AIRPORT MASTER PLAN

OXNARD AIRPORT

AIRPORT MASTER PLAN

FOR

OXNARD AIRPORT
Oxnard, California

Prepared For
Ventura County

By
Coffman Associates, Inc.

August 2004

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Oxnard, California

Airport Master Plan

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INTRODUCTION AND SUMMARY

INTRODUCTION AND SUMMARY

The Oxnard Airport Master Plan is being prepared to provide the community and public officials with proper guidance for future development that addresses aviation demands and is wholly compatible with the environment. This study has the specific objective of re-examining the recommended direction from the 1996 Draft Airport Master Plan. This will include incorporating subsequent changes where conditions and circumstances may have invalidated previous recommendations within the context of the airport mission statement. Still valid concepts may be retained, while new concepts will be developed for those alternatives that are either no longer valid or considered to be unacceptable or unworkable. Coordination between Ventura County (Sponsor), local, regional, state, and federal agencies, and the consultant team will be essential to bringing together all facts and data relevant to the project and to developing a mutual agreement regarding future development of the airport.

The Master Plan will provide recommendations from which the County may take action to maintain and improve the airport and all associated services important to public needs, convenience, and economic growth. The Master Plan is intended to benefit all residents of the area by providing a comprehensive plan which supports and balances continued opportunity for aviation activities and the environmental preservation of the surroundings.

AIRPORT MISSION STATEMENTS

The mission statements for both the Ventura County Department of Airports and the Oxnard Airport are provided here for reference and guidance during the preparation, review, and implementation of the Oxnard Airport Master Plan.

DEPARTMENT OF AIRPORTS MISSION STATEMENT

- To provide safe, efficient, maintained, and accessible facilities for the provision of general aviation and limited commuter airline service needs of the citizens of Ventura County.
- To limit the development of Camarillo and Oxnard Airports to meet the forecasted needs of general aviation and commuter airline services in a manner that will complement each other.
- To optimize the use of present airport land, maximize safety, assure financial feasibility, and minimize the negative environmental effects on the surrounding communities.

OXNARD AIRPORT MISSION STATEMENT

Oxnard Airport shall:

- be a publicly owned, operated, and managed general aviation airport with a strong emphasis on safety, cooperation with its neighbors, and responsible flight operations.
- maintain a viable center for air commerce, which enhances trade and business for the economic development and transportation needs of the City of Oxnard and Ventura County.
- make every reasonable effort to limit the hours of air operations through a curfew, and to reduce noise and air pollution nuisances caused by airport users and operations.
- provide the region with safe and efficient access to the national air transportation system and general aviation.
- continue to search for a regional airport to serve the air carrier and commercial needs of the City of Oxnard and Ventura County.

SUMMARY AND RECOMMENDATIONS

The proper planning of a facility of any type must consider the demand that may occur in the future. For Oxnard Airport (OXR), this involved updating forecasts to identify potential future aviation demand. Because of the cyclical nature of the economy, it is virtually impossible to predict with certainty year-to-year fluctuations in activity when looking five, ten, and twenty years into the future.

Recognizing this reality, the Master Plan is keyed more to potential demand "horizon" levels than future dates in time. These "planning horizons" were established as levels of activity that will call for consideration of the implementation of the next step in the Master Plan program. By developing the airport to meet the aviation demand levels instead of specific points in time, the airport will serve as a safe and efficient aviation facility which will meet the operational demands of its users while being developed in a cost efficient manner. This program allows the County to change specific development in response to unanticipated needs or demand.

The forecasts of aviation activity at Oxnard Airport were developed taking into account the two mission statements. This results in forecasts that are somewhat constrained compared to those developed by previous planning efforts. The forecast planning horizons are summarized in **Table A** and **Exhibit A**.

TABLE A
Aviation Demand Planning Horizons
Oxnard Airport

	Current	Short Term	Intermediate Term	Long Term
ANNUAL OPERATIONS				
Commuter	3,650	4,500	5,600	6,500
Air Taxi	9,756	11,500	12,600	14,500
Military	1,541	1,500	1,500	1,500
General Aviation	73,803	78,200	83,900	92,700
Total Operations	88,750	95,700	103,600	115,200
ANNUAL PASSENGERS				
Enplanements	22,829	35,000	45,000	60,000
Based Aircraft	142	150	158	170

Exhibit A also presents historic activity for the four primary activity indicators. It is evident from this exhibit that the long term planning horizon activity levels for based aircraft and operations will remain well below levels attained in the 1990's. The long term horizon for enplanements is just slightly above the 1990 high level.

The Airport Layout Plan set acts as a blueprint for everyday use by management, planners, programmers, and designers. These plans were prepared on computer to help ensure their continued use as an everyday working tool for the Department of Airports.

As indicated in the introduction, this Master Plan is intended to re-examine the recommended direction of the 1996 Draft Master Plan that was never adopted by the County Board of Supervisors.

The principal airfield recommendations focus upon safety, security, and compatibility. It is of key importance to ensure that airport design standards are upheld to the maximum extent feasible, particularly in relation to the runway safety area (RSA). Other recommendations are provided to improve the efficiency and circulation on the airfield. **Exhibit B** depicts the airfield recommendations.

Runway 7-25 will remain the only runway at Oxnard Airport. The runway is currently 5,950 feet long and 100 feet wide with a pavement strength of 70,000 pounds dual wheel loading. It is planned to remain at this pavement strength to continue to accommodate the design aircraft indicated earlier.

An analysis of the runway's safety area requirements indicated that the runway does not meet the FAA design standards for the approach category C and D aircraft that regularly use the airport. The RSA beyond the east end of the runway extends for approximately 750 feet before reaching the airport's perimeter service road. The recommended plan for the east end involves relocating the departure end threshold for Runway 7 250 feet to the west.

It is also recommended that, in the interest of safety and to minimize disruption of airline service, the airport continue to improve its instrument approaches. This will likely mean improving approach minimums as improved capabilities become available through GPS (global positioning system).

Exhibit B also depicts the property acquisition recommendations. All property acquisitions are related to direct control of land use for the enhancement of safety. The intent is to either clear properties, maintain undeveloped properties, or to at least maintain current uses with no new development.

Recommended landside improvements are primarily associated with maintenance, redevelopment, and modernization of existing facilities. The facility requirements indicated that, with the addition of previously approved executive hangars, and the replacement of Hangar One, facilities area should be adequate from a space standpoint. Older hangar facilities may require replacement during the planning period. In addition, future mandates in security could require alterations in the terminal area.

The primary improvement items over the planning horizons include the following:

Short Term

- Meet changing security needs.
- Continue pavement rehabilitation and maintenance

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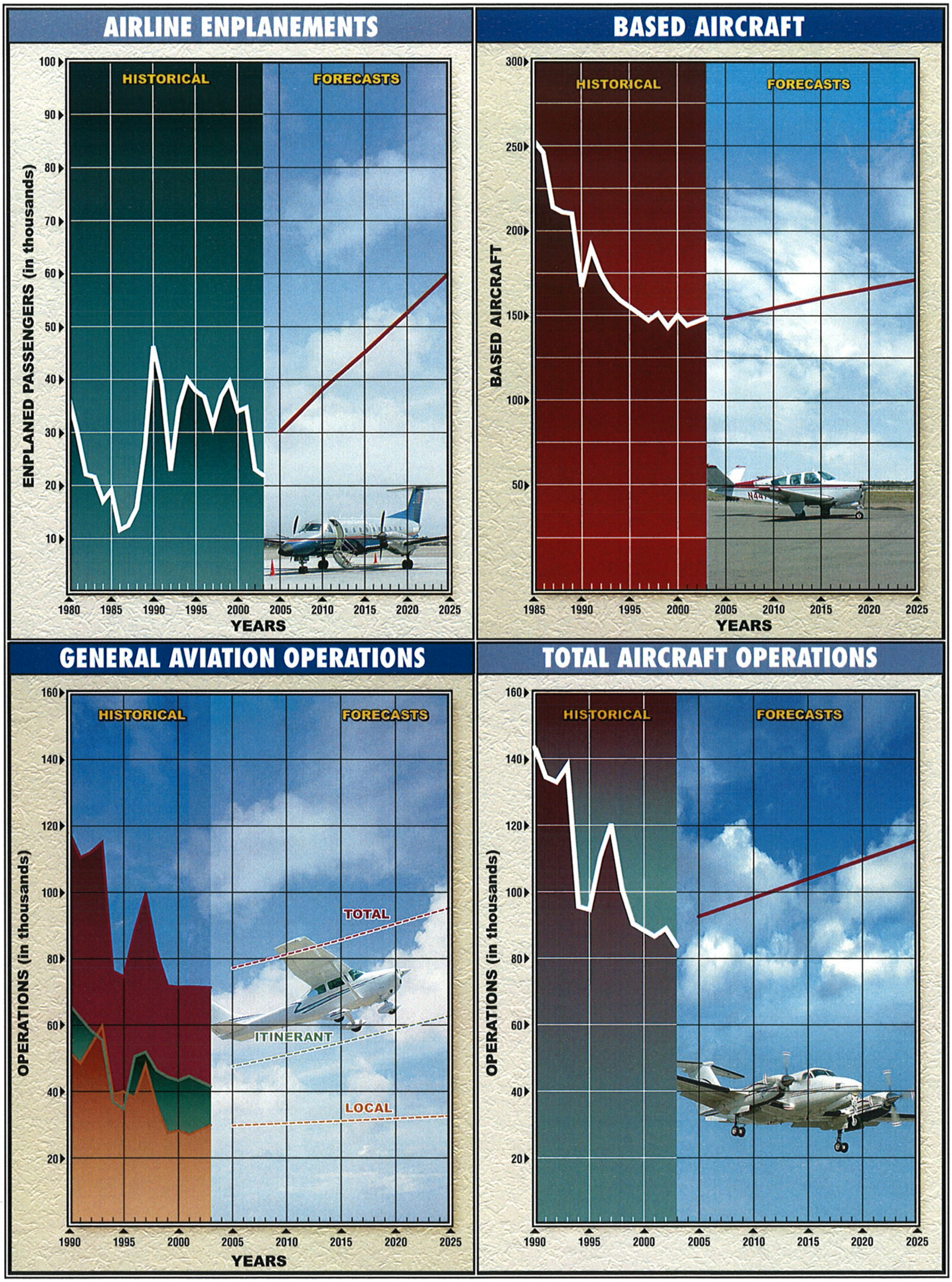

Exhibit A
AIRPORT ACTIVITY
HISTORIC AND FORECAST

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Exhibit B
RECOMMENDED PLAN

- Correct extended RSA off east end of runway
- Construct blast pad off east end of runway
- Continue fee simple and easement acquisitions for safety enhancement
- Repair and maintain existing structures as necessary
- Make security improvements as may become necessary

Intermediate Term

- Improve Runway 7 GPS approach minimums by installing approach light system
- Continue airport facility rehabilitations and modernizations
- Remodel terminal building

Long Term

- Continue rehabilitation and modernization of facilities as necessary.

The full implementation of the Master Plan would involve a financial commitment of $16.4 million over the planning period (**Table B**). Approximately 90 percent of the total costs will be eligible for grants-in-aid administered by the Federal Aviation Administration (FAA). The source of these grants is the Aviation Trust Fund which is a depository for aviation taxes such as those from airline tickets, aviation fuel, aircraft registrations, and other aviation-related fees. Most eligible projects can receive up to 95 percent funding from the FAA.

Primary commercial service airports such as Oxnard Airport qualify for entitlement funding through the program. Oxnard Airport is currently earmarked for $1.0 million in annual entitlement funds annually. These funding levels, however, are not guaranteed. The amount of federal funding that will be made available will depend upon the future of the Airport Improvement Program.

TABLE B
CIP Financial Assumptions (2004 $)

	Short Term	Intermediate Term	Long Range
Total Project Costs	$6,757,000	$3,171,000	$6,500,000
Grant Eligible	$5,997,900	$3,012,450	$5,795,000
AIP Entitlements	$5,000,000	$7,000,000	$10,000,000
State Funding	$0	$0	$0
Remaining Grant Eligible Costs	$997,900	$0	$0
Matching Share Costs	$439,100	$158,550	$305,000
Remaining PFC-Eligible Costs	$1,437,000	$158,550	$305,000
Passenger Facility Charges (PFC)	$722,400	$1,227,650	$2,289,750
Remaining Matching Share	714,600	$0	$0
Non-Eligible Costs	$320,000	$0	$400,000
Remaining Airport CIP Costs	$1,034,600	$0	$400,000

The Ventura County Department of Airports will need to use other sources of airport-generated funding as well. Commercial service airports such as Oxnard Airport have been authorized by Congress to impose passenger facility charges (PFCs) as a means to collect revenues for airport improvements. A PFC of up to $4.50 is allowed. The airport has been authorized at this maximum level and currently uses the revenue to fund eligible projects in excess of the entitlement funding received. Most of the projects not eligible for federal funding can be funded from the revenue they generate.

CONCLUSIONS

In conclusion, the Master Plan is reviewed with regard to the Department of Airports and Oxnard Airport Mission Statements.

DEPARTMENT OF AIRPORTS MISSION STATEMENT

- ***To provide safe, efficient, maintained, and accessible facilities for the provision of general aviation and limited commuter airline service needs of the citizens of Ventura County.***

The Master Plan concept preserves the current general aviation and commuter activities for which Oxnard Airport is used. It includes recommendations to enhance safety and efficiency, as well as to maintain existing facilities.

- ***To limit the development of Camarillo and Oxnard Airports to meet the forecasted needs of general aviation and commuter airline services in a manner that will complement each other.***

The Master Plan utilizes a forecast that takes into account the following development qualifiers:

- No increase in runway length.
- No significant increase in terminal space.
- Planning to maintain and serve based aircraft levels equal to its current market share of registered aircraft in the county.

- ***To optimize the use of present airport land, maximize safety, assure financial feasibility, and minimize the negative environmental effects on the surrounding communities.***

With the exception of an approach light system, segmented circle relocation, and perimeter fencing, all development in the Master Plan will occur on current airport property. The only property acquisitions recommended are those designed to enhance operational safety.

OXNARD AIRPORT MISSION STATEMENT

Oxnard Airport shall:

- ***be a publicly owned, operated, and managed general aviation airport with a strong emphasis on safety, cooperation with its neighbors, and responsible flight operations.***

The Master Plan is based upon maintaining the Oxnard Airport as a County-owned and operated airport. It remains open to general aviation activity that can operate within the constraints of its facilities. The major improvement recommendations for the airfield are based upon meeting airport design standards to the extent feasible.

- ***maintain a viable center for air commerce, which enhances trade and business for the economic development and transportation needs of the City of Oxnard and Ventura County.***

The Master Plan continues to provide for maintenance and modernization of existing terminal area facilities to serve the needs of its users. The plan does consider growth in general aviation and airline traffic beyond the current levels of activity in support of economic development and transport-ation needs of the City and County.

- ***make every reasonable effort to limit the hours of air operations through a curfew, and to reduce noise and air pollution nuisances caused by airport users and operations.***

Since the Master Plan is primarily a facility-related plan, the consideration of limited hours and/or curfews is beyond the purview of the Master Plan. The Master Plan is also limited in means to reduce noise and air pollution. The Master Plan, however, does not recommend any improvements that would increase the potential for noise and air pollution.

- ***provide the region with safe and efficient access to the national air transportation system and general aviation.***

Safety, maintenance, and modernization of the Oxnard Airport is the primary emphasis of the Master Plan. The plan will allow the airport to continue to be a regional access to the national air transportation system.

- ***continue to search for a regional airport to serve the air carrier and commercial needs of the City of Oxnard and Ventura County.***

The limited development recommendations of the Master Plan are based in large part on the continued search for a new airport. The Master Plan recognizes that the forecasts for Oxnard Airport fall well short of meeting the commercial service demand in Ventura County. As other commercial airports in the Los Angeles Basin reach their capacities, it will become more incumbent upon the County to have access to adequate airport facilities to serve the needs of its citizens, businesses, and economic well-being.

OXNARD AIRPORT

Chapter One
INVENTORY

CHAPTER ONE

INVENTORY

The initial step in the preparation of an airport master plan is the collection of information that will provide a basis for further analysis in subsequent chapters. Information is gathered regarding not only the airport but also the region it serves. This chapter will begin with an overview of the existing conditions at Oxnard Airport consisting of airport facilities, airspace, and the airport's role in regional, state, and national aviation systems. This will be followed by background information regarding Ventura County, the City of Oxnard, and the regional area, including information regarding surface transportation and the socioeconomic profile.

Information provided in this chapter was obtained through on-site inspections of the airport, interviews with airport management, airport tenants, and various governmental agencies. Information was also obtained from available documents and studies, both in print and online, concerning the Oxnard Airport and the Ventura County area.

HISTORICAL PERSPECTIVE

The current airport setting and configuration is depicted on **Exhibit 1A**. Oxnard Airport was opened by Ventura County in 1934 with a 3,500-foot dirt runway. In 1938, the runway was paved and a large hangar, now referred to as Hangar Two, was constructed by the Works Progress Administration (WPA). After the completion of these improvements, the Oxnard Flying School began operations in 1939 with two aircraft. In 1940, the U.S. Army Air Corps established a primary training base for its pilots at the airport. The training facility was named the Mira Loma Flight Academy. During the Air Corps tenure at the airport, two more hangars, Hangar One and Hangar Three, and a housing facility were constructed. The housing facility, that was used to house the pilots and their trainers, still exists across the street from the airport and is now the Mira Loma Apartments.

The declaration of war in December 1941 resulted in the relocation of the Oxnard Flying School to Boulder City, Nevada as civilian flying was not allowed within 200 miles of the coastline. The Army Air Corps continued training at the airport prior to 1944 when the airport was reassigned to the U.S. Navy until the Naval Air Station at Point Mugu could be completed. In 1945, the Navy relocated to the completed station at Point Mugu and the Oxnard Flying School returned to the airport. Control of the airport was returned to Ventura County by the federal government in 1948 and in the following year, the State of California issued the airport an operating permit.

Scheduled airline flights began in 1946 by Southwest Airlines and later Pacific Airlines. Since that time, a number of commercial service providers have served the airport including Cable, Golden West, Wings West, American Eagle, Mesa, and America West Express.

Major improvements at the airport have included the construction of an airport traffic control tower in 1960, the extension of Runway 7-25 to 5,947 feet in 1963, construction of a terminal building in 1971, the installation of taxiway lighting in 1973, and the installation of precision instrument landing and approach lighting systems in 1976. It should also be noted that in 1974 radar approach control was established at Point Mugu, thereby allowing positive radar coverage to aircraft flying into and out of Oxnard Airport.

In October 1994, Hangar One, the original hangar constructed at the airport, was lost to fire. Plans are underway to replace this hangar with a corporate hangar and office complex which will serve the general aviation community at the airport.

Currently, Oxnard Airport is positioned to serve all segments of the civil air transportation industry as it has facilities to accommodate commercial airline activity and general aviation users.

The commercial airline segment of the air transportation industry includes all air carriers providing scheduled air service. Currently, regularly scheduled commercial service is provided by Sky West Airlines, operating under a code share agreement with United Airlines as United Express.

General aviation is the largest and most diverse segment of the air transportation industry. General aviation aircraft constitute 97 percent of all civil aircraft in the United States today. Use of these aircraft covers a broad spectrum of activities from personal and recreational flying to air ambulance to business and commercial uses such as aerial applicators, aerial surveyors and photographers, and the non-scheduled transport of company staff from one location to another. General aviation aircraft range from one and two seat piston-powered

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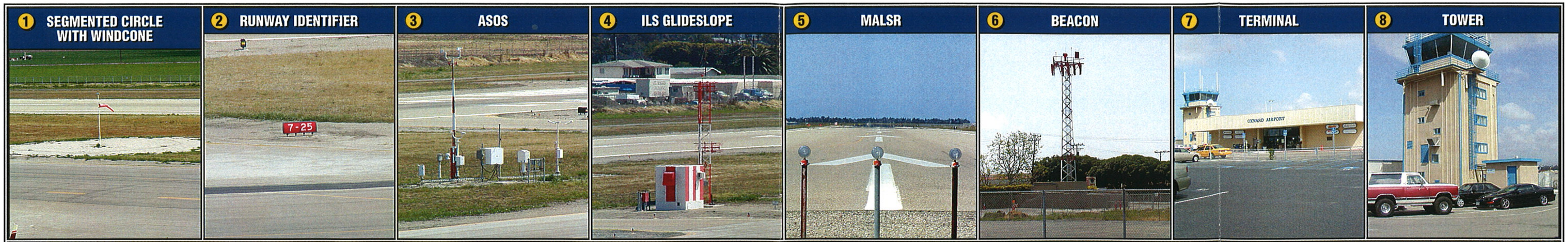

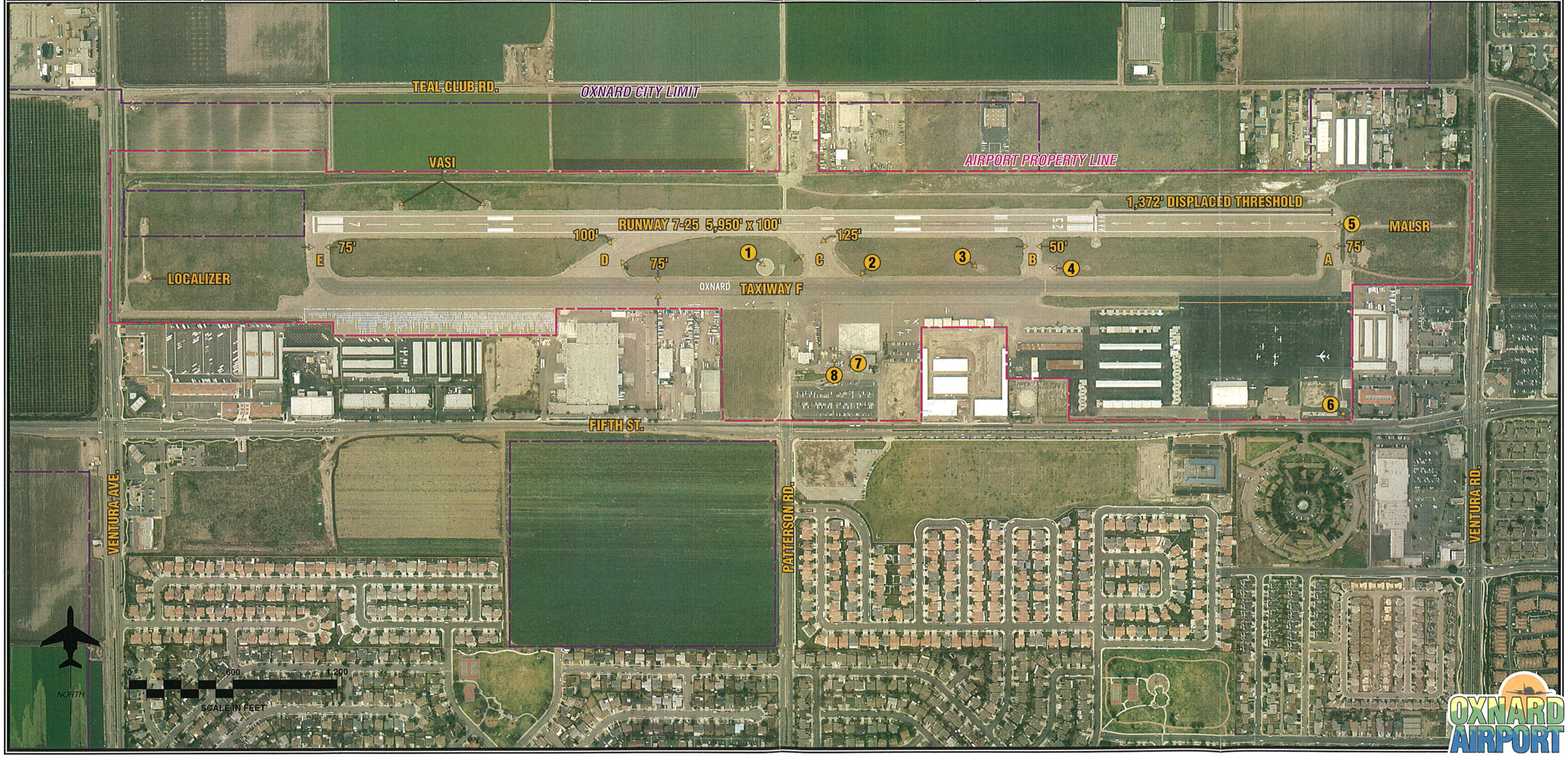

Exhibit 1A
EXISTING AIRFIELD FACILITIES

aircraft to long-range business jet aircraft capable of flying non-stop to international destinations. In the spring of 2002, there were 144 aircraft based at Oxnard Airport.

THE AIRPORT'S SYSTEM ROLE

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

At the national level, the airport is included in the National Plan of Integrated Airport Systems (NPIAS). The NPIAS includes a total of 3,660 airports (both existing and proposed) which are important to national air transportation. Oxnard Airport is classified as a primary commercial service airport within the NPIAS.

At the state level, the airport is included in the **California Aviation System Plan** (CASP) as one of 29 primary commercial service airports in the State of California.

At the regional level, the airport is included in the **Southern California Association of Government's Regional Aviation Plan**. This plan encompasses 65 airports including six air carrier airports, three commuter airports, 45 general aviation airports, and 11 existing or recently closed military installations. Within this plan, Oxnard Airport is classified as a commuter airport.

AIRPORT ADMINISTRATION

Oxnard Airport is a commercial service airport owned by Ventura County and operated by the Ventura County Department of Airports which is charged with the day-to-day operation, repair, maintenance, and administration of the airport. The Department of Airports oversees Oxnard and Camarillo airports and is staffed with 32 employees. Of these 32 staff members, ten are allocated directly to Oxnard Airport.

The airport is overseen by the Ventura County Board of Supervisors. The Board receives recommendations from the Ventura County Airport Advisory Commission, which is concerned with the technical aspects of the airport, and the Oxnard Airport Authority, which is concerned with the business aspects of the airport.

The Aviation Advisory Commission, which makes recommendations on both Oxnard and Camarillo airports, consists of ten appointed members. The members are appointed by the County Board of Supervisors. Each supervisor appoints two individuals to serve on this commission.

The Airport Authority is responsible for only Oxnard Airport and consists of five members - two members from the Board of Supervisors, two members from the Oxnard City Council, and one member from the public.

