FRENCH VALLEY AIRPORT

DRAFT FINAL

Airport Master Plan

AIRPORT MASTER PLAN

for

FRENCH VALLEY AIRPORT
Riverside County, California

Draft Final Technical Report

Prepared by
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Murrieta, California

Draft Final
Airport Master Plan

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INTRODUCTION

INTRODUCTION

The French Valley Airport Master Plan Study has been undertaken to evaluate the airport's capabilities and role, to forecast future aviation demand, and to plan for the timely development of new or expanded facilities that may be required to meet that demand. The ultimate goal of the Master Plan is to provide systematic guidelines for the airport's overall maintenance, development, and operation.

The Master Plan is intended to be a proactive document which identifies and then plans for future facility needs well in advance of the actual need. This is done to ensure that Riverside County can coordinate project approvals, design, financing, and construction in a timely manner prior to experiencing the detrimental effects of inadequate facilities.

An important result of the Master Plan is reserving sufficient areas for future facility needs. This protects development areas and ensures they will be readily available when required to meet future needs. The intended result is a detailed land use concept which outlines specific uses for all areas of airport property.

The preparation of this Master Plan is evidence that Riverside County recognizes the importance of air transportation to the community and the associated challenges inherent in providing for its unique operating and improvement needs. The cost of maintaining an airport is an investment which yields impressive benefits to the community. With a sound and realistic Master Plan, French Valley Airport can maintain its role as an important link to the national air transportation system for the community and main-

tain the existing public and private investments in its facilities.

MASTER PLAN OBJECTIVES

The primary objective of the French Valley Airport Master Plan Study is to develop and maintain a financially feasible long term development program which will satisfy aviation demand and be compatible with community development, other transportation modes, and the environment. The accomplishment of this objective requires the evaluation of the existing airport and a determination of what actions should be taken to maintain an adequate, safe, and reliable airport facility to meet the air transportation needs of the area. The completed Master Plan will provide an outline of the necessary development and give responsible officials advance notice of future needs to aid in planning, scheduling, and budgeting.

Specific objectives of the French Valley Airport Master Plan are:

& To determine the projected aviation demand and identify the facilities necessary to accommodate the demand.

& To determine projected needs of airport users for the next 20 years by which to support airport development alternatives.

& To evaluate the current and future airport design standards.

& To recommend improvements that will enhance the airport's safety and capacity to the maximum extent possible.

& To identify a suitable airport traffic control tower (ATCT) location.

& To establish a development schedule and a program for proposed improvements.

& To prioritize the airport capital improvement program.

& To prepare a new airport layout plan (ALP) in accordance with the Federal Aviation Administration (FAA) and the California Department of Transportation (CALTRANS) guidelines.

MASTER PLAN ELEMENTS AND PROCESS

The French Valley Airport Master Plan Study is being prepared in a systematic fashion following FAA guidelines and industry-accepted principles and practices. The Master Plan Study for French Valley Airport has six general elements that are intended to assist in the discovery of future facility needs and provide the supporting rationale for their implementation. **Exhibit IA** provides a graphical depiction of the process and elements involved in the Airport Master Plan Study.

Element One encompasses the inventory efforts. The inventory efforts are

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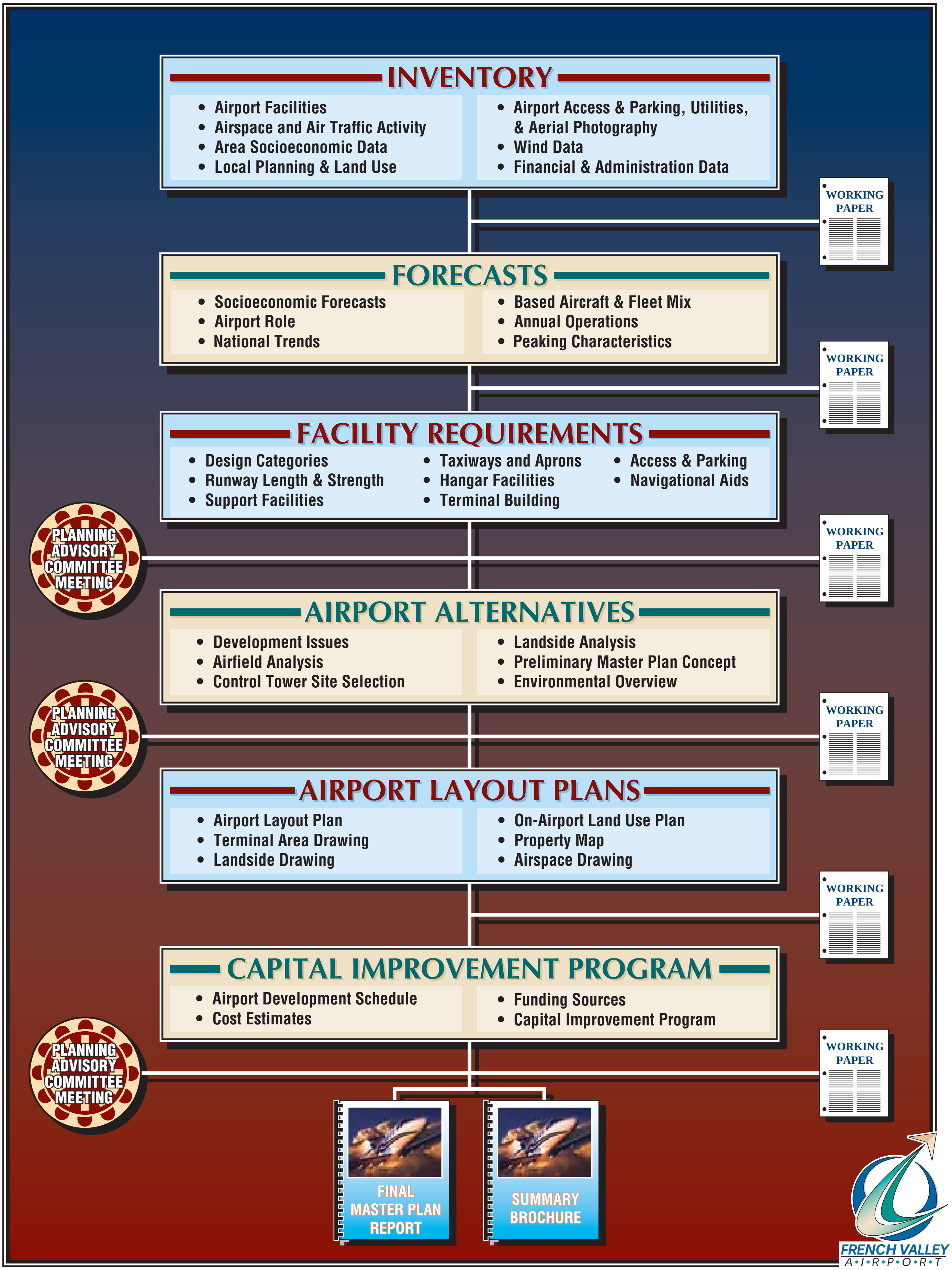

Exhibit IA
MASTER PLAN PROCESS

focused on collecting and assembling relevant data pertaining to the airport and the area it serves. Information is collected on existing airport facilities and operations. Local economic and demographic data is collected to define the local growth trends. Planning studies which may have relevance to the Master Plan are also collected. Information collected during the inventory efforts is summarized in Chapter One, Inventory.

Element Two examines the potential demand for aviation activity at the airport. This analysis utilizes local socioeconomic information, as well as national air transportation trends to quantify the levels of aviation activity which can reasonably be expected to occur at French Valley Airport though the year 2030. This includes based aircraft totals and mix, annual aircraft operations by classification, peaking characteristics, and annual instrument operations. The results of this effort are used to determine the types and sizes of facilities which will be required to meet the projected aviation demands for the airport through the planning period. The results of this analysis are presented in Chapter Two, Aviation Demand Forecasts.

Element Three comprises the facility requirements analysis. The intent of this analysis is to compare the existing facility capacities to forecast aviation demand and determine where deficiencies in capacities (as well as excess capacities) may exist. Where deficiencies are identified, the size and type of new facilities to accommodate the demand are identified. The airfield analysis focuses on improvements needed to serve the type of aircraft expected to operate at the airport in the future, as well as navigational aids to increase the safety and efficiency of operations. This element also examines the general aviation terminal, aircraft storage hangars, and apron needs. The findings of this analysis are presented in Chapter Three, Facility Requirements.

Element Four considers a variety of solutions to accommodate the projected facility needs. This element proposes various facility and site plan configurations which meet the projected facility needs. A thorough analysis is completed to identify the strengths and weaknesses of each proposed development alternative, with the intention of determining a single direction for development. These results are presented in Chapter Four, Airport Development Alternatives.

Element Five comprises two independent, yet interrelated, work efforts: a recommended development plan and an environmental overview. Chapter Five, Airport Plans, presents a graphic and narrative description of the recommended plan for the use, development, and operation of the airport, and a review of federal environmental requirements applicable to French Valley Airport. The official ALP drawings used by the FAA and CALTRANS in determining grant eligibility and funding will be included as an appendix to the Master Plan.

Element Six focuses on the capital needs program. This program defines the schedules, costs, and funding sources for the recommended development projects. The Capital Improvement Program will be included in Chapter Six.

COORDINATION

The French Valley Airport Master Plan Study is of interest to many within the local community. This includes local citizens, community organizations, airport users, airport tenants, area-wide planning agencies, and aviation organizations. As an important component of the regional, state, and national aviation systems, the Master Plan Study is of importance to both state and federal agencies responsible for overseeing air transportation.

To assist in the development of the French Valley Airport Master Plan Study, a cross-section of community members and interested persons has been identified to act in an advisory role in the development of the Master Plan. As members of the Planning Advisory Committee (PAC), the committee members will review phase reports and provide comments throughout the study to help ensure that a realistic, viable plan is developed.

To assist in the review process, working papers are prepared at each work element in the planning process as shown previously on **Exhibit IA**. The working paper process allows for input and review during each step of the Master Plan process to ensure that all issues are fully addressed as the recommended program is developed.

Chapter One

INVENTORY

Chapter One

INVENTORY

The initial step in the preparation of the airport master plan for French Valley Airport is the collection of information pertaining to the airport and the area it serves. The information collected in this chapter will be used in subsequent analyses in this study. The inventory of existing conditions at French Valley Airport provides an overview of the airport facilities, airspace, and air traffic control. Background information regarding the regional area is also collected and presented. This includes information regarding the airport's role in regional, state, and national aviation systems, surface transportation, and a socioeconomic profile.

The information was obtained from several sources, including on-site inspections, airport records, review of other planning studies, the Federal Aviation Administration (FAA), various government agencies, a number of Internet sites which presently summarize most statistical information and facts about the airport, and interviews with airport staff, planning associations, and airport tenants. As with any airport planning study, an attempt has been made to utilize existing data or information provided in existing planning documents to the maximum extent possible.

REGIONAL SETTING

French Valley Airport is located in the unincorporated southwestern Riverside County community of French Valley, which is bordered by the City of Murrieta on the west, the City of Temecula on the east, and the unincor-

porated community of Winchester on the north.

Centrally located in the heart of California, Riverside County is a neighbor to San Bernardino County, Orange County, San Diego County, and the State of Arizona. Regionally, the airport is located approximately 55 miles north of San Diego, 73 miles southwest of Palm Springs, and 89 miles southeast of Los Angeles.

The airport is situated on approximately 261 acres within the sphere of influence of the City of Temecula, which lies approximately one and one-half miles south. The only other city in the immediate vicinity of the airport is Murrieta, which is approximately one-quarter mile to the west. Access to the airport is provided by State Highway 79 via the airport access road. **Exhibit 1A** depicts the location of the airport in its regional setting.

INFRASTRUCTURE

Freeway Access: Interstate 10 traverses the entire county from east to west, and Interstates 15 and 215 connect Riverside County with San Diego County and San Bernardino County. Highways 60 and 91 link Riverside County to Los Angeles and Orange Counties. Highway 86 is part of the North American Free Trade Agreement (NAFTA) Corridor, providing easy access to Imperial County and Mexico. Highways 74, 374, and 111 link cities within Riverside County, making the mountain and desert communities easily accessible.

Rail Service: BNSF's new intermodal terminal is an important transportation link for businesses in Riverside County. Rail service connects the county with important markets, ports of entry, and key airports to expedite major national and international commerce transactions. Metrolink provides commuter rail service from Riverside to Los Angeles, Orange, and San Bernardino Counties.

Port Access/Foreign Trade: Shipping into and out of the Port of Los Angeles, the Port of Long Beach, and the Port of San Diego is easily accessible from Riverside County. Riverside County offers a customs port of entry in Palm Springs as well as convenient access to customs facilities in the greater Los Angeles area. In addition, designated Foreign Trade Zones are located at the Palm Springs Regional Airport and the March Inland Port.

CLIMATE

Weather conditions are important to the planning and development of an airport. Temperature is an important factor in determining runway length requirements, while wind direction and speed are used to determine optimum runway orientation. The need for navigational aids and lighting is determined by the percentage of time that visibility is impaired due to cloud coverage or other conditions.

With the Pacific Ocean less than twenty miles away, Temecula's climate benefits from the cool marine air which flows through a gap in the

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Exhibit 1A
VICINITY MAP

mountains. July is the warmest month, with an average high of 98 degrees Fahrenheit and December is the coolest month, with an average low of 34 degrees Fahrenheit. Annual rainfall in Temecula totals approximately 11 inches, with February being the wettest month. Smog occurs mostly in the late summer with virtually no smog in the winter months. **Table 1A** summarizes climatic data for City of Temecula, including temperatures and precipitation.

TABLE 1A
Climate Summary
Temecula, CA

Month	Average High	Average Low	Mean	Average Precipitation
January	66°F	36°F	51°F	2.62 in.
February	68°F	38°F	53°F	2.86 in.
March	70°F	41°F	55°F	2.34 in.
April	77°F	44°F	60°F	0.63 in.
May	83°F	50°F	66°F	0.33 in.
June	92°F	54°F	73°F	0.04 in.
July	98°F	59°F	78°F	0.04 in.
August	98°F	60°F	79°F	0.25 in.
September	93°F	57°F	75°F	0.18 in.
October	84°F	49°F	67°F	0.26 in.
November	74°F	40°F	57°F	0.76 in.
December	68°F	34°F	51°F	1.09 in.

Source: www.weather.com (averages based on a 30-year period).

UTILITIES

Temecula's municipal water and sewer system are supplied by the Eastern Municipal Water District. Natural gas service in Temecula is provided by Southern California Gas Company. Southern California Edison provides electricity to the city. Telecommunications are provided by Verizon.

AIRPORT SYSTEM PLANNING ROLE

Airport planning exists on many levels: national, state, and local. Each level has a different emphasis and purpose. An airport master plan is the primary local airport planning document.

At the regional level, French Valley Airport is included in the Southern California Association of Government (SCAG) *General Aviation System Plan* (GASP). The GASP evaluates the region's capacity and ability to meet aviation demand. French Valley Airport is one of 44 general aviation airports included in the GASP, which SCAG considers important to meeting the region's demand for aviation services.

At the state level, the airport is included in the *California Aviation System Plan* (CASP). The purpose of the CASP is to ensure that the state has an adequate and efficient system of airports to serve its aviation needs. The CASP defines the specific role of each airport in the state's aviation system and establishes funding needs. The CASP is updated every five years, with the most recent revision being completed in 2003. French Valley Airport is one of 244 general aviation and reliever airports within the state's aviation system plan.

At the national level, the airport is included in the *National Plan of Integrated Airport Systems* (NPIAS). The NPIAS includes a total of 3,431 airports which are significant to national air transportation. Of this total, 2,847 are general aviation or reliever airports. The NPIAS plan is used by the FAA in administering the Airport Improvement Program (AIP). The NPIAS supports the FAA's strategic goals for safety, system efficiency, and environmental compatibility by identifying specific airport improvements. An airport must be included in the NPIAS to be eligible for federal funding assistance through the AIP program. French Valley Airport is one of 191 general aviation airports in California included in the NPIAS. The NPIAS includes estimates on the total development needs of the nation's airports which are eligible for federal funding assistance.

AIRPORT HISTORY AND ADMINISTRATION

In the late 1970s, discussion and planning began on relocating the existing Rancho California Airport due, in part, to safety deficiencies. In addition, the airport was leased to the County with the owner not wanting to renew the lease. An evaluation leading to the identification and selection of potential new sites was undertaken in June 1983. In June 1985 the Riverside County Board of Supervisors approved a resolution designating the French Valley site as the replacement site for the existing Rancho California Airport. The Federal Aviation Administration approved the French Valley Airport Layout plan in 1985 and funded four grants for land acquisition. Initial construction of French Valley Airport began in October 1987 and was completed in April 1989.

French Valley Airport is owned and operated by Riverside County. The County also owns three additional airports, including Chiraco Summit Airport, Hemet-Ryan Airport, and Jacqueline Cochran Regional Airport. Day to day operations at each of these airports is the responsibility of the Economic Development Agency – Aviation and the Board of Supervisors.

A summary of capital improvement projects completed at French Valley Airport since 1995 is presented in **Table 1B**. These projects were funded by the Airport Improvement Program (AIP), which provides grants to public agencies for the planning and development of public-use airports that are included in the NPIAS.

TABLE 1B Historical AIP Grant History French Valley Airport			
Fiscal Year	**Project Number**	**Federal Funds**	**Description of Project**
1995	14	$495,000	Storm Drainage.
1997	15	$300,000	Construct Apron; Seal Taxiway.
2001	16	$900,000	Land Acquisition for Runway 36 Approach (39 acres).
2002	17	$150,000	Rehabilitate Access Road & Apron; Construct Apron.
2003	18	$150,000	Rehabilitate Apron; Install Apron Lighting.
2004	19	$2,800,000	Runway Extension; Taxiway Extension.
2005	20	$396,400	Rehabilitate Runway; Install Security Lighting.
Source: FAA			

AIRPORT FACILITIES

Airport facilities can be functionally classified into two broad categories: airside and landside. The airside category includes those facilities directly associated with aircraft operations. The landside category includes those facilities necessary to provide a safe transition from surface to air transportation and support aircraft servicing, storage, maintenance, and operational safety.

AIRSIDE FACILITIES

Airside facilities include runways, taxiways, airfield lighting, and navigational aids. Airside facilities are identified on **Exhibit 1B**. **Table 1C** summarizes airside facility data at French Valley Airport.

TABLE 1C Airside Facility Data French Valley Airport	**Runway 18-36**
Runway Length (feet) Runway Width (feet)	6,000 75
Runway Surface Material Condition	Asphalt Good
Pavement Markings	Nonprecision Instrument (Runway 18) Basic (Runway 36)
Runway Load Bearing Strengths (lbs.) Single Wheel Loading (SWL)	30,000
Runway Lighting	MIRL
Taxiway Lighting	MITL
Approach Lighting	PAPI-2L (Runway 18-36) REILs (Runway 18-36)
Instrument Approach Procedures	RNAV (GPS) Runway 18
Weather or Navigational Aids	Segmented Circle Lighted Wind Cone

GPS – Global Positioning System
MIRL – Medium Intensity Runway Lighting
MITL – Medium Intensity Taxiway Lighting
PAPI – Precision Approach Path Indicator
REIL – Runway End Identification Lighting

Source: *Airport/Facility Directory, Southwest U.S.* (February 14, 2008).

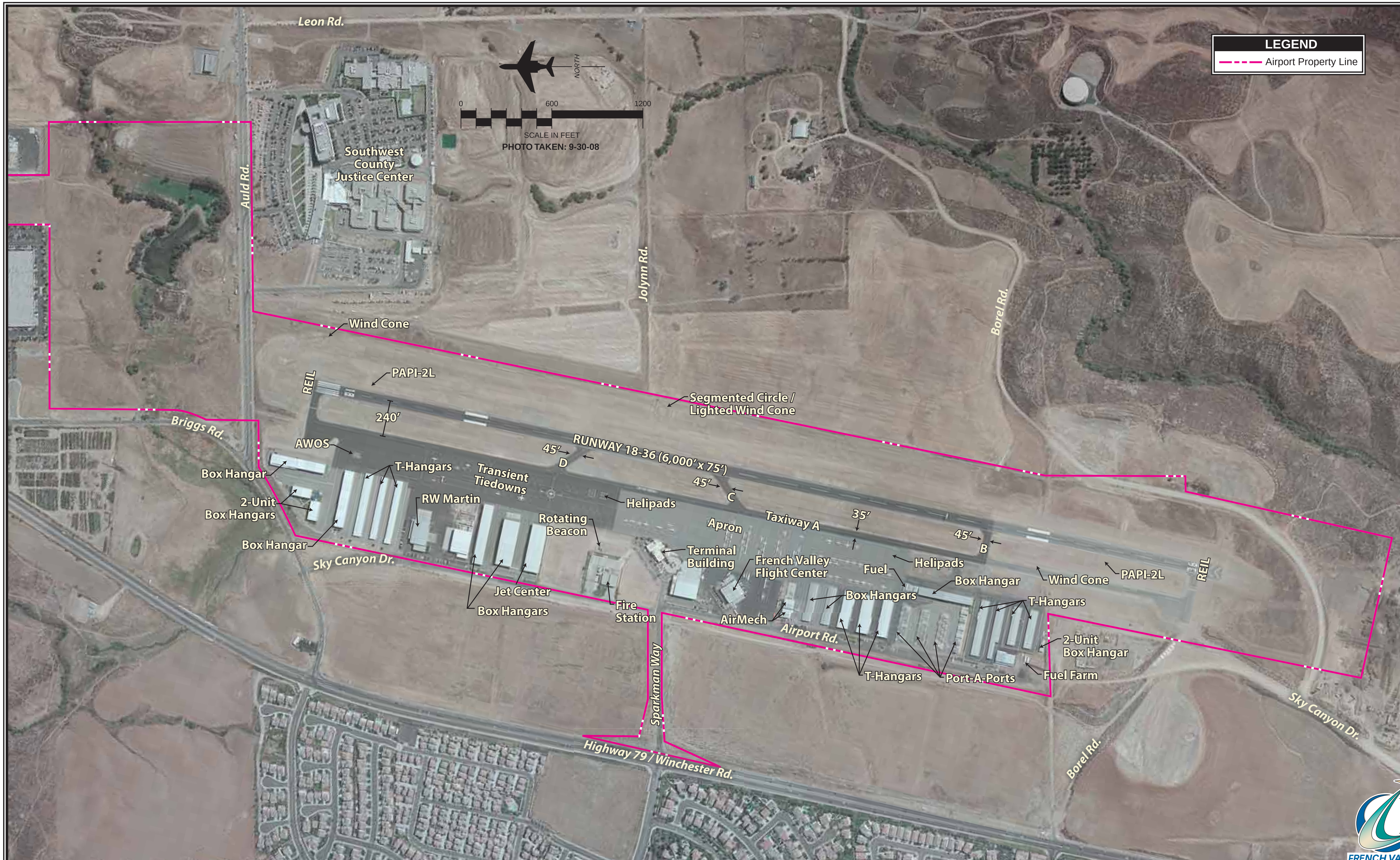

Exhibit 1B
EXISTING FACILITIES

Runways

French Valley Airport is served by a single runway (Runway 18-36), which is oriented in a north-south direction. Runway 18-36 is 6,000 feet long, 75 feet wide, and is constructed of asphalt. The runway has a load bearing strength of 30,000 pounds single wheel loading (SWL), which refers to the design of certain aircraft landing gear which has a single wheel on each main landing gear strut.

Taxiways

The existing taxiway system at French Valley Airport is illustrated on **Exhibit 1B**. Runway 18-36 is served by a full-length parallel taxiway, which provides primary access to the general aviation facilities. This parallel taxiway is 35 feet wide and lies 240 feet west of Runway 18-36.

A series of connecting taxiways also serve the airport. Three of these taxiways are at a 90-degree angle to the runway, two of which provide access to each runway end. The remaining two taxiways are at acute angles to the runway and provide exits at mid-field. Each of these connecting taxiways is 45 feet in width.

Helipads

There are a total of four helipads at French Valley Airport. Two of the helipads are located on the south end of the local apron, while the other two are located on the transient apron, southwest of Taxiway D.

Airfield Lighting

Airfield lighting systems extend an airport's usefulness into periods of darkness and/or poor visibility. A variety of lighting systems are installed at the airport for this purpose. These lighting systems, categorized by function, are summarized as follows.

Identification Lighting: The location of the airport at night is universally identified by a rotating beacon. A rotating beacon projects two beams of light, one white and one green, 180 degrees apart. The rotating beacon at French Valley Airport is located at mid-field, north of the general aviation terminal building.

Pavement Edge Lighting: Pavement edge lighting utilizes light fixtures placed near the edge of the pavement to define the lateral limits of the pavement. This lighting is essential for safe operations during night and/or times of low visibility, in order to maintain safe and efficient access to and from the runway and aircraft parking areas. Runway 18-36 is equipped with medium intensity runway lighting (MIRL). All taxiways at the airport are equipped with medium intensity taxiway lighting (MITL).

Visual Approach Lighting: A precision approach path indicator (PAPI-2L) is installed on both ends of the runway. A PAPI consists of a system of lights located at various distances from the runway threshold. When interpreted by the pilot, these lights give him or her an indication of being above, below, or on the designed descent path to the runway.

Runway End Identification Lighting: Runway end identifier lights (REILs) provide rapid and positive identification of the approach end of a runway. REILs are typically used on runways without more sophisticated approach lighting systems. The REIL system consists of two synchronized flashing lights located laterally on each side of the runway facing the approaching aircraft. REILs are installed on both ends of the runway.

Pilot-Controlled Lighting: A pilot-controlled lighting system (PCL) is available at French Valley Airport. The PCL operates from dusk to dawn and allows pilots to turn on and/or increase the intensity of the airfield lighting systems from the aircraft with the use of the aircraft's radio transmitter. All lighting systems at French Valley Airport can be controlled by PCL.

Airfield Signs: Airfield identification signs assist pilots in identifying their location on the airfield and directing them to their desired location. Lighted signs are installed at all taxiway and runway intersections.

Distance Remaining Signs: Lighted distance remaining signs are installed at 1,000-foot intervals on Runway 18-36. These signs provide pilots with an indication of the length of runway available for landing or departure.

Pavement Markings

Pavement markings aid in the movement of aircraft along airport surfaces and identify closed or hazardous areas on the airport. The nonprecision markings on Runway 18 identify the runway designation, threshold, centerline, side stripes, and aiming point. The basic markings on Runway 36 identify the runway designation and centerline.

Taxiway and apron centerline markings are provided to assist aircraft using these airport surfaces. Taxiway centerline markings assist pilots in maintaining proper clearance from pavement edges and objects near the taxiway/taxilane edges.

Pavement markings also identify aircraft parking and aircraft holding positions. Holding position markings are located on all taxiways entering the runway at 125 feet or more from the runway centerline.

Weather Facilities

The airport is equipped with a lighted wind cone, which provides pilots with information about wind conditions, and a segmented circle, which provides traffic pattern information to pilots. The lighted wind cone and segmented circle are located on the east side of the runway at mid-field. Supplemental wind cones are also located near each end of the runway.

French Valley Airport is also equipped with an Automated Weather Observation System III (AWOS-III). An AWOS automatically records weather conditions such as wind speed, wind gusts, wind direction, temperature, dew point, altimeter setting, and density altitude. In addition, the AWOS-III will record visibility, precipitation, and cloud height. This information is then transmitted at regular intervals. The AWOS is located on the north end of the transient apron.

LANDSIDE FACILITIES

Landside facilities are the ground-based facilities that support the aircraft and pilot/passenger handling functions. These facilities typically include the terminal building, aircraft storage/maintenance hangars, aircraft parking aprons, and support facilities such as fuel storage, automobile parking, roadway access, and aircraft rescue and firefighting. Landside facilities are identified on **Exhibit 1B**.

General Aviation Terminal Building

The general aviation terminal building, which was constructed in 1992, is located on the west side of the runway at mid-field. The terminal building totals approximately 12,495 square feet and provides space for a pilot/ passenger lounge, café, and office lease space. The offices of the Riverside County Economic Development Agency - Aviation are also located in this building. **Exhibit 1C** depicts the terminal building space.

Aircraft Storage Facilities

Hangar space at French Valley Airport is comprised of large conventional hangars, smaller executive/box hangars, T-hangars, and Port-A-Ports. Conventional hangars provide a large, open space free from roof support structures and have the capability to accommodate several aircraft simultaneously. These hangars are typically 10,000 square feet or greater in size.

Executive/box hangars provide the same type of aircraft storage as conventional hangars, but are normally less than 10,000 square feet. T-hangars and Port-A-Ports provide individual aircraft storage within a large contiguous facility. Hangar space at French Valley Airport is identified on **Exhibit 1B**.

Total hangar space at French Valley Airport totals approximately 464,200 square feet. Conventional hangar space, which includes the fixed base operators (FBOs), totals approximately 52,200 square feet in three separate structures. Executive/box hangar space totals approximately 23,800 square feet in five separate structures providing eight total spaces. T-hangar space totals approximately 333,800 square feet in 18 separate structures providing approximately 187 total spaces, and there are 36 Port-A-Ports totaling approximately 54,400 square feet.

Aircraft Parking Apron

A large aircraft parking apron extends along the entire west side of the runway. There are 211 tiedowns available on this apron, which totals approximately 131,700 square yards.

Fuel Storage Facilities

Fuel storage facilities at French Valley Airport include two tanks of Jet A fuel (12,000 gallons each), a 12,000-gallon tank of 100LL fuel (Avgas), and an additional 6,000-gallon tank of 100LL

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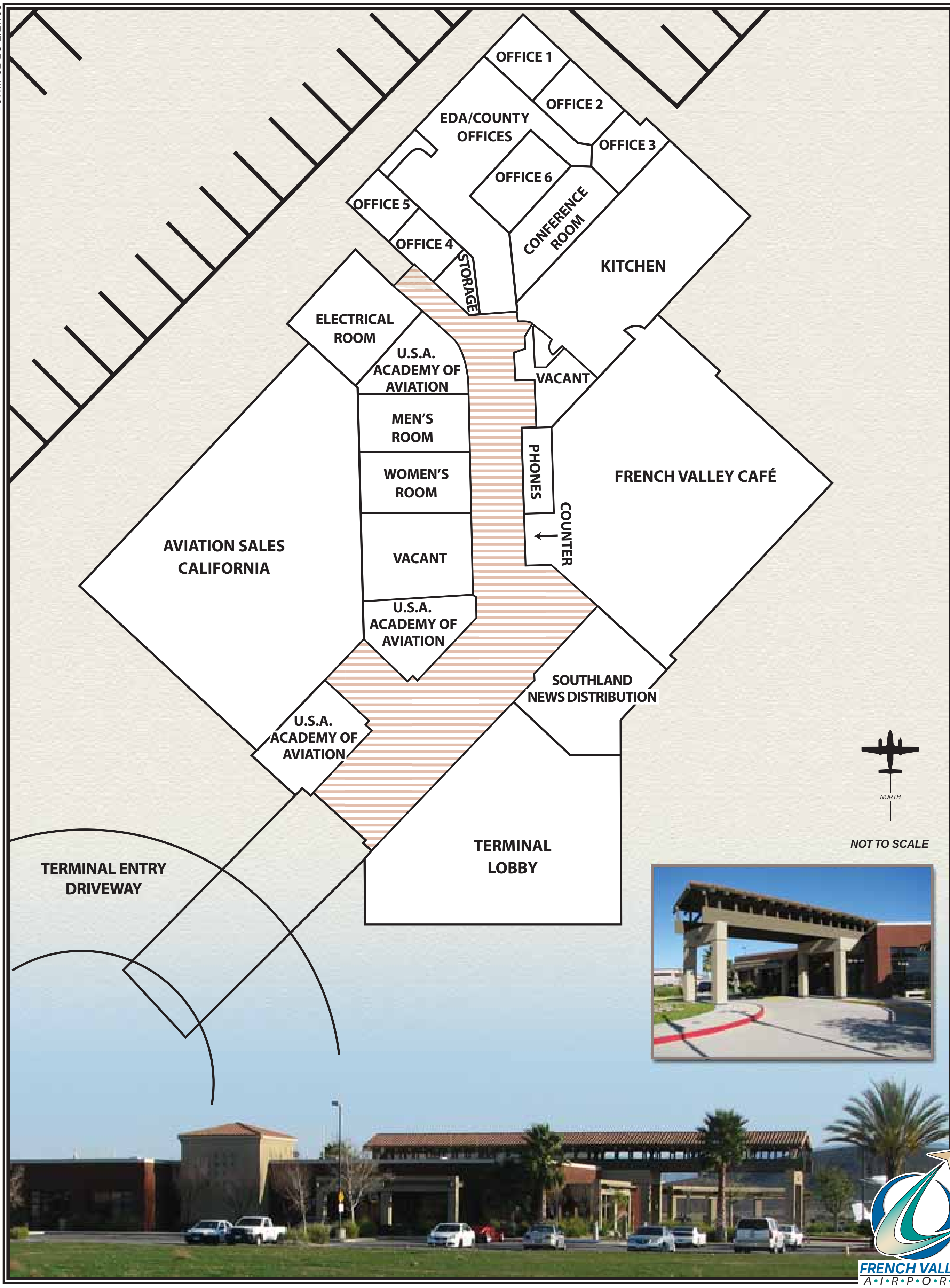

Exhibit 1C
TERMINAL BUILDING

fuel. All four of these tanks are aboveground. Fuel trucks are also provided for refueling aircraft.

Automobile Parking

Automobile parking is provided west and south of the terminal building. Approximately 50 parking spaces are provided in this area. Additional parking is available adjacent to each of the FBOs.

Fire Protection

The airport is not equipped with an airport rescue and firefighting facility. However, a 13,000 square-foot fire station is located on airport property, north of the terminal building. This station provides structural fire support only.

ENROUTE NAVIGATION AND AIRSPACE

Navigational aids are electronic devices that transmit radio frequencies which pilots of properly equipped aircraft translate into point-to-point guidance and position information. The types of electronic navigational aids available for aircraft flying to or from French Valley Airport include the very high frequency omnidirectional range (VOR) facility, nondirectional beacon (NDB), Loran-C, and global positioning system (GPS).

The VOR, in general, provides azimuth readings to pilots of properly equipped aircraft by transmitting a radio signal at every degree to provide 360 individual navigational courses. Frequently, distance measuring equipment (DME) is combined with a VOR facility (VOR/DME) to provide distance as well as directional information to the pilot. In addition, military tactical air navigation (TACAN) and civil VORs are commonly combined to form a VORTAC. A VORTAC provides distance and directional information to civil and military pilots. Pilots flying to or from the airport can utilize the following navigational aids, which are depicted on **Exhibit 1D**.

- Homeland VOR (13 miles north)
- Oceanside VORTAC (25 miles southwest)
- Riverside VOR (28 miles northwest)
- Paradise VORTAC (29 miles northwest)
- El Toro VOR/DME (31 miles west)
- Julian VORTAC (38 miles southeast)
- Palm Springs VORTAC (39 miles northeast)

The NDB transmits nondirectional radio signals whereby the pilot of properly equipped aircraft can determine the bearing to or from the NDB facility and then “home” or track to or from the station.

GPS is an additional navigational aid for pilots enroute to the airport. GPS was initially developed by the United States Department of Defense for military navigation around the world. Increasingly, GPS has been utilized more in civilian aircraft. GPS uses satellites placed in orbit around the

Exhibit 1D
VICINITY AIRSPACE

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globe to transmit electronic signals, which properly equipped aircraft use to determine altitude, speed, and position information. GPS allows pilots to navigate to any airport in the country, and they are not required to navigate using a specific navigational facility.

In July of 2003, the FAA commissioned a Wide Area Augmentation System (WAAS), which is a GPS-based navigation and landing system that provides guidance to aircraft at thousands of airports and airstrips where there is currently no precision landing capability. Systems such as WAAS are known as satellite-based augmentation systems (SBAS). WAAS is designed to improve the accuracy and ensure the integrity of information coming from GPS satellites. The FAA is using WAAS to provide Lateral Navigation/Vertical Navigation (LNAV/VNAV) capability.

INSTRUMENT APPROACH PROCEDURES

Instrument approach procedures are a series of predetermined maneuvers established by the FAA using electronic navigational aids that assist pilots in locating and landing at an airport during low visibility and cloud ceiling conditions. French Valley Airport has one published public instrument approach: RNAV (GPS) Runway 18.

The capability of an instrument approach is defined by the visibility and cloud ceiling minimums associated with the approach. Visibility minimums define the horizontal distance that the pilot must be able to see in order to complete the approach. Cloud ceilings define the lowest level a cloud layer (defined in feet above the ground) can be situated for the pilot to complete the approach. If the observed visibility or cloud ceilings are below the minimums prescribed for the approach, the pilot cannot complete the instrument approach. The different minimum requirements for visibility and cloud ceilings are varied, dependent on the approach speed of the aircraft.

French Valley Airport is equipped with a single instrument approach (GPS Runway 18). Utilizing this approach, a properly equipped aircraft can land at the airport with 600-foot cloud ceilings and one-mile visibility for aircraft in Categories A and B. The visibility minimums increase to 1½ miles for aircraft in Category C.

When using the GPS approach to land at a different runway end (defined as a circling approach), the cloud ceilings increase to 700 feet above ground for aircraft in Categories A, B, and C. The visibility minimums remain one mile for aircraft in Categories A, B, and C.

VICINITY AIRSPACE

To ensure a safe and efficient airspace environment for all aspects of aviation, the FAA has established an airspace structure that regulates and establishes procedures for aircraft using the National Airspace System. The U.S. airspace structure provides two basic categories of airspace, controlled and uncontrolled, and identifies them as Classes A, B, C, D, E, and G.

Class A airspace is controlled airspace that includes all airspace from 18,000 feet mean sea level (MSL) to Flight Level 600 (approximately 60,000 feet MSL). Class B airspace is controlled airspace surrounding high-capacity commercial service airports. Class C airspace is controlled airspace surrounding lower activity commercial service airports and some military airports. Class D airspace is controlled airspace surrounding airports with an airport traffic control tower. All aircraft operating within Classes A, B, C, and D airspace must be in contact with the air traffic control facility responsible for that particular airspace. Class E airspace is controlled airspace that encompasses all instrument approach procedures and low-altitude federal airways. Only aircraft conducting instrument flights are required to be in contact with air traffic control when operating in Class E airspace. Aircraft conducting visual flights in Class E airspace are not required to be in radio communications with air traffic control facilities. Visual flight can only be conducted if minimum visibility and cloud ceilings exist. Class G airspace is uncontrolled airspace that does not require contact with an air traffic control facility.

Airspace in the vicinity of French Valley Airport is depicted on **Exhibit 1D**. Class E airspace surrounds the airport, with the floor beginning at 700 feet above the surface. This Class E airspace also encompasses the low altitude Victor Airways in the vicinity of the airport. Victor Airways are corridors of airspace eight miles wide that extend upward from 1,200 feet above ground level (AGL) to 18,000 feet MSL and extend between VOR navigational facilities.

LOCAL OPERATING PROCEDURES

French Valley Airport is situated at 1,350 feet MSL. The traffic pattern altitude for all aircraft at the airport is approximately 1,000 feet above airfield elevation (2,350 feet MSL). Runway 18 utilizes a left-hand traffic pattern. In doing so, the approach to landing is made using a series of left turns. Conversely, a right traffic pattern is used on Runway 36. In this manner, the approach to landing is made using a series of right turns. For both runways, the traffic pattern is located on the east side of the runway.

Noise abatement procedures are in place for departures at French Valley Airport. Noise-sensitive areas exist to the north and south. Pilots are instructed to use the optimum rate of climb to traffic pattern altitude before departing the pattern.

SPECIAL USE AIRSPACE

Airspace may be reserved for use by a specific agency, primarily the military, within which operations of other aircraft are restricted or prohibited. The special use airspace in the vicinity of French Valley Airport is defined in the following paragraphs and is identified on **Exhibit 1D**.

As shown on the exhibit, military training routes (MTRs) are located southeast of French Valley Airport. These routes are used by military training aircraft which commonly operate at speeds in excess of 250 knots and at altitudes to 10,000 feet MSL. While general aviation flights are not restricted within this area, pilots are strongly cautioned to be alert for high speed military jet training aircraft.

Several restricted areas southwest of French Valley Airport are also depicted on the exhibit. Restricted areas denote the existence of unusual, often invisible, hazards to aircraft such as artillery firing, aerial gunnery, or guided missiles. Penetration of restricted areas without authorization from the using or controlling agency may be extremely hazardous to the aircraft and its occupants.

Exhibit 1D also depicts several wilderness areas in the vicinity of the airport, including the San Mateo Canyon Wilderness Area to the west and the Agua Tibia Wilderness Area to the southeast. All aircraft in and over these designated areas are requested to remain above 2,000 feet AGL.

AIR TRAFFIC CONTROL

There is no airport traffic control tower (ATCT) at French Valley Airport; therefore, no formal terminal air traffic control services are available for aircraft landing or departing the airport. Aircraft operating in the vicinity of the airport are not required to file any type of flight plan or to contact any air traffic control facility unless they are entering airspace where contact is mandatory. The common traffic advisory frequency (CTAF) is used by pilots to obtain airport information and advise other aircraft of their position in the traffic pattern and their intentions.

Aircraft arriving and departing the area are controlled by MARCH Approach Control. MARCH controls aircraft approaching and departing certain airports in the metropolitan area. All aircraft in radio communication with MARCH will be provided with altitude, aircraft separation, and route guidance to and from the airport.

AREA AIRPORTS

A review of airports within 15 nautical miles of French Valley Airport has been made to identify and distinguish the type of air service provided in the area immediately surrounding the airport. Airports within a greater geographic area of the airport were previously illustrated on **Exhibit 1D**. Information pertaining to each airport was obtained from FAA master airport records.

Hemet-Ryan Airport (owned and operated by Riverside County) is located approximately 11 nautical miles north-northeast of French Valley Airport. The airport is served by two runways, the longest of which is 4,314 feet long and 100 feet wide. There is no airport traffic control tower at the airport. One published instrument approach is available at Hemet-Ryan Airport and 279 based aircraft. The airport has an average of 207 operations per day. In addition, heavy air tanker activity takes place at Hemet-Ryan Airport from May to November due to CDF firefighting. Services available include aircraft maintenance, aircraft tiedowns, and fuel sales (100LL & Jet A).

Perris Valley Airport is a privately owned airport located approximately 12 nautical miles north-northwest of French Valley Airport. The airport is served by a single 5,100 feet by 50 feet runway. There is no airport traffic control tower at the airport and there are no published instrument approaches available. There are 141 aircraft based at Perris Valley Airport. The airport has an average of 94 operations per day. In addition, extensive ultralight and parachuting activity takes place at Perris Valley Airport. Services available include aircraft maintenance and fuel sales (100LL & Jet A).

Fallbrook Community Airpark Airport is located approximately 15 nautical miles south-southwest of French Valley Airport. The airport is served by a single 2,160 feet by 60 feet runway. The airport is not equipped with an airport traffic control tower. There is one published instrument approach available at Fallbrook Airport and 112 based aircraft. The airport has an average of 99 operations per day. Services available include aircraft maintenance, aircraft tiedowns, and fuel sales (100LL).

GENERALIZED LAND USE

The environs in which the airport is located are defined by existing land uses as well as projected future land uses. French Valley Airport is located two miles northeast of the central business district of Murrieta on approximately 261 acres. **Exhibits 1E** and **1F** depict the general plan land uses in the vicinity of the airport for Murrieta and Temecula.

The area surrounding French Valley Airport includes the unincorporated community of French Valley and portions of the cities of Murrieta and Temecula. The area immediately adjacent to the airport consists primarily of commercial (offices/business park) use. Heavy industrial use lies within 2,000 feet north of the Runway 18 end. Multiple residential subdivisions are located less than a mile west and south of the airport, with rural residential located farther out. Area to the north and east is generally rural residential, but is rapidly becoming more urbanized.

SOCIOECONOMIC CHARACTERISTICS

For an airport master plan, socioeconomic characteristics are collected and examined to derive an understanding of the dynamics of growth within the study area. This information is essential in determining aviation service

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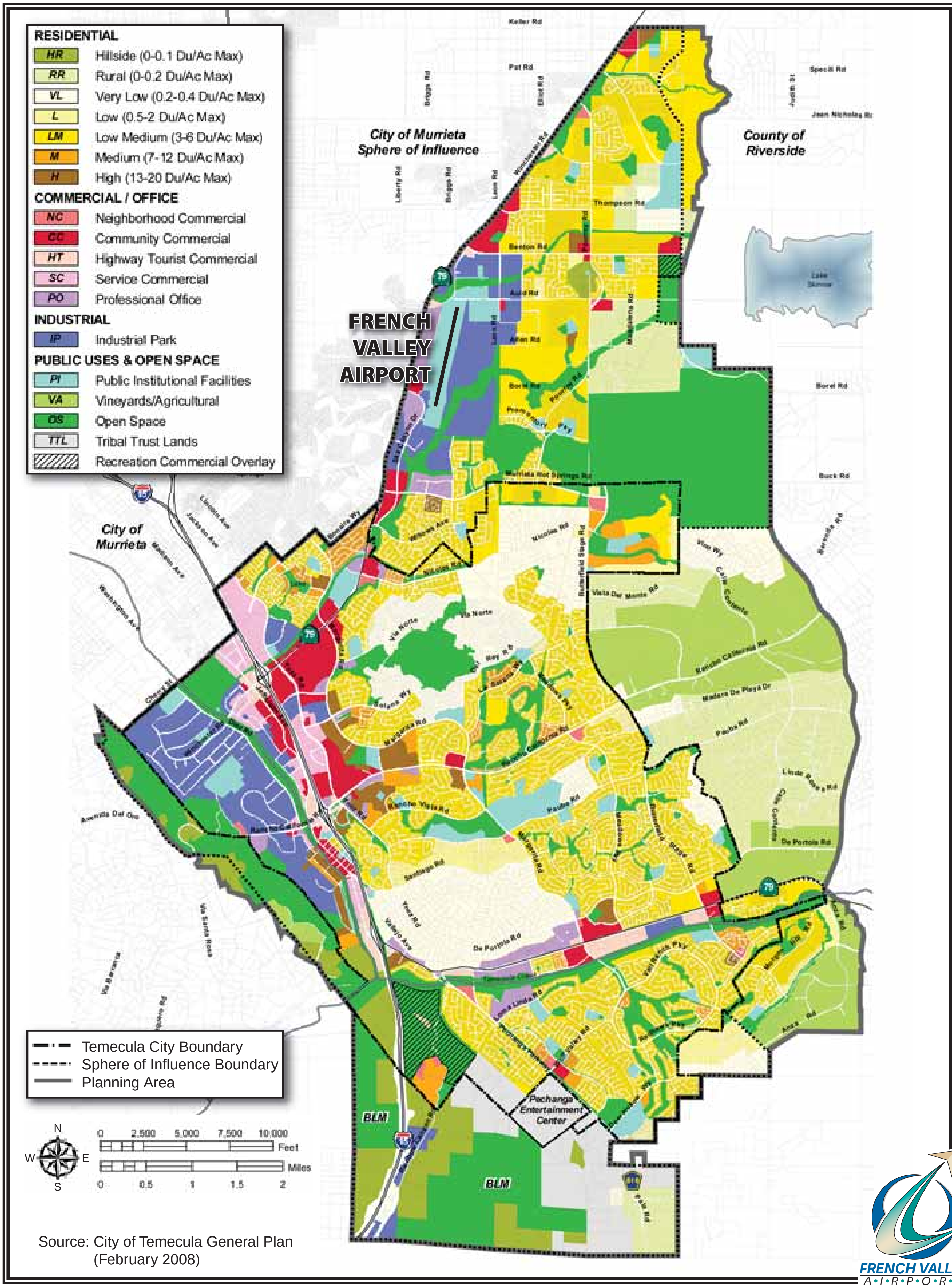

Exhibit 1E
CITY OF TEMECULA GENERAL PLAN

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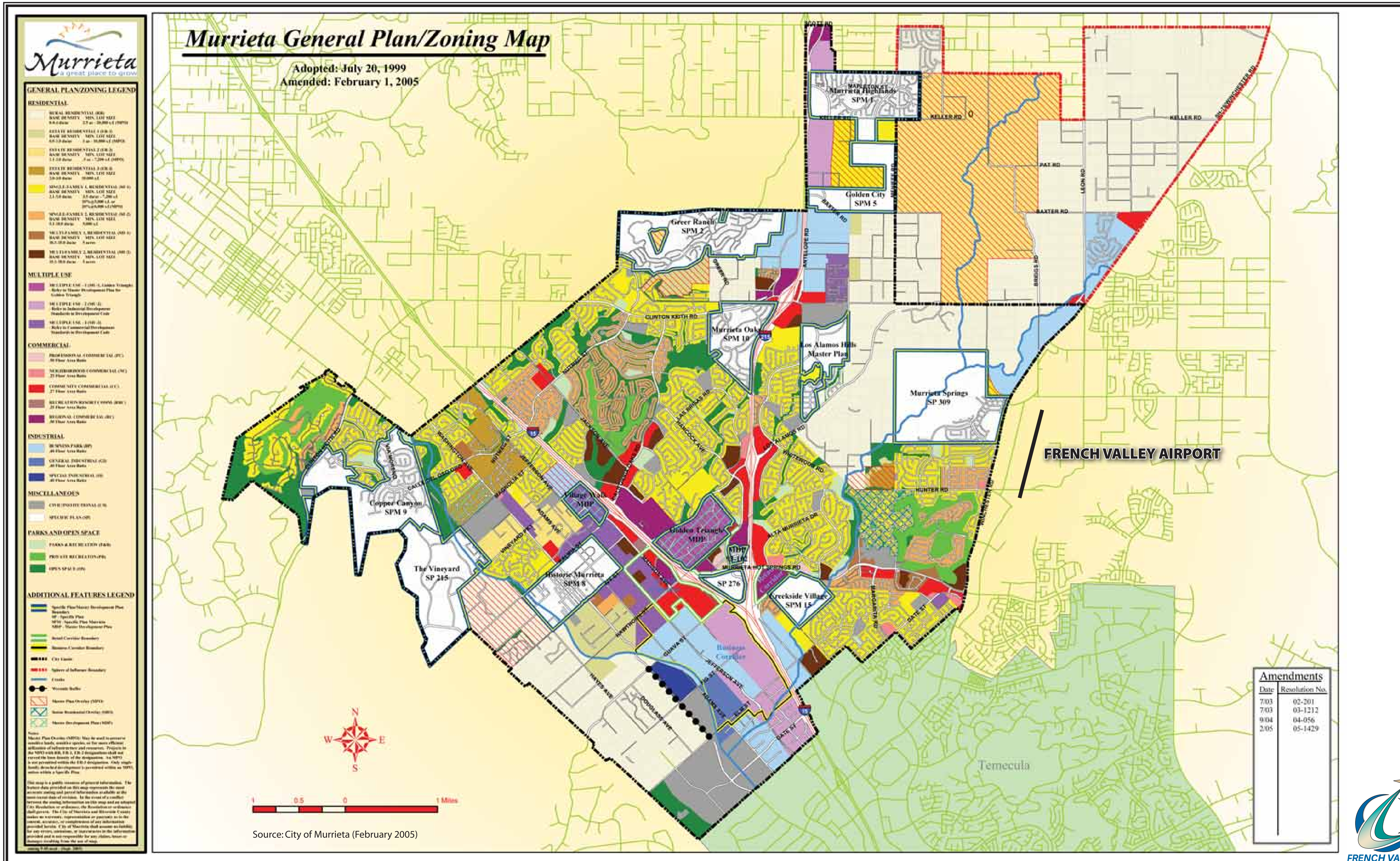

Exhibit 1F
CITY OF MURRIETA GENERAL PLAN

level requirements, as well as forecasting the number of based aircraft and aircraft activity at the airport. Aviation forecasts are typically related to the population base, economic strength of the region, and the ability of the region to sustain a strong economic base over an extended period of time.

