OUT OF FOX AIRFIELD

Alternative A

Alternative A

- 5,500 SF terminal building
- 500-space automobile parking area
- Aircraft Rescue and Fire Fighting (ARFF) station
- Entrance road to the terminal building
- Helipad/helicopter parking places
- New helicopter area access road and gate
- Expanded general aviation apron with additional individual hangars
- New individual hangars west of the existing GA area

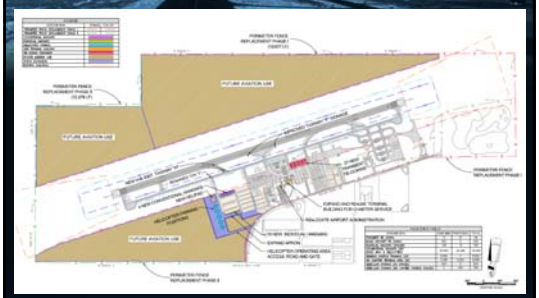
Alternative A

- New aircraft tie downs east of existing fuel island
- Expansion capability for USFS
- Air cargo complex on north side
- Helipad on north side
- New parallel taxiway north of Runway 6-24

Alternative A

- New high speed taxiway exit
- New or expanded high-end FBO (north side)
- Development on north side: golf course, aeronautical school, parking area for non-flight worthy aircraft, hotel, and restaurant
- Perimeter fence replacement
- Pavement maintenance

Alternative B



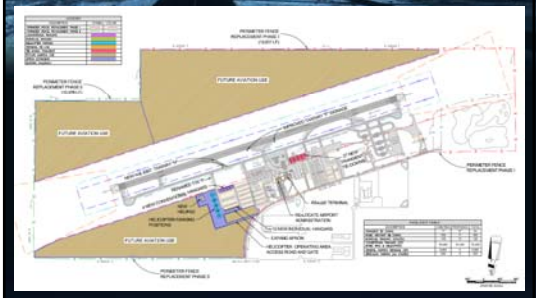
Alternative B

- Fox Airfield remains a GA facility with regularly scheduled charter service
- Renovations to existing terminal
- One flight per day

Alternative B

- Airport management and other tenants relocate to former FSDO building (vacant)
- Helipad/helicopter parking places
- New helicopter area access road and gate
- Expand GA apron for 10 new hangars
- Four new conventional hangars
- 27 new aircraft tie downs east of existing fuel island
- New high-speed taxiway exit
- Perimeter fence replacement
- Airfield signage improvements

Alternative C



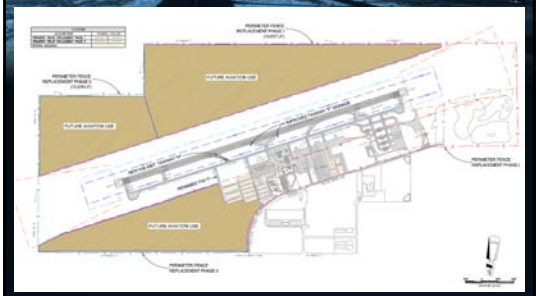
Alternative C

- Fox Airfield remains a GA facility with limited charter service in the existing terminal building
- Current airport management activities are moved to the former FSDO building
- Two to four charter flights per week

Alternative C

- Airport management and other tenants relocate to former FSDO building (vacant)
- Helipad/helicopter parking places
- New helicopter area access road and gate
- Expand GA apron for 10 new hangars
- Four new conventional hangars
- 27 new aircraft tie downs east of existing fuel island
- New high-speed taxiway exit
- Perimeter fence replacement
- Airfield signage improvements

Alternative D



Alternative D

- Fox Airfield remains a GA facility as it is today with limited charter activity using the Airport's existing facilities
- Current ACIP projects:
  - New high-speed taxiway exit
  - Perimeter fence replacement
  - Airfield signage improvements
  - Pavement maintenance
-

Alternatives Evaluation Criteria

- Long Term Aviation Needs
- Safety of Aircraft Operations
- Community and Environmental Compatibility
- Future Flexibility
- Constructability
- Operational Efficiency
- Cost Effectiveness

Alternative A

- Pros:
  - Full build-out of Fox Airfield beyond planning period
  - Creates significant number of community/individual hangars and tie-downs
  - Creates opportunity for significant increase in based aircraft
  - Allows airport to expand its capacity to accommodate more GA traffic
  - Creates two helicopter operations areas

Alternative A

- Expands service from a charter operation to full passenger service
- Creates separate and distinct operating areas for GA, helicopter, passenger service, and USFS
- Offers most opportunity for future GA and helicopter operations
- Enables the USFS to expand to the west
- Offers most flexibility for future development opportunities on the north side of the airfield

Alternative A

- Uses the areas immediately west of the existing GA hangars
- It provides the most operational efficiency
- Compatible with current land use plans
- Major economic opportunities for Airport and surrounding area

- Cons
  - Allows for new facilities to the north but at higher cost than other alternatives
  - Utilities may have to be extended westward and northward from their current locations
  - Creates the most new impervious surfaces

Alternative B

- Pros
  - Meets 20-year facility requirements
  - Creates additional community/individual hangars and tie-downs
  - Allows for increase in based aircraft
  - Allows the airport to expand to accommodate more GA traffic, helicopter, and charter operations
  - Expands existing terminal to accommodate growth in charter activity
  - Offers flexibility for future aviation uses on the north and west side of airfield
  - Includes perimeter fence project

Alternative B

- Improves operational efficiency via high-speed taxiway exit
- Access to existing utilities
- Compatible with current land use plans
- Economic opportunity for Airport

- Cons
  - Shows less over long-term development
  - Creates new impervious surfaces
  - Airport administration has to move

Alternative C

- Pros
  - Meets 20-year facility requirements
  - Creates additional community/individual hangars and tie-downs
  - Allows for increase in based aircraft
  - Allows airport to accommodate more helicopter operations
  - Uses existing terminal to accommodate limited charter service
  - Offers flexibility for future aviation uses on north and west side of airfield
  - Improves operational efficiency via high-speed taxiway exit

Alternative C

- Includes perimeter fence project
- Access to existing utilities
- Compatible with current land use plans
- Economic opportunity for Airport

- Cons
  - Shows less over long-term development
  - Relocates administrative offices and functions
  - Creates new impervious surfaces

Alternative D

- Pros
  - Offers flexibility for future aviation uses on north and west side of airfield
  - Improves operational efficiency via high-speed taxiway exit
  - Improves signage at Taxiway F
  - Includes perimeter fence project
  - Lowest overall cost among alternatives
  - Compatible with current land use plans

Alternative D

- Cons
  - Provides no facilities for increase in based aircraft
  - Limited economic impact to Airport or surrounding area
  - Does not meet 20-year facility requirements
  - No development over long-term
  - Does not provide dedicated space for charter operations
  - Limited economic benefit to surrounding economy

Preferred Alternative

- Selecting a preferred alternative
  - Technical Advisory Committee Feedback
  - County of Los Angeles Feedback
  - Consultant recommendations
- Open discussion
  - Consensus

Next Steps

- Submit facility requirements chapter
- Finalize alternatives analysis/submit alternatives chapter
- Initiate environmental overview using preferred alternative
- Develop Airport Layout Plan Set
- Develop Financial Plan & ACIP
- Conduct a public meeting (TBD)
- Submit draft master plan & ALP to FAA

Fox Airfield Master Plan Update

Sign up here to stay informed about the study!

Name	Street Address	City	State	Zip	Email Address
Comments					
Comments					
Comments					
Comments					
Comments					

FOX AIRFIELD MASTER PLAN

Technical Advisory Committee Meeting
General William J. Fox Airfield, Lancaster
Tuesday, March 3, 2011 – 9 am

NAME ORGANIZATION / AFFILIATION	ADDRESS	MOBILE PHONE / EMAIL
Name Chris Ludlum	Address 44933 N. Fern Ave	Mobile Phone (661) 510-3854
Organization/Affiliation City of Lancaster	City & Zip Lancaster CA 93534	Email cludlum@cityoflancasterca.org
Name Luis Gariban	Address 44933 Fern Ave	Mobile Phone 661. 816. 4608.
Organization/Affiliation City of Lancaster	City & Zip Lancaster, CA 93534	Email lgariban@colra.org
Name Richard Smith	Address 900 S. Fremont Ave, A-9E	~~Mobile~~ Phone 626. 300. 4600
Organization/Affiliation LA County airports	City & Zip Alhambra, CA. 91803	Email rsmith@dpw.lacounty.gov
Name Patrick DiLeva	Address 900 S. Fremont Ave. A-9E	Mobile Phone 626-300-4615
Organization/Affiliation LA County Airports	City & Zip Alhambra, CA. 91803	Email pdileva@dpw.lacounty.gov
Name Peter Amundson	Address 275 W Longden Ave	Mobile Phone 626 664 3433
Organization/Affiliation LA County Aviation Commissn	City & Zip Arcadia Ca 91007	Email PeterA Keep Arcadia Green.com