AIRPORT SETTING

The City of Oxnard lies equidistant between Santa Barbara and Los Angeles, approximately 62 miles from each. **Exhibit 1B** depicts the city in its regional setting. Oxnard Airport lies one and one-half miles east of the Pacific coastline, and is situated along the coastal edge of the 200-square mile Oxnard Plain. The airport is located on approximately 216 acres of land in the northwest portion of the City of Oxnard.

AIRPORT FACILITIES

This section presents a description of the existing facilities at Oxnard Airport. These facilities can be divided into two distinct categories, airside facilities and landside facilities. Airside facilities include those directly associated with aircraft operation. Landside facilities include those necessary to provide a safe transition from surface-to-air transportation and support aircraft servicing, storage, maintenance, and operational safety.

AIRSIDE FACILITIES

Airside facilities, previously depicted on **Exhibit 1A**, are those facilities directly associated with the safe and efficient movement of aircraft on the airport. In most cases, airside facilities dictate the types and levels of aviation activity capable of operating at an airport. Airside facilities include runways, taxiways, airport lighting, and navigational aids. Airside facility data is discussed in detail below and is summarized in **Table 1A**.

Runways

Oxnard Airport is equipped with a single 5,950-foot long by 100-foot wide runway. This runway, Runway 7-25, is oriented in an east-west alignment. Due to obstructions in the east approach, the Runway 25 landing threshold has been displaced 1,372 feet to the west, which reduces the landing length available for Runway 25 to 4,578 feet.

Runway 7-25 has an asphalt surface and is strength-rated for 50,000 pounds single-wheel loading (SWL) and 70,000 pounds dual-wheel loading (DWL). SWL refers to the design of the aircraft landing gear that has a single wheel on each main landing gear strut and DWL refers to a landing gear that has dual wheels on each main landing strut.

Taxiways

The taxiway system at Oxnard Airport, as depicted on **Exhibit 1A**, consists of a full length parallel taxiway and five connecting taxiways, all located on the south side of Runway 7-25.

Taxiway F is the full length parallel taxiway. This taxiway is 75 feet wide and provides access to all apron and hangar facilities on the airport.

Taxiways A, B, C, D, and E are connecting taxiways providing access between the runway to Taxiway F. Taxiways A (east end) and E (west end) are 75-foot wide right angle taxiways which provide access for aircraft taking off and exiting from both ends of the runway.

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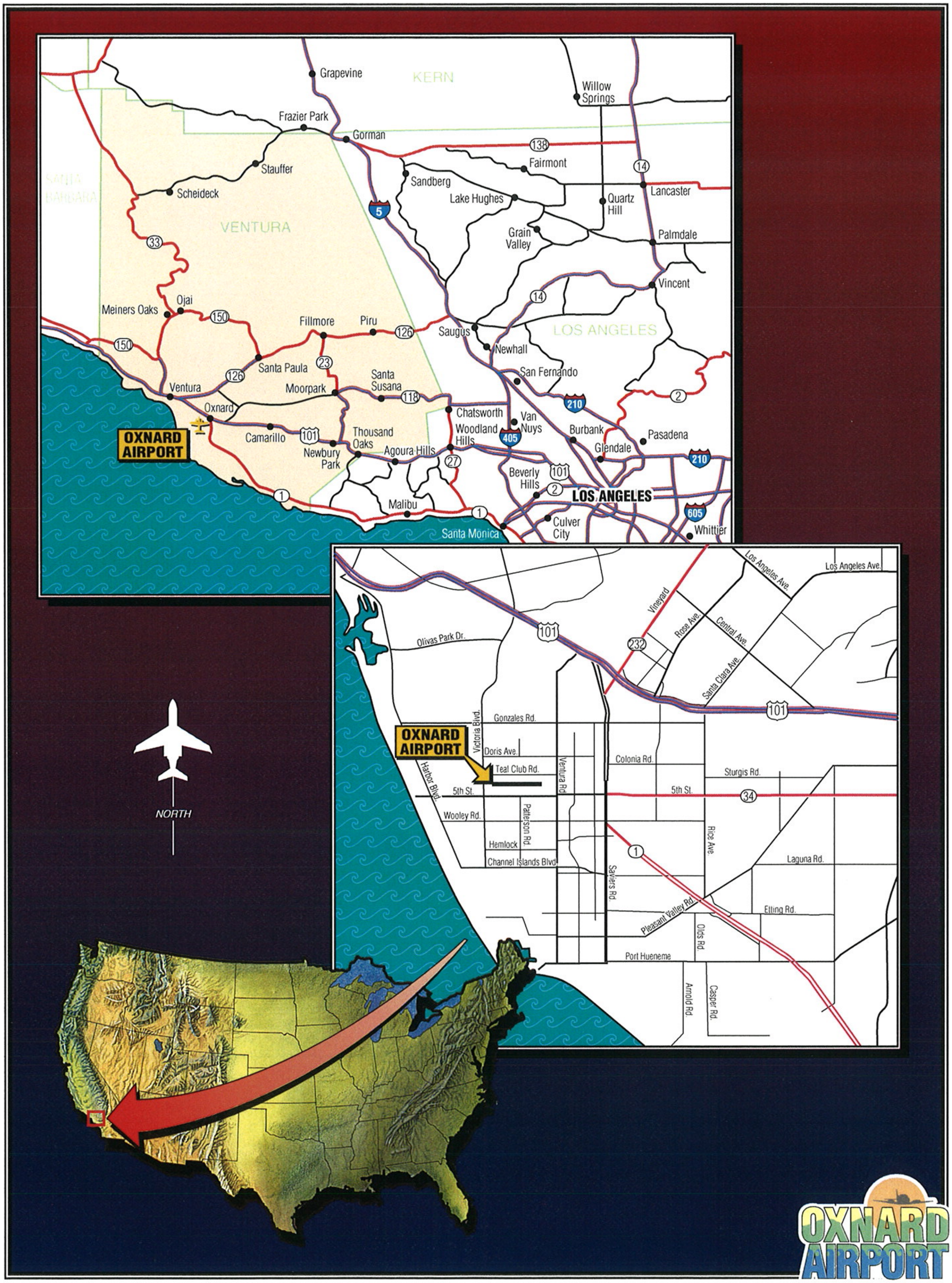


Exhibit 1B
LOCATION MAP

TABLE 1A
Runway Data
Oxnard Airport

	RUNWAY	
	7	**25**
Runway Length (feet) Runway Width (feet)	5,950' 100'	
Runway Surface Surface treatment	Asphalt Grooved	
Displaced Threshold	No	1,372'
Runway Load Bearing Strength (pounds) Single Wheel Loading (SWL) Dual Wheel Loading (DWL)	50,000 70,000	
Runway Lighting	MIRL	
Approach Lighting	No	MALSR
Runway Pavement Markings	Non-precision Instrument	Precision Instrument
Visual Slope Indicator	VASI-4	PAPI-2
Instrument Approach Procedure	GPS	ILS
Traffic Pattern	Left	Left
Taxiway Lighting	MITL	
Taxiway, Taxilanes, Apron Pavement Markings	Centerline markings, signage	
Other Facilities	ASOS, Segmented Circle, Wind Cones	
Airport Elevation	42.5 MSL	

MIRL/MITL: Medium intensity runway/taxiway lighting
MALSR: Medium intensity approach lighting system with runway alignment indicator lights
VASI: Visual approach slope indicator
PAPI: Precision approach path indicator
ASOS: Automated surface observation system

Taxiway B is a 50-foot wide exit taxiway located approximately 1,500 feet west of the displaced threshold for Runway 25. Taxiways C and D are angled exit taxiways. Taxiway C is 125 feet wide and is angled to serve Runway 25 landings. Taxiway D is 100 feet wide and is angled to serve as an exit for Runway 7 landings.

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 Oxnard Airport for this purpose. These lighting systems, categorized by function, are summarized as follows.

- IDENTIFICATION LIGHTING

The location of an airport at night is universally indicated by a rotating beacon which projects two beams of light, one white and one green, 180 degrees apart. The rotating beacon at Oxnard Airport is located in the southeast corner of the airfield near Fifth Street.

- RUNWAY AND TAXIWAY LIGHTING

Runway and taxiway lighting are light fixtures placed near the pavement edge to define the lateral limits of the pavement. This lighting is essential for maintaining safe operations at night and/or during times of poor visibility in order to maintain safe and efficient access from the runway and aircraft parking areas.

Runway 7-25 is equipped with medium intensity runway lighting (MIRL). Medium intensity taxiway lighting (MITL) has been installed on its associated taxiways.

- APPROACH LIGHTING

Approach lighting systems (ALS) consist of a configuration of signal lights that extend into the approach area from the runway threshold. The purpose of an ALS is to aid pilots in transitioning from instrument flight to visual flight for landing. A medium intensity approach lighting system with runway alignment indicator lights (MALSR) is installed at the end of Runway 25 to assist pilots in landing to the west during inclement weather conditions. The MALSR extends for 2,800 feet from the displaced runway threshold.

Two types of visual approach slope guidance aids are utilized at the airport: visual approach slope indicator (VASI) and precision approach path indicator PAPI). While configured differently, the VASI and PAPI have a similar purpose of providing visual approach slope guidance to pilots. Generally, each lighting aid consists of a system of lights, located at various distances from the runway threshold which, when interpreted by the pilot, give him or her an indication of being above, below, or on the designed descent path to the runway.

The two-box PAPI (PAPI-2) system installed for Runway 25 is located on the left, approximately 400 feet past the displaced threshold. Runway 7 is equipped with a four-box VASI (VASI-4) system which is located on the left side of the runway approximately 400 feet from the runway threshold.

- AIRFIELD SIGNS

Airfield identification signs assist pilots in identifying their location on the airfield and direct them to their desired location. Lighted airfield signs at Oxnard Airport are located along Runway 7-25 and its associated taxiways. They are also used to identify aircraft hold positions, taxiway intersections, as well as the intersection of the connecting taxiways and runway.

- PILOT-CONTROLLED LIGHTING

The MIRL and MALSR systems on Runway 7-25 can be controlled through a pilot-controlled lighting system (PCL) when the airport federal control tower (FCT) is closed. This system allows pilots to turn on and/or increase the intensity of the lighting system from the aircraft with the use of the aircraft's radio transmitter.

Pavement Markings

Pavement markings aid in the movement of aircraft along airport surfaces and identify closed or hazardous areas on the airport. Non-precision instrument markings on Runway 7 identify the runway designations, centerline, touchdown point, and aircraft holding positions. Runway 25 has precision instrument markings that identify the runway centerline, designation, touchdown point, and pavement edge as well as the displaced threshold. Taxiway and apron centerline markings are provided to assist pilots in maintaining proper clearance from pavement edges and objects near the taxiway/taxilane edges. Pavement markings also identify aircraft tie-down positions and aircraft holding positions.

Other Facilities

The airport also has a lighted wind cone inside a segmented circle. A lighted wind cone provides information to pilots regarding wind conditions both day and night. The segmented circle consists of a system of visual indicators designed to provide traffic pattern information at airports. The segmented circle and wind cone are located midfield near the intersection of Taxiways C and F. Additional windcones are located near each end of Runway 7-25 between the runway and Taxiway F.

Air Traffic Control

Oxnard Airport has an FCT which provides traffic control services from 7:00 a.m. to 9:00 p.m. The purpose of the FCT is to control aircraft movement within the local Class D airspace and on the runway and taxiway system. Approach and departure control is provided by Point Mugu Approach Control between the hours of 7:00 a.m. and 11:00 p.m. Between the hours of 11:00 p.m. and 7:00 a.m., approach and departure control services are provided by the Los Angeles Air Route Traffic Control Center (ARTCC).

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. Air traffic advisories and certain weather information can be obtained using the airport CTAF. Enroute air traffic control services are provided through the Los Angeles ARTCC, which controls aircraft in a large multi-state area.

LANDSIDE FACILITIES

Landside facilities are the ground-based facilities that support the aircraft and pilot/passenger handling functions. These facilities typically include the passenger terminal complex, aircraft storage/maintenance hangars, aircraft parking apron and support facilities such as fuel storage, automobile parking, and roadway access. Landside facilities at Oxnard Airport are identified on **Exhibit 1C**.

Airline Terminal Facilities And Services

The airport terminal building is located at midfield, east of the FCT. Areas for airline ticketing and operations, baggage claim, rental car reservation offices, security screening, a lounge, and a restaurant are provided within the terminal building. **Exhibit 1D** depicts terminal area floor plan.

Fifth Street provides access to the airport. The terminal access road connects to this street and extends north to the terminal building. The two-lane, one-way road then turns west and runs between the terminal building and the vehicle parking lot. The terminal road ends at Patterson Road on the west side of the parking lot. Patterson Road returns traffic to a signaled intersection at Fifth Street.

The passenger pick-up or drop-off area consists of 160 feet of curb in front of the terminal building. Three vehicle parking lots are located within the terminal complex area. The public parking lot, located across the street from the terminal building, consists of 220 public and 36 rental car parking spaces. A total of 26 public spaces are designated for short term parking with the remaining spaces available for long term parking.

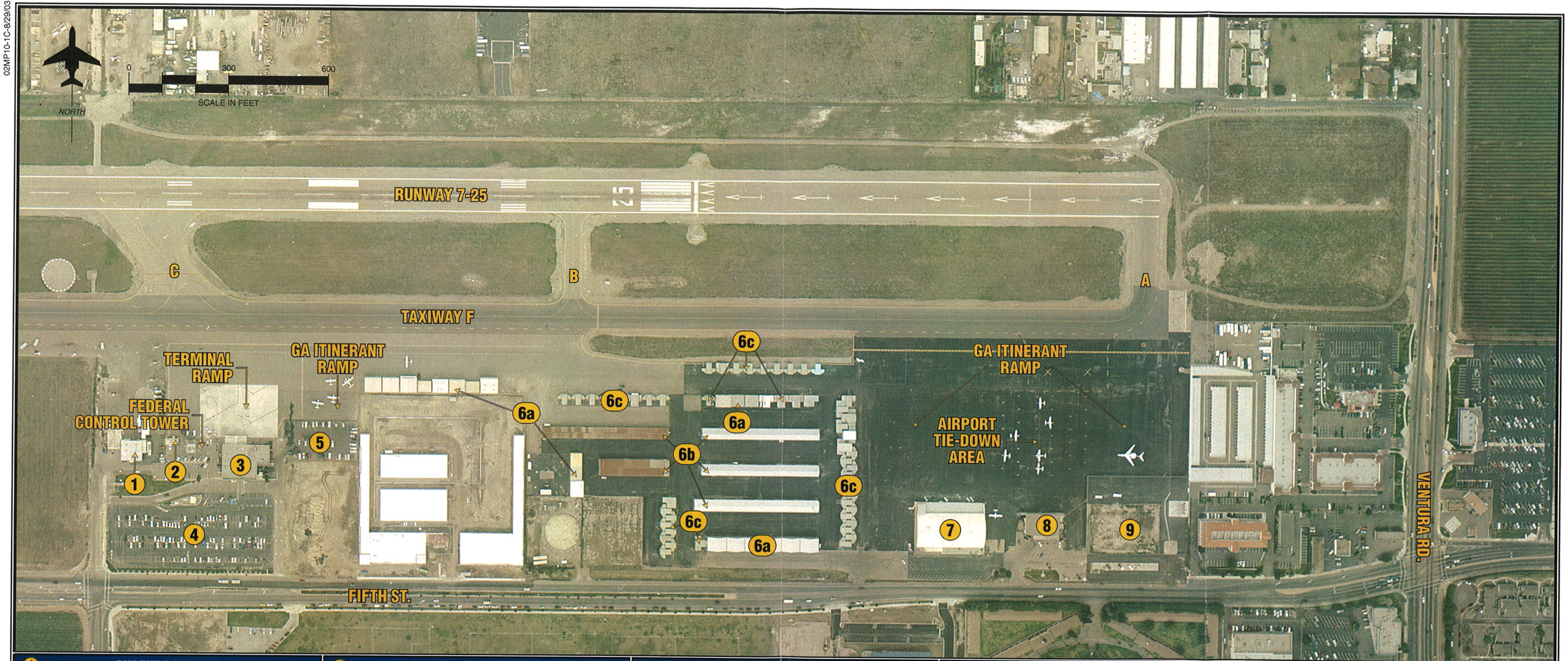
A rental car lot is located east of the terminal building. This lot provides 73 parking spaces for rental car storage and service.

A 43-space employee parking lot is located north and west of the terminal access road, near the base of the FCT. Access to this parking lot is provided via Patterson Road.

The terminal apron is located directly north of the terminal building. The apron provides for aircraft parking, access, and circulation for the commuter aircraft.

Scheduled air service at Oxnard Airport is provided by United Express using Embraer Brasilia 120 (EMB-120) aircraft. **Table 1B** summarizes the scheduled flights for the airport as of April 2002. All flights either arrive from or depart to Los Angeles International Airport.

02MP10-1C-8/29/03



1 MIDFIELD HANGAR

2 ARFF FACILITY

3 PASSENGER TERMINAL

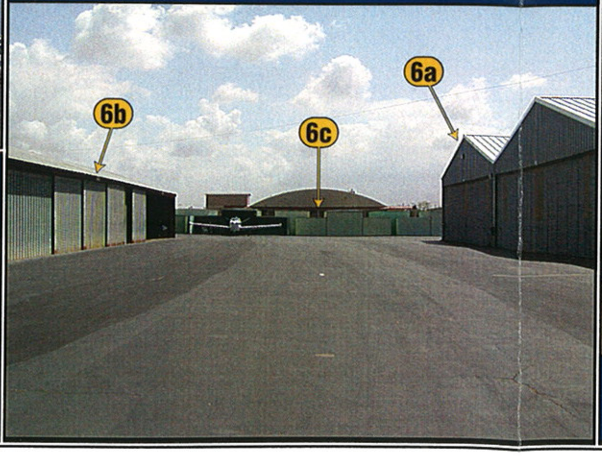
4 TERMINAL PARKING LOT

5 RENTAL CAR READY-RETURN PARKING LOT

6a EXECUTIVE HANGARS

6b T-HANGARS

6c PORT-A-PORT



7 HANGAR 3

8 HANGAR 2

9 FUTURE LOCATION FOR HANGAR 1

Exhibit 1C
LANDSIDE FACILITIES

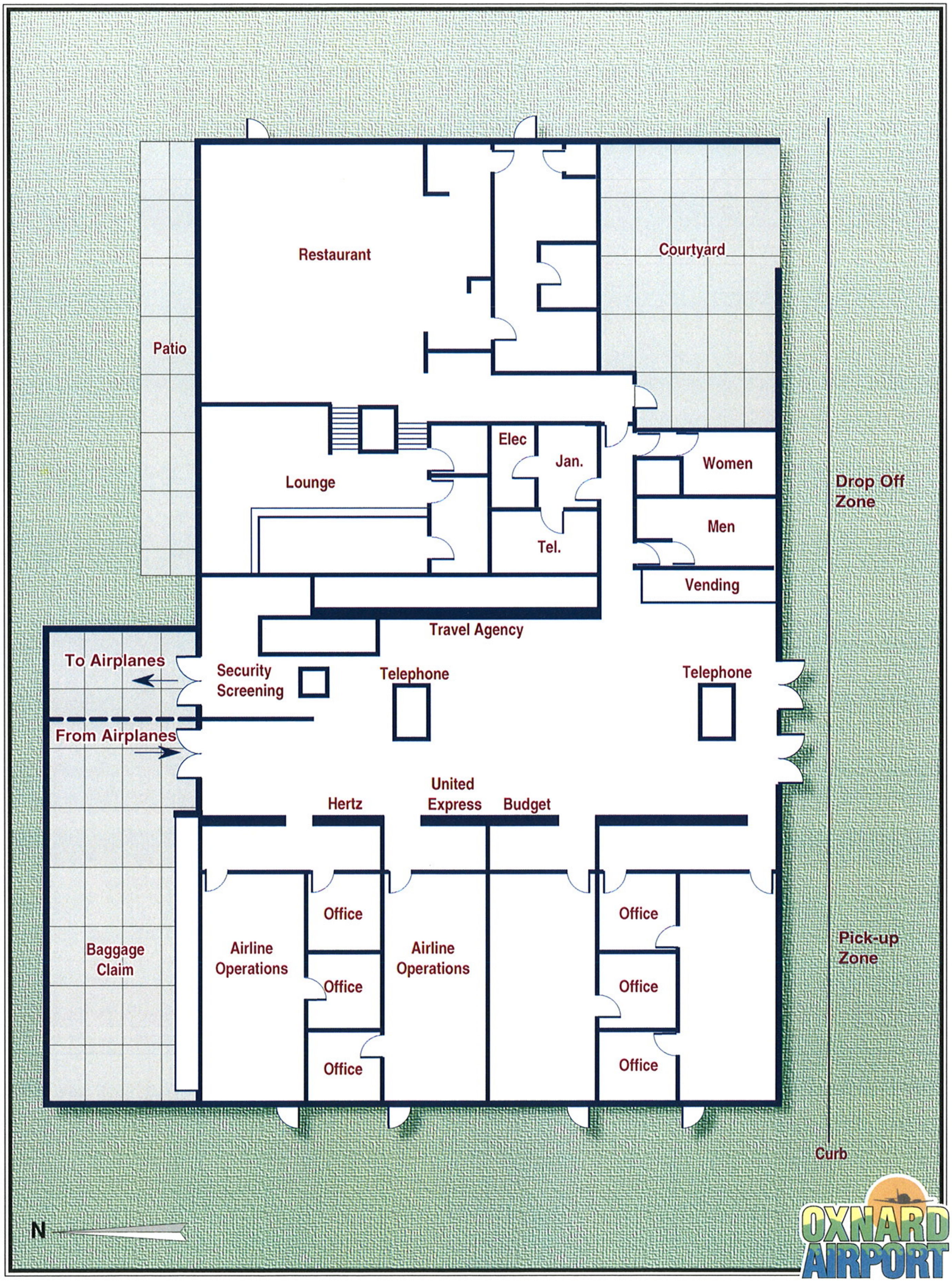


Exhibit 1D
EXISTING TERMINAL BUILDING

TABLE 1B Commercial Air Service Flight Schedule (April 2002)		
Flight Number	**Departure Time**	**Destination**
5133	7:15 a.m.	Los Angeles
5135	9:26 a.m.	Los Angeles
5137	11:40 a.m.	Los Angeles
5139	4:28 p.m.	Los Angeles
5141	8:29 p.m.	Los Angeles

General Aviation Facilities And Services

Oxnard Airport is also a full service general aviation airport. The general aviation facilities at Oxnard Airport are located both east and west of the terminal and are described in the following sections.

- FIXED BASE OPERATORS

One fixed base operator (FBO), Oxnard Jet Center, currently provides service at the airport. This FBO occupies Hangars Two and Three on the southeast side of the airport, as well as a hangar immediately west of the FCT. The FBO leases approximately 3,786 square feet of office space, 15,671 square feet of hangar space, and 10,000 square feet of ramp space in Hangars Two and Three. Aircraft parking, charters, fuel, catering services, aircraft maintenance, oxygen, pilot training, and aircraft rental are some of the services provided by this FBO within these hangars.

The midfield hangar contains 2,575 square feet of office space, 4,485 square feet of hangar space, and fronts 55,000 square feet of ramp space. Helicopter services are provided from this location.

- HANGAR AND AIRCRAFT STORAGE FACILITIES

Hangar facilities at Oxnard Airport include conventional hangars, executive hangars, T-hangars, and Port-a-Ports (portable hangars). All hangars, except the one occupied at midfield by Aspen Helicopters, are located east of the terminal facilities and are depicted on **Exhibit 1C.**

A total of three conventional hangars, 20 executive hangars, 53 T-hangars, and 51 Port-a-Ports are located at the airport. Of these hangars, 55 are privately-owned and 69 are owned by the airport. All of the conventional hangar space is presently occupied by the FBO or by other business enterprises.

There are 39 aircraft tie-downs located in front of Hangar Two. A total of 11 of these spaces are leased to the FBO: four are leased privately, and the rest are utilized by transient aircraft.

- FUEL FACILITIES

Fuel storage facilities consist of two 12,000-gallon Jet A fuel tanks and two 12,000-gallon AvGas fuel tanks. The FBO provides fueling services to both commercial and general aviation aircraft with the use of two Jet A fuel trucks and one AvGas fuel truck.

- AIRPORT RESCUE AND FIREFIGHTING

Airport rescue and firefighting (ARFF) services at Oxnard Airport are provided 24 hours a day. The ARFF facility, located at the base of the ATCT, is continuously staffed by one of five trained ARFF officers. ARFF quick response equipment includes one truck with the capacity for 600 gallons of water, 110 gallons of aqueous film forming foam (AFFF), and 500 gallons of dry chemicals.

- AIRPORT MAINTENANCE

Airport maintenance equipment is stored in a secured storage area in the maintenance and storage facility located north of the midpoint of Runway 7-25.

- GENERAL AVIATION AUTOMOBILE PARKING

A number of parking spaces are available near the various general aviation facilities at Oxnard Airport. The parking spaces include approximately 21 spaces at the midfield location of Aspen Helicopters, 23 spaces in front of Hangar Two, and 42 spaces in front of Hangar Three.

Weather Observations

An Automatic Surface Observation System (ASOS) is installed at Oxnard Airport. The ASOS provides automated aviation weather observations 24 hours a day. The system updates weather observations every minute, continuously reporting significant weather changes as they occur. The ASOS system reports cloud ceiling, visibility, temperature, dew point, wind direction and speed, and barometric pressure. The ASOS is located on the west side of the airfield.

Utilities

The City of Oxnard provides water and sewer services to the airport. Electrical service is provided by Edison and natural gas service is provided by the Southern California Gas Company.

Tenants

Table 1C contains a summary of the airport tenants at Oxnard Airport. The location of many of these business was previously depicted on **Exhibit 1C**.

AIRSPACE AND AIR TRAFFIC CONTROL

The Federal Aviation Administration (FAA) Act of 1958 established the FAA as the responsible agency for the control and use of navigable airspace within the United States. The FAA Western-Pacific Region, with offices in Lawndale, CA, controls the airspace in southern California.