POPULATION

The size and structure of the local communities and the service area that the airport supports are important factors to consider when planning airport facilities. These factors provide an understanding of the economic base that is needed to determine future airport requirements. Historical population totals, which were obtained from the U.S. Census Bureau, are presented in **Table 1D**.

According to the U.S. Census Bureau, the State of California had over 37.6 million residents in 2007. This is an increase of more than 7.9 million residents since 1997, which represents an average annual increase of 2.4 percent.

During this same time, Riverside County experienced a 3.6 percent annual increase in population, gaining 610,000 residents. With a current population of over two million people, Riverside County is California's fastest growing county and has a housing growth ranked fourth in the nation. Riverside County, along with its neighbor to the north, San Bernardino County, comprises the Inland Empire. The Inland Empire is the fastest growing region of the state and among the fastest growing metro areas in the nation.

Located in the Inland Empire, the cities of Murrieta and Temecula have experienced significant growth over the past ten years, with annual growth rates of 10.2 percent and 7.8 percent respectively.

TABLE 1D
Historical Population

Area	1997	2000	2007*	Average Annual Growth Rate (1997-2007)
Murrieta	36,900	44,300	93,600	9.8%
Temecula	46,200	57,700	94,600	7.4%
Riverside County	1,422,000	1,545,000	2,032,000	3.6%
State of California	29,760,000	33,872,000	37,663,000	2.4%

Source: U.S. Census Bureau.
*Estimated on 1/1/2007

Forecast population projections are presented in **Table 1E**. These projections were prepared by the California Department of Finance in July 2007. As shown in the table, the department projects the state's population to reach more than 48.1 million by 2030, which is an annual growth rate of 1.1 percent. Population in Riverside County is expected to grow at nearly twice that rate (2.0 percent) during this same time, totaling more than 3.1 million residents by 2030. The Inland Empire, which includes Riverside County and San Bernardino County, is in a position to dominate growth over the next several years.

TABLE 1E
Forecast Population

Area	2013	2018	2030	Average Annual Growth Rate (2007-2026)
Riverside County	2,307,000	2,565,000	3,180,000	2.0%
State of California	40,575,000	42,890,000	48,111,000	1.1%

Source: California Department of Finance (July 2007).

EMPLOYMENT

Analysis of a community=s employment base can provide valuable insight to the overall well-being of the community. In most cases, the community make-up and health is significantly impacted by the availability of jobs, variety of employment opportunities, and types of wages provided by local employers. Civilian labor force data, which was obtained from the California Labor Market Information (LMI), is presented in **Table 1F**.

As shown in the table, Riverside County had an unemployment rate of 6.2 percent in 2007. While this is down from the high of 7.2 percent reached in 1990, the county's unemployment rate has increased since 2000. Meanwhile, at 5.4 percent, the State of California's 2007 unemployment rate was below that of Riverside County.

The United States also experienced a decrease in its unemployment rate between 1990 and 2000. However, the rate has since increased and was at 4.6 percent in 2007. This is still lower than the unemployment rates of the state and the county.

Table 1G presents the major employers in Riverside County, several of which utilize French Valley Airport. The principal sectors that are producing jobs in the county are business services, retail trade, and leisure and hospitality. The recreation and leisure services sector is creating more job opportunities as population growth continues to swell in the Inland Empire. Momentum for employment growth is expected to increase over the next few years in the services sector, namely health care services, which support the aging population.

TABLE 1F Civilian Labor Force Data	1990	2000	2007
Riverside County			
Civilian Labor Force	536,900	680,400	909,800
Employment	498,300	643,900	853,800
Unemployment	38,600	36,500	56,000
Unemployment Rate	7.2%	5.4%	6.2%
State of California			
Civilian Labor Force	15,168,500	16,857,500	18,188,100
Employment	14,294,100	16,024,300	17,208,900
Unemployment	874,400	833,200	979,200
Unemployment Rate	5.8%	4.9%	5.4%
United States			
Civilian Labor Force	125,840,000	142,583,000	153,124,000
Employment	118,793,000	136,891,000	146,047,000
Unemployment	7,047,000	5,692,000	7,078,000
Unemployment Rate	5.6%	4.0%	4.6%

Source: California Labor Market Information.
*Data is not seasonally adjusted.

TABLE 1G
Major Employers
Riverside County

Employer Name	City	Industry
C A State Transportation	Lake Elsinore	Government
Conduit Networks, Inc.	Murrieta	Computers
Crossroads Truck Dismantling	Mira Loma	Automobile Recycling
Desert Regional Medical Center	Palm Springs	Hospitals
Eisenhower Medical Center	Rancho Mirage	Clinics
Guidant Corp	Temecula	Physicians Equipment
Hemet Valley Medical System	Hemet	Hospitals
La Quinta Resort & Club	La Quinta	Hotels/Motels
Labtechniques	Rancho Mirage	Medical Laboratories
Marriott Desert Springs Resort	Palm Desert	Hotels/Motels
Morongo Casino Resort & Spa	Cabazon	Tourist Attractions
Mountain & Dunes Golf Courses	La Quinta	Golf Courses
Oasis Distributing	Thermal	Fruits/Vegetables Distributor
Pechanga Development	Temecula	Casinos
Riverside Community College	Riverside	Universities/Colleges
Riverside Community Hospital	Riverside	Hospitals
Riverside County Regional Med Center	Moreno Valley	Hospitals
Riverside Forklift Training	Riverside	Trucks – Wholesale
Robertson's Ready Mix	Corona	Concrete – Ready Mixed
Starcrest Products – California	Perris	Internet/Catalog Shopping
Sun World International LLC	Coachella	Fruits/Vegetables Distributor
T Michael Int'l	Perris	Internet/Catalog Shopping
University of California	Riverside	Universities/Colleges
Watson Pharmaceuticals, Inc.	Corona	Drug Manufacturers

Source: California Labor Market Information.

SUMMARY

The information discussed on the previous pages provides a foundation upon which the remaining elements of the planning process will be constructed. Information on current airport facilities and utilization will serve as a basis, with additional analysis and data collection, for the development of forecasts of aviation activity and facility requirement determinations. The inventory of existing conditions is the first step in the process of determining those factors which will meet projected aviation demand in the community and the region.

DOCUMENT SOURCES

As previously mentioned, a variety of different sources were utilized in the inventory process. The following listing reflects a partial compilation of these sources. This does not include data provided by the airport management as part of their records, nor does it include airport drawings and photographs which were referenced for information. On-site inventory and interviews with staff tenants also contributed to the inventory effort.

Airport/Facility Directory, Southwest U.S., U.S. Department of Transportation, Federal Aviation Administration, National Aeronautical Charting Office, February 14, 2008 Edition.

National Plan of Integrated Airport Systems (NPIAS), U.S. Department of Transportation, Federal Aviation Administration (2007-2011).

U.S. Terminal Procedures, Southwest U.S., U.S. Department of Transportation, Federal Aviation Administration, National Aeronautical Charting Office, February 14, 2008 Edition.

Los Angeles Sectional Aeronautical Chart, U.S. Department of Transportation, Federal Aviation Administration, National Aeronautical Charting Office, February 15, 2007.

A number of Internet sites were also used to collect information for the inventory chapter. These include the following:

AirNav:
www.airnav.com

California Department of Finance:
www.dof.ca.gov

California Employment Development Department:
http://www.edd.ca.gov

City of Murietta:
www.murrietta.org

City of Temecula:
www.cityoftemecula.org

FAA:
www.faa.gov

Riverside County Airport Land Use Commission:
www.rcaluc.org

Riverside County Economic Development Agency:
www.rivcoeda.org

U.S. Census Bureau:
www.census.gov

The Weather Channel:
www.weather.com

Chapter Two

FORECASTS

Chapter Two

FORECASTS

This chapter will provide forecasts of aviation activity through the year 2030. Forecasts of based aircraft, based aircraft fleet mix, annual aircraft operations, and peak hour operations will serve as the basis for facility planning.

The resulting forecast may be used for several purposes, including facility needs assessments, airfield capacity evaluation, and environmental evaluations. The forecasts will be reviewed and approved by the Federal Aviation Administration (FAA) to ensure that they are reasonable projections of aviation activity. The intent is to permit Riverside County to make the necessary planning adjustments to ensure the facility meets projected demands in an efficient and cost-effective manner.

Because aviation activity can be affected by many influences at the local, regional, and national levels, it is important to remember that forecasts are to serve only as guidelines, and planning must remain flexible enough to respond to unforeseen facility needs.

NATIONAL AVIATION TRENDS

Each year, the FAA updates and publishes a national aviation forecast. Included in this publication are forecasts for the large air carriers, regional/commuter air carriers, general aviation, and FAA workload measures. The forecasts are prepared to meet budget and planning needs of the constituent units of the FAA and to provide information that can be used by

state and local authorities, the aviation industry, and the general public.

The current edition when this chapter was prepared was FAA *Aerospace Forecasts - Fiscal Years 2008-2025*, published in March 2008. The forecasts use the economic performance of the United States as an indicator of future aviation industry growth. Similar economic analyses are applied to the outlook for aviation growth in international markets.

In 2007, passenger demand growth on U.S. airlines rebounded from a weak year in 2006. System revenue passenger miles (RPMs) and enplanements grew 3.9 and 3.3 percent, respectively. Commercial air carrier domestic enplanements increased 3.1 percent, while international enplanements grew 5.1 percent to a record 75.5 million. The system-wide load factor increased to an all-time high of 79.9 percent and, coupled with a 2.3 percent increase in yield, resulted in an industry-wide operating profit for the second year in a row.

For the first time since 1995, regional carrier domestic market share declined. The market share for low-cost carriers grew while their network carrier counterparts remained flat. The market for general aviation products and services showed mixed results in 2007. Although total shipments and billings were up 4.2 percent and 15.2 percent respectively compared to 2006, piston aircraft shipments by U.S. manufacturers were down 4.9 percent. The increase in shipments and billings seen in the jet fleet was stimulated by growth in the U.S. and world economy.

The Office of Management and Budget (OMB) forecasts a slowdown in U.S. economic growth in FY 2008 followed by a rebound to more historic rates for the balance of the forecast. This slowdown in 2008 could result in some difficulties for the U.S. commercial aviation industry, but the return to historic rates after that should allow the industry to continue its growth.

Following a 0.2 percent decline in 2006, passenger enplanement growth rebounded in 2007, up 3.1 percent. Similar to RPMs, passenger volume is expected to grow slowly in 2008 (up 1.0 percent) and speed up in 2009 (up 3.5 percent). During the entire forecast period, domestic enplanements are projected to grow at an average annual rate of 2.8 percent with mainline carriers growing slower than regional carriers (2.5 and 3.8 percent per year, respectively).

Historically, air cargo activity has moved in sync with gross domestic product (GDP). However, the all-cargo carriers have increased their share of domestic cargo revenue ton miles (RTMs) flown from 65.4 percent in 1977 to 80.9 percent in 2007. There are several recent factors that account for the relative growth of the all-cargo sector. One factor is the FAA security directive issued in 2001 that strengthened security standards for transporting cargo on passenger flights. Another factor was the inclusion of Airborne Express into the cargo data reported to the Department of Transportation beginning in 2003. In addition, with passenger load factors at record levels, there is less space available for belly cargo. The all-cargo share is forecast to increase to 84.4 percent by 2025.

GENERAL AVIATION

Following more than a decade of decline, the general aviation industry was revitalized with the passage of the *General Aviation Revitalization Act* in 1994, which limits the liability on general aviation aircraft to 18 years from the date of manufacture. This legislation sparked an interest to renew the manufacturing of general aviation aircraft due to the reduction in product liability, as well as renewed optimism for the industry.

As the demand for business jets has grown over the past several years, the current forecast assumes that business use of general aviation aircraft will expand at a more rapid pace than that for personal/sport use. The business/corporate side of general aviation should also continue to benefit from a growing market for new very light jets (VLJs).

In 2007, there were an estimated 225,007 active general aviation aircraft in the United States. **Exhibit 2A** depicts the FAA forecast for active general aviation aircraft. The FAA projects an average annual increase of 1.3 percent through 2025, resulting in 286,500 active aircraft. The more expensive and sophisticated turbine-powered fleet (including rotorcraft) is projected to grow at an average of 3.7 percent a year over the forecast period, with the turbine jet fleet increasing at 5.6 percent a year.

The number of active piston-powered aircraft (including rotorcraft) is projected to decrease from the 2006 total of 167,008 through 2008, and then increase gradually to 181,345 by 2025, which is an average annual growth rate of 0.5 percent. In addition, it is expected that the new, light sport aircraft and the relatively inexpensive microjets could erode the replacement market for traditional piston aircraft at the high and low ends of the market respectively.

Beginning in 2005, a new category of aircraft that was previously not included in the FAA's aircraft registry counts was created: light sport aircraft. At the end of 2006, a total of 1,273 aircraft were estimated to be in this category. The forecast assumes registration of 5,600 aircraft over a five-year period beginning in 2005. By 2025, a total of 14,700 light sport aircraft are projected to be in the fleet.

The number of general aviation hours flown is projected to increase by 3.0 percent yearly over the forecast period. Much of this reflects increased flying by business and corporate aircraft as well as a relatively small annual percentage increase in utilization rates for piston aircraft. Hours flown by turbine aircraft are forecast to increase 5.3 percent yearly over the forecast period, compared with 1.1 percent for piston-powered aircraft. Jet aircraft are forecast to account for most of the increase, with hours flown expanding at an average annual rate of 7.7 percent over the forecast period. The large increases in jet hours result mainly from the introduction of VLJs, as well as increases in the fractional ownership fleet and its activity levels.

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U.S. ACTIVE GENERAL AVIATION AIRCRAFT

U.S. ACTIVE GENERAL AVIATION AIRCRAFT (in thousands)

	FIXED WING									
	PISTON		TURBINE		ROTORCRAFT					
Year	Single Engine	Multi-Engine	Turboprop	Turbojet	Piston	Turbine	Experimental	Sport Aircraft	Other	Total
2007 (Est.)	144.5	21.1	8.2	11.0	3.6	6.0	23.9	2.7	6.4	225.0
2015	145.6	17.2	9.3	19.8	6.2	7.3	29.7	10.5	6.5	252.3
2020	150.0	16.5	10.1	24.9	7.3	7.9	32.6	13.2	6.4	268.9
2025	157.4	15.6	10.8	29.5	8.3	8.6	35.2	14.7	6.4	286.5

Source: FAA Aerospace Forecasts, Fiscal Years 2008-2025.

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

FRENCH VALLEY AIRPORT

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

FORECASTING APPROACH

The development of aviation forecasts proceeds through both analytical and judgmental processes. A series of mathematical relationships is tested to establish statistical logic and rationale for projected growth. However, the judgment of the forecast analyst, based upon professional experience, knowledge of the aviation industry, and assessment of the local situation, is important in the final determination of the preferred forecast. The most reliable approach to estimating aviation demand is through the utilization of more than one analytical technique. Methodologies frequently considered include trend line/time-series projections, correlation/regression analysis, and market share analysis.

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

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

Regression analysis measures statistical relationships between dependent and independent variables, yielding a "correlation coefficient." The correlation coefficient (Pearson's "r") measures association between the changes in the dependent variable and the independent variable(s). If the "r^2" value (coefficient determination) is greater than 0.95, it indicates good predictive reliability. A value less than 0.95 may be used, but with the understanding that the predictive reliability is lower.

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

It is important to note that one should not assume a high level of confidence in forecasts that extend beyond five years. Facility and financial planning usually require at least a 10-year preview since it often takes more than five years to complete a major facility development program. However, it is important to use forecasts which do not overestimate revenue-generating capabilities or understate demand for facilities needed to meet public (user) needs.

AIRPORT SERVICE AREA

French Valley Airport is classified in the National Plan of Integrated Airport Systems (NPIAS), as well as by the California Department of Transportation (CALTRANS), as a general aviation airport. It is expected that the airport will remain a general aviation airport, and there are currently no plans by Riverside County (or no justification) to bring commercial air service and/or air cargo to the airport. Therefore, the forecasts will only examine the general aviation role at French Valley Airport.

The general aviation service area is affected by the number of nearby airfields which also have the ability to base and serve general aviation aircraft. There are three public-use airports within a 15 nautical mile (nm) radius of French Valley Airport. While French Valley Airport has a runway length of 6,000 feet, the longest runway of these three nearby airports is the 5,100-foot runway at Perris Valley Airport. A runway of 5,000 feet or greater is generally preferred by corporate aviation departments operating turbine aircraft.

Other factors affect the decision to base at a given airport, including availability of hangars (and rates), services offered (including fuel), access to major highways, and instrument capabilities. Services provided at many of these airports include aircraft maintenance, aircraft rental/sales, flight training, aerial tours, fuel, pilot supplies, aircraft hangars, tie downs, courtesy transportation, and catering.

AVIATION ACTIVITY FORECASTS

The following forecast analysis examines each of the aviation demand categories expected at French Valley Airport. Each segment will be examined individually, and then collectively, to provide an understanding of the overall aviation activity at the airport through 2030.

The need for airport facilities at French Valley Airport can best be determined by accounting for forecasts of future aviation demand. Therefore, the remainder of this chapter presents the forecasts for airport users and includes the following:

- GENERAL AVIATION
  - Based Aircraft
  - Based Aircraft Fleet Mix
  - Local and Itinerant Operations*
  - Peak Activity
  - Annual Instrument Approaches

* includes air taxi category

GENERAL AVIATION

General aviation encompasses all portions of civil aviation except commercial operations. To determine the types and sizes of facilities that should be planned to accommodate general aviation activity, certain elements of this activity must be forecast. These indicators of general aviation demand include based aircraft, aircraft fleet mix, and annual operations.

The number of based aircraft is the most basic indicator of general aviation demand. By first developing a forecast of based aircraft, the growth of other general aviation activities and demands can be projected. Aircraft basing at an airport is somewhat dependent upon the nature and magnitude of aircraft ownership in the local service area. As a result, aircraft registrations in the area were reviewed and forecast first.

Registered Aircraft Forecasts

Table 2A presents historical registered aircraft data for Riverside County since 1997. While the number of registered aircraft decreased slightly between 1997 and 1998, it has increased every year since then. Over the past ten years, the county's registered aircraft experienced an average annual growth rate of 2.4 percent, adding nearly 400 additional aircraft. This is slightly above the national average of 1.6 percent annual growth rate for U.S. active general aviation aircraft during that same time. National growth coincides not only with the improved general economic conditions of the period, but also the *General Aviation Revitalization Act*, which was approved by Congress in 1994 and sparked new aircraft manufacturing.

TABLE 2A
Historical Registered Aircraft
Riverside County

Year	Riverside County Registered Aircraft	Annual Growth Rate
1997	1,462	-
1998	1,427	-2.4%
1999	1,492	4.6%
2000	1,554	4.2%
2001	1,600	3.0%
2002	1,608	0.5%
2003	1,638	1.9%
2004	1,706	4.2%
2005	1,744	2.2%
2006	1,766	1.3%
2007	1,854	5.0%

Source: Historical Registered Aircraft – Aviation Goldmine CD (1997-2000), Avantex Aircraft & Airmen CD (2001-2007).

There are no recently prepared forecasts of registered aircraft to examine and compare. As a result, several projections of county registrations were developed. First, a time-series analysis of registered aircraft in Riverside County was prepared based upon the historic data gathered between 1997 and 2007. This analysis yielded an r^2 value of 0.97. As previously mentioned, an r^2 greater than 0.95 indicates good predictive reliability. Utilizing this projection, the County could expect 2,746 registered aircraft by 2030. Next, a regression analysis was completed, which compared registered aircraft in Riverside County to the population in the county. This analysis also yielded an r^2 value of 0.97, which equates to 2,583 registered aircraft by 2030.

Another useful tool in projecting registered aircraft in Riverside County considers the county's market share of U.S. active general aviation aircraft. This market share analysis compares the county's aircraft ownership trends versus national aircraft ownership trends. Over the past ten years, the county's market share fluctuated between a low of 0.68 percent in 1999 to a high of 0.82 percent in 2007. Based on this historical data, two market share forecasts were then developed. First, a projection maintaining the 2007 market share constant through the planning period was developed and resulted in 2,515 registered aircraft by 2030. Second, a projection continuing with an increasing market share was developed to represent the historical trend since 1999 and yields 2,747 registered aircraft by 2030. These two market share forecasts are presented in **Table 2B**.

TABLE 2B
Registered Aircraft Market Share of U.S. Active General Aviation (GA) Aircraft
Riverside County

Year	Riverside County Registered Aircraft	U.S. Active GA Aircraft	Riverside County Market Share
1997	1,462	192,414	0.76%
1998	1,427	204,711	0.70%
1999	1,492	219,464	0.68%
2000	1,554	217,533	0.71%
2001	1,600	211,446	0.76%
2002	1,608	211,244	0.76%
2003	1,638	209,606	0.78%
2004	1,706	219,319	0.78%
2005	1,744	224,262	0.78%
2006	1,766	221,942	0.80%
2007	1,854	225,007	0.82%
Constant Market Share			
2013	2,019	245,090	0.82%
2018	2,163	262,460	0.82%
2030	2,515	305,200[1]	0.82%
Increasing Market Share			
2013	2,059	245,090	0.84%
2018	2,257	262,460	0.86%
2030	2,747	305,200[1]	0.90%

Source: Historical Registered Aircraft – Aviation Goldmine CD (1997-2000), Avantex Aircraft & Airmen CD (2001-2007); Historical & Forecast U.S. Active GA Aircraft – FAA Aerospace Forecasts, Fiscal Years 2008-2025.
[1]Extrapolated

A forecast comparing the number of registered aircraft in Riverside County to the population was also developed. This forecast examined the historical registered aircraft as a ratio of 1,000 residents in the county. As shown in **Table 2C**, the 2007 estimated population for the county was 2,032,000.

This equates to 0.91 registered aircraft per 1,000 residents. While this ratio saw a slight increase between 1998 and 2000, it has steadily decreased every year since. Two projections were developed based on this data.

The first projection maintains a constant ratio projection and yields 2,901 registered aircraft by 2030. Next, a decreasing ratio projection was developed to represent the historical trend and yields 2,639 registered aircraft by 2030. These two projections are presented in **Table 2C**.

TABLE 2C
Registered Aircraft Per 1,000 Residents
Riverside County

Year	Riverside County Registered Aircraft	Riverside County Population	Registered Aircraft Per 1,000 Residents
1997	1,462	1,422,000	1.03
1998	1,427	1,462,000	1.98
1999	1,492	1,503,000	0.99
2000	1,554	1,545,000	1.01
2001	1,600	1,607,000	1.00
2002	1,608	1,671,000	0.96
2003	1,638	1,738,000	0.94
2004	1,706	1,807,000	0.94
2005	1,744	1,879,000	0.93
2006	1,766	1,954,000	0.90
2007	1,854	2,032,000	0.91
Constant Market Share			
2013	2,105	2,307,000	0.91
2018	2,340	2,565,000	0.91
2030	2,901	3,180,000	0.91
Decreasing Market Share			
2013	2,053	2,307,000	0.89
2018	2,232	2,565,000	0.87
2030	2,639	3,180,000	0.83

Source: Historical Registered Aircraft – Aviation Goldmine CD (1997-2000), Avantex Aircraft & Airmen CD (2001-2007); Historical Population – U.S. Census Bureau; Forecast Population – California Department of Finance (July 2007).

Another forecast method examined the historical growth rate of registered aircraft in Riverside County. As previously mentioned, registered aircraft grew at an average annual rate of 2.4 percent between 1997 and 2007. This growth rate was applied to the forecast years and yields 3,199 registered aircraft by the year 2030.

Table 2D summarizes the registered aircraft forecasts for Riverside County. For planning purposes, an average of each of the newly created forecasts has been selected as the planning forecast. This forecast results in 2,065 registered aircraft by 2013; 2,260 registered aircraft by 2018; and 2,760 registered aircraft by 2030. This represents an average annual growth rate of 1.7 percent.

TABLE 2D Registered Aircraft Forecast Summary Riverside County	2007	2013	2018	2030
Time-Series Analysis 1997-2007 (r^2=0.97)		2,064	2,265	2,746
Population Regression 1997-2007 (r^2=0.97)		2,019	2,186	2,583
Market Share of U.S. Active GA Aircraft				
Constant Market Share		2,019	2,163	2,515
Increasing Market Share		2,059	2,257	2,747
Registered Aircraft Per 1,000 Residents				
Constant Ratio Projection		2,105	2,340	2,901
Decreasing Ratio Projection		2,053	2,232	2,639
2.4% Historical Growth Rate (1997-2007)		2,138	2,407	3,199
Selected Planning Forecast	**1,854**	**2,065**	**2,260**	**2,760**

Based Aircraft Forecasts

As previously mentioned, the number of based aircraft is the most basic indicator of general aviation demand at an airport. By first developing a forecast of based aircraft, the growth of aviation activities at the airport can be projected.

The previous master plan identified 161 based aircraft in 1997, but this number is unverified. According to airport records, there were 311 based aircraft in 2007. Since annualized based aircraft was not available for this study, several methods have been utilized to project future based aircraft.

The first method used to develop forecasts of based aircraft examined the airport's market share of registered aircraft. The 311 based aircraft at French Valley Airport in 2007 represents 17 percent of the total aircraft registered in Riverside County. A constant market share forecast is presented in **Table 2E**. This forecast assumes the airport's market share will remain at 17 percent, which yields 463 based aircraft by 2030.

TABLE 2E
Based Aircraft Market Share of Registered Aircraft (Riverside County)
French Valley Airport

Year	French Valley Based Aircraft	Riverside County Registered Aircraft	Based Aircraft Market Share
2007	311	1,854	17%
Constant Market Share			
2013	346	2,065	17%
2018	379	2,260	17%
2030	463	2,760	17%

Source: Historical Based Aircraft – Airport Records; Historical Registered Aircraft – Aviation Goldmine CD (1997-2000), Avantex Aircraft & Airmen CD (2001-2007).

Another method used to project based aircraft examined the number of based aircraft as a ratio per 1,000 residents in Riverside County. The county's estimated population in 2007 was 2,032,000, which equates to 0.15 based aircraft per 1,000 residents. As shown in **Table 2F**, a constant ratio projection was developed and yields 487 based aircraft by 2030.

TABLE 2F
Based Aircraft Per 1,000 Residents (Riverside County)
Riverside County

Year	French Valley Based Aircraft	Riverside County Population	Based Aircraft Per 1,000 Residents
2007	311	2,032,000	0.15
Constant Market Share			
2013	353	2,307,000	0.15
2018	393	2,565,000	0.15
2030	487	3,180,000	0.15

Source: Historical Based Aircraft – Airport Records; Historical Registered Aircraft – Aviation Goldmine CD (1997-2000), Avantex Aircraft & Airmen CD (2001-2007); Historical Population – U.S. Census Bureau; Forecast Population – California Department of Finance (July 2007).

Projections included in the *FAA Terminal Area Forecasts* (TAF), which was issued in December 2007, were also examined. The 2007 FAA TAF used a base year of 2006 when they estimated 311 based aircraft at French Valley Airport. The FAA projects based aircraft to remain stagnant through the planning period (although no justification is provided).

A summary of the based aircraft forecasts is presented in **Table 2G** and **Exhibit 2B**. The preferred planning forecast is an average of the newly created forecasts developed by Coffman Associates. The preferred planning forecast yields 350 based aircraft by 2013; 385 based aircraft by 2018; and 475 based aircraft by 2030. This represents an average annual growth rate of 1.9 percent, which is consistent with national trends and less than the historic growth at the airport over the past fifteen years.

TABLE 2G
Based Aircraft Forecast Summary
French Valley Airport

	2007	2013	2018	2030
Market Share of Registered Aircraft (Riverside Co.) Constant Market Share		346	379	463
Based Aircraft Per 1,000 Residents (Riverside Co.) Constant Ratio Projection		353	393	487
2006 FAA *Terminal Area Forecast*		311	311	311
Preferred Planning Forecast	**311**	350	385	475

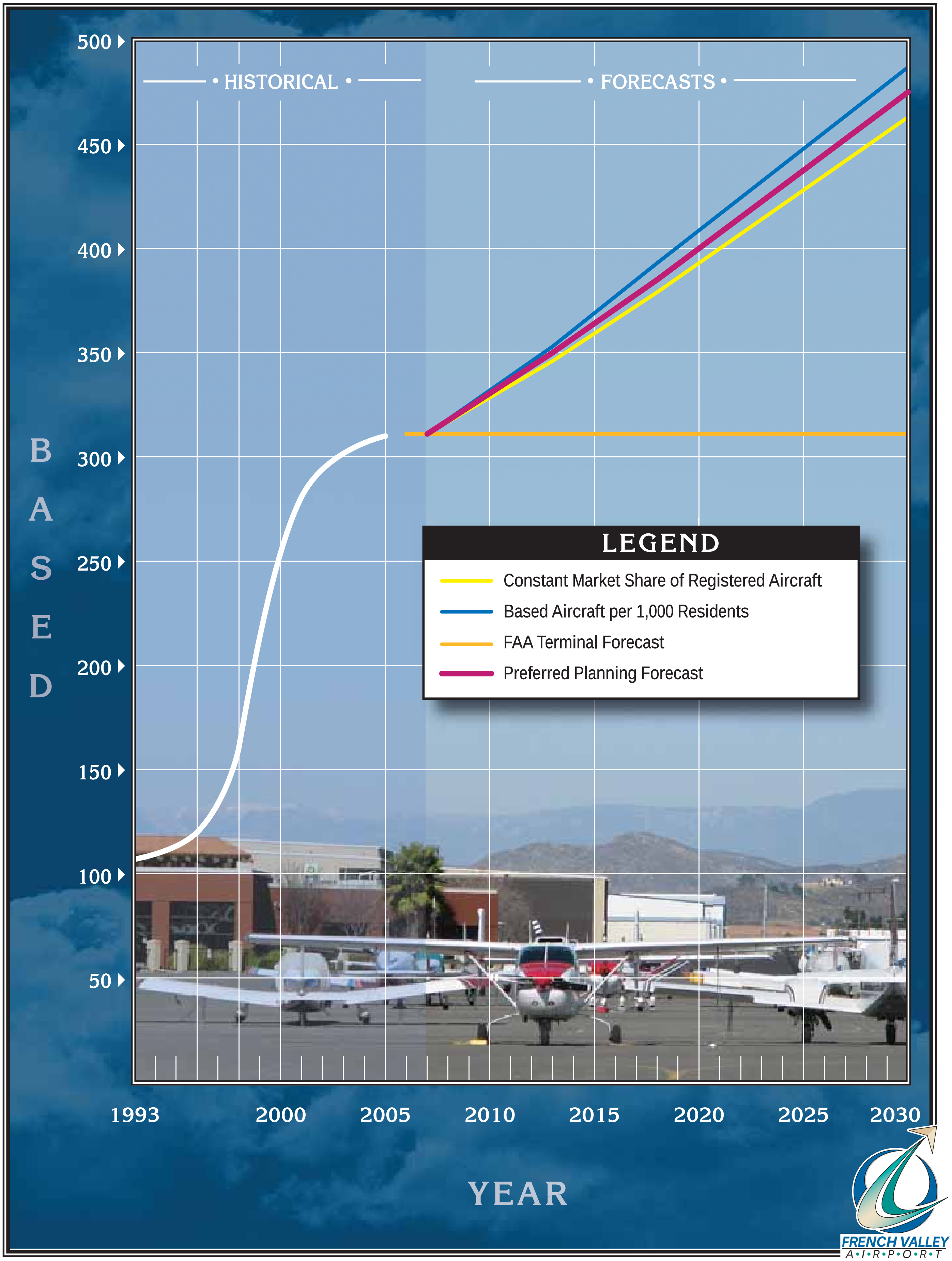


Exhibit 2B
BASED AIRCRAFT
FORECASTS

Based Aircraft Fleet Mix

According to airport records, the fleet mix consists of the following: 283 single-engine aircraft, 12 multi-engine aircraft, six jets, six helicopters, and four ultralights. While the number of general aviation aircraft basing at French Valley Airport is projected to increase, it is important to know the fleet mix of the aircraft expected to use the airport. This will ensure the placement of proper facilities in the future.

The national trend in general aviation is toward a greater percentage of larger, more sophisticated aircraft as part of the national fleet. While an increase in single engine aircraft can be expected, their percentage of the total fleet mix will likely decrease. Meanwhile, the percentage of multi-engine aircraft is projected to increase by six percent by the end of the planning period, while the percentage of jets is expected to increase by two percent. Only a slight percentage increase is projected for the helicopter and ultralight fleet mix at the airport. The fleet mix projections are shown in **Table 2H**.

TABLE 2H
Based Aircraft Fleet Mix
French Valley Airport

Year	Total	Single-Engine	Multi-Engine	Jets	Helicopters	Ultralights
2007	311	283	12	6	6	4
Percentage Share						
2007	100.0%	91.0%	3.9%	1.9%	1.9%	1.3%
FORECAST						
2013	350	311	18	9	7	5
2018	385	328	31	12	8	6
2030	475	391	48	19	10	7
Change	+164	+108	+36	+13	+4	+3
Percentage Share						
2013	100.0%	89.0%	5.0%	2.5%	2.0%	1.5%
2018	100.0%	85.5%	8.0%	3.0%	2.0%	1.5%
2030	100.0%	82.5%	10.0%	4.0%	2.0%	1.5%

Source: Historical Based Aircraft – Airport Records.

General Aviation Operations

General aviation operations are classified as either local or itinerant. A local operation is a take-off or landing performed by an aircraft that operates within sight of the airport, or which executes simulated approaches or touch-and-go operations at the airport.

Itinerant operations are those performed by aircraft with a specific origin or destination away from the airport. Generally, local operations are characterized by training operations. Typically, itinerant operations increase with business and commercial use, since business aircraft are operated on a higher frequency.

According to the 2007 FAA TAF, there were 98,185 estimated general aviation operations at French Valley Airport in 2006. Forecasts in the FAA TAF project operations to remain stagnant through the year 2025. However, without an airport traffic control tower, this number is only an estimate.

For a more accurate measure of annual operations, records of acoustical counts performed at the airport were reviewed. Acoustical counters log aircraft operations by sensing the noise generated by arriving and departing aircraft. Typically, two-week samples are taken during each quarter to estimate total operations for the year. At French Valley Airport, a total of nine two-week samples were taken between January 2005 and April 2007. These two-week samples were then used to estimate quarterly operations for each year and a base number of 97,700 annual operations was then derived from the annual averages. A summary of the acoustical counts is presented in **Table 2J**.

TABLE 2J
Acoustical Counts
French Valley Airport

	2005 Annualized Totals
1st Quarter Sample	58,811
2nd Quarter Sample	124,328
3rd Quarter Sample	90,833
4th Quarter Sample	98,185
Year Average	93,039
	2006 Annualized Totals
1st Quarter Sample	108,126
2nd Quarter Sample	136,419
3rd Quarter Sample	69,399
4th Quarter Sample	102,492
Year Average	104,109
	2007 Annualized Totals
3rd Quarter Sample	95,995
Summary of Annual Operations	
2005 Annualized Operations	93,039
2006 Annualized Operations	104,109
2007 Annualized Operations	95,995
Base Year Operations	**97,700**

Source: Airport Records.

Forecasts of annual operations were developed by examining the number of operations per based aircraft. As shown in **Table 2K**, the base number of 97,700 annual operations equates to 314 operations per based aircraft. Holding this ratio constant through the planning period yields 149,200 annual operations by 2030, which equates to an average annual growth rate of 1.9 percent.

Itinerant operations were estimated to account for approximately 35 percent of total operations, while local operations were estimated to account for approximately 65 percent. It is expected that these percentages will remain the same through the planning period. A summary of the general aviation operations forecasts are presented in **Table 2K** and **Exhibit 2C**.

TABLE 2K
General Aviation Operations Forecast
French Valley Airport

Year	Based Aircraft	Itinerant Operations	Local Operations	Total Operations	Ops Per Based Aircraft
2007	311	34,200	63,500	97,700	314
Constant Ratio Projection					
2013	350	38,500	71,500	110,000	314
2018	385	42,300	78,600	120,900	314
2030	475	52,200	97,000	149,200	314

Base number of annual operations estimated from acoustical counts.

Peaking Characteristics

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

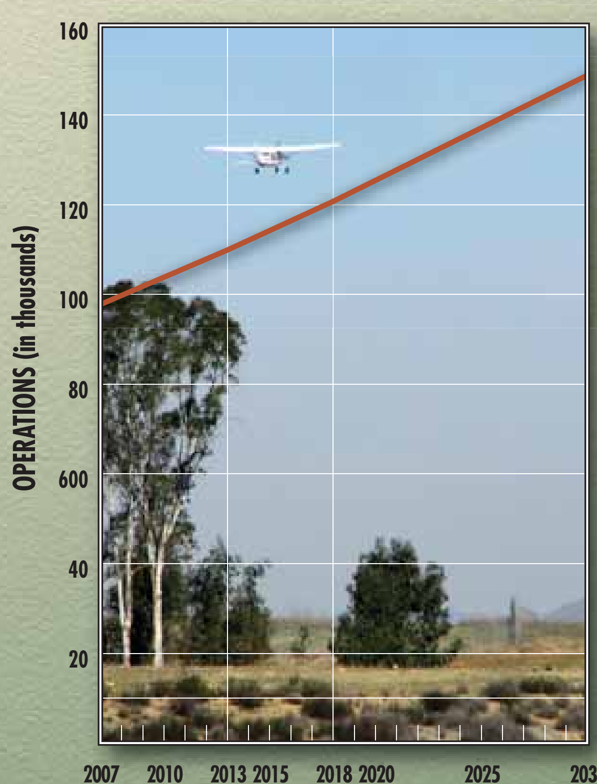
- **Peak Month –** The calendar month when peak activity occurs.
- **Design Day –** The average day in the peak month. This indicator is derived by dividing the peak month activity by the number of days in the month.
- **Busy Day –** The busy day of a typical week in the peak month.
- **Design Hour –**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

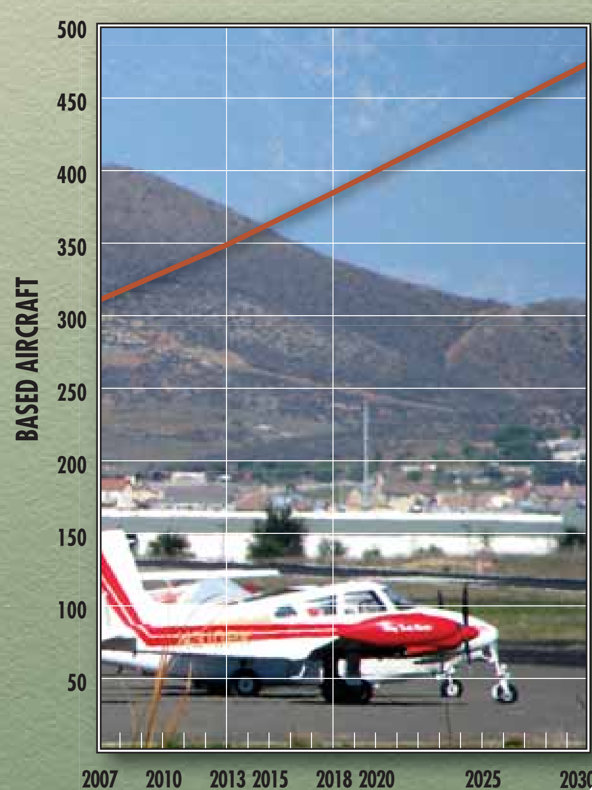
It is important to realize that only the peak month is an absolute peak within the year. Each of the other periods will be exceeded at various times during the year. However, each provides reasonable planning standards that can be applied without overbuilding or being too restrictive.

Typically, the peak month for general aviation operations represents between 10 and 12 percent of the airport's annual operations. For this analysis, the peak month was estimated at 10 percent of annual operations, which equates to 11,724 operations. Forecasts of peak month activity have been developed by applying this percentage to the forecasts of annual operations.

Design day operations were calculated by dividing the total number of operations in the peak month by the number of days in the month. The design hour is projected as 15 percent of the design day operations. Busy day op-

	2007	2013	2018	2030
ANNUAL OPERATIONS				
Itinerant				
General Aviation	30,780	34,650	38,070	46,980
Air Taxi	3,420	3,850	4,230	5,220
Total Itinerant	***34,200***	***38,500***	***42,300***	***52,200***
Local				
General Aviation	63,500	71,500	78,600	97,000
Total Local	***63,500***	***71,500***	***78,600***	***97,000***
Total Operations	***97,700***	***110,000***	***120,900***	***149,200***
Annual Instrument Approaches	342	385	423	522
BASED AIRCRAFT				
Single Engine	283	311	328	391
Multi-Engine	12	18	31	48
Jets	6	9	12	19
Helicopters	6	7	8	10
Ultralights	4	5	6	7
Total Based Aircraft	***311***	***350***	***385***	***475***





FRENCH VALLEY AIRPORT

Exhibit 2C
FORECAST SUMMARY

erations were calculated as 1.25 times the design day activity. **Table 2L** summarizes the general aviation peak activity forecasts.

TABLE 2L **Peak Period Forecasts** **French Valley Airport**				
		FORECASTS		
	2007	**2013**	**2018**	**2030**
Annual	97,700	110,000	120,900	149,200
Peak Month (10.0%)	11,724	13,200	14,508	17,904
Design Day	391	440	484	597
Busy Day	489	550	605	746
Design Hour (15%)	59	66	73	90

AIR TAXI OPERATIONS

The total annual operations by aircraft operating under F.A.R. Part 135 (air taxi) have also been examined since a percentage of the locally based aircraft operate under Part 135. Part 135 operations were estimated at ten percent of itinerant operations, which is typical for general aviation airports of this size. This equates to an estimated 3,420 air taxi operations for the base year. **Table 2M** presents the air taxi operations forecast at French Valley Airport. Assuming air taxi operations will continue to account for ten percent of itinerant operations, approximately 5,220 air taxi operations are projected by the end of the planning period.

TABLE 2M **Air Taxi Operations Forecast** **French Valley Airport**	
Year	**Air Taxi Operations**
2007	3,420
2013	3,850
2018	4,230
2030	5,220

ANNUAL INSTRUMENT APPROACHES

Forecasts of annual instrument approaches (AIAs) provide guidance in determining an airport's requirements for navigational aid facilities. An instrument approach is defined by the FAA as "an approach to an airport with intent to land by an aircraft in accordance with an Instrument Flight Rule (IFR) flight plan, when visibility is less than three miles and/or when the ceiling is at or below the minimum approach altitude."

To qualify as an instrument approach at French Valley Airport, aircraft must land at the airport after following the published Global Positioning System instrument approach procedures and then properly close their flight plan on the ground. The approach must be conducted in weather conditions which necessitate the use of the instrument approach. If the flight plan is closed prior to landing, then the AIA is not counted in the statistics. It should be noted that practice or training approaches do not count.

Historical AIA information was not available for French Valley Airport. This does not necessarily indicate that this approach is not used. The FAA does not make records available for each airport. For planning purposes, it has been assumed that a total of 10 percent of annual air taxi operations are performed as AIAs. This yields an initial total of approximately 342 AIAs for the base year. Assuming AIAs will continue to account for approximately 10 percent of air taxi operations, 522 AIAs are projected by the end of the planning period. It should be noted that actual AIAs will vary from year to year based upon the actual amount of IFR weather. Forecasts of AIAs are presented in **Table 2N**.

TABLE 2N
AIA Forecast
French Valley Airport

Year	AIAs
2007	342
2013	385
2018	423
2030	522

SUMMARY

The information discussed on the previous pages provides a foundation upon which the remaining elements of the planning process will be constructed. Information on current airport facilities and utilization will serve as a basis, with additional analysis and data collection, for the development of forecasts of aviation activity and facility requirement determinations. The inventory of existing conditions is the first step in the process of determining those factors which will meet projected aviation demand in the community and the region. A summary of the aviation forecasts prepared for French Valley Airport is presented in **Exhibit 2C**.

Chapter Three

FACILITY REQUIREMENTS

Chapter Three

FACILITY REQUIREMENTS

To properly plan for the future of French Valley Airport, it is necessary to translate forecast aviation demand into the specific types and quantities of facilities that can adequately serve this identified demand. This chapter uses the results of the forecasts conducted in Chapter Two, as well as established planning criteria, to determine the airfield (i.e., runways, taxiways, navigational aids, marking and lighting) and landside (i.e., hangars, general aviation terminal building, aircraft parking apron) facility requirements.

The objective of this effort is to identify, in general terms, the adequacy of the existing airport facilities, outline what new facilities may be needed, and when these may be needed to accommodate forecast demands. Having established these facility requirements, alternatives for providing these facilities will be evaluated in Chapter Four to determine the most cost-effective and efficient means for implementation.

The cost-effective, efficient, and orderly development of an airport should rely more upon actual demand at an airport than on a time-based forecast figure. In order to develop a master plan that is demand-based rather than time-based, a series of planning horizon milestones have been established for French Valley Airport that take into consideration the reasonable range of aviation demand projections prepared in Chapter Two. It is important to consider that the actual activity at the airport may be higher or lower than projected activity levels. By planning according to activity

milestones, the resultant plan can accommodate unexpected shifts or changes in the area's aviation demand.

The most important reason for utilizing milestones is that they allow the airport to develop facilities according to need generated by actual demand levels. The demand-based schedule provides flexibility in development, as development schedules can be slowed or expedited according to actual demand at any given time over the planning period. The resultant plan provides airport officials with a financially responsible and needs-based program. **Table 3A** presents the planning horizon milestones for each activity demand category.

TABLE 3A
Planning Horizon Activity Levels
French Valley Airport

	2007	Short Term	Intermediate Term	Long Term
OPERATIONS				
Local	63,500	71,500	78,600	97,000
Itinerant	34,200	38,500	42,300	52,200
Total	97,700	110,000	120,900	149,200
Based Aircraft	311	350	385	475

In this chapter, existing components of the airport are evaluated so that the capacities of the overall system are identified. Once identified, the existing capacity is compared to the planning horizon milestones to determine where deficiencies currently exist or may be expected to materialize in the future. Once deficiencies in a component are identified, a more specific determination of the appropriate sizing and timing of the new facilities can be made.