FOX AIRFIELD MASTER PLAN

Technical Advisory Committee Meeting
General William J. Fox Airfield, Lancaster
Tuesday, March 3, 2011 – 9 am

NAME ORGANIZATION / AFFILIATION	ADDRESS	MOBILE PHONE / EMAIL
Name Harvey Holloway	*Address* 42402 10th St W Suite E	*Mobile Phone* 661 609-8173
Organization/Affiliation LA County, Aviation Commission	*City & Zip* Lancaster, CA 93534	*Email* harvey@cbcvalleyrealty.com
Name Steve Irving	*Address* 4555 West Avenue G	*Mobile Phone*
Organization/Affiliation Fox Airfield/American Airports	*City & Zip* Lancaster 93536	*Email* sirving@americanairports.net
Name Scott Wadlow	*Address* 16461 Sherman Way #170B	*Mobile Phone*
Organization/Affiliation American Airports	*City & Zip* Van Nuys 91406	*Email* swadlow@americanairports.net
Name Barbara Michael	*Address* 1951 Bishop Lane #203	*Mobile Phone*
Organization/Affiliation PB Americas, Inc.	*City & Zip* Louisville, KY 40218	*Email* michaelb@pbworld.com
Name Bart Gover	*Address* 2333 Alumni Park Plaza #330	*Mobile Phone*
Organization/Affiliation PB Americas, Inc.	*City & Zip* Lexington, KY 40517	*Email* gover@pbworld.com

FOX AIRFIELD MASTER PLAN

Technical Advisory Committee Meeting
General William J. Fox Airfield, Lancaster
Tuesday, March 3, 2011 – 9 am

NAME ORGANIZATION / AFFILIATION	ADDRESS	MOBILE PHONE / EMAIL
Name Edgar Argomaniz	Address 13791 Roswell Ave., #A	Mobile Phone
Organization/Affiliation Arellano Associates	City & Zip Chino 91710	Email eargomaniz@arellanoassociates.com
Name Chester Britt	Address 13791 Roswell Ave., #A	Mobile Phone
Organization/Affiliation Arellano Associates	City & Zip Chino 91710	Email cbritt@arellanoassociates.com
Name	Address	Mobile Phone
Organization/Affiliation	City & Zip	Email
Name	Address	Mobile Phone
Organization/Affiliation	City & Zip	Email
Name	Address	Mobile Phone
Organization/Affiliation	City & Zip	Email

County of Los Angeles
Department of Public Works
Aviation Division
Public Workshop Announcement
General William J. Fox Airfield

The County of Los Angeles Department of Public Works, Aviation Division will host a public workshop on Tuesday, January 10, 2012, from 4:00 p.m. to 6:00 p.m. at General William J. Fox Airfield terminal lobby at 4555 West Avenue G, Lancaster, California. The purpose of this public workshop is to provide the general public with an overview of the recommendations included in the General William J. Fox Airfield Master Plan Update. This workshop will be conducted in an open-house format.

The General William J. Fox Airfield Master Plan Update

Technical Advisory Committee Meeting
January 10, 2012

Agenda

- Introduction
- Project Update
- Overview of Alternatives A, B, C, D
- Alternatives Evaluation
- Preferred alternative
- Recommended projects
- Draft Airport Plans Package
- Financial/funding plan
- Next Steps
- Conclusion

Project Update

- Overview of work preformed since last TAC meeting:
  - Finalized facility requirements
  - Revised alternatives
  - Recommended 65 airport improvement projects
  - Developed a draft Airport Layout Plan
  - Created financial funding plan

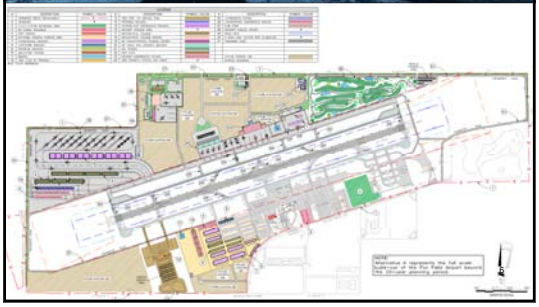
Brief overview of Alternatives

- Four alternatives
  - Three development – A, B, C
  - One no-build (limited development) - D
- Preview

Alternative A

- Fox Airfield transitions into a commercial service FAR Part 139 airport.
  - new terminal building on north side to accommodate future passenger service
  - General aviation will make up the majority of operations and activity at the Airport
  - Aviation and non aviation revenue generating facilities
- ULTIMATE BUILD-OUT OF FOX AIRFIELD

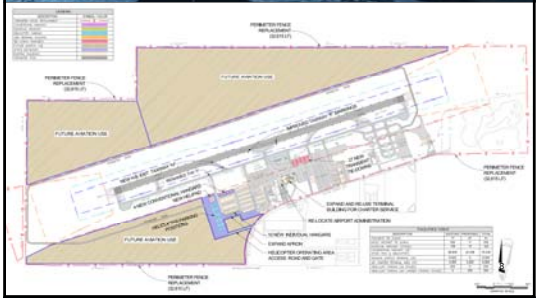
Alternative A



Alternative B

- Fox Airfield remains a general aviation airport
  - Assumes FAR Part 135 Commuter or On Demand Service occurs on a regular basis
    - (minimum of 1 flight per day)
  - Existing terminal building is retrofitted to serve and support the Part 135 operations
  - Current airport administrative functions are relocated to the former FSDO building

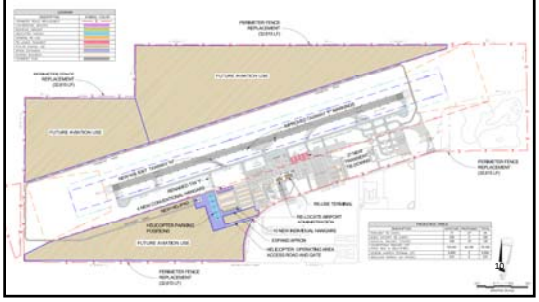
Alternative B



Alternative C

- Fox Airfield remains a general aviation airport
  - Occasional FAR Part 135 Commuter or On Demand Service occurs on a non scheduled basis
  - Existing terminal and former FSDO building remain unchanged

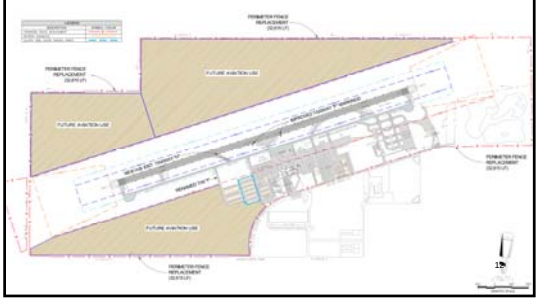
Alternative C



Alternative D

- Fox Airfield remains a general aviation airport
  - Facility requirements are not achieved over 20-year planning period
  - Future development includes only those projects identified on Fox Airfield's current ACIP
    - includes new high speed taxiway exit, perimeter fence replacement, slurry seal GA apron pavement maintenance.

Alternative D



Evaluation of Alternatives

- Evaluation criteria
  - Long Term Aviation Needs and Future Flexibility
  - Operational Efficiency
  - Cost Effectiveness
  - Community and Environmental Compatibility
- Overall Evaluation (Table 5.4)

Table 5.4: Overall Alternatives Evaluation

Resource Areas	Alternative A	Alternative B	Alternative C	Alternative D
Long Term Aviation Needs and Future Flexibility	●	●	●	○
Operational Efficiency	●	◗	◗	○
Cost Effectiveness	○	◗	◗	●
Community and Environmental Compatibility	●	●	●	●
Rating	Good (3.0)	Good (3.0)	Good (3.0)	Fair (2.0)

Legend: ● = Good (1) ◗ = Fair (.5) ○ = Poor (0) NR = No Rating

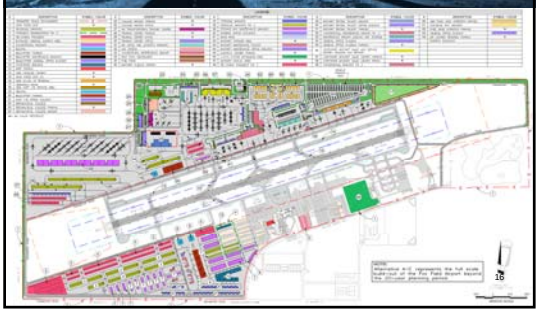
Identification of the Preferred Alternative

- The selection of preferred alternative included:
  - feedback of the Technical Advisory Committee (TAC)
  - results of the alternatives evaluation analysis
  - ability to meet the goals and objectives
- Alternatives A, B and C were rated Good
- Alternative D was rated Fair – does not meet future needs of the Airport and was dismissed
- Alternatives B and C have some new development but do not achieve overall level of revenue generation as Alternative A
- Alternative A was selected as the preferred alternative