TABLE 1C Airport Tenants Oxnard Airport			
Tenant	**Type of Business**	**Space Leased**	**Location**
AeroSpaceNews.com	aviation publication	office	Hangar Three
Aspen Helicopters/ Oxnard Jet Control	FBO, agricultural application services	office, hangar, ramp, storage	Hangar Two, midfield hangar
Bailey Industries	aircraft research and development	office, hangar, storage	Hangar Three
Camarillo Electronics	avionics storage	storage	general hangar area
Metro Computers	computers	office	Hangar Three
Reel Graphics	aircraft graphics	office	Hangar Three
TwinMill	aircraft research and development	land	east end of airport
ETR Graphics	printing	storage	general hangar area
Airport Travel	travel agency	airport counter	terminal building
Budget	car rental	airport counter, cargo	terminal building
Hertz	car rental	office, airport counter	terminal building
United Airlines	airline	office, airport counter, cargo	terminal building
Buky's BBQ	restaurant	restaurant	terminal building

The FAA has established the National Airspace System (NAS) to protect persons and property on the ground and to establish a safe and efficient airspace environment for civil, commercial, and military aviation. The NAS covers the common network of U.S. airspace, including: air navigation facilities; airports and landing areas; aeronautical charts; associated rules, regulations, and procedures; technical information; personnel and material. The system also includes components shared jointly with the military.

AIR TRAFFIC CONTROL

Air Route Traffic Control Center (ARTCC)

The FAA has established 21 ARTCCs in the continental United States to control aircraft operating under instrument flight rules (IFR) within controlled airspace and while in the enroute phase of flight. An ARTCC assigns specific routes and altitudes along federal airways to maintain separation and orderly air traffic flow. ARTCCs use radio communication and long range radar with automatic tracking capability to provide enroute air traffic services. Typically, the ARTCC splits its airspace into sectors and assigns a controller or team of controllers to each sector. As an aircraft travels through the ARTCC, one sector hands off control to another. Each sector guides the aircraft using discrete radio frequencies.

The Los Angeles ARTCC controls IFR aircraft entering and leaving the southern California area. The area of jurisdiction for the Los Angeles center includes most of the State of California, and portions of Nevada, Arizona, and Utah.

Radar Air Traffic Control Facility (RATCF)

The ARTCC delegates certain airspace to local terminal facilities which are responsible for the orderly flow of air traffic arriving and departing the major terminals. The Los Angeles ARTCC has delegated airspace to Point Mugu radar air traffic control facility (RATCF). The RATCF is staffed and operated by the U.S. Navy and is under contract with the FAA for terminal control of civilian aircraft.

RATCF uses direct radio communications and an automated radar terminal tracking system to control air traffic within its jurisdiction. Air traffic control services provided by Point Mugu RATCF include radar vectoring, sequencing and separation of IFR aircraft, and traffic advisories for all aircraft. The RATCF provides air traffic control services between 7:00 a.m. and 11:00 p.m. Between 10:00 p.m. and 6:00 a.m., air traffic control services are provided by the Los Angeles ARTCC.

Oxnard Airport Federal Control Tower (FCT)

The Oxnard Airport federal control tower operates daily from 7:00 a.m. to 9:00 p.m. local time, controlling aircraft movement within the Class D airspace and on the runway and taxiway systems. The IFR arrivals and departures from Oxnard Airport are coordinated with Point Mugu RATCF.

AIRSPACE STRUCTURE

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 for two basic categories of airspace, controlled and uncontrolled, and identifies them as Classes A, B, C, D, E, and G as described below.

Class A Airspace

Class A airspace is designated in F.A.R. Part 71.33 for positive control of aircraft. The area includes specified airspace within the coterminous United States from 18,000 feet above mean sea level (MSL) to and including Flight Level 600 (60,000 feet MSL). Within Class A airspace, only IFR operations are allowed. The aircraft must have special radio and navigation equipment and the pilot must obtain an air traffic control (ATC) clearance to enter Class A airspace. The pilot must have at least an instrument rating.

Class B Airspace

Class B airspace has been established at 29 high density airports in the United States as a means of regulating air traffic activity in these areas. They are established on the basis of a combination of enplaned passengers and volume of operations. Los Angeles International Airport (LAX), located 41 nautical miles (nm) south of Oxnard, is the only airport with Class B airspace in the area.

Class B airspace is designed to regulate the flow of uncontrolled traffic above, around, and below the arrival and departure airspace required for high performance, passenger-carrying aircraft at major airports. Aircraft operating in Class B airspace must have special radio and navigation equipment and must obtain an air traffic control (ATC) clearance. In order to operate within Class B airspace, a pilot must have at least a private pilot's certificate or be a student pilot who has met the requirements of F.A.R. 61.95, requiring special ground and flight training for Class B airspace. The LAX Class B airspace has an irregular shape due to the terrain and the number of airports in the vicinity of the airport.

The Mode C veil, an area associated with Class B airspace, extends for 30 nautical miles from LAX. When operating within this area, all aircraft must be equipped with a transponder with altitude encoder (Mode C).

Class C Airspace

The FAA has established Class C airspace at 120 airports around the country as a means of regulating air traffic activity in these areas. In order to fly inside Class C airspace, the aircraft must have a two-way radio and an encoding transponder, and the pilot must obtain an ATC clearance. Pilots must have at least a student pilot's certificate to fly in Class C airspace.

Burbank-Glendale-Pasadena Airport, located approximately 41 nautical miles east-southeast, and Santa Barbara Airport, located 40 nautical miles northwest of Oxnard Airport, are surrounded with Class C airspace. Oxnard Airport, however, does not have Class C airspace.

Class D Airspace

Class D airspace is normally a circular area with a radius of four to five miles around the primary airport and any extensions necessary to include instrument approach and departure paths. This controlled airspace typically extends upward from the surface to about 2,500 feet above the elevation of airports with operating control towers. Oxnard Airport, Camarillo Airport, and Naval Air Weapons Station (NAWS) Point Mugu are encompassed by Class D airspace.

As depicted on **Exhibit 1E**, Oxnard's Class D airspace is interrupted to the southeast by NAWS Point Mugu's Class D airspace, and to the east by Camarillo Airport's Class D airspace. The ceiling of Oxnard and Camarillo Class D airspace is 2,000 feet mean sea level (MSL). NAWS Point Mugu's Class D airspace has a ceiling of 3,000 feet MSL.

Class E Airspace

The Class E category contains airspace formerly designated as control zones for non-towered airports and transition surfaces. The Class E airspace for a non-towered airport extends from the surface upward to overlying or adjacent controlled airspace. Otherwise, Class E airspace terminates at the base of Class A airspace. When Class E airspace is designated as a surface area, it is configured to contain all instrument approaches. When designated as an extension of Class B, Class C, or Class D airspace, the extension allows standard instrument approach procedures without communications requirements for VFR operations.

Class G Airspace

Airspace not designated as Class A, B, C, D, or E is considered uncontrolled, or Class G, airspace. Air traffic control does not have the authority or responsibility to exercise control over air traffic within this airspace. Class G airspace lies between the surface and 700 feet above the surface underneath much of the Class E transition surfaces in the study area. Also, the Oxnard and Camarillo Class D airspace reverts to Class G airspace when the ATCT is not operational.

Special Use Airspace

Immediately adjacent to and south of NAWS Point Mugu lies an area of restricted airspace (R-2519). This area is operated continuously and has an unlimited floor and ceiling. The airspace is restricted due to ground-to-air missile firings from NAWS Point Mugu out over the Pacific Ocean.

Approximately 10 nautical miles due south of Oxnard Airport is Warning Area 289. In general, restricted and warning areas indicate the existence of unusual, often invisible, hazards to aircraft such as artillery firing, aerial gunnery, or guided missiles. Warning areas are established beyond the three-mile limit along U.S. coastlines. Though the activities conducted within warning areas may be as hazardous as those in restricted areas, warning areas cannot be legally designated as restricted areas because they are over international waters. Penetrations of warning areas during periods of activity may be hazardous to aircraft not participating in national defense operations. Los Angeles ARTCC is the controlling facility for the warning area. The warning area extends from NAWS Point Mugu out into the Pacific Ocean in a triangular shape. The warning area is used for weapons training by Navy and Marine high performance aircraft.

Approximately 20 nautical miles north of Oxnard, an eight-mile wide corridor, which runs in an east-west direction, is designated as special military use airspace. Flights in this area are not restricted, however, pilots must be aware of the potential airspace conflict

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LEGEND

- Airport with hard-surfaced runways 1,500' to 8,069' in length
- Airports with hard-surfaced runways greater than 8,069' or some multiple runways less than 8,069'
- VOR
- VORTAC
- VOR-DME
- Compass Rose
- Wilderness Areas
- Class B Airspace
- Class C Airspace
- Class D Airspace
- Class E Airspace
- Class E Airspace with Floor 700 ft. or greater above surface
- Restricted Areas
- Special Airport Traffic Areas
- Victor Airways
- Military Training Routes

Source: Los Angeles Sectional Chart, US Department of Commerce, National Oceanic and Atmospheric Administration December 27, 2001

Exhibit 1E
AREA AIRSPACE

in the area. The sectional chart lists the floors and ceilings of the operations, and instructs navigators to contact Hawthorne Flight Service Station (FSS) to receive activity status of military operations in the area.

Airspace Conflicts

There are a number of airspace conflicts in the Oxnard Airport area including obstructions, terrain, and congested airspace.

The location of Oxnard Airport in proximity to NAWS Point Mugu and Camarillo Airport limits the available area near the airport for unrestricted VFR flying. For safety purposes, air traffic controllers at Oxnard must call RATCF and wait for approval, prior to releasing aircraft on instrument departures from Oxnard Airport. After permitting an instrument departure from Oxnard Airport, RATCF will not permit another departure until positive radar contact is established with the first aircraft.

NAVIGATIONAL AIDS

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 Oxnard Airport include the very high frequency omnidirectional range facility (VOR), non-directional beacon (NDB), and the 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 direction information to the pilot. The Camarillo VOR and the Ventura VOR are used by pilots flying to or from Oxnard Airport.

The NDB transmits nondirectional radio signals whereby pilots of properly equipped aircraft can determine the bearing to or from the NDB facility and "home on" or track to or from the station. Pilots flying to or from Oxnard Airport can use the Pacoima NDB.

GPS is an additional navigational aid for pilots enroute to the airport. This system was initially developed by the United States Department of Defense for military navigation around the world and is currently being utilized more and more in civilian aircraft. GPS uses satellites placed in orbit around the earth to transmit electronic signals, which properly equipped aircraft use to determine altitude, speed, and navigational information. With GPS, pilots can directly navigate to any airport in the country and are not required to navigate using a specific navigational facility. The FAA is proceeding with a program to gradually replace all traditional enroute navigational aids with GPS over the next 20 years.

LOCAL OPERATING PROCEDURES

Oxnard Airport is situated at 43 feet MSL. The traffic pattern altitude for all aircraft at the airport is 1,000 feet above the airfield elevation (1,043 feet MSL). Both runways utilize a left-hand traffic pattern. In this manner, aircraft approach the desired runway end following a series of left-hand turns.

Instrument Approach Procedures

Instrument approach procedures are a series of predetermined maneuvers, established by the FAA, which utilize electronic navigational aids such as those discussed in the previous section. The use of approach procedures assist pilots in locating and landing at an airport during low visibility and cloud ceiling conditions.

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 in feet above the ground) can be situated for a pilot to complete the approach. If the observed visibility or cloud ceilings is below the minimums prescribed for the approach, the pilot cannot complete the instrument approach.

- PRECISION INSTRUMENT APPROACHES

Most precision approaches in use in the United States today are instrument landing systems (ILS). An ILS provides an approach path for the exact alignment and descent of an aircraft on final approach to a runway. The system provides three functions: guidance, provided vertically by a glide slope antenna and horizontally by a localizer; range, furnished by marker beacons or distance measuring equipment; and visual alignment, supplied by the approach light systems and runway edge lights.

Oxnard Airport has one published precision approach to Runway 25. Runway 25 is equipped with an ILS consisting of a localizer, glide slope, and a MALSR in addition to middle and outer marker beacons. The precision ILS approach to Runway 25 at Oxnard Airport uses a standard 3.0 degree glide slope.

Typically, a precision ILS approach aided by a localizer, glideslope, and MALSR will provide Category I minimums (one-half mile visibility and 200-foot cloud ceilings). However, for Oxnard Airport, obstructions located in the approach require weather minimums for the ILS Runway 25 approach to be at or above one mile visibility and 300-foot cloud ceilings.

- NON-PRECISION APPROACHES

Utilizing the Camarillo VOR/DME or the global positioning system (GPS), two non-precision approaches are available at Oxnard. The VOR or GPS Runway 25 approach can be flown when cloud ceilings are 500 feet above ground level (AGL) or greater and visibility is one mile for aircraft with approach speeds of up to 121 knots, 1-1/4 miles for aircraft with approach speeds less than 141 knots, and 1-1/2 miles for aircraft with approach speeds less than 166 knots. The VOR or GPS Runway 25 approach also provides for a circling approach. The circling approach also requires a cloud ceiling of 500 feet AGL for aircraft with approach speeds less than 141 knots. Visibility requirements are the same for aircraft with approach speeds less than 121 knots, but increase to 1-1/2 miles for aircraft with approach speeds less than 141 knots. For aircraft with approach speeds greater than 141 knots but less than 166 knots, the circling approach minimums increase to 700 feet AGL cloud ceilings and 2-1/4 miles visibility.

The GPS approach to Runway 7 is the second published non-precision approach at Oxnard Airport. GPS signals ensure adequate terrain and obstruction clearances during final approach to the runway. The GPS approach to Runway 7 can be flown when cloud ceilings are 500 feet AGL or greater and visibility is one mile for aircraft with approach speeds of less than 121 knots, 1-1/4 miles for aircraft with approach speeds greater than 121 but less than 141 knots, and 1-1/2 miles for aircraft with approach speeds greater than 141 knots but less than 166 knots. The GPS Runway 7 approach also allows a circling approach. The minimums for the circling approach are the same as the circling VOR or GPS approach to Runway 25.

Standard Instrument Departures

Currently, two Standard Instrument Departure (SID) procedures are published for Oxnard Airport -- the Skiff Four and the Camarillo Three SID. Each of these SIDs have two procedures: take-off and transition routing. The take-off procedures are designed to get the aircraft off the ground to a specified point. Once aircraft reach the designated point, they continue to their destination via transition routes or routes assigned by air traffic control. Transition routes are paths delineated by VOR/DME radials.

Aircraft departing Runway 7 utilizing the Skiff Four SID are directed to turn left after take-off and intercept the Camarillo VOR/DME radial 249. Aircraft are to continue climbing westbound to the Skiff intersection then via a transition or assigned route. Aircraft departing Runway 25 climb via the Camarillo VOR/DME radial 249 to the Skiff intersection. Once at the Skiff intersection, aircraft continue via a transition route or other route assigned by air traffic control.

Aircraft departing Runway 7 utilizing the Camarillo Four departure climb to the Camarillo VOR/DME via an assigned or transition route. Aircraft utilizing the Camarillo Three SID departing Runway 25 turn right after take-off and intercept the Camarillo VOR/DME radial 249 via an assigned or transition route.

Although the airport is supported by the aforementioned SIDs, discussions with Oxnard ATCT staff indicate that they are not often used. For noise abatement purposes, radar vectors are given to aircraft in order to avoid noise-sensitive areas. ATCT staff indicate that aircraft departing Runway 25 are assigned a heading of 270 degrees between 7:00 a.m. and 8:00 a.m. and 255 degrees between 8:00 a.m. and 9:00 p.m.

Customary ATC And Flight Procedures

Flights to and from Oxnard Airport are conducted using both Instrument Flight Rules (IFR) and Visual Flight Rules (VFR). Instrument Flight Rules are those that govern the procedures for conducting instrument flight. Visual Flight Rules govern the procedures for conducting flight under visual conditions (good weather). Most air carrier, military, and general aviation jet operations are conducted under IFR regardless of the weather conditions.

Visual Flight Rule Procedures: Under VFR conditions, the pilot is responsible for collision avoidance and will typically contact the tower when approximately 10 miles from the airport for sequencing into the traffic pattern.

Generally, VFR general aviation traffic stays clear of the more congested airspace and follows recommended VFR flyways in the area. There are no VFR fly routes located in the vicinity of Oxnard Airport; however, many VFR fly routes are located to the southeast in the greater Los Angeles area.

Instrument Flight Rule Procedures: The Point Mugu RATCF handles all IFR traffic to and from Oxnard Airport. IFR arrival traffic is transferred to the RATCF by the ARTCC as traffic enters RATCF airspace. Traffic approaching from the southeast is typically vectored to the Camarillo or Ventura VOR/DME and then to the airport via the precision approach procedure. Aircraft approaching from the north/northwest are typically provided vectors to intercept the ILS signal. IFR departures require clearance from the Point Mugu RATCF before takeoff unless RATCF is closed. When the RATCF is closed, aircraft receive IFR clearance once airborne from the Los Angeles ARTCC.

Local ATC Procedures: At present there is no formal runway use program at Oxnard Airport that dictates the use of one runway over another. Arrivals and departures, however, are almost exclusively on Runway 25 due to the prevailing westerly winds. Arrivals and departures occur occasionally on Runway 7. Operations on this runway usually occur in Santa Ana wind conditions (strong winds from the north and east) or if requested by the pilot.

Noise Abatement Procedures

At Oxnard Airport, the airport traffic control tower, the Ventura County Department of Airports, and the airport users have developed noise abatement procedures for VFR operations. Instructions are outlined regarding departures, arrivals, and pattern procedures at the airport which are aimed at minimizing noise exposure over noise-sensitive areas without compromising safety. Pilots are requested to follow the published procedures unless it is considered unsafe, weather conditions do not allow, or they are otherwise instructed to deviate by the airport traffic control tower. A voluntary curfew is in effect for all operations between the hours of 11:00 p.m. and 6:00 a.m.

COMMUNITY PROFILE

The purpose of this section is to summarize various studies and data to provide an understanding of the characteristics of the local area. Within this section is a description of ground access systems near the airport, a description of land use around the airport now and planned for the future, local climate data, and a historical summary of the local economy and demographics.

REGIONAL SETTING, ACCESS AND TRANSPORTATION

The City of Oxnard is situated along the coastal edge of the 200-square mile Oxnard Plain. Immediately adjacent to the City of Oxnard is the City of Port Hueneme. The Oxnard Harbor District operates the largest deep sea port between San Francisco and Los Angeles.

Oxnard Airport lies one and one-half miles east of the Pacific Ocean. **Exhibit 1E** depicts the location of Oxnard Airport in its regional setting. The airport is bordered on three sides by major arterial roadways: Ventura Road and Victoria Avenue run north-south along the eastern and western edges of airport property, and Fifth Avenue runs east-west along the southern edge of airport property between Ventura Road and Victoria Avenue. The airport is afforded regional access by the Ventura Freeway (U.S. Highway 101) located four miles north of the airport and the Pacific Coast Highway (State Highway 1) located approximately one mile east of the airport.

Regional Airports

Oxnard Airport is the only airport served by commercial (commuter) airlines in the immediate vicinity. The Los Angeles Basin, however, is served by a number of commercial service airports. They include Los Angeles International, Burbank-Glendale-Pasadena, Long Beach, Ontario International, and John Wayne-Orange County, all of which are served by major airlines. Approximately 40 nautical miles to the northwest, Santa Barbara Airport is the only other commercial service airport within relatively close proximity of Oxnard Airport.

Two other public use general aviation airports and one military airport are located in or near the Oxnard Airport study area. Camarillo Airport is a public use general aviation airport approximately five miles east of Oxnard Airport. Owned and operated by Ventura County, this airport is served by a single runway and has more than 500 based aircraft and over 180,000 operations annually. Santa Paula Airport is a privately-owned, public use airport. Located approximately nine nautical miles northeast of Oxnard, Santa Paula Airport has one runway and more than 250 based aircraft.

NAWS Point Mugu is a Navy/Marine Airbase located approximately eight miles southeast of Oxnard Airport. The airbase serves military aircraft ranging from the large C-130 transport to the high performance F-18A fighter/attack jet aircraft. Due to the orientation of the airbase's two runways, Point Mugu's flight pattern does not conflict with Oxnard Airport's airspace.

Although only three other airports are within the vicinity of Oxnard Airport, it is important to note the large number of airports in the greater Los Angeles area. In addition to the commercial service airports, 20 public use general aviation airports, seven private airports, and four military airports are in the greater Los Angeles area.

AREA LAND USE AND CONTROL

Land uses immediately surrounding Oxnard Airport are varied and include a mix of agriculture, open space, residential, commercial and industrial development. The airport itself and development to the east and south are under the jurisdiction of the City of Oxnard. Undeveloped agricultural land to the north and west are unincorporated and are therefore under the jurisdiction of Ventura County.

The nearest school to the airport is located approximately two blocks east of the airport. The nearest church is also located two blocks east of the airport.

Land Use Plans

Land use surrounding the airport is under the jurisdiction of both the City of Oxnard and Ventura County. To guide development in the area, both of these entities have prepared and adopted general plans as required by California State Law.

The Public Utilities Code of the State of California, Sections 21670 et. seq., requires the County Board of Supervisors to establish an Airport Land Use Commission (ALUC) in each county with an airport operated for the benefit of the general public. The Code also sets forth the range of responsibilities, duties, and powers of the Commission.

Instead of creating a new body to serve as the ALUC, state law allows the county board of supervisors to authorize an appropriately designated body to fulfill ALUC responsibilities. (See Section 21670.1.) In Ventura County, the Board of Supervisors has designated the Ventura County Transportation Commission to act as the ALUC for the County.

Section 21675 requires the Airport Land Use Commission to formulate a comprehensive land use plan for the area surrounding each public use airport.

As part of these general plans, various future land use maps were prepared. Review of these future land use maps indicate that future land uses within the vicinity are planned to be compatible with airport operations. Commercial and industrial land uses are planned for the area immediately surrounding the airport.

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.

The Oxnard region experiences steady temperatures throughout the year. The average high temperature only varies nine degrees, as December, January, February, and March are the coolest months with an average high of 66 degrees Farenheit (F), and August and September are the warmest months with an average high of 75 degrees F. The average precipitation in Oxnard is 14.3 inches per year. Average temperature and precipitation totals by month are summarized in **Table 1D**.

TABLE 1D
Weather Summary
Oxnard, California

Month	Daily Minimum (degrees F)	Daily Maximum (degrees F)	Average Total Precipitation (inches)
January	44	66	3.0
February	45	66	3.1
March	46	66	2.4
April	48	68	0.9
May	51	69	0.1
June	55	71	0.0
July	57	74	0.0
August	59	75	0.1
September	57	75	0.4
October	53	74	0.3
November	48	70	2.0
December	44	66	2.0
Yearly Average	**34.9**	**65.3**	**14.3**

Source: National Weather Service, Los Angeles/Oxnard Weather Forecast Office.

SOCIOECONOMIC CHARACTERISTICS

A variety of historical and forecast socioeconomic data, related to the regional area, has been collected for use in various elements of this master plan. This information provides essential background for use in determining aviation service level requirements. Aviation forecasts are often related to the population base, economic strength of a region, and the ability of a region to sustain a strong economic base over an extended period of time.

POPULATION

Historical population data for the City of Oxnard, Ventura County, and the State of California are presented in **Table 1E**. As shown in the table, the population of Oxnard, with an average annual growth rate of 2.30 percent, has grown at a faster pace than both Ventura County and the State of California, which have similar growth rates of 1.81 and 1.78 percent, respectively. According to the **City of Oxnard 2020 General Plan**, these population trends are not expected to continue as the city is expected to grow at a slower pace through the year 2020 than it has historically.

TABLE 1E
Historical Population

	1980	1990	2000	Average Annual Growth Rate
City of Oxnard	108,195	142,216	170,358	2.30%
Ventura County	525,818	669,016	753,197	1.81%
State of California	23,796,800	29,760,021	33,871,648	1.78%

Source: U.S. Census

EMPLOYMENT

Analysis of a community's employment base can be valuable in determining the overall well-being of that community. In most cases, the community's make-up and health is significantly determined by the availability of jobs, the variety of employment opportunities, and the types of wages provided by local employers. A breakdown of historical and current employment data for Ventura County is presented in **Table 1F**.

TABLE 1F **Employment by Sector** **Ventura County**						
Industry	**1997**	**1998**	**1999**	**2000**	**2001**	**% Change**
Farming	17,300	17,700	17.500	19,300	22,300	6.55
Mining	1,500	1,300	1,000	900	900	-11.99
Construction	11,100	12,700	14,500	15,100	15,500	8.71
Manufacturing	32,800	36,000	38,600	41,000	41,100	5.80
Transportation and Utilities	9,700	10,600	11,500	11,100	11,000	3.19
Trade	59,200	59,700	62,100	65,000	66,400	2.91
Finance, Insurance & Real Estate	12,600	13,600	14,900	16,300	18,100	9.48
Services	72,400	75,500	77,100	81,300	81,800	3.10
Government	43,300	43,100	43,900	44,300	45,300	1.14
Source: California Economic Development Department						

As indicated in the table, the services industry is the largest employer in the county followed by the trade industry. The greatest increases in activity during the five-year period were experienced in the construction and financial sectors. The only decrease experienced during the time period was in the mining industry. Overall, the county has experienced strong growth in the majority of the industries.

Table 1G summarizes labor force data for Ventura County. As shown in the table, the labor force available in Ventura County increased by 45,000 persons from 1990 to 2000. During that same time period, the unemployment rate increased by 1.80 percent from 1990 to 1995 but then decreased 3.0 percent in 2000 to a level below that reported in 1990.

TABLE 1G **Labor Force Data and Economic Indicators** **Ventura County**			
	1990	**1995**	**2000**
Labor Force Data			
Civilian Labor Force	368,000	382,100	413,000
Unemployment	21,100	28,500	18,700
Unemployment Rate	5.7%	7.5%	4.5%
Source: California Economic Development Department			

SUMMARY

The information discussed in this chapter provides a foundation upon which the remaining elements of the planning process will be constructed. This information will provide guidance, along with additional analysis and data collection, for the development of forecasts of aviation demand and facility requirements.

Chapter Two
FORECASTS

FORECASTS

An important initial factor in facility planning is a definition of demand that may reasonably be expected to occur during the useful life of its key components. In airport master planning, this involves projecting potential aviation activity over at least a twenty-year time frame. For general aviation/commuter service airports such as Oxnard Airport (OXR), forecasts of passengers, based aircraft, and operations (takeoffs and landings) serve as the basis for facility planning.