AIRFIELD REQUIREMENTS

Airfield requirements include the need for those facilities related to the arrival and departure of aircraft. The adequacy of existing airfield facilities at French Valley Airport has been analyzed from a number of perspectives, including airfield capacity, runway length, runway pavement strength, airfield lighting, navigational aids, and pavement markings.

AIRFIELD DESIGN STANDARDS

The selection of appropriate Federal Aviation Administration (FAA) design standards for the development and location of airport facilities is based primarily upon the characteristics of the aircraft which are currently using or are expected to use the airport. Planning for future aircraft use is of particular importance since design standards are used to plan separation distances between facilities. These standards must be determined now, since the relocation of these facilities will likely be extremely expensive at a later date.

The FAA has established a coding system to relate airport design criteria to the operational and physical characteristics of aircraft expected to use the airport. This code, the airport reference code (ARC), has two components. The first component, depicted by a letter, is the aircraft approach speed (operational characteristic). The second component, depicted by a Roman numeral, is the airplane design group and relates to aircraft wingspan (physical characteristic). Generally, aircraft approach speed applies to runways and runway-related facilities, while aircraft wingspan primarily relates to separation criteria involving taxiways, taxilanes, and landside facilities.

According to FAA Advisory Circular (AC) 150/5300-13, *Airport Design*, an aircraft's approach category is based upon 1.3 times its stall speed in landing configuration at that aircraft's maximum certificated weight. The five approach categories used in airport planning are as follows:

Category A: Speed less than 91 knots.

Category B: Speed 91 knots or more, but less than 121 knots.

Category C: Speed 121 knots or more, but less than 141 knots.

Category D: Speed 141 knots or more, but less than 166 knots.

Category E: Speed greater than 166 knots.

The airplane design group (ADG) is based upon the aircraft's wingspan and tail height. The six ADGs used in airport planning are as follows:

Group I: Up to but not including 49 feet wingspan or tail height up to but not including 20 feet.

Group II: 49 feet up to but not including 79 feet wingspan or tail height from 20 up to but not including 30 feet.

Group III: 79 feet up to but not including 118 feet wingspan or tail height from 30 up to but not including 45 feet.

Group IV: 118 feet up to but not including 171 feet wingspan or tail height from 45 up to but not including 60 feet.

Group V: 171 feet up to but not including 214 feet wingspan or tail height from 60 up to but not including 66 feet.

Group VI: 214 feet up to but not including 262 feet wingspan or tail height from 66 up to but not including 80 feet.

In order to determine facility requirements, an ARC should first be determined, and then appropriate airport design criteria can be applied. This begins with a review of the type of aircraft using and expected to use French Valley Airport. **Exhibit 3A** provides a listing of typical aircraft and their associated ARC.

The FAA recommends designing airport functional elements to meet the requirements of the most demanding

07MP01-3A-5/02/08

A-I

- Beech Baron 55
- Beech Bonanza
- Cessna 150
- Cessna 172
- Cessna Citation Mustang
- **Eclipse 500**
- Piper Archer
- Piper Seneca

C-I, D-I

- Beech 400
- **Lear** 25, 31, **35**, 45, 55, 60
- Israeli Westwind
- HS 125-400, 700

B-I *less than 12,500 lbs.*

- Beech Baron 58
- Beech King Air 100
- Cessna 402
- **Cessna 421**
- Piper Navajo
- Piper Cheyenne
- Swearingen Metroliner
- Cessna Citation I

C-II, D-II

- Cessna Citation III, VI, VIII, X
- **Gulfstream** II, III, **IV**
- Canadair 600
- ERJ-135, 140, 145
- CRJ-200, 700, 900
- Embraer Regional Jet
- Lockheed JetStar
- Super King Air 350

B-II *less than 12,500 lbs.*

- **Super King Air 200**
- Cessna 441
- DHC Twin Otter

C-III, D-III

- ERJ-170, 190
- Boeing Business Jet
- B 727-200
- **B 737-300 Series**
- MD-80, DC-9
- Fokker 70, 100
- A319, A320
- Gulfstream V
- Global Express

B-I, B-II *over 12,500 lbs.*

- Super King Air 300
- Beech 1900
- Jetstream 31
- Falcon 10, 20, 50
- Falcon 200, 900
- **Citation II**, III, IV, V
- Saab 340
- Embraer 120

C-IV, D-IV

- **B-757**
- B-767
- C-130
- DC-8-70
- DC-10
- MD-11
- L1011

A-III, B-III

- DHC Dash 7
- **DHC Dash 8**
- DC-3
- Convair 580
- Fairchild F-27
- ATR 72
- ATP

D-V

- **B-747** Series
- B-777

Note: Aircraft pictured is identified in bold type.

FRENCH VALLEY AIRPORT

Exhibit 3A
AIRPORT REFERENCE CODES

ARC for that airport (minimum of 500 annual itinerant operations). French Valley Airport currently accommodates a wide variety of civilian aircraft, including small single and multi-engine aircraft (which fall within approach categories A and B and airplane design groups I and II) and business turboprop and jet aircraft (which fall within approach categories B, C, and D and airplane design groups I, II, and III). No single aircraft provides 500 annual itinerant operations. While the airport is used by a number of helicopters, they are not included in this determination as they are not assigned an ARC.

The existing ARC for Runway 18-36 (and the facility) is B-II. This ARC includes all general aviation aircraft, as well as the majority of the business aircraft currently using the airport. While aircraft in higher ARCs may use the airport, they are not expected to contribute more than 500 annual itinerant operations and are limited by weight and takeoff and landing requirements. The forecasts anticipate increasing utilization by small single and multi-engine aircraft, as well as business turboprop and jet aircraft throughout the planning period. The potential mix of aircraft will continue to place the airport in the B-II category.

AIRPORT IMAGINARY SURFACES

The FAA has established several imaginary surfaces to protect aircraft operational areas and keep them free from obstructions that could affect the safe operation of aircraft. These include the runway safety area (RSA), object free area (OFA), obstacle free zone (OFZ), and runway protection zone (RPZ).

The RSA is "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 an excursion from the runway." An object free area is an area on the ground centered on the runway, taxiway, or centerline, provided to enhance the safety of aircraft operations, except for objects that need to be located in the OFA for air navigation or aircraft ground maneuvering purposes. An obstacle free zone is a volume of airspace that is required to be clear of objects, except for frangible items required for navigation of aircraft. It is centered along the runway and extended runway centerline. The RPZ is defined as an area off the runway end to enhance the protection of people and property on the ground. The RPZ is trapezoidal in shape and centered about the extended runway centerline. The dimensions of an RPZ are a function of the runway ARC and approach visibility minimums.

Table 3B summarizes the design requirements of these safety areas by airport reference code for Runway 18-36. The FAA expects these areas to be free from obstructions. As shown in the table, Runway 18 meets the required ARC B-II standards for a global positioning system (GPS) approach with greater than one-mile visibility minimums.

TABLE 3B
Airfield Safety Area Dimensional Standards (feet)
French Valley Airport

	Runway 18-36	ARC B-II Standards >1 mi. vis.
Runway Safety Area (RSA)		
Width	150	150
Length Prior to Landing Threshold	300	300
Length Beyond Runway End	300	300
Runway Object Free Area (OFA)		
Width	500	500
Length Beyond Runway End	300	300
Runway Obstacle Free Zone (OFZ)		
Width	400	400
Length Beyond Runway End	200	200
Runway Protection Zone (RPZ)		
Inner Width	500	500
Outer Width	700	700
Length	1,000	1,000

Source: FAA Airport Design Computer Program, Version 4.2D.

RUNWAYS

The adequacy of the existing runway system at French Valley Airport was analyzed from a number of perspectives, including airfield capacity, runway configuration, runway use, runway length, runway width, and pavement strength. From this information, requirements for runway improvements were determined for the airport.

Airfield Capacity

A demand/capacity analysis measures the capacity of the airfield configuration in order to identify and plan for additional development needs. Annual capacity of a single runway configuration normally exceeds 150,000 operations with a suitable parallel taxiway available. Since the forecasts for French Valley Airport do not exceed 150,000 operations, the capacity of the existing runway and taxiway system will not be reached and the airfield will be able to meet operational demands.

Runway Configuration

French Valley Airport is served by a single runway, which is oriented in a north-south direction. Runway 18-36 is 6,000 feet long, 75 feet wide, and is constructed of asphalt. The runway is served by a 35-foot wide, full-length parallel taxiway. This maximizes airfield capacity and safety as aircraft are not required to taxi on the active runway surface to gain access to a runway end. The runway is also served by several connecting taxiways, which are each 45 feet in width.

Runway Use

Runway use is normally dictated by wind conditions. The direction of take-offs and landings are generally determined by the speed and direction of the wind. For the operational safety and efficiency of an airport, it is desirable for the principal runway of an airport's runway system to be oriented as close as possible to the direction of the prevailing wind. This reduces the impact of crosswind components during landing or takeoff.

FAA design standards specify that additional runway configurations are needed when the primary runway configuration provides less than 95 percent wind coverage at specific crosswind components. The 95 percent wind coverage is computed on the basis of crosswinds not exceeding 10.5 knots for small aircraft weighing less than 12,500 pounds and from 13 to 20 knots for aircraft weighing over 12,500 pounds.

Raw wind data has been collected at French Valley Airport for the past two years. A wind rose has been prepared and is depicted on **Exhibit 3B**. The single runway alignment provides in excess of 99 percent coverage at 10.5 knot crosswind component.

Runway Length

The runway length requirements for an airport are based on five primary factors: airport elevation, mean maximum temperature of the hottest month, runway gradient (difference in runway elevation of each runway end), critical aircraft type expected to use the airport, and stage length of the longest nonstop trip destination.

Aircraft performance declines as each of these factors increase. Summertime temperatures and stage lengths are the primary factors in determining runway length requirements. For calculating runway length requirements at the airport, the airport elevation is 1,350 feet above mean sea level (MSL) and the mean maximum temperature of the hottest month is 90.0 degrees Fahrenheit (F). Runway end elevations vary by approximately 10 feet, which results in a longitudinal gradient of 0.2 percent. This conforms to FAA design standards, which specify the longitudinal gradient for aircraft in approach categories A and B cannot exceed two percent.

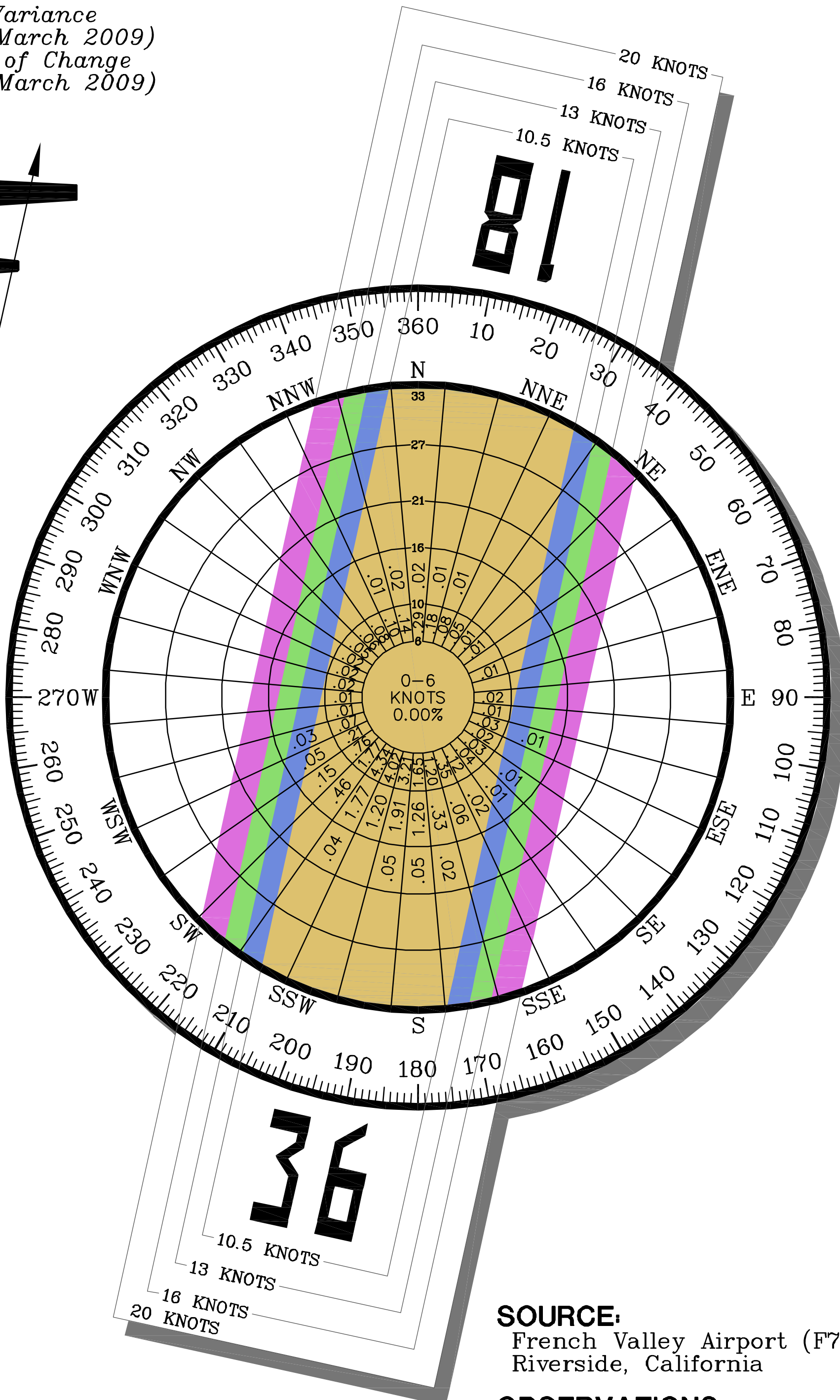
Using the site-specific data described above, runway length requirements for the various classifications of aircraft that may operate at the airport were examined using the FAA Airport Design computer program, Version 4.2D. The program groups general aviation aircraft into several categories, reflecting the percentage of the fleet within each category. As previously discussed, the runway design should be based upon the most critical

ALL WEATHER WIND COVERAGE

Runway	10.5 Knots	13 Knots	16 Knots	20 Knots
Runway 18–36	*99.91%*	*99.97%*	*100.00%*	*100.00%*

Magnetic Variance
12° 31' East (March 2009)
Annual Rate of Change
00° 05' West (March 2009)

NORTH



SOURCE:
French Valley Airport (F70)
Riverside, California

OBSERVATIONS:
49,755 All Weather Observations
09/2005–09/2007

Exhibit 3B
WIND ROSE

aircraft (or group of aircraft) performing at least 500 annual itinerant operations. **Table 3C** summarizes FAA's generalized recommended runway lengths for French Valley Airport.

TABLE 3C
Runway Length Requirements
French Valley Airport

AIRPORT AND RUNWAY DATA	
Airport elevation	1,350 feet
Mean daily maximum temperature of the hottest month	90.0° F
Maximum difference in runway centerline elevation	10 feet
Length of haul for airplanes of more than 60,000 pounds	500 miles
RUNWAY LENGTHS RECOMMENDED FOR AIRPORT DESIGN	
Small airplanes with less than 10 passenger seats	
75 percent of these small airplanes	3,000 feet
95 percent of these small airplanes	3,600 feet
100 percent of these small airplanes	4,200 feet
Small airplanes with 10 or more passengers seats	4,600 feet
Large airplanes of 60,000 pounds or less	
75 percent of large airplanes at 60 percent useful load	5,500 feet
75 percent of large airplanes at 90 percent useful load	7,000 feet
100 percent of large airplanes at 60 percent useful load	6,000 feet
100 percent of large airplanes at 90 percent useful load	8,900 feet
Airplanes of more than 60,000 pounds	5,500 feet

Reference: FAA's airport design computer software, Version 4.2D.

The current critical aircraft using the airport falls in ARC B-II. As the table shows, local conditions call for a runway length of at least 4,600 feet to accommodate all small airplanes. For the majority of business jets (refer to 75 percent of business jets at 60 percent useful load), a runway length of 5,500 feet is required. Runway 18-36 meets the requirement for 100 percent of large airplanes at 60 percent useful load.

Runway length requirements for various business jets operating at French Valley Airport were also examined. The current mix of aircraft operating at the airport includes aircraft within the Cessna Citation family of business jets, Bombardier/Learjet, Falcon, and Raytheon jet aircraft, as well as several others. Only the Raytheon Premier is currently based at the airport.

Based upon data available from the FAA, there were an estimated 512 operations by business aircraft at French Valley Airport in 2007. The required take-off and landing lengths for maximum load and range (adjusted for temperature and elevation) for several of the business aircraft currently utilizing the airport are shown in **Table 3D**.

TABLE 3D
Runway Length Requirements – Individual Aircraft Performance

Aircraft Type	Required Take-off Length (feet)	Required Landing Length (feet)
Cessna 525 Citation	4,290	3,840
Cessna 550 Citation Bravo	4,440	4,420
Cessna 560 Citation Excel	4,690	4,250
Dassault Falcon 20	6,940	4,930
Hawker 800XP	6,590	3,480
Learjet 31A	4,600	4,250
Learjet 45	5,790	3,950
Learjet 55	6,950	4,820
Raytheon 390 Premier (Based)	4,994	4,704

Note: Individual aircraft performance characteristics with distances adjusted for temperature and elevation (1,350 ft. MSL and 90.0 ºF), maximum load and range.

Based upon the FAA's design software and the individual aircraft performance data, Runway 18-36 can accommodate all small airplanes (less than 12,500 pounds) with 10 or more passenger seats and 100 percent of large airplanes (less than 60,000 pounds) at 60 percent useful load. The critical aircraft will remain within ARC B-II. Therefore, no extension to the runway is justified. However, it is important to note that some aircraft may experience payload and/or fuel limitations when attempting longer stage lengths during the warmest summer days.

Runway Width

The width of each of the existing runways was also examined to determine the need for facility improvements. Currently, Runway 18-36 has a width of 75 feet, which meets the design standards for ARC B-II facilities (for visual runways and runways with not lower than ¾ statute mile approach visibility minimums).

Runway Pavement Strength

The most important feature of airfield pavement is its ability to withstand repeated use by aircraft of significant weight. The current strength rating on Runway 18-36 is 30,000 pounds single wheel gear loading (SWL). This strength rating is adequate for all aircraft currently serving the airport, or expected to serve the airport in the future.

It should be noted that the pavement strength rating is not the maximum weight limit. Aircraft weighing more than the certified strength can operate on the runway on an infrequent basis. However, heavy aircraft operations can shorten the life span of airport pavements.

TAXIWAYS

Taxiways are constructed primarily to facilitate aircraft movements to and from the runway system. Some taxiways are necessary simply to provide access between the aprons and the runways, whereas other taxiways become necessary as activity increases at an airport to provide safe and efficient use of the airfield.

Taxiway width is determined by the ADG of the most demanding aircraft to use the taxiway. As previously mentioned, the most demanding aircraft to use the airfield fall within ADG II. According to FAA design standards, the minimum taxiway width for ADG II is 35 feet. All taxiways at French Valley Airport are at least 35 wide, which meets the design standards.

The runway-taxiway separation distance was also examined. This distance is such to satisfy the requirement that no part of an aircraft (tail tip, wing tip) on the taxiway/taxilane centerline is within the runway safety area or penetrates the obstacle free zone (OFZ). Currently, the Taxiway A centerline lies 240 feet west of the Runway 18-36 centerline, which meets the requirement for ARC B-II facilities (with not lower than ¾ mile approach visibility minimums).

HELICOPTER PARKING

There are a total of four helicopter parking positions at French Valley Airport. Two of the positions are located on the south end of the local apron, while the other two are located on the transient apron, southwest of Taxiway D. These positions are sufficient and should be maintained through the planning period.

NAVIGATIONAL AIDS AND INSTRUMENT APPROACH PROCEDURES

Navigational Aids

Navigational aids are electronic devices that transmit radio frequencies, which properly equipped aircraft allow pilots to translate into point-to-point guidance and position information. The very high frequency omnidirectional range (VOR), GPS, nondirectional beacon (NDB), and LORAN-C are available for pilots to navigate to and from French Valley Airport. These systems are sufficient; therefore, no other navigational aids are needed at the airport.

Instrument Approach Procedures

Instrument approach procedures (IAPs) are a series of predetermined maneuvers established by the FAA using electronic navigational aids that assist pilots in locating and landing at an airport during poor visibility and low cloud ceiling conditions. Instrument approach procedures are categorized as either precision or nonprecision. Precision instrument approach aids provide an exact alignment and descent path for an aircraft on final approach to a runway, while nonprecision instrument approach aids provide only runway alignment information.

The capability of an instrument approach is defined by the visibility and cloud ceiling minimums associated with the approach. Visibility minimums define the horizontal distance that the pilot must be able to see to complete the approach. Cloud ceilings define the lowest level a cloud layer (defined as feet above the ground) can be situated for a pilot to complete the approach. If the observed visibility or cloud ceiling is below the minimums prescribed for the approach, the pilot cannot complete the instrument approach.

French Valley Airport is served by a single nonprecision approach. The Runway 18 GPS allows for landings when the cloud ceiling is 600 feet above the ground and visibility is restricted to one mile for aircraft in Categories A and B. The visibility minimums increase to 1½ miles for aircraft in Category C.

When using the GPS approach to land at a different runway end (defined as a circling approach), the cloud ceilings increase to 700 feet aboveground for aircraft in Categories A, B, and C. The visibility minimums remain one mile for aircraft in Categories A, B, and C.

AIRFIELD LIGHTING AND MARKING

Airports commonly include a variety of lighting and pavement markings to assist pilots utilizing the airport. These lighting systems and marking aids are used to assist pilots in locating the airport during the day, at night, during poor weather conditions, and assisting in the ground movement of aircraft.

Airport Identification Lighting

The location of the airport at night is universally indicated by a rotating beacon. For civil airports, a rotating beacon projects two beams of light, one white and one green, 180 degrees apart. At French Valley Airport, the beacon is located at mid-field, north of the general aviation terminal building. The beacon is sufficient and should be maintained through the planning period.

Runway and Taxiway Lighting

Runway edge lighting provides the pilot with a rapid and positive identification of the runway and its alignment. Runway 18-36 is equipped with medium intensity edge lighting (MIRL). All taxiways at the airport are equipped with medium intensity taxiway lighting (MITL). These lighting systems should be maintained through the planning period.

Visual Approach Lighting

In most instances, the landing phase of any flight must be conducted in visual conditions. To provide pilots with visual guidance information during landings to the runway, electronic visual approach aids are commonly provided at airports. Currently, both ends of the runway are served by a two-box precision approach path indicator (PAPI-2). Each system should be maintained through the planning period.

Runway End Identification Lighting

Runway end identifier lights (REILs) are flashing lights that facilitate identification of the runway end at night and during poor visibility conditions. REILs provide pilots with the ability to identify the runway ends and distinguish the runway end lighting from other lighting on the airport and in the approach areas. REILs are installed on both ends of Runway 18-36. Each system should be maintained through the planning period.

Pilot-Controlled Lighting

French Valley Airport is equipped with pilot-controlled lighting (PCL). PCL allows pilots to control the intensity of the runway and taxiway lighting using the radio transmitter in the aircraft, as well as providing a more efficient use of energy. This system should be maintained throughout the planning period.

Distance Remaining Signs

Lighted distance remaining signs are installed at 1,000-foot intervals on Runway 18-36. These signs provide pilots with an indication of the length of runway available for landing or departure. These signs should be maintained through the planning period.

Pavement Markings

Runway markings are designed according to the type of instrument approach available on the runway. FAA Advisory Circular 150/5340-1J, *Marking of Paved Areas on Airports*, provides the guidance necessary to design airport markings. The nonprecision markings on Runway 18 identify the runway threshold, runway centerline, and runway designation. The basic markings on Runway 36 identify the runway centerline and runway designation. These markings should be maintained through the planning period.

Taxiway and apron areas also require marking. Yellow centerline stripes are currently painted on all taxiway surfaces at the airport to provide this guidance to pilots. The paved aircraft parking aprons also have centerline markings to indicate the alignment of taxilanes within these areas. Besides routine maintenance of the taxiway striping, these markings will be sufficient through the planning period.

Holding position markings should be located on all taxiways that intersect runways. At airports without airport traffic control towers, these runway markings identify the location where a pilot should assure there is adequate separation with other aircraft before proceeding onto the runway. The existing hold lines do not meet the current standard which is 200 feet from the runway centerline.

WEATHER REPORTING

French Valley Airport is equipped with a lighted wind cone and a segmented circle, which provides pilots with information about wind conditions and local traffic patterns. These facilities are required when an airport is not served by a 24-hour airport traffic control tower (ATCT).

The airport is also equipped with an automated weather observation system (AWOS-III). This system provides automated aviation weather observation 24 hours per day and reports the altimeter setting, wind data, temperature, dew point, density altitude, visibility, precipitation, and cloud/ceiling data. The AWOS-III should be maintained at French Valley Airport to provide pilots with accurate weather information.

LANDSIDE REQUIREMENTS

Landside facilities are those necessary for the handling of aircraft and passengers while on the ground. These facilities provide the essential interface between the air and ground transportation modes. The capacities of the various components of each area were examined in relation to projected demand to identify future landside facility needs. This includes:

- General Aviation Terminal
- Aircraft Hangars
- Aircraft Parking Apron
- Automobile Parking
- Airport Support Facilities

GENERAL AVIATION TERMINAL FACILITIES

General aviation terminal facilities have several functions. Space is required for a pilots' lounge, flight planning, concessions, management, storage, and various other needs. This space is not necessarily limited to a single, separate terminal building, but can include space offered by fixed base operators (FBOs) for these functions and services.

The existing terminal building at French Valley Airport totals approximately 12,495 square feet and provides space for a pilot/passenger lounge, café, and office lease space. The offices of the Riverside County Economic Development Agency – Aviation are also located in this building.

The methodology used in estimating general aviation terminal facility needs is based on the number of airport users expected to utilize general aviation facilities during the design hour. General aviation space requirements were based upon providing 120 square feet per design hour itinerant passenger. Design hour itinerant passengers are determined by multiplying design hour itinerant operations by the number of passengers on the aircraft (multiplier). An increasing passenger count is used to account for the likely increase in larger, more sophisticated aircraft using the airport.

As shown in **Table 3E**, additional area could be supported through the planning period. Future needs could be met with the development of a new facility or expansion of the existing facility. A portion of the space requirements may also be met in an FBO. The alternatives analysis will examine this in more detail in the following chapter.

TABLE 3E
General Aviation Terminal Building
French Valley Airport

	Currently Available	Short Term Need	Intermediate Term Need	Long Term Need
General Aviation Design Hour Itinerant Passengers	93	119	148	222
General Aviation Building Space (s.f.)	13,300*	14,200	17,800	26,600

*Does not include space provided at fixed base operators.

AIRCRAFT HANGARS

The demand for aircraft storage hangars typically depends upon the number and type of aircraft expected to be based at the airport. For planning purposes, it is necessary to estimate hangar requirements based upon forecast operational activity. However, hangar development should be based upon actual demand trends and financial investment conditions.

Utilization of hangar space varies as a function of local climate, security, and owner preferences. The trend in general aviation aircraft, whether single or multi-engine, is toward more sophisticated (and consequently, more expensive) aircraft. Therefore, many aircraft owners prefer enclosed hangar space to outside tie-downs. This is evident at French Valley Airport, as approximately 80 percent of based aircraft are currently located in hangars. This is expected to increase to approximately 85 percent by the end of the planning period.

Existing hangar space at French Valley Airport is comprised of large conventional hangars, smaller executive/box hangars, and T-hangars/Port-a-Ports. There are 157 T-hangars and 36 Port-A-Ports on the airport. Approximately 90 percent of hangared aircraft at French Valley Airport are currently stored in T-hangars/Port-A-Ports. T-hangars are individual spaces within a larger contiguous structure that allow privacy and individual access to their space. Port-A-Ports also provide individual aircraft storage, and while portable, are connected to one another. These types of hangars are used for smaller single and multi-engine aircraft storage. Current T-hangar/Port-A-Port space at French Valley Airport totals approximately 388,200 square feet. A planning standard of 1,200 square feet per based aircraft has been used to determine future T-hangar requirements.

The remaining 10 percent of hangared aircraft at French Valley Airport are stored in executive/conventional hangars. These types of hangars are designed for multiple aircraft storage. They are open space facilities with no supporting structure interference. According to the inventory chapter, executive/conventional hangar space at French Valley Airport totals approximately 76,000 square feet.

As the trend towards more sophisticated aircraft continues throughout the planning period, it is important to determine the need for more executive/conventional hangars. For executive/conventional hangars, a planning standard of 1,200 square feet was used for single-engine aircraft, while a planning standard of 3,000 square feet was used for multi-engine, jet, and helicopters. These planning standards recognize that some of the larger business jets require a greater amount of space.

Since portions of conventional hangars are also used for aircraft maintenance and servicing, requirements for maintenance/service hangar area were estimated using a planning standard of approximately 15 percent of the total hangar space needs.

Future hangar requirements for the airport are summarized in **Table 3F**. As shown in the table, additional hangar area will be required before the end of the planning period. Chapter Four, Airport Development Alternatives, will examine the options available for hangar development at the airport and determine the best location for each type of hangar facility.

TABLE 3F
Aircraft Storage Requirements
French Valley Airport

		Future Requirements		
	Currently Available	Short Term Need	Intermediate Term Need	Long Term Need
Aircraft to be Hangared		284	320	404
Single Engine Positions	223	245	263	320
Multi-Engine, Jet, & Helicopter Positions	25	39	57	84
T-Hangar/Port-a-Port Area	388,200	307,200	345,100	436,800
Executive/Conventional Hangar Area	76,000	73,200	81,600	102,000
Total Maintenance Area	*	57,100	64,000	80,800
Total Hangar Area (s.f.)	**464,200**	**437,500**	**490,700**	**619,600**

***Included within conventional hangar area.**

AIRCRAFT PARKING APRON

A parking apron should provide for the number of locally based aircraft that are not stored in hangars and for those aircraft used for air taxi and raining activity. Parking should be provided for itinerant aircraft as well. As mentioned in the previous section, approximately 80 percent of based aircraft at French Valley Airport are currently stored in hangars, and that percentage is expected to increase to 85 percent by the end of the planning period.

Current apron area at French Valley Airport consists of one large apron extending along the entire west side of the runway. There are 211 tiedowns available on this apron, which totals approximately 131,700 square yards. These tie-downs are available for use by locally based aircraft as well as itinerant aircraft, and are also available for weekly or monthly leases.

For planning purposes, 25 percent of the based aircraft total will be used to determine the parking apron requirements of local aircraft, due to some aircraft requiring both hangar storage and parking apron space. Since the majority of locally based aircraft are stored in hangars, the area requirement for parking of locally based aircraft is smaller than for transient aircraft. Therefore, a planning criterion of 650 square yards per aircraft was used to determine the apron requirements for local aircraft.

Transient aircraft parking needs must also be considered when determining apron requirements. A planning criterion of 800 square yards was used for single and multi-engine itinerant aircraft and 1,600 square yards for itinerant jets. Total aircraft parking apron requirements are presented in **Table 3G**. As shown in the table, additional apron area could be supported by the end of the planning period.

TABLE 3G
General Aviation Aircraft Parking Apron Requirements
French Valley Airport

	Currently Available	Short Term	Intermediate Term	Long Term
Single, Multi-Engine Transient Aircraft Positions		34	37	42
Apron Area (s.y.)		27,200	29,600	33,600
Transient Jet Aircraft Positions		8	9	11
Apron Area (s.y.)		12,800	14,400	17,600
Locally-Based Aircraft Positions		110	121	149
Apron Area (s.y.)		71,500	78,700	96,900
Total Positions	**211**	**152**	**167**	**202**
Total Apron Area (s.y.)	**131,700**	**111,500**	**122,700**	**148,100**

AUTOMOBILE PARKING

Automobile parking at French Valley Airport is provided west and south of the terminal building. Approximately 50 parking spaces are provided in this area, which totals approximately 20,000 square feet. Additional parking is provided adjacent to each of the FBOs. For this analysis, it is estimated that the FBOs provide parking for an additional 50 automobiles in 20,000 additional square feet.

Future parking demands have been determined based on an evaluation of the existing airport use, as well as industry standards, which consider one-half of based aircraft at the airport will require a parking space. As shown in **Table 3H**, additional vehicle parking area will be needed throughout the planning period.

TABLE 3H
Vehicle Parking Requirements
French Valley Airport

		Future Requirements		
	Currently Available	Short Term Need	Intermediate Term Need	Long Term Need
Design Hour Passengers		44	51	69
Terminal Vehicle Spaces		83	107	173
Parking Area (s.f.)		33,200	42,800	69,200
General Aviation Spaces		175	193	238
Parking Area (s.f.)		70,000	77,200	95,200
Total Parking Spaces	**100**	**258**	**300**	**411**
Total Parking Area (s.f.)	**40,000**	**103,200**	**120,000**	**164,400**

AIRPORT SUPPORT FACILITIES

Various facilities that do not logically fall within classifications of airfield, terminal building, or general aviation areas have also been identified. These other areas provide certain functions related to the overall operation of the airport and include aircraft rescue and firefighting, fuel storage, and airport maintenance facilities.

Aircraft Rescue and Firefighting

Requirements for aircraft rescue and firefighting (ARFF) services at an airport are established under Federal Aviation Regulations (FAR) Part 139, which applies to the certification and operation of land airports served by any scheduled or unscheduled passenger operation of an air carrier using an aircraft with more than nine seats. Since the airport does not operate under Part 139 and the County does not intend to pursue Part 139 Certification, the establishment of dedicated ARFF facilities is not justified or required.

A 13,000 square-foot fire station is located on airport property, north of the terminal building. This facility provides structural fire support only.

Fuel Storage

Fuel storage facilities at French Valley Airport include two tanks of Jet A fuel (12,000 gallons each) and a 12,000-gallon tank of 100LL fuel (Avgas), which are located at the fuel farm on the south end of the airfield. An additional 6,000-gallon tank of 100LL fuel is also available at the self-service pump. Fuel trucks also provide additional fueling at the airport.

Fuel storage requirements are typically based upon maintaining a two-week supply of fuel during the peak month. The airport is not projected to exceed this requirement.

Airport Maintenance/ Storage Facilities

The majority of maintenance equipment at French Valley Airport is stored in various buildings/hangars. The alternatives analysis will evaluate various locations for the development of a separate facility for airport maintenance and storage. A summary of the landside requirements is presented on **Exhibit 3C**.

SUMMARY

The intent of this chapter has been to outline the facilities required to meet potential aviation demands projected for French Valley Airport through the long term planning horizon. The next step is to develop an alternative for development to best meet these projected needs. The remainder of the airport master plan will be devoted to outlining this direction, its schedule, and costs.

07MP01-3C-4/17/09

Aircraft Storage Requirements

	Currently Available	Short Term Need	Intermediate Term Need	Long Term Need
Aircraft to be Hangared		284	320	404
Single Engine Positions	223	245	263	320
Multi-Engine, Jet, & Helicopter Positions	25	39	57	84
T-Hangar Area	388,200	307,200	345,100	436,800
Executive / Conventional Hangar Area	76,000	73,200	81,600	102,000
Total Maintenance Area	*	57,100	64,000	80,800
Total Hangar Area (s.f.)	**464,200**	**437,500**	**490,700**	**619,600**

**Included within conventional hangar aea.*

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	Currently Available	Short Term Need	Intermediate Term Need	Long Term Need
Single, Multi-Engine Transient Aircraft Positions		34	37	42
Apron Area (s.y.)		27,200	29,600	33,600
Transient Jet Aircraft Positions		8	9	11
Apron Area (s.y.)		12,800	14,400	17,600
Locally-Based Aircraft Positions		110	121	149
Apron Area (s.y.)		71,500	78,700	96,900
Total Positions	**211**	**152**	**167**	**202**
Total Apron Area (s.y.)	**131,700**	**111,500**	**122,700**	**148,100**

Passenger Terminal Facilities

	Currently Available	Short Term Need	Intermediate Term Need	Long Term Need
General Aviation Terminal Building Area (s.f.)	*13,300	14,200	17,800	26,600

**Does not include space provided at FBO's.*

Vehicle Parking Requirements

	Currently Available	Short Term Need	Intermediate Term Need	Long Term Need
Design Hour Passengers		44	51	69
Terminal Vehicle Spaces		83	107	173
Parking Area (s.f.)		33,200	42,800	69,200
General Aviation Spaces		175	193	238
Parking Area (s.f.)		70,000	77,200	95,200
Total Parking Spaces	**100**	**258**	**300**	**411**
Total Parking Area (s.f.)	**40,000**	**103,200**	**120,000**	**164,400**

Exhibit 3C
LANDSIDE FACILITY REQUIREMENTS

Chapter Four

AIRPORT DEVELOPMENT ALTERNATIVES

Chapter Four

AIRPORT DEVELOPMENT ALTERNATIVES

In the previous chapter, airside and landside facility needs that would satisfy projected demand over the planning period were identified. The next step in the master planning process is to evaluate the various ways these facilities can be provided. In this chapter, the facility needs will be applied to a series of airport development alternatives. The possible combination of alternatives can be endless, so some intuitive judgment must be applied to identify the alternatives which have the greatest potential for implementation. The alternatives analysis is an important step in the planning process since it provides the underlying rationale for the final master plan recommendations.

The alternatives presented in this chapter provide a series of options for meeting short and long-range facility needs. Since the levels of general aviation activity can vary from forecast levels, flexibility must be considered in the plan. If activity levels vary significantly within a five-year period, Riverside County should consider updating the plan to reflect the changing conditions.

Since the combination of alternatives can be endless and the budgeted time for alternative evaluation is limited, only the more prudent and feasible alternatives were examined. The alternatives presented in this chapter will be reviewed with the Planning Advisory Committee (PAC) to allow for further refinement.

An environmental overview will be completed and included as

an appendix to the final report. The purpose of this document is to obtain information regarding environmental sensitivities on or near airport property and identify any potential environmental concerns that must be addressed prior to program implementation.

Following environmental reviews and an updated airport layout plan drawing, a capital improvement program will be developed. However, a final decision with regard to pursuing a particular development plan which meets the needs of general aviation users rests with Riverside County.

BACKGROUND

Prior to presenting airport development alternatives, it is helpful to review some of the previous airport planning efforts and the development that has occurred during the intervening years. Recounting recent (or ongoing) airfield improvements will assist with the identification of current issues affecting future development options. Improvements made at French Valley Airport since 1995 include the following projects:

- 1995 – Storm drainage.
- 1997 – New apron, seal taxiway.
- 2001 – Land acquisition for Runway 36 approach (39 acres).
- 2002 – New apron, rehabilitation of existing apron/access road.
- 2003 – Rehabilitation of apron, new apron lighting.
- 2004 – Runway/taxiway extension.
- 2005 – Rehabilitation of runway, install security lighting, automated weather observation system (AWOS) installed.

In addition, a significant number of hangar projects have steadily increased the availability of aircraft storage facilities.

INITIAL DEVELOPMENT CONSIDERATIONS

Upon completion of the facility needs evaluation and a subsequent meeting with the Planning Advisory Committee for the master plan study, a number of airport development considerations were outlined. These considerations, which have been grouped into airside and landside categories, have been summarized in **Exhibit 4A**.

NO ACTION ALTERNATIVE

In analyzing and comparing costs and benefits of various development alternatives, it is important to consider the consequences of no further development. The "no action" alternative essentially considers keeping the airfield in its present condition, and not providing for any improvements to existing facilities. The primary result of this alternative, as in any changing air transportation market, would be the eventual inability of the airport to satisfy the increasing demands of the local service area.

The airport's aviation forecasts and the analysis of facility requirements indicated a need to provide additional hangar facilities. Without these improvements to the airport facilities, 07MP01-4A-9/30/08

AIRSIDE CONSIDERATIONS

- Upgrade runway edge lighting to high intensity (HIRL) and install omni-directional approach lighting system (ODALS) to enhance the safety of the instrument approach procedure on Runway 18.
- Relocate holdlines to 200' from runway centerline.
- Consider alternative sites for airport traffic control tower.

LANDSIDE CONSIDERATIONS

- Provide additional hangar capacity.
- Consider future redevelopment of hangars in vicinity of port-a-ports.
- Provide additional commercial / industrial business oppurtunities on property not accessible from airfield.
- Provide additional tie-down area.
- Provide additional auto parking (terminal area and hangar areas).

ACCESS CONSIDERATIONS

- Extend Sky Canyon Drive (South of Sparkman Way), and provide connection to Borel Road.

FRENCH VALLEY AIRPORT

Exhibit 4A
INITIAL DEVELOPMENT CONSIDERATIONS

regular and potential users of the airport would be constrained from taking maximum advantage of the airport's air transportation capabilities.

The ramifications of the "no action" alternative extend into impacts on the economic well-being of the region. If facilities are not maintained and improved so that the airport maintains a pleasant experience to the visitor or business traveler, then these individuals may consider alternate locations.

Thus, the "no action" alternative is inconsistent with the long term transportation system goals of the county, which are to enhance local and interstate commerce. A policy of "no action" would be considered an irresponsible approach, affecting not only the long term viability of the airport and the investment that has been made in it, but also the economic growth and development of the airport's service area. Therefore, the "no action" alternative was not considered as prudent or feasible.

TRANSFER SERVICES TO ANOTHER AIRPORT

Limiting development at French Valley Airport and relying on other airports to serve aviation demand for the local area is an alternative for consideration. As discussed in the Inventory Chapter, there are three public-use airports located within a 15-mile radius of French Valley Airport. Hemet-Ryan Airport is owned by Riverside County, Perris Valley Airport is privately owned, and Fallbrook Community Airpark is a public-use facility with very limited runway length. Increasing this radius to 30 miles finds five additional public-use airports. All eight of the airports within the 30-mile radius offer similar services to those provided by French Valley Airport. The longest runway at any of these airports is at Riverside Municipal Airport, which has a runway length of 5,400 feet.

Growth in new businesses will continue to create a need for local access to the air transportation system. Aircraft operating for "on-demand" air taxi and charter are projected to increase at French Valley Airport, as outlined in Chapter Two. This category is expected to represent ten percent of the total itinerant operations over the planning period. However, Riverside County does not have a desire to pursue certification as an F.A.R. Part 139 airport, and to provide services for scheduled airlines. An analysis of Part 139 requirements has been included in Appendix C. Part 139 certification would require additional facilities for dedicated rescue and firefighting, as well as increased security. The role of the airport is expected to continue as a general aviation facility.

DEVELOP NEW AIRPORT/ UPGRADE EXISTING SYSTEM AIRPORT

The alternative of developing an entirely new airport facility to meet the aviation needs of the local area can also be considered. The development of a new airport is generally considered when an airport reaches capacity and it is cost-prohibitive to expand the existing facility. French Valley Airport was built in the late 1980s as a replacement airport for Rancho California Airport. The airport was originally constructed and the runway later extended, consistent with the original master plan for the airport. Development of a new airport is not considered necessary, since French Valley Airport was designed to meet current standards. However, developing or upgrading an airport in the system to serve increasing demands in higher design categories and/or with lower landing minimums is certainly a possibility.

AIRFIELD DESIGN CONSIDERATIONS

Airfield facilities are, by their very nature, a focal point of the airport complex. Because of their role, and the fact that they physically dominate a great deal of the airport's property, airfield facility needs are often the most critical factor in the determination of viable airport development alternatives. In particular, the runway system requires the greatest influence on the identification and development of other airport facilities. Furthermore, due to the number of aircraft operations, there are a number of Federal Aviation Administration (FAA) design criteria that must be considered when looking at airfield improvements.

Safety area design standards and adjacent development can ultimately impact the viability of various alternatives. These criteria, depending upon existing constraints around the airport, can have a significant impact on the viability of various alternatives which are designed to meet airfield needs. The existing airport reference code (ARC) for Runway 18-36 (and the facility) is B-II. This ARC includes most general aviation propeller aircraft, as well as the majority of business aircraft currently using the airport. The forecasts anticipate increasing utilization by small single and multi-engine aircraft, as well as business turboprop and jet aircraft throughout the planning period. The potential mix of aircraft will continue to place the airport in the B-II category. The object clearing criteria, which are discussed in the following paragraphs, are depicted on **Exhibit 4B**.

The FAA requires the runway safety area (RSA) to be cleared and graded, drained by grading or storm sewers, capable of accommodating fire and rescue vehicles, and free of obstacles not fixed by navigational purpose for a distance of 300 feet beyond the end of the runway. The facility requirements analysis in the previous chapter indicated that the RSA on both runways conforms to all FAA safety design standards as outlined in FAA AC 150/5300-13, *Airport Design,* for ARC B-II runways with not lower than ¾-statute mile approach visibility minimums.

The runway object free area (OFA) is defined in FAA Advisory Circular 150/5300-13, *Airport Design*, as an area centered on the runway extending out in accordance to the critical aircraft design category utilizing the runway. The OFA must provide

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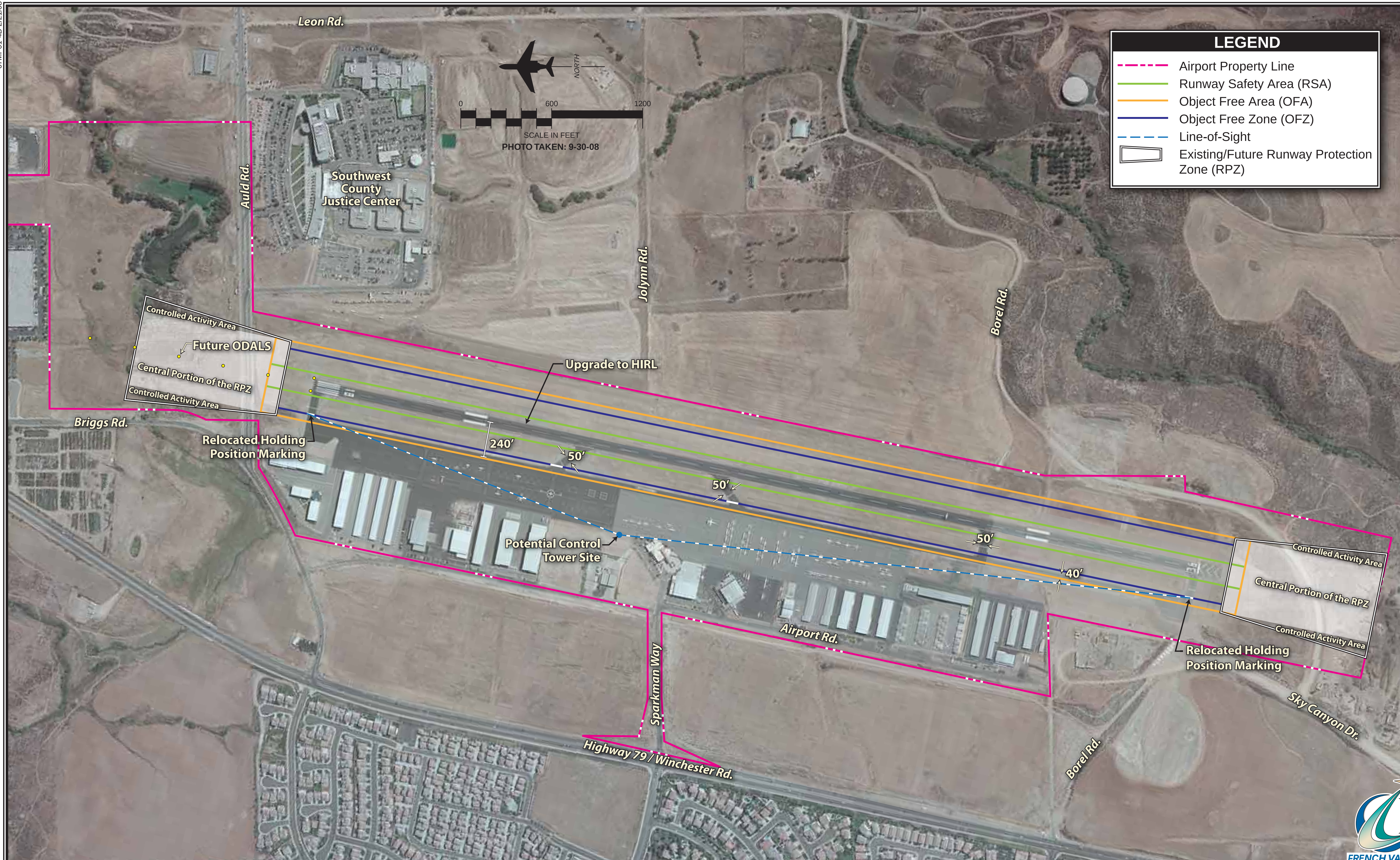

Exhibit 4B
AIRSIDE ALTERNATIVES

clearance of all ground-based objects protruding above the RSA edge elevation, unless the object is fixed by function serving air or ground navigation. The OFA on Runway 18-36 meets the standards for ARC B-II runways with not lower than ¾-statute mile approach visibility minimums.