Development of Alternative A-1

- Alternative A-1 (hybrid of Alternative A) was created to reflect the full development of the North Airfield
- As in Alternative A, many of the projects within Alternative A-1 are beyond the traditional 20-year planning period
- Projects shown in Alternative A-1 are demand driven; therefore, no formal implementation schedule exits

Preferred Alternative A-1



Recommended Airport Improvement Projects

- 65 Total recommended projects
- Key projects include:
  - New Part 139 terminal building
  - Aircraft Rescue and Fire Fighting (ARFF) Station
  - New helipad/helicopter parking positions
  - New aircraft fueling station (north airfield)
  - Expansion of the south general aviation area
  - New individual and corporate hangars
  - Replace existing RW 6-24 with concrete

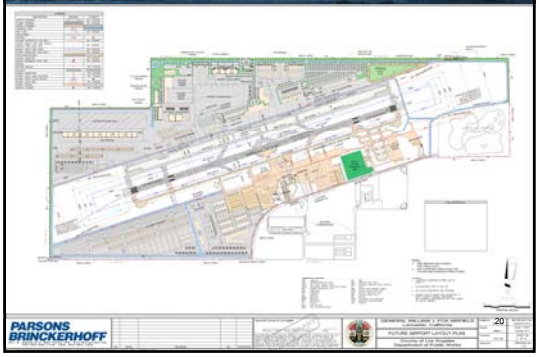
Development of Airport Plans Package

- Airport Plans Package includes 14 drawings:
  - Cover Sheet
  - Airport Data Sheet
  - Airport Layout Plan
  - **Future Airport Layout Plan**
  - Terminal Area Plan (North)
  - Terminal Area Plan (South)
  - Building Facilities Plan
  - Approach Plan (FAR Part 77)
  - Airspace Obstruction and Runway Approach Plan (Runway 6)
  - Airspace Obstruction and Runway Approach Plan (Runway 24)
  - On-Airport Land Use Plan
  - **Off-Airport Land Use Plan**
  - Airport Property Map (Exhibit A)
  - Airport Photograph

Airport Layout Plan (ALP)

- Guides the airport's development over 20 year time frame
- Developed under the guidelines in FAA Advisory Circular 150/5300-13, Airport Design, Change 16
- Includes prominent airport features
  - examples
- Organized into three phases
  - Phase I: 2009-2013
  - Phase II: 2014-2018
  - Phase III: 2019-2029
- Requires FAA Approval

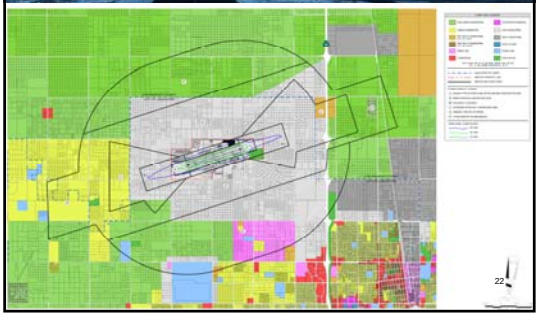
Draft ALP



Off-Airport Land Use Plan

- Identifies the existing and future land uses surrounding the Airport
- Displays long-term noise contours produced using
- FAA's Integrated Noise Model (INM) version 7.01b
- Community Noise Equivalent Level (CNEL)
- 65 CNEL noise contour remains within airport property
- Only one land use type (light industrial) lies within the 65 CNEL contour.

Off Airport Land Use Plan



Financial/Funding Plan

- Fox Airfield Financial Structure
- ACIP Costs and Phasing
- ACIP Funding
- Operating Expenses
- Revenues
- Summary and Recommendations

Fox Airfield Financial Structure

- The County of Los Angeles owns and operates Fox Airfield as a part of the Aviation Enterprise Fund
  - Entirely or predominantly self-supporting by user charges
- The annual budget for the Aviation Enterprise Fund is approved by the County of Los Angeles' Board of Supervisors.
  - Revenues derived from: fuel flowage fees, leases, and contract payment from the airport management company

Fox Airfield Financial Structure

- The County of Los Angeles uses an accrual basis in accordance with Generally Accepted Accounting Principles (GAAP).
- Fox Airfield is financially self-sustaining and does not receive tax dollars for its operating costs
- Fox Airfield has historically received grants from the FAA and CalTrans to fund capital improvements
  - It is assumed that Fox Airfield will continue receiving grants from FAA
- The County of Los Angeles fiscal year begins July 1

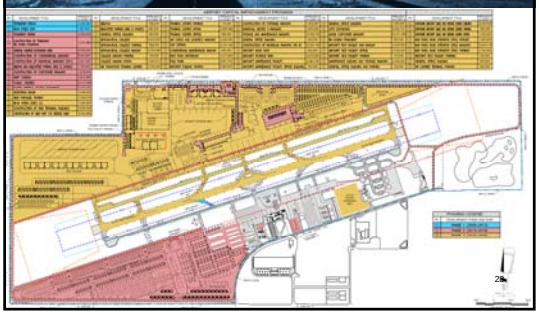
ACIP Costs and Phasing

- Phasing plan and cost estimates undertaken using a planning level of detail
- Approximately $243.1 million (in 2011 dollars) in phased capital improvements are projected through 2029
- **Table 7.1** and Exhibit 6-1 show these capital improvements projects

Proposed Capital Improvement Projects

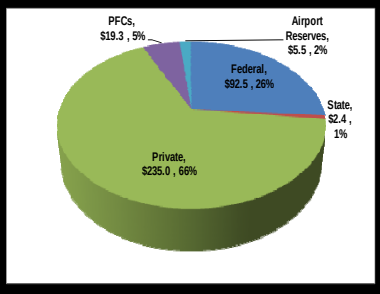
- See 24 x 36 board for Table 7.1

Capital Improvement Phasing Plan



ACIP Funding

- Future potential funding sources



Operating Expenses

- Operating expenses include services provided by other County of Los Angeles divisions, contract administration, and fuel credits
- Additional operating expenses will occur when passenger service is initiated
- Passenger fees will cover 75% of total expenses

Revenues

- Revenue Sources
  - contract payments from the airport management company
  - fuel flowage fees
  - Future passenger fees
  - Rents/lease payments from future developments
- Inflation rate of 2.7 percent was applied to actual FY 2010 operating revenues
  - Assumed each year thereafter

Revenues

- 10-year annual average historical consumer price index (CPI) used for inflation rate
  - from the Los Angeles Combined Metropolitan Statistical Area (CMSA)
- The following assumptions were applied to develop the revenue projections:
  - Fuel flowage fees increase at the same rate as aircraft operations
  - Passenger and concessions fees will be collected from any airline providing scheduled service
  - A fee of $6.00 per enplanement will be collected
  - $6.00 fee is projected to increase with inflation and is in addition to any PFCs approved for eligible projects

Summary and Recommendations

- The Master Plan Update improvements are:
  - financially feasible
  - assumed to be completed some FAA discretionary grants
- Fox Airfield is projected to be financially self-sufficient and adequate funds are projected to be available to implement the ACIP
  - Should the projected level of discretionary funding not be received, the County of Los Angeles may have to re-evaluate the phasing of the ACIP

Next Steps

- Finalize Airport Layout Plan Set
- Conduct a public meeting
  - January 10, 2012 from 4-6 pm
- Submit draft master plan & ALP to FAA

Fox Airfield Master Plan Update

Sign up here to stay informed about the study!