FAA Advisory Circular 150/5070-6A outlines six standard steps involved in the forecast process, including:

1) Obtain existing FAA and other related forecasts for the area served by the airport.

2) Determine if there have been significant local conditions or changes in the forecast factors.

3) Make and document any adjustments to the aviation activity forecasts.

4) Where applicable, consider the effects of changes in uncertain factors affecting demand for airport services.

5) Evaluate the potential for peak loads within the overall forecasts of aviation activity.

6) Monitor actual activity levels over time to determine if adjustments are necessary in the forecasts.

Aviation activity can be affected by many influences on the local, regional, and national levels, making it virtually impossible to predict year-to-year fluctuations of activity over twenty years with any certainty into the future. Therefore, it is important to remember that forecasts are to serve only as guidelines and planning must remain flexible enough to respond to a range of unforseen developments.

The following forecast analysis examines recent developments, historical information, and current aviation trends to provide an updated set of aviation demand projections for Oxnard Airport. The intent is to permit the County of Ventura and its Department of Airports to make planning adjustments necessary to ensure that the facility meets projected demands in an efficient and cost-effective manner.

One of the longest and strongest growth periods in aviation history came to an abrupt halt on September 11, 2001 (9-11). Immediately following the terrorist attacks, the national airspace system was closed and all commercial flights were grounded. Following the resumption of flights, commercial airline traffic declined, which led to schedule reductions and layoffs by many of the commercial airlines. The federal government provided billions of dollars in financial assistance to the commercial airlines, along with loan guarantees. The cumulative impacts of September 11 may only be determined over time.

Prior to updating the airport's forecasts, the following section further discusses the trends in aviation at the national level.

NATIONAL AVIATION TRENDS

Each year, the Federal Aviation Administration (FAA) publishes its national aviation forecast. Included in this publication are forecasts for air carriers, regional/commuters, 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 by the general public. The current edition when this chapter was prepared was FAA **Aerospace Forecasts-Fiscal Years 2003-2014**, published in March 2003. 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 2002, the overall demand for aviation services declined for the first time in more than seven years. A modest recovery is expected in 2003 as aviation user groups redefine themselves, in the post 9-11 environment. More stable levels of growth are not anticipated until 2005.

U.S. air carriers reduced capacity approximately 20 percent immediately after 9-11. Extensive route restructuring by the major carriers was expected to reduce domestic capacity another 0.8 percent in 2003. Passenger enplanements, however, are forecast to increase by 2.0 percent in 2003, 4.7

percent in 2004, then average 3.5 percent annually through 2014.

Air cargo traffic declined 5.9 percent in domestic markets in 2002, but the all-cargo carriers were down just 2.8 percent. Domestic cargo is forecast to grow at 3.9 percent annually through 2014. General aviation is expected to achieve low-to-moderate increases in the active fleet and hours flown, with most of the growth occurring in business/corporate flying. Combined aviation activity at FAA and contract airport traffic control facilities is expected to increase at significantly higher rates than those predicted for general aviation.

The forecasts prepared by the FAA assume that aviation demand will follow a similar path to recovery, as with previous terrorist or war-related incidents. In each instance, traffic and revenue growth resumed within a year. However, the events of September 11 had a much more significant effect on the aviation industry and, therefore, must be taken into consideration in the following forecasts.

REGIONAL/COMMUTER AIRLINES

The regional/commuter airline industry, defined as air carriers providing regularly scheduled passenger service and fleets composed primarily of aircraft having 60 seats or less, continues to be the strongest growth sector of the commercial air carrier industry. Dramatic growth in agreements with the major carriers, followed by a wave of air carrier acquisitions and purchases of equity interests, has resulted in the transfer of large numbers of short-haul jet routes to their regional partners, fueling the industry's growth.

Despite the events of September 11, many regionals/commuters were able to maintain their previous flight schedules. In fact, many have even increased their flight schedules in response to the transfer of additional routes from their larger code-sharing partners. Regional/ commuter capacity and traffic continued to grow in 2002, enplaning 90.7 million passengers in the fiscal year. This is an increase of 8.5 percent more than 2001. The regionals/commuters achieved an all-time high load factor of 61.3 percent in 2002, an increase of 2.6 percent over the previous year.

Industry growth is expected to continue to outpace that of the larger commercial air carriers. The introduction of new state-of-the-art aircraft, especially high-speed turboprops and regional jets with ranges of well over 1,000 miles, is expected to open up new opportunities for growth in non-traditional markets. The regional airline industry will also continue to benefit from integration with the larger air carriers. The further need for larger commercial air carriers to reduce costs and fleet size will insure that these carriers continue to transfer smaller, marginally profitable routes to the regional air carriers.

Likewise, the increased use of regional jets is expected to lead to another round of route rationalization by the larger commercial carriers, particularly on low-density routes in the 500-mile range. Regional jet aircraft can serve these markets with the speed and comfort of a large jet, while at the same time providing greater service frequency that is not economically feasible with larger jets. This is expected to contribute to strong growth during the early portion of the planning period, although this phenomenon is expected to diminish during the mid-to-latter portion of the planning period.

Passenger enplanements are expected to increase at an average annual rate of 5.6 percent during the FAA's 12-year forecast period, from 90.7 million in 2002 to 174.1 million in 2014. In 2014, regionals/commuters are expected to transport 17.5 percent of all passengers in scheduled domestic air service. This is an increase of 3.0 percent from 2002. This greater use of regional jets results in the average seating capacity of the regional fleet increasing from 42.8 seats in 2002 to 50.4 seats in 2014. **Exhibit 2A** depicts passenger enplanements and fleet mix forecasts for the U.S. regional/commuter market.

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. The high cost of product liability insurance was a major factor in the decision by many American aircraft manufacturers to slow or discontinue the production of general aviation aircraft.

However, this continued growth in the general aviation industry slowed considerably in 2001, negatively impacted by the events of September 11. Thousands of general aviation aircraft were grounded for weeks, due to "no-fly zone" restrictions imposed on operations of aircraft in security-sensitive areas. Some U.S. airports in and around Washington, D.C. and New York City remain closed to visual flight rules (VFR) traffic. This, in addition to the economic recession which began in March 2001, has had a profoundly negative impact on the general aviation industry.

According to a report released by the General Aviation Manufacturers Association (GAMA), aircraft shipments in 2002 were down 16.9 percent for the three quarters of fiscal year 2002. The Aerospace Industries Association of America (AIAA) expected general aviation shipments in 2002 to decline 17.7 percent, to 2,153 aircraft. The number of general aviation hours flown declined by 5.9 percent in 2002 and is projected to increase by only 1.1 percent in 2003 and 1.4 percent in 2004.

The events of September 11 have not had as negative an impact on the business/corporate side of general aviation. The increased security measures placed on commercial flights has increased interest in fractional and

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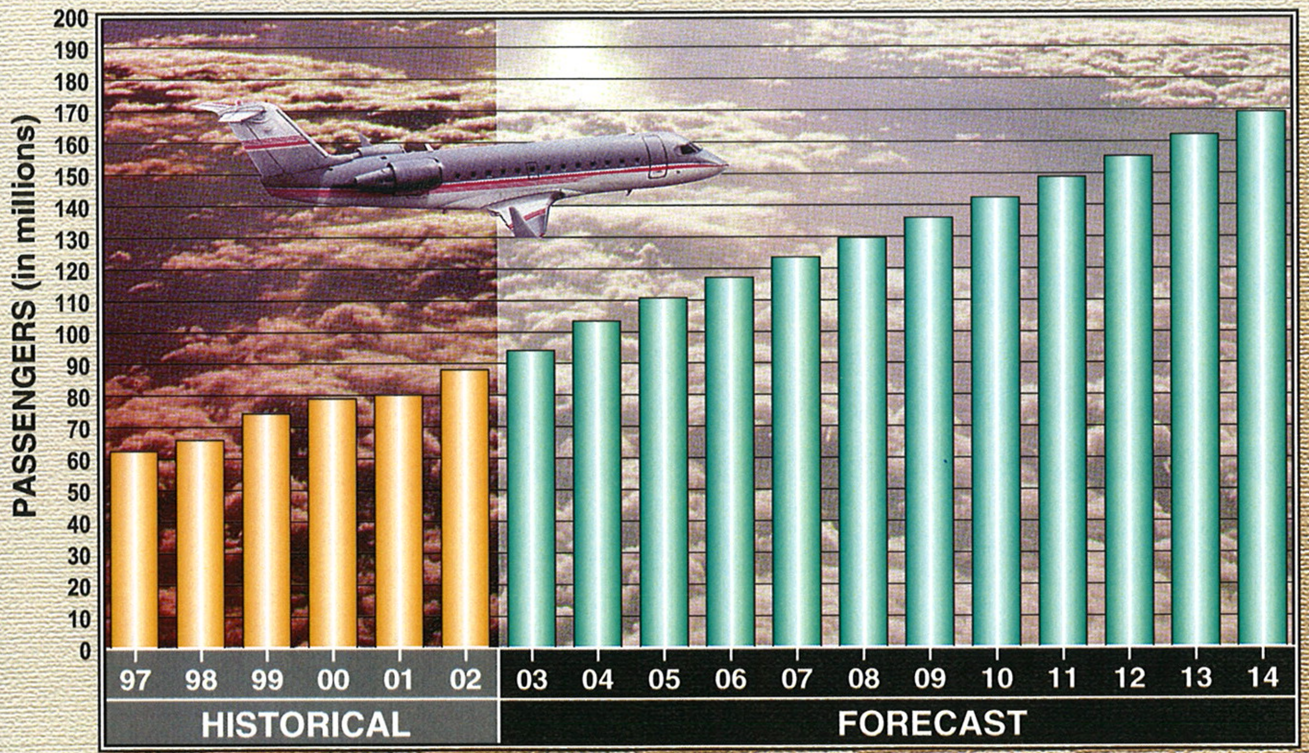
U.S. REGIONAL/COMMUTER SCHEDULED PASSENGER ENPLANEMENTS



Source: FAA Aerospace Forecasts, FY 2003-2014

PERCENT BY AIRCRAFT SEAT SIZE

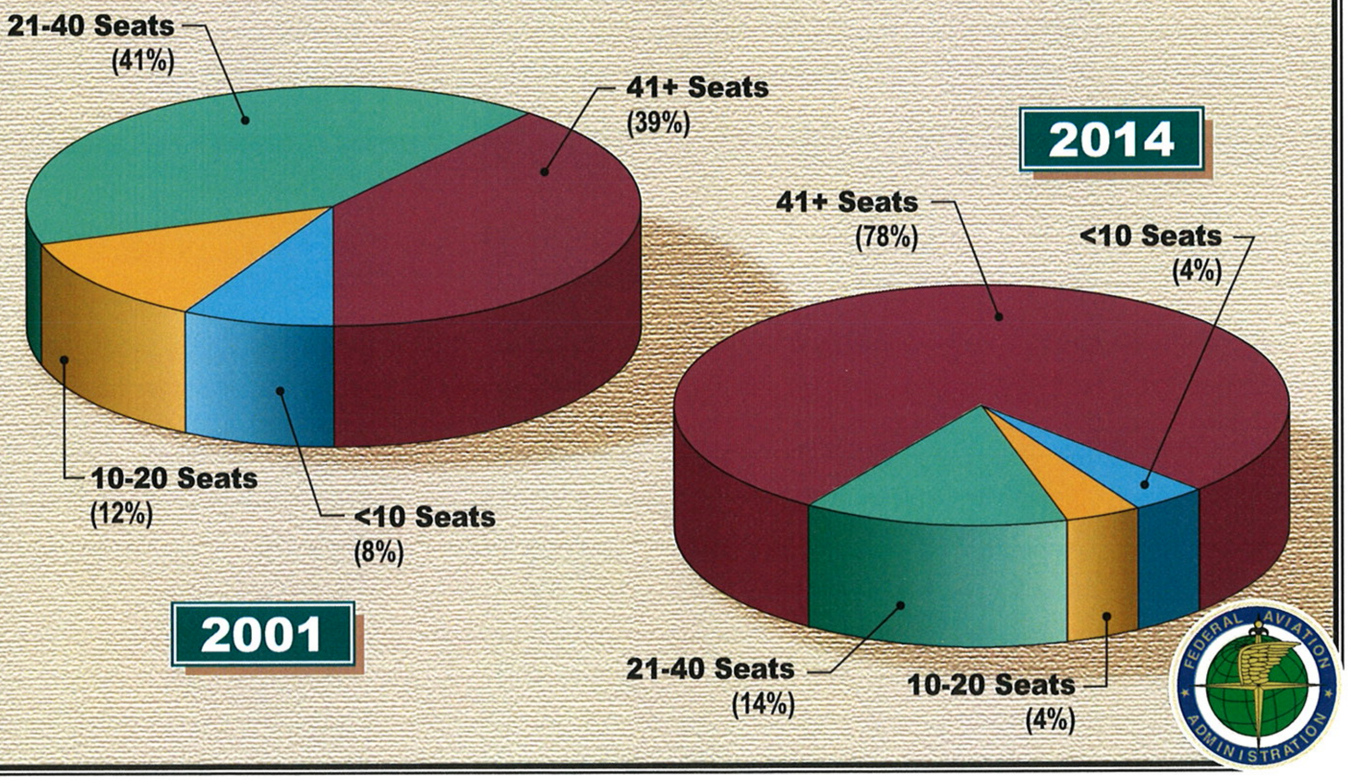


Exhibit 2A
U.S. REGIONAL/COMMUTER FORECASTS

corporate aircraft ownership, as well as on-demand charter flights. This is reflected in the forecast of active general aviation pilots (excluding air transport pilots), which are projected to increase by 81,000 (1.2 percent annually) over the forecast period.

According to the FAA, general aviation operations and general aviation aircraft handled at enroute traffic control centers increased for the ninth consecutive year. The forecast for general aviation aircraft assumes that business use of general aviation will expand much more rapidly than personal/sport use, due largely to the expected growth in fractional ownership.

In 2002, there were an estimated 211,040 active general aviation aircraft, representing a decrease of 0.2 percent from the previous year and the third straight decline in five years of increases. **Exhibit 2B** depicts the FAA forecast for active general aviation aircraft in the United States. The FAA forecasts general aviation aircraft to increase at an average annual rate of 0.7 percent over the 12-year forecast period. Piston-powered aircraft are expected to grow at an average annual rate of 0.2 percent. This is due, in part, to declining numbers of multi-engine piston aircraft, while single engine and rotorcraft increase at rates of 0.3 and 1.1 percent, respectively.

Turbine-powered aircraft (turboprop and jet) are expected to grow at an average annual rate of 2.3 percent over the forecast period. The jet portion of this fleet is expected to grow at an annual average growth rate of 3.6 percent. This growth rate for jet aircraft can be attributed to growth in the fractional ownership industry, new product offerings (which include new entry level aircraft and long-range global jets), and a shift away from commercial travel by many travelers and corporations.

Manufacturer and industry programs and initiatives continue to revitalize the general aviation industry with a variety of programs. For example, Piper Aircraft Company has created Piper Financial Services (PFS) to offer competitive interest rates and/or leasing of Piper aircraft. Manufacturer and industry programs include the "No Plane, No Gain" program promoted jointly by the General Aviation Manufacturers Association (GAMA) and the National Business Aircraft Association (NBAA). This program was designed to promote the use of general aviation aircraft as an essential, cost-effective tool for businesses. Other programs are intended to promote growth in new pilot starts and to introduce people to general aviation. These include "Project Pilot" sponsored by the Aircraft Owners and Pilots Association (AOPA), "Flying Start" and "Young Eagles" sponsored by the Experimental Aircraft Association (EAA), "Be a Pilot" jointly sponsored and supported by more than 100 industry organizations, and "Av Kids" sponsored by the NBAA. Over the years, programs such as these have played an important role in the success of general aviation and will continue to be vital to its growth in the future.

SOCIOECONOMIC TRENDS

Local and regional forecasts developed for key socioeconomic variables provide an indicator for identifying changes in demand for aviation activities at an airport. Three variables typically useful in evaluating potential for increased demand are population, employment, and per capita personal income (PCPI).

Table 2A presents historic and forecast demographics for Ventura County. These forecasts were obtained from **The Complete Economic and Demographic Data Source (CEDDS 2001)**, by Woods and Poole Economics, Inc., January 2002. This source forecasts population in Ventura County to grow at an average annual rate of 1.2 percent through 2025. Total employment is projected to grow by an average annual rate of 1.4 percent. Inflation-adjusted PCPI is projected to grow at 1.1 percent annually.

The Southern California Association of Governments (SCAG) prepared a Socioeconomic Forecast in 2001 for the six-county metropolitan region including Ventura County. The regional forecasts were adopted by the SCAG Regional Council in April 2001, and the Ventura County forecasts were adopted by the Ventura Council of Governments in May 2001. These are depicted on **Table 2B**.

The six-county region includes Ventura, Imperial, Los Angeles, Orange, Riverside, and San Bernardino counties. Overall, population is projected to grow 1.4 percent annually in the region. While Ventura County's population grew an average of 1.25 percent annually over the decade of the 1990s, the SCAG forecast calls for a 1.1 percent average increase through 2025. This is slightly lower than the 1.2 percent average population growth projected by Woods and Poole. While Woods and Poole anticipates that Ventura County will top one million residents by 2025, SCAG forecasts 951,000.

Table 2B also includes the SCAG forecast for the City of Oxnard. The projections for the city actually anticipate that the population will grow from the 2000 census count of 173,316 to 227,460 residents by 2025.

While using a different benchmark for employment, SCAG projected Ventura County employment to increase at an average annual rate of 1.3 percent through 2025. Like population, this growth is slightly lower than that projected by Woods and Poole.

According to SCAG, a key change anticipated to occur in future employment is a decline in agricultural employment from ten percent to just three percent by 2025. Similarly, manufacturing employment is projected to decline while the services sector increases.

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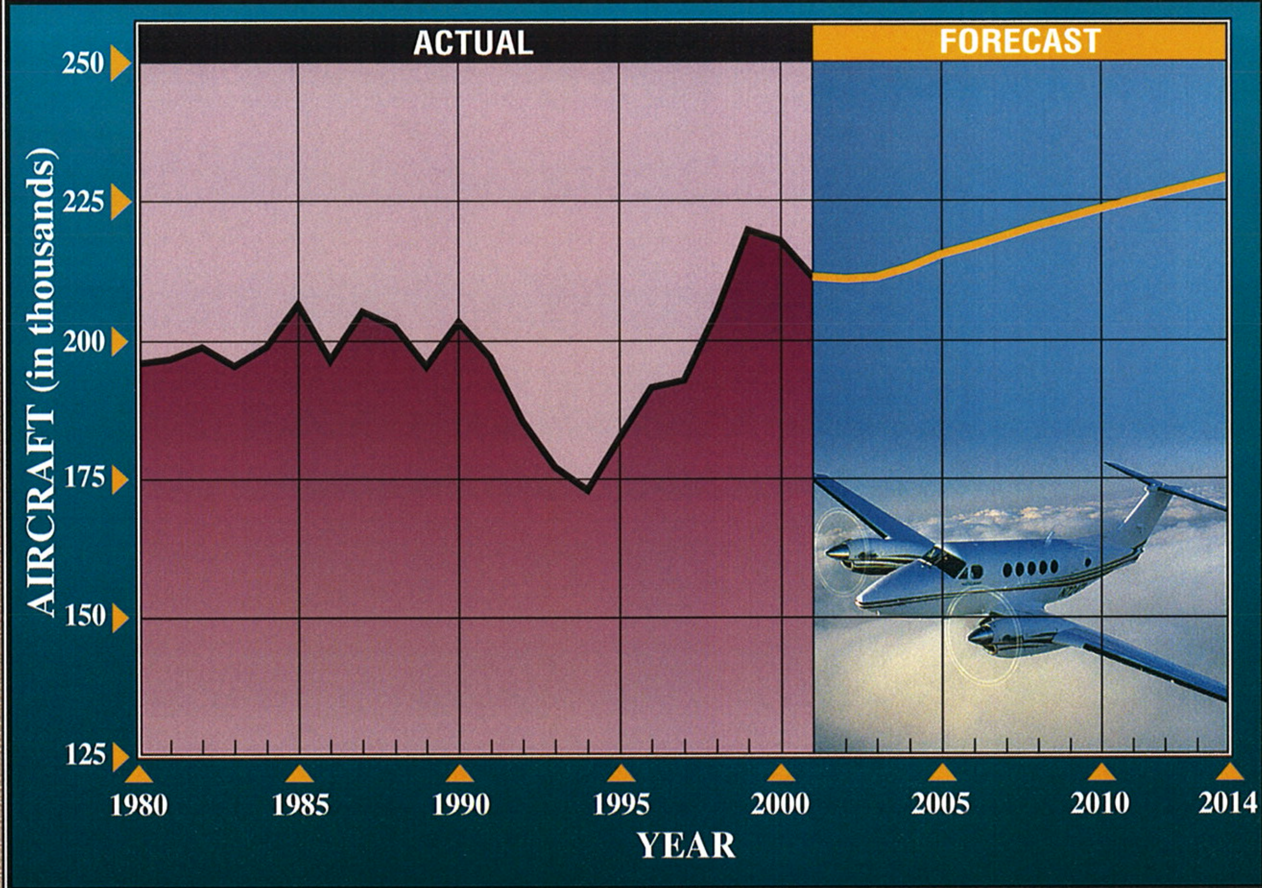
U.S. ACTIVE GENERAL AVIATION AIRCRAFT



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

	FIXED WING									
	PISTON		TURBINE		ROTORCRAFT					
Year	Single Engine	Multi-Engine	Turbo-prop	Turbojet	Piston	Turbine	Experi-mental	Sport	Other	Total
2001 (Actual)	145.0	18.3	6.6	7.8	2.3	4.5	20.4	NA	6.5	211.4
2004	144.9	18.2	6.8	8.4	2.5	4.4	20.4	1.0	6.5	213.1
2009	147.6	18.0	7.4	10.3	2.6	4.5	21.0	4.1	6.6	222.2
2014	149.6	17.8	8.0	12.3	2.8	4.6	21.4	6.2	6.7	229.5

Sources: FAA General Aviation and Air Taxi Activity (and Avionics) Surveys.
FAA Aerospace Forecasts, Fiscal Years 2003-2014.

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

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

TABLE 2A
Socioeconomic Statistics
Ventura County

Year	County Population	Employment	PCPI (1996$)
1980	532,890	219,778	$21,388
1981	546,389	225,242	$21,644
1982	562,142	230,219	$21,353
1983	575,586	236,821	$21,807
1984	588,790	249,289	$22,810
1985	602,819	261,866	$23,537
1986	615,422	272,055	$24,849
1987	632,062	287,856	$25,430
1988	650,851	306,656	$25,835
1989	664,692	319,790	$25,707
1990	670,164	332,120	$26,291
1991	675,558	330,242	$25,644
1992	684,118	332,643	$25,318
1993	690,195	337,770	$25,185
1994	698,921	348,310	$24,908
1995	704,080	355,310	$26,099
1996	711,000	361,750	$26,054
1997	722,470	360,580	$26,733
1998	732,820	379,040	$27,272
1999	746,220	390,770	$28,259
2000	753,197	400,290	$28,728
2001	770,630	408,750	$29,203
FORECAST			
2005	805,520	438,700	$30,813
2010	855,590	471,650	$32,644
2015	907,710	503,990	$34,351
2020	961,360	535,390	$35,980
2025	1,016,980	565,940	$37,525

Notes: Historic information from U.S. Department of Commerce. Forecasts from CEDDS 2002, Woods & Poole, January 2002.

TABLE 2B
Population Forecasts
Southern California Association of Governments (SCAG)

	Actual 2000	2010	2015	2020	2025
SCAG Region	16,516,006	19,061,000	20,062,000	21,305,000	22,621,000
Ventura County	753,197	836,000	875,000	915,000	951,000
City of Oxnard	173,316	197,532	208,005	218,194	227,460

COMMUTER SERVICE FORECASTS

Airline activity at Oxnard Airport is exclusively comprised of commuter airline service. As of the late fall of 2002, when these forecasts were completed, service was provided by SkyWest Airlines operating as United Express. There were five daily flights to Los Angeles International Airport (LAX) utilizing 30-seat Embraer 120 turboprop aircraft.

Since airline deregulation in the late 1970s, airline passenger activity at Oxnard Airport has fluctuated widely. As can be seen in **Table 2C**, annual enplaned passengers began the 1980s decade at 36,553 before dropping to a low of just 11,604 in 1986. By the end of the decade, however, traffic had risen to a high of 46,275 enplanements in 1990. That remains the highest enplanement level in the last twenty years. During that peak year, OXR had 18 daily flights to LAX, San Francisco, and Las Vegas. Two years later, traffic had dropped by more than 50 percent to 22,767 enplanements as service had been reduced to just one airline and seven daily flights.

By the base year of the **1996 Draft Master Plan** (1994), traffic was back up to 39,989 enplanements. At that time, the airport was being served by two commuters (United Express and American Eagle), both providing service to LAX on 30-seat turboprop aircraft. In the ensuing years, traffic fluctuated but remained in the 30,000 to 40,000 enplanement range. During this period, American Eagle dropped service, but Mesa Airlines added service in November 2000 with 37-seat DeHavilland Dash 8 aircraft, and 19-seat Beech 1900s.

Exhibit 2C depicts 12-month moving totals for enplanements at Oxnard Airport since December 1998. The moving totals represent a year's worth of enplanements ending with the month shown. Moving totals provide a means by which to analyze annualized trends on a monthly basis. As indicated, the moving totals reached a peak with the 12 months ending in August 1999 totaling 39,863 enplanements. At that time, United Express was the only airline serving OXR, but it was providing eight flights per day. Shortly thereafter, United Airlines began to reduce its schedule at LAX. The 12-month total began to decline each month after that until November 2000, when Mesa Airlines began service under the code-share name America West Express.

The 12-month total began to increase until reaching a peak of 38,345 in August 2001. Mesa Airlines announced it was discontinuing service to OXR on September 6, 2001. Five days after the airline left, came the events of September 11, 2001.