The runway must also consider the obstacle free zone (OFZ), which is a volume of airspace that is required to be clear of objects, except for frangible items required for air navigation of aircraft. It is centered along the runway and extended runway centerline. The standard dimension of the OFZ for runways serving large airplanes is 400 feet wide, extending 200 feet beyond the runway end. The OFZ at French Valley Airport meets these standards.

Whenever an airport master plan study is undertaken, an evaluation of land uses in the runway protection zone (RPZ) should be a normal consideration, especially if there are existing objects in the RPZ, including roads. The RPZ is a trapezoidal area centered on the runway and typically beginning 200 feet beyond the runway end. The RPZ has been established by the FAA to provide an area clear of obstructions and incompatible land uses in order to enhance the protection of approaching aircraft as well as people and property on the ground. The dimensions of the RPZ vary according to the visibility minimums serving the runway, and in some instances, the type of aircraft operating on the runway.

The current and future RPZ for Runway 18-36 is for "not lower than one mile" visibility conditions for ARC B-II aircraft and is 500 feet (inner width) by 700 feet (outer width) by 1,000 feet (length). It should be noted that Auld Road currently runs through the RPZ on the north end of the runway, but at a lower grade elevation than the runway. While it is desirable to clear all objects from the RPZ, some uses are permitted, provided they do not attract wildlife, are outside of the OFA, and do not interfere with navigational aids. It should also be noted that Borel Road runs through the RPZ on the south end of the runway. However, this is a private road with limited public access.

Another consideration for airport development is the location and height of structures both on and off the airport. On-airport development typically follows guidelines established by 14 CFR Part 77 (FAA's height and hazard zoning and planning guidelines). Airports are encouraged to not allow penetrations to these surfaces as it could result in diminished approach capabilities and allowances. An imaginary surfaces drawing will be included with the updated airport layout plan drawings.

Considering all of the aforementioned FAA design criteria, the alternatives will present ultimate development designed to accommodate future aviation demand at French Valley Airport.

RUNWAY CONSIDERATIONS

The facility needs evaluation completed in the previous chapter did not identify the potential need for a runway extension. The current runway length of 6,000 feet accommodates all general aviation aircraft, as well as the majority of the business aircraft currently operating at French Valley Airport. However, it should be noted that these aircraft may experience payload and/or fuel limitations during the warmest summer days, when attempting longer stage lengths. The facility needs also examined the width of the existing runway, which is currently 75 feet. This meets the required width for airport design group (ADG) II facilities.

TAXIWAY CONSIDERATIONS

Taxiways are primarily constructed to facilitate aircraft movements to and from the runway system. The availability of entrance and exit taxiways can affect the overall airfield efficiency. According to FAA design standards, the minimum taxiway width for ADG II is 35 feet. The parallel taxiway (beyond ramp) at French Valley Airport is 40 feet wide and each of the connecting taxiways is 50 feet wide, which meets or exceeds the standard.

The exhibit also depicts the runway-taxiway separation. The parallel taxiway lies 240 feet west of the runway, which meets the design standards for ADG II. Holding position lines will need to be relocated to a distance of 200 feet from the runway centerline to meet current design criteria. This will place the holding aircraft outside of the OFZ.

AIRPORT TRAFFIC CONTROL TOWER SITING CONSIDERATIONS

French Valley Airport does not currently have an airport traffic control tower. However, consideration should be given to designating a location for a control tower at the airport to enhance air traffic functions at the airport.

While siting is traditionally undertaken with an independent FAA tower siting study, the master plan provides the opportunity to examine siting considerations and a cursory review of potential relocation options. The following are mandatory operational and spatial requirements per FAA Order 6480.4, *Airport Traffic Control Tower Siting Criteria*, used for locating potential control tower sites:

A) There must be maximum visibility of the airport traffic patterns.

B) There must be a clear, unobstructed, and direct view of all approaches to all runways or landing areas and to all runway and taxiway surfaces.

C) The proposed site must be large enough to accommodate current and future building needs, including employee parking spaces.

D) The proposed tower must not violate FAR Part 77 surfaces unless it is absolutely necessary.

E) The proposed tower must not derogate the signal generated by any existing or planned electronic facility.

For any site analysis, line-of-sight considerations are paramount. Minimum eye elevations must be sited in accordance with FAA Order 6480.4. Sites should also take into account local traffic patterns, flight patterns in relationship to sunrise and sunset coordinates, and the locations of building masses that may obstruct visibility. Additionally, controllers should not be required to cross active aircraft operating areas. Discussions with local personnel and officials may also have important bearing on the site location. Preliminary evaluations indicate that a location adjacent to the terminal meets the preceding criteria. Line-of-sight to each runway end has been depicted on **Exhibit 4B**.

LANDSIDE ALTERNATIVES

The primary general aviation functions to be accommodated at French Valley Airport include aircraft storage hangars, aircraft parking aprons, commercial general aviation activities, and other aviation-related development. The interrelationship of these functions is important in defining a long-range landside layout for general aviation uses at the airport. Runway frontage should be reserved for those uses with a high level of airfield interface, or need of exposure. Other uses with lower levels of aircraft movement or little need for runway exposure can be planned in more isolated locations. While the relationship between hangar area, apron, and automobile parking will vary based upon usage, a general rule of thumb is to provide 1,000 square feet of apron space with each 1,000 square feet of hangar space, and 400 square feet of auto parking for each 1,000 square feet of hangar area. The following briefly describes landside facility requirements.

Commercial General Aviation Facilities: This essentially relates to providing areas for the development of facilities associated with aviation businesses providing services to general aviation pilots, passengers, and users. This typically includes businesses involved with (but not limited to) aircraft rental and flight training, aircraft charters, aircraft maintenance, line service, and aircraft fueling. High levels of activity characterize businesses such as these, with a need for apron space for the storage and circulation of aircraft. These facilities are best placed along ample apron frontage with good visibility from the runway system for transient aircraft. The facilities commonly associated with businesses such as these include large conventional hangars that hold several aircraft. Utility services are needed for these types of facilities, as well as automobile parking areas and public access roads.

Aviation-Related Commercial/Industrial Facilities: Aviation-related commercial/industrial facilities are distinguished from commercial general aviation facilities in that these types of uses are associated with non-service providers to the general aviation industry. This can include, but is not limited to, aircraft manufacturing, aircraft component manufacturing, aviation trade organizations, or aircraft financial services. While aircraft manufacturers may need access to the airfield, many aviation-related businesses do not need airfield access. Both users with a need for airfield access and those without a need for airfield access may be considered. These types of users need all utility services, as well as public access roads.

Corporate/Executive Hangars: Corporate/executive aviation facilities are characterized by co-located hangar and office complexes for individually owned or corporate-owned aircraft storage, maintenance, and administration. Corporate/executive aviation facilities are different from commercial general aviation facilities. Corporate/executive aviation facilities generally have lower levels of activity that do not require visibility from the runways or taxiways for transient aircraft identification and location as these facilities generally do not provide services to the public. Utility services are needed for these types of facilities, as well as automobile parking areas and a public access road.

T-hangars/Box Hangars: The facility requirements analysis indicated the need for additional T-hangar/box hangar facilities at the airport. T-hangars/box hangars are specifically designed hangar facilities that provide for segregated individual storage areas within a single hangar complex. This is in contrast with the hangars described in the previous paragraphs, which allow for multiple aircraft storage in the same area.

Segregated Vehicular Access/Airfield Security: A planning consideration for any master plan is the segregation of vehicles and aircraft operational areas. This is both a safety and security consideration for the airport. Aircraft safety is reduced and accident potential increased when vehicles and aircraft share the same pavement surfaces. Vehicles contribute to the accumulation of debris on aircraft operational surfaces, which increases the potential for foreign object damage (FOD). The potential for runway incursions is increased as vehicles may inadvertently access active runway or taxiway areas if they become disoriented once on the aircraft operational area (AOA). Finally, airfield security is compromised as there is loss of control over the vehicles as they enter the secure AOA. The greatest concern is for public vehicles such as delivery vehicles and visitors, which may not fully understand the operational characteristics of aircraft and the markings in place to control vehicle access. The best solution is to provide dedicated vehicle access roads to each landside facility that is separated from the aircraft operational areas with security fencing.

The segregation of vehicle and aircraft operational areas is further supported by new FAA guidance established in June 2002. FAA AC 150/5210-20, *Ground Vehicle Operations on Airports* states, "The control of vehicular activity on the airside of an airport is of the highest importance." The AC further states, "An airport operator should limit vehicle operations on the movement areas of the airport to only those vehicles necessary to support the operational activity of the airport." Special attention must be given to ensure public access routes to commercial general aviation operators' facilities. Commercial general aviation operators' facilities are focal points for users who are not familiar with aircraft operations (i.e., delivery vehicles, charter passengers, etc.).

The *Aviation and Transportation Security Act*, passed in November 2001, created the Transportation Security Administration (TSA) to administer the security of public-use airports across the country. In cooperation with representatives of the general aviation community, the TSA published security guidelines for general aviation airports. These guidelines are contained in the publication entitled *Security Guidelines for General Aviation Airports,* published in May 2004. Within this publication, the TSA recognized that general aviation is not a specific threat to national security. However, the TSA does believe that general aviation may be vulnerable to misuse by terrorists as security is enhanced in the commercial portions of aviation and at other transportation links.

To assist in defining which security methods are most appropriate for a general aviation airport, the TSA defined a series of airport characteristics that potentially affect an airport's security posture. These include:

1. **Airport Location** – An airport's proximity to areas with over 100,000 residents or sensitive sites can affect its security posture. Greater security emphasis should be given to airports within 30 miles of mass population centers (areas with over 100,000 residents) or sensitive areas such as military installations, nuclear and chemical plants, centers of government, national monuments, and/or international ports.

2. **Based Aircraft** – A smaller number of based aircraft increases the likelihood that illegal activities will be identified more quickly. Airports with based aircraft over 12,500 pounds warrant greater security.

3. **Runways** – Airports with longer paved runways are able to serve larger aircraft. Shorter runways are less attractive as they cannot accommodate the larger aircraft which have more potential for damage.

4. **Operations** – The number and type of operations should be considered in the security assessment.

In October 2008, the TSA proposed in a Notice of Proposed Rulemaking (NPRM) to amend current aviation transportation security regulations to enhance the security of general aviation by expanding the scope of current requirements and by adding new requirements for criteria for large aircraft operations and airports serving these aircraft. The TSA is proposing to require that all aircraft operations, including corporate and private operations by large aircraft (above 12,500 pounds) adopt a large aircraft security program. This security program would be based on the current security program that applies to operators providing scheduled or charter services. The potential impact of the new regulations on French Valley Airport is being evaluated by Riverside County.

HANGAR DEVELOPMENT

Exhibit 4C depicts the proposed hangar development at French Valley Airport. As shown on the exhibit, the areas adjacent to RW Martin and French Valley Aviation both have hangar expansion planned or currently underway. An additional area north of the fire station is also under lease/option for hangar development.

The exhibit also depicts the potential development of a row of T-Hangars near the south end of the airfield. These six T-Hangars total approximately 105,500 square feet and would require additional land acquisition by the county. These proposed T-hangars, along with the hangar expansion currently underway or planned at French Valley Airport, would satisfy the forecasted hangar demand through the end of the planning period.

The existing hangars in the port-a-port area have been depicted for potential redevelopment during the planning period. Large nested and/or box hangars should remain perpendicular to the runway system to alleviate potential aircraft taxiing conflicts.

GENERAL AVIATION TERMINAL BUILDING

The existing general aviation terminal building, which was constructed in 1992, totals approximately 12,495 square feet and provides space for a pilot/passenger lounge, a café, and office lease space. The offices for the Riverside County Economic Development Agency – Aviation are also located in this building.

The previous chapter indicated a need for as much as twice the existing general aviation terminal building space by the end of the planning period. The methodology used in estimating this need is based on the number of airport users expected to utilize general aviation facilities during the design hour. Future needs could be met by those areas with hangar expansion currently underway or planned, those areas under lease or option, as well as the fixed base operators (FBOs).

AIRCRAFT PARKING APRON

Current apron area at French Valley Airport consists of one large apron extending along the west side of the runway. There are 211 tiedowns available on this apron, which totals approximately 131,700 square yards. The previous chapter indicated a need for an additional 16,000 square yards by the end of the planning period. This demand could be met by extending the existing apron south, near the end of Runway 36, as shown on **Exhibit 4C**.

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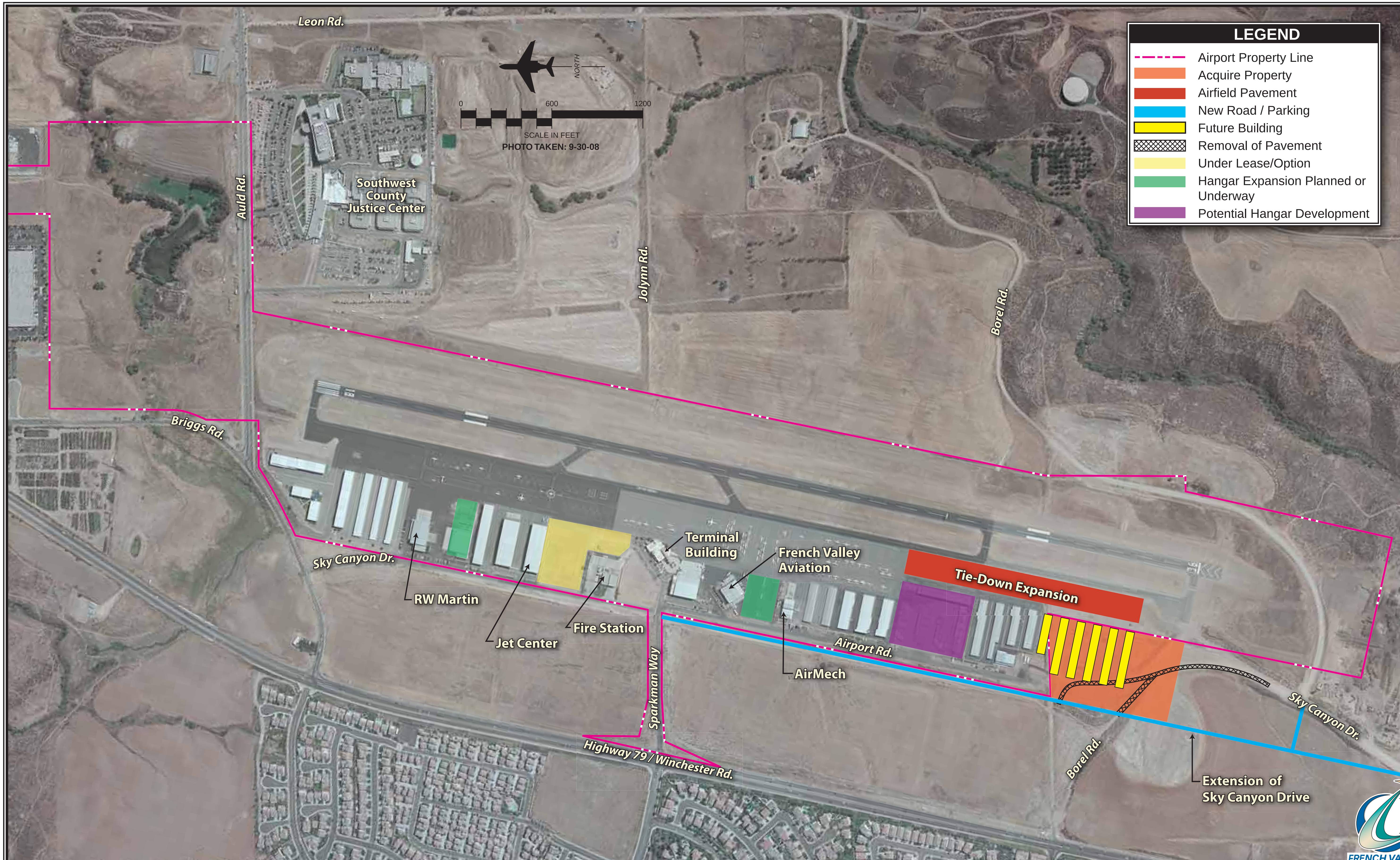


Exhibit 4C
LANDSIDE ALTERNATIVES

AUTOMOBILE PARKING/ ROAD ACCESS

Automobile parking at French Valley Airport is provided adjacent to the terminal building and near aviation businesses. Approximately 50 parking spaces are provided in the terminal area, which totals approximately 20,000 square feet. Additional parking is also provided adjacent to each of the FBOs. For this analysis, it is estimated that the FBOs provide parking for an additional 50 automobiles in 20,000 square feet.

Future parking demands were determined in the previous chapter and indicated a need for more than 124,000 square feet of parking space. As shown on **Exhibit 4C**, the county has considered a parking lot extension for the area adjacent to the terminal building and fire station. In conjunction with additional parking adjacent to aviation businesses, this should satisfy future parking demands through the end of the planning period.

The exhibit also depicts the extension of Sky Canyon Drive (south of Sparkman Way). The extension of Sky Canyon Dive would improve vehicle access in and out of the airport. The extension of this road, along with the removal of part of Borel Road, would also allow for future hangar development on the south end of the airfield.

THROUGH-THE-FENCE AIRPORT ACCESS

There are instances when the owner of a public airport proposes to enter into an agreement which permits access to the public landing area by aircraft based on land adjacent to, but not part of, the airport property. This type of an arrangement is commonly called a through-the-fence operation, whether the perimeter fence is imaginary or real. It is FAA policy to strongly discourage through-the-fence agreements.

The obligation to make an airport available for the use and benefit of the public does not impose any requirement to permit access by aircraft from adjacent property. On the contrary, the existence of such an arrangement has been recognized as an encumbrance upon the airport property itself. Airport obligations arising from federal grant agreements and conveyance instruments apply to dedicated airport land and facilities and not to private property adjacent to the airport, even when the property owner is granted a through-the-fence privilege.

The owner of a public airport is entitled to seek recovery of the initial and continuing costs of providing a public use landing area. The owners of airports receiving federal funds have been required to establish a fee and rental structure designed to make the airports as self-sustaining as possible. Most public airports seek to recover a substantial part of airfield operating costs indirectly through various arrangements affecting commercial activities on the airport. The development of aeronautical businesses on land uncontrolled by the airport owner may give the through-the-fence operation a competitive advantage that will be detrimental to the on-airport operators on whom the airport owner relies for revenue and service to the public. To avoid a potential imbalance, the airport owner may refuse to authorize a through-the-fence operation. In an effort to equalize an imbalance of existing through-the-fence operations, the airport owner should obtain a fair return from off-airport operators in exchange for continuing access to the airport and use of the landing area.

Although airports do not need and should avoid through-the-fence arrangements, circumstances may arise which compel an airport owner to contemplate a through-the-fence operation. In this situation, the airport owner must plan ahead to formulate a prudent through-the-fence agreement and obtain just compensation for granting access to the airport. This is because the airport is enfranchising a special class of airport users who will be permitted to exercise an exclusive through-the-fence privilege.

In making airport facilities available for public use, the airport owner must make the airport as self-sustaining as possible under the particular circumstances at the airport. The FAA has interpreted the self-sustaining assurance to require airport owners to charge fair market value (FMV) commercial rates for non-aeronautical uses of the airport. In conformity with the self-sustaining principle, it would be appropriate to charge FMV rates to off-airport users for the exclusive privilege of accessing the airport through-the-fence. In formulating a through-the-fence agreement, the airport owner should endeavor to establish terms that are beneficial to the airport. For example, the adjacent developer or landowner should be made to finance the necessary improvements and maintenance of the facilities and infrastructure connecting the adjacent land to the airport's landing area. Recurring payments should be based on use rather than on flat rates. Agreements should contain provisions allowing the airport to terminate through-the-fence access permits for cause.

In addition, the airport owner must restrict the uses that may be made of the adjacent land as a condition for granting a through-the-fence privilege. Private property owners must be asked to enter into agreements that prohibit public aeronautical commercial operations. Simply stated, they should not be allowed to operate as fixed base operators (FBO) offering aeronautical services to the public. Such FBO operations, if allowed, would give private property operators an advantage over on-airport operators. Allowing private property owners to gain a competitive advantage will jeopardize the economic vitality of the airport and impede its ability to remain self-sustaining. Additionally, any economic advantage gained by adjacent property owners will diminish the economic viability of the airport's own aeronautical commercial operators.

Arrangements that permit aircraft to gain access to a public landing area from off-site property introduce safety considerations along with additional hazards that complicate the control of vehicular and aircraft traffic. Airport improvements designed to accommodate access to the airport and landing areas from an off-site location for the sole benefit and convenience of an off-airport neighbor present a substantial and continuing burden to the airport owner. In addition, the airport must contend with legal, insurance, and management implications represented by increased costs, liability, and administrative and operational controls. For the airport owner, it may become an unexpected challenge to balance airport needs with the increasing demands on the airport by off-airport users.

It is FAA policy to strongly discourage any agreement that grants access to public landing areas by aircraft normally stored on adjacent property. Airport owners must guard against any through-the-fence operation that can become detrimental to the airport and threaten its economic viability. Any agreement for a through-the-fence operation must include provisions making such operations subject to the same federal obligations as tenants on airport property. Furthermore, the airport owner must ensure that the through-the-fence operators contribute a fair share toward the cost of the operation, maintenance, and improvement of the airport and that they do not gain an unfair economic advantage over on-airport operators.

DEVELOPMENT OF NON-AVIATION PROPERTIES

French Valley Airport provides the region with several functions: corporate/executive access, air freight services, general aviation basing and servicing, medical and law enforcement air support, and sites for the development of the commercial/ industrial sector. While all but the last of these functions is directly dependent on the ability of French Valley Airport to provide facilities which meet their respective need, economic development is not specifically dependent upon the operational capabilities of the airport.

While proximity or access to airport services may be desirable for some industrial firms, most of the potential tenants will not have an aviation connection. Instead, the airport may provide a site and support services as an alternative location within the overall availability of properties that are zoned and master planned for commercial/industrial uses in Riverside County. In that sense, the airport sites compete with other locations that are developed by private firms, individuals, nonprofit foundations, and other municipal agencies.

Many commercial/industrial uses that develop on airport property are airport-related, but do not necessarily need to be located on airport property. They do so based upon the availability of sites, convenience, and other market considerations.

As much as practical, the non-aviation properties which develop on the property should be developed in ways that enhance the air operations and support those functions that are directly dependent upon airport services. This may include temporary uses for properties that are scheduled for future runways, taxiways, or other aviation facilities, to assure they are available for airport development when the need arises.

All future development within the bounds of the property owned by the airport will be compatible with the primary purpose and function of the airport and will bring in lease revenue to support the operation of the airport. Some areas of the airport are not likely to provide taxiway access and are not identified for aviation use although they can be utilized for an aviation support activity that does not require taxiway and runway access. The revenue generation potential of these areas will vary based on local traffic and roads. Specific proposals for non-aviation use will undergo additional review and approval with the Federal Aviation Administration.

Airport-Related Commercial Service Businesses: The airport can offer location advantages for commercial businesses that neither support the airport operations nor provide services to users of the airport, such as restaurants, car rental agencies, and small executive offices that provide services and facilities for business travelers. In many locations, these businesses are accommodated in off-airport locations, especially where air transportation plays a relatively minor role in the overall commercial activity of the area.

Aviation-Oriented Businesses: French Valley Airport has played a key role in providing a location for these type of businesses. These firms generally require direct access to the airfield, although some firms (such as parts suppliers and avionics repair shops) often operate from locations not directly accessible to the airfield.

There are also a wide variety of companies that prefer to locate on airports because they have an orientation to aviation through their products, markets, or operations. These include many firms that operate their own aircraft in addition to using commercial air services. Several successful commercial airparks have been developed around the country.

Aviation/Aerospace Manufacturers: Consolidation of the industry in recent years has created fewer options for this type of operation. With the recent resurgence of general aviation aircraft manufacturing, several of these companies have opened new manufacturing plants. Typically, these companies will locate in areas with an aviation-oriented labor base. Many manufacturers of specialized parts or components do not require sites on an airport, but their aviation orientation makes an airport a preferred location.

Non-Aviation Industrial/Commercial Uses: While Riverside County should give priority consideration in its real estate policy to firms that are aviation oriented, it should not preclude using their available airport properties to attract other industrial/commercial activities. Creating strong business activities near the airport will create beneficial effects and a favorable climate for the potential attraction of aviation-related companies.

NAVIGATIONAL AND APPROACH AIDS

Electronic and visual guidance to arriving and departing aircraft enhance safety and utilization of the airfield. Such facilities are vital to the operational success of the airport and enhance the safety of passengers using the airport. While instrument approach aids are especially helpful during poor weather, they often are used by air taxi or commercial pilots when visibility is above instrument flight rule conditions.

French Valley Airport is equipped with a single nonprecision instrument approach (GPS Runway 18). Utilizing this approach, a properly equipped aircraft can land at the airport with 600-foot cloud ceilings and one-mile visibility for aircraft in Categories A and B. The visibility minimums increase to 1½ miles for aircraft in Category C.

VISUAL APPROACH LIGHTING

While there are no plans to upgrade the GPS Runway 18 approach, improvements can be made to enhance the safety of the existing approach. According to *Advisory Circular 150/5300-13*, *Appendix 16*, while not required, an approach lighting system is recommended on runways with a nonprecision approach having one mile visibility minimums. While several approach lighting systems would be acceptable, the most basic system would be the omnidirectional approach lighting system (ODALS), which is noted by a single row of lights (300 feet on center) extending a total distance of 1,500 feet into the approach.

Upgrading the runway edge lights to high intensity runway lighting (HIRL) is also recommended. Although this is not required it would greatly enhance the safety of the existing approach.

AIRFIELD MARKINGS

Pavement markings aid in the movement of aircraft along airport surfaces and identify closed or hazardous areas on the airport. Runway markings are designed according to the type of approach available on the runway. FAA *Advisory Circular 150/5340-1J*, *Standards for Airport Markings*, provides the guidance necessary to design an airport's markings. Runway 18-36 has nonprecision markings on Runway 18 and basic or visual markings on Runway 36. Holding position markings on the entrance taxiways are required to be a minimum of 200 feet from the centerline of the runway. This distance may need to be increased when the tail height of critical aircraft is taken into account. Existing holdlines will need to be relocated to meet the current standard.

SUMMARY

The process utilized in assessing the airside and landside development alternatives involved an analysis of both short and long term requirements and future growth potential. Current airport design standards are reflected in the alternatives.

Upon review of this working paper by the Planning Advisory Committee, a final Master Plan concept can be finalized. The resultant plan will represent an airside facility that fulfills safety and design standards and a landside complex that can be developed as demand dictates.

The proposed development plan for the airport must represent a means by which the airport can grow in a balanced manner, both on the airside as well as the landside, to accommodate forecast demand. In addition, it must provide for flexibility in the plan to meet activity growth beyond the long term planning period. The remaining chapters will provide a refinement of the final concept, recommend an implementation schedule, and provide detailed cost estimates and capital program financing assumptions.

FRENCH VALLEY
A•I•R•P•O•R•T

Chapter Five

MASTER PLAN CONCEPT AND AIRPORT PLANS

Chapter Five

MASTER PLAN CONCEPT AND AIRPORT PLANS

The airport master planning process has evolved through efforts in the previous chapters to analyze future aviation demand, establish airside and landside facility needs, and evaluate options for the future development of the airside and landside facilities. The development alternatives have been considered for refinement into a single recommended master plan concept. The planning process has included the development of phased reports, which were distributed to the Planning Advisory Committee (PAC) and discussed at the coordination meetings held during the study process.

This chapter describes, in narrative and graphic form, the recommended direction for the future use and development of French Valley Airport. Following the final coordination meeting with the PAC, the draft final document will be presented to the County of Riverside. Upon acceptance of the final master plan document, a final technical report will be prepared for the study.

RECOMMENDED MASTER PLAN CONCEPT

The recommended master plan concept provides for anticipated facility needs over the next 20 years. The concept, depicted on **Exhibit 5A**, is a composite of airside and landside considerations developed in the last chapter. The following sections summarize airside and landside recommendations.

07MP01-5-1/14/09

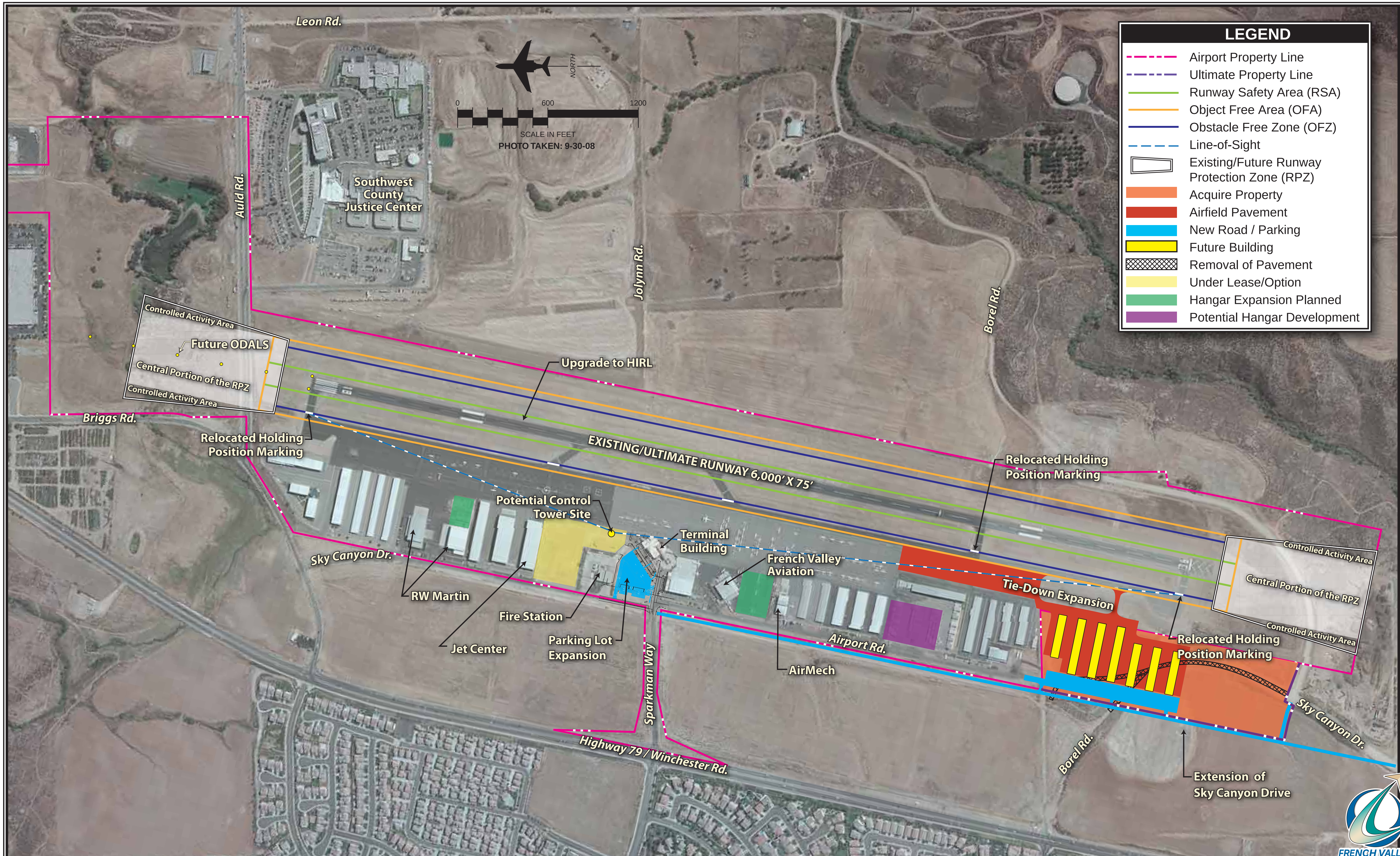


Exhibit 5A
MASTER PLAN CONCEPT

AIRSIDE RECOMMENDATIONS

Airside recommendations include improvements to the runway, the taxiways, airfield lighting or marking, and navigational aids, as follows:

- Upgrade runway edge lighting to high intensity (HIRL) and install omni-directional approach lighting system (ODALS) to enhance the safety of the instrument approach procedure on Runway 18.

- Relocate hold lines 200 feet from runway centerline to meet current design criteria.

- Consider alternative sites for a control tower at the airport to enhance air traffic functions at the airport. Preliminary evaluations indicate that a location adjacent to the terminal building would be the ideal location, providing a clear line-of-sight to each runway end.

LANDSIDE RECOMMENDATIONS

Landside recommendations include improvements to the general aviation service and storage hangars, ramp, and parking areas, as follows:

- Development of additional T-Hangars near the south end of the airfield. These T-Hangars total approximately 130,000 square feet and would require additional land acquisition by the county. While the plan reflects an eventual extension of Sky Canyon Drive, the hangar development is not dependent on this road extension.

- Potential redevelopment of existing hangars in the Port-A-Port area. Relocation of the existing Port-A-Ports will allow for placement of larger box hangars.

- Extension of the existing apron to the south to provide additional ramp area for transient aircraft.

- Additional auto parking (terminal area and hangar areas). Development is planned for a parking lot extension in the area adjacent to the terminal building and fire station. In conjunction with additional parking adjacent to the individual businesses, this should satisfy future parking demands through the end of the planning period.

- Additional commercial/industrial business opportunities on property not accessible from the airfield.

AIRPORT LAYOUT PLANS

The remainder of this chapter provides a brief description of the official airport layout plan drawings that will be submitted to Riverside County and the FAA for their respective approvals. These drawings, referred to as the Airport Layout Plans (ALPs), have been prepared to graphically depict the ultimate airfield layout, facility development, and airport imaginary surfaces (pursuant to 14 CFR Part 77, *Objects Affecting Navigable Airspace*). They have been prepared in AutoCAD 2008, which will allow the County (or consultants for the County) to easily update the drawings as facilities are updated. The drawings have been prepared with new aerial mapping which was compiled (under this master plan contract) in September 2008. Property metes and bounds information was obtained from the ALP.

The documents summarized in this chapter include:

- Airport Layout Plan Drawing
- Landside Drawings (North Ramp and South Ramp)
- 14 CFR Part 77 Airspace Drawing
- Inner Approach Surfaces Drawings (Runway 18 and 36 ends)
- On-Airport Land Use Drawing
- Airport Property Map

AIRPORT LAYOUT PLAN DRAWING

This drawing graphically depicts existing and future airport layout, buildings, property, and critical safety/setback lines. Checklists for this drawing are developed by the FAA and the drawing must conform to the latest checklist when it is submitted to the FAA for review and approval. The drawing will become the official guidance for the FAA (upon acceptance by Riverside County) in making future decisions for funding improvements eligible for federal grant assistance. Quite simply, if a potential project is not shown on the ALP, it will not be considered by the FAA for funding assistance. It is important that the county periodically update this drawing as new facilities are added or removed.

Most of the information presented on the ALP has been analyzed or discussed in previous chapters, providing the justification for the project. While the ALP is a comprehensive drawing, outlining existing and future facilities, separate drawings are required to provide added detail in the runway approach areas, airport property information and on-airport land use.

Landside Drawings

Enlarged drawings of the north and south ramp areas have been provided to show additional detail on an aerial base.

14 CFR PART 77 AIRSPACE DRAWING(S)

The airspace drawing was developed utilizing the criteria found in 14 CFR Part 77, *Objects Affecting Navigable Airspace*. In order to protect the airspace and approaches to each runway end from hazards that could affect the safe and efficient operation of the airport, federal criteria has been established for use by local planning and land use jurisdictions to control the height of objects in the vicinity of the airport. The 14 CFR Part 77 airspace plan is a graphic depiction of these criteria.

The drawing assigns three-dimensional imaginary surfaces to the runway. These imaginary surfaces emanate from the runway centerline and are dimensioned according to visibility minimums associated with each runway approach, transitional surface, horizontal surface, and conical surface. Part 77 imaginary surfaces are described in the following paragraphs.

Primary Surface: The primary surface is an imaginary surface longitudinally centered on the runway. The primary surface extends 200 feet beyond each runway end. The elevation at any point on the primary surface is the same as the elevation along the nearest associated point on the runway centerline. Under Part 77 regulations, the primary surface for Runway 18-36 is 500 feet wide.

Approach Surface: An approach surface is also established for each runway end. The approach surface begins at the same width as the primary surface and extends upward and outward from the primary surface end, and is centered along an extended runway centerline. The approach surface for Runway 18 extends 10,000 feet from the primary surface at an upward slope of 34:1. The width of the approach surface at the outer end is 3,500 feet. The approach surface for Runway 36 extends 5,000 feet from the primary surface at an upward slope of 20:1. The width of the approach surface at the outer end is 1,500 feet.

Transitional Surface: The runway has a transitional surface that begins at the outside edge of the primary surface at the same elevation as the runway. The transitional surface also connects with the approach surfaces at each runway end. The surface rises at a slope of 7:1 up to a height which is 150 feet above the highest runway elevation. At that point, the controlling surface is the horizontal surface.

Horizontal Surface: The horizontal surface is established at 150 feet above the highest elevation of the runway surface. Having no slope, the horizontal surface connects the transitional and approach surfaces to the conical surface at a distance of 10,000 feet from the primary surface of each runway.

Conical Surface: The conical surface begins at the outer edge of the horizontal surface, and then continues for an additional 4,000 feet horizontally at a slope of 20:1. Therefore, at 4,000 feet from the edge of the horizontal surface, the elevation of the conical surface is 350 feet above the highest airport elevation.

INNER APPROACH SURFACES DRAWING(S)

The Inner Portion of the Approach Surface Drawing is a scaled drawing of the RPZ, RSA, OFZ, and OFA for each runway end. A plan and profile view of each RPZ is provided to facilitate identification of obstructions that lie within these safety areas. Detailed obstruction and facility data is provided to identify planned improvements and the disposition of obstructions.

ON-AIRPORT LAND USE DRAWING

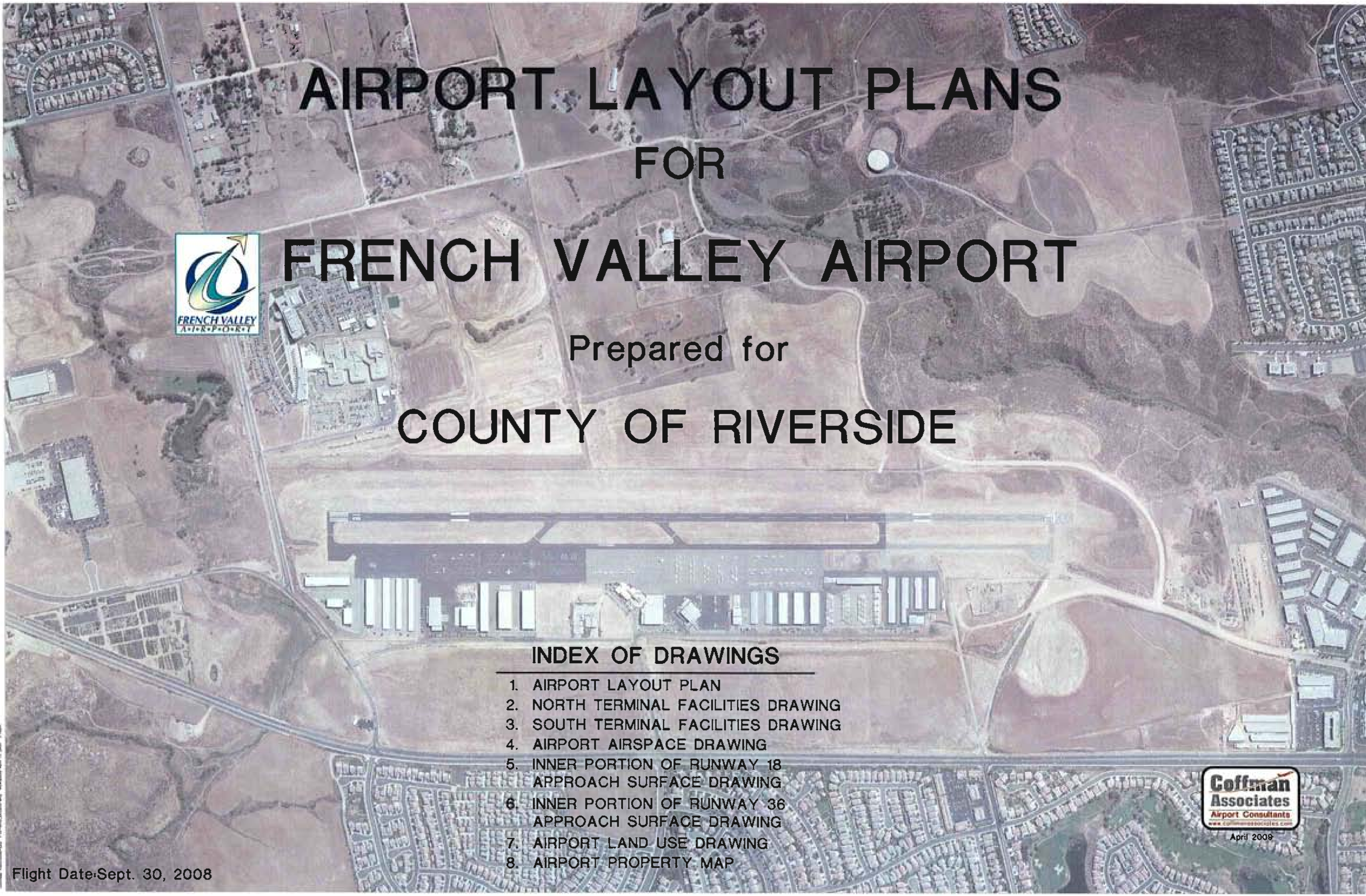
The objective of the On-Airport Land Use Drawing is to coordinate uses of airport property in a manner compatible with the functional design of the airport facility. Airport land use planning is important for the orderly development and efficient use of available space. There are two primary considerations for airport land use planning: first, to secure those areas essential to the safe and efficient operation of the airport; and second, to determine compatible land uses for the balance of property which would be most advantageous to the airport and community. The plan depicts the recommendations for ultimate land use development on the airport. When development is proposed, is should be directed to the appropriate land use area depicted on this plan.

AIRPORT PROPERTY MAP

The Airport Property Map provides information on the acquisition and identification of all land tracts under the control of the airport.

SUMMARY

The airport layout plan drawings are intended to assist the FAA and Riverside County with decision-making relative to future development. The plan considers anticipated development needs based upon forecasts for a 20-year planning period. Flexibility in planning will be essential as activity growth may not occur exactly as forecast. The drawings provide the County an overall direction and reference as future projects are contemplated and funded.