Name	Street Address	City	State	Zip	Email Address
Comments					
Comments					
Comments					
Comments					
Comments					

Fox Airfield Master Plan Update: TAC Meeting RSVPs 1-10-12

TAC RSVP Organization Last Name First Name	Dept Title	Address City	Zip	Phone Email
Confirmed TAC Meeting				
American Airports				
Wardle Scott	Regional Director of Operations	16461 Sherman Way, #170B Van Nuys	91406	818-285-0931 swardle@americanairports.net
City of Lancaster				
Ludlum Chris	Management Analyst	44933 Fern Avenue Lancaster	93534	661-723-5958 cludlum@cityoflancasterca.org
Los Angeles County Aviation Commission				
Amundson Peter	Aviation Commissioner	275 W. Longden Ave., P.O. Arcadia	91007	626-664-3433 peter@keeparcadiagreat.com
Los Angeles County Dept. of Regional Planning				
Franco-Rogan Susana	Principal Planner	320 W. Temple Street Los Angeles	90012	213-974-6425 sfranco-rogan@planning.lacounty.gov
Confirmed TAC Meeting/Public Workshop				
Los Angeles County Board of Supervisors, District 5				
Hickling Norm	Office of Supervisor Antonovich Senior Deputy	1113 W. Avenue M-4, Suite Palmdale	93551	661-726-3600 nhickling@bos.lacounty.gov

TAC RSVP Organization Last Name First Name	Dept Title	Address City	Zip	Phone Email
No response				
American Airports				
Irving Steve	Manager, Fox Airfield	4555 West Avenue G Lancaster	93536	661-917-1446 or 6 sirving@americanairports.net
City of Lancaster				
Garibay Luis		44933 Fern Avenue Lancaster	93534	661-723-6110 lgaribay@cityoflancasterca.org; lgaribay@colra.org
Lawson Vern	Economic Development/Redevelopment Dire	44933 Fern Avenue Lancaster	93534	661-723-6108 vlawson@cityoflancasterca.org
Los Angeles County Aviation Commission				
Holloway Harvey	Aviation Commissioner	42402 Tenth St. West, #E Lancaster	93534	661-948-2644 harvey@cbcvalleyrealty.com; hholloway@cbcworldwide.com
Regrets				
City of Lancaster				
Rizzo Nicole	Management Analyst	44933 Fern Avenue Lancaster	93534	661-723-5893 nrizzo@cityoflancasterca.org
Los Angeles County Board of Supervisors, District 5				
Grooms Richard	Office of Supervisor Antonovich	1113 W. Avenue M-4, Suite Palmdale	93551	661-726-3600 rgrooms@lacbos.org

The William J. Fox Airfield Master Plan Update

Technical Advisory Committee Meeting
January 10, 2012

Agenda

- Introduction
- Project Update
- Overview of Alternatives A, B, C, D
- Alternatives Evaluation
- Preferred alternative
- Recommended projects
- Draft Airport Plans Package
- Financial/funding plan
- Next Steps
- Conclusion

Project Update

- Overview of work preformed since last TAC meeting:
  - Finalized facility requirements
  - Revised alternatives
  - Recommended 65 airport improvement projects
  - Developed a draft Airport Layout Plan
  - Created financial funding plan

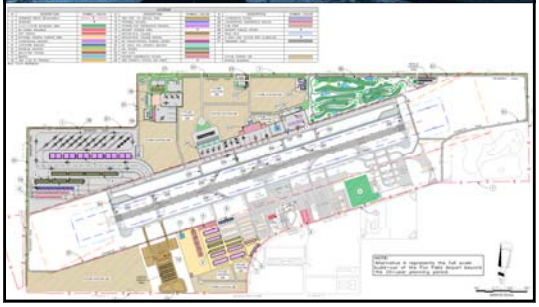
Brief overview of Alternatives

- Four alternatives
  - Three development – A, B, C
  - One no-build (limited development) - D
- Preview

Alternative A

- Fox Airfield transitions into a commercial service FAR Part 139 airport.
  - new terminal building on north side to accommodate future passenger service
  - General aviation will make up the majority of operations and activity at the Airport
  - Aviation and non aviation revenue generating facilities
- ULTIMATE BUILD-OUT OF FOX AIRFIELD

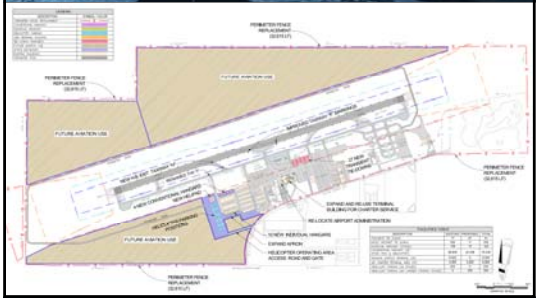
Alternative A



Alternative B

- Fox Airfield remains a general aviation airport
  - Assumes FAR Part 135 Commuter or On Demand Service occurs on a regular basis
    - (minimum of 1 flight per day)
  - Existing terminal building is retrofitted to serve and support the Part 135 operations
  - Current airport administrative functions are relocated to the former FSDO building

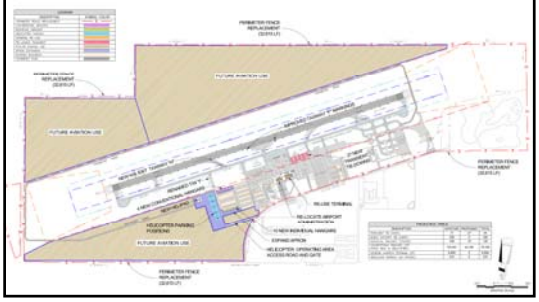
Alternative B



Alternative C

- Fox Airfield remains a general aviation airport
  - Occasional FAR Part 135 Commuter or On Demand Service occurs on a non scheduled basis
  - Existing terminal and former FSDO building remain unchanged

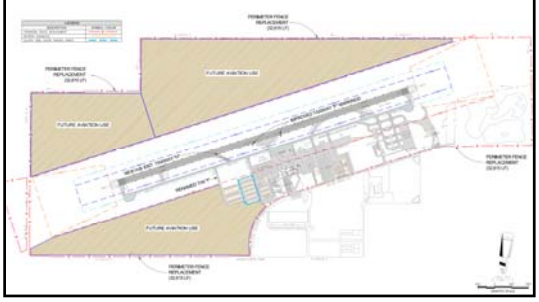
Alternative C



Alternative D

- Fox Airfield remains a general aviation airport
  - Facility requirements are not achieved over 20-year planning period
  - Future development includes only those projects identified on Fox Airfield's current ACIP
    - includes new high speed taxiway exist, perimeter fence replacement, slurry seal GA apron

Alternative D



Evaluation of Alternatives

- Evaluation criteria
  - Long Term Aviation Needs and Future Flexibility
  - Operational Efficiency
  - Cost Effectiveness
  - Community and Environmental Compatibility
- Overall Evaluation (Table 5.4)

Table 5.4: Overall Alternatives Evaluation

Resource Areas	Alternative A	Alternative B	Alternative C	Alternative D
Long Term Aviation Needs and Future Flexibility	●	●	●	○
Operational Efficiency	●	◗	◗	○
Cost Effectiveness	○	◗	◗	●
Community and Environmental Compatibility	●	●	●	●
Rating	Good (3.0)	Good (3.0)	Good (3.0)	Fair (2.0)

Legend: ● = Good (1) ◗ = Fair (.5) ○ = Poor (0) NR = No Rating

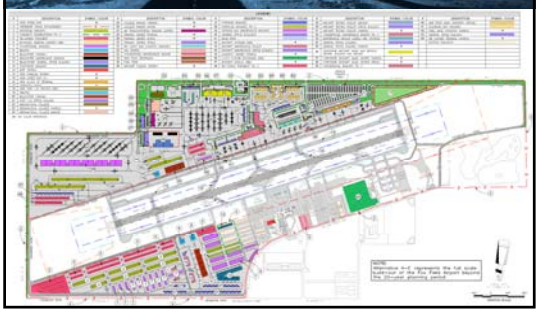
Identification of the Preferred Alternative

- The selection of preferred alternative included:
  - feedback of the Technical Advisory Committee (TAC)
  - results of the alternatives evaluation analysis
  - ability to meet the goals and objectives
- Alternatives A, B and C were rated Good
- Alternative D was rated Fair – does not meet future needs of the Airport and was dismissed
- Alternatives B and C have some new development but do not achieve overall level of revenue generation as Alternative A
- Alternative A was selected as the preferred alternative

Development of Alternative A-1

- Alternative A-1 (hybrid of Alternative A) was created to reflect the full development of the North Airfield
- As in Alternative A, many of the projects within Alternative A-1 are beyond the traditional 20-year planning period
- Projects shown in Alternative A-1 are demand driven; therefore, no formal implementation schedule exits

Preferred Alternative A-1



Recommended Airport Improvement Projects

- 65 Total recommended projects
- Key projects include:
  - New Part 139 terminal building
  - Aircraft Rescue and Fire Fighting (ARFF) Station
  - New helipad/helicopter parking positions
  - New aircraft fueling station (north airfield)
  - Expansion of the south general aviation area
  - New individual and corporate hangars
  - Replace existing RW 6-24 with concrete

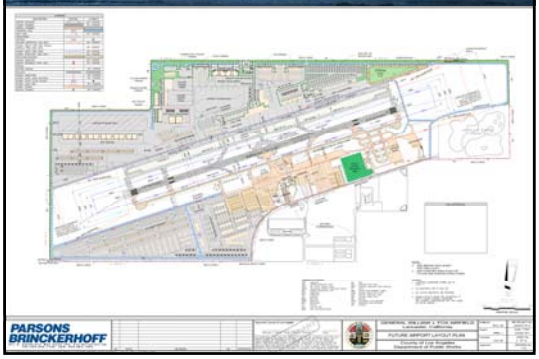
Development of Airport Plans Package

- Airport Plans Package includes 14 drawings:
  - Cover Sheet
  - Airport Data Sheet
  - Airport Layout Plan
  - **Future Airport Layout Plan**
  - Terminal Area Plan (North)
  - Terminal Area Plan (South)
  - Building Facilities Plan
  - Approach Plan (FAR Part 77)
  - Airspace Obstruction and Runway Approach Plan (Runway 6)
  - Airspace Obstruction and Runway Approach Plan (Runway 24)
  - On-Airport Land Use Plan
  - **Off-Airport Land Use Plan**
  - Airport Property Map (Exhibit A)
  - Airport Photograph