During the full nine months of operation, Mesa Airlines averaged 1,073 enplanements. During that same period, SkyWest's enplanements declined to an average of 586 per month. This resulted in a net gain of

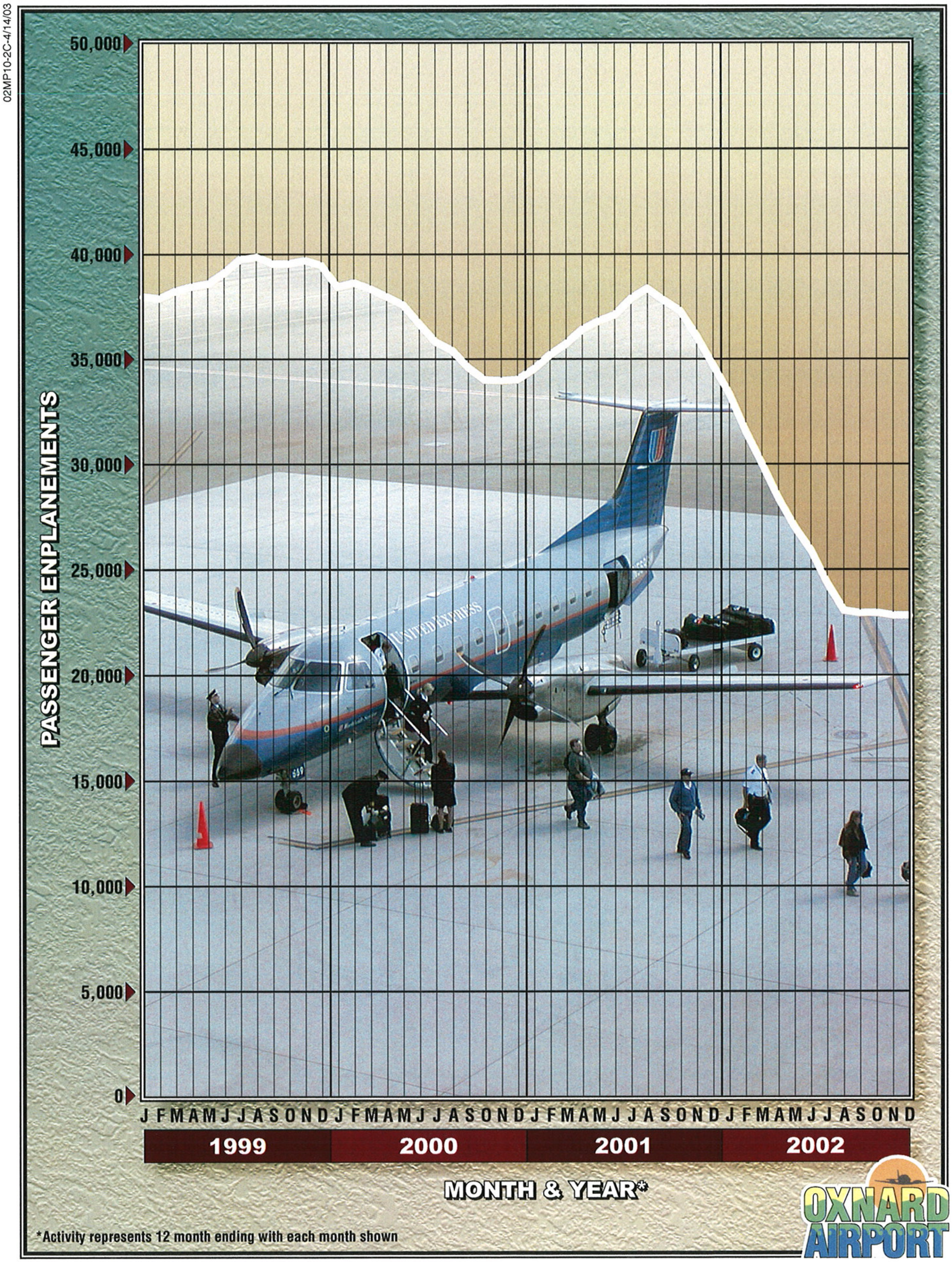


Exhibit 2C
12-MONTH MOVING TOTAL
PASSENGER ENPLANEMENTS

487 passengers per month at OXR. Statistics after 9-11, however, indicate that SkyWest traffic did not increase, but continued to decline.

TABLE 2C
Annual Enplanements
Oxnard Airport

Year	OXR Annual Enplaned[1]	U.S. Domestic Enplanements (millions)[2]	OXR % Market Share
ACTUAL			
1980	36,553	287.9	0.0127%
1981	30,020	274.7	0.0109%
1982	22,100	286.0	0.0077%
1983	21,595	308.1	0.0070%
1984	17,063	333.8	0.0051%
1985	19,097	369.9	0.0052%
1986	11,604	404.7	0.0029%
1987	12,456	441.2	0.0028%
1988	15,696	441.2	0.0036%
1989	27,545	443.6	0.0062%
1990	46,275	456.6	0.0101%
1991	39,047	445.9	0.0088%
1992	22,767	464.7	0.0049%
1993	34,857	470.4	0.0074%
1994	39,989	511.3	0.0078%
1995	37,840	531.1	0.0071%
1996	36,696	558.1	0.0066%
1997	31,152	577.8	0.0054%
1998	36,723	590.4	0.0062%
1999	39,448	610.9	0.0065%
2000	33,999	639.8	0.0053%
2001	34,696	626.7	0.0055%
2002	22,829	576.8	0.0040%
CONSTANT SHARE PROJECTION			
2005	26,304	651.1	0.0040%
2010	31,516	780.1	0.0040%
2015	38,130	943.8	0.0040%
2025	56,443	1,397.1	0.0040%
FAA-TAF 2002[3]			
2005	23,001	651.1	0.0035%
2010	24,327	780.1	0.0031%
2015	25,653	943.8	0.0027%
2020	26,980	1,148.3	0.0023%
RECAPTURE SHARE PROJECTION			
2005	30,000	651.1	0.0046%
2010	38,000	780.1	0.0049%
2015	45,000	943.8	0.0048%
2025	60,000	1,397.1	0.0043%

Sources:
1 Airport records.
2 FAA *Aerospace Forecasts, FY 2003-2014*, March 2003. Projections for 2015, 2020, and 2025 extrapolated by Coffman Associates.
3 FAA *Terminal Area Forecasts, 2002-2020*, December 2002.

In fact, the 12-month totals continued to decline until a slight increase was observed in October. This reflects the October 2002 enplanements of 2,060, being slightly higher than the 2,045 in October 2001. The 12-month total ending October 2002 was 22,904; a 40 percent decline from the 12-month total ending in August 2001. Enplanements for calendar year 2002 totaled approximately 22,829. Since August 2001, not only had service been reduced to one airline, but frequency was down to five flights per day.

ENPLANEMENT FORECASTS

It is evident from the discussion in the previous section that passenger traffic at Oxnard Airport is directly affected by the level of service provided. As with many smaller commuter airports located near a major metropolitan area, most of the local air travelers bypass the local airport and go directly to the larger hub airports in the metropolitan area.

In 1993, SCAG performed origin-destination studies that estimated there were more than 2.3 million commercial air passengers with an origin or final destination in Ventura County. That year, Oxnard Airport's total passengers (enplaned and deplaned) were approximately 70,000, or approximately 3.0 percent of the County's total passengers.

In the **Regional Aviation Plan for 2001**, published in August 2001, SCAG estimated that Ventura County's passenger demand was 4.23 million passengers. Total passengers at OXR that year totaled approximately 62,000, or just 1.5 percent of the county's demand. The **Regional Aviation Plan** indicated that Ventura County, Orange County, and Riverside County were each generating far more demand than the commercial service airports in each county were supporting. In Ventura County's case, the County was generating 5.2 percent of the demand but serving only 0.1 percent.

An emphasis of the **Regional Aviation Plan** was to move toward a decentralized airport system including former military bases and joint-use facilities rather than expanding existing urbanized airports. According to the **Regional Aviation Plan**, Ventura County's passenger demand will increase to 8.3 million by the year 2025.

While it is recognized that Ventura County's airport does not support a significant portion of the demand generated by the county's commercial air travelers, it must also be recognized that Oxnard Airport is one of the airports located in an urbanized setting with little or no room for expansion.

This is reflected in Oxnard Airport's Mission Statement which includes the following point: "Continue to search for a regional airport to serve the air carrier and commercial needs of the City of Oxnard and Ventura County."

As a result, the forecast for passenger enplanements at Oxnard Airport must reflect that the airport is limited in expansion potential and the county will continue to search for a regional airport to accommodate the long range commercial service demands generated in Ventura County. With this in mind, the passenger potential at Oxnard Airport was examined with the following qualifiers:

- No increase in runway length.
- No significant increase in terminal building space.
- As more commuter airlines convert to all-jet fleets, a decision regarding air service in the County will become necessary.

This generally means that commercial service at Oxnard Airport will continue to be provided by commuter aircraft that can operate within the design characteristics of the runway. It is likely that various commuter airlines will continue to come and go in the market. Depending upon success, airlines will likely adjust the frequency of flights to serve the demand they generate. Competitive air fares and reliable, frequent flights will be the recipe for success. Still, the size of equipment and the availability of discount airlines at the larger hub airports in the Los Angeles basin will keep the market share at Oxnard Airport low.

Because of this, the typical regression correlation and trend analyses do not apply at Oxnard Airport. As a result, passengers were forecast based upon the potential to capture market share. **Table 2C** depicts Oxnard Airport's share of the United States domestic passenger market every year since 1980. Over this time frame, the market share has ranged from 0.0127 percent in 1980 to a low of 0.0028 percent in 1987. The market share in 1990 increased to 0.0101 percent, while by 2000, it had dropped to 0.0053 percent. In 2002, the market share dropped to 0.0040 percent.

It is evident that the general trend in market share at OXR has been downward with highs and lows depending upon the level of air service. The constant share projection presented in **Table 2C** indicates where Oxnard Airport's enplanements would go if the airport followed the growth rate of the national domestic passenger market.

Exhibit 2D compares the constant market share with the forecasts of the **1996 Draft Master Plan**. It should be noted that the **1996 Draft Master Plan** forecasts were developed based upon the potential that a variety of regional jets could serve the airport in the future. In addition, the FAA forecasts of U.S. domestic enplanements at that time were approximately 14 percent higher than the current projections. Subsequently, these forecasts are now considered too high for continued use.

Exhibit 2D and **Table 2C** also provide a comparison of the market share projections to forecasts for OXR prepared by the FAA and presented in their **Terminal Area Forecasts (TAF) 2002-2020.** It should be noted that these TAF projections were the first to take into account 9-11. The TAF projections show only marginal growth from the 2002 passenger levels. The 2020 forecast of 26,980 remains well below the 34,696 enplanements experienced in 2001.

The table shows that the enplanement projections in the TAF would result in a significant erosion in the Oxnard Airport market share of domestic enplanements. As shown in the table, the market share would decline incrementally to 0.0023 percent by 2020.

The history of passenger traffic at Oxnard Airport shows a definite reaction to the air service provided. Airline choices, frequency of service, air fares, etc. have played a role in the up-and-down nature of traffic levels. The drop in traffic of the past two years is indicative of this.

Given the Mission Statement for Oxnard Airport, it is highly unlikely that the airport will see a significant recapture of the local market of air travelers. Still, history has shown that OXR traffic can recover from similar setbacks in air service.

As a result, a market share recapture scenario was also considered. This scenario is also depicted on **Table 2C** and assumes the market share would recover to 0.0050 percent by 2010 and grow at the national forecast rate. The market share can be expected to decline over the long term as the airport becomes more limited in the types of commuter aircraft that can be served. For the planning purposes of this Master Plan, the following enplanement forecasts are recommended:

Near Term (2005): 30,000
Short Term (2010): 38,000
Intermediate Term (2015): . . . 45,000
Long Term (2025): 60,000

COMMUTER OPERATIONS AND FLEET MIX

The fleet mix defines a number of key parameters in airport planning, including critical aircraft, stage length capabilities, and terminal gate configurations. Changes in equipment, airframes, and engines have always had a significant impact on airlines and airport planning. There are many on-going programs by the manufacturers to improve performance characteristics. These programs are focusing on improvements in fuel efficiency, noise suppression, and the reduction of air emissions. A fleet mix projection for Oxnard Airport has been developed by reviewing the aircraft currently used and anticipated transitions.

As previously mentioned, scheduled passenger service at Oxnard Airport is provided by SkyWest under a code-sharing agreement with United Airlines. As United Express, the airline offers five daily flights to LAX. SkyWest's aircraft fleet consists of 76 Embraer, 120 turboprops, and 73 Canadair Regional Jets (CRJs). Only the turboprops operate into Oxnard Airport.

The FAA views the regional jet as the most significant change in the composition of the future regional/ commuter fleet. These aircraft have a range in seating capacity, stand-up headroom, and lower operating costs. The long-term outlook in fleet transition is dependent on traffic growth, technological improvements, aircraft leasing and financing arrangements, and airfield facilities which can meet aircraft demand.

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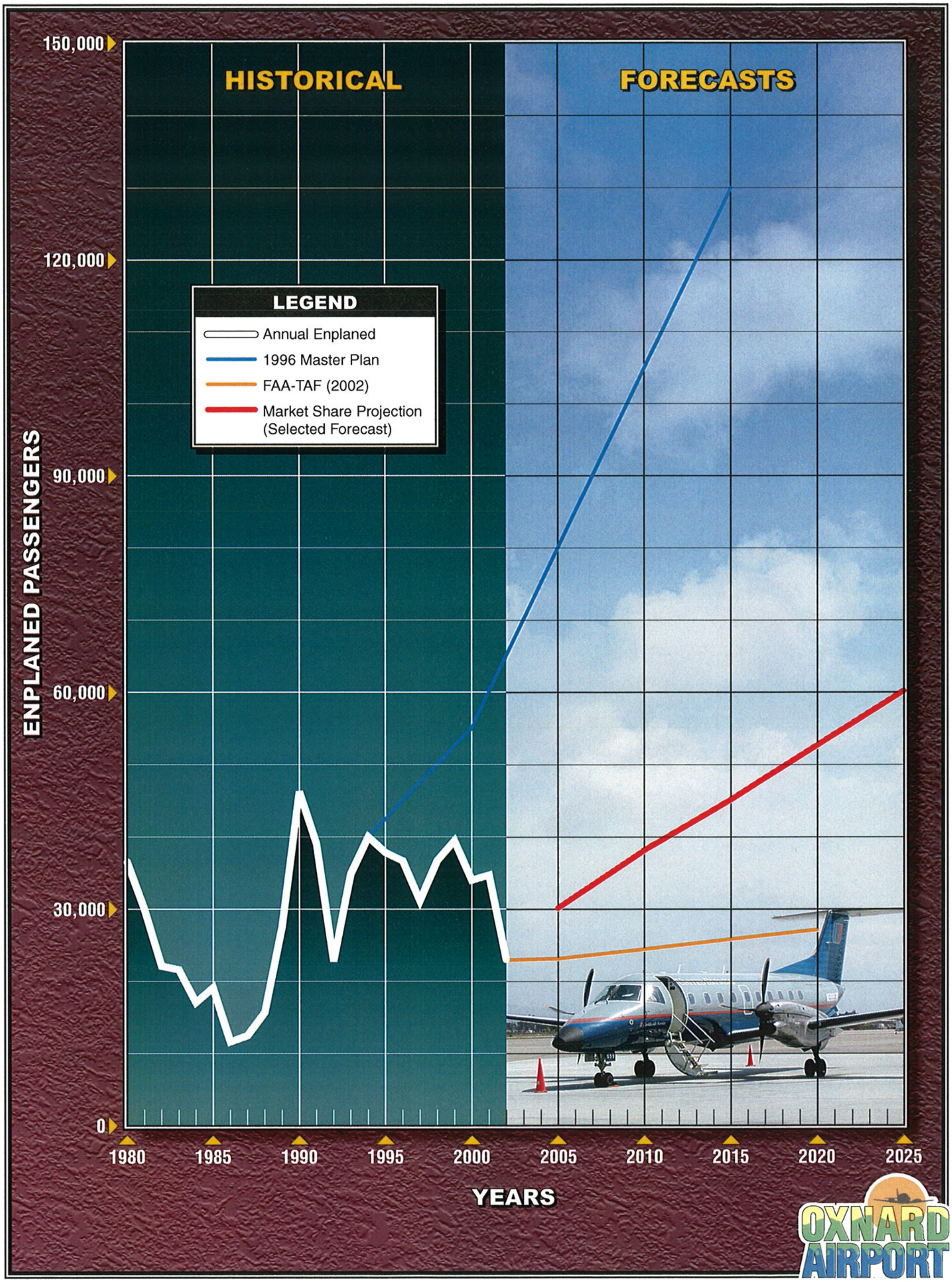

Exhibit 2D
ENPLANEMENT FORECASTS

SkyWest is adding more CRJs while reducing its turboprop fleet. The airline has orders or options for 109 more CRJs over the next four years. Over that same time frame, it expects to remove 21 Embraer 120s from service. While SkyWest has not indicated that it plans to transition to an all-regional jet fleet, other airlines, such as Mesa, have. Given the constraints on runway improvements, and the airport's Mission Statement, as more commuter airlines transition to all-jet, the County will eventually need to make decisions regarding improvements that may become necessary to accommodate available commuter aircraft.

The fleet mix projections have been used to calculate the average seats per departure, which (after applying a load factor) were used to project annual departures. The boarding load factor for Oxnard Airport may fluctuate with periodical changes in air service, but it is expected to remain around 50 percent over the planning period. Annual operations were then calculated based on boarding load factors. **Table 2D** summarizes the fleet mix and operations forecast for Oxnard Airport.

TABLE 2D
Airline Fleet Mix and Operations Forecast
Oxnard Airport

	Actual			Forecast			
Fleet Mix Seating Capacity	**2000**	**2001**	**2002**	**2005**	**2010**	**2015**	**2025**
Commuter Airlines							
45-59	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	20.0%
35-44	2.5%	18.4%	0.0%	0.0%	25.0%	35.0%	40.0%
20-34	96.1%	79.3%	100.0%	100.0%	75.0%	65.0%	40.0%
< 19	1.4%	2.3%	0.0%	0.0%	0.0%	0.0%	0.0%
Totals	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Seats/Departure	30.0	31.0	30.0	30.0	31.8	32.5	36.8
Boarding Load Factor	50.3%	48.1%	41.7%	50.0%	50.0%	50.0%	50.0%
Enplanements/Departure	15.1	14.9	12.5	15.0	15.9	16.2	18.4
Annual Enplanements	33,999	34,696	22,829	30,000	38,000	45,000	60,000
Annual Departures	2,250	2,325	1,825	2,000	2,400	2,800	3,250
Annual Operations	4,500	4,650	3,650	4,000	4,800	5,600	6,500

GENERAL AVIATION FORECASTS

General aviation is defined as that portion of civil aviation which encompasses all portions of 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.

BASED AIRCRAFT

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.

Aircraft Registrations

The **1996 Draft Master Plan** included a historical listing of aircraft registrations in Ventura County from 1983 through 1994. Additional information was obtained from the FAA's Aircraft Registry to update this information through 2002. This is presented in **Table 2E**, as well as on **Exhibit 2E.**

In contrast to many locations around the country, registered aircraft in Ventura County grew throughout the 1980s. In the 1990s, however, the growth leveled out and registered aircraft fluctuated between 1,000 and 1,060. The turn of the century saw some renewed growth with registered aircraft growing to 1,080 in 2000 and an all-time high of 1,120 in 2001.

Exhibit 2E displays the forecast of registered aircraft from the **1996 Draft Master Plan**. That forecast expected 1,100 aircraft registered in the county by 2000 and 1,200 in 2005. While the 1,120 aircraft in 2001 is right on the forecast, the prior years tended to be below the anticipated growth. In addition, 2002 registered aircraft dropped slightly to 1,012. As a result, the methodology used to produce the previous forecast was revisited, and updated data was incorporated into the analysis.

First, an updated trend line or "time-series" analysis was conducted for the period of 1983-2002. The historical data provided a correlation coefficient or r-value of 0.77. An r-value of at least 0.90 is necessary to be considered a significant statistical fit. Still, the time-series analysis does reflect the average growth trend over the 20-year period.

Next, several multiple variable regression analyses were revisited. In the 1996 plan, county employment and inflation-adjusted per capita personal income provided r-values over 0.90. These two variables, as well as county population, were tested for the period of 1983-2001. PCPI still provided the highest correlation ® = 0.88), but was below the level to be considered significant. Employment had a correlation coefficient of 0.82, while population had an r-value of 0.80. For comparative purposes, a projection was developed from the registered aircraft correlation with county PCPI. This projection is also depicted on **Exhibit 2E.**

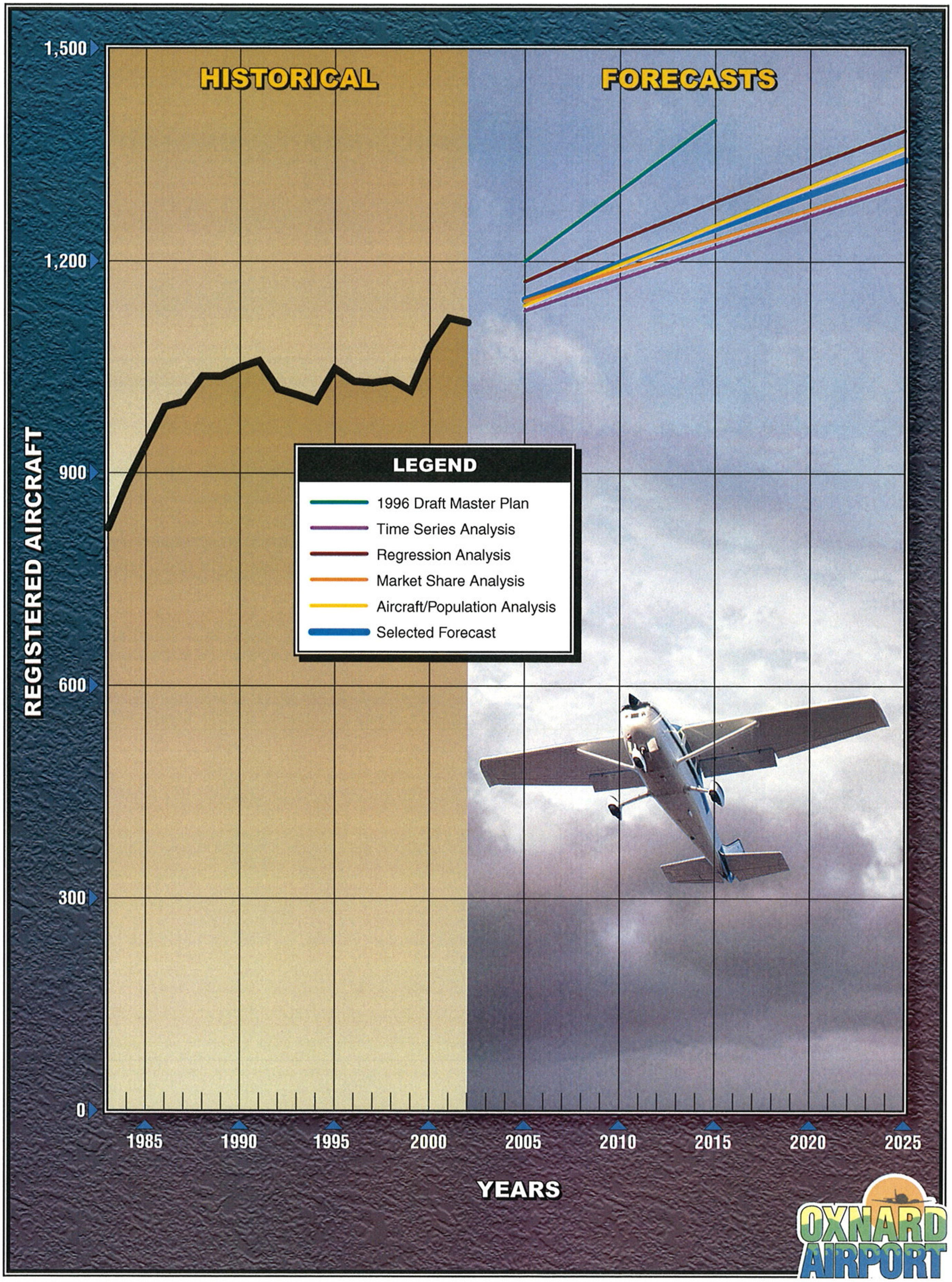

Exhibit 2E
AIRCRAFT REGISTRATIONS
VENTURA COUNTY

TABLE 2E Registered Aircraft Ventura County			
Year	County Registered Aircraft	Reg. AC/1,000 pop.	County Population
1983	822	1.428	575,586
1984	886	1.505	588,790
1985	940	1.559	602,819
1986	994	1.615	615,422
1987	1,001	1.584	632,062
1988	1,037	1.593	650,851
1989	1,037	1.560	664,692
1990	1,050	1.567	670,164
1991	1,059	1.568	675,558
1992	1,019	1.490	684,118
1993	1,011	1.465	690,195
1994	1,002	1.434	698,921
1995	1,048	1.488	704,080
1996	1,030	1.449	711,000
1997	1,028	1.423	722,470
1998	1,032	1.408	732,820
1999	1,017	1.363	746,220
2000	1,080	1.434	753,197
2001	1,120	1.453	770,630
2002	1,112	1.425	780,089
Population Ratio Forecast			
2005	1,137	1.43	795,000
2010	1,195	1.43	836,000
2015	1,251	1.43	875,000
2025	1,360	1.43	951,000

Table 2F examines Ventura County's registered aircraft growth as a percentage of the U.S. active general aviation fleet. Because of a change in how the FAA counts active aircraft, this comparison could only be extended back to 1993. From 1993 through 1999, Ventura County's market share was declining. The past two years, however, the county has reclaimed some market share. Over the period from 1993-2001, the county's share has averaged 0.53 percent of the market. This average was extended through the planning period to provide a constant, or static, market share projection. This is presented on **Exhibit 2E**,as well as on **Table 2G**, for comparison to the other projections.

TABLE 2F
Registered Aircraft Market Share
Ventura County

Year	County Registered Aircraft	U.S. Active GA Aircraft	Market Share %
1993	1,011	177,719	0.569%
1994	1,002	172,936	0.579%
1995	1,048	188,089	0.557%
1996	1,030	191,129	0.539%
1997	1,028	192,414	0.534%
1998	1,032	204,710	0.504%
1999	1,017	219,464	0.463%
2000	1,080	217,533	0.496%
2001	1,120	211,447	0.530%
2002	1,112	211,040	0.527%
FORECASTS			
2005	1,142	215,490	0.50%
2010	1,186	223,720	0.50%
2015	1,228	231,620	0.50%
2025	1,314	248,000	0.50%

Table 2E also examines the ratio of registered aircraft per 1,000 population. Through this period, the ratio has fluctuated between 1.49 and 1.36. A projection at a constant ratio of 1.43 aircraft per 1,000 population was used to show the potential if registrations continue to grow in a similar proportion to county population.