AIRPORT LAYOUT PLANS

FOR

FRENCH VALLEY AIRPORT

Prepared for

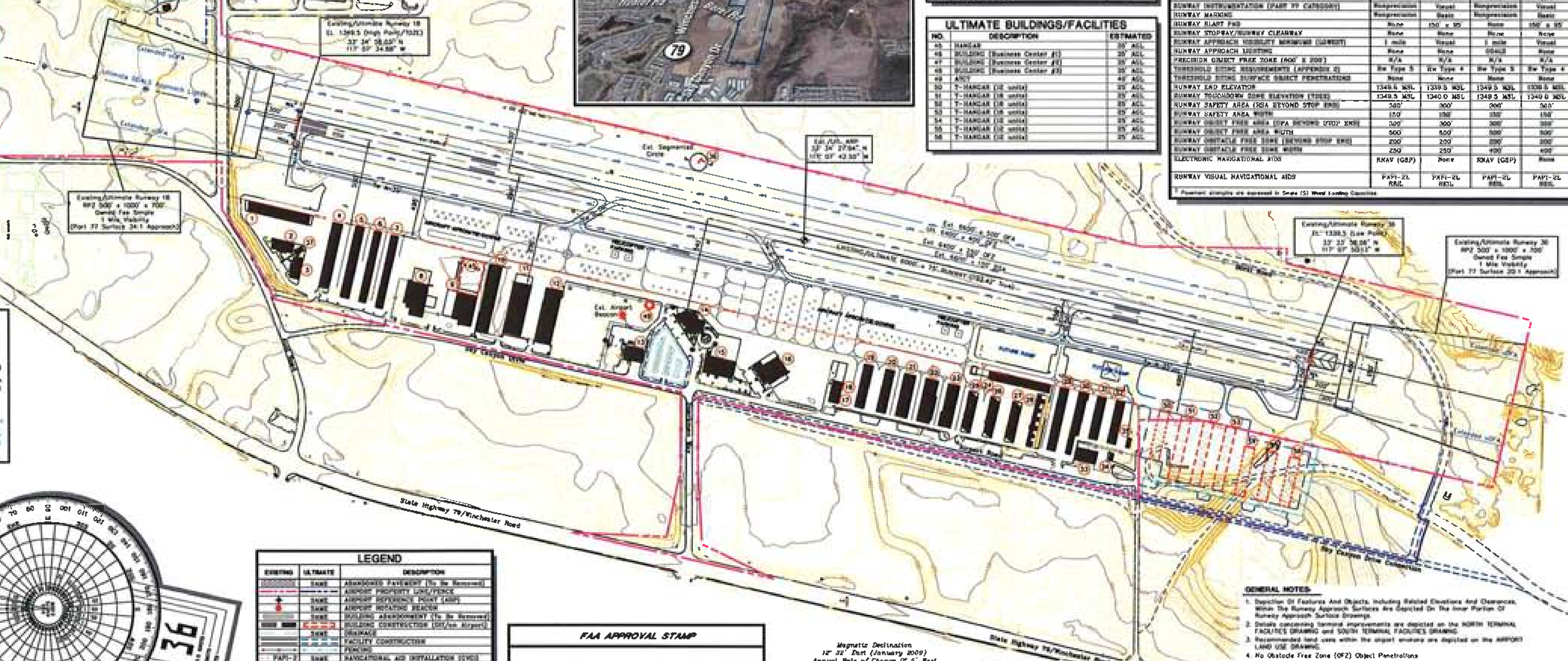
COUNTY OF RIVERSIDE

INDEX OF DRAWINGS

1. AIRPORT LAYOUT PLAN
2. NORTH TERMINAL FACILITIES DRAWING
3. SOUTH TERMINAL FACILITIES DRAWING
4. AIRPORT AIRSPACE DRAWING
5. INNER PORTION OF RUNWAY 18 APPROACH SURFACE DRAWING
6. INNER PORTION OF RUNWAY 36 APPROACH SURFACE DRAWING
7. AIRPORT LAND USE DRAWING
8. AIRPORT PROPERTY MAP

Flight Date Sept. 30, 2008

Coffman Associates
Airport Consultants
April 2009



AIRPORT DATA

OWNER: Riverside County		AIRPORT NPIAS CODE GA	
CITY: Murrieta/Temecula, California		COUNTY: Murrieta/Temecula, California	
RANGE: 2 West TOWNSHIP: 7 South		CIVIL TOWNSHIP Murrieta/Temecula	
FRENCH VALLEY (F70)		EXISTING	ULTIMATE
AIRPORT SERVICE LEVEL		General Aviation	General Aviation
AIRPORT REFERENCE CODE		B-II	B-II
DESIGN AIRCRAFT		King Air 350	King Air 350
AIRPORT ELEVATION (NAVD 88)		1349.5 MSL	1349.5 MSL
MEAN MAXIMUM TEMPERATURE OF HOTTEST MONTH		90° F (July)	90° F (July)
AIRPORT REFERENCE POINT (ARP) COORDINATES (NAD 83)	Latitude	33° 34' 27.64" N	33° 34' 27.64" N
	Longitude	117° 07' 42.50" W	117° 07' 42.50" W
AIRPORT INSTRUMENT APPROACHES		RNAV (GPS) RWY 18	RNAV (GPS) RWY 18
AIRPORT and TERMINAL NAVIGATIONAL AIDS		Rotating Beacon	Rotating Beacon ATCT
GPS Approach (ANAPC 04/18/1999 NCS)		Yes	Yes
Existing Runway 18 End-EL 1349.5 COORDINATES (NAD 83)	Latitude	33° 34' 58.03" N	33° 34' 58.03" N
	Longitude	117° 07' 34.98" W	117° 07' 34.98" W
Existing Runway 36 End-EL 1339.5 COORDINATES (NAD 83)	Latitude	33° 33' 58.08" N	33° 33' 58.08" N
	Longitude	117° 07' 50.13" W	117° 07' 50.13" W

EXISTING BUILDINGS/FACILITIES

NO.	DESCRIPTION	ELEVATION
1	T-HANGAR	1375.4 MSL
2	HANGAR	1375.8 MSL
3	HANGAR	1374.8 MSL
4	T-HANGAR	1375.2 MSL
5	T-HANGAR	1366.8 MSL
6	T-HANGAR	1366.2 MSL
7	T-HANGAR	1366.3 MSL
8	HANGAR (SW Marvin)	1376.8 MSL
9	HANGAR (SW Marvin)	1375.1 MSL
10	T-HANGAR	1377.3 MSL
11	HANGAR	1366.8 MSL
12	HANGAR (Jet Center)	1375.5 MSL
13	BUILDING (Fire Station)	1356.5 MSL
14	BUILDING (Terminal Building)	1358.4 MSL
15	HANGAR (STA Jets)	1368.0 MSL
16	BUILDING (French Valley Aviation)	1363.8 MSL
17	BOX HANGAR (AirMech)	1355.1 MSL
18	BOX HANGAR (AirMech)	1354.8 MSL
19	T-HANGAR	1348.8 MSL
20	T-HANGAR	1347.8 MSL
21	T-HANGAR	1348.8 MSL
22	T-HANGAR	1357.7 MSL
23	T-HANGAR	1349.2 MSL
24	T-HANGAR	1362.4 MSL
25	PORTAPORTS	1334.4 MSL
26	PORTAPORTS	1344.8 MSL
27	PORTAPORTS	1344.8 MSL
28	PORTAPORTS	1350.3 MSL
29	T-HANGAR	1348.1 MSL
30	T-HANGAR	1348.8 MSL
31	T-HANGAR	1348.1 MSL
32	T-HANGAR	1348.8 MSL
33	BUILDING	-
34	FUEL TANKS	N/A
35	BUILDING	1345.8 MSL
36	SEGMENTED CIRCLE/WIND INDICATOR	-
37	PILOTS LOUNGE	-

ULTIMATE BUILDINGS/FACILITIES

NO.	DESCRIPTION	ESTIMATED
45	HANGAR	35' AGL
46	BUILDING (Business Center #1)	35' AGL
47	BUILDING (Business Center #2)	35' AGL
48	BUILDING (Business Center #3)	35' AGL
49	ATCT	45' AGL
50	T-HANGAR (12 units)	25' AGL
51	T-HANGAR (18 units)	25' AGL
52	T-HANGAR (18 units)	25' AGL
53	T-HANGAR (18 units)	25' AGL
54	T-HANGAR (12 units)	25' AGL
55	T-HANGAR (12 units)	25' AGL
56	T-HANGAR (12 units)	25' AGL

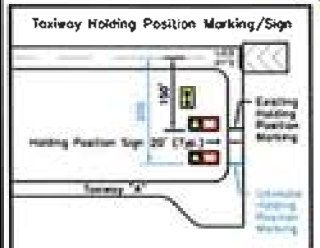
RUNWAY DATA

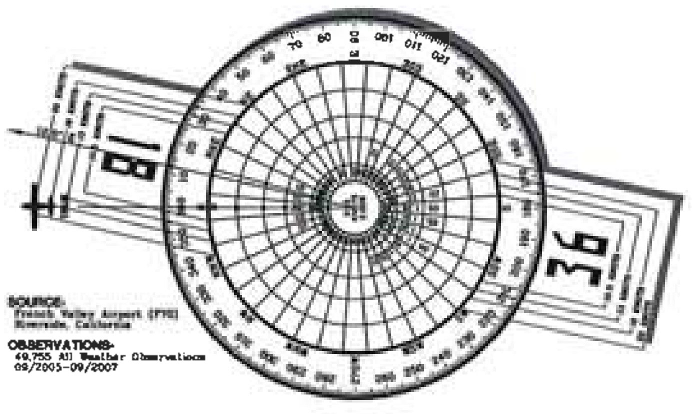
	RUNWAY 18-36 EXISTING	RUNWAY 18-36 ULTIMATE
RUNWAY CATEGORY	General Aviation	General Aviation
AIRCRAFT APPROACH CATEGORY-DESIGN GROUP	B-II	B-II
DESIGN CRITICAL AIRCRAFT	King Air 350	King Air 350
WINGSPAN OF DESIGN AIRCRAFT	57.9'	57.9'
MAX. CERTIFIED TAKEOFF WEIGHT OF DESIGN A/C	15,000#	15,000#
UNDERCARRIAGE WIDTH OF DESIGN AIRCRAFT	17.6'	17.6'
DESIGN AIRCRAFT APPROACH SPEED IN KNOTS	100 knots	100 knots
TAXIWAY CENTERLINE TO FIXED OR MOVABLE OBJECT	65.5	65.5
TAXIWAY WINGTIP CLEARANCE	20'	20'
RUNWAY CENTERLINE TO PARALLEL TAXIWAY CENTERLINE	240'	240'
RUNWAY DIMENSIONS (L X W)	6,000' x 75'	6,000' x 75'
RUNWAY TRUE BEARING (NGS SURVEY)	182.42° / 2.42°	182.42° / 2.42°
RUNWAY WIND COVERAGE (10 KNOTS/12 MPH)	95%	95%
RUNWAY SHOULDERS	7.5'	7.5'
RUNWAY MAXIMUM ELEVATION/HIGH POINT OF RUNWAY	1349.5 MSL	1349.5 MSL
RUNWAY LOW POINT ELEVATION	1339.6 MSL	1339.5 MSL
RUNWAY LIGHTING	MIRL	HIRL
RUNWAY EFFECTIVE GRADIENT/MAXIMUM GRADIENT	2%	2%
RUNWAY PAVEMENT MATERIAL / SURFACE TREATMENT	Asphalt (GRVD)	Asphalt (GRVD)
RUNWAY PAVEMENT STRENGTH (IN THOUSAND LBS.)[1]	30(S)	30(S)
LINE OF SIGHT REQUIREMENT MET	YES	YES
14CFR PART 77 APPROACH SURFACES	500' x 10,000' x 3500' (18) 500' x 5000' x 1500' (36)	500' x 10,000' x 3500' (18) 500' x 5000' x 1500' (36)
RUNWAY PROTECTION ZONES	500' x 1000' x 700' (18) 500' x 1000' x 700' (36)	500' x 1000' x 700' (18) 500' x 1000' x 700' (36)
TAXIWAY WIDTH	35'-35'	50'-35'
TAXIWAY LIGHTING	MITL	MITL
TAXIWAY MARKING	Centerline/Signage	Centerline/Signage
TAXIWAY SURFACE MATERIAL	Asphalt	Asphalt
TAXIWAY SAFETY AREA WIDTH	79'	79'
TAXIWAY OBJECT FREE AREA WIDTH	131'	131'
TAXIWAY HOLDING POSITION MARKING/HOLD SIGN	150'	200'

RUNWAY ENDS DATA	RUNWAY 18	RUNWAY 36	RUNWAY 18	RUNWAY 36
14CFR PART 77 APPROACH SLOPE	34:1	20:1	34:1	20:1
RUNWAY INSTRUMENTATION (PART 77 CATEGORY)	Nonprecision	Visual	Nonprecision	Visual
RUNWAY MARKING	Nonprecision	Basic	Nonprecision	Basic
RUNWAY BLAST PAD	None	150' x 95'	None	150' x 95'
RUNWAY STOPWAY/RUNWAY CLEARWAY	None	None	None	None
RUNWAY APPROACH VISIBILITY MINIMUMS (LOWEST)	1 mile	Visual	1 mile	Visual
RUNWAY APPROACH LIGHTING	None	None	[illegible]	None
PRECISION OBJECT FREE ZONE (800' X 200')	N/A	N/A	N/A	N/A
THRESHOLD SITING REQUIREMENTS (APPENDIX 2)	Rw Type 5	Rw Type 4	Rw Type 5	Rw Type 4
THRESHOLD SITING SURFACE OBJECT PENETRATIONS	None	None	None	None
RUNWAY END ELEVATION	1349.6 MSL	1339.5 MSL	1349.5 MSL	1339.5 MSL
RUNWAY TOUCHDOWN ZONE ELEVATION (TDZE)	1349.5 MSL	1340.0 MSL	1349.5 MSL	1340.0 MSL
RUNWAY SAFETY AREA (RSA BEYOND STOP END)	300'	300'	300'	300'
RUNWAY SAFETY AREA WIDTH	150'	150'	150'	150'
RUNWAY OBJECT FREE AREA (OFA BEYOND STOP END)	300'	300'	300'	300'
RUNWAY OBJECT FREE AREA WIDTH	500'	500'	500'	500'
RUNWAY OBSTACLE FREE ZONE (BEYOND STOP END)	200'	200'	200'	200'
RUNWAY OBSTACLE FREE ZONE WIDTH	250'	250'	400'	400'
ELECTRONIC NAVIGATIONAL AIDS	RNAV (GSP)	None	RNAV (GSP)	None
RUNWAY VISUAL NAVIGATIONAL AIDS	PAPI-2L REIL	PAPI-2L REIL	PAPI-2L REIL	PAPI-2L REIL

[1] Pavement strengths are expressed in Single (S) Wheel Loading Capacities

Taxiway Holding Position Marking/Sign





SOURCE:
French Valley Airport (F70)
Riverside, California

OBSERVATIONS:
49,755 All Weather Observations
09/2005-09/2007

ALL WEATHER WIND COVERAGE

Runway	10.5 Knots 12 MPH	13 Knots 15 MPH	16 Knots 18 MPH	20 Knots 23 MPH
Runway 18-36	[illegible]	[illegible]	100.00%	100.00%

LEGEND

EXISTING	ULTIMATE	DESCRIPTION
	SAME	ABANDONED PAVEMENT (To Be Removed)
		AIRPORT PROPERTY LINE/FENCE
	SAME	AIRPORT REFERENCE POINT (ARP)
	SAME	AIRPORT ROTATING BEACON
	SAME	BUILDING ABANDONMENT (To Be Removed)
		BUILDING CONSTRUCTION (Off/on Airport)
		DRAINAGE
		FACILITY CONSTRUCTION
		FENCING
PAPI-2	SAME	NAVIGATIONAL AID INSTALLATION (VGI)
REIL	REIL	RUNWAY END IDENTIFICATION LIGHTS
	SAME	RUNWAY THRESHOLD LIGHTS
	SAME	SECTION CORNER
	SAME	SEGMENTED CIRCLE/WIND INDICATOR
	SAME	TOPOGRAPHY (2005)
	SAME	WIND INDICATOR (Lighted)
		HOLDING POSITION MARKING
		BUILDING RESTRICTION LINE (BRL)
		DIRT ROAD
		TREES
OFZ		RUNWAY OBSTACLE FREE ZONE
RSA		RUNWAY SAFETY AREA
OFA		RUNWAY OBJECT FREE AREA
		SURVEY MONUMENT (PACS/SACS)
		RUNWAY GUARD
	SAME	HELICOPTER PARKING
	SAME	TIE-DOWNS
	SAME	RUNWAY PROTECTION ZONE (RPZ)

FAA APPROVAL STAMP

Magnetic Declination
12° 32' East (January 2009)
Annual Rate of Change 0° 5' West

0 300 600 900
SCALE IN FEET

12° 32' East
TRUE NORTH

FOR APPROVAL BY:
COUNTY OF RIVERSIDE

Robert Field
Assistant County Executive Officer
DATE

GENERAL NOTES:

1. Depiction Of Features And Objects, Including Related Elevations And Clearances, Within The Runway Approach Surfaces Are Depicted On The Inner Portion Of Runway Approach Surface Drawings.
2. Details concerning terminal improvements are depicted on the NORTH TERMINAL FACILITIES DRAWING and SOUTH TERMINAL FACILITIES DRAWING.
3. Recommended land uses within the airport environs are depicted on the AIRPORT LAND USE DRAWING.
4. No Obstacle Free Zone (OFZ) Object Penetrations
5. No Threshold Siting Surface Object Penetrations
6. French Valley Airport Photography Dated September 30, 2008

No.	REVISIONS	DATE	BY	APPD.
		-	-	-
		-	-	-
		-	-	-

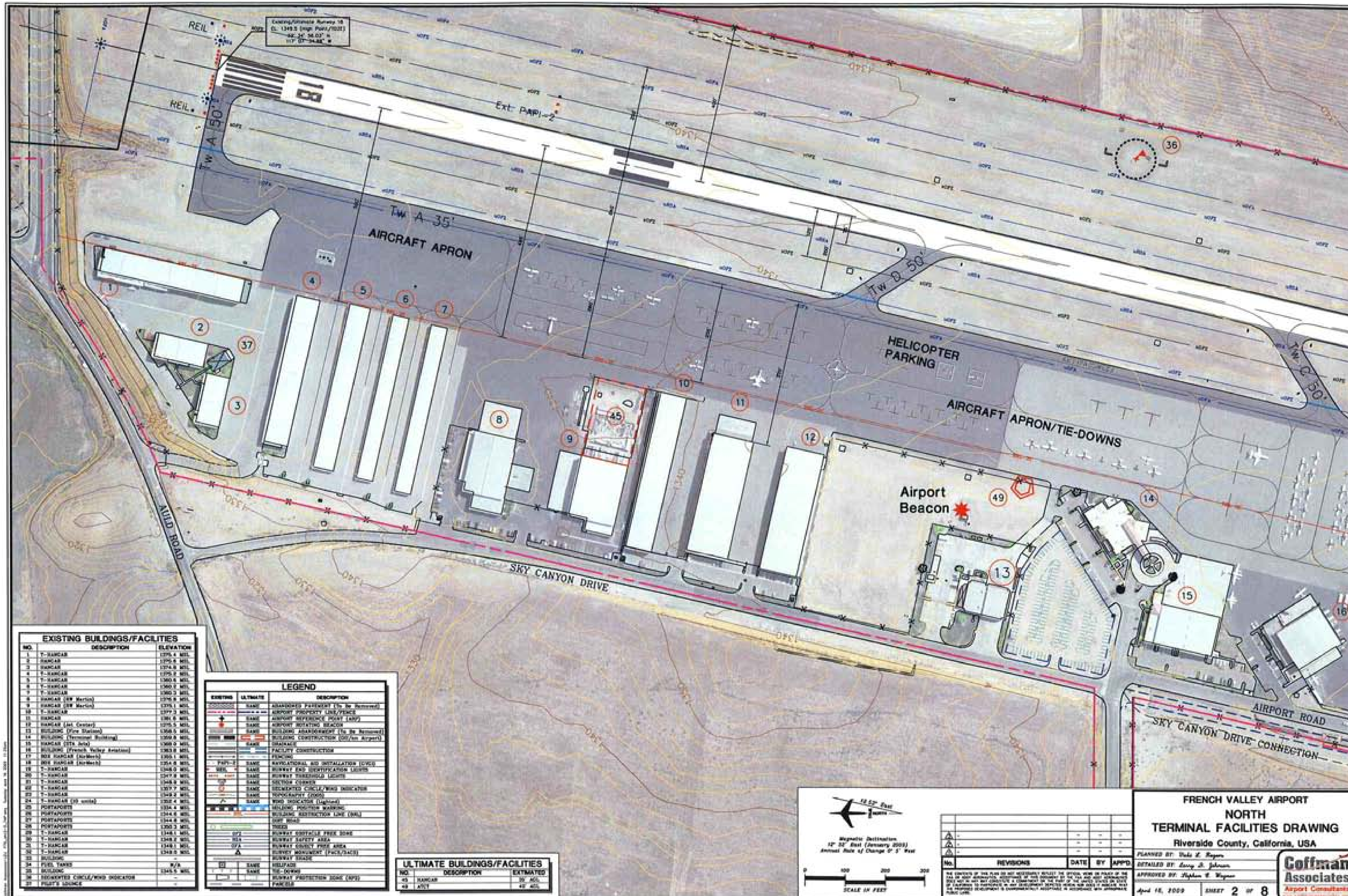
FRENCH VALLEY AIRPORT
AIRPORT LAYOUT DRAWING

Riverside County, California, USA

PLANNED BY: *Vicki E. Rogers*
DETAILED BY: *Larry D. Johnson*
APPROVED BY: *Stephen B. Wagner*

April 16, 2009 SHEET 1 OF 8

Coffman Associates
Airport Consultants



EXISTING BUILDINGS/FACILITIES		
NO.	DESCRIPTION	ELEVATION
1	T-HANGAR	1375.4 MSL
2	HANGAR	1375.6 MSL
3	HANGAR	1374.6 MSL
4	T-HANGAR	1375.2 MSL
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6	T-HANGAR	1360.2 MSL
7	T-HANGAR	1360.2 MSL
8	HANGAR (SW Martin)	1376.8 MSL
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20	T-HANGAR	1347.8 MSL
21	T-HANGAR	1348.8 MSL
22	T-HANGAR	1357.7 MSL
23	T-HANGAR	1349.2 MSL
24	T-HANGAR (10 units)	1352.4 MSL
25	PORTAPORTS	1334.4 MSL
26	PORTAPORTS	1344.6 MSL
27	PORTAPORTS	1344.8 MSL
28	PORTAPORTS	1350.3 MSL
29	T-HANGAR	1348.1 MSL
30	T-HANGAR	1348.2 MSL
31	T-HANGAR	1348.1 MSL
32	T-HANGAR	1348.0 MSL
33	BUILDING	-
34	FUEL TANKS	N/A
35	BUILDING	1345.5 MSL
36	SEGMENTED CIRCLE/WIND INDICATOR	-
37	PILOT'S LOUNGE	-

LEGEND		
EXISTING	ULTIMATE	DESCRIPTION
	SAME	ABANDONED PAVEMENT (To Be Removed)
		AIRPORT PROPERTY LINE/FENCE
	SAME	AIRPORT REFERENCE POINT (ARP)
	SAME	AIRPORT ROTATING BEACON
	SAME	BUILDING ABANDONMENT (To Be Removed)
		BUILDING CONSTRUCTION (Off/on Airport)
	SAME	DRAINAGE
		FACILITY CONSTRUCTION
		FENCING
PAPI-2	SAME	NAVIGATIONAL AID INSTALLATION (CVC)
REIL	SAME	RUNWAY END IDENTIFICATION LIGHTS
	SAME	RUNWAY THRESHOLD LIGHTS
	SAME	SECTION CORNER
	SAME	SEGMENTED CIRCLE/WIND INDICATOR
	SAME	TOPOGRAPHY (2005)
	SAME	WIND INDICATOR (Lighted)
		HOLDING POSITION MARKING
		BUILDING RESTRICTION LINE (BRL)
		DIRT ROAD
		TREES
OFZ		RUNWAY OBSTACLE FREE ZONE
RSA		RUNWAY SAFETY AREA
OFA		RUNWAY OBJECT FREE AREA
		SURVEY MONUMENT (PACS/SACS)
		RUNWAY SHADE
	SAME	HELIPADS
	SAME	TIE-DOWNS
		RUNWAY PROTECTION ZONE (RPZ)
		PARCELS

ULTIMATE BUILDINGS/FACILITIES		
NO.	DESCRIPTION	ESTIMATED
45	HANGAR	35' AGL
49	ATCT	40' AGL

No.	REVISIONS	DATE	BY	APP'D.
	-	-	-	-
	-	-	-	-
	-	-	-	-

FRENCH VALLEY AIRPORT

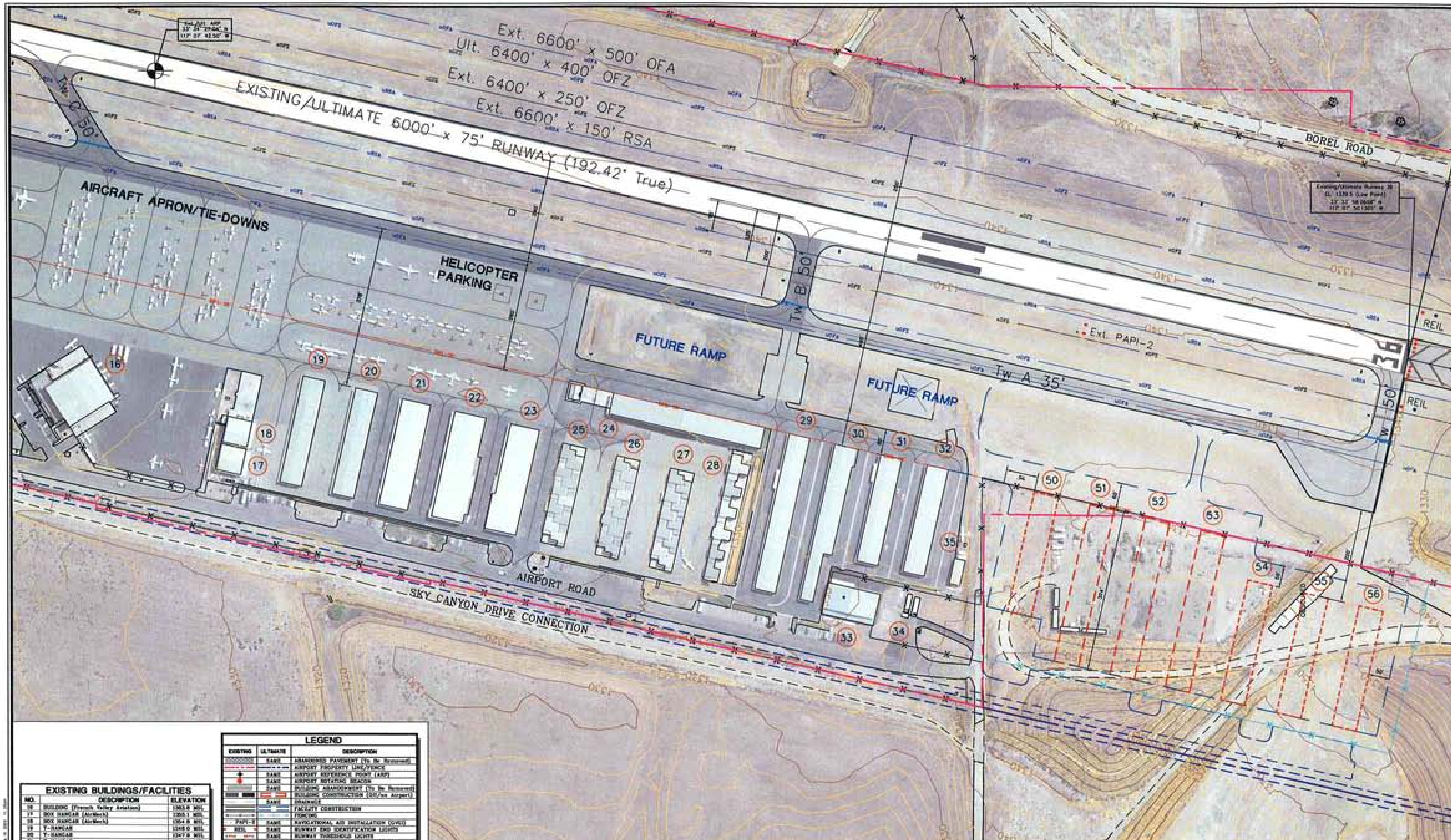
NORTH TERMINAL FACILITIES DRAWING

Riverside County, California, USA

PLANNED BY: Dale L. Rogers
DETAILED BY: Larry B. Johnson
APPROVED BY: Stephen E. Wagner

April 16, 2009 SHEET 2 OF 8

Coffman Associates Airport Consultants



LEGEND

EXISTING	ULTIMATE	DESCRIPTION
	SAME	ABANDONED PAVEMENT (To Be Removed)
		AIRPORT PROPERTY LINE/FENCE
	SAME	AIRPORT REFERENCE POINT (ARP)
	SAME	AIRPORT ROTATING BEACON
	SAME	BUILDING ABANDONMENT (To Be Removed)
		BUILDING CONSTRUCTION (Off/on Airport)
	SAME	DRAINAGE
		FACILITY CONSTRUCTION
		FENCING
PAPI-2	SAME	NAVIGATIONAL AID INSTALLATION (CVG)
REIL	SAME	RUNWAY END IDENTIFICATION LIGHTS
	SAME	RUNWAY THRESHOLD LIGHTS
	SAME	SECTION CORNER
	SAME	SEGMENTED CIRCLE/WIND INDICATOR
	SAME	TOPOGRAPHY (2005)
	SAME	WIND INDICATOR (Lighted)
		HOLDING POSITION MARKING
		BUILDING RESTRICTION LINE (BRL)
		DIRT ROAD
		TREES
OFZ		RUNWAY OBSTACLE FREE ZONE
RSA		RUNWAY SAFETY AREA
OFA		RUNWAY OBJECT FREE AREA
		SURVEY MONUMENT (PACS/SACS)
		RUNWAY SHADE
	SAME	HELIPADS
	SAME	TIE-DOWNS
		RUNWAY PROTECTION ZONE (RPZ)
		PARCELS

EXISTING BUILDINGS/FACILITIES

NO.	DESCRIPTION	ELEVATION
16	BUILDING (French Valley Aviation)	1363.8 MSL
17	BOX HANGAR (AirMech)	1355.1 MSL
18	BOX HANGAR (AirMech)	1354.8 MSL
19	T-HANGAR	1348.0 MSL
20	T-HANGAR	1347.6 MSL
21	T-HANGAR	1348.9 MSL
22	T-HANGAR	1357.7 MSL
23	T-HANGAR	1349.2 MSL
24	T-HANGAR (10 units)	1352.4 MSL
25	PORTAPORTS	1334.4 MSL
26	PORTAPORTS	1344.6 MSL
27	PORTAPORTS	1344.8 MSL
28	PORTAPORTS	1350.3 MSL
29	T-HANGAR	1348.1 MSL
30	T-HANGAR	1348.2 MSL
31	T-HANGAR	1348.1 MSL
32	T-HANGAR	1349.6 MSL
33	BUILDING	–
34	FUEL TANKS	N/A
35	BUILDING	1345.5 MSL
36	SEGMENTED CIRCLE/WIND INDICATOR	–

ULTIMATE BUILDINGS/FACILITIES

NO.	DESCRIPTION	ESTIMATED
50	T-HANGAR (12 units)	25' AGL
51	T-HANGAR (8 units)	25' AGL
52	T-HANGAR (8 units)	25' AGL
53	T-HANGAR (8 units)	25' AGL
54	T-HANGAR (12 units)	25' AGL
55	T-HANGAR (12 units)	25' AGL
56	T-HANGAR (12 units)	25' AGL

12°52' East
TRUE NORTH

Magnetic Declination
12° 52' East (January 2009)
Annual Rate of Change 0° 5' West

0 100 200 300
SCALE IN FEET

No.	REVISIONS	DATE	BY	APP'D.
3	-	-	-	-
2	-	-	-	-
1	-	-	-	-

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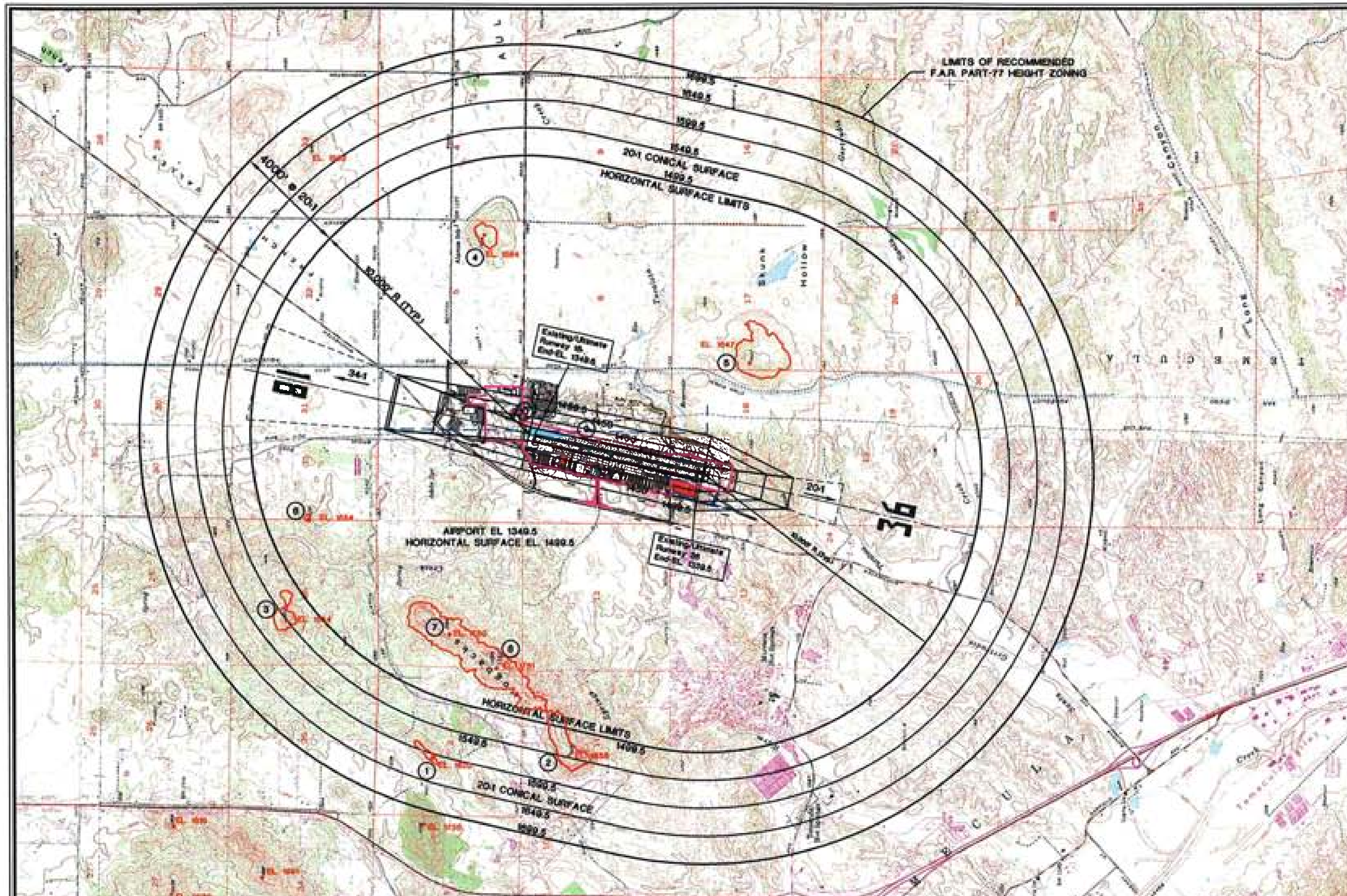
FRENCH VALLEY AIRPORT
SOUTH TERMINAL FACILITIES DRAWING

Riverside County, California, USA

PLANNED BY: Vicki E. Rogers
DETAILED BY: Larry D. Johnson
APPROVED BY: Stephen B. Wagner

April 16, 2009 SHEET 3 OF 8

Coffman Associates
Airport Consultants



OBSTRUCTION TABLE

Object Description	Object Elevation	Obstructed Part 77 Surface	Surface Elevation	Object Penetration	Proposed Object Disposition
1 TERRAIN	1620 MSL	CONICAL SURFACE	EL 1607	13'	REQUEST AERONAUTICAL STUDY
2 TERRAIN	1658 MSL	CONICAL SURFACE	EL 1546	112'	REQUEST AERONAUTICAL STUDY
3 TERRAIN	1654 MSL	CONICAL SURFACE	EL 1550	104'	REQUEST AERONAUTICAL STUDY
4 TERRAIN	1564 MSL	HORIZONTAL SURFACE	EL 1499.5	65'	REQUEST AERONAUTICAL STUDY
5 TERRAIN	1647 MSL	HORIZONTAL SURFACE	EL 1499.5	148'	REQUEST AERONAUTICAL STUDY
6 HOGBACKS	1654 MSL	HORIZONTAL SURFACE	EL 1499.5	154'	REQUEST AERONAUTICAL STUDY
7 HOGBACKS	1750 MSL	HORIZONTAL SURFACE	EL 1499.5	250'	REQUEST AERONAUTICAL STUDY
8 HOGBACKS	1781 MSL	HORIZONTAL SURFACE	EL 1499.5	281'	REQUEST AERONAUTICAL STUDY
9 WINDSOCK	1354 MSL	TRANSITIONAL SURFACE	EL 1346	8'	ADD OBSTRUCTION LIGHT
10 AULD ROAD	1345 MSL	TRANSITIONAL SURFACE	EL 1337	3'	REQUEST WAIVER

OBSTRUCTION LEGEND

1 — OBSTRUCTION

TERRAIN ELEVATION ABOVE 1499.5 MSL

GENERAL NOTES:

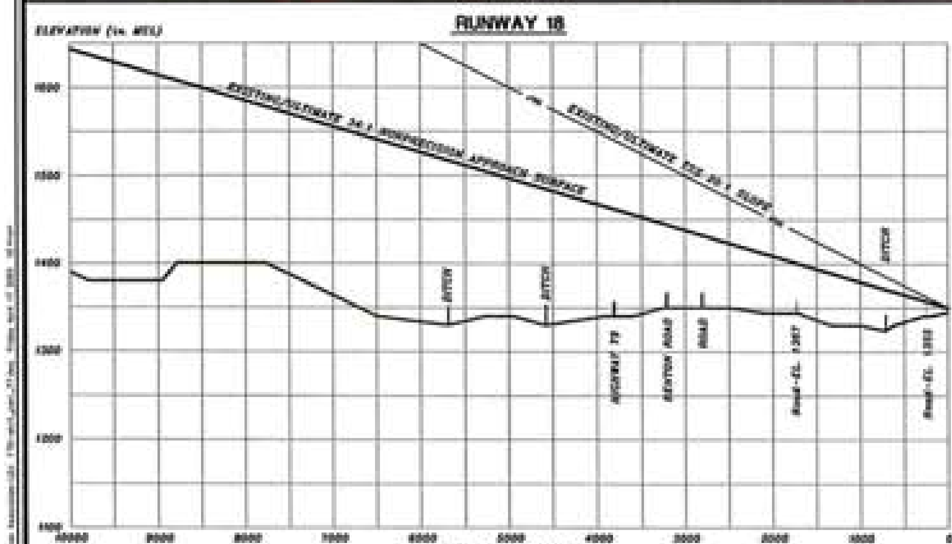
1. Obstructions, clearances, and locations are calculated from ultimate runway end elevations and ultimate approach surfaces, unless otherwise noted.
2. Additional obstruction data is illustrated on National Ocean Survey document OC 5341 – AIRPORT OBSTRUCTION CHART, published July 1991.
3. Existing and future height and hazard ordinances are to be amended and/or referenced upon approval of updated PART 77 AIRSPACE PLAN.

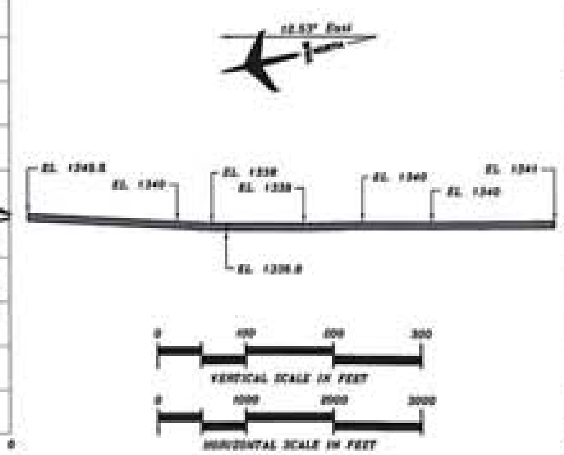
12.53° East

Magnetic Declination
12° 32' East (January 2009)
Annual Rate of Change 0° 5' West

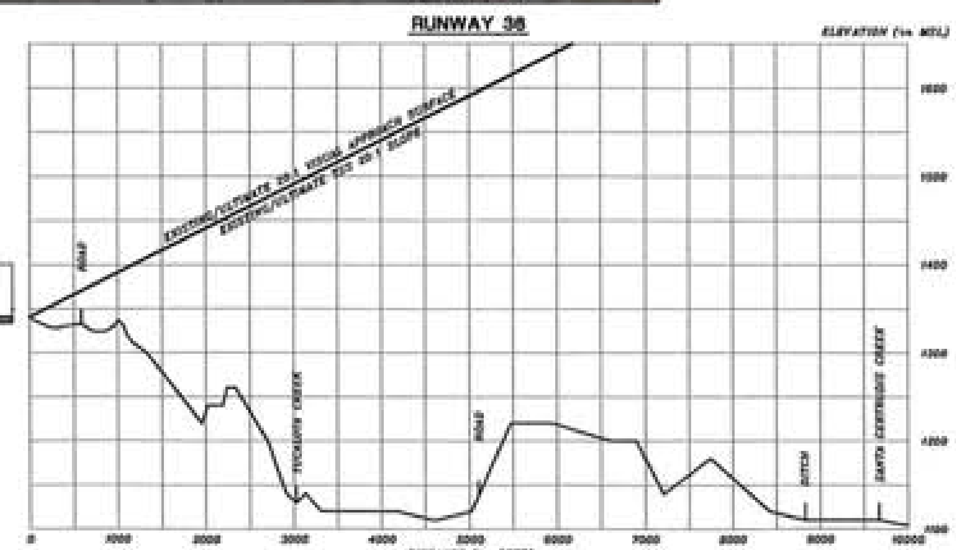
0 2000 4000 6000
SCALE IN FEET

RUNWAY 18





RUNWAY 36



No.	REVISIONS	DATE	BY	APP'D.
	-	-	-	-
	-	-	-	-
	-	-	-	-

FRENCH VALLEY AIRPORT

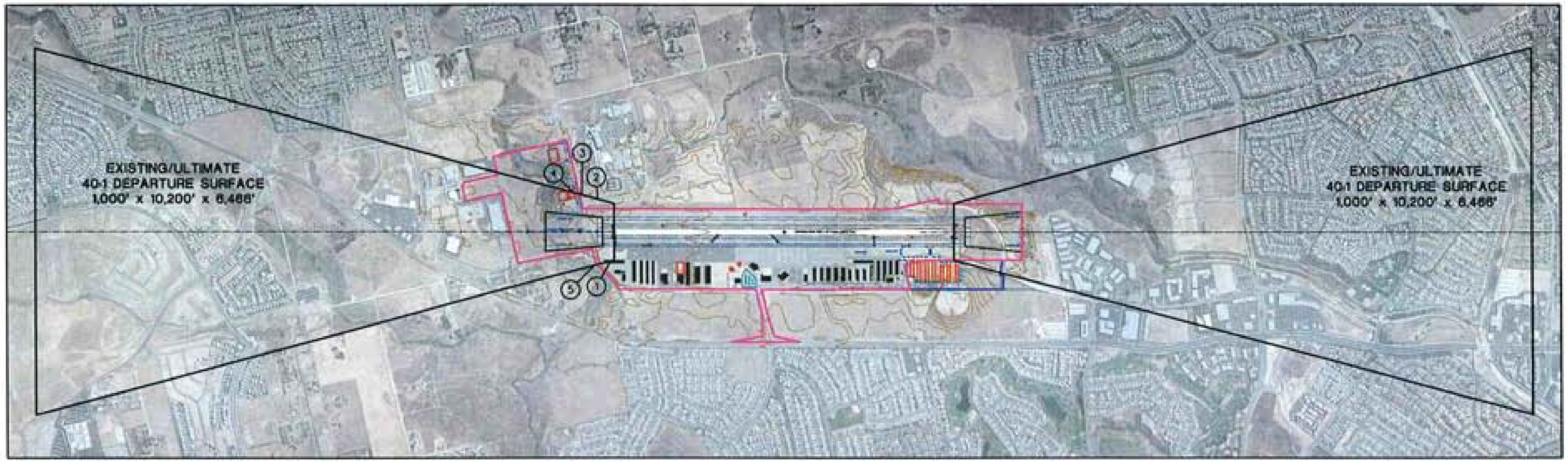
AIRPORT AIRSPACE DRAWING

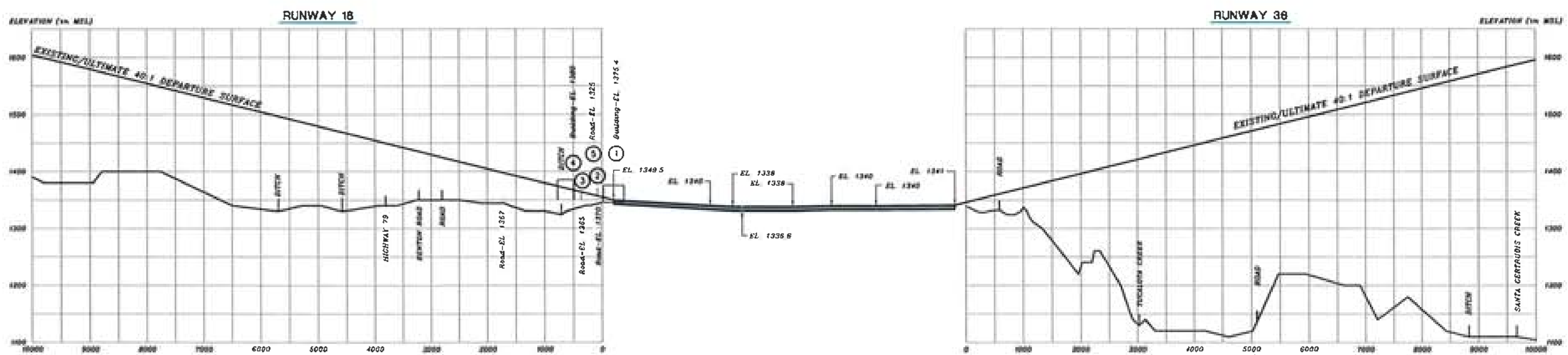
Riverside County, California, USA

PLANNED BY: Dale E. Rogers
DETAILED BY: Larry D. Johnson
APPROVED BY: Stephen E. Wagner

April 15, 2009 — SHEET 4 OF 8

Coffman Associates
Airport Consultants





Magnetic Declination
12° 32' East (January 2009)
Annual Rate of Change 0° 5' West

OBSTACLE IDENTIFICATION SURFACE (OIS)			
Object Description/Elevation	40:1 Departure Surface		Obstacle Clearance Requirements (Remove, Relocate, or Lower Object)
	Elevation	Penetrations	
1 Building-EL. 1375.4	EL. 1349.5	26' (less than 35')	AC 150/5300-13 CHG 12 Appendix 2 page 101 Par. 3 #C Contact the Flight Procedures Office (FPO)
2 Road-EL. 1370	EL. 1356.6	14' (less than 35')	
3 Road-EL. 1365	EL. 1363.7	2' (less than 35')	
4 Building-EL. 1380	EL. 1367.0	13' (less than 35')	

GENERAL NOTES:

1. Obstructions, clearances, and locations are calculated from ultimate runway end elevations and ultimate approach surfaces, unless otherwise noted. Road obstructions reflect a safety clearance of 10' for dirt roads or private roads, 15' for noninterstate roads, 17' for interstate roads, and 23' for railroad.
2. Standard in AC 150/5300-13 CHG 11 Appendix 2, Runway End Siting Requirements are not applicable for identifying objects affecting navigable airspace. See CFR Part 77 Title 14.
3. Roads and Buildings Clearance of more than 50 feet AGL are not detail in Departure Surface Profiles.

No.	REVISIONS	DATE	BY	APP'D.
	-	-	-	-
	-	-	-	-
	-	-	-	-

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FRENCH VALLEY AIRPORT

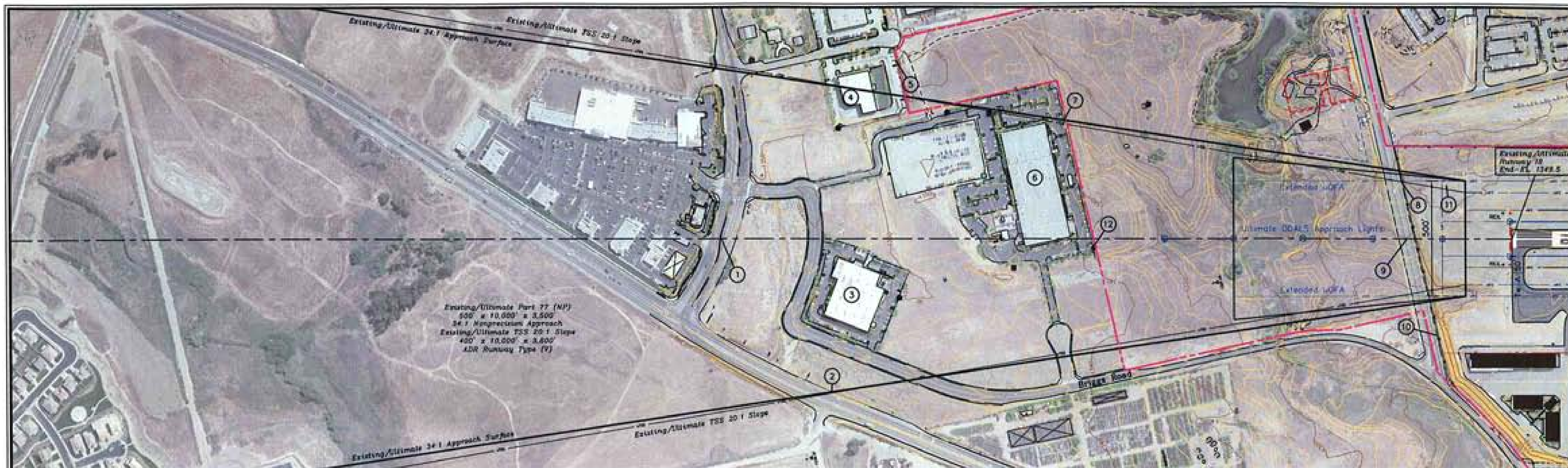
DEPARTURE SURFACE DRAWING

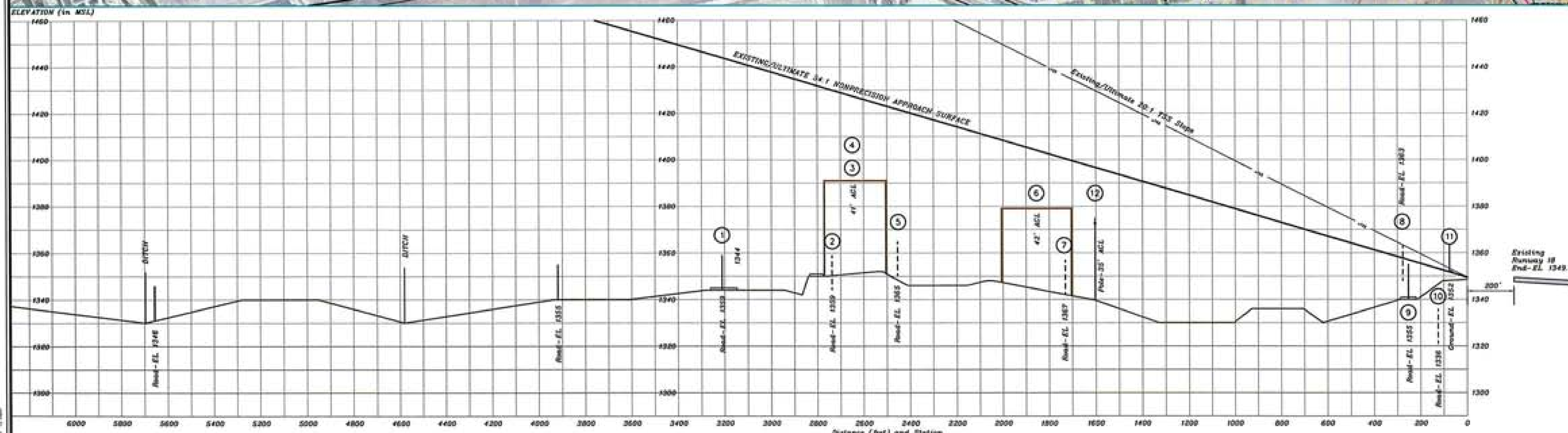
Riverside County, California, USA

PLANNED BY: Vicki L. Rogers
DETAILED BY: Larry D. Johnson
APPROVED BY: Stephen E. Wagner

April 15, 2009 — SHEET 4b OF 8

Coffman Associates — Airport Consultants





RUNWAY 18 OBSTRUCTION TABLE			
Objects Description/Elevation	Part 77 Approach Ext/Ult 34:1	Ext./Ult. TSS 20:1	Proposed Disposition
8 Road-EL 1365	5.3'	0'	Request Aeronautical Study
11 Ground-EL 1352	2'	0'	Request Ground To Be Graded
-- --	--	--	--
-- --	--	--	--
-- --	--	--	--
-- --	--	--	--

GENERAL NOTES:

1. Obstructions, clearances, and locations are calculated from ultimate runway end elevations and ultimate approach surfaces, unless otherwise noted. Road obstructions reflect a safety clearance of 10' for dirt Roads or private Roads, 15' for noninterstate Roads, 17' for interstate Roads, and 23' for railroad.
2. Depiction of features and objects within the primary, transitional, and horizontal Part 77 surfaces, is illustrated on the AIRPORT AIRSPACE DRAWING.