Airport Layout Plan (ALP)

- Guides the airport's development over 20 year time frame
- Developed under the guidelines in FAA Advisory Circular 150/5300-13, Airport Design, Change 16
- Includes prominent airport features
  - examples
- Organized into three phases
  - Phase I: 2009-2013
  - Phase II: 2014-2018
  - Phase III: 2019-2029
- Requires FAA Approval

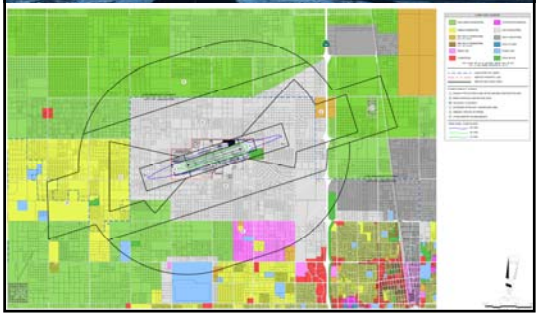
Draft ALP



Off-Airport Land Use Plan

- Identifies the existing and future land uses surrounding the Airport
- Displays long-term noise contours produced using
- FAA's Integrated Noise Model (INM) version 7.01b
- Community Noise Equivalent Level (CNEL)
- 65 CNEL noise contour remains within airport property
- Only one land use type (light industrial) lies within the 65 CNEL contour.

Off Airport Land Use Plan



Financial/Funding Plan

- Fox Airfield Financial Structure
- ACIP Costs and Phasing
- ACIP Funding
- Operating Expenses
- Revenues
- Summary and Recommendations

Fox Airfield Financial Structure

- The County of Los Angeles owns and operates Fox Airfield as a part of the Aviation Enterprise Fund
  - Entirely or predominantly self-supporting by user charges
- The annual budget for the Aviation Enterprise Fund is approved by the County of Los Angeles' Board of Supervisors.
  - Revenues derived from: fuel flowage fees, leases, and contract payment from the airport management company

Fox Airfield Financial Structure

- The County of Los Angeles uses an accrual basis in accordance with Generally Accepted Accounting Principles (GAAP).
- Fox Airfield is financially self-sustaining and does not receive tax dollars for its operating costs
- Fox Airfield has historically received grants from the FAA and CalTrans to fund capital improvements
  - It is assumed that Fox Airfield will continue receiving grants from FAA
- The County of Los Angeles fiscal year begins July 1

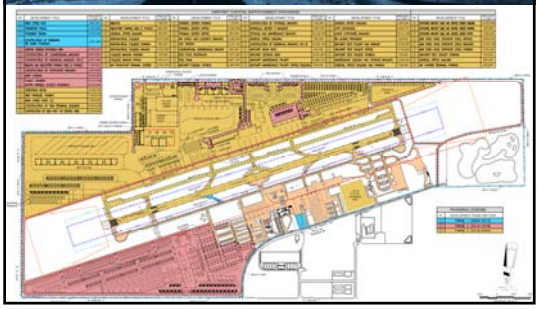
ACIP Costs and Phasing

- Phasing plan and cost estimates undertaken using a planning level of detail
- Approximately $177.5 million (in 2011 dollars) in phased capital improvements are projected through 2029
- **Table 7.1** and Exhibit 6-1 show these capital improvements projects

Proposed Capital Improvement Projects

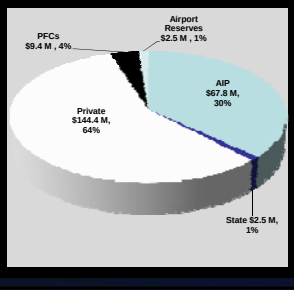
- See 24 x 36 board

Capital Improvement Phasing Plan



ACIP Funding

- Future potential funding sources



Operating Expenses

- Operating expenses include services provided by other County of Los Angeles divisions, contract administration, and fuel credits
- Additional operating expenses will occur when passenger service is initiated
- Passenger fees will cover 75% of total expenses

Revenues

- Revenue Sources
  - contract payments from the airport management company
  - fuel flowage fees
  - Future passenger fees
  - Rents/lease payments from future developments
- Inflation rate of 2.7 percent was applied to actual FY 2010 operating revenues
  - Assumed each year thereafter

Revenues

- 10-year annual average historical consumer price index (CPI) used for inflation rate
  - from the Los Angeles Combined Metropolitan Statistical Area (CMSA)
- The following assumptions were applied to develop the revenue projections:
  - Fuel flowage fees increase at the same rate as aircraft operations
  - Passenger and concessions fees will be collected from any airline providing scheduled service
  - A fee of $6.00 per enplanement will be collected
  - $6.00 fee is projected to increase with inflation and is in addition to any PFCs approved for eligible projects

Summary and Recommendations

- The Master Plan Update improvements are:
  - financially feasible
  - assumed to be completed some FAA discretionary grants
- Fox Airfield is projected to be financially self-sufficient and adequate funds are projected to be available to implement the ACIP
  - Should the projected level of discretionary funding not be received, the County of Los Angeles may have to re-evaluate the phasing of the ACIP

Next Steps

- Finalize Airport Layout Plan Set
- Conduct a public meeting
  - January 10, 2012 from 4-6 pm
- Submit draft master plan & ALP to FAA

Fox Airfield Master Plan Update

Sign up here to stay informed about the study!

Name	Street Address	City	State	Zip	Email Address
Comments					
Comments					
Comments					
Comments					
Comments					

FOX AIRFIELD MASTER PLAN

Public Workshop

Join us to learn about airport improvement recommendations being considered for the Fox Airfield

Date: Tuesday, January 10, 2012

Time: 4 p.m. to 6 p.m.

Place: General William J. Fox Airfield
4555 West Avenue G
Lancaster, CA 93536

For more information contact:

Elsa Argomaniz, Arellano Associates at
(909) 627-2974 or eargomaniz@arellanoassociates.com

Steve Irving, Fox Airfield Airport Manager,
(661) 940-1709 or sirving@americanairports.net

Appendix B

Glossary of Terms

GLOSSARY OF TERMS

A

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

AC: Advisory Circular published by the Federal Aviation Administration.

ACCOM: Accommodations

ADPM: Average Day of the Peak Month

AFB: Air Force Base

AGL: Above Ground Level

AIA: Annual Instrument Approaches

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

AIP: Airport Improvement Program of the FAA.

AIR CARRIER: The commercial system of air transportation, consisting of the certificated air carriers, air taxis (including commuters), supplemental air carriers, commercial operators of large aircraft, and air travel clubs.

AIRCRAFT LANDING GEAR: The main landing gear consists on a single wheel under each wing. Single-wheel landing gear typically used on a single-engine aircraft that weighs less than 20,000 pounds.

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 OPERATION: The airborne movement of aircraft in controlled or noncontrolled airport terminal areas and about a given en route fix or at other points where counts can be made. There are two types of operations - local and itinerant. An operation is counted for each landing and each departure, such that a touch-and-go flight is counted as two operations.

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 an 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: An area of land or water that is used or intended to be used for the landing and taking off of aircraft, and includes its buildings and facilities, if any.

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

AIRPORT ELEVATION: The highest point of an airport's usable runways, measured in feet above mean sea level.

AIRPORT LAYOUT PLAN (ALP): A scale drawing of existing and proposed airport facilities, their location on an airport, and the pertinent clearance and dimensional information required to demonstrate conformance with applicable standards.

AIRPORT MASTER PLAN (AMP): A long-range plan for development of an airport, including descriptions of the data and analyses on which the plan is based.

AIRPORT REFERENCE CODE (ARC): A coding system used to relate airport design criteria to the operational and physical characteristics of the airplanes intended to operate at an airport.

AIRPORT REFERENCE POINT (ARP): The latitude and longitude of the approximate center of the airport.

AIRPORT USE AGREEMENT: Legal contract for the air carriers' use of the airport and leases for use of terminal facilities.

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

AIR TAXI/AIR CHARTER OPERATION: Includes operations which are not major air carrier operations, but which are performed in revenue service, on aircraft with fewer than 60 seats. This includes carriage of passengers in unscheduled, on-demand operations; and cargo operations. Also includes operations of some corporate aircraft carrying passengers in unscheduled, on-demand operations.

ALSF-1: Approach Light System with Sequence Flasher Lights

GLOSSARY OF TERMS

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.