TABLE 2G
Registered Aircraft Projections
Ventura County

	(r-value)	2005	2010	2015	2025
1996 Draft Master Plan	NA	1,200	1,300	1,400	NA
Time Series Analysis (1983-2002)	0.77	1,128	1,173	1,218	1,307
Regression Analysis vs. County PCPI	0.88	1,171	1,230	1,284	1,385
Market Share Analysis Constant Share	NA	1,142	1,186	1,228	1,314
Aircraft/Population Ratio 1.43 per 1,000 Pop.	NA	1,137	1,195	1,251	1,360
Selected Forecast	NA	1,144	1,196	1,295	1,342

All four of the updated projections are lower than the **1996 Draft Master Plan** forecast and represent a relatively narrow band. In the long term (2025), the PCPI regression projection is highest at 1,385 registered aircraft, while the time series analysis is lowest at 1,307, for a range of less than six percent over 23 years. In the immediate term (2005), the time series analysis projects 1,128 aircraft, or just slightly higher than the actual 1,120 aircraft in 2001. The PCPI regression projects 1,171 for a four percent range.

Because of the narrow grouping, an average of the four projections was selected for use in this update. This takes into account the local demographic and economic factors as well as the national general aviation industry.

Based Aircraft Forecast

Having updated the aircraft ownership demand in Ventura County, the historic basing at Oxnard Airport was reviewed to examine the change in market share over the years to project potential based aircraft demand. The market share at OXR is somewhat dependent upon what is happening at other area airports.

As depicted on **Table 2H**, the based aircraft totals at Oxnard Airport have generally been declining for at least the last 16 years. The rate of decline, however, has slowed in the last eight years. At the same time, the number of aircraft registered in the County has generally been growing.

A check of based aircraft at the other two public-use general aviation airports in the County shows they have not seen any growth in basing either. Camarillo Airport's based aircraft has dropped from 580 in 1994 to 510 in 1997, but has since grown back to 558. Santa Paula Airport has maintained its basing around 255. Overall, there was a total of 995 based aircraft in 1994, dropping to 910 in 1997, then rebounding to 957 in 2002.

In its **General Aviation Forecast for the SCAG Region**, in 1999, the Southern California Association of Governments forecast minimal growth at the three Ventura County airports through 2020. Camarillo was projected to grow from 510 to 523. This, of course, has already been exceeded. Oxnard Airport was projected to grow to only 156 based aircraft, while Santa Paula Airport would grow to 259. This was a total of 940 aircraft, or 30 more than were based at the three airports in 1997. This projection has proven to be too conservative as there are presently a combined 957 based aircraft.

The **1996 Draft Master Plan** projected the based aircraft to maintain a 16 percent share of the registered aircraft through 2015. As is evident from **Table 2H**, the airport's share has continued to drop and was 12.6 percent in 2001. In 2002, the share rebounded slightly to 12.8 percent. The historic graph on **Exhibit 2F** shows that the decline in based aircraft may be flattening out in the range of 140 to 150. If the airport were to maintain a current market share consistent with the last two years, based aircraft could be expected to grow to 170 by the end of the planning period. If the airport simply maintained the current level of basing, its market share would decline to approximately 11 percent.

TABLE 2H
Based Aircraft Forecast
Oxnard Airport

Year	OXR Based	Registered Aircraft	OXR Market Share
1985	253	940	26.9%
1986	246	994	24.7%
1987	214	1,001	21.4%
1988	211	1,037	20.3%
1989	210	1,037	20.3%
1990	167	1,050	15.9%
1991	190	1,059	17.9%
1992	175	1,019	17.2%
1993	165	1,011	16.3%
1994	159	1,002	15.9%
1995	155	1,048	14.8%
1996	151	1,030	14.7%
1997	147	1,028	14.3%
1998	151	1,032	14.6%
1999	143	1,017	14.1%
2000	150	1,080	13.9%
2001	141	1,120	12.6%
2002	142	1,112	12.8%
FORECAST			
2005	146	1,144	12.8%
2010	152	1,196	12.7%
2015	158	1,245	12.7%
2025	170	1,342	12.7%
FAA-TAF 2002			
2005	146	1,144	12.8%
2010	150	1,196	12.5%
2015	155	1,245	12.4%
2020	161	1,294	12.4%

The FAA-TAF forecast for based aircraft at OXR is also included for comparison in **Table 2H**. This forecast is only slightly below that of the market share projection. In fact, the two projections differ by just two percent (three based aircraft) in 2020.

For the planning purposes of this Master Plan update, the market share

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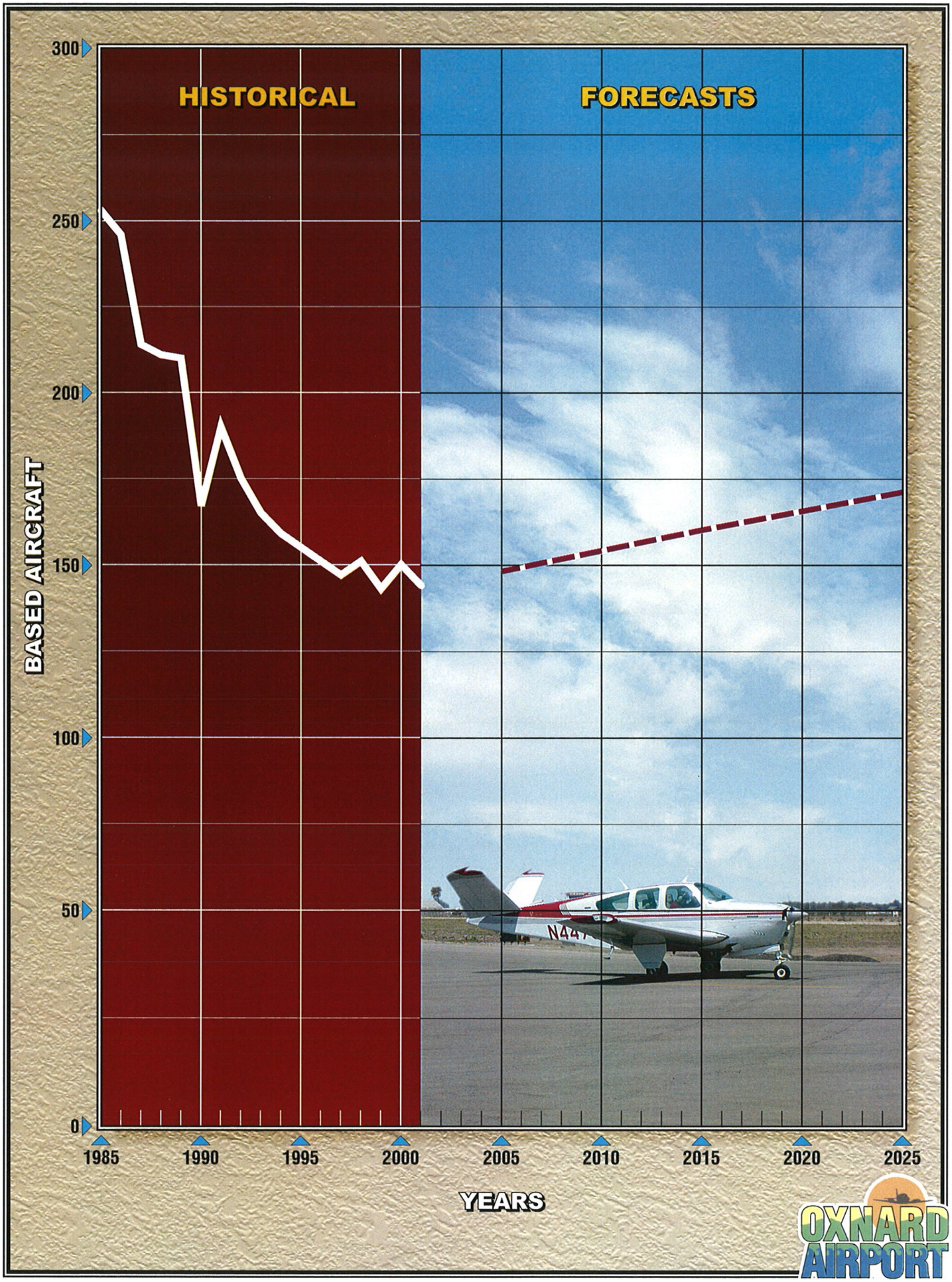

Exhibit 2F
BASED AIRCRAFT FORECAST

for Oxnard Airport was projected to follow the growth of demand for general aviation aircraft in Ventura County. This is consistent with the Mission Statements of the Oxnard Airport and the Ventura County Department of Airports. The latter Mission Statement reads, "To limit the development of Camarillo and Oxnard Airports to meet forecasted needs of general aviation and commuter airline services in a manner that will complement each other."

Planning OXR to serve and maintain its current share of the County's future demand would meet this objective. Thus, the constant market share projection depicted in **Table 2H** and on **Exhibit 2F** is the recommended forecast for based aircraft.

Based Aircraft Fleet Mix

The based aircraft fleet mix at Oxnard Airport (**Table 2J**) was compared to the existing and forecast U.S. general aviation fleet mix trends as presented in FAA **Aerospace Forecasts Fiscal Years 2003-2014**. The current based aircraft fleet mix at Oxnard Airport has a higher than average percentage of rotorcraft and multi-engine piston aircraft, lower-than-average turboprops, and no business jets.

TABLE 2J
Based Aircraft Fleet Mix
Oxnard Airport

Year	Single Engine	Multi-Engine	Turbo-prop	Jet	Rotor	Total
2002	100	28	2	0	12	142
FORECAST						
2005	102	28	2	1	12	146
2010	106	28	3	2	13	152
2015	109	28	4	3	14	158
2025	116	27	6	6	15	170

According to the FAA forecasts, active single engine aircraft will have a slow growth trend of 0.3 percent per year. So the overall percentage of single engine and experimental aircraft will remain fairly constant in the future.

The number of multi-engine piston aircraft will actually decline slightly as older aircraft are retired according to the FAA forecasts. Turboprop aircraft are expected to experience gains, approximately 120 per year nationwide (1.6 percent annually).

The largest percentage growth nationwide is anticipated in the business jet market, where an average annual increase of 3.6 percent is expected. This relates to a net gain of nearly 360 business jets a year. Rotorcraft are anticipated to show a growth rate slightly better than the single engine and experimental aircraft.

The fleet mix for Oxnard Airport is forecast to evolve into a similar make-up as that on the national level, although the rotorcraft percentage will remain high due to the helicopter business on the airport. The single engine percentage will remain relatively constant. The number of multi-engine piston aircraft is forecast to decline by one, resulting in a percentage decline. The low percentages of turbine-powered aircraft at the airport can be expected to increase with a net increase of four turboprops and six business jets over the planning period.

GENERAL AVIATION OPERATIONS

General aviation operations are classified by the federal contract tower (FCT) 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 of use compared to personal and pleasure flights.

Itinerant Operations Forecast

Table 2K depicts the history of general aviation itinerant operations since 1990. The FCT counted 65,890 itinerant operations in 1990; this dropped to a low of 34,591 operations in 1995. The count rose to 51,749 in 1997, but has hovered around the mid-40,000s ever since.

The table also presents a history of the total general aviation itinerant operations at all airports with FAA airport traffic control towers. As with Oxnard Airport, the national itinerant operations were higher in 1990 than anytime since, and hit a low point in 1995.

The table further includes the OXR market share of the towered itinerant operations. While the market share declined in the early and middle part of the 1990s, it has since remained relatively constant.

In FAA **Aerospace Forecasts Fiscal Years 2003-2014**, the FAA projects itinerant general aviation operations will be recovering the operation level lost in 2001 in the immediate term, then grow at approximately 1.4 percent annually. **Table 2K** presents this forecast and includes a projection for Oxnard Airport based upon maintaining its share of the itinerant market.

The itinerant operation growth rate is higher than the 0.7 percent rate forecast for active aircraft in the U.S., indicating that aircraft will be flown more in the coming years. As a result, the operations per based aircraft at the airport can be expected to increase in the future. The operations per based aircraft ratio was utilized to check the reasonableness of the itinerant operations forecast. As shown on **Table 2K**, the ratio of operations per based aircraft at Oxnard Airport would increase in the future from 316 to 354.

Table 2K also compares the Master Plan forecast with that of the FAA-TAF. As with based aircraft, the two projections are relatively close. The Master Plan forecast is just 3.4 percent higher than the FAA-TAF in 2020.

TABLE 2K
General Aviation Itinerant Operations Forecast
Oxnard Airport

Year	OXR GA Itinerant	U.S. ATCT GA Itinerant (millions)	OXR Market Share (%)	OXR Based AC	Itinerant Ops Per AC
1990	65,890	23.1	0.285%	167	395
1991	62,013	22.2	0.279%	190	326
1992	58,146	22.1	0.263%	175	332
1993	55,311	21.1	0.262%	165	335
1994	36,811	21.1	0.174%	159	232
1995	34,591	20.9	0.166%	155	223
1996	50,395	20.8	0.242%	151	334
1997	51,749	21.7	0.238%	147	352
1998	46,222	22.1	0.209%	151	306
1999	44,274	23.0	0.192%	143	310
2000	43,158	22.9	0.188%	150	288
2001	44,506	21.4	0.208%	141	316
2002	44,822	21.4	0.209%	142	316
FORECAST					
2005	46,200	22.1	0.209%	146	316
2010	49,500	23.7	0.209%	152	326
2015	52,900	25.3	0.209%	158	335
2025	60,200	28.8	0.209%	170	354
FAA-TAF 2002					
2005	45,913	22.1	0.208%	146	314
2010	48,806	23.7	0.206%	150	325
2015	51,699	25.3	0.204%	155	334
2020	54,592	27.0	0.202%	161	339

Local Operations

A similar methodology was utilized to forecast local operations. **Table 2L** depicts the history of local operations at Oxnard Airport and examines its historic market share of local operations at towered airports in the United States. By 2000, local operations at OXR had declined by more than 50 percent from 59,660 in 1993. Local operations nationally had remained relatively constant over the past decade. While the local operations declined in 2001, primarily due to September 11, they recovered in 2002 to 28,981.

The FAA **Aerospace Forecasts** projects a 1.2 percent per year increase in local operations nationwide. As with itinerant operations, this would indicate an increase in operations per active aircraft since general aviation is projected to grow at a slower rate.

Training activity is not expected to increase significantly at Oxnard Airport, thus the local operations forecast assumes growth associated with maintaining a slightly declining operations per based aircraft ratio. The table shows the forecast as well as the slight decline of operations per based aircraft over the planning period.

The table also presents the **FAA-TAF 2002** projections for general aviation and local operations. While the TAF forecasts show virtually no growth, the Master Plan forecast is within seven percent for 2020.

Table 2M and **Exhibit 2G** provide a summary of the general aviation forecasts for Oxnard Airport. The **FAA-TAF 2002** general aviation operations are also shown on the exhibit for comparison.

AIR TAXI

The air taxi category includes aircraft involved in on-demand passenger or small parcel transport. The control tower counts air taxi in the same category as commuter airline operations. Since the airport keeps track of airline operations from the airline landing reports, the commuter operations can be subtracted from the tower count to determine the air taxi operations.

In 2000, the tower counted 15,422 air taxi and commuter operations. The commuter airlines reported a total of 2,325 landings for a total of 4,650 annual operations. Thus, there were 10,922 air taxi operations. In 2001, there were 14,046 operations in the tower count, and 4,500 were by commuter airlines, leaving 9,396 air taxi operations.

In 2002, there were 13,406 operations in the tower count, and 3,650 were commuters. This left 9,756 air taxi operations. In 1994, the base year for the **1996 Draft Master Plan**, there were 8,057 air taxi operations. The Master Plan forecast 12,700 operations for 2000.

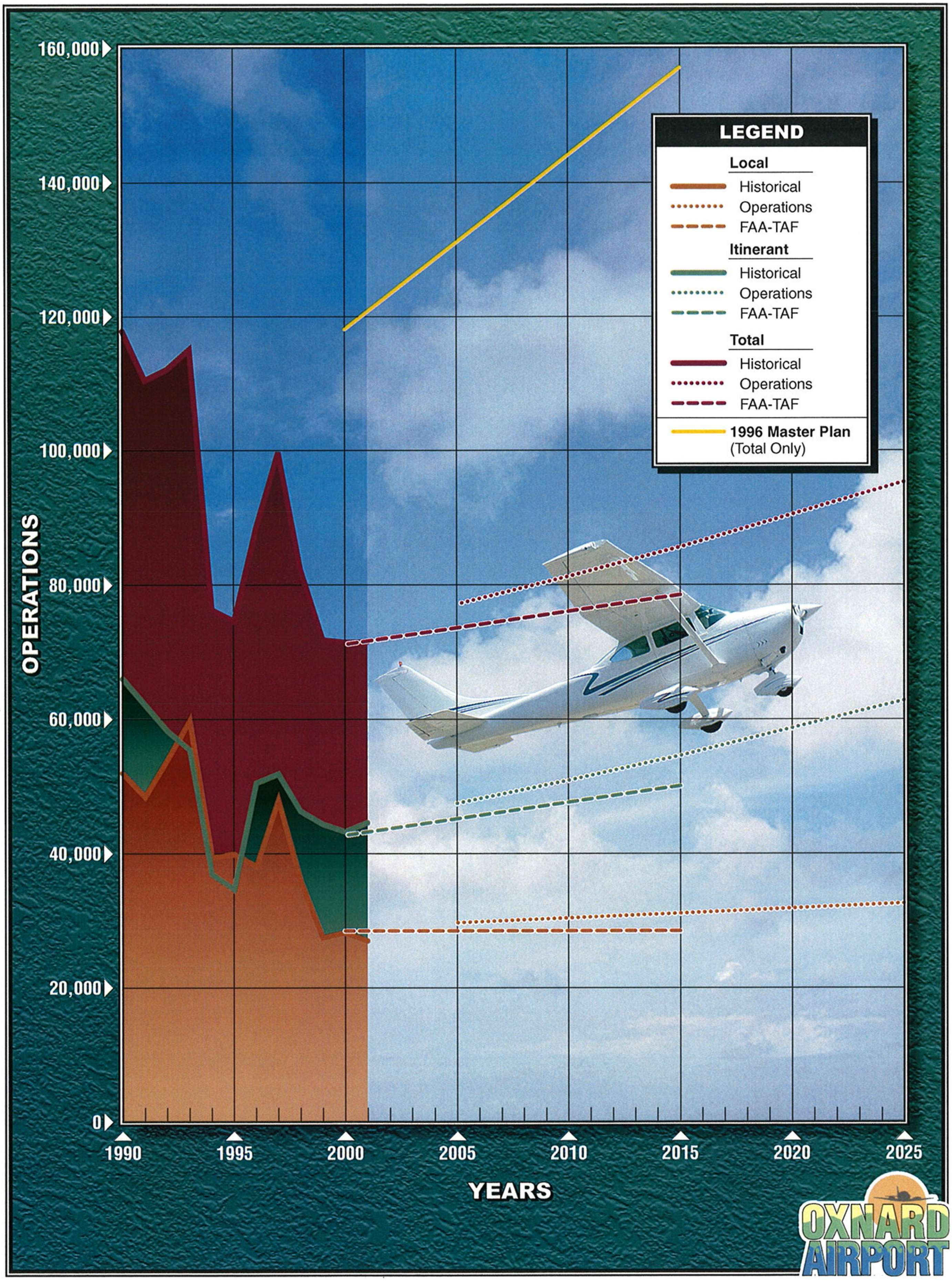

Exhibit 2G
GENERAL AVIATION
OPERATIONS FORECAST

TABLE 2L
General Aviation Local Operations Forecast
Oxnard Airport

Year	OXR GA Local	U.S. ATCT GA Local (millions)	OXR Market Share (%)	OXR Based AC	Local Ops Per AC
1990	51,844	17.1	0.303%	167	310
1991	48,328	16.6	0.291%	190	254
1992	53,866	16.3	0.330%	175	308
1993	59,660	15.5	0.385%	165	362
1994	39,293	15.2	0.259%	159	247
1995	39,865	15.1	0.264%	155	257
1996	38,020	14.5	0.262%	151	252
1997	47,853	15.2	0.315%	147	326
1998	35,911	16.0	0.224%	151	238
1999	27,372	17.0	0.161%	143	191
2000	28,138	17.0	0.166%	150	188
2001	26,885	16.2	0.166%	141	191
2002	28,981	16.2	0.179%	142	204
FORECAST					
2005	29,600	16.7	0.177%	148	202
2010	30,300	17.8	0.170%	154	199
2015	31,000	18.9	0.164%	160	196
2025	32,500	21.3	0.153%	171	191
FAA-TAF 2002					
2005	29,167	16.7	0.175%	146	200
2010	29,367	17.8	0.165%	150	196
2015	29,567	18.9	0.156%	155	191
2020	29,768	20.1	0.148%	161	185

TABLE 2M
General Aviation Forecast Summary
Oxnard Airport

		Operations			
Year	Based Aircraft	Total	Itinerant	Local	% Local
2000	150	71,296	43,158	28,138	39%
2001	141	71,391	44,506	26,885	38%
2002	142	73,803	44,802	28,981	39%
FORECAST					
2005	148	75,800	46,200	29,600	39%
2010	154	79,800	49,500	30,300	38%
2015	160	83,900	52,900	31,000	37%
2025	171	92,700	60,200	32,500	35%

For this Master Plan update, air taxi operations are projected to recover, then grow at a rate similar to that of general aviation itinerant operations. The air taxi forecasts are presented in **Table 2N**.

TABLE 2N
Air Taxi and Military Operations Forecast
Oxnard Airport

		Military		
	Air Taxi	**Itinerant**	**Local**	**Total**
ACTUAL				
2000	10,922	1,461	64	1,525
2001	9,396	958	37	995
2002	9,756	1,523	18	1,541
FORECAST				
2005	11,000	1,400	100	1,500
2010	11,800	1,400	100	1,500
2015	12,600	1,400	100	1,500
2025	14,500	1,400	100	1,500

MILITARY

Military activity accounts for the smallest portion of the operational traffic at OXR. Since 1990, annual military operations have fluctuated between a high of 2,626 in 1993 and a low of 995 in 2001. Since 1998, local military operations have totaled less than 100 each year. For the purposes of this Master Plan update, military operations were projected to average 1,500 per year over the planning period. This includes 1,400 itinerant and 100 local operations. This is down from the **1996 Draft Master Plan** which projected an average of 2,200 annually. **Table 2N** includes the military forecast.

SUMMARY

This chapter has outlined the various aviation demand levels to be anticipated over the planning period. The next step in the master plan is to reassess the capacity of the existing facilities and determine what facilities will be necessary to meet both existing and future demands. This will be examined in the following chapter. **Table 2P** provides a summary of the aviation forecasts for Oxnard Airport.

TABLE 2P
Aviation Activity Forecasts
Oxnard Airport

	ACTUAL		FORECAST			
	2001	**2002**	**2005**	**2010**	**2015**	**2025**
ANNUAL OPERATIONS						
General Aviation						
Itinerant	44,506	44,822	46,200	49,500	52,900	60,200
Local	26,885	28,981	29,600	30,300	31,000	32,500
Total GA	71,391	73,803	75,800	79,800	83,900	92,700
Commuter	4,650	3,650	4,000	4,800	5,600	6,500
Other Air Taxi	9,396	9,756	11,000	11,800	12,600	14,500
Military	995	1,541	1,500	1,500	1,500	1,500
Total Operations	86,432	88,750	92,300	97,900	103,600	115,200
Enplanements	34,696	22,829	30,000	38,000	45,000	60,000
Based Aircraft						
Single Engine	100	100	103	106	109	116
Multi-Engine	27	28	28	28	28	27
Turboprop	2	2	2	3	4	6
Jet	0	0	1	2	3	6
Rotorcraft	12	12	12	13	14	15
Total Based	141	142	146	152	158	170

OXNARD AIRPORT

Chapter Three
FACILITY REQUIREMENTS

CHAPTER THREE

FACILITY REQUIREMENTS

The objective of the facility requirements effort is to identify, in general terms, the capability of the existing airport facilities and outline what deficiencies there are or may be created by the forecast demands.

It is important to note that most of the activity levels forecast in the previous chapter have been exceeded in the past. For example, the 170 based aircraft forecast for 2002 are less than the 175 that were based at the airport in 1992. The 115,000 operations forecast for 2025 are less than the 137,880 operations counted in 1993. Since most of the forecast activity has been accommodated at this airport before, the emphasis will be more on re-development to ensure a safe, secure, and efficient operation. Once the deficiencies are identified, a more specific determination can be made as to how to address them in relation to the Mission Statements of Oxnard Airport and the Ventura County Department of Airports.

PLANNING HORIZONS

Cost-effective, safe, efficient, and orderly development of an airport should rely more upon actual demand at that airport than a time-based forecast figure. Thus, in order to develop a master plan that is demand-based rather than time-based, a series of planning horizon milestones have been established that take into consideration the reasonable range of aviation demand projections.

It is important to consider that, over time, the actual activity at the airport may be higher or lower than what the annualized forecast portrays. By planning according to activity milestones, the resultant plan can accommodate unexpected shifts, or changes, in the area's aviation demand. It is important to plan for these milestones so that airport officials can respond to unexpected changes in a timely fashion. As a result, these milestones provide flexibility, while potentially extending this plan's useful life if aviation trends slow over the period.

The most important reason for utilizing milestones is to allow the airport to adapt facilities according to need generated by actual demand levels. The demand-based schedule provides flexibility in development, as the schedule 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 need-based program. **Table 3A** presents the planning horizon milestones for each activity demand category.

TABLE 3A
Aviation Demand Planning Horizons
Oxnard Airport

	Current	Short Term	Intermediate Term	Long Term
ANNUAL OPERATIONS				
Commuter	3,650	4,500	5,600	6,500
Air Taxi	9,756	11,500	12,600	14,500
Military	1,541	1,500	1,500	1,500
General Aviation	73,803	78,200	83,900	92,700
Total Operations	88,750	95,700	103,600	115,200
ANNUAL PASSENGERS				
Enplanements	22,829	35,000	45,000	60,000
Based Aircraft	142	150	158	170

The planning horizons represent current, short, intermediate, and long term activity levels. The short term generally relates to the expected activity five years in the future (2008). The intermediate and long term are quite similar to the forecast levels for 2015 and 2025 in the previous chapter, with modifications to round the numbers.