Magnetic Declination 12° 33' East (January 2009) Annual Rate of Change 0° 5' West

VERTICAL SCALE IN FEET: 0 20 40 80

HORIZONTAL SCALE IN FEET: 0 200 400 800

No.	REVISIONS	DATE	BY	APPD.
△	-	-	-	-
△	-	-	-	-
△	-	-	-	-

FRENCH VALLEY AIRPORT

INNER PORTION OF RUNWAY 18 APPROACH SURFACE DRAWING

Riverside County, California, USA

PLANNED BY: Dale L. Rogers

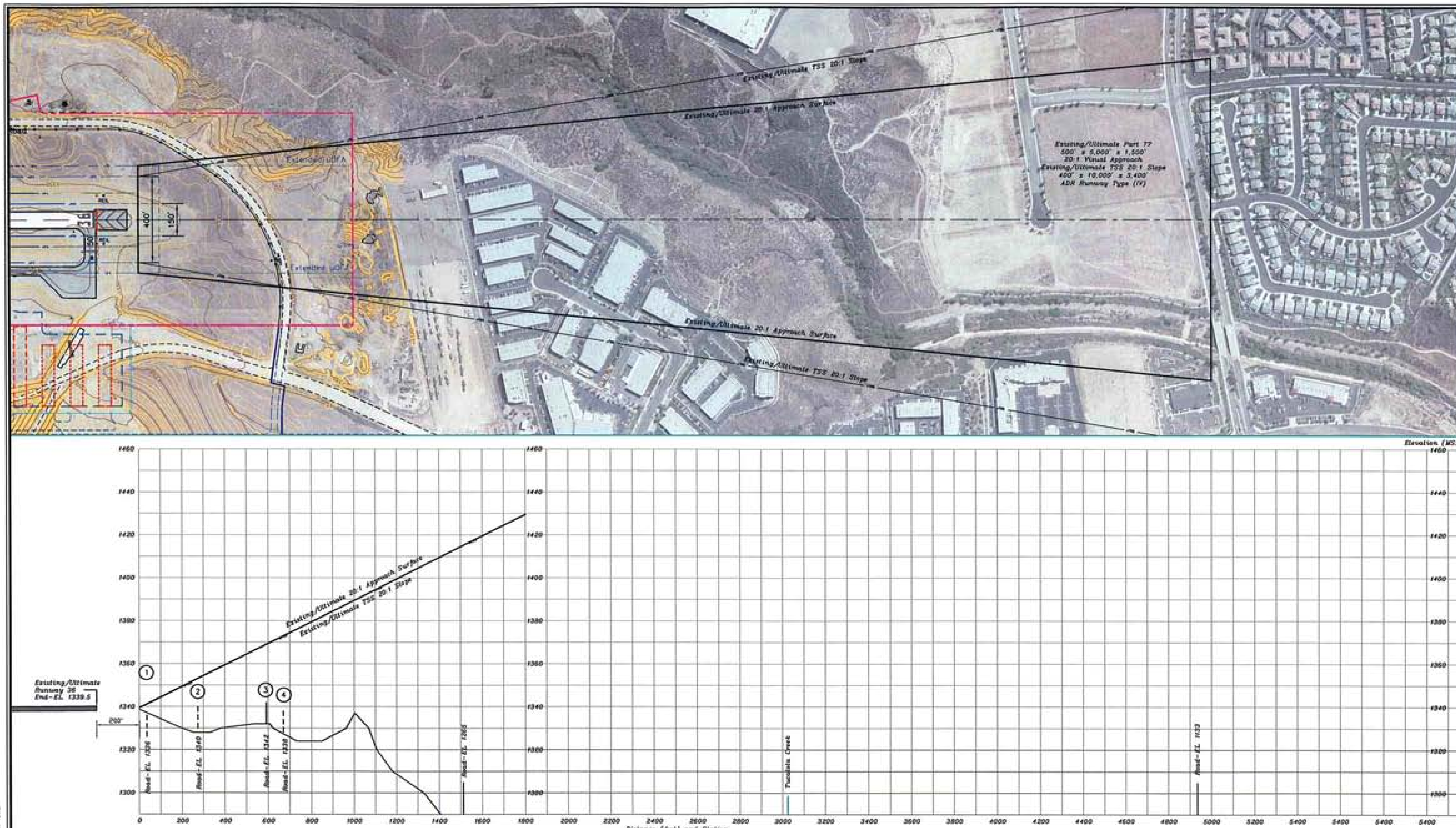
DETAILED BY: Larry D. Johnson

APPROVED BY: Stephen E. Wagner

April 16, 2009

SHEET 5 OF 8

Coffman Associates
Airport Consultants



RUNWAY 36 OBSTRUCTION TABLE

Objects Description/Elevation	Part 77 Approach Ext/Ult 20:1	Ext./Ult. TSS 20:1	Proposed Disposition
-- None	--	--	--
-- --	--	--	--
-- --	--	--	--
-- --	--	--	--
-- --	--	--	--
-- --	--	--	--

GENERAL NOTES:

1. Obstructions, clearances, and locations are calculated from ultimate runway end elevations and ultimate approach surfaces, unless otherwise noted. Road obstructions reflect a safety clearance of 10' for dirt Roads or private Roads, 15' for noninterstate Roads, 17' for interstate Roads, and 23' for railroad.
2. Depiction of features and objects within the primary, transitional, and horizontal Part 77 surfaces, is illustrated on the AIRPORT AIRSPACE DRAWING.

VERTICAL SCALE IN FEET: 0 – 20 – 40 – 60

HORIZONTAL SCALE IN FEET: 0 – 200 – 400 – 600

No.	REVISIONS	DATE	BY	APP'D.
△	-	-	-	-
△	-	-	-	-
△	-	-	-	-

FRENCH VALLEY AIRPORT

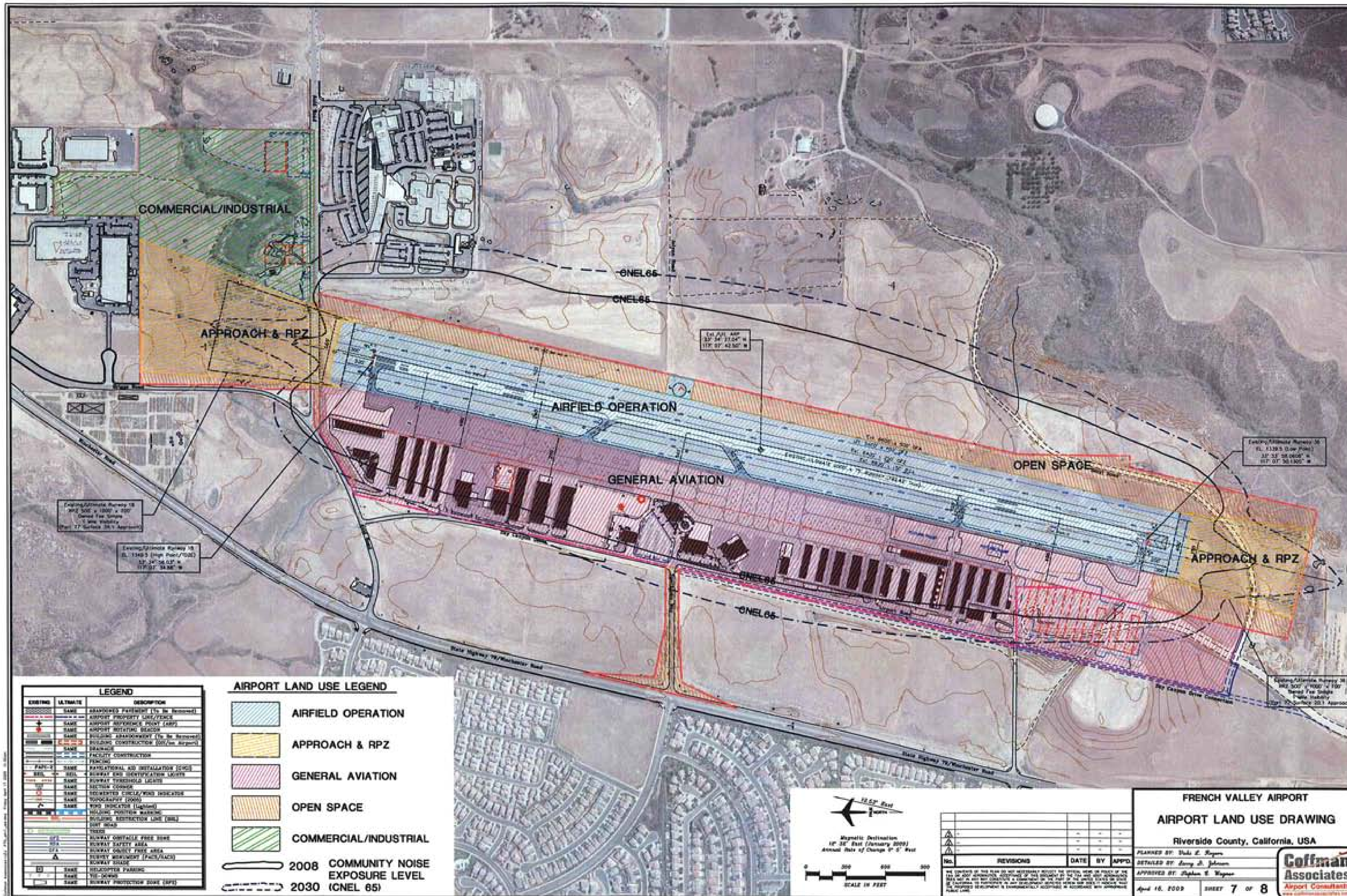
INNER PORTION OF RUNWAY 36 APPROACH SURFACE DRAWING

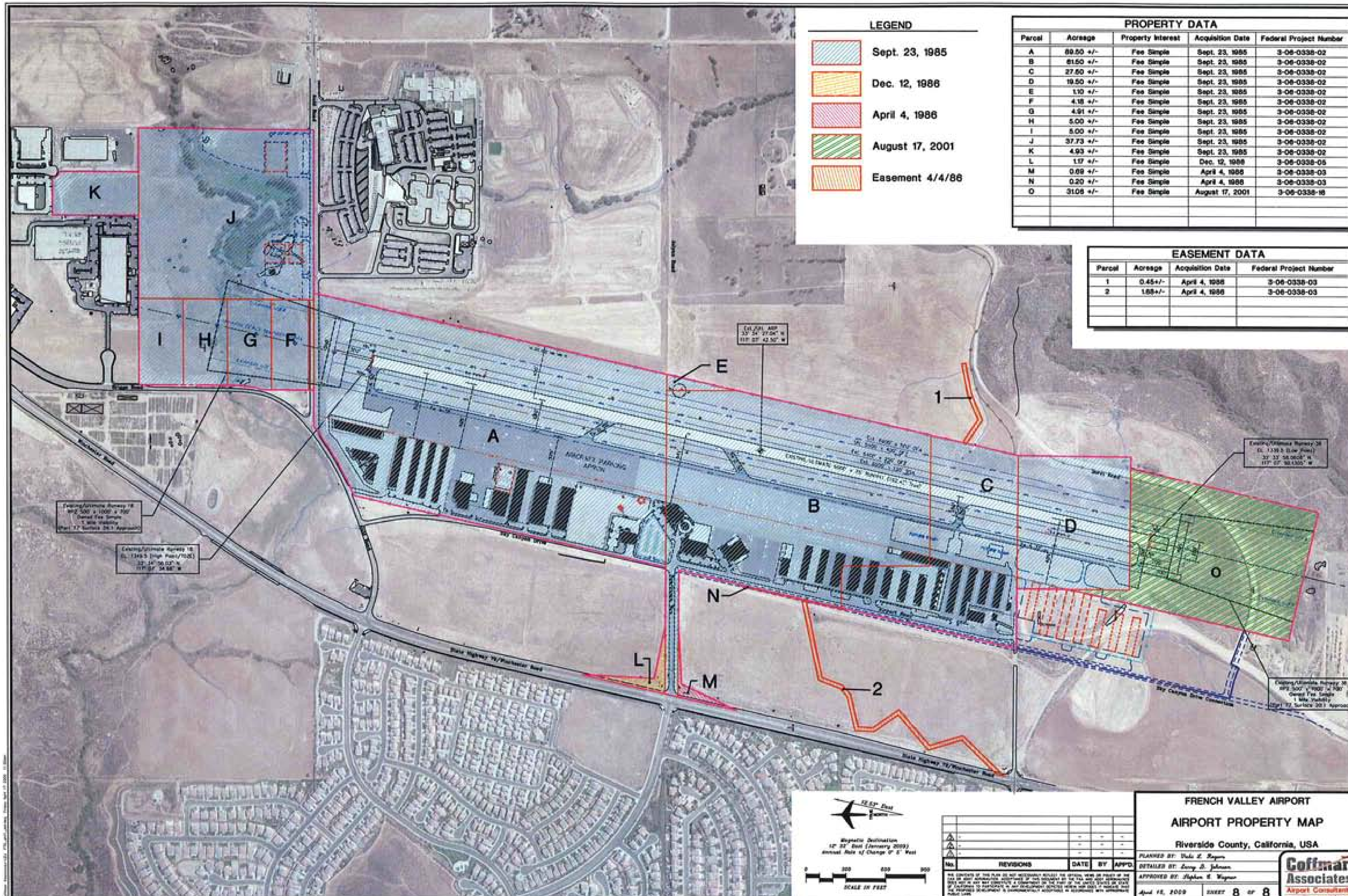
Riverside County, California, USA

PLANNED BY: Vicki L. Rogers
DETAILED BY: Larry D. Johnson
APPROVED BY: Stephen E. Wagner

April 15, 2009 SHEET 6 OF 8

Coffman Associates
Airport Consultants


COMMERCIAL/INDUSTRIAL
APPROACH & RPZ
AIRFIELD OPERATION
GENERAL AVIATION
OPEN SPACE
APPROACH & RPZ
CNEL65
CNEL65
CNEL65
CNEL65
LEGEND
AIRPORT LAND USE LEGEND
AIRFIELD OPERATION
APPROACH & RPZ
GENERAL AVIATION
OPEN SPACE
COMMERCIAL/INDUSTRIAL
2008 COMMUNITY NOISE EXPOSURE LEVEL
2030 (CNEL 65)
SCALE IN FEET
No.
REVISIONS
DATE
BY
APP'D.
FRENCH VALLEY AIRPORT
AIRPORT LAND USE DRAWING
Riverside County, California, USA
Coffman Associates
Airport Consultants
SHEET 7 OF 8



PROPERTY DATA				
Parcel	Acreage	Property Interest	Acquisition Date	Federal Project Number
A	89.50 +/-	Fee Simple	Sept. 23, 1985	3-06-0338-02
B	81.50 +/-	Fee Simple	Sept. 23, 1985	3-06-0338-02
C	27.50 +/-	Fee Simple	Sept. 23, 1985	3-06-0338-02
D	19.50 +/-	Fee Simple	Sept. 23, 1985	3-06-0338-02
E	1.10 +/-	Fee Simple	Sept. 23, 1985	3-06-0338-02
F	4.18 +/-	Fee Simple	Sept. 23, 1985	3-06-0338-02
G	4.91 +/-	Fee Simple	Sept. 23, 1985	3-06-0338-02
H	5.00 +/-	Fee Simple	Sept. 23, 1985	3-06-0338-02
I	5.00 +/-	Fee Simple	Sept. 23, 1985	3-06-0338-02
J	37.73 +/-	Fee Simple	Sept. 23, 1985	3-06-0338-02
K	4.93 +/-	Fee Simple	Sept. 23, 1985	3-06-0338-02
L	1.17 +/-	Fee Simple	Dec. 12, 1986	3-06-0338-05
M	0.69 +/-	Fee Simple	April 4, 1986	3-06-0338-03
N	0.20 +/-	Fee Simple	April 4, 1986	3-06-0338-03
O	31.06 +/-	Fee Simple	August 17, 2001	3-06-0338-16

EASEMENT DATA			
Parcel	Acreage	Acquisition Date	Federal Project Number
1	0.45+/-	April 4, 1986	3-06-0338-03
2	1.68+/-	April 4, 1986	3-06-0338-03

No.	REVISIONS	DATE	BY	APP'D.
	-	-	-	-
	-	-	-	-
	-	-	-	-

FRENCH VALLEY AIRPORT

AIRPORT PROPERTY MAP

Riverside County, California, USA

PLANNED BY: Dale E. Rogers

DETAILED BY: Larry D. Johnson

APPROVED BY: Stephen E. Wagner

April 15, 2009 SHEET 8 OF 8

Coffman Associates Airport Consultants

Chapter Six

CAPITAL IMPROVEMENT PROGRAM

Chapter Six

CAPITAL IMPROVEMENT PROGRAM

The successful implementation of the master plan will require that Riverside County remain flexible to changing aviation needs. While it is necessary for scheduling and budgeting purposes to consider the timing of airport development, the actual needs will be established by airport activity. This chapter will provide guidance for the county, State Aeronautics, and the FAA for implementing the plan recommendations.

Presentation of the recommended capital improvement program in **Table 6A** separates the planning period into short, intermediate, and long term periods. Projects eligible for federal or state funding participation have been noted, and discussion in the following paragraphs explains these programs in more detail. However, as noted in the discussion, these programs cannot be assumed to exist in their present form throughout the planning period. Availability of funds will be contingent on authorizations and appropriations by federal and state legislatures on a year-to-year basis.

Due to the conceptual nature of a master plan, implementation of capital projects will only occur after further refinement of their design and costs through engineering analyses. Under normal conditions, the cost estimates reflect an allowance for engineering and contingencies that may be anticipated on the project. Although the capital costs presented in this chapter should be viewed only as estimates, and subject to further refinement, they are considered sufficiently accurate for performing feasibility analyses.

TABLE 6A
Capital Improvement Program (CIP)
French Valley Airport
Riverside County, California

Project Description					Total Cost	FAA Share	State Share	Local Share
Short Term Program (Years 1-5)								
Year 1	Tie-Down Expansion/Security Fencing		lump sum		$1,500,000	$1,425,000	$35,625	$39,375
	Slurry Seal Apron Area		lump sum		$400,000	$380,000	$9,500	$10,500
Year 2	Design/Engineering-Runway/Taxiways		lump sum		$150,000	$142,500	$3,562	$3,938
	Overlay Runway/Taxiways	95000	sq. yds.	25	$2,375,000	$2,256,250	$52,250	$66,500
Year 3	Update AWOS/Install ODALS		lump sum		$500,000	$475,000	$11,875	$13,125
	Upgrade Runway Lighting (HIRL)		lump sum		$250,000	$237,500	$5,938	$6,563
Year 4	Acquire Acreage for Hangars	20	acres	100000	$2,000,000	$1,900,000	$47,500	$52,500
	Prepare Site for Hangar Development		lump sum		$250,000	$237,500	$5,938	$6,563
	Update Airport Security/Fencing	2500	lineal ft.	30	$75,000	$71,250	$1,781	$1,969
Year 5	Construct Control Tower (ATCT)		lump sum		$4,000,000	$3,800,000	$95,000	$105,000
Short Term Program Total					$11,500,000	$10,925,000	$268,968	$306,032
Intermediate Term Program (Years 6-10)								
	Extend Taxilanes/T-hangar Access (Ph. 1)	14300	sq. yds.	40	$572,000	$543,400	$13,585	$15,015
	Extend Airport Rd./Parking (Ph. 1)	3100	sq. yds.	20	$62,000	$58,900	$1,473	$1,628
	Construct Nested Hangars (44 units)	44	units	40000	$1,760,000	$0	$0	$1,760,000
	Overlay Ramp/Hangar Taxilanes	228000	sq. yds.	15	$3,420,000	$3,249,000	$81,225	$89,775
	Acquire Airport Maintenance Equipment		lump sum		$250,000	$237,500	$5,938	$6,563
	Rehabilitate Airfield Lighting/Navaids		lump sum		$250,000	$237,500	$5,938	$6,563
	Overlay Runway/Taxiway Pavements	95000	sq. yds.	25	$2,375,000	$2,256,250	$118,750	$0
Intermediate Term Program Total					$8,689,000	$6,582,550	$226,908	$1,879,543
Long Term Program (Years 11-20)								
	Extend T-Hangar Taxilanes (Ph. 2)	13800	sq. yds.	40	$552,000	$524,400	$13,110	$14,490
	Extend Airport Rd./Parking (Ph. 2)	4200	sq. yds.	20	$84,000	$79,800	$1,995	$2,205
	Construct Nested Hangars (52 units)	52	units	40000	$2,080,000	$0	$0	$2,080,000
	Update Airport Security/Fencing		lump sum		$150,000	$0	$75,000	$75,000
	Acquire Airport Maintenance Equipment		lump sum		$500,000	$475,000	$11,875	$13,125
	Update Fuel Storage Facility		lump sum		$200,000	$0	$0	$200,000
	Rehabilitate Terminal Building	12500	sq. ft.	50	$625,000	$0	$0	$625,000
	Overlay Runway/Taxiway Pavements	95000	sq. yds.	25	$2,375,000	$2,256,250	$56,406	$62,344
	Rehabilitate Airfield Lighting/Navaids		lump sum		$250,000	$237,500	$5,938	$6,563
	Overlay Ramp/Hangar Taxilanes	228000	sq. yds.	15	$3,420,000	$3,249,000	$81,225	$89,775
Long Term Program Total					$10,236,000	$6,821,950	$245,549	$3,168,501
TOTAL PROGRAM COSTS					$30,425,000	$24,329,500	$741,425	$5,354,076

Sources: Riverside County ACIP (Short Term Program) and Coffman Associates.
All costs in current (2009) dollars and based upon current federal and state funding programs.
Abbreviations:
AWOS - Airport Weather Observation System
ODALS - Omni Directional Approach Lighting System
HIRL - High Intensity Runway Lighting
ATCT - Airport Traffic Control Tower

CAPITAL IMPROVEMENTS FUNDING

Financing of capital improvements at the airport will not rely exclusively upon the financial resources of Riverside County. Capital improvement funding is available through various grants-in-aid programs at both the federal and state levels. The following discussion outlines the key sources for capital improvement funding.

FEDERAL GRANTS

The United States Congress has long recognized the need to develop and maintain a system of aviation facilities across the nation for the purpose of national defense and promotion of interstate commerce. Various grants-in-aid programs to public airports have been established over the years for this purpose. The most recent legislation is the *Airport Improvement Program* (AIP) of 1982. The AIP has been reauthorized several times, with the most recent legislation enacted in 2003 and entitled the *Vision 100 – Century of Aviation Reauthorization Act.*

Fiscal year 2007 was the last year of the four-year program. That bill presented similar funding levels to the previous reauthorization – *AIR-21*. Funding was authorized at $3.7 billion in 2007. *Vision 100* expired in September 2007 and since this time, Congress has not passed reauthorization legislation. However, Congress passed the FAA *Extension Act of 2008, Part II*, which is a continuation of funds through March 6, 2009. Funds available from October 1, 2008 to March 6, 2009 total $1.5 billion.

The source for AIP funds is the Aviation Trust Fund. The Aviation Trust Fund was established in 1970 to provide funding for aviation capital investment programs (aviation development, facilities and equipment, and research and development). The Trust Fund also finances the operation of the FAA. It is funded by user fees, taxes on airline tickets, aviation fuel, and various aircraft parts. Funds are distributed each year by the FAA from appropriations by Congress. A portion of the annual distribution is to primary commercial service airports based upon enplanement levels. General aviation airports, however, also received entitlements under the last reauthorization. After all specific funding mechanisms are distributed, the remaining AIP funds are disbursed by the FAA, based upon the priority of the project for which they have requested federal assistance through discretionary apportionments. A national priority system is used to evaluate and rank each airport project. Those projects with the highest priority are given preference in funding.

Under the AIP program, examples of eligible development projects include the airfield, aprons, and access roads. Passenger terminal building improvements (such as bag claim and public waiting lobbies) may also be eligible for FAA funding. Under the newest version of AIP, *Vision 100*, automobile parking at small hub airports can also be eligible. Improvements such as fueling facilities, utilities (with the exception of water supply for fire prevention), hangar buildings, airline ticketing, and airline operations areas are not typically eligible for AIP funds.

Under *Vision 100*, French Valley Airport has been eligible for 95 percent funding assistance from AIP grants, as opposed to the previous *AIR-21* level of 90 percent. While similar programs have been in place for over 50 years, it will be up to Congress to either extend or draft new legislation authorizing and appropriating future federal funding. As is often the case, major capital projects may also require discretionary funds, which are distributed by the FAA on a priority basis. One of the reasons for undertaking an airport master planning study is to assist the FAA in determining priorities for discretionary funding.

STATE AID TO AIRPORTS

All state grant programs for airports are funded from the Aeronautics Account in the State Transportation Fund. Tax revenues, which are collected on general aviation fuel, are deposited in the Aeronautics Account. General aviation jet fuel is taxed at $.02 per gallon, and avgas is taxed at $.18 per gallon. These taxes generate about $7 million per year. The Revenue and Taxation Code spells out the priority for expenditure of funds: 1) Administration and collection of taxes; 2) Operations of Division of Aeronautics; and 3) Grants to airports. The Public Utilities Code further specifies the priority for allocation of Aeronautics Account funds to airports: 1) Annual Grants; 2) AIP Matching; and 3) Acquisition and Development (A&D) Grants.

Annual Grants

To receive an Annual Grant, the airport cannot be designated by the FAA as a reliever or commercial service airport. The Annual Grant can fund projects for Aairport and aviation purposes@ as defined in the *State Aeronautics Act*. It can also be used to fund fueling facilities, restrooms, showers, wash racks, and operations and maintenance. The annual funding level is $10,000; up to five years' worth of Annual Grants may be accrued at the sponsor=s discretion. No local match is required.

AIP Matching Grants

An FAA AIP grant can be matched with state funds; the current matching rate is 2.5 percent. Generally, state matching is limited to projects that primarily benefit general aviation. A project which is being funded by an AIP grant must be included in the Capital Improvement Program (CIP). The amount set aside for AIP matching is determined by the California Transportation Commission (CTC) each fiscal year. Unused set-aside funds are available for additional A&D Grants.

Acquisition and Development (A&D) Grants

This grant program is open to general aviation, reliever, and commercial service airports. Also, a city or county may receive grants on behalf of a privately owned, public-use airport. An airport land use commission (ALUC) can receive funding to either prepare or update a comprehensive land use plan (CLUP). An A&D grant can fund projects for Aairport and aviation purposes@ as defined in the *State Aeronautics Act*. An A&D grant cannot be used as a local match for an AIP grant. The minimum amount of an A&D grant is $10,000, while the maximum amount that can be allocated to an airport in a single fiscal year is $500,000 (single or multiple grants). The local match can vary from 10 to 50 percent of the project's cost, and is set annually by the CTC. A 10 percent rate has been used the past 15 years. The Annual Grant may not be used for the local match to an A&D grant.

LOCAL SHARE FUNDING

Table 6A has itemized the federal and state eligibility for projects identified in the CIP. While several funding options may be available on a given project, the maximum federal eligibility has been identified in an attempt to maximize federal/state funding (and to reduce the level of local matching funds). If federal funding is not forthcoming on a project, then alternatives involving a combination of state/local funding may be considered (based upon existing state programs as identified in the preceding paragraphs). The local match will need to come from airport operating revenues.

Several methods are available to maximize local revenues for matching funds: hangar rentals and land leases, fuel flowage fees, tie-down fees, or lease of land/buildings for non-aeronautical purposes. Of course, any new hangars constructed on the airport will need to obtain market rental rates to amortize the construction cost.

The state offers loans to eligible airports for construction and land acquisition projects. The sponsor must meet the same requirements as the Annual Grant. For a revenue-producing project, a separate account must be established to receive income from the project. Expenses for maintaining the project may be paid from this separate account, but all revenues received must be held in trust for payment of the loan=s principal and interest until the loan is repaid in full.

No limit on the size of a loan has been established in either law or regulation. The state determines the amount for each individual loan in accordance with the feasibility of the project and the sponsor's financial status. Economic feasibility is an especially strong factor in the approval of loans for revenue-generating projects such as hangars and fueling facilities.

A pay-back schedule is included in each loan agreement. Generally, the term of the loan will vary between 8 and 17 years depending upon the amount of the loan. Simple interest is charged on the outstanding balance of the loan=s principal. The interest rate is based upon the state bond sale that occurs before the loan agreement is prepared.

ECONOMIC BENEFITS

Revenues generated from operations at general aviation airports often do not meet the required annual expenditures to operate, maintain, and improve the facility without additional funding from the governing entity. As such, general aviation airports are often criticized for not operating at a profit or causing a drain on local taxpayers.

When airports are perceived in this limited way, their role in attracting business and facilitating spending in the community is overlooked. It is true that a goal of an airport should be to strive for self-sufficiency; however, there are limits to the amount of revenue that can be obtained from airport users in meeting operating expenses and necessary capital costs for airport improvements. An analysis of direct and indirect impacts of airport development provides some insight into the amount of economic activity generated by the presence of an airport.

The economics of an airport reach beyond a simple balance sheet of revenues and expenditures. Since businesses often choose to locate near transportation centers, the presence of an airport can provide a substantial benefit to the community. Similar to the location advantages of waterways and railroads of the past, airports are now considered attractors of economic development opportunities.

The airport also improves the essential services of the community, including enhanced medical care (such as air ambulance services), support for law enforcement, and courier delivery of freight and mail. These services raise the quality of life for residents and maintain a competitive environment for economic development.

Studies of factors influencing economic development consistently show that the presence of a modern airport facility has a positive impact on the pace and quality of economic growth. An efficient airport can provide a competitive edge for communities seeking corporate relocations or expansions.

Two out of every three Fortune 500 companies use private aircraft in their businesses to transport goods, materials, and personnel. The remainder often charter, lease, or employ other ownership options. Therefore, adequate general aviation facilities, properly promoted and funded, are necessary to ensure that a community fully participates in the modern economy.

PLAN IMPLEMENTATION

The best means of beginning the implementation of recommendations of this master plan is to first recognize that planning is an ongoing process that does not end with completion of the master plan. Rather, the ability to continuously monitor the existing and forecast status of airport activity must be provided and maintained. The basic issues upon which this master plan is based will remain valid for several years. As such, the primary goal is for the airport to evolve into a facility that will best serve the air transportation needs of the surrounding area.

While projections have been made with regard to when additional storage hangars and capital projects will need to be completed, actual development will only be undertaken when the demand supports a given project. The real value of the plan is that it keeps the issues and objectives in front of key decision-makers, and provides guidance in the long term development of the facility. The airport layout drawings and capital improvement program need to be updated on a regular basis or as projects are implemented.

Appendix A

GLOSSARY OF TERMS

Glossary of Terms

A

ABOVE GROUND LEVEL: The elevation of a point or surface above the ground.

ACCELERATE-STOP DISTANCE AVAILABLE (ASDA): See declared distances.

ADVISORY CIRCULAR: External publications issued by the FAA consisting of nonregulatory material providing for the recommendations relative to a policy, guidance and information relative to a specific aviation subject.

AIR CARRIER: An operator which: (1) performs at least five round trips per week between two or more points and publishes flight schedules which specify the times, days of the week, and places between which such flights are performed; or (2) transports mail by air pursuant to a current contract with the U.S. Postal Service. Certified in accordance with Federal Aviation Regulation (FAR) Parts 121 and 127.

AIRCRAFT: A transportation vehicle that is used or intended for use for flight.

AIRCRAFT APPROACH CATEGORY: A grouping of aircraft based on 1.3 times the stall speed in their landing configuration at their maximum certificated landing weight. The categories are as follows:

- Category A: Speed less than 91 knots.
- Category B: Speed 91 knots or more, but less than 121 knots.
- Category C: Speed 121 knots or more, but less than 141 knots.
- Category D: Speed 141 knots or more, but less than 166 knots.
- Category E: Speed greater than 166 knots.

AIRCRAFT OPERATION: The landing, takeoff, or touch-and-go procedure by an aircraft on a runway at an airport.

AIRCRAFT OPERATIONS AREA (AOA): A restricted and secure area on the airport property designed to protect all aspects related to aircraft operations.

AIRCRAFT OWNERS AND PILOTS ASSOCIATION: A private organization serving the interests and needs of general aviation pilots and aircraft owners.

AIRCRAFT RESCUE AND FIRE FIGHTING: A facility located at an airport that provides emergency vehicles, extinguishing agents, and personnel responsible for minimizing the impacts of an aircraft accident or incident.

AIRFIELD: The portion of an airport which contains the facilities necessary for the operation of aircraft.

AIRLINE HUB: An airport at which an airline concentrates a significant portion of its activity and which often has a significant amount of connecting traffic.

AIRPLANE DESIGN GROUP (ADG): A grouping of aircraft based upon wingspan. The groups are as follows:

- Group I: Up to but not including 49 feet.
- Group II: 49 feet up to but not including 79 feet.
- Group III: 79 feet up to but not including 118 feet.
- Group IV: 118 feet up to but not including 171 feet.
- Group V: 171 feet up to but not including 214 feet.
- Group VI: 214 feet or greater.

AIRPORT AUTHORITY: A quasi-governmental public organization responsible for setting the policies governing the management and operation of an airport or system of airports under its jurisdiction.

AIRPORT BEACON: A navigational aid located at an airport which displays a rotating light beam to identify whether an airport is lighted.

AIRPORT CAPITAL IMPROVEMENT PLAN: The planning program used by the Federal Aviation Administration to identify, prioritize, and distribute funds for airport development and the needs of the National Airspace System to meet specified national goals and objectives.

AIRPORT ELEVATION: The highest point on the runway system at an airport expressed in feet above mean sea level (MSL).

AIRPORT IMPROVEMENT PROGRAM: A program authorized by the Airport and Airway

Improvement Act of 1982 that provides funding for airport planning and development.

AIRPORT LAYOUT DRAWING (ALD): The drawing of the airport showing the layout of existing and proposed airport facilities.

AIRPORT LAYOUT PLAN (ALP): A scaled drawing of the existing and planned land and facilities necessary for the operation and development of the airport.

AIRPORT LAYOUT PLAN DRAWING SET: A set of technical drawings depicting the current and future airport conditions. The individual sheets comprising the set can vary with the complexities of the airport, but the FAA-required drawings include the Airport Layout Plan (sometimes referred to as the Airport Layout Drawing (ALD), the Airport Airspace Drawing, and the Inner Portion of the Approach Surface Drawing, On-Airport Land Use Drawing, and Property Map.

AIRPORT MASTER PLAN: The planner's concept of the long-term development of an airport.

AIRPORT MOVEMENT AREA SAFETY SYSTEM: A system that provides automated alerts and warnings of potential runway incursions or other hazardous aircraft movement events.

AIRPORT OBSTRUCTION CHART: A scaled drawing depicting the Federal Aviation Regulation (FAR) Part 77 surfaces, a representation of objects that penetrate these surfaces, runway, taxiway, and ramp areas, navigational aids, buildings, roads and other detail in the vicinity of an airport.

AIRPORT REFERENCE CODE (ARC): A coding system used to relate airport design criteria to the operational (Aircraft Approach Category) to the physical characteristics (Airplane Design Group) of the airplanes intended to operate at the airport.

AIRPORT REFERENCE POINT (ARP): The latitude and longitude of the approximate center of the airport.

AIRPORT SPONSOR: The entity that is legally responsible for the management and operation of an airport, including the fulfillment of the requirements of laws and regulations related thereto.

AIRPORT SURFACE DETECTION EQUIPMENT: A radar system that provides air traffic controllers with a visual representation of the movement of aircraft and other vehicles on the ground on the airfield at an airport.

AIRPORT SURVEILLANCE RADAR: The primary radar located at an airport or in an air traffic control terminal area that receives a signal at an antenna and transmits the signal to air traffic control display equipment defining the location of aircraft in the air. The signal provides only the azimuth and range of aircraft from the location of the antenna.

AIRPORT TRAFFIC CONTROL TOWER (ATCT): A central operations facility in the terminal air traffic control system, consisting of a tower, including an associated instrument flight rule (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.

AIR ROUTE TRAFFIC CONTROL CENTER: A facility which provides en route air traffic control service to aircraft operating on an IFR flight plan within controlled airspace over a large, multi-state region.

AIRSIDE: The portion of an airport that contains the facilities necessary for the operation of aircraft.

AIRSPACE: The volume of space above the surface of the ground that is provided for the operation of aircraft.

AIR TAXI: An air carrier certificated in accordance with FAR Part 121 and FAR Part 135 and authorized to provide, on demand, public transportation of persons and property by aircraft. Generally operates small aircraft "for hire" for specific trips.

AIR TRAFFIC CONTROL: A service operated by an appropriate organization for the purpose of providing for the safe, orderly, and expeditious flow of air traffic.

AIR ROUTE TRAFFIC CONTROL CENTER (ARTCC): A facility established to provide air traffic control service to aircraft operating on an IFR flight plan within controlled airspace and principally during the en route phase of flight.

AIR TRAFFIC CONTROL SYSTEM COMMAND CENTER: A facility operated by the FAA which is responsible for the central flow control, the central altitude reservation system, the airport reservation position system, and the air traffic service contingency command for the air traffic control system.

AIR TRAFFIC HUB: A categorization of commercial service airports or group of commercial service airports in a metropolitan or urban area based upon the proportion of annual national enplanements existing at the airport or airports. The categories are large hub, medium hub, small hub, or non-hub. It forms the basis for the apportionment of entitlement funds.

AIR TRANSPORT ASSOCIATION OF AMERICA: An organization consisting of the principal U.S. airlines that represents the interests of the airline industry on major aviation issues before federal, state, and local government bodies. It promotes air transportation safety by coordinating industry and governmental safety programs and it serves as a focal point for industry efforts to standardize practices and enhance the efficiency of the air transportation system.

ALERT AREA: See special-use airspace.

ALTITUDE: The vertical distance measured in feet above mean sea level.

ANNUAL INSTRUMENT APPROACH (AIA): An approach to an airport with the intent to land by an aircraft in accordance with an IFR flight plan when visibility is less than three miles and/or when the ceiling is at or below the minimum initial approach altitude.

APPROACH LIGHTING SYSTEM (ALS): An airport lighting facility which provides visual guidance to landing aircraft by radiating light beams by which the pilot aligns the aircraft with the extended centerline of the runway on his final approach and landing.

APPROACH MINIMUMS: The altitude below which an aircraft may not descend while on an IFR approach unless the pilot has the runway in sight.

APPROACH SURFACE: An imaginary obstruction limiting surface defined in FAR Part 77 which is longitudinally centered on an extended runway centerline and extends outward and upward from the primary surface at each end of a runway at a designated slope and distance based upon the type of available or planned approach by aircraft to a runway.

APRON: A specified portion of the airfield used for passenger, cargo or freight loading and unloading, aircraft parking, and the refueling, maintenance and servicing of aircraft.

AREA NAVIGATION: The air navigation procedure that provides the capability to establish and maintain a flight path on an arbitrary course that remains within the coverage area of navigational sources being used.

AUTOMATED TERMINAL INFORMATION SERVICE (ATIS): The continuous broadcast of recorded non-control information at towered airports. Information typically includes wind speed, direction, and runway in use.

AUTOMATED SURFACE OBSERVATION SYSTEM (ASOS): A reporting system that provides frequent airport ground surface weather observation data through digitized voice broadcasts and printed reports.

AUTOMATED WEATHER OBSERVATION STATION (AWOS): Equipment used to automatically record weather conditions (i.e. cloud height, visibility, wind speed and direction, temperature, dew point, etc.)

AUTOMATIC DIRECTION FINDER (ADF): An aircraft radio navigation system which senses and indicates the direction to a non-directional radio beacon (NDB) ground transmitter.

AVIGATION EASEMENT: A contractual right or a property interest in land over which a right of unobstructed flight in the airspace is established.

AZIMUTH: Horizontal direction expressed as the angular distance between true north and the direction of a fixed point (as the observer's heading).

B

BASE LEG: A flight path at right angles to the landing runway off its approach end. The base leg normally extends from the downwind leg to the intersection of the extended runway centerline. See "traffic pattern."

BASED AIRCRAFT: The general aviation aircraft that use a specific airport as a home base.

BEARING: The horizontal direction to or from any point, usually measured clockwise from true north or magnetic north.

BLAST FENCE: A barrier used to divert or dissipate jet blast or propeller wash.

BLAST PAD: A prepared surface adjacent to the end of a runway for the purpose of eliminating the erosion of the ground surface by the wind forces produced by airplanes at the initiation of takeoff operations.

BUILDING RESTRICTION LINE (BRL): A line which identifies suitable building area locations on the airport.

C

CAPITAL IMPROVEMENT PLAN: The planning program used by the Federal Aviation Administration to identify, prioritize, and distribute Airport Improvement Program funds for airport development and the needs of the National Airspace System to meet specified national goals and objectives.

CARGO SERVICE AIRPORT: An airport served by aircraft providing air transportation of property only, including mail, with an annual aggregate landed weight of at least 100,000,000 pounds.

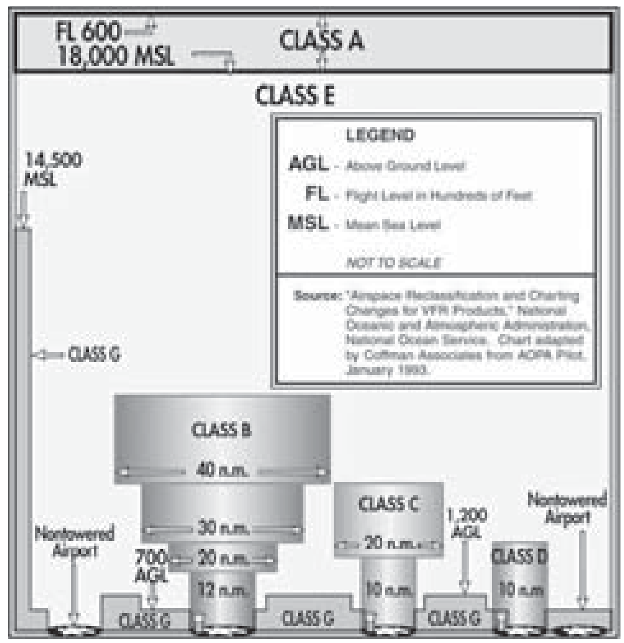
CATEGORY I: An Instrument Landing System (ILS) that provides acceptable guidance information to an aircraft from the coverage limits of the ILS to the point at which the localizer course line intersects the glide path at a decision height of 100 feet above the horizontal plane containing the runway threshold.

CATEGORY II: An ILS that provides acceptable guidance information to an aircraft from the coverage limits of the ILS to the point at which the localizer course line intersects the glide path at a decision height of 50 feet above the horizontal plane containing the runway threshold.

CATEGORY III: An ILS that provides acceptable guidance information to a pilot from the coverage limits of the ILS with no decision height specified above the horizontal plane containing the runway threshold.

CEILING: The height above the ground surface to the location of the lowest layer of clouds which is reported as either broken or overcast.

CIRCLING APPROACH: A maneuver initiated by the pilot to align the aircraft with the runway for landing when flying a predetermined circling instrument approach under IFR.



CLASS A AIRSPACE: See Controlled Airspace.

CLASS B AIRSPACE: See Controlled Airspace.

CLASS C AIRSPACE: See Controlled Airspace.

CLASS D AIRSPACE: See Controlled Airspace.

CLASS E AIRSPACE: See Controlled Airspace.

CLASS G AIRSPACE: See Controlled Airspace.

CLEAR ZONE: See Runway Protection Zone.

COMMERCIAL SERVICE AIRPORT: A public airport providing scheduled passenger service that enplanes at least 2,500 annual passengers.

COMMON TRAFFIC ADVISORY FREQUENCY: A radio frequency identified in the appropriate aeronautical chart which is designated for the purpose of transmitting airport advisory information and procedures while operating to or from an uncontrolled airport.

COMPASS LOCATOR (LOM): A low power, low/medium frequency radio-beacon installed in conjunction with the instrument landing system at one or two of the marker sites.

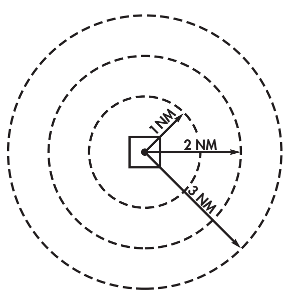
CONICAL SURFACE: An imaginary obstruction-limiting surface defined in FAR Part 77 that extends from the edge of the horizontal surface outward and upward at a slope of 20 to 1 for a horizontal distance of 4,000 feet.

CONTROLLED AIRPORT: An airport that has an operating airport traffic control tower.

CONTROLLED AIRSPACE: Airspace of defined dimensions within which air traffic control services are provided to instrument flight rules (IFR) and visual flight rules (VFR) flights in accordance with the airspace classification. Controlled airspace in the United States is designated as follows:

- **CLASS A**: Generally, the airspace from 18,000 feet mean sea level (MSL) up to but not including flight level FL600. All persons must operate their aircraft under IFR.

- **CLASS B**: Generally, the airspace from the surface to 10,000 feet MSL surrounding the nation's busiest airports. The configuration of Class B airspace is unique to each airport, but typically consists of two or more layers of air space and is designed to contain all published instrument approach procedures to the airport. An air traffic control clearance is required for all aircraft to operate in the area.



- **CLASS C**: Generally, the airspace from the surface to 4,000 feet above the airport elevation (charted as MSL) surrounding those airports that have an operational control tower and radar approach control and are served by a qualifying number of IFR operations or passenger enplanements. Although individually tailored for each airport, Class C airspace typically consists of a surface area with a five nautical mile (nm) radius and an outer area with a 10 nautical mile radius that extends from 1,200 feet to 4,000 feet above the airport elevation. Two-way radio communication is required for all aircraft.

- **CLASS D**: Generally, that airspace from the surface to 2,500 feet above the air port elevation (charted as MSL) surrounding those airports that have an operational control tower. Class D airspace is individually tailored and configured to encompass published instrument approach procedure . Unless otherwise authorized, all persons must establish two-way radio communication.

- **CLASS E**: Generally, controlled airspace that is not classified as Class A, B, C, or D. Class E airspace extends upward from either the surface or a designated altitude to the overlying or adjacent controlled airspace. When designated as a surface area, the airspace will be configured to contain all instrument procedures. Class E airspace encompasses all Victor Airways. Only aircraft following instrument flight rules are required to establish two-way radio communication with air traffic control.

- **CLASS G**: Generally, that airspace not classified as Class A, B, C, D, or E. Class G airspace is uncontrolled for all aircraft. Class G airspace extends from the surface to the overlying Class E airspace.

CONTROLLED FIRING AREA: See special-use airspace.

CROSSWIND: A wind that is not parallel to a runway centerline or to the intended flight path of an aircraft.

CROSSWIND COMPONENT: The component of wind that is at a right angle to the runway centerline or the intended flight path of an aircraft.

CROSSWIND LEG: A flight path at right angles to the landing runway off its upwind end. See "traffic pattern."

D

DECIBEL: A unit of noise representing a level relative to a reference of a sound pressure 20 micro newtons per square meter.

DECISION HEIGHT: The height above the end of the runway surface at which a decision must be made by a pilot during the ILS or Precision Approach Radar approach to either continue the approach or to execute a missed approach.

DECLARED DISTANCES: The distances declared available for the airplane's takeoff runway, takeoff distance, accelerate-stop distance, and landing distance requirements. The distances are:

- **TAKEOFF RUNWAY AVAILABLE (TORA)**: The runway length declared available and suitable for the ground run of an airplane taking off.
- **TAKEOFF DISTANCE AVAILABLE (TODA)**: The TORA plus the length of any remaining runway and/or clear way beyond the far end of the TORA.
- **ACCELERATE-STOP DISTANCE AVAILABLE (ASDA)**: The runway plus stopway length declared available for the acceleration and deceleration of an aircraft aborting a takeoff.
- **LANDING DISTANCE AVAILABLE (LDA)**: The runway length declared available and suitable for landing.

DEPARTMENT OF TRANSPORTATION: The cabinet level federal government organization consisting of modal operating agencies, such as the Federal Aviation Administration, which was established to promote the coordination of federal transportation programs and to act as a focal point for research and development efforts in transportation.

DISCRETIONARY FUNDS: Federal grant funds that may be appropriated to an airport based upon designation by the Secretary of Transportation or Congress to meet a specified national priority such as enhancing capacity, safety, and security, or mitigating noise.

DISPLACED THRESHOLD: A threshold that is located at a point on the runway other than the designated beginning of the runway.

DISTANCE MEASURING EQUIPMENT (DME): Equipment (airborne and ground) used to measure, in nautical miles, the slant range distance of an aircraft from the DME navigational aid.

DNL: The 24-hour average sound level, in Aweighted decibels, obtained after the addition of ten decibels to sound levels for the periods between 10 p.m. and 7 a.m. as averaged over a span of one year. It is the FAA standard metric for determining the cumulative exposure of individuals to noise.

DOWNWIND LEG: A flight path parallel to the landing runway in the direction opposite to landing. The downwind leg normally extends between the crosswind leg and the base leg. Also see "traffic pattern."

E

EASEMENT: The legal right of one party to use a portion of the total rights in real estate owned by another party. This may include the right of passage over, on, or below the property; certain air rights above the property, including view rights; and the rights to any specified form of development or activity, as well as any other legal rights in the property that may be specified in the easement document.

ELEVATION: The vertical distance measured in feet above mean sea level.

ENPLANED PASSENGERS: The total number of revenue passengers boarding aircraft, including originating, stop-over, and transfer passengers, in scheduled and nonscheduled services.

ENPLANEMENT: The boarding of a passenger, cargo, freight, or mail on an aircraft at an airport.

ENTITLEMENT: Federal funds for which a commercial service airport may be eligible based upon its annual passenger enplanements.

ENVIRONMENTAL ASSESSMENT (EA): An environmental analysis performed pursuant to the National Environmental Policy Act to determine whether an action would significantly affect the environment and thus require a more detailed environmental impact statement.

ENVIRONMENTAL AUDIT: An assessment of the current status of a party's compliance with applicable environmental requirements of a party's environmental compliance policies, practices, and controls.

ENVIRONMENTAL IMPACT STATEMENT (EIS): A document required of federal agencies by the National Environmental Policy Act for major projects are legislative proposals affecting the environment. It is a tool for decision-making describing the positive and negative effects of a proposed action and citing alternative actions.