AMBIENT NOISE LEVEL: The level of noise that is all encompassing within a given environment for which a single source cannot be determined. It is usually a composite of sounds from many and varied sources near to and far from the receiver.

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

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

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

APPROACH PROTECTION EASEMENT: A form of easement which both conveys all of the rights of an avigation easement and sets specified limitations on the type of land uses allowed to be developed on the property.

APPROACH SPEED: The recommended speed contained in aircraft manuals used by pilots when making an approach to landing. This speed will vary for different segments of an approach as well as for aircraft weight and configuration.

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.

APRON: A defined area on an airport or heliport intended to accommodate aircraft for purposes of loading or unloading passengers or cargo, refueling, parking, or maintenance. With regard to seaplanes, a ramp is used for access to the apron from the water.

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.

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

ASOS: Automated Surface Observing System

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

ATCT: Airport Traffic Control Tower

ATC: Air Traffic Control

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

- A right-of-way for free and unobstructed passage of aircraft through the airspace over the property at any altitude above a surface specified in the easement (usually set in accordance with FAR Part 77 criteria).

- A right to subject the property to noise, vibrations, fumes, dust, and fuel particle emissions associated with normal airport activity.

- A right to prohibit the erection or growth of any structure, tree, or other object that would enter the acquired airspace.

- A right-of-entry onto the property, with proper advance notice, for the purpose of removing, marking, or lighting any structure or other object that enters the acquired airspace.

- A right to prohibit electrical interference, glare, misleading lights, visual impairments, and other hazards to aircraft flight from being created on the property.

B

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

BEST MANAGEMENT PRACTICES OR BMP: A term used commonly to define the physical or behavioral practices that ensure environmental protection)

BIT: Bituminous Asphalt Pavement

BLAST FENCE: A barrier used to divert or dissipate jet blast or propeller wash.

BUILDING RESTRICTION LINE: A BRL is an imaginary line which identifies suitable locations for development on an 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

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).

CEILING: Height above the earth's surface to the lowest layer of clouds or obscuring phenomena. (AIM)

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).

CHARTER OPERATION: Defined by the FAA as being a type of Air Taxi operation typically above 60 seats non-scheduled to include vacation tour groups and non-scheduled air freight operations.

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

CL: Centerline

CLEARWAY: A defined rectangular area beyond the end of a runway cleared or suitable for use in lieu of runway to satisfy takeoff distance requirements. Also known as a Runway Protection Zone (RPZ).

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

COMBINING DISTRICT: A zoning district which establishes development standards in areas of special concern over and above the standards applicable to basic underlying zoning districts.

COMMERCIAL ACTIVITIES: Airport related activities which may offer a facility, service or commodity for sale, hire or profit. Examples of commodities for sale are: food, lodging, entertainment, real estate, petroleum products, parts and equipment. Examples of services are: flight training, charter flights, maintenance, aircraft storage and tie down.

COMMERCIAL OPERATOR: A person who, for compensation or hire, engages in the carriage by aircraft in air commerce of persons or property, other than as an air carrier.

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

COMMUTER AIRLINES: A category of airline classified according to the type of aircraft used (maximum of 60 seats) and their operating frequency (at least five scheduled round trip flights per week between two or more points).

COMPATIBILITY PROGRAM: As used herein, a plan, usually adopted by an Airport Land Use Commission, which sets forth policies for promoting compatibility between airports and the land uses which surround them. Often referred to as a Comprehensive Land Use Plan (CLUP).

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.

CONCESSION AGREEMENT: An agreement between the airport and a concession regarding the conduct of business on airport property.

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

CONTROLLED AIRSPACE: An airspace of defined dimensions within which air traffic control service is provided to IFR flights and to VFR flights in accordance with the airspace classification, Class A, Class B, etc. CROSSWIND RUNWAY - A runway aligned at an angle to the prevailing wind which allows use of an airport when crosswind conditions on the primary runway would otherwise restrict use.

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

D

DAY-NIGHT AVERAGE SOUND LEVEL (DNL): The noise metric adopted by the U.S. Environmental Protection Agency for measurement of environmental noise. It represents the average daytime noise level during a 24-hour day, measured in decibels and adjusted to account for the lower tolerance of people to noise during nighttime periods.

DEBT SERVICE COVERAGE: The requirement that the airport's revenue, net of operating and maintenance expenses be equal to a specified percentage in excess of the annual debt service (principal and interest payments) for revenue bond issues.

DECIBEL (dB): A unit measuring the magnitude of a sound, equal to the logarithm of the ratio of the intensity of the sound to the intensity of an arbitrarily chosen standard sound, specifically a sound just barely audible to an unimpaired human ear. For environmental noise from aircraft and other transportation sources, an A-weighted sound level (sometimes abbreviated dBA) is normally used. The A-weighting scale

adjusts the values of different sound frequencies to approximate the auditory sensitivity of the human ear.

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.

DECLARED DISTANCES: The distances the airport owner declares available for the airplane's takeoff run, takeoff distance, accelerate-stop distance, and landing distance requirements. The distance is:

- *Accelerate-stop distance available (ASDA):* The runway plus stopway (SWY length declared available and suitable for the acceleration and deceleration of an airplane aborting a takeoff; and

- *Landing distance available (LDA):* The runway length declared available and suitable for a landing airplane.

DEED NOTICE: A formal statement added to the legal description of a deed to a property and on any subdivision map. As used in airport land use planning, a deed notice would state that the property is subject to aircraft over flights. Deed notices are used as a form of buyer notification to ensure that those who are particularly sensitive to aircraft over flights can avoid moving to the affected areas.

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.

DENSITY OF USE: As used in airport land use planning, the term refers to the number of dwelling units per gross acre for residential land uses or the number of people per acre with regard to other land uses.

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

DESIGNATED BODY: A local government entity, such as a regional planning agency or a county planning commission, chosen by the county board of supervisors and the selection committee of city mayors to act in the capacity of an airport land use commission.

DISPLACED THRESHOLD: A landing threshold that is located at a point on the runway other than the designated beginning of the runway (see Threshold).

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.

DUAL-TANDEM: The main landing gear consists of four wheels under each wing. Dual-Tandem landing gear is typically used on multi-engine aircraft weighing over 200,000 pounds.

DUAL-WHEEL: The main landing gear consists of two wheels under each wing. Dual-wheel landing gear is typically used on multi-engine aircraft weighing between 20,000 pounds up to 200,000 pounds.

E

EASEMENT: A less than fee title transfer of real property rights from the property owner to the holder of the easement.

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

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

EQUIVALENT SOUND LEVEL (LEQ): The level of constant sound which, in the given situation and time period, has the same average sound energy as does a time varying sound.

EXPERIMENTAL AIRCRAFT ASSOCIATION: A not-for-profit organization operated exclusively for educational, recreational, and charitable purposes drawing upon the surrounding community for its membership and activities which include youth programs and public services.

F

F&E: Facilities and Equipment Programming – FAA

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 77 SURFACES: Imaginary airspace surfaces established with relation to each runway of an airport. There are five types of surfaces: (1) primary; (2) approach; (3) transitional; (4) horizontal; and (5) conical.

FAR PART 91-GENRAL OPERATING AND FLIGHT RULES: This Federal Aviation Regulation (FAR) prescribes rules governing the operation of aircraft with the US.

FAR PART 139-CERTIFICATION AND OPERATIONS: Land airports serving certain air carriers. The regulation governs the certification and operation of land airports which serve any scheduled or unscheduled passenger operation of an air carrier that conducted with an aircraft having and seating a capacity of more than 30 passengers.

FAR PART 150: The Aviation Safety and Noise Abatement Act of 1979 require the FAA to establish regulations that set forth national standards for identifying airport noise and land-use incompatibilities and to develop programs to eliminate them.

FEDERAL AIRWAYS: See Low Altitude Airways.

FEDERAL AVIATION ADMINISTRATION (FAA): The U.S. government agency which is responsible for ensuring the safe and efficient use of the nation's airports and airspace.

FEDERAL AVIATION REGULATIONS (FAR): Regulations formally issued by the FAA to regulate air commerce.

FINAL APPROACH (IFR): The flight path of an aircraft which is inbound to an airport on a final instrument approach course, beginning at the final approach fix or point and extending to the airport or the point where a circle-to-land maneuver or a missed approach is executed.

FINDINGS: Legally relevant sub conclusions which expose a government agency's mode of analysis of facts, regulations, and policies, and which bridge the analytical gap between raw data and ultimate decision.

FIXED BASE OPERATOR (FBO): A business which operates at an airport and provides aircraft services to the general public, including but not limited to sale of fuel and oil; aircraft sales, rental, maintenance, and repair; parking and tie-down or storage of aircraft; flight training; air taxi/charter operations; and specialty services, such as instrument and avionics maintenance, painting, overhaul, aerial application, aerial photography, aerial hoists, or pipeline patrol.