FCT COUNT ADJUSTMENT

The planning horizon operational activity levels in **Table 3A** represent the actual operations counted by the federal control tower (FCT). They will remain the milestones for monitoring growth and activity because tower count is readily available.

The Oxnard federal control tower (FCT) is not a 24-hour tower, so the count is not all-inclusive of operations at the airport. Certain elements of the planning analyses, however, require that all airport activity be considered. For these evaluations, it is necessary to estimate and adjust for operations that occur when the tower is closed.

The Oxnard FCT hours are from 7:00 a.m. to 9:00 p.m. daily. **Table 3B** outlines the adjusted tower count. The commercial service operations were derived from the landing reports of the airline and do not need to be adjusted. The other operations are adjusted based upon information obtained from flight plans and airport management estimates.

TABLE 3B
Adjusted Aircraft Operations
Oxnard Airport

	Current	Short Term	Intermediate Term	Long Term
Commuter	3,650	4,500	5,600	6,500
Air Taxi	10,634	12,500	13,700	15,800
Military	1,618	1,600	1,600	1,600
General Aviation				
Itinerant	46,615	50,100	55,000	62,600
Local	29,561	30,600	31,600	33,100
Total	92,078	99,300	107,500	119,600

Note: Traffic count adjusted to include estimated operations when Oxnard Federal Control Tower is closed (9:00 p.m. to 7:00 a.m.)

KEY PEAKING CHARACTERISTICS

While the planning horizons are statistical benchmarks that can be easily monitored, much of facility planning must be directly related to levels of peak activity. The following planning definitions apply to the peak periods:

- **Peak Month** - The calendar month when peak activity occurs.
- **Design Day** - The average day in the peak month.

- **Busy Day** - The busy day of a typical week in the peak month.

- **Design Hour** - The peak hour within the design day.

The design day is normally derived by dividing the peak month operations or enplanements by the number of days in the month. However, if commercial activity is heavier on weekdays, it may require an adjustment to reflect design weekday activity.

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.

AIRLINE DESIGN PEAKS

Historical airport records over the last six years were examined to determine the peak month for passenger enplanements at Oxnard Airport. The peak month has occurred in a different month each year since 1997. The peak month has averaged 9.7 percent of annual enplanements during this time. Design day enplanements were then calculated by dividing total enplanements in the peak month by the number of days in the month.

With five flights currently dispersed throughout the day, the design hour enplanements presently match the seating capacity of the aircraft. This will vary in the future as airline service or aircraft seating capacity changes.

According to airport records, there were 3,650 total airline operations in 2002. The flight schedule at Oxnard Airport does not fluctuate significantly with the season. Changes in operations are more related to weather cancellations than seasonal flight schedule changes. The lower peaking percentages for passengers also suggest that the operations peaks do not vary significantly. Therefore, the peak month percentage will be forecast at 9.0 percent.

Hourly operational peaks will vary depending upon the service as well. With one airline, the activity will be dispersed throughout the day. With two airlines, there is more probability for more operations per hour. This is accounted for in the peak activity forecast in **Table 3C.**

TABLE 3C Peaking Characteristics Oxnard Airport	Current	Short Term	Intermediate Term	Long Term
AIRLINE				
Enplanements				
Annual	22,829	35,000	45,000	60,000
Peak Month	2,169	3,400	4,360	5,820
Design Day	73	113	145	194
Design Hour	30	43	51	63
Operations				
Annual	3,650	4,500	5,600	6,500
Peak Month	316	406	504	584
Design Day	10	14	18	20
Design Hour	2	4	4	4
GENERAL AVIATION				
Itinerant Operations				
Annual	44,822	48,200	52,900	60,200
Peak Month	4,503	4,920	5,400	6,140
Design Day	145	159	174	198
Busy Day	186	218	238	271
Design Hour	24	26	28	32
TOTAL OPERATIONS				
Annual	88,750	95,700	103,600	115,200
Peak Month	8,570	9,760	10,590	11,730
Design Day	276	315	342	378
Design Hour	42	48	52	57

GENERAL AVIATION DESIGN PEAKS

The key peaking characteristic for general aviation (GA) activity is related to itinerant operations. Busy day and design hour itinerant operations are utilized to determine space requirements for transient ramp, terminal services, and auto parking in GA areas.

The peak month for GA itinerant operations over the past six years has averaged 10.2 percent of annual operations. Forecasts of peak month itinerant activity have been developed by applying this percentage to the forecasts of annual itinerant operations.

Design day operations were calculated by dividing the total number of itinerant operations in the peak month by the number of days in the month. Busy day itinerant operations were examined over the past six years. It was found that the busy day typically averaged 19.6 percent of the weekly itinerant operations. As a result, the busy day itinerant operations factor was determined to be 1.37. The design hour itinerant operations were projected at 16 percent of the design day operations over the planning period. **Table 3C** summarizes the general aviation peak activity forecasts.

TOTAL OPERATIONS DESIGN PEAKS

The total number of takeoffs and landings becomes a factor when evaluating the capacity of the airfield. The design day and design hour are factors in calculating the airport's annual service volume as well as evaluating the hourly capacity. The peak month was evaluated over the last decade as a percentage of annual operations. Although the peak month occurred during several different months over the years, May was most common, followed by April. The percentage of operations in the peak month varied between 9.3 percent and 12.1 percent, but has averaged 10.2 percent since 1990. The peak month was projected at this percentage over the planning horizons.

As with the GA itinerant operations, design day was calculated by dividing the peak month activity by 31. The design hour averages 15.0 percent of the daily operations. This percentage was projected throughout the planning horizons. **Table 3C** summarizes the peak activity forecasts for total operations.

AIRFIELD CAPACITY

Airfield capacity is measured in a variety of different ways. The **hourly capacity** of a runway measures the maximum number of aircraft that can take place in an hour. The **annual service volume (ASV)** is an annual level of service that may be used to define airfield capacity needs. **Aircraft delay** is the total delay incurred by aircraft using the airfield during a given time frame. FAA Advisory Circular 150/5060-5, **Airport Capacity and Delay**, provides a methodology for examining the operational capacity of an airfield for planning purposes. This analysis takes into account specific factors about the airfield. These various factors are depicted in **Exhibit 3A**. The following describes the input factors as they relate to Oxnard Airport:

- **Runway Configuration** - A single runway configuration with a full length parallel taxiway and instrument approaches.

- **Runway Use** - There is no formal runway use program in place, but prevailing winds dictate the use of

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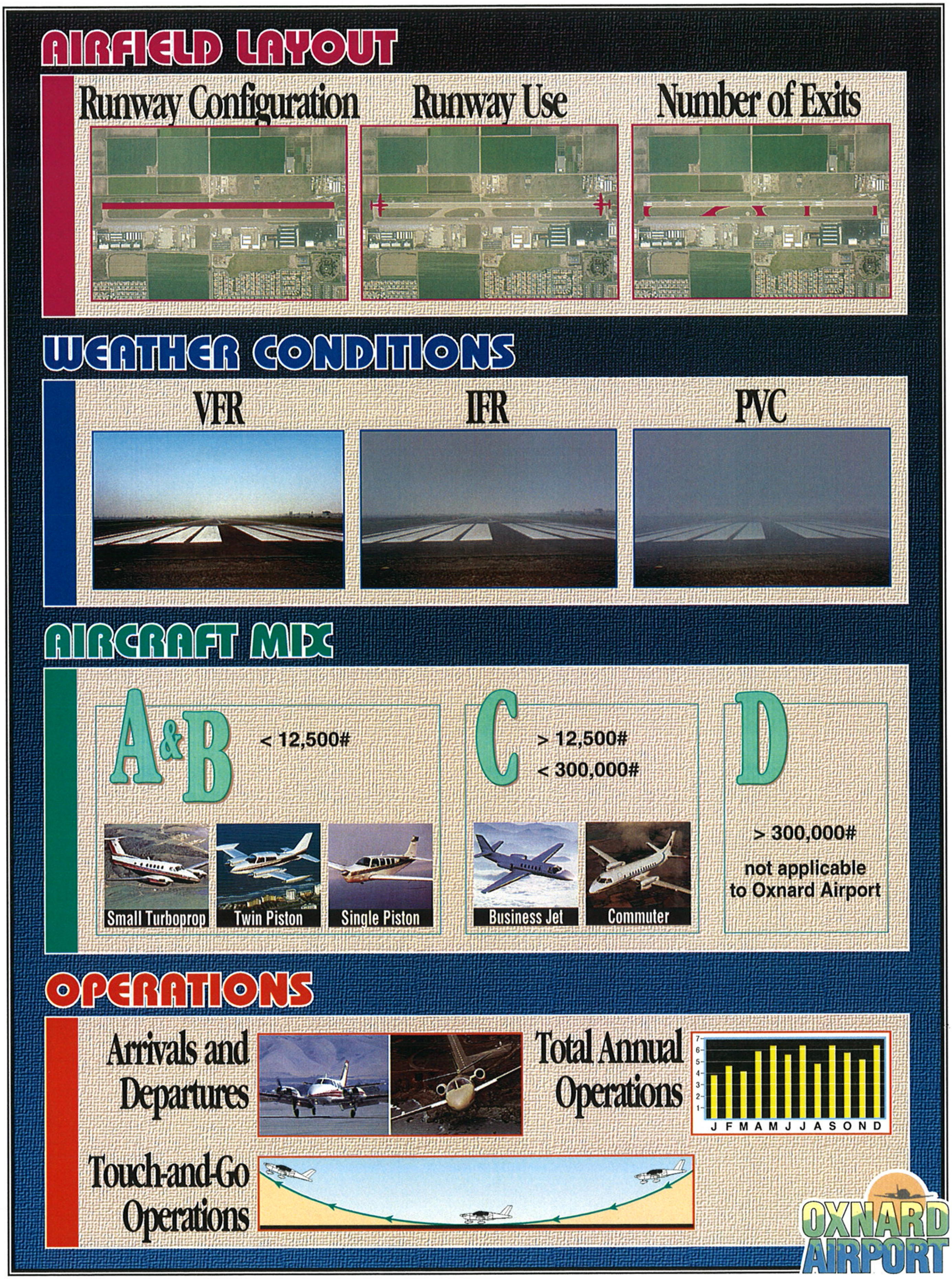


Exhibit 3A
AIRFIELD CAPACITY
FACTORS

Runway 25 approximately 80 percent of the time.

- **Exit Taxiways** - Based upon mix, only taxiways between 2,000 feet and 4,000 feet from the runway threshold count in the exit rating. The exits must also be at least 750 feet apart to be credited. Therefore, Runway 25 is credited for only one taxiway exit, while Runway 7 gets credited for two.

- **Weather Conditions** - The airport operates under visual flight rules (VFR) 84 percent of the time. Instrument flight rules (IFR) occur when cloud ceilings are between 500 and 1,000 feet, and visibility is between one and three statute miles. This occurs 13 percent of the time. Poor visibility conditions (PVC) apply for minimums below 500 feet and one mile. This occurs three percent of the time.

- **Aircraft Mix** - Description of the classifications and the percentage mix for each planning horizon is presented on **Table 3D**.

- **Percent Arrivals** - Generally follows the typical 50-50 percent split.

- **Touch-and-Go Activity** - Percentages of touch-and-go activity are presented in **Table 3D**.

- **Operational Levels** - Operational planning horizons were outlined in the previous section of this chapter. The peak month averages 10.2 percent of the year. The peak hour currently averages 16 percent of the operations in a day, and will decline to 15 percent as operations increase over the long term.

HOURLY RUNWAY CAPACITY

Based upon the input factors, current and future hourly capacities for the various operational scenarios at Oxnard Airport were determined. The hourly operational capacity during VFR ranges between 98 and 108 operations per hour. During IFR, the hourly capacity of the runway drops to between 58 and 62 operations per hour, and during PVC the capacity drops to 49 operations per hour. This is due to increased spacings required between aircraft during IFR conditions.

As the mix of aircraft operating at an airport changes to include a higher percentage of large aircraft (weighing over 12,500 pounds), the hourly capacity of the system declines. As indicated on **Table 3D**, the percentages of Class C aircraft will increase with the planning horizon activity milestones. This results in a decline in the hourly capacity.

TABLE 3D
Aircraft Operational Mix - Capacity Analysis
Oxnard Airport

Aircraft Classification	Current	Short Term	Intermediate Term	Long Term
VFR				
Classes A & B	87%	85%	83%	81%
Class C	13%	15%	17%	19%
Class D	0%	0%	0%	0%
IFR				
Classes A & B	70%	68%	65%	63%
Class C	30%	32%	35%	37%
Class D	0%	0%	0%	0%
Touch-and-Go's	33%	32%	30%	28%

Definitions:
Class A: Small single engine aircraft with gross weight of 12,500 pounds or less.
Class B: Small twin-engine aircraft with gross weight of 12,500 pounds or less.
Class C: Large aircraft with gross weights over 12,500 pounds up to 300,000 pounds.*
Class D: Large aircraft with gross weights over 300,000 pounds.*

* OXR's published pavement strength is 70,000 pounds.

The weighted hourly capacity reflects the average capacity of the airfield taking into account VFR, IFR, and PVC conditions. The current and future weighted hourly capacities are depicted in **Table 3E**. At Oxnard Airport, the current weighted hourly capacity is 84 operations. This is expected to decline to 78 operations in the long term. This is still well above the design hour of 57 operations expected in the long term.

ANNUAL SERVICE VOLUME

The weighted hourly capacity is utilized to determine the annual service volume in the following equation:

$$ASV = C \times D \times H$$

C = weighted hourly capacity;
D = ratio of annual demand to the average daily demand during the peak month; and
H = ratio of average daily demand to the design hour demand during the peak month.

The ratio of annual demand to average daily demand (D) was determined to be 304 for OXR. This is expected to remain relatively constant over the long range planning period. The ratio of average daily demand to average peak hour demand (H) was determined to be 6.57. This ratio was also projected to increase slightly to 6.63 by the long term planning horizon.

The current ASV was determined to be 167,000 operations. As mentioned earlier, the percentage of Class C aircraft utilizing the airport is expected to increase as activity increases. This will result in a decline in the annual service volume to 157,000 as operations increase over the planning horizons. With adjusted operations in 2002 totaling over 92,000, the airport is currently at 55 percent of its annual service volume. Long range adjusted annual operations are forecast to reach over 119,000 operations which would be 76 percent of the airport's ASV. **Table 3E** summarizes the airport's ASV over the long range planning horizon.

TABLE 3E
Airfield Demand/Capacity Summary
Oxnard Airport

	PLANNING HORIZON			
	Base Year (2002)	**Short Term**	**Intermediate Term**	**Long Term**
Operational Demand				
Annual (Adjusted)	92,078	99,300	107,500	119,600
Design Hour	42	48	52	57
Operational Capacity				
Annual Service Volume	167,000	163,000	157,000	158,000
Weighted Hourly Capacity	83.7	81.6	77.9	78.4
Delay				
Per Operation (Min.)	0.41	0.50	0.65	0.81
Total Annual (Hrs.)	629	828	1,167	1,612

AIRCRAFT DELAY

As the number of annual aircraft operations approaches the airfield's capacity, increasing amounts of delay to aircraft operations begin to occur. Delays occur to arriving and departing aircraft in all weather conditions. Arriving aircraft delays result in aircraft holding outside the airport traffic area. Departing aircraft delays result in aircraft holding at the runway end until released by air traffic control.

Table 3E summarizes the aircraft delay analysis conducted for Oxnard Airport. Current annual delay is a minimal 629 hours. As an airport's operations increase toward its annual service volume, delay increases exponentially. Analysis of delay factors for the long range planning horizon indicate that annual delay can be expected to reach 1,612 hours. This should still be a very manageable level of delay.

CAPACITY ANALYSIS CONCLUSIONS

This section has examined the capability of the airfield to handle aircraft operations without excessive capacity and delay. **Exhibit 3B** compares annual service volume to existing and forecast operational levels at Oxnard Airport. The current operations level represents 55 percent of the airfield's annual service volume. By the end of the planning period, total annual operations are expected to represent 76 percent of annual service volume. Thus, the airfield has adequate operational capacity for the long range planning horizon.

CRITICAL AIRCRAFT

The selection of appropriate 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. The critical design aircraft is defined as the most demanding category of aircraft, or family of aircraft, which conducts at least 500 operations per year at the airport. Planning for the type of aircraft use is of particular importance since design standards are used to plan separation distances between facilities. These standards must be considered to ensure the airport operates with maximum safety.

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 airport reference code (ARC) has two components: the first component, depicted by a letter, is the aircraft approach category and relates to 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 airplane 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. The six ADG's used in airport planning are as follows:

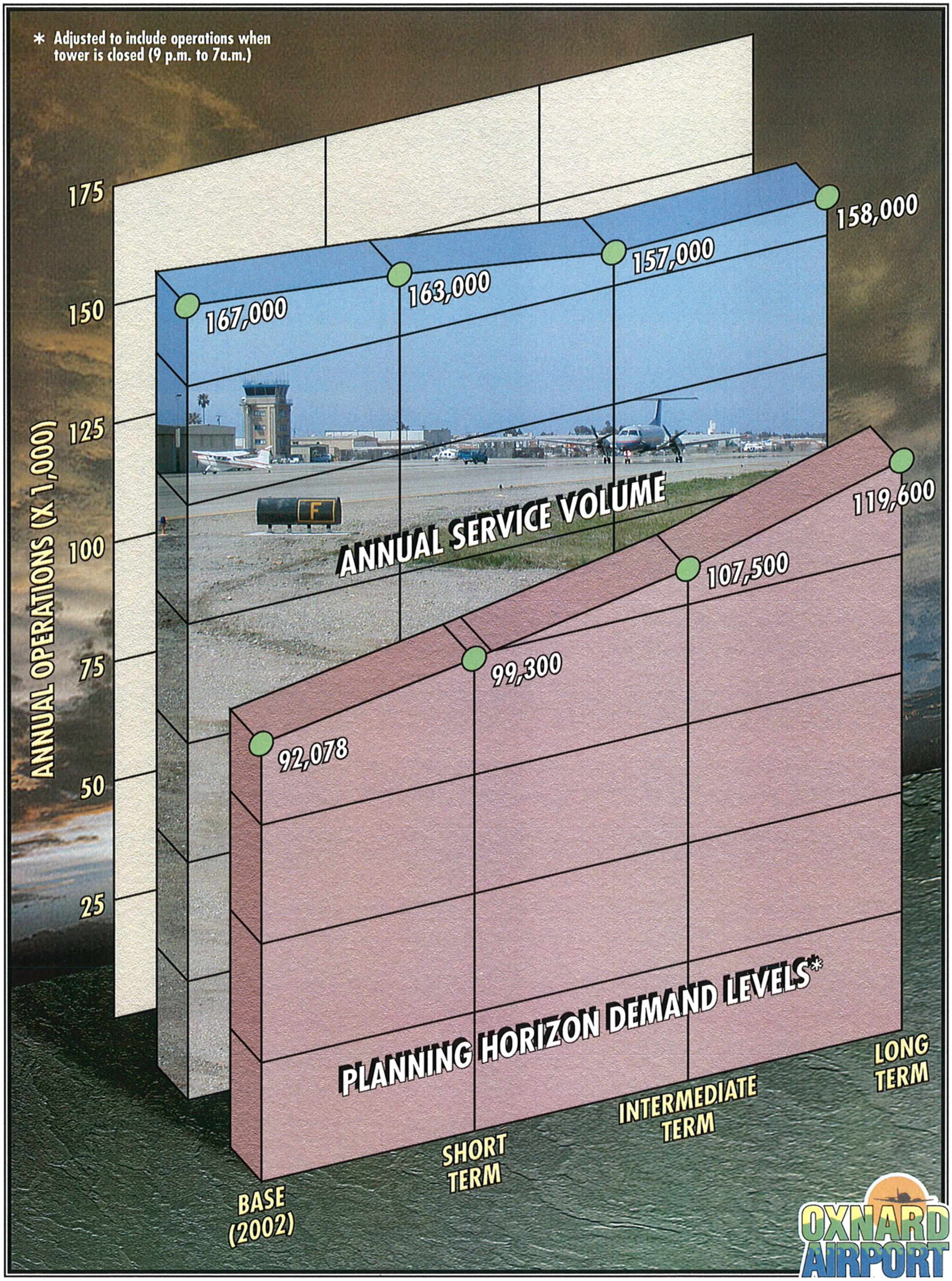


Exhibit 3B
AIRFIELD DEMAND VS. CAPACITY

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.

Exhibit 3C summarizes representative aircraft by ARC.

In order to determine several airfield design requirements, the critical aircraft and critical ARC should first be determined, then appropriate airport design criteria can be applied. This begins with a review of the type of aircraft using and expected to use Oxnard Airport. **Table 3F** provides a projected breakdown of planning horizon operations by airport reference code.

TABLE 3F
Airport Reference Code (ARC) Mix
Oxnard Airport

			ANNUAL OPERATIONS					
	2002		Short Term		Intermediate Term		Long Term	
Reference Code	Ops	%	Ops	%	Ops	%	Ops	%
A, B-I	83,247	90.41	88,022	88.64	93,461	86.94	101,776	85.10
A, B-II	7,903	8.58	9,219	9.28	10,261	9.55	12,002	10.04
A, B-III	220	0.47	977	0.98	2.278	2.12	3,642	3.05
C-I	333	0.36	489	0.49	700	0.65	1,000	0.84
C-II	189	0.21	316	0.32	400	0.37	600	0.50
C-III	6	0.01	12	0.01	30	0.03	50	0.04
D-I	74	0.08	116	0.12	160	0.15	200	0.17
D-II	53	0.06	94	0.09	140	0.13	230	0.19
D-III	53	0.06	60	0.06	70	0.07	100	0.08
Total	92,078	100.00	99,300	100.00	107,500	100.00	119,600	100.00

Note: Operations based upon adjusted ATCT count.

Aircraft in Approach Category C or higher comprise over 700 annual operations currently. C-I has the most with 333 while C-II has 189 operations. There are also operations by aircraft up to D-III, but they do not comprise at least 500 annual operations to be considered the critical ARC.

Consideration must also be given to aircraft at a slower approach speed but larger wingspans. Even at the slower speeds, the size of the wingspan will determine ground taxiway design standards. The largest ADG utilizing the airport is ADG III. The aircraft in this group currently total an estimated 400 operations. The Dash 8 that was flown on regularly scheduled flights in 2001 is in ADG III. In fact, many short takeoff and landing aircraft (STOL) used for commuter airline purposes have wingspans in ADG III. As long as Oxnard Airport continues as a commuter service facility, the airport should maintain ADG III standards. **For planning purposes, Oxnard Airport should continue to plan based upon the combination of ARC D-II and B-III.**

AIRFIELD CAPABILITIES

The analyses of the operational capacity and the critical design aircraft are used to examine airfield capabilities. This includes runway configuration, runway length, pavement strength, safety design standards as well as navigational aids, lighting, and marking.

RUNWAY CONFIGURATION

The present single-runway configuration was evaluated based upon its operational capability and wind coverage. The earlier demand-capacity analysis indicated that the runway has adequate operational capacity for the activity that can reasonably be expected over the planning horizons.

The other consideration in the runway's capability involves the orientation for wind coverage. FAA Advisory Circular 150/5300-13, Change 1, **Airport Design**, considers an airport to have adequate wind coverage if aircraft can use it at least 95 percent of the time. The 95 percent wind coverage is computed on the basis of the crosswind component not exceeding 10.5 knots (12 mph) for ARC A-I and B-I; 13 knots (15 mph) for ARC A-II and B-II; and 16 knots (18 mph) for ARC A-III, B-III, and C-I through D-II.

The most recent 10 years of wind data specific to Oxnard Airport at the time of this analysis was 1993-2002. This data is graphically depicted on the wind rose in **Exhibit 3D**. The east-west orientation of Runway 7-25 provides 97.0 percent coverage for 10.5 knot crosswinds. Thus, the existing runway orientation has adequate wind coverage for all sizes and speeds of aircraft.

RUNWAY LENGTH

The evaluation of the operational capabilities of the available runway length is based upon four primary elements including the elevation of the airport, the air temperature, the gradient of the runway, and the operating weight of the aircraft. The airport elevation at Oxnard Airport is 43 feet above mean sea level (MSL). The temperature commonly used for design is the mean maximum daily temperature during the hottest month. According to the National Weather Service, that occurs in August and September and is 75.0 degrees Fahrenheit (F). The elevation varies by 11 feet from its high (43 feet) to its low

02MP10-3C-4/17/03

A-I

Beech Baron 55
Beech Bonanza
Cessna 150
Cessna 172
Piper Archer
Piper Seneca

C-I, D-I

Lear 25, 35, **55**
Israeli Westwind
HS 125

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

Gulfstream II, **III**, IV
Canadair 600
Canadair Regional Jet
Lockheed JetStar
Super King Air 350
Embraer 132

B-II
less than 12,500 lbs.

Super King Air 200
Cessna 441
DHC Twin Otter

C-III, D-III

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, 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
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.