ESSENTIAL AIR SERVICE: A federal program which guarantees air carrier service to selected small cities by providing subsidies as needed to prevent these cities from such service.

F

FEDERAL AVIATION REGULATIONS: The general and permanent rules established by the executive departments and agencies of the Federal Government for aviation, which are published in the Federal Register. These are the aviation subset of the Code of Federal Regulations.

FEDERAL INSPECTION SERVICES: The provision of customs and immigration services including passport inspection, inspection of baggage, the collection of duties on certain imported items, and the inspections for agricultural products, illegal drugs, or other restricted items.

FINAL APPROACH: A flight path in the direction of landing along the extended runway centerline. The final approach normally extends from the base leg to the runway. See "traffic pattern."

FINAL APPROACH AND TAKEOFF AREA (FATO). A defined area over which the final phase of the helicopter approach to a hover, or a landing is completed and from which the takeoff is initiated.

FINAL APPROACH FIX: The designated point at which the final approach segment for an aircraft landing on a runway begins for a non-precision approach.

FINDING OF NO SIGNIFICANT IMPACT (FONSI): A public document prepared by a Federal agency that presents the rationale why a proposed action will not have a significant effect on the environment and for which an environmental impact statement will not be prepared.

FIXED BASE OPERATOR (FBO): A provider of services to users of an airport. Such services include, but are not limited to, hangaring, fueling, flight training, repair, and maintenance.

FLIGHT LEVEL: A designation for altitude within controlled airspace.

FLIGHT SERVICE STATION: An operations facility in the national flight advisory system which utilizes data interchange facilities for the collection and dissemination of Notices to Airmen, weather, and administrative data and which provides pre-flight and in-flight advisory services to pilots through air and ground based communication facilities.

FRANGIBLE NAVAID: A navigational aid 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.

G

GENERAL AVIATION: That portion of civil aviation which encompasses all facets of aviation except air carriers holding a certificate of convenience and necessity, and large aircraft commercial operators.

GENERAL AVIATION AIRPORT: An airport that provides air service to only general aviation.

GLIDESLOPE (GS): Provides vertical guidance for aircraft during approach and landing. The glideslope consists of the following:

1. Electronic components emitting signals which provide vertical guidance by reference to airborne instruments during instrument approaches such as ILS; or

2. Visual ground aids, such as VASI, which provide vertical guidance for VFR approach or for the visual portion of an instrument approach and landing.

GLOBAL POSITIONING SYSTEM (GPS): A system of 24 satellites used as reference points to enable navigators equipped with GPS receivers to determine their latitude, longitude, and altitude.

GROUND ACCESS: The transportation system on and around the airport that provides access to and from the airport by ground transportation vehicles for passengers, employees, cargo, freight, and airport services.

H

HELIPAD: A designated area for the takeoff, landing, and parking of helicopters.

HIGH INTENSITY RUNWAY LIGHTS: The highest classification in terms of intensity or brightness for lights designated for use in delineating the sides of a runway.

HIGH-SPEED EXIT TAXIWAY: A long radius taxiway designed to expedite aircraft turning off the runway after landing (at speeds to 60 knots), thus reducing runway occupancy time.

HORIZONTAL SURFACE: An imaginary obstruction- limiting surface defined in FAR Part 77 that is specified as a portion of a horizontal plane surrounding a runway located 150 feet above the established airport elevation. The specific horizontal dimensions of this surface are a function of the types of approaches existing or planned for the runway.

I

INITIAL APPROACH FIX: The designated point at which the initial approach segment begins for an instrument approach to a runway.

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.

INSTRUMENT FLIGHT RULES (IFR): Procedures for the conduct of flight in weather conditions below Visual Flight Rules weather minimums. The term IFR is often also used to define weather conditions and the type of flight plan under which an aircraft is operating.

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 METEOROLOGICAL CONDITIONS: Meteorological conditions expressed in terms of specific visibility and ceiling conditions that are less than the minimums specified for visual meteorological conditions.

ITINERANT OPERATIONS: Operations by aircraft that are not based at a specified airport.

K

KNOTS: A unit of speed length used in navigation that is equivalent to the number of nautical miles traveled in one hour.

L

LANDSIDE: The portion of an airport that provides the facilities necessary for the processing of passengers, cargo, freight, and ground transportation vehicles.

LANDING DISTANCE AVAILABLE (LDA): See declared distances.

LARGE AIRPLANE: An airplane that has a maximum certified takeoff weight in excess of 12,500 pounds.

LOCAL AREA AUGMENTATION SYSTEM: A differential GPS system that provides localized measurement correction signals to the basic GPS signals to improve navigational accuracy integrity, continuity, and availability.

LOCAL OPERATIONS: Aircraft operations performed by aircraft that are based at the airport and that operate in the local traffic pattern or within sight of the airport, that are known to be departing for or arriving from flights in local practice areas within a prescribed distance from the airport, or that execute simulated instrument approaches at the airport.

LOCAL TRAFFIC: Aircraft operating in the traffic pattern or within sight of the tower, or aircraft known to be departing or arriving from the local practice areas, or aircraft executing practice instrument approach procedures. Typically, this includes touch and-go training operations.

LOCALIZER: The component of an ILS which provides course guidance to the runway.

LOCALIZER TYPE DIRECTIONAL AID (LDA): A facility of comparable utility and accuracy to a localizer, but is not part of a complete ILS and is not aligned with the runway.

LONG RANGE NAVIGATION SYSTEM (LORAN): Long range navigation is an electronic navigational aid which determines aircraft position and speed by measuring the difference in the time of reception of synchronized pulse signals from two fixed transmitters. Loran is used for en route navigation.

LOW INTENSITY RUNWAY LIGHTS: The lowest clas- sification in terms of intensity or brightness for lights designated for use in delineating the sides of a runway.

M

MEDIUM INTENSITY RUNWAY LIGHTS: The middle classification in terms of intensity or brightness for lights designated for use in delineating the sides of a runway.

MICROWAVE LANDING SYSTEM (MLS): An instrument approach and landing system that provides precision guidance in azimuth, elevation, and distance measurement.

MILITARY OPERATIONS: Aircraft operations that are performed in military aircraft.

MILITARY OPERATIONS AREA (MOA): See special-use airspace

MILITARY TRAINING ROUTE: An air route depicted on aeronautical charts for the conduct of military flight training at speeds above 250 knots.

MISSED APPROACH COURSE (MAC): The flight route to be followed if, after an instrument approach, a landing is not affected, and occurring normally:

1. When the aircraft has descended to the decision height and has not established visual contact; or

2. When directed by air traffic control to pull up or to go around again.

MOVEMENT AREA: The runways, taxiways, and other areas of an airport which are utilized for taxiing/hover taxiing, air taxiing, takeoff, and landing of aircraft, exclusive of loading ramps and parking areas. At those airports with a tower, air traffic control clearance is required for entry onto the movement area.

N

NATIONAL AIRSPACE SYSTEM: The network of air traffic control facilities, air traffic control areas, and navigational facilities through the U.S.

NATIONAL PLAN OF INTEGRATED AIRPORT SYSTEMS: The national airport system plan developed by the Secretary of Transportation on a biannual basis for the development of public use airports to meet national air transportation needs.

NATIONAL TRANSPORTATION SAFETY BOARD: A federal government organization established to investigate and determine the probable cause of transportation accidents, to recommend equipment and procedures to enhance transportation safety, and to review on appeal the suspension or revocation of any certificates or licenses issued by the Secretary of Transportation.

NAUTICAL MILE: A unit of length used in navigation which is equivalent to the distance spanned by one minute of arc in latitude, that is, 1,852 meters or 6,076 feet. It is equivalent to approximately 1.15 statute mile.

NAVAID: A term used to describe any electrical or visual air navigational aids, lights, signs, and associated supporting equipment (i.e. PAPI, VASI, ILS, etc.)

NAVIGATIONAL AID: A facility used as, available for use as, or designed for use as an aid to air navigation.

NOISE CONTOUR: A continuous line on a map of the airport vicinity connecting all points of the same noise exposure level.

NON-DIRECTIONAL BEACON (NDB): A beacon transmitting nondirectional signals whereby the pilot of an aircraft equipped with direction finding equipment can determine his or her bearing to and from the radio beacon and home on, or track to, the station. When the radio beacon is installed in conjunction with the Instrument Landing System marker, it is normally called a Compass Locator.

NON-PRECISION APPROACH PROCEDURE: A standard instrument approach procedure in which no electronic glide slope is provided, such as VOR, TACAN, NDB, or LOC.

NOTICE TO AIRMEN: A notice containing information concerning the establishment, condition, or change in any component of or hazard in the National Airspace System, the timely knowledge of which is considered essential to personnel concerned with flight operations.

O

OBJECT FREE AREA (OFA): An area on the ground centered on a runway, taxiway, or taxilane centerline provided to enhance the safety of aircraft operations by having the area free of objects, except for objects that need to be located in the OFA for air navigation or aircraft ground maneuvering purposes.

OBSTACLE FREE ZONE (OFZ): The airspace below 150 feet above the established airport elevation and along the runway and extended runway centerline that is required to be kept clear of all objects, except for frangible visual NAVAIDs that need to be located in the OFZ because of their function, in order to provide clearance for aircraft landing or taking off from the runway, and for missed approaches.

ONE-ENGINE INOPERABLE SURFACE: A surface emanating from the runway end at a slope ratio of 62.5:1. Air carrier airports are required to maintain a technical drawing of this surface depicting any object penetrations by January 1, 2010.

OPERATION: The take-off, landing, or touch-and-go procedure by an aircraft on a runway at an airport.

OUTER MARKER (OM): An ILS navigation facility in the terminal area navigation system located four to seven miles from the runway edge on the extended centerline, indicating to the pilot that he/she is passing over the facility and can begin final approach.

P

PILOT CONTROLLED LIGHTING: Runway lighting systems at an airport that are controlled by activating the microphone of a pilot on a specified radio frequency.

PRECISION APPROACH: A standard instrument approach procedure which provides runway alignment and glide slope (descent) information. It is categorized as follows:

- **CATEGORY I (CAT I)**: A precision approach which provides for approaches with a decision height of not less than 200 feet and visibility not less than 1/2 mile or Runway Visual Range (RVR) 2400 (RVR 1800) with operative touchdown zone and runway centerline lights.

- **CATEGORY II (CAT II)**: A precision approach which provides for approaches with a decision height of not less than 100 feet and visibility not less than 1200 feet RVR.

- **CATEGORY III (CAT III)**: A precision approach which provides for approaches with minima less than Category II.

PRECISION APPROACH PATH INDICATOR (PAPI): A lighting system providing visual approach slope guidance to aircraft during a landing approach. It is similar to a VASI but provides a sharper transition between the colored indicator lights.

PRECISION APPROACH RADAR: A radar facility in the terminal air traffic control system used to detect and display with a high degree of accuracy the direction, range, and elevation of an aircraft on the final approach to a runway.

PRECISION OBJECT FREE AREA (POFA): An area centered on the extended runway centerline, beginning at the runway threshold and extending behind the runway threshold that is 200 feet long by 800 feet wide. The POFA is a clearing standard which requires the POFA to be kept clear of above ground objects protruding above the runway safety area edge elevation (except for frangible NAVAIDS). The POFA applies to all new authorized instrument approach procedures with less than 3/4 mile visibility.

PRIMARY AIRPORT: A commercial service airport that enplanes at least 10,000 annual passengers.

PRIMARY SURFACE: An imaginary obstruction limiting surface defined in FAR Part 77 that is specified as a rectangular surface longitudinally centered about a runway. The specific dimensions of this surface are a function of the types of approaches existing or planned for the runway.

PROHIBITED AREA: See special-use airspace.

PVC: Poor visibility and ceiling. Used in determining Annual Service Volume. PVC conditions exist when the cloud ceiling is less than 500 feet and visibility is less than one mile.

R

RADIAL: A navigational signal generated by a Very High Frequency Omni-directional Range or VORTAC station that is measured as an azimuth from the station.

REGRESSION ANALYSIS: A statistical technique that seeks to identify and quantify the relationships between factors associated with a forecast.

REMOTE COMMUNICATIONS OUTLET (RCO): An unstaffed transmitter receiver/facility remotely controlled by air traffic personnel. RCOs serve flight service stations (FSSs). RCOs were established to provide ground-to-ground communications between air traffic control specialists and pilots at satellite airports for delivering en route clearances, issuing departure authorizations, and acknowledging instrument flight rules cancellations or departure/landing times.

REMOTE TRANSMITTER/RECEIVER (RTR): See remote communications outlet. RTRs serve ARTCCs.

RELIEVER AIRPORT: An airport to serve general aviation aircraft which might otherwise use a congested air-carrier served airport.

RESTRICTED AREA: See special-use airspace.

RNAV: Area navigation - airborne equipment which permits flights over determined tracks within prescribed accuracy tolerances without the need to overfly ground-based navigation facilities. Used en route and for approaches to an airport.

RUNWAY: A defined rectangular area on an airport prepared for aircraft landing and takeoff. Runways are normally numbered in relation to their magnetic direction, rounded off to the nearest 10 degrees. For example, a runway with a magnetic heading of 180 would be designated Runway 18. The runway heading on the opposite end of the runway is 180 degrees from that runway end. For example, the opposite runway heading for Runway 18 would be Runway 36 (magnetic heading of 360). Aircraft can takeoff or land from either end of a runway, depending upon wind direction.

RUNWAY ALIGNMENT INDICATOR LIGHT: A series of high intensity sequentially flashing lights installed on the extended centerline of the runway usually in conjunction with an approach lighting system.

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 GRADIENT: The average slope, measured in percent, between the two ends of a runway.

RUNWAY PROTECTION ZONE (RPZ): An area off the runway end to enhance the protection of people and property on the ground. The RPZ is trapezoidal in shape. Its dimensions are determined by the aircraft approach speed and runway approach type and minima.

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.

RUNWAY VISIBILITY ZONE (RVZ): An area on the airport to be kept clear of permanent objects so that there is an unobstructed line of- site from any point five feet above the runway centerline to any point five feet above an intersecting runway centerline.

RUNWAY VISUAL RANGE (RVR): An instrumentally derived value, in feet, representing the horizontal distance a pilot can see down the runway from the runway end.

S

SCOPE: The document that identifies and defines the tasks, emphasis, and level of effort associated with a project or study.

SEGMENTED CIRCLE: A system of visual indicators designed to provide traffic pattern information at airports without operating control towers.

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. The shoulder does not necessarily need to be paved.

SLANT-RANGE DISTANCE: The straight line distance between an aircraft and a point on the ground.

SMALL AIRPLANE: An airplane that has a maximum certified takeoff weight of up to 12,500 pounds.

SPECIAL-USE AIRSPACE: Airspace of defined dimensions identified by a surface area wherein activities must be confined because of their nature and/or wherein limitations may be imposed upon aircraft operations that are not a part of those activities. Special-use airspace classifications include:

- **ALERT AREA**: Airspace which may contain a high volume of pilot training activities or an unusual type of aerial activity, neither of which is hazardous to aircraft.

- **CONTROLLED FIRING AREA**: Airspace wherein activities are conducted under conditions so controlled as to eliminate hazards to nonparticipating aircraft and to ensure the safety of persons or property on the ground.

- **MILITARY OPERATIONS AREA (MOA)**: Designated airspace with defined vertical and lateral dimensions established outside Class A airspace to separate/segregate certain military activities from instrument flight rule (IFR) traffic and to identify for visual flight rule (VFR) traffic where these activities are conducted.

- **PROHIBITED AREA**: Designated airspace within which the flight of aircraft is prohibited.

- **RESTRICTED AREA**: Airspace designated under Federal Aviation Regulation (FAR) 73, within which the flight of aircraft, while not wholly prohibited, is subject to restriction. Most restricted areas are designated joint use. When not in use by the using agency, IFR/VFR operations can be authorized by the controlling air traffic control facility.

- **WARNING AREA**: Airspace which may contain hazards to nonparticipating aircraft.

STANDARD INSTRUMENT DEPARTURE (SID): A preplanned coded air traffic control IFR departure routing, preprinted for pilot use in graphic and textual form only.

STANDARD INSTRUMENT DEPARTURE PROCEDURES: A published standard flight procedure to be utilized following takeoff to provide a transition between the airport and the terminal area or en route airspace.

STANDARD TERMINAL ARRIVAL ROUTE (STAR): A preplanned coded air traffic control IFR arrival routing, preprinted for pilot use in graphic and textual or textual form only.

STOP-AND-GO: A procedure wherein an aircraft will land, make a complete stop on the runway, and then commence a takeoff from that point. A stop-and-go is recorded as two operations: one operation for the landing and one operation for the takeoff.

STOPWAY: An area beyond the end of a takeoff runway that is designed to support an aircraft during an aborted takeoff without causing structural damage to the aircraft. It is not to be used for takeoff, landing, or taxiing by aircraft.

STRAIGHT-IN LANDING/APPROACH: A landing made on a runway aligned within 30 degrees of the final approach course following completion of an instrument approach.

T

TACTICAL AIR NAVIGATION (TACAN): An ultrahigh frequency electronic air navigation system which provides suitably-equipped aircraft a continuous indication of bearing and distance to the TACAN station.

TAKEOFF RUNWAY AVAILABLE (TORA): See declared distances.

TAKEOFF DISTANCE AVAILABLE (TODA): See declared distances.

TAXILANE: The portion of the aircraft parking area used for access between taxiways and aircraft parking positions.

TAXIWAY: 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.

TERMINAL INSTRUMENT PROCEDURES: Published flight procedures for conducting instrument approaches to runways under instrument meteorological conditions.

TERMINAL RADAR APPROACH CONTROL: An element of the air traffic control system responsible for monitoring the en-route and terminal segment of air traffic in the airspace surrounding airports with moderate to high levels of air traffic.

TETRAHEDRON: A device used as a landing direction indicator. The small end of the tetrahedron points in the direction of landing.

THRESHOLD: The beginning of that portion of the runway available for landing. In some instances the landing threshold may be displaced.

TOUCH-AND-GO: An operation by an aircraft that lands and departs on a runway without stopping or exiting the runway. A touch-and go is recorded as two operations: one operation for the landing and one operation for the takeoff.

TOUCHDOWN: The point at which a landing aircraft makes contact with the runway surface.

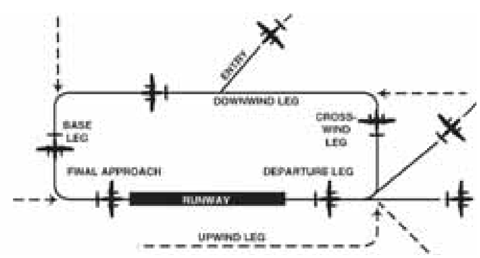
TOUCHDOWN AND LIFT-OFF AREA (TLOF): A load bearing, generally paved area, normally centered in the FATO, on which the helicopter lands or takes off.

TOUCHDOWN ZONE (TDZ): The first 3,000 feet of the runway beginning at the threshold.

TOUCHDOWN ZONE ELEVATION (TDZE): The highest elevation in the touchdown zone.

TOUCHDOWN ZONE (TDZ) LIGHTING: Two rows of transverse light bars located symmetrically about the runway centerline normally at 100- foot intervals. The basic system extends 3,000 feet along the runway.

TRAFFIC PATTERN: The traffic flow that is prescribed for aircraft landing at or taking off from an airport. The components of a typical traffic pattern are the upwind leg, crosswind leg, downwind leg, base leg, and final approach.



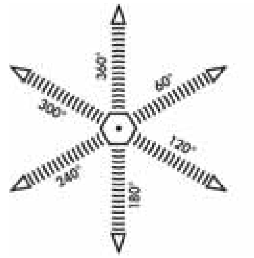
U

UNCONTROLLED AIRPORT: An airport without an air traffic control tower at which the control of Visual Flight Rules traffic is not exercised.

UNCONTROLLED AIRSPACE: Airspace within which aircraft are not subject to air traffic control.

UNIVERSAL COMMUNICATION (UNICOM): A nongovernment communication facility which may provide airport information at certain airports. Locations and frequencies of UNICOM's are shown on aeronautical charts and publications.

UPWIND LEG: A flight path parallel to the landing runway in the direction of landing. See “traffic pattern.”



V

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

VERY HIGH FREQUENCY/ OMNIDIRECTIONAL RANGE (VOR): A ground-based electronic navigation aid transmitting very high frequency navigation signals, 360 degrees in azimuth, oriented from magnetic north. Used as the basis for navigation in the national airspace system. The VOR periodically identifies itself by Morse Code and may have an additional voice identification feature.

VERY HIGH FREQUENCY OMNI-DIRECTIONAL RANGE/ TACTICAL AIR NAVIGATION (VORTAC): A navigation aid providing VOR azimuth, TACAN azimuth, and TACAN distance-measuring equipment (DME) at one site.

VICTOR AIRWAY: A control area or portion thereof established in the form of a corridor, the centerline of which is defined by radio navigational aids.

VISUAL APPROACH: An approach wherein an aircraft on an IFR flight plan, operating in VFR conditions under the control of an air traffic control facility and having an air traffic control authorization, may proceed to the airport of destination in VFR conditions.

VISUAL APPROACH SLOPE INDICATOR (VASI): An airport lighting facility providing vertical visual approach slope guidance to aircraft during approach to landing by radiating a directional pattern of high intensity red and white focused light beams which indicate to the pilot that he is on path if he sees red/white, above path if white/white, and below path if red/red. Some airports serving large aircraft have three-bar VASI’s which provide two visual guide paths to the same runway.

VISUAL FLIGHT RULES (VFR): Rules that govern the procedures for conducting flight under visual conditions. The term VFR is also used in the United States to indicate weather conditions that are equal to or greater than minimum VFR requirements. In addition, it is used by pilots and controllers to indicate type of flight plan.

VISUAL METEOROLOGICAL CONDITIONS: Meteorological conditions expressed in terms of specific visibility and ceiling conditions which are equal to or greater than the threshold values for instrument meteorological conditions.

VOR: See “Very High Frequency Omnidirectional Range Station.”

VORTAC: See “Very High Frequency Omnidirectional Range Station/Tactical Air Navigation.”

W

WARNING AREA: See special-use airspace.

WIDE AREA AUGMENTATION SYSTEM: An enhancement of the Global Positioning System that includes integrity broadcasts, differential corrections, and additional ranging signals for the purpose of providing the accuracy, integrity, availability, and continuity required to support all phases of flight.

AC: advisory circular

ADF: automatic direction finder

ADG: airplane design group

AFSS: automated flight service station

AGL: above ground level

AIA: annual instrument approach

AIP: Airport Improvement Program

AIR-21: Wendell H. Ford Aviation Investment and Reform Act for the 21st Century

ALS: approach lighting system

ALSF-1: standard 2,400-foot high intensity approach lighting system with sequenced flashers (CAT I configuration)

ALSF-2: standard 2,400-foot high intensity approach lighting system with sequenced flashers (CAT II configuration)

AOA: Aircraft Operation Area

APV: instrument approach procedure with vertical guidance

ARC: airport reference code

ARFF: aircraft rescue and fire fighting

ARP: airport reference point

ARTCC: air route traffic control center

ASDA: accelerate-stop distance available

ASR: airport surveillance radar

ASOS: automated surface observation station

ATCT: airport traffic control tower

ATIS: automated terminal information service

AVGAS: aviation gasoline - typically 100 low lead (100L)

AWOS: automated weather observation station

BRL: building restriction line

CFR: Code of Federal Regulation

CIP: capital improvement program

DME: distance measuring equipment

DNL: day-night noise level

DWL: runway weight bearing capacity of aircraft with dual-wheel type landing gear

DTWL: runway weight bearing capacity of aircraft with dual-tandem type landing gear

FAA: Federal Aviation Administration

FAR: Federal Aviation Regulation

FBO: fixed base operator

FY: fiscal year

GPS: global positioning system

GS: glide slope

HIRL: high intensity runway edge lighting

IFR: instrument flight rules (FAR Part 91)

ILS: instrument landing system

IM: inner marker

LDA: localizer type directional aid

LDA: landing distance available

LIRL: low intensity runway edge lighting

LMM: compass locator at ILS outer marker

LORAN: long range navigation

MALS: midium intensity approach lighting system with indicator lights

MIRL: medium intensity runway edge lighting

MITL: medium intensity taxiway edge lighting

MLS: microwave landing system

MM: middle marker

MOA: military operations area

MLS: mean sea level

NAVAID: navigational aid

NDB: nondirectional radio beacon

NM: nautical mile (6,076.1 feet)

NPES: National Pollutant Discharge Elimination System

NPIAS: National Plan of Integrated Airport Systems

NPRM: notice of proposed rule making

ODALS: omnidirectional approach lighting system

OFA: object free area

OFZ: obstacle free zone

OM: outer marker

PAC: planning advisory committee

PAPI: precision approach path indicator

PFC: porous friction course

PFC: passenger facility charge

PCL: pilot-controlled lighting

PIW public information workshop

PLASI: pulsating visual approach slope indicator

POFA: precision object free area

PVASI: pulsating/steady visual approach slope indicator

PVC: poor visibility and ceiling

RCO: remote communications outlet

REIL: runway end identifier lighting

RNAV: area navigation

RPZ: runway protection zone

RSA: runway safety area

RTR: remote transmitter/receiver

RVR: runway visibility range

RVZ: runway visibility zone

SALS: short approach lighting system

SASP: state aviation system plan

SEL: sound exposure level

SID: standard instrument departure

SM: statute mile (5,280 feet)

SRE: snow removal equipment

SSALF: simplified short approach lighting system with runway alignment indicator lights

STAR: standard terminal arrival route

SWL: runway weight bearing capacity for aircraft with single-wheel tandem type landing gear

TACAN: tactical air navigational aid

TDZ: touchdown zone

TDZE: touchdown zone elevation

TAF: Federal Aviation Administration (FAA) Terminal Area Forecast

TODA: takeoff distance available

TORA: takeoff runway available

TRACON: terminal radar approach control

VASI: visual approach slope indicator

VFR: visual flight rules (FAR Part 91)

VHF: very high frequency

VOR: very high frequency omni-directional range

VORTAC: VOR and TACAN collocated

Appendix B

ENVIRONMENTAL OVERVIEW

Appendix B
ENVIRONMENTAL OVERVIEW

A review of the potential environmental impacts associated with proposed airport projects is an essential consideration in the Airport Master Plan process. The primary purpose of this section is to review the proposed improvement program at French Valley Airport to determine whether the proposed actions could, individually or collectively, have the potential to significantly affect the quality of the environment. The information contained in this section was obtained from previous studies, various internet websites, and analysis by the consultant.

Construction of any and all improvements depicted on the Airport Layout Plan (ALP) will require compliance with the *National Environmental Policy Act* (NEPA) *of 1969*, as amended. This includes privately funded projects in addition to those projects receiving federal funding. For projects not "categorically excluded" under FAA Order 1050.1E, *Environmental Impacts: Policies and Procedures*, compliance with NEPA is generally satisfied through the preparation of an Environmental Assessment (EA). In instances where significant environmental impacts are expected, an Environmental Impact Statement (EIS) may be required.

In addition, because the airport is located in California, compliance with the *California Environmental Quality Act* (CEQA) is also necessary. CEQA requires consideration of the environmental impacts of the entire airport improvement program prior to local adoption of the master plan. The CEQA process will begin once Riverside County has accepted the Draft Airport Master Plan.

While this portion of the Master Plan is not designed to satisfy the NEPA or CEQA requirements, it is intended to supply a preliminary review of environmental issues that would need to be analyzed in more detail within the environmental review processes. This evaluation considers all environmental categories required as outlined within FAA Order 1050.1E, *Environmental Impacts, Policies and Procedures* and FAA Order 5050.4B, *National Environmental Policy Act* (NEPA) *Implementation Instructions for Airport Actions.*

The following sections provide a description of the environmental resources which could be impacted by the proposed ultimate airport development depicted on Exhibit 5A. Through a review of previous environmental studies and resource agency websites, it was determined that the following resources are not present within the airport environs or cannot be inventoried:

- Coastal Barriers
- Coastal Zone Management Areas
- Construction Impacts
- Energy Supply, Natural Resources, and Sustainable Design
- Farmland
- Wild and Scenic Rivers

Air Quality

Air quality in a given location is described by the concentrations of various pollutants in the atmosphere. The significance of a pollution concentration is determined by comparing it to the state and federal air quality standards. In 1971, the U.S. Environmental Protection Agency (EPA) established standards that specify the maximum permissible short-term and long-term concentrations of various air contaminants. The National Ambient Air Quality Standards (NAAQS) consist of primary and secondary standards for six criteria pollutants which include: Ozone (O_3), Carbon Monoxide (CO), Sulfur Dioxide (SO_2), Nitrogen Oxide (NO), Particulate matter (PM_{10} and $PM_{2.5}$), and Lead (Pb). Prior to the development of the NAAQS, the California Clean Air Act (CAA) established state-specific air quality standards for the same pollutants, plus sulfates, hydrogen sulfide, vinyl chloride, and visibility reducing particulates. In addition, the California CAA identifies stricter standards for the national pollutants.

Based on both federal and state air quality standards, a specific geographic area can be classified under the federal and state CAA as either being an "attainment" or "non-attainment" area for each pollutant. The threshold for non-attainment designation varies by pollutant. French Valley Airport is located in Riverside County, portions of which are included in the Los Angeles South Coast Air Basin. The South Coast Air Basin (SCAB), which includes French Valley Airport, is classified as non-attainment for 8-hour ozone, 10 micrometer particulate matter (PM_{10}) and 2.5

micrometer particulate matter ($PM_{2.5}$). SCAB has prepared an Air Quality Management Plan (AQMP) which is included within the State of California's overall Sate Implementation Plan (SIP). The purpose of the SIP is to outline the state's plan to meet the established air quality standards.

During the master plan CEQA process and any future NEPA processes undertaken for projects that increase capacity (i.e., hangar development), an emission inventory will be needed to determine if the proposed airport improvements will be consistent with the SCAB AQMP. Within the AQMP, air pollutant thresholds have been established. If the proposed improvements do not exceed the established thresholds, the projects will be considered to have impacts that do not exceed the established thresholds of significance. If the impacts exceed the thresholds, mitigation measures will likely be required.

Furthermore, a number of projects planned at the airport would have temporary air quality impacts during construction. Emissions from the operation of construction vehicles and fugitive dust from pavement removal are common air pollutants during construction. The potential emissions would need to be evaluated as part of any air quality analyses.

Section 4(f) Resources

Section 4(f) properties include publicly owned land from a public park, recreational area; or wildlife and waterfowl refuge of national, state, or local significance; or any land from a historic site of national, state, or local significance.

The closest recreation facility to the airport is the Lake Skinner Recreation Area, managed by Riverside County and located approximately 2.5 miles east of the airport. Additionally, there are several national forests and state parks within the vicinity of the airport. No wildlife or waterfowl refuges are located in proximity to the airport. Further discussion regarding historic sites can be found later in this section.

None of the proposed airport improvements will result in direct impacts to any of these areas. Additionally, indirect impacts are not anticipated due to the distance between the airport and the parks and recreational areas.

Fish, Wildlife, and Plants

Biotic resources include the various types of plants and animals that are present in a particular area. The term also applies to rivers, lakes, wetlands, forests, and other habitat types that support plants, birds, and/or fish. Typically, development in areas such as previously disturbed airport property, populated places, or farmland would result in minimal impacts to biotic resources.

Previous biological surveys completed for the airport in 1994, 1998, 1999, 2000, and 2003 determined that the airport and its surrounding areas contain three types of natural vegetation: ruderal or disturbed habitat, successional buckwheat scrub, and riversidean sage scrub.

Ruderal vegetation is characterized by non-native grasses and both native and non-native invasive herbs. On-site species diversity is considered low due to the highly disturbed nature of the areas and surrounding agricultural uses. Ruderal vegetation is located in the areas regularly maintained for aviation purposes.

Buckwheat scrub is an early successional plant assemblage dominated by flat-top buckwheat and non-native grasses. This habitat type has been previously identified as occurring in the northern portions of airport property, along berms of existing roads, and in southern portions of airport property. Numerous state or federally protected species can be present within this habitat type.

Riversidean sage scrub is found in the far north and far south portions of airport property, adjacent to areas of coastal sage scrub. Numerous state or federally protected species can be present within this habitat type.

A review of biological surveys conducted for projects within the airport vicinity indicates that there are no areas of proposed or designated critical habitat within airport development areas identified within this master plan.

The Fish and Wildlife Service (FWS) and the National Marine Fisheries Service (NMFS) are charged with overseeing the requirements contained within Section 7 of the *Endangered Species Act*. This Act was put into place to protect animal or plant species whose populations are threatened by human activities. Along with the FAA, the FWS and the NMFS review projects to determine if a significant impact to these protected species will result with implementation of a proposed project. Significant impacts occur when the proposed action could jeopardize the continued existence of a protected species or would result in the destruction or adverse modification of federally designated critical habitat in the area

Table 5A depicts federally and state-listed species found in the Murrieta and Bachelor Mountain topographic quadrangles which include the airport property. Previously identified protected animal and plant species located in on, or very near, the airport include: Quino checkerspot butterfly, Coastal California Gnatcatcher, and Stephen's kangaroo rat.

Habitat for the Quino checkerspot butterfly was identified just outside the southern portions of airport property during the 2003 field studies. The California gnatcatcher was found to be present in the coastal sage scrub bordering the southeast portions of airport property. Stephen's kangaroo rat was reported in the northern, eastern, and southern portions of airport property.

The Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) indicates that the airport property contains potential habitat for the burrowing owl, a state of California species of special concern. Additionally, the MSHCP indicates that the airport has potential habitat for the following Criteria Area species: Davidson's saltscale, Parish's brittlescale, Thread-leaved brodiaea, Smooth Tarplant, Round-leaved filaree, Coulter's Goldfields, and Little Mousetail. Potential habitat for the following Narrow Endemic Plant Species may also be located at the airport: Munz's onion, San Diego ambrosia, Many-stemmed dudleya, Spreading navarretia, California Orcutt grass, and Wright's trichocoronis.[1]

Due to the previous identification of protected species in the airport environs, additional field surveys are recommended prior to airport development.

French Valley Airport
Federal and State Listed Species

Common Name	Scientific Name	Federally Listed	State Listed
California Orcutt grass	*Orcuttia californica*	Endangered	Endangered
Moran's navarretia	*Navarretia fossalis*	Threatened	
Munz's onion	*Allium munzii*	Endangered	Threatened
Riverside fairy shrimp	*Streptocephalus woottoni*	Endangered	
San Diego button-celery	*Eryngium aristulatum var. parishii*	Endangered	Endangered
Stephen's kangaroo rat	*Dipodomys stephensi*	Endangered	Threatened
Bald eagle	*Haliaeetus leucocephalus*	Delisted	Endangered
Coastal California gnatcatcher	*Polioptila californica californica*	Threatened	
Dwarf burr ambrosia	*Ambrosia pumila*	Endangered	
Least Bell's vireo	*Vireo bellii pusillus*	Endangered	Endangered
Quino checkerspot butterfly	*Euphydryas editha quino*	Endangered	
Thread-leaved brodiaea	*Brodiaea filifolia*	Threatened	Endangered
Vernal pool fairy shrimp	*Branchinecta lynchi*	Threatened	

Source: California Natural Diversity Database, accessed February 2009

Floodplains

Executive Order 11988 directs federal agencies to take action to reduce the risk of flood loss, minimize the impact of floods on human safety, health, and welfare, and restore and preserve the natural and beneficial values served by the floodplains.

The Federal Emergency Management Agency does not print floodplain maps for the area containing French Valley Airport. According to the Riverside County Flood

[1] http://www.rctlma.org/online/content/rcip_report_generator.aspx, Parcel #96303001, accessed March 27, 2009

Control and Water Conservation's Flood Zone Determination Application, the entire airport property is located in an area classified as Zone D. According to FEMA, Zone D indicates areas where there are possible, but undetermined, flood hazards. No flood hazard analysis has been conducted for this area. [2]

Hazardous Materials, Pollution Prevention, and Solid Waste

Federal, state, and local laws regulate hazardous materials use, storage, transport, and disposal. These laws may extend to past and future landowners of properties containing these materials. In addition, disrupting sites containing hazardous materials or contaminates may cause significant impacts to soil, surface water, groundwater, air quality, and the organisms using these resources.

The EPA's *Enviromapper for Envirofacts*[3] was consulted regarding the presence of impaired waters or regulated hazardous sites. No impaired waters are located on or in the vicinity of the airport. According to the site, four hazardous waste sites were identified within the vicinity of the airport. These include a vehicle fleet service station and three manufacturing facilities are registered with the EPA. All four sites are located north of the airport and would not be affected by the proposed developments at the airport.

The FAA may require a Phase I Environmental Due Diligence Audit during the NEPA process that will be needed prior to the acquisition of land for the southern tie down area, hangar expansion, and relocation of Airport Road and Sky Canyon Drive.

A construction-related National Pollutant Discharge Elimination System (NPDES) permit may be required prior to on-airport construction projects. The permit requires a Notice of Intent for all construction activities disturbing one or more acre of land. In conjunction with the NPDES, a Storm Water Pollution Prevention Plan (SWPPP) may be required to outline the Best Management Practices to be used to minimize impacts to storm water conveyance systems.

The landfill facility closest to the airport is the Lamb Canyon Landfill located approximately 26 miles north of the airport in Beaumont, California. It is not anticipated that the presence of this landfill will impact any of the planned development at the airport

[2] http://www.floodcontrol.co.riverside.ca.us accessed March 2009

[3] http://www.epa.gov/enviro/emef/, Accessed February 2009.

Historic Properties and Archaeological Resources

Determination of a project's impact to historical and cultural resources is made in compliance with the *National Historic Preservation Act* (NHPA) *of 1966*, as amended for federal undertakings. A historic property is defined as any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places (NRHP). Properties or sites having traditional religions or cultural importance to Native American Tribes may also qualify.

Several cultural resource surveys have been conducted for previous projects at French Valley Airport. A review of these surveys indicates that, although cultural or historical resources have been located within the vicinity of the airport, no historical or cultural resources are known to exist on airport property. Field surveys may be required to determine the presence of historic properties or archaeological resources prior to undertaking the improvements outlined in this airport master plan in areas previously undisturbed. Projects which may require surveys include the southern expansion of the tie down area, hangar development, development of the business park, and relocation of Airport Road.

Noise

The Community Noise Equivalent Level (CNEL) is accepted by the FAA for use in California to assess the extent of aircraft noise within a community. Cumulative noise metrics such as CNEL and the Yearly Day-Night Average Sound Level (DNL) are accepted by the FAA, Environmental Protection Agency (EPA), and Department of Housing and Urban Development (HUD) as appropriate measures of noise exposure. These three agencies have each identified the 65 CNEL or DNL noise contour as the threshold of incompatibility. Noise exposure contours are overlaid on maps of existing and planned land uses to determine areas that may be affected by aircraft noise at or above 65 CNEL. The noise exposure contours are developed using the FAA-approved Integrated Noise Model which accepts inputs for several airport characteristics, including aircraft type, operations, flight tracks, time of day, and topography.

For the purposes of this overview, noise contours were prepared for the existing condition as well as the anticipated noise condition in 2030. The 2030 contours assume the operational levels described in Chapter Two.

Exhibit B1 depicts the existing (2008) noise condition for French Valley Airport. As shown on the exhibit, the 65 CNEL noise contour extends off airport property to the east over the parking lot for the Riverside County Sheriff's Department's Southwest County Justice Center and to the west over undeveloped land and an industrial storage lot. No noise-sensitive land uses are contained within this contour of significance. **Exhibit B2** depicts the ultimate condition noise contours. As shown on the exhibit, the noise exposure contours experience a general increase in size extending over not only the Southwest County Justice Center parking lot, but also one outbuilding. To the south the contour extends off airport property, encompassing portions of an adjacent industrial storage area. To the east the contour extends over undeveloped areas. No noise-sensitive land uses are contained within the 2030 65 CNEL noise contour.

Compatible Land Use

The compatibility of existing and planned land uses in the vicinity of an airport is typically associated with the extent of the airport's noise impacts. Noise impacts are generally evaluated by comparing the extent and airport's noise exposure contours to the land uses within the immediate vicinity of the airport.

A review of the City of Temecula General Plan, which includes planning guidance for the area surrounding French Valley Airport, indicates that compatible land uses are planned within the immediate vicinity of the airport. The General Plan land use map indicates that the areas north, south, and east of the airport are planned for industrial park uses, and the areas west of the airport are planned for office and commercial uses. Additionally, there are open space corridors north and south of the existing airport property.

SOCIOECONOMIC IMPACTS, ENVIRONMENTAL JUSTICE, AND CHILDREN'S ENVIRONMENTAL HEALTH AND SAFETY RISKS

Socioeconomic impacts known to result from airport improvements are often associated with relocation activities or other community disruptions, including alterations to surface transportation patterns, division or disruption of existing communities, interferences with orderly planned development, or an appreciable change in employment related to the project.

The acquisition of real property or displacing people or businesses is required to conform to the *Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970* (URARPAPA). These regulations mandate that certain relocation assistance services be made available to owners/tenants of the properties.

Relocation assistance may be necessary as part of the proposed property acquisition identified in the master plan. A parcel has been identified to be acquired which is currently used as an industrial storage lot southwest of the airport.

07MP01-B1-4/17/09

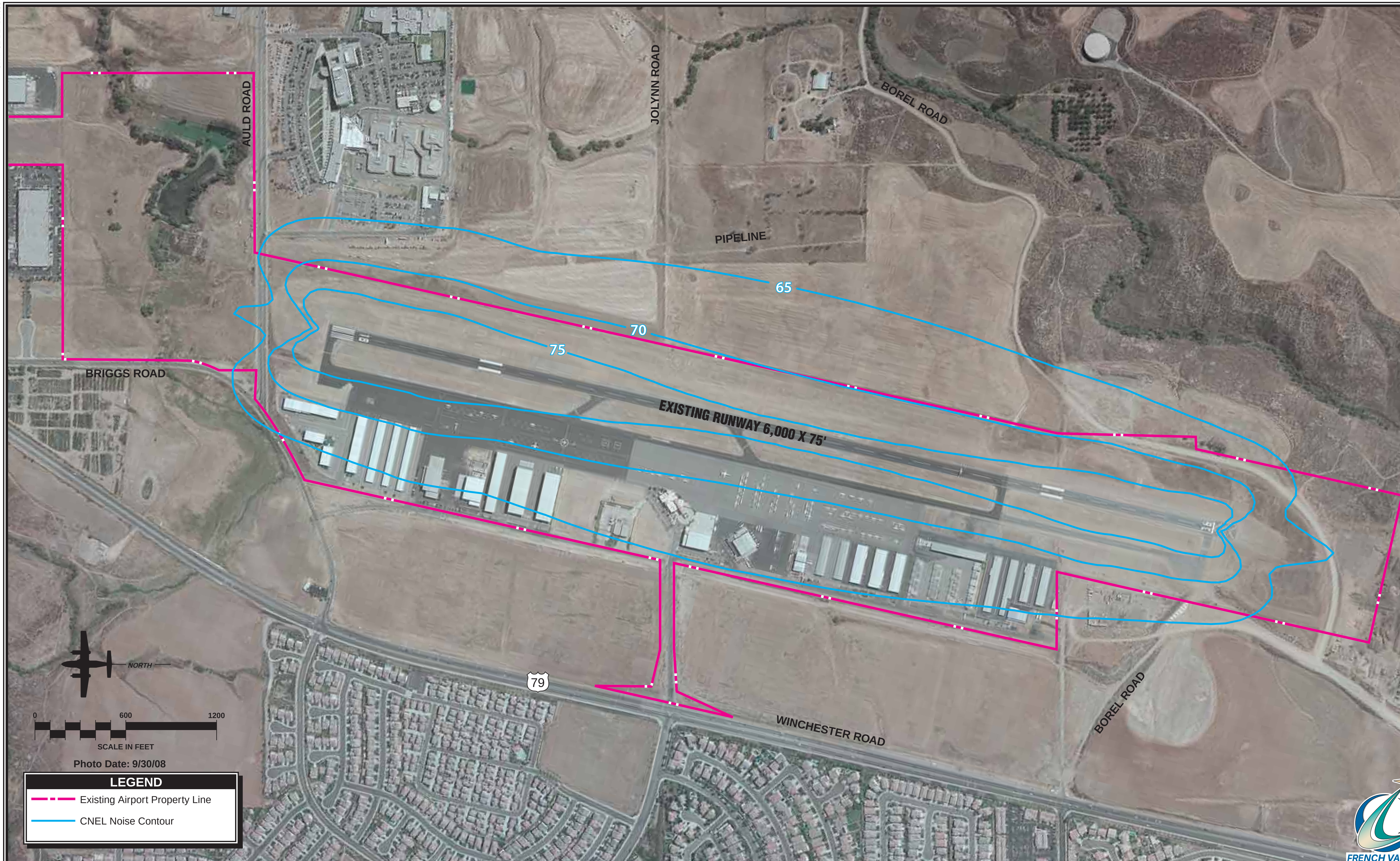


Exhibit B1
2008 AIRCRAFT NOISE EXPOSURE

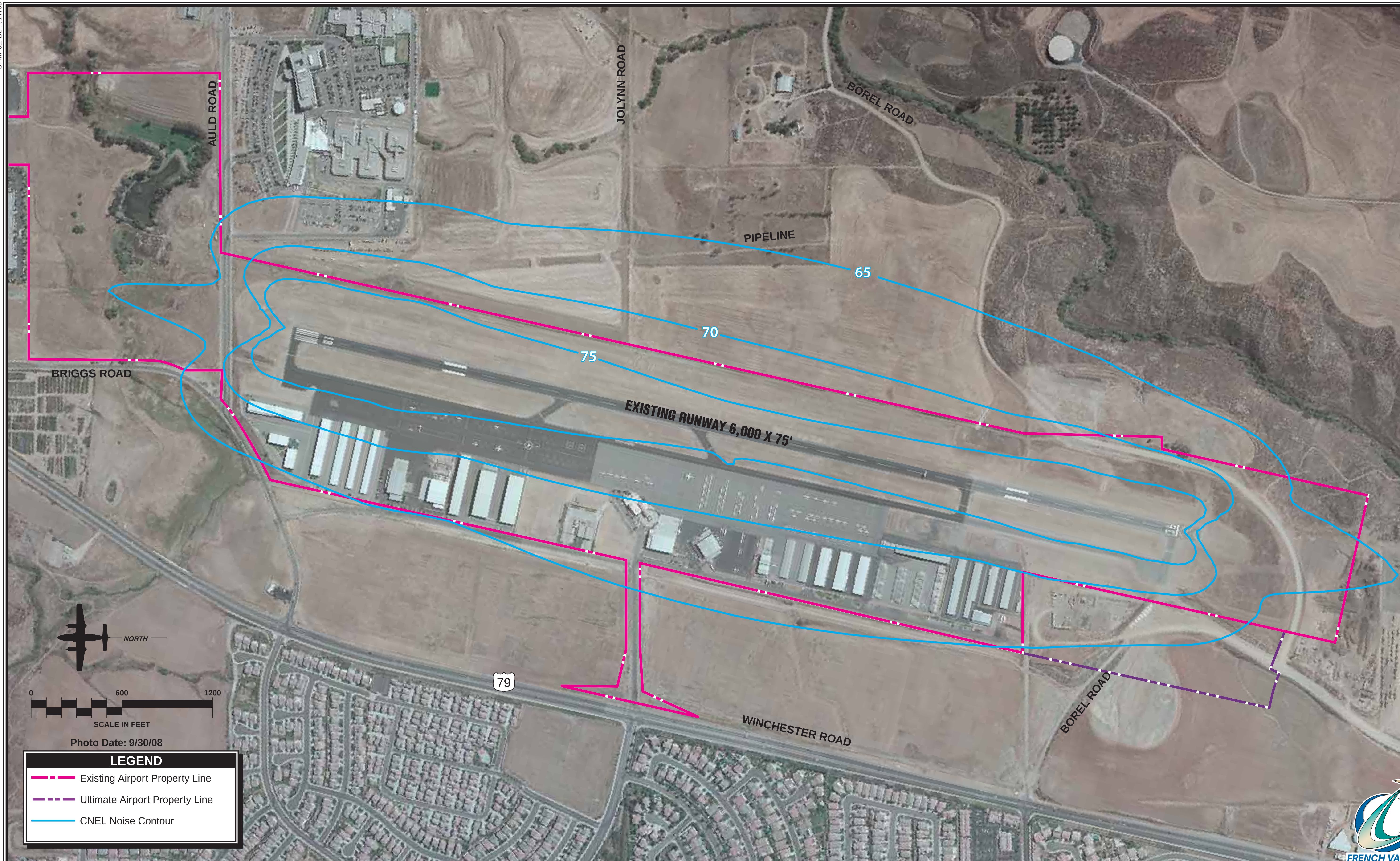


Exhibit B2
2030 AIRCRAFT NOISE EXPOSURE

Executive Order 12898, *Federal Action to Address Environmental Justice in Minority Populations and Low-Income Populations,* and the accompanying Presidential Memorandum, and Order DOT 5610.2, *Environmental Justice*, require FAA to provide for meaningful public involvement by minority and low-income populations as well as analysis that identifies and addresses potential impacts on these populations that may be disproportionately high and adverse.