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.

FRACTIONAL AIRCRAFT OWNERSHIP: An aircraft ownership system that is based on a user paying an annual fee to an aircraft leasing company for access to a varied selection of corporate aircraft types. Aircraft operating fees are also paid for the specific type of aircraft and the number of hours flown.

FRANGIBLE NAVAID: A navigational aid (NAVAID) which retains its structural integrity and stiffness up to a designated maximum load, but on impact from a greater load, breaks, distorts, or yields in such a manner as to present the minimum hazard to aircraft. The term NAVAID includes electrical and visual air navigational aids, lights, signs, and associated supporting equipment.

FUEL FLOWAGE FEES: Fees levied by the airport operator per gallon of aviation gasoline and jet fuel sold at the airport.

FY: Fiscal Year

G

GPS: A space-base radio positioning, navigation and time-transfer system. The system provides highly accurate position and velocity information, and precise time, on a continuous global basis, to an unlimited number of properly equipped users. The system is unaffected by weather, and provides a worldwide common grid reference system.

GENERAL AVIATION: That portion of civil aviation which encompasses all facets of aviation except air carriers.

GENERAL OBLIGATION BONDS: Bonds that are issued by states, municipalities, and other general-purpose governments and backed by the full faith, credit, and taxing power of the issuing government agency.

GLIDE SLOPE: An electronic signal radiated by a component of an ILS to provide vertical guidance for aircraft during approach and landing.

GLOBAL POSITIONING SYSTEM (GPS): A satellite based radio positioning, navigation, and time transfer system developed and used by the U.S. Department of Defense. This technology may eventually become the principal system for air navigation throughout the world.

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.

HELIPAD: A small, designated area, usually with a prepared surface, on a heliport, airport, landing/takeoff area, apron/ramp, or movement area used for takeoff, landing, or parking of helicopters.

HELIPORT: A site used for the landing and taking off of helicopters which consists of a takeoff and landing area, helipad/helideck, approach departure paths, heliport imaginary surfaces, a functioning wind cone, and sufficient lighting.

HIGH ALTITUDE AIRWAYS: See Jet Routes.

HIRL: High Intensity Runway Lights.

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

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.

INFILL: Development which takes place on vacant property largely surrounded by existing development, especially development which is similar in character.

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

INSTRUMENT APPROACH PROCEDURE: 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 landing or to a point from which a landing may be made visually. It is prescribed and approved for a specific airport by competent authority (refer to Nonprecision Approach Procedure and Precision Approach Procedures).

INSTRUMENT FLIGHT RULES (IFR): Rules governing the procedures for conducting instrument flight. Generally, IFR applies when meteorological conditions with a ceiling below 1,000 feet or visibility of less than 3 miles prevail.

INSTRUMENT LANDING SYSTEM (ILS): A precision instrument approach system which normally consists of the following electronic components and visual aids: (1) localizer; (2) Glide Slope; (3) Outer Marker; (4) Middle Marker; (5) Approach Lights.

INSTRUMENT OPERATION: An aircraft operation in accordance with an IFR flight plan or an operation where IFR separation between aircraft is provided by a terminal control facility.

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

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

INVERSE CONDEMNATION: An action brought by a property owner seeking just compensation for land taken for a public use against a government or private entity having the power of eminent domain. It is a remedy peculiar to the property owner and is exercisable by that party where it appears that the taker of the property does not intend to bring eminent domain proceedings.

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

J

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

L

LARGE AIRPLANE: An airplane of more than 12,500 pounds maximum certificated takeoff weight.

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.

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.

LIMITED PART 139-OPERATING CERTIFICATE: A certificate issued under the FAR Part 139 for the operation of an airport serving unscheduled air carrier operations.

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.

LOCALIZER (LOC): The component of an ILS which provides course guidance to the runway.

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

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

LONG: Longitude

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

LRR: Long-Range Radar

M

MALS: Medium Intensity Approach Light System

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

MALSR: MALS with Runway Alignment Indicator Lights (RAIL)
MAJOR AIRLINES: Major airlines are airlines with gross operating revenues during any calendar year of more than $1 billion; national airlines gross between $100 million and $1 billion; and regional airlines gross under $100 million.

MARKER BEACON: An electronic navigation facility which transmits a fan or bone shaped 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 aircraft operation conducted by either a fixed-wing or rotor-wing military aircraft.

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

MIRL: Medium Intensity Runway Lighting

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

MITL: Medium Intensity Taxiway Lighting

MLS: Microwave Landing System

MM: Middle Marker (part of an ILS)

MOA: Military Operations Area

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

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

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

MSL: Mean Sea Level

N

NA: Not applicable

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

NATIONAL TRANSPORTATION SAFETY BOARD (NTSB): The U.S. government agency responsible for investigating transportation accidents and incidents.

NAVIGATIONAL AID (NAVAID): Any visual or electronic device airborne or on the surface which provides point to point guidance information or position data to aircraft in flight.

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 CONTOURS: Continuous lines of equal noise level usually drawn around a noise source, such as an airport or highway. The lines are generally drawn in 5-decibel increments so that they resemble elevation contours in topographic maps.

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.

NONCONFORMING USE: An existing land use which does not conform to subsequently adopted or amended zoning or other land use development standards.

NONPRECISION APPROACH PROCEDURE: A standard instrument approach procedure in which no electronic glide slope is provided.

NONPRECISION INSTRUMENT RUNWAY: A runway with an approved or planned straight in instrument approach procedure which has no existing or planned precision instrument approach procedure.

NPI: Non-Precision Instrument Runway

NPIAS: National Plan of Integrated Airport Systems

O

OAG: Official Airline Guide

OBSTRUCTION: Any object of natural growth, terrain, or permanent or temporary construction or alteration, including equipment or materials used therein, the height of which exceeds the standard established in Subpart C of Federal Aviation Regulations Part 77, Objects Affecting Navigable Airspace.

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.

OVER FLIGHT: Any distinctly visible and audible passage of an aircraft in flight, not necessarily directly overhead.

OVER FLIGHT EASEMENT: An easement which describes the right to overfly the property above a specified surface and includes the right to subject the property to noise, vibrations, fumes and emissions. An over flight easement is used primarily as a form of buyer notification.

OVER FLIGHT ZONE: The area(s) where aircraft maneuver to enter or leave the traffic pattern, typically defined by the FAR Part 77 horizontal surface.

OVERLAY ZONE: See Combining District.

P

PAPI: Precision Approach Path Indicator

PAR: Precision Approach Radar

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

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

PEAKING OPERATION: Peak hour aircraft operational projections are required to determine the peak period capacity of a runway system, as well as for determining the size of the various functional areas of a passenger terminal.

PI: Precision Instrument Runway marking.

PLANNING AREA BOUNDARY: An area surrounding an airport designated by an ALUC for the purpose of airport land use compatibility planning conducted in accordance with provisions of the State Aeronautics Act.

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.

PRECISION APPROACH CATEGORY I (CAT I) RUNWAY: A runway with an instrument approach procedure which provides for approaches to a decision height (DH) of not less than 200 feet (60m) and visibility of not less than ½ mile (800m) or Runway Visual Range (RVR) 2400 (RVR 1800 with operative touchdown zone and runway centerline lights).

PRECISION APPROACH CATEGORY II (CAT II) RUNWAY: A runway with an instrument approach procedure which provides for approaches to a minima less than CAT I to as low as a decision height (DH).

PRECISION APPROACH CATEGORY III (CAT III) RUNWAY: A runway with an instrument approach procedure which provides for approaches to minima less than CAT II.

PRECISION INSTRUMENT RUNWAY: A runway with an existing or planned precision instrument approach procedure.

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. An airport that is open to the general public with or without a prior request to use the 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

REFERRAL AREA: The area around an airport defined by the planning area boundary adopted by an Airport Land Use Commission within which certain land use proposals are to be referred to the commission for review.

REIL: Runway End Identification Lights

RELIEVER AIRPORT: An airport designated as having the function of relieving congestion at a commercial service airport and providing more general aviation access to the overall community.

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.

REVENUE BONDS: Bonds which are payable solely from the revenues derived from the operation of a facility which was constructed or acquired with the proceeds of the bonds.

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.

ROTORCRAFT: A heavier-than-air aircraft that depends principally for its support in flight on the lift generated by one or more rotors.

RUNWAY BLAST PAD: A surface adjacent to the ends of runways provided to reduce the erosive effect of jet blast and propeller wash.

RUNWAY END IDENTIFIER LIGHTS (REIL): Two synchronized flashing lights, one on each side of the runway threshold, which provide rapid and positive identification of the approach end of a particular runway.

RUNWAY PROTECTION ZONE (RPZ): A trapezoidal shaped area off runway end to enhance the protection of people and property on the ground.