According to the EPA's *Environmental Justice Geographic Assessment Tool*[4], the U.S. Census Bureau block that includes the airport environs do not contain high percentages (above 50 percent) of minority populations or high percentages of residents below the poverty level.

Pursuant to Executive Order 13045, *Protection of Children from Environmental Health Risks and Safety Risks,* federal agencies are directed to identify and assess environmental health and safety risks that may disproportionately affect children. These risks include those that are attributable to products or substances that a child is likely to come in contact with or ingest, such as air, food, drinking water, recreational waters, soil, or products to which they may be exposed.

During construction of the projects outlined within the master plan, appropriate measures should be taken to prevent access by unauthorized persons to construction project areas. Additionally, best management practices should be implemented to decrease environmental health risks to children.

Water Quality

The *Clean Water Act* provides the authority to establish water quality standards, control discharges, develop waste treatment management plans and practices, prevent or minimize the loss of wetlands, and regulate other issues concerning water quality. Water quality concerns related to airport development most often relate to the potential for surface runoff and soil erosion, as well as the storage and handling of fuel, petroleum products, solvents, etc.

A review of topographic maps and aerial photos indicates one stream within the business park portion of the airport that the U.S. Army Corps of Engineers could consider waters of the United States. It is not anticipated that the airport improvements outlined within the master plan would affect any waters of the U.S.

As previously discussed, none of the waters within the vicinity of the airport are considered impaired, thereby being in violation of established water quality standards.

[4] http://www.epa.gov/enviro/ej/. Accessed January 2009.

Wetlands

The U.S. Army Corps of Engineers regulates the discharge of dredged and/or fill material into waters of the United States, including adjacent wetlands, under Section 404 of the *Clean Water Act*. Wetlands are defined by Executive Order 11990, *Protection of Wetlands*, as those areas that are inundated by surface or groundwater with a frequency sufficient to support, and under normal circumstances does or would support, a prevalence of vegetation or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction. Categories of wetlands include swamps, marshes, bogs, sloughs, potholes, wet meadows, river overflows, mud flats, natural ponds, estuarine areas, tidal overflows, and shallow lakes and ponds with emergent vegetation. Wetlands exhibit three characteristics: hydrology, hydrophytes (plants able to tolerate various degrees of flooding or frequent saturation), and poorly drained soils.

According to previous environmental documentation conducted for improvements at French Valley Airport, there are no wetlands present at the airport. Additional field investigation may be required to determine the presence of wetlands prior to acquiring and developing the property proposed to contain the southern tie down area, hangar expansion, and relocation of Airport Road.

Appendix C

PART 139 ANALYSIS

Appendix C
14 CFR PART 139 ANALYSIS

Prior to June 9, 2004, Title 14 of the Code of Federal Regulations (CFR) Part 139 applied to airports that had scheduled or unscheduled air carrier operations in aircraft with a seating capacity of more than 30 passenger seats. Under the 2004 amendments, 14 CFR Part 139 also now applies to airports with scheduled air carrier operations in aircraft with a seating capacity of more than 9 passenger seats. If an airport has only unscheduled air carrier operations in aircraft with a seating capacity of less than 31 passenger seats, Part 139 does not apply.

Previously, airports were issued an Airport Operating Certificate (AOC) or a Limited Airport Operating Certificate (LOAC) corresponding to either scheduled or unscheduled air carrier operations. These certificates will now be replaced with a single Airport Operating Certificate that covers operation of a Class I, II, III, or IV airport. The class of airport is determined by the seating capacity of the air carrier aircraft and the schedule of service. The class of airport will be discussed in detail later in this document.

The purpose of this report is to analyze potential compliance with these new regulations as they apply to the French Valley Airport. This report summarizes each section of the 14 CFR Part 139 regulations and what would need to be done at French Valley Airport to comply with this regulation.

CLASSIFICATION

In order to apply for an Airport Operating Certificate (AOC), the airport must provide written documentation to the FAA Western-Pacific Region Airports Division that there is currently air carrier service or that air carrier service will begin on a certain date. Without air carrier service this regulation does not apply. During periods when there is no air carrier service, the airport's Airport Operating Certificate becomes inactive.

As mentioned above, the 14 CFR Part 139 certification requirements applicable to French Valley Airport will relate to the type of aircraft serving the French Valley Airport. In helping to define the airport's class it is important to understand the distinction between the definition of large and small air carrier aircraft.

- A large air carrier aircraft is designed for 31 passenger seats or more.
- A small air carrier aircraft is designed for 10 to 30 passenger seats.

Note: 14 CFR Part 139 does not apply to airports served by scheduled air carrier aircraft with nine seats or less and/or unscheduled air carrier aircraft with 30 seats or less.

14 CFR Part 139 defines four airport classifications as follows:

- **Class I** - an airport certificated to serve scheduled operations of large air carrier aircraft that also can serve unscheduled passenger operations of large air carrier aircraft and/or scheduled operations of small air carrier aircraft. A Class I airport may serve any class of air carrier operations.
- **Class II** - an airport certificated to serve scheduled operations of small air carrier aircraft and the unscheduled passenger operations of large air carrier aircraft. A Class II airport cannot serve scheduled large air carrier aircraft.
- **Class III** - an airport certificated to serve scheduled operations of small air carrier aircraft. A Class III airport cannot serve scheduled or unscheduled large air carrier aircraft (this would be the most likely classification for French Valley Airport).
- **Class IV** - an airport certificated to serve unscheduled passenger operations of large air carrier aircraft. A Class IV airport cannot serve scheduled large or small air carrier aircraft.

Note: The FAA will only allow an airport to be certificated for the type of operations currently occurring at the airport.

14 CFR PART 139 CERTIFICATION OF AIRPORTS

The following sections of this report will examine each section of 14 CFR Part 139. A summary of the regulation is provided as well as an explanation of what French Valley Airport would need to do to be in compliance with these regulations. Deadlines for compliance are noted. Worksheets to help with record keeping are provided where applicable.

SUBPART A – GENERAL

139.1 Applicability

This regulation applies to airports serving scheduled air carrier operations in aircraft designed for more than 9 passenger seats or airports serving unscheduled air carrier operations in aircraft designed for more than 30 passenger seats, and are located in any state of the United States, the District of Columbia or any territory or possession of the United States.

139.3 Delegation of authority.

The FAA Administrator has the authority to issue, deny and revoke the AOC to specific levels of management within the Office of Airports. In most cases this will be the Regional Airports Division Manager.

139.5 Definitions.

AFFF means aqueous film forming foam agent.

Air carrier aircraft means an aircraft that is being operated by an air carrier and is categorized as either a large air carrier aircraft if designed for at least 31 passenger seats or a small air carrier aircraft if designed for more than 9 passenger seats but less than 31 passenger seats, as determined by the aircraft type certificate issued by a competent civil aviation authority.

Air carrier operation means the takeoff or landing of an air carrier aircraft and includes the period of time from 15 minutes before until 15 minutes after the takeoff or landing.

Airport means an area of land or other hard surface, excluding water, that is used or intended to be used for the landing and takeoff of aircraft, including any buildings and facilities.

Airport Operating Certificate means a certificate, issued under this part, for operation of a Class I, II, III, or IV airport.

Average daily departures means the average number of scheduled departures per day of air carrier aircraft computed on the basis of the busiest 3 consecutive calendar months of the immediately preceding 12 consecutive calendar months. However, if the average daily departures are expected to increase, then ``average daily departures'' may be determined by planned rather than current activity, in a manner authorized by the Administrator.

Certificate holder means the holder of an Airport Operating Certificate issued under this part.

Class I airport means an airport certificated to serve scheduled operations of large air carrier aircraft that can also serve unscheduled passenger operations of large air carrier aircraft and/or scheduled operations of small air carrier aircraft.

Class II airport means an airport certificated to serve scheduled operations of small air carrier aircraft and the unscheduled passenger operations of large air carrier aircraft. A Class II airport cannot serve scheduled large air carrier aircraft.

Class III airport means an airport certificated to serve scheduled operations of small air carrier aircraft. A Class III airport cannot serve scheduled or unscheduled large air carrier aircraft.

Class IV airport means an airport certificated to serve unscheduled passenger operations of large air carrier aircraft. A Class IV airport cannot serve scheduled large or small air carrier aircraft.

Clean agent means an electrically nonconducting volatile or gaseous fire extinguishing agent that does not leave a residue upon evaporation and has been shown to provide extinguishing action equivalent to halon 1211 under test protocols of FAA Technical Report DOT/FAA/AR-95/87.

Heliport means an airport, or an area of an airport, used or intended to be used for the landing and takeoff of helicopters.

Index means the type of aircraft rescue and firefighting equipment and quantity of fire extinguishing agent that the certificate holder must provide in accordance with Sec. 139.315.

Joint-use airport means an airport owned by the United States that leases a portion of the airport to a person operating an airport specified under Sec. 139.1(a).

Movement area means the runways, taxiways, and other areas of an airport that are used for taxiing, takeoff, and landing of aircraft, exclusive of loading ramps and aircraft parking areas.

Regional Airports Division Manager means the airports division manager for the FAA region in which the airport is located.

Safety area means a defined area comprised of either a runway or taxiway and the surrounding surfaces that is prepared or suitable for reducing the risk of damage to aircraft in the event of an undershoot, overshoot, or excursion from a runway or the unintentional departure from a taxiway.

Scheduled operation means any common carriage passenger-carrying operation for compensation or hire conducted by an air carrier for which the air carrier or its representatives offers in advance the departure location, departure time, and arrival location. It does not include any operation that is conducted as a supplemental operation under 14 CFR part 121 or public charter operations under 14 CFR part 380.

Shared-use airport means a U.S. Government-owned airport that is co-located with an airport specified under Sec. 139.1(a) and at which portions of the movement areas and safety areas are shared by both parties.

Unscheduled operation means any common carriage passenger-carrying operation for compensation or hire, using aircraft designed for at least 31 passenger seats, conducted by an air carrier for which the departure time, departure location, and arrival location are specifically negotiated with the customer or the customer's representative. It includes any passenger-carrying supplemental operation conducted under 14 CFR part 121 and any passenger-carrying public charter operation conducted under 14 CFR part 380.

Wildlife hazard means a potential for a damaging aircraft collision with wildlife on or near an airport. As used in this part, “wildlife” includes feral animals and domestic animals out of the control of their owners.

139.7 Methods and procedures for compliance.

An airport that receives an AOC must comply with the requirements of subparts C and D of Part 139. FAA Advisory Circulars present acceptable methods and procedures, but not the only means, for demonstrating compliance with the applicable regulations. The FAA will consider other methods of demonstrating compliance. The method or procedure must be approved by the Airport Certification Safety Inspector (ACSI) and included in your ACM.

SUBPART B – CERTIFICATION

139.101 General requirements.

Based upon the most likely class determination discussed in previous paragraphs (Class III), the airport must comply with 14 CFR Part 139 to establish scheduled airline service. This requires obtaining an Airport Operating Certificate and getting an approved Airport Certification Manual.

139.103 Application for certificate.

Two signed copies of the ACM and one signed copy of Form 5280-1.

139.105 Inspection authority.

The ACSI is allowed to inspect the airport at any time to ensure compliance with this regulation and the airport's approved ACM. These inspections may be unannounced and may include tests to determine compliance with the applicable parts. Failure to allow these inspections or tests may result in civil penalties or certificate action.

139.107 Issuance of certificate.

French Valley Airport is entitled to a certificate if there is air carrier service, the airport has submitted all the documentation as outlined under section 139.103 and the airport is equipped and able to provide a safe airport operating environment in accordance with the approved ACM and any other provisions imposed by the FAA to ensure safety in air transportation. Once approved, the certificate will be mailed to the operating entity with the effective date.

139.109 Duration of certificate.

Once issued, the AOC is good indefinitely unless it is surrendered or it is suspended or revoked by the FAA.

139.111 Exemptions.

An airport may petition the FAA for an exemption from any requirement of Part 139 including Airport Rescue and Firefighting (ARFF). These requests for exemption must be in writing and submitted at least 120 days before the proposed effective date of the exemption. An exact detail of what must be included in the request and the necessary procedures are outlined under 139.111(b) and (c) and 14 CFR Part 11.

Exemptions, if approved will be time limited and normally not exceed one year. An exemption is not a permanent fix. Airports should work towards full compliance and the termination of the exemption.

Also, an exemption is not a "Modification of Standards" which is covered in FAA Order 5300.1, "Approval Level for Modification of Agency Airport Design and Construction Standards." Questions about "Exemptions" and "Modification of Standards" should be addressed to the ACSI.

139.113 Deviations.

Without prior approval, an airport may deviate from any of the requirements of subpart D of this regulation or the ACM to the extent necessary to deal with an emergency that is required to protect life or property.

Within 14 days after the emergency that caused a deviation, the airport must provide a written description of the deviation to the Regional Airports Division Manager.

SUBPART C – AIRPORT CERTIFICATION MANUAL

139.201 General Requirements.

An airport must have and comply with an approved ACM. The ACM must contain all the elements contained in 139.203. AC 150/5210-21 provides a format for the ACM that is acceptable to the FAA. The airport must maintain a complete and current copy at all times. The airport will also need to provide a copy to the ACSI. Therefore, the original and all changes must be submitted in duplicate.

In addition, the airport must provide the ACM to all airport personnel responsible for its implementation. This includes air carriers, FBO personnel, and emergency response personnel. Personnel should be trained on the contents of the ACM and expected to comply with its provisions.

139.203 Contents of Airport Certification Manual.

The ACM is a description of the operating procedures, facilities and equipment, responsibility assignments, and any other information needed by personnel concerned with operating the airport on how they need to comply with the provisions of subpart D of part 139.

As evident from the chart below, the ACM elements are the same for Class I, II, and III airports. The primary differences between a Class I and Class III AOC are as follows:

- Class I airports are required to conduct a full scale emergency exercise every three years. Class III airports are not required to conduct a full-scale emergency exercise.
- Class III airports can purse exemptions from Airport Rescue and Fire Fighting (ARFF) requirements. Class I airports cannot.

REQUIRED AIRPORT CERTIFICATION MANUAL ELEMENTS				
Manual elements	**Class I**	**Class II**	**Class III**	**Class IV**
1. Lines of succession of airport operational responsibility	X	X	X	X
2. Each current exemption issued to the airport from the requirements of this part	X	X	X	X
3. Any limitations imposed by the Administrator	X	X	X	X
4. A grid map or other means of identifying locations and terrain features on and around the airport that are significant to emergency operations	X	X	X	X
5. The location of each obstruction required to be lighted or marked within the airport's area of authority	X	X	X	X
6. A description of each movement area available for air carriers and its safety areas, and each road described in § 139.319(k) that serves it	X	X	X	X
7. Procedures for avoidance of interruption or failure during construction work of utilities serving facilities or NAVAIDS that support air carrier operations	X	X	X	
8. A description of the system for maintaining records, as required under § 139.301	X	X	X	X
9. A description of personnel training, as required under § 139.303	X	X	X	X
10. Procedures for maintaining the paved areas, as required under § 139.305	X	X	X	X
11. Procedures for maintaining the unpaved areas, as required under § 139.307	X	X	X	X
12. Procedures for maintaining the safety areas, as required under §139.309	X	X	X	X
13. A plan showing the runway and taxiway identification system, including the location and inscription of signs, runway markings, and holding position markings, as required under §139.311	X	X	X	X
14. A description of, and procedures for maintaining, the marking, signs, and lighting systems, as required under § 139.311	X	X	X	X
15. A snow and ice control plan, as required under § 139.313	X	X	X	

REQUIRED AIRPORT CERTIFICATION MANUAL ELEMENTS				
Manual elements	**Class I**	**Class II**	**Class III**	**Class IV**
16. A description of the facilities, equipment, personnel, and procedures for meeting the aircraft rescue and firefighting requirements, in accordance with §§ 139.315, 139.317 and 139.319	X	X	X	X
17. A description of any approved exemption to aircraft rescue and firefighting requirements, as authorized under § 139.111	X	X	X	X
18. Procedures for protecting persons and property during the storing, dispensing, and handling of fuel and other hazardous substances and materials, as required under § 139.321	X	X	X	X
19. A description of, and procedures for maintaining, the traffic and wind direction indicators, as required under § 139.323	X	X	X	X
20. An emergency plan as required under § 139.325	X	X	X	X
21. Procedures for conducting the self-inspection program, as required under § 139.327	X	X	X	X
22. Procedures for controlling pedestrians and ground vehicles in movement areas and safety areas, as required under § 139.329	X	X	X	
23. Procedures for obstruction removal, marking, or lighting, as required under § 139.331	X	X	X	X
24. Procedures for protection of NAVAIDS, as required under § 139.333	X	X	X	
25. A description of public protection, as required under § 139.335	X	X	X	
26. Procedures for wildlife hazard management, as required under § 139.337	X	X	X	
27. Procedures for airport condition reporting, as required under § 139.339	X	X	X	X
28. Procedures for identifying, marking, and lighting construction and other unserviceable areas, as required under § 139.341	X	X	X	
29. Any other item that the Administrator finds is necessary to ensure safety in air transportation	X	X	X	X

It is imperative that the ACM describe the actual conditions and operations at the airport. If changes occur, the manual must be updated in accordance with 139.205. As part of the ACSI inspection, a pre-inspection review of the ACM will always be accomplished. Remember that the ACM must be kept current at all times.

139.205 Amendment of Airport Certification Manual.

An “amendment” to the ACM is a significant change in the method of compliance to part 139 by the airport operator. Simple changes to names, phone numbers, and minor wording corrections constitute a “revision”. These revisions must still be submitted to the ACSI for approval in a timely manner, but do not constitute an actual amendment.

The ACM is formally amended either at the discretion of the certificate holder or at the request of the FAA. Examples of what constitutes an amendment are major changes to the Emergency or Wildlife Hazard Management Plans, change in ARFF index, and addition of a new runway. All proposed amendments by the certificate holder must be submitted in writing to the ACSI at least 30 days prior to the effective date of the amendment unless a shorter time period is allowed by the FAA.

If the FAA initiates the amendment, the proposed amendment will be provided to the airport operator in writing. There will be at least 7 days to respond. After review of the airport operators’ response, the FAA will issue a final amendment that becomes effective not less than 30 days after the certificate holder receives it. The FAA can issue an immediate amendment if there is an emergency situation requiring such action. The airport can petition the FAA within 30 days of such an emergency amendment to reconsider the emergency situation or the amendment itself.

SUBPART D – OPERATIONS

139.301 Records.

An airport is required to maintain certain records for specified periods of time. These records must be in a manner prescribed in the applicable section of Part 139 and as authorized by the ACSI. These records must be made available during inspection. The period of time these records must be maintained is as follows (in consecutive calendar months):

Personnel training (24 Months)
Emergency personnel training (24 Months)
Airport tenant fueling inspection (12 Months)
Airport tenant fueling agent training (12 Months)
Self-inspection (6 Months)
Movement areas and safety areas training (24 Months)
Accident and incident (12 months)
Airport Condition (6 Months)
Any additional records deemed necessary by the ACSI

What constitutes acceptable records will be covered under the appropriate section.

139.303 Personnel.

An airport must provide sufficient and qualified personnel to comply with the requirements of Part 139 and the ACM. The important point here is that there must be a balance between the number of personnel an airport employs and the training/experience level these personnel possess. Personnel who access movement areas and safety areas to perform their duties must be properly trained and equipped to their job. This training must be accomplished prior to commencement of their duties and at least once every 12 consecutive calendar months.

Neither the ACSI nor other FAA offices will dictate to an airport what constitutes sufficient qualified personnel. The number of personnel an airport operator needs is that required to meet, maintain, and operate the airport at the minimum safety standards set forth in Part 139. The conditions found on the airport are what an ACSI must base their determination on as to whether there are sufficient qualified personnel. An ACSI can observe personnel while performing their duties and if necessary even test personnel on their knowledge of a subject appropriate to their responsibilities.

Also, having numerous employees may meet the test of sufficiency, but inadequate training may leave an individual less then qualified. A training program is a mandatory requirement and must include the requirements of Part 139 and the ACM. Records of this training must be kept for 24 consecutive calendar months. The curriculum for the initial and recurrent training must include the areas specified in this part and a description must be included in the ACM. The FAA may require additional subject areas for training as appropriate.

An airport may use an independent organization or designee to comply with the requirements of this part and the ACM, but this arrangement would have to be approved by the ACSI and this organization or designee would still have to meet the same requirements.

139.305 Paved areas.

All pavements available for air carrier use, including runways, taxiways, loading ramps and parking areas must be maintained to meet the required specifications of this part. Although there is a specific criterion, any pavement cracks or variations that could impair an air carrier aircraft's directional control is a violation of this part and needs to be immediately addressed. A good self-inspection program is important to identifying potential problem areas before they exceed standards. These inspections should be conducted in varying weather conditions such as heavy rain to determine if the pavement is draining properly and to identify areas where ponding is occurring so that these areas can be repaired.

The airport should have a regular maintenance program in place to remove mud, dirt, sand, loose aggregate, debris, foreign objects, rubber deposits and other contaminates as well as repair cracks, holes and deterioration. Any crack or surface variation that produces loose aggregate or other contaminants shall be immediately repaired. The airport should work with the ADO to procure funding for major repairs and reconstructions, but does not relieve the airport of its responsibility to make immediate repairs or restrict air carrier use if necessary.

AC 150/5380-6, *Guidelines and Procedures for Maintenance of Airport Pavements*, provides an introduction to airport pavement maintenance and is a good starting point for airport personnel. Also AC 150/5380-7, *Pavement Management System*, describes the components of a Pavement Management System.

Runway 18-36 is available for small air carrier use. This runway meets or exceeds all FAA design standards for use by the small air carrier aircraft which may use the airport. Taxiways A, B, C, and D serve the runway.

139.307 Unpaved areas.

There are no unpaved areas for potential air carrier operations.

139.309 Safety areas.

A safety area is an area comprised of either a runway or taxiway and the surrounding surfaces that is prepared or suitable for reducing the risk of damage to aircraft in the event of an undershoot, overshoot, or excursion from a runway or the unintentional departure from a taxiway. Safety area design and dimensional standards shall be provided and maintained for each runway and taxiway that is available for air carrier use.

Safety areas must be cleared and graded and have no potentially hazardous ruts, humps, depressions, or other surface variations. They should also allow for water to adequately drain preventing accumulation. The safety area is there to support an aircraft without causing major damage. Safety areas should also be able to support ARFF equipment under dry conditions.

No objects may be located in the safety area unless they are located there specifically for their function. Usually items located in the safety areas are limited to signs, lighting and navigational aids. Items that are approved to remain in the safety areas shall be on frangible structures with the frangible point no higher then 3 inches above the grade.

Current safety areas meet design standards on the airport.

AC 150/5300-13, *Airport Design*, paragraph 305 and Appendix 8 discuss Runway Safety Areas (RSA) and paragraph 403 discusses Taxiway Safety Areas (TSA).

139.311 Marking, signs, and lighting.

Airports must provide and maintain a marking system for air carrier operations. This includes marking runways for the approach with the lowest authorized minimums, taxiway centerlines and edge markings as appropriate, holding position markings and marking ILS critical areas. Markings must be provided and maintained so that pilots easily see them. Maintaining markings means to have a scheduled maintenance program to repaint faded, chipped, or worn markings. This includes the addition of glass beads on all required markings and the outlining of markings with a black border on light colored pavements. Markings should also be kept clean and free of rubber deposits. AC 150/5340-1, *Standards for Airport Markings*, contains the acceptable standards for airport markings at airports with air carrier operations.

French Valley Airport is equipped with a GPS approach to Runway 18. Runway 18 has non-precision markings, while Runway 36 has basic markings.

Airports must provide and maintain a sign system for air carrier operations. This sign system must include signs identifying taxiing routes, holding position signs and ILS critical area signs. For Class III airports, only holding position signs, and instrument landing system (ILS) critical area signs must be internally illuminated. Other signs must be lighted if they are installed on a lighted runway or taxiway. Signs must be properly positioned appropriate to their size and must be maintained so that pilots can easily read them. Maintaining signs includes replacing worn or faded panels and keeping them clear of snow and vegetation. An airport sign plan must be submitted to the ACSI for approval and included in the ACM. AC 150/5340-18, *Standards for Airport Sign Systems*, provides guidance for the type of airport signs.

Current holding position marking and signage need to be relocated to a distance of 200 feet from runway centerline.

Airports must provide and maintain a lighting system for air carrier operations when the airport is open at night or during periods of reduced visibility. This system must include runway lights that meet the specifications for the takeoff and landing minimums of the runway and one taxiway lighting system. In addition to runway and taxiway lighting, an airport is required to have an airport beacon, approach lighting that meets the specifications for takeoff and landing minimums unless this lighting is provided and maintained by the FAA, and obstruction marking and lighting as appropriate. AC 150/5340-24, *Runway and Taxiway Edge Lighting System*, describes acceptable standards for the design, installation, and maintenance of runway and taxiway edge lighting systems.

Runway 18-36 has medium intensity runway lighting (MIRL) and medium intensity taxiway lighting (MITL). The airport has a rotating beacon.

The airport is responsible for maintaining their marking, lighting, and signs. This means that that they should be clean, unobscured, and clearly visible at all times. Any faded, missing, or nonfunctional items should be repaired or replaced. Marking, lighting, and signs are used by pilots and need to be easily seen and provide an accurate reference to the user.

FAA Advisory Circulars that provide assistance with compliance with this section are listed below.

AC 150/5340-21, *Airport Miscellaneous Lighting Visual Aids*, describes the standards for the system design, installation, inspection, testing, and maintenance of airport miscellaneous visual aids; i.e., airport beacons, beacon towers, wind cones, wind tees, and obstruction lights.

AC 150/5340-26, *Maintenance of Airport Visual Aid Facilities*, provides recommended guidelines for maintenance of airport visual aid facilities.

AC 150/5340-27A, *Air-to-Ground Radio Control of Airport Lighting Systems*, contains the FAA standard operating configurations for air-to-ground radio control of airport lighting systems.

AC 150/5345-44F, *Specification for Taxiway and Runway Signs*, contains a specification for lighted and unlighted signs to be used on taxiways and runways.

139.313 Snow and ice control.

A snow and ice control plan is needed in an area where measurable snow and icing conditions occur at least once a year. This plan must be approved by the ACSI and becomes an enforceable part of the ACM. When snow and/or icing conditions occur, the airport must execute the approved plan.

139.315 Aircraft rescue and firefighting (ARFF): Index determination:

The length of air carrier aircraft and the average scheduled daily departures of air carrier aircraft determine ARFF index. The minimum ARFF index will always be Index A.

Below is the length of air carrier aircraft that make up a particular index:

(1) Index A includes aircraft less than 90 feet in length.
(2) Index B includes aircraft at least 90 feet but less than 126 feet in length.

(3) Index C includes aircraft at least 126 feet but less than 159 feet in length.
(4) Index D includes aircraft at least 159 feet but less than 200 feet in length.
(5) Index E includes aircraft at least 200 feet in length.

Small turboprops will generally fall within Index A. Common regional jets such as the Bombardier CRJ 200 and Embraer 135 are also less than 90 feet long and fall within Index A.

Paragraph (e) of this section allows for a Class III airport to comply with this section if they can provide a level of safety comparable to Index A, the procedure is approved by the ACSI, and if it is documented in the ACM. The alternate compliance must include the criteria listed in paragraph 139.315(e)(i-iv).

Note: Determination of ARFF index is used to determine the minimum ARFF equipment and agents that must be available for air carrier operations to occur on an airport.

139.317 Aircraft rescue and firefighting: Equipment and agents.

Once the ARFF index has been determined, a determination of the minimum type and number of ARFF vehicles, the type and number of pounds of dry chemical, the amount of Halon 1211 or clean agent (referred to as agent/s) that must be on the truck/s, and the amount of aqueous film forming foam (AFFF) and water that must be available on the truck/s is determined. Refer to 139.317(a-e) for applicable index requirements.

All trucks used to comply with index B and above must be equipped with a turret. This section also specifies the foam discharge rate and the agent discharge rate for each vehicle (139.317(f-g)). Other extinguishing agents may be used only if they are approved by the ACSI and in amounts that provide the same level of firefighting capability.

Vehicles must be able to carry enough AFFF to mix with twice the amount of water the vehicle is required to carry.

FAA Advisory Circulars that may assist you with compliance with this section are listed below.

AC 150/5210-6C, *Aircraft Fire and Rescue Facilities and Extinguishing Agents*, outlines scales of protection considered as the recommended level compared with the minimum level in Federal Aviation Regulation Part 139.49 and tells how these levels were established from test and experience data.

AC 150/5220-4, *Water Supply Systems for Aircraft Fire and Rescue Protection*, provides guidance for the selection of a water source and standards for the design of a distribution system to support aircraft rescue and firefighting (ARFF) service operations on airports.

AC 150/5220-10C *Guide Specification for Water/Foam Aircraft Rescue and Firefighting Vehicles*, contains performance standards, specifications, and recommendations for the design, construction, and testing of a family of aircraft rescue and firefighting (ARFF) vehicles.

AC 150/5220-19, *Guide Specification for Small Agent Aircraft Rescue and Fire Fighting Vehicles*, contains performance standards, specifications, and recommendations for the design, construction, and testing of a family of small, dual agent aircraft rescue and fire fighting (ARFF) vehicles.

AC 150/5220-10C, *Guide Specification for Water/Foam Aircraft Rescue and Firefighting Vehicles*, contains performance standards, specifications, and recommendations for the design, construction, and testing of a family of aircraft rescue and firefighting (ARFF) vehicles.

AC 150/5210-13A, *Water Rescue Plans, Facilities, and Equipment*, provides guidance to assist airport operators in preparing for water rescue operations.

AC 150/5210-15, *Airport Rescue and Firefighting Station Building Design*, provides standards and guidance for planning, designing, and constructing and airport rescue and firefighting station.

AC 150/5210-19, *Driver's Enhanced Vision System (DEVS)*, contains performance standards, specifications, and recommendations for DEVS.

AC 150/5220-4B, *Water Supply Systems for Aircraft Fire and Rescue Protection*, provides guidance for the selection of a water source and standards for the design of a distribution system to support aircraft rescue and firefighting (ARFF) service operations on airports.

139.319 Aircraft rescue and firefighting: Operational requirements.

It is required that an airport, during air carrier operations, defined as the period of time 15 minutes before until 15 minutes after the takeoff or landing, provide the ARFF capability for their required index. If the average daily departures or the length of aircraft changes such that the index increases, the airport is required to meet the ARFF required by the increased ARFF index. If there is reduction in average daily departures or the length of aircraft, the airport may reduce its index by following the procedures under section 139.319(d)(1-3).

ARFF vehicles are required to be ready and capable to meet their intended requirements as required by 139.319(g)(1-3) and the response requirements of 139.319(h)(1-2). The ACSI will initiate a timed response drill during inspections. Vehicles must also be equipped with the necessary radios to communicate with all required parties as outlined in 139.319(e)(1-4), and they must be appropriately marked and lighted in accordance with 139.319(f)(1-2).

ARFF personnel must be trained and equipped to perform their duties. Personnel training includes initial and recurrent training with a curriculum that is approved by the ACSI and includes all the elements of 139.319(i)(2)(i-xi) and (3).

Initial Training. Prior to any person assuming ARFF duties, they must have completed initial training as outlined above. It is not acceptable to simply take a structural firefighter and assign them to ARFF duties without additional training. Initial training may be accomplished during an initial ARFF training course offered by an approved facility or internally using an approved curriculum. The internal curriculum must be approved by the ACSI. Initial training is not complete until the individual has participated in at least one live-fire drill. <u>Initial ARFF training records are kept as long as the person is employed and will be made available during each inspection</u>.

Recurrent Training. Once an ARFF person has completed initial training, they must receive recurrent instruction every 12 consecutive calendar month using an approved curriculum. The Aircraft Rescue and Fire Fighting (ARFF) Computer-Based Training (CBT) CD is an excellent supplement to the curriculum but should not be considered all-inclusive. Practical application with the airport's equipment, airport familiarization, driving on the airport, and duties under the airport emergency plan are just a few areas that cannot be fully taught using the CD. ARFF personnel must also participate in at least one live-fire drill every 12 consecutive calendar months. The live-fire drill must be accomplished at an approved training facility or in a manner acceptable to the ACSI.

<u>An airport is required to maintain a record of all recurrent training given to each individual for 24 consecutive calendar months and these records will be made available during each inspection.</u>

Medical Services. The airport is required to have at least one individual available during air carrier operations that has been trained and is current in basic emergency medical services as outlined in 139.319(i)(4). The individual must have received at least 40 hours of training in the required topics and a record of this training must be maintained for 24 consecutive calendar months and made available for inspection. The emergency medical person does not have to be an ARFF person and they do not need to meet the timed response requirements. Off-airport personnel such as an ambulance service may be used if a reasonable response time is assured. How the airport will meet this requirement must be approved by the ACSI and documented in the ACM.

The airport must also meet the requirements of 139.319(i)(5 & 6) with regards to hazardous materials guidance and maintaining emergency access roads.

FAA Advisory Circulars that may assist with compliance with this section are listed below.

AC 150/5210-17, *Programs for Training of Aircraft Rescue and Firefighting Personnel*, provides information on courses and reference materials for training of aircraft and firefighting (ARFF) personnel and Change 1, AC 150/5210-17 Chg. 1 changed the AC to reflect a new source for the FAA Standard Basic Aircraft Rescue and Firefighting Curriculum, and to update other sources of training programs.

Note: An Aircraft Rescue and Fire Fighting (ARFF) Computer-Based Training (CBT) CD is available from the ACSI.

AC 150/5210-18, *Systems for Interactive Training of Airport Personnel*, provides guidance in the design of systems for interactive training of airport personnel.

AC 150/5210-7C, *Aircraft Rescue and Firefighting Communications*, provides guidance for planning and implementing the airport Aircraft Rescue and Firefighting (ARFF) Communications systems.

AC 150/5210-14A, *Airport Fire and Rescue Personnel Protective Clothing*, was developed to assist airport management in the development of local procurement specifications for an acceptable, cost-effective proximity suit for use in aircraft rescue and firefighting operations.

139.321 Handling and storing of hazardous substances and materials.

The airport is required to establish and maintain acceptable fire safety standards for handling fuel servicing on the airport. This includes storing and dispensing. These standards must be approved by the ACSI and included in the ACM. It is recommended that the airport adopt NFPA 407, Standard for Aircraft Fuel Servicing (current edition) as the standard for the airport. 139.321(b)(1-7) lists the minimum standards that must be addressed if NFPA 407 is not adopted.

Once the standards are approved and adopted, the airport, as a fueling agent, if applicable, and all other fueling agents on the airport including Part 121 and Part 135 certificated air carriers must comply with the standards. To ensure compliance, the airport must inspect the trucks and storage and dispensing facilities every 3 consecutive calendar months. The inspection records must be maintained for 12 consecutive calendar months. The inspection results should show the discrepancies found and the corrective action taken. Regardless of the inspections, the airport must require fueling agents to immediately correct any noncompliance with a standard. If the fueling agent cannot correct the deficiency in a reasonable period of time, the airport will notify the ACSI.

All fueling agents shall have at least one supervisor that has completed an approved fuel-training course in fire safety. A list of nationally approved courses is attached. The individual must complete the training prior to initial performance of duties or be enrolled in a course that will be completed within 90 days of starting work. They must also receive recurrent training every 24 consecutive calendar months. Any training courses other than the nationally approved courses must be reviewed and approved by the ACSI as acceptable. The inspector will want to see documentation of the training.

The supervisor must provide initial on-the-job training and recurrent instruction every 24 consecutive calendar months to all other employees that are responsible for handling fuel in any manner. Once every 12 consecutive calendar months, the fueling agent must provide the airport written confirmation that all training has been accomplished. The written confirmation must be maintained for 12 consecutive calendar months. The written confirmation should include the name of the person receiving the training and the date the training occurred.

The attached forms can also be used to track and record the quarterly inspections required by this part. These inspections can be performed by someone other than airport staff, such as the Fire Marshall. The ACM must state who will be responsible for these inspections.

AC 150/5230-4 *Aircraft Fuel Storage, Handling, and Dispensing On Airports* provides guidance in this area.

139.323 Traffic and wind direction indicators.

An airport must have a wind cone that provides surface wind direction information to pilots and supplemental wind cones at each end of all air carrier runways or at a point visible to a pilot during final approach and prior to takeoff. If the airport is open at night, it must be lighted.

There is no control tower at French Valley Airport. A segmented circle with lighted wind indicator is located on the east side of the airfield. Supplemental wind cones are located at each runway end.

FAA Advisory Circulars that may assist with compliance with this section are listed below.

AC 150/5340-5B, *Segmented Circle Airport Marker System*, sets forth standards for a system of airport marking consisting of certain pilot aids and traffic control devices.

AC 150/5340-23B, *Supplemental Wind Cones*, describes criteria for the location and performance of supplemental wind cones.

139.325 Airport emergency plan.

The airport is required to write and maintain an Airport Emergency Plan (AEP). The plan is designed to minimize personal injury and damage to property in the event of an emergency situation. All parties that have a role in the plan should participate in the development of the plan. AC 150/5200-31A, *Airport Emergency Plan*, provides guidance for the preparation and implementation of emergency plans at civil airports. The AEP may be written using the guidance provided in the AC and must include all applicable parts of 139.325(b-f).

The plan will be submitted in two copies to the ACSI for approval. The AEP Review Checklist must be completed and included with the submission of the AEP. The ACSI will review the plan and once approved will become part of the ACM.

Once completed, the AEP must be coordinated with all parties that have responsibilities under the plan. All airport personnel having duties and responsibilities under the plan must be trained on their assignments under the plan. Once every 12 consecutive calendar months, the plan must be reviewed with all parties that have responsibilities under the plan. This is the opportunity to get everyone together and go through the plan page by page to ensure everyone is familiar with their duties, responsibilities and that the information in the plan is accurate. The airport should keep a participant list as well as minutes of the meeting. Any changes to the plan should be immediately submitted to the ACSI for approval.

Every 36 consecutive calendar months, all Class I airports must hold a full-scale emergency plan exercise. Class II, III and IV airports do not need to complete this requirement; however, it is recommended. The AEP Exercise Evaluation Checklist should be used to prepare and evaluate the exercise. The purpose of the full-scale exercise is to test the effectiveness of the AEP through a response of the airport and its mutual aid for a disaster at the airport. All planning, execution, and evaluation documentation should be maintained for inspection purposes.

FAA Advisory Circulars that may assist with compliance with this section are listed below.

AC 150/5200-12B, *Fire Department Responsibility in Protecting Evidence at the Scene of an Aircraft Accident*, furnishes general guidance for airport, employees, airport management and other personnel responsible for firefighting and rescue operations, at the scene of an aircraft accident, on the proper presentation of evidence.

AC 150/5210-2A, *Airport Emergency Medical Facilities and Services*, provides information and advice so that airports may take specific voluntary preplanning actions to assure at least minimum first-aid and medical readiness appropriate to the size of the airport in terms of permanent and transient personnel.

139.327 Self-inspection program.

The self-inspection program is considered the cornerstone of compliance with many of the sections of Part 139. The airport must perform an inspection daily unless otherwise authorized by the ACSI and approved in the ACM. If there is air carrier service on any given day, including weekends and holidays, an inspection must be performed. The inspection schedule is required to be included in the ACM. Inspections will also be completed when required by unusual conditions or an aircraft accident/incident. Usually the inspections are recorded on an inspection checklist that is an approved part of the ACM. The inspection record must include the conditions found and the corrective action that was taken to fix the discrepancy. Each daily-recorded inspection must be maintained for 12 consecutive calendar months.

Personnel trained to identify noncompliance with all the areas that are being inspected must complete self-inspections. These personnel must be trained in accordance with 139.303, and receive initial and recurrent instruction. This initial instruction must be documented and maintained for the duration of the employee's employment. Recurrent training must be completed every 12 consecutive calendar months. Training records shall be maintained for 24 consecutive calendar months. Instruction must include the following:

1) Airport familiarization, including airport signs, marking and lighting
2) Airport emergency plan
3) Notice to Airmen (NOTAM) notification procedures
4) Procedures for pedestrians and ground vehicles in movement areas and safety areas
5) Discrepancy reporting procedures
6) A reporting system to ensure prompt correction of unsafe airport conditions noted during the inspection, inc

The attached form can assist with recording and tracking this training.

Note: A person sent to inspect the airport that is not thoroughly familiar with the requirements of Part 139 and all applicable ACs may provide an inaccurate report and potentially provide airport management with a false sense of well-being. If, during an annual certification inspection numerous discrepancies are discovered that should have been identified under the self-inspection program there is good cause to reevaluate the process, training and/or personnel conducting the inspections.

All personnel responsible for self-inspections should be thoroughly familiar with the contents of AC 150/5200-18B, *Airport Safety Self-Inspection*, and AC 150/5200-29, *Announcement of Availability: Airport Self-Inspection Videotape*, (which may be obtained through the ACSI).

It is critical that the self-inspection program is tied to the airport condition reporting system. The use of the NOTAM system is acceptable, but an additional system to immediately notify air carriers directly may be necessary. In some cases, the information or NOTAM may have to be hand delivered, faxed or e-mailed directly to the air carrier in order to ensure prompt notification. The air carriers should also be notified as soon as the discrepancy is corrected.

139.329 Pedestrians and Ground Vehicles.

The only pedestrians or ground vehicles that should be allowed to be in the movement areas (runway and taxiways) and safety areas are those that are absolutely necessary for airport operations. The airport is responsible to limit access to the movement areas to authorized personnel and vehicles only. Normally this limits the access to rescue, maintenance and inspection activities. Construction would be considered maintenance, but the airport must ensure that the construction safety plan is in compliance with this section. Wherever possible, service roads should be constructed to alleviate vehicles such as fuel trucks from entering the movement areas.

The airport must establish and implement procedures for the access to and operation in the movement and safety areas. This means that the airport must establish a driver's training program that includes provisions for all personnel that may have to drive or walk in the movement/safety areas. The training program must be approved and included in the ACM. It must also include the consequences that the airport will enforce if an individual does not follow the rules. This training must be documented and the documentation must be maintained for 24 consecutive calendar months.

The French Valley Airport air carrier movement area would be defined as Runway 18-36, Taxiway A, and connecting Taxiways B, C, and D. The driver of any vehicle which might cross any of these areas would require ground vehicle training.

It should be noted that not all tenants gaining access through the fence would require ground vehicle training. Tenants accessing T-hangars or other buildings on the airport would not require training.

FAA Advisory Circulars that may assist with compliance with this section are listed below.

AC 150/5210-20, *Ground Vehicle Operations on Airports*, contains guidance to airport operators developing ground vehicle operation training programs.

AC 150/5210-5B, *Painting, Marking, and lighting of Vehicles Used on an Airport*, provides guidance, specifications, and standards, in the interest of airport personnel safety and operational efficiency, for painting, marking, and lighting of vehicles operating in the airport air operations areas.

139.331 Obstructions.

Any objects that are within the airport's authority that have been determined by the FAA to be an obstruction must be removed, marked, or lighted unless an FAA aeronautical study has determined that it is not necessary. If the object has not had an FAA aeronautical study, the airport is required to initiate the study. The airport must have procedures in place for the identification of obstructions to the applicable Part 77 imaginary surfaces. Applicability of airport authorities will be determined on a case-by-case basis.

FAA Advisory Circulars that may assist with compliance with this section are listed below.

AC 150/5340-21, *Airport Miscellaneous Lighting visual Aids*, describes the standards for the system design, installation, inspection, testing, and maintenance of airport obstruction lights.

AC 150/5345-43E, *Specification for Obstruction Lighting Equipment*, contains the FAA specification for obstruction lighting equipment.

139.333 Protection of NAVAIDS.

The airport must prevent the construction of facilities near NAVAIDS and air traffic control facilities that would derogate the signal or operation of the facility. This includes electronic and visual facilities.

This is usually accomplished with signage and restricting access to the airport to those authorized to use the airport and through defining safety measures during construction.

139.335 Public protection.

The airport must have safeguards to prevent inadvertent entry to the movement areas by unauthorized person or vehicles. Fencing that meets Transportation Security Administration (TSA) regulations are acceptable to meet the requirements of this section. The airport must also provide reasonable protection of persons and property from jet blast. The airport perimeter is fully fenced.

139.337 Wildlife hazard management.

Wildlife hazard management at airports is a critical issue that, if taken lightly, poses a serious threat to life and property. For this reason, airports are required to take immediate action to alleviate wildlife hazards any time they are detected.

If an airport has any of the occurrences listed in 139.337(b)(1-4), they are required to have a wildlife hazard assessment. The wildlife hazard assessment usually starts with an initial consultation and possibly a site visit. The consultation and/or site visit will determine the need for a complete wildlife hazard assessment. If it is required, the wildlife hazard assessment must be completed by an individual as specified under 139.337(c) and include the items listed under 139.337(c)(1-5). Wildlife hazard assessments and plans are eligible for AIP funding and need to be coordinated with the ADO.

The wildlife hazard assessment is submitted to the ACSI who will determine if there is a need for a wildlife hazard management plan. If it is determined that a plan is required, the certificate holder must write a plan using the assessment as a guide. The plan is submitted to the ACSI for approval and is implemented by the airport. Section 139.337(e) and (f) will be followed in the development, writing and implementation of the plan.

All airport personnel that may be required to execute the plan must be trained on its implementation, and the airport must evaluate the effectiveness of the plan at least every 12 consecutive calendar months or whenever additional occurrences that triggered the assessment occur.

If an airport has an advisory for wildlife in the Airport Facility Directory (AFD), they will be required to have an initial consultation and site visit. If it is determined that a wildlife hazard assessment is required, then one must be accomplished.

FAA Advisory Circulars that may assist you with compliance with this section are listed below.

AC 150/5200-33, *Hazardous Wildlife Attractants on or Near Airports*, provides guidance on locating certain land uses having the potential to attract hazardous wildlife to or in the vicinity of public-use airports.

AC150/5200-32, *Announcement of Availability: Bird Strike Incident/Ingestion Report*, explains the nature of the revision of FAA Form 5200-7, Bird Strike Incident/Ingestion Report and how it can be obtained.

AC 150/5200-34, *Construction or Establishment of Landfills near Public Airports*, contains guidance on complying with new Federal statutory requirements regarding the construction or establishment of landfills near public airports.

139.339 Airport condition reporting.

The airport is required to collect and disseminate the airport condition to all air carriers. They can use the NOTAM system or another system approved by your ACSI to accomplish this requirement. Airport conditions that may affect the safe operations of air carriers are listed under section 139.339(c)(1-9). The airport must keep a record of each dissemination of airport condition to air carriers for 12 consecutive calendar months.

FAA Advisory Circulars that may assist you with compliance with this section are listed below.

AC 150/5200-28B, *Notices to Airmen (NOTAMS) for Airport Operators*, provides guidance for use of the NOTAM system in airport condition reporting.

139.341 Identifying, marking, and lighting construction and other unserviceable areas.

The airport is responsible for the marking and lighting of construction and unserviceable areas, construction equipment and roadways, and areas adjacent to a NAVAID that may cause the derogation of the signal or failure of the NAVAID. They must also include procedures for avoiding damage to existing utilities and other underground facilities.

The best way to comply with this section is to have a thorough construction safety plan. The safety plan must include all the items required by this section.

FAA Advisory Circulars that may assist you with compliance with this section are listed below.

AC 150/5345-55, *Lighted Visual Aid to Indicate Temporary Runway Closure*, provides guidance in the design of a lighted visual aid to indicate temporary runway closure.

139.343 Noncomplying conditions.

An airport must limit air carrier operations to only those parts of the airport that are safe for air carrier operations. If any of the requirements of subpart D cannot be met to the extent that unsafe conditions exist on the airport, it is the responsibility of the airport to close those areas to air carrier use until they are brought back into compliance.

Example: Disabled aircraft or vehicles on a runway or taxiway, taxi routes with inadequate wing tip clearance, or parking aprons that will not support the weight or turning radius due to design or condition.

SUMMARY

The following steps would need to be taken for 14 CFR Part 139 compliance at French Valley Airport:

1. Prepare and submit a Class III Airport Certification Manual (ACM) to the FAA.
2. Prepare ground vehicle operating rules and regulations.
3. Prepare a ground vehicle training program.
4. Prepare a training program for airport personnel involved with Part 139 implementation.
5. Ensure that FBOs comply with the fuel training requirements.
6. Develop a record-keeping system for the following:
    a. Personnel training (24 Months)
    b. Emergency personnel training (24 Months)
    c. Airport tenant fueling inspection (12 Months)
    d. Airport tenant fueling agent training (12 Months)
    e. Self-inspection (6 Months)
    f. Movement areas and safety areas training (24 Months)
    g. Accident and incident (12 months)
    h. Airport Condition (6 Months)
7. Prepare and submit an Airport Emergency Plan to the FAA.
8. Acquire an ARFF vehicle and comply with ARFF training and operational requirements.

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