RUNWAY SAFETY AREA (RSA): A defined surface surrounding the runway prepared or suitable for reducing the risk of damage to airplanes in the event of an undershoot, overshoot, or excursion from the runway.

RVR: Runway Visual Range

RVV: Runway Visibility Value

R/W: Runway

S

SAFETY ZONE: For the purpose of airport land use planning, an area near an airport in which land use restrictions are established to protect the safety of the public from potential aircraft accidents.

SALS: Short Approach Light System

SCAG: Southern California Association of Governments

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

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

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

SHOULDER: An area adjacent to the edge of paved runways, taxiways, or aprons providing a transition between the pavement and the adjacent surface; support for aircraft running off the pavement; enhanced drainage; and blast protection.

SINGLE-EVENT NOISE: As used herein, the noise from an individual aircraft operation or over flight.

SMALL AIRPLANE: An airplane of 12,500 pounds or less maximum certificated takeoff weight. (Airport Design AC)

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

SOUND EXPOSURE LEVEL (SEL): A time integrated metric (i.e., continuously summed over a time period) which quantifies the total energy in the A-weighted sound level measured during a transient noise event. The time period for this measurement is generally taken to be that between the moments when the A-weighted sound level is 10 dB below the maximum.

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)

STRAIGHT-IN INSTRUMENT APPROACH: An instrument approach wherein a final approach is begun without first having executed a procedure turn; it is not necessarily completed with a straight-in landing or made to straight-in landing weather minimums. (AIM)

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

TAF- TERMINAL AREA FORECAST: An annual FAA forecast of aviation activity throughout the US used in the FAA's planning and decision making. The TAF is a subset of approximately 900 airports in the National Plan of Integrated Airport Systems (NPIAS) database the contains over 4000 airports.

TAKING: Government appropriation of private land for which compensation must be paid as required by the First Amendment of the U.S. Constitution. It is not essential that there be physical seizure or appropriation for a taking to occur, only that the government action directly interferes with or substantially disturbs the owner's right to use and enjoyment of the property.

TAXILANE (TL): The portion of the aircraft parking area used for access between taxiways and aircraft parking positions.

TAXIWAY (TW): A defined path established for the taxiing of aircraft from one part of an airport to another.

TAXIWAY SAFETY AREA (TSA): A defined surface alongside the taxiway prepared or suitable for reducing the risk of damage to an airplane unintentionally departing the taxiway.

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.

TERMINAL INSTRUMENT PROCEDURES (TERPS): Procedures for instrument approach and departure of aircraft to and from civil and military airports. There are four types of terminal instrument procedures: precision approach, nonprecision approach, circling, and departure.

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

THRESHOLD (TH): The beginning of that portion of the runway usable for landing. In some instances the landing threshold may be displaced. (see Displaced Threshold)

THRESHOLD LIGHTS: Fixed green lights arranged symmetrically left and right of the runway centerline, identifying the runway end.

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.

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 that is constructed for and intended to be used by propeller driven aircraft of 12,500 pounds maximum gross weight or less.

V

VASI: Visual Approach Slope Indicator providing visual glide path.

VASI-2: Two Box Visual Approach Slope Indicator

VASI-4: Four Box Visual Approach Slope Indicator

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

VERTICAL FLIGHT: Aircraft flight operations by vertical lift aircraft. Typically, vertical lift aircraft include helicopters, tilt rotors, ducted-fan vehicles, and directed-thrust type propulsion systems.

VNY: Three letter identifier for Van Nuys Airport

VISUAL APPROACH: An approach where the pilot must use visual reference to the runway for landing under VFR conditions.

VISUAL FLIGHT RULES (VFR): Rules that govern the procedures for conducting flight under visual conditions. VFR applies when meteorological conditions are equal to or greater than the specified minimum, generally, a 1,000-foot ceiling and 3-mile visibility.

VISUAL RUNWAY: A runway intended solely for the operation of aircraft using visual approach procedures, with no straight in instrument approach procedure and no instrument designation indicated on a FAA approved airport layout plan or by any planning document submitted to the FAA by competent authority.

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

VHF: Very High Frequency

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

VORTAC: Co-located VOR and TACAN.

V/STOL: Vertical/Short Takeoff and Landing

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

W

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

WHP: Three letter identifier for Whiteman Airport.

WIND CONE (WINDSOCK): Conical wind directional indicator.

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

Y

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

Z

ZONING: A police power measure, enacted primarily by units of local government, in which the community is divided into districts or zones within which permitted and special uses are established, as are regulations governing lot size, building bulk, placement, and other development standards. Requirements vary from district to district, but they must be uniform within districts. A zoning ordinance consists of two parts: the text and a map.

Glossary Sources

FAR 1: Federal Aviation Regulations Part 1, Definitions and Abbreviations

AIM: Airmen's Information Manual (1993)

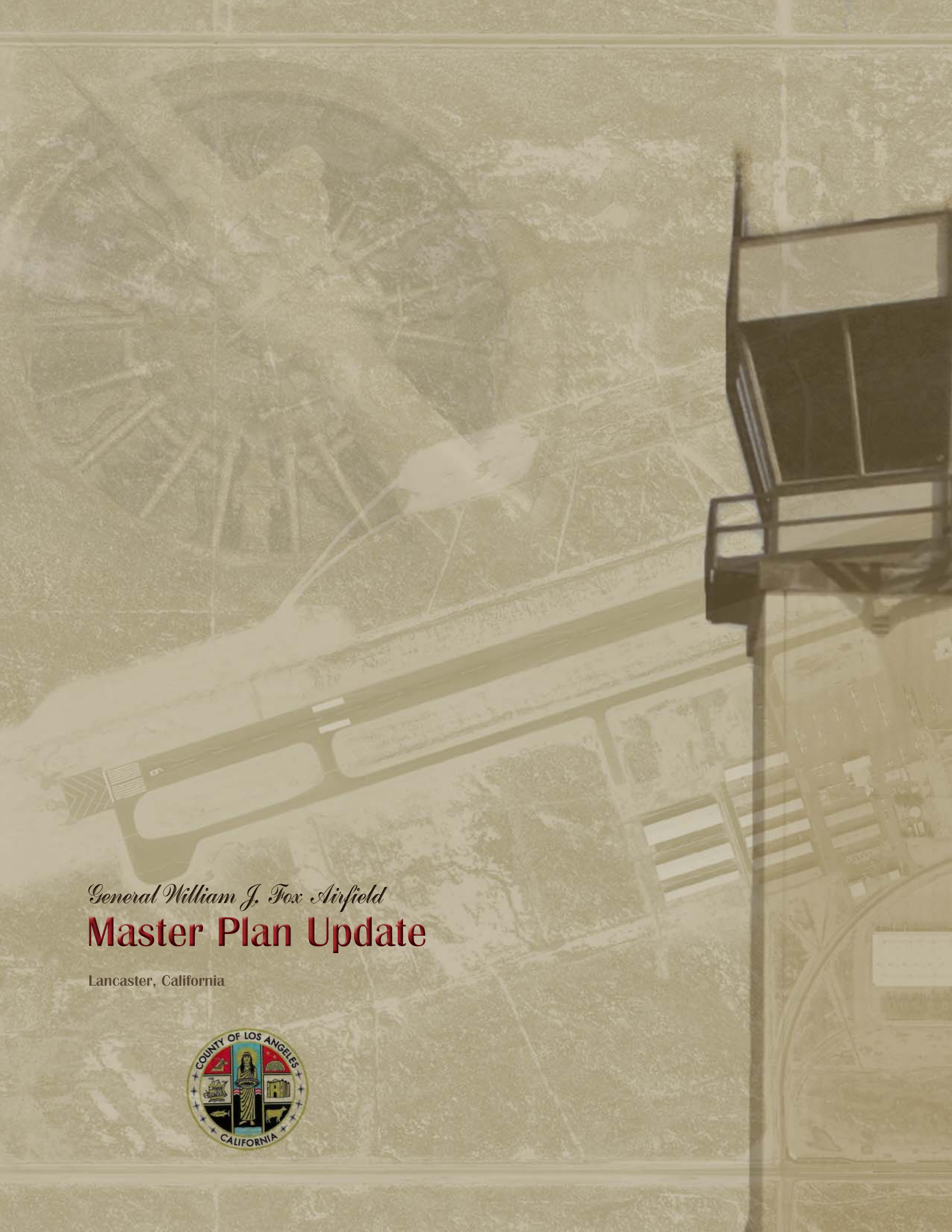
Airport Design AC: Federal Aviation Administration, Airport Design Advisory Circular 150/5300-13 (1993)

FAA ATA: Federal Aviation Administration, Air Traffic Activity

FAA Stats: Federal Aviation Administration, Statistical Handbook of Aviation

GLOSSARY OF TERMS

NTSB: National Transportation and Safety Board



General William J. Fox Airfield

Master Plan Update

Lancaster, California