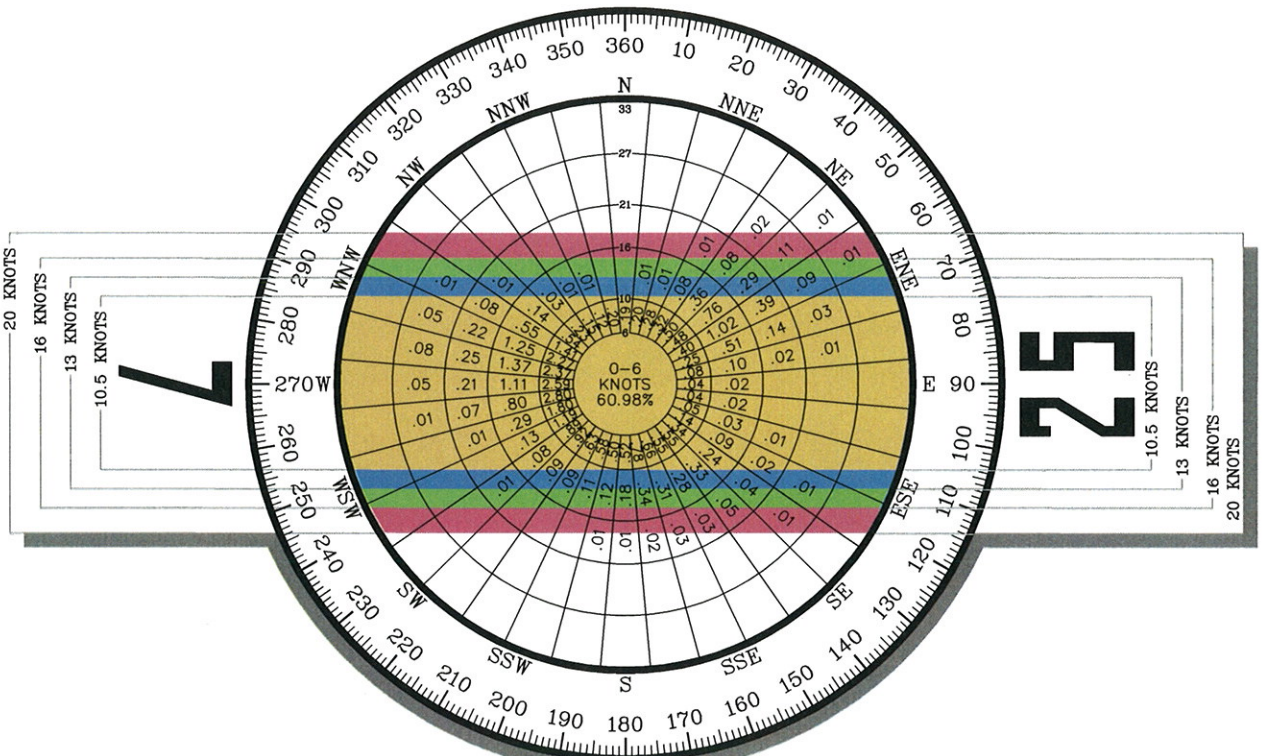
OXNARD AIRPORT

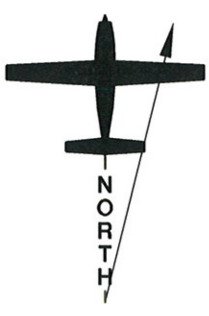
Exhibit 3C
AIRPORT REFERENCE CODES

02MP10-3D-04/30/03

ALL WEATHER WIND COVERAGE

Runways	10.5 Knots	13 Knots	16 Knots	20 Knots
Runway 7–25	*97.05%*	*98.64%*	*99.69%*	*99.93%*





Magnetic Variance
13° 41' East (April 2003)
Annual Rate of Change
2.31' West (April 2003)

SOURCE:
NOAA National Climatic Center
Asheville, North Carolina
Point Mugu Naval Air Station
Point Mugu, California

OBSERVATIONS:
78,602 All Weather Observations
1989 – 1998

OXNARD AIRPORT

Exhibit 3D
ALL WEATHER WIND ROSE

(32 feet) for a runway gradient of 0.18 percent.

The critical aircraft for runway length at Oxnard Airport are business jets. The turboprop aircraft used by the commuter airlines generally require less runway length than jets. The introduction of regional jets into many commuter airline fleets has changed at many airports. Regional jet service that would require either additional runway length or runway weight-bearing capacity at Oxnard Airport is not a consideration of this master plan.

The aircraft load is dependent upon the payload of passengers and/or cargo, plus the amount of fuel on board. For departures, the amount of fuel varies depending upon the length of a nonstop flight, or trip length. This can vary for commuter and general aviation aircraft. As a result, the runway requirements for each are evaluated to determine the critical length for Oxnard Airport.

Table 3G outlines the runway length requirements for various classifications of general aviation aircraft at Oxnard Airport. These were derived utilizing the FAA Airport Design Computer Program for **Runway Lengths Recommended for Airport Design**. These runway lengths are based upon groupings or "families" of aircraft. As discussed earlier, the runway design required should be based upon the most critical family with at least 500 annual operations.

TABLE 3G
Runway Length Requirements
Oxnard Airport

AIRPORT AND RUNWAY DATA	
Airport elevation	43 feet
Mean daily maximum temperature of the hottest month	75.0 F
Maximum difference in runway centerline elevation	11 feet
Wet runway	
RUNWAY LENGTHS RECOMMENDED FOR AIRPORT DESIGN	
Small airplanes with less than 10 passenger seats	
75 percent of these airplanes	2,400 feet
95 percent of these airplanes	2,900 feet
100 percent of these airplanes	3,500 feet
Small airplanes with 10 or more passenger seats	4,000 feet
Business jets of 60,000 pounds or less	
75 percent of these airplanes at 60 percent useful load	5,300 feet
75 percent of these airplanes at 90 percent useful load	6,600 feet
100 percent of these airplanes at 60 percent useful load	5,500 feet
100 percent of these airplanes at 90 percent useful load	7,300 feet

REFERENCE: Chapter 2 of AC 150/5325-4A, **Runway Length Requirements for Airport Design**, no Changes included.

Small aircraft are defined as aircraft weighing 12,500 pounds or less. Small airplanes make up the vast majority of general aviation activity at OXR as they do at most nonhub airports. While piston-powered aircraft make up the majority of the small airplane operations, there are several turboprops, and even some business jets, that can be characterized as small airplanes.

Runway 7-25 is 5,950 feet long. As is evident from the table, this is adequate to accommodate business jets for at least shorter haul flights (60 percent useful load). The length is not adequate to accommodate many business jets on longer haul flights (90 percent useful load). Most destinations for business jets departing from Oxnard Airport are in the western United States, although recent flight plan records indicate non-stop destinations as far east as Chicago.

PAVEMENT STRENGTH

An important feature of airfield pavement is the ability to withstand repeated use by aircraft of significant weight. Runway 7-25 is strength-rated at 50,000 pounds single wheel loading (SWL) and 70,000 pounds dual wheel loading (DWL).

The Embraer 120 turboprop aircraft currently utilized by United Express (SkyWest) Airlines has a maximum ramp weight of 26,500 pounds on dual wheel gear. Most of the business jets currently utilizing the airport weigh less than 70,000 pounds on dual wheel gear. The Gulfstream V and the Global Express are the largest business jets to visit, but use the airport on an infrequent basis. Infrequent use of an aircraft weighing slightly more than the rated pavement strength will not seriously impact the pavement. The Gulfstream V has a maximum weight of 91,400 pounds on dual wheel gear, while the Bombardier Global Express weighs a maximum of 95,000 pounds. They are not considered the critical aircraft for future planning, so the present pavement strength should be adequate.

RUNWAY SAFETY DESIGN STANDARDS

Runway safety design standards define the widths, and clearances required to optimize safe operations in the landing and takeoff area. These dimensional standards vary depending upon the ARC for each runway. **Table 3H** outlines key dimensional standards for the airport reference codes most applicable to Oxnard Airport. The runway at OXR should currently meet at least C/D-II and A/B-III standards, the airport's current critical ARCs. The following discusses the various standards as they relate to OXR.

Runway Width

The runway width is currently 100 feet, with paved shoulders of 10 feet or more. This meets the design standards for both B-III and D-II.

TABLE 3H
Airfield Design Standards
Oxnard Airport

Airport Reference Code	Current Dimensions (ft.)	B-III Standard (ft.)	C-II Standard (ft.)
Runway Width	100	100	100
Runway Safety Area			
Width	500	400	500
Length Beyond End	720	**800**	**1,000**
Runway Object Free Area			
Width	700	**800**	**800**
Length Beyond End	720	**800**	**1,000**
Runway Blast Pad			
Width	N/A	140	120
Length	N/A	200	150
Runway Centerline to:			
Holding Position	250	200	250
Parallel Taxiway	365	350	**400**
Taxiway Width	75	50	35
Taxiway Centerline to:			
Fixed or Movable Object	135	93	65.5
Parallel Taxilane	N/A	152	105
Taxilane Centerline to:			
Fixed or Movable Object	N/A	81	57.5
Parallel Taxilane	N/A	140	97
Runway Protection Zones - One mile or greater visibility			
Inner width	500	500	500
Length	1,700	1,700	1,700
Outer width	1,010	1,010	1,010
Category I			
Inner Width	1,000	1,000	1,000
Length	2,500	2,500	2,500
Outer Width	1,750	1,750	1,750

Note: Dimensions in bold indicate that design standard exceeds the current dimensions on the airport.

Runway Safety Area

The single-most critical design standard is the runway safety area. FAA Advisory Circular (AC) 150/5300-13 defines the runway safety area (RSA) as, "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." According to the AC, the RSA shall be:

1) cleared and graded and have no potentially hazardous ruts, depressions, or other surface variations;
2) drained by grading or storm sewers to prevent water accumulation;
3) capable, under dry conditions, of supporting aircraft rescue and firefighting equipment, and the occasional passage of aircraft without causing structural damage to the aircraft; and
4) free of objects, except for objects that need to be located in the safety area because of their function.

Approach Categories C and D have the most extensive standards for the RSA. OXR meets the RSA width standard of 500 feet. The extended RSA to the west of the runway meets the full standard of 1,000 feet, but the extended RSA to the east of the runway does not. There is presently 720 feet of RSA beyond the east end of the runway. This is 280 feet short of the design standard.

Runway Object Free Area

A related standard to the RSA is the runway object free area (ROFA) which is defined as, "A two dimensional ground area surrounding runways, taxiways, and taxilanes which is clear of objects except for objects whose location is fixed by function." Except where precluded by other clearing standards, it is acceptable to place objects that need to be located in the ROFA for air navigation purposes or aircraft ground maneuvering purposes, and to taxi and hold aircraft in the ROFA. Objects nonessential for air navigation or aircraft ground maneuvering purposes are not to be placed in the ROFA.

As with the RSA, Approach Categories C and D standards are the most demanding with a width of 800 feet and an extended length of 1,000 feet beyond the runway end. The airport's north property line is located 300 feet north of the runway centerline, resulting in a 100-foot encroachment into the width of the ROFA. The west end of the runway meets the extended ROFA standard, but the east end has an extended ROFA of 720 feet.

Runway Centerline Separations

The dimensional standards for separations of aircraft on the ground from the runway centerline include the hold position and parallel taxiway separation. The holding positions at 250 feet are adequate for D-II. The parallel taxiway centerline is located 365 feet from the runway centerline. This does not meet the Approach Categories C and D standard of 400 feet.

Taxiway Standards

As indicated earlier, the Airplane Design Group (ADG) sets the taxiway standards. The current taxiway width of 75 feet exceeds the design standard for ADG III. Key taxiway separation requirements include the distance to fixed or movable objects. The minimum separation available is 135 feet. This exceeds the design standard of 93 feet for ADG III.

Runway Protection Zones

The runway protection zone (RPZ) is defined as an area off the runway end to enhance the protection of people and property on the ground. The RPZ is a trapezoidal shape varying in size depending upon approach minimums and the approach category of the design aircraft. For a runway with a precision instrument approach the RPZ is 1,000 feet x 2,500 feet x 1,750 feet. For runways with approach minimums of one mile visibility or more, the RPZ is 500 feet x 1,700 feet x 1,010 feet for Approach Categories C and D aircraft.

TAXIWAYS

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

As detailed in Chapter One, Runway 7-25 is served by a full length parallel taxiway, and five exit/entrance taxiways on the south side of the runway. With all the landside facilities currently being located on the south side of the airport, the parallel taxiway meets the circulation needs.

NAVIGATIONAL APPROACH AIDS

Navigational aids provide two primary services to airport operations, precision guidance to specific runway and/or non-precision guidance to a runway or the airport itself. The basic difference between a precision and non-precision navigational aid is that the former provides electronic descent, alignment (course), and position guidance, while the non-precision navigational aid provides only alignment and position location information. The necessity for such equipment is usually determined by design standards predicated on safety considerations and operational needs. The type, purpose, and volume of aviation activity expected at the airport are factors in the determination of the airport's eligibility for navigational aids.

The advancement of technology has been one of the most important factors in the growth of the aviation industry in the twentieth century. Many of the civil aviation improvements have been derived and enhanced from initial development for military purposes. The use of orbiting satellites to confirm an aircraft's location is one of the latest military developments to be made available to the civil aviation community.

Global positioning systems (GPS) use multiple satellites to derive an aircraft's location by a triangulation method. The accuracy of these systems has been remarkable, with initial degrees of error of only a few meters. As the technology improves, it is anticipated that GPS may be able to provide accurate enough position information to allow Category II and III precision instrument approaches, independent of any existing ground-based navigational facilities. In addition to the navigational benefits, it has been estimated that GPS equipment will be much less costly than existing precision instrument landing systems.

Currently, the best minimums to Oxnard Airport are provided by the ILS approach to Runway 25. This approach provides weather minimums down to 300-foot AGL cloud ceilings and one-mile visibility. The only published approach to Runway 7 is provided by a GPS approach with a 500-foot ceiling and one mile visibility for Approach Categories A and B aircraft, and 500 feet and 1-1/4-mile visibility for Category C. Category D minimums on Runway 7 are 500 feet and 1-1/2 miles.

While this is adequate for most current operations, improved minimums can enhance the safety of the airport and minimize flight cancellations. If opportunities to reduce minimums to 3/4- or ½-mile become available with GPS, they should be considered for Oxnard Airport.

Visual glide slope indicators provide visual descent guidance information during approach. There are two forms of these aids that have been regularly installed by the FAA at airports. They include precision approach path indicators (PAPI) and visual approach path indicators (VASI). Both are in use at OXR. Runway 25 is equipped with PAPI-2 while Runway 7 has VASI-4.

Two types of automated weather observing systems are currently deployed at airports around the country. ASOS (automated surface observing system) and AWOS (automated weather observing system) both measure and process surface weather observations 24 hours a day, with reporting varying from one minute to hourly. The systems provide near real-time measurements of atmospheric conditions.

ASOS is typically commissioned by the National Weather Service or the Department of Defense. AWOS is often commissioned by the Federal Aviation Administration for airports that meet criteria of either 8,250 annual itinerant operations or 75,500 annual local operations. Oxnard Airport currently has an ASOS operating on-site.

OXR is presently served by a federal control tower operated on a contract basis. While hours may change based upon activity, the tower should be adequate for the planning period.

AIRFIELD LIGHTING, MARKING, AND SIGNAGE

Runway approach lighting provides the pilot with a rapid and positive identification of the runway end for final approach. Runway 25 is presently equipped with a medium intensity approach light system with runway alignment indicator lights (MALSR). The MALSR will also be needed for any improved minimums. A similar system would be needed to achieve lower minimums on Runway 7.

Medium intensity runway edge lighting (MIRL) is currently available along Runway 7-25 and will be adequate for the planning horizons. The taxiway system is lighted with medium intensity taxiway lighting (MITL), and will also be adequate for the planning period. Lighted airfield signage on the primary runway currently meets standards for certificated commercial service airports.

Precision runway marking should be maintained on Runway 25, and will be needed for any approach improvements. The non-precision markings on Runway 7 will be adequate for the current approach. Basic taxiway marking will continue to be adequate.

The airport also has a lighted wind cone and segmented circle which provide pilots with information about wind conditions and the airport traffic pattern. In addition, an airport beacon assists in identifying the airport from the air at night. Each of these facilities should be maintained in the future.

AIRLINE TERMINAL

Components of the terminal area complex include the terminal building, gate positions, and apron area. This section identifies the facilities required to meet the airport's needs through the planning period.

Review of the capacity and requirements for various terminal complex functional areas was performed with the guidance of the FAA Advisory Circular 150/5360-13, **Planning and Design Guidelines for Airport Terminal Facilities**. Facility requirements were updated to reflect the planning horizon milestones for enplanements. This included the current level (23,000) as well as milestone levels of 35,000, 45,000, and 60,000 annual enplaned passengers.

Airline terminal capacity and requirements were developed for the following functional areas:

- Airline Ticketing and Operations
- Security Screening
- Gates and Hold Areas
- Baggage Claim
- Terminal Services

The methodology utilized in the analysis involves the design hour passenger demands and comparison of those demands with the existing facilities. **Table 3J** presents the existing terminal building space and compares it to the space necessary to accommodate each of the planning horizon levels. In general, it was found that the current 12,250 square-foot terminal should be marginally adequate through the intermediate planning horizon of 45,000 enplanements.

TABLE 3J
Terminal Building Requirements (square feet unless noted)
Oxnard Airport

		Enplanement Milestones			
	Available	**Current**	**35,000**	**45,000**	**60,000**
AIRLINE TICKETING AND OPERATIONS					
Counter Frontage (l.f.)	30	12	18	18	24
Counter Area	240	120	180	180	240
Counter Queue	240	180	270	270	**360**
Lobby Area	1,500	1,140	**1,630**	**2,010**	**2,380**
Airline Operations	1,060	960	**1,440**	**1,440**	**1,920**
SECURITY					
Checked Baggage Search	180	120	170	**210**	**250**
Screening Station (#)	1	1	1	1	1
Screening Area	440	**600**	**600**	**600**	**600**
TSA Office	620	400	400	400	400
DEPARTURE HOLD AREA					
Aircraft Positions/Gates	2	2	2	3	3
Hold Area	420	420	**600**	**710**	**880**
BAGGAGE CLAIM					
Claim Display (l.f.)	40	24	34	40	**50**
Display Area	100	**120**	**170**	**200**	**250**
Lobby Area	1,200	630	900	1,110	**1,320**
Bag Input	120	**230**	**330**	**400**	**480**
RENTAL CAR					
Counter Frontage (l.f.)	40	16	24	28	34
Counter/Office	850	320	480	560	680
Queue Area	320	100	140	170	200
TERMINAL SERVICES					
Food and Beverage	3,050	760	1,100	1,300	1,600
Shops	0	0	**300**	**380**	**480**
Other Concessions	270	200	200	260	**320**
Restrooms	500	500	500	500	500
TOTAL PROCESSING SPACE	11,110	7,000	9,400	10,500	**12,900**
Circulation/Mech./Util.	1,140	1,000	1,400	1,600	**1,900**
TOTAL TERMINAL PROGRAM	12,250	8,000	10,800	12,100	**14,800**

Note: Figures in bold indicate that the requirement exceeds the space presently available.

GENERAL AVIATION (GA) FACILITIES

General aviation facilities are those used for handling general aviation aircraft, passengers, and cargo while on the ground. To identify GA capabilities, the following types of facilities normally associated with general aviation terminal areas are examined:

- Hangars
- Aircraft Parking Apron
- General Aviation Terminal Services

HANGARS

The demand for hangar facilities typically varies with the number and type of aircraft based at the airport. Hangar facilities are generally classified as T-hangars (including port-a-ports), executive/corporate hangars, and conventional hangars. Conventional hangars are typically larger, multi-use hangars that may also be utilized for fixed base operator (FBO) purposes. Conventional hangars can hold a varying number of aircraft depending upon size and parking arrangements. The different types of hangars offer varying levels of privacy, security, and protection from the elements.

While weather extremes in Oxnard are not considered severe, the airport's close proximity to the ocean can still have an effect on hangar decisions. Moist, salty air can be corrosive to aircraft with prolonged exposure. At Oxnard Airport, most of the based aircraft stored on the ramp are Aspen's helicopters.

It is anticipated that most based aircraft will continue to be stored in hangars over the planning horizons. The resulting facility demand for each planning horizon is shown on **Table 3K**. The new Hangar One is included in the available totals. It is estimated that 80 percent of the 20,000 square-foot hangar will be available for aircraft storage. A lease for 20 additional executive hangars has also been approved. Timing is less certain, so they are not included as currently available.

The next step in the process of determining hangar requirements involves estimating the area necessary to accommodate the required hangar space. The T-hangars and port-a-ports at OXR average 1,200 square feet per hangar space. The executive hangars at OXR average 2,500 square feet per aircraft. Planning figures for conventional hangars suggest an area of 1,200 square feet for piston and rotary aircraft, and 2,500 square feet for turbine aircraft. These figures were applied to the aircraft to be hangared. Requirements for maintenance and shop hangar area were estimated at 150 square feet per based aircraft.

Table 3K compares the existing hangar availability to the future hangar demand. The new Hangar One and the previously approved lease for 20 additional executive hangars will assist in meeting future hangar needs.

TABLE 3K
Hangar Storage Requirements
Oxnard Airport

		PLANNING HORIZONS			
	Available	**Current**	**Short Term**	**Inter-mediate**	**Long Term**
Based Aircraft					
Piston		128	133	137	143
Turbine		2	4	7	12
Rotor		12	13	14	15
Total Based Aircraft		142	150	158	170
Hangar Storage Capacity*					
Shade/T-Hangars*	104	104	104	104	104
Executive Hangars*	20	26	32	38	40
Conventional Hangars*	22	2	3	4	14
Total Hangar Capacity	146	132	139	146	158
Hangar Area Requirements					
T-Hangars (s.f.)	124,800	124,800	124,800	124,800	124,800
Executive (s.f.)	41,000	65,000	70,000	75,000	82,500
Conventional. (s.f.)	36,000	2,900	4,900	7,400	27,200
Service Hangar Area (s.f.)	19,600	21,300	22,500	23,700	25,500
Total Hangar Area (s.f.)	221,400	213,500	222,200	230,900	260,000

* Indicates number of aircraft (stored or to be stored) in this type of hangar.

GA PARKING APRON

Parking apron should be provided for at least the number of locally-based aircraft that are not stored in hangars, as well as transient aircraft. Although most will prefer hangars, a small number of based aircraft owners may still prefer ramp storage over the long range. FAA planning criterion of 350 square yards per tie-down was used to estimate the ramp area that would be needed for based fixed-wing aircraft. Based helicopter spaces were estimated at 450 square yards per aircraft. The number of local tie-downs and ramp space for the planning period is presented in **Table 3L.**

FAA Advisory Circular 150/5300-13 suggests a methodology by which transient apron requirements can be determined as 17.5 percent of busy-day itinerant operations. Planning criterion of 600 square yards per aircraft was applied to the number of transient positions to determine transient apron area. The transient apron space ratio is higher than that of the local apron, because it serves a larger variety of aircraft and is typically designed for taxi-through parking spaces.

The results of this analysis are presented in **Table 3L**. While there are currently 48 marked tie-downs, there are approximately 58,000 square yards of GA parking apron located around the airport. As shown in the table, the existing apron area should be adequate through the planning horizons.

TABLE 3L
GA Apron Requirements
Oxnard Airport

		PLANNING HORIZONS			
	Available	Current	Short	Intermediate	Long
Non-hangared Fixed-Wing		2	2	2	2
Non-hangared Rotorcraft		8	9	10	10
Busy Day Itinerant Operations		186	218	238	271
Local Ramp Positions	NA	10	11	12	12
Transient Ramp Positions	NA	33	38	42	47
Total Ramp Positions	48	43	49	54	59
Apron Area (s.y.)	58,000	24,100	27,600	30,400	33,400

GA TERMINAL SERVICES

The general aviation facilities are often the first impression of the community that corporate officials and vacationers will encounter. General aviation terminal facilities at an airport provide space for passenger waiting, pilots' lounge and flight planning, concessions, management, storage, and various other needs. This can be accommodated in a single facility or spread throughout several fixed base operators.

The methodology used in estimating general aviation terminal facility needs was based upon the number of airport users expected to utilize general aviation facilities during the design hour.

Space requirements for terminal facilities were based on providing 120 square feet per design hour itinerant passenger. Space within the offices of the fixed base operator is used for general aviation terminal facilities.

Table 3M outlines the space requirements for general aviation terminal services at Oxnard Airport through the long term planning horizon. The general aviation terminal facilities were undersized prior to the replacement of Hangar One. Now, it will be generally sufficient through the long term.

TABLE 3M GA Terminal Services Requirements Oxnard Airport		PLANNING HORIZONS			
	Available	Current	Short Term	Intermediate	Long Term
Itinerant Operations					
Annual		44,822	48,200	52,900	60,200
Design Hour		24	26	28	32
Pax/OP		1.9	2.0	2.1	2.3
Des. HR Pax		46	52	59	74
Terminal Space (s.f.)	8,600	5,500	6,300	7,100	8,800

TERMINAL ACCESS AND PARKING

The airport's ground access and parking system begins with the off-airport access route, and extends to the on-airport access and circulation, as well as the interface at the terminal curb and vehicle storage in the parking lots.

AIRPORT ACCESS ROUTES

With all aviation-related facilities located on the south side of the airfield, Fifth Street is the primary access to the airport. The east-west roadway intersects with four-lane, arterial roadways that run north-south at either end of the airport. At the east signalized intersection with Ventura Road, Fifth Street is also four lanes divided with left turn lanes. As it extends to the west in front of the FBO facilities, Fifth Street reduces to two lanes plus a center turn lane. It remains in this configuration for approximately 1,500 feet before widening to a divided four-lane once more on the approach to the terminal entrance road. There are left turn lanes at the terminal entrance as well as at the signalized intersection with Patterson Road. West of Patterson Road, Fifth Street again narrows to two lanes before widening back to four lanes on the approach to the intersection with Victoria Boulevard at the west end of the airport.

Patterson Road is a secondary access option to the airport. Patterson Road is also a four-lane roadway that begins at the airport and extends south to Channel Islands Boulevard.

According to City of Oxnard traffic counts from July 2001, Fifth Street handles 16,800 vehicles per day east of Patterson Road and 9,200 vehicles per day west of Patterson Road. Patterson Road, south of Fifth Street, carries 9,000 vehicles per day. While the current road system will be adequate to meet the airport's needs, other development along Fifth Street will likely require that the rest of this roadway be developed to four lanes, divided with left turn lanes.

The terminal access road system consists of a two-lane, one-way road system extending from Fifth Street north to the terminal building, then west along the front of the terminal building and parking lot, before ending at an intersection with Patterson Road. Vehicles wishing to return to the terminal either from the access road or the parking lot, must turn onto Patterson Road, left onto Fifth Street, then left onto the terminal access road.

Ideally, a loop road system maintained entirely on airport property would be preferred. Given the airport's Mission Statement and the projected demand, the airport traffic levels are not anticipated to create significant problems for the existing system.

TERMINAL CURB FRONTAGE

The curb element is the interface between the terminal building and the ground transportation system. The length of curb required for the loading and unloading of passengers and baggage is determined by the type and volume of ground vehicles anticipated in the peak period on the design day.

A typical problem for terminal curb capacity is the length of dwell time for vehicles utilizing the curb. At airports where the curb front has not been strictly patrolled, vehicles have been known to be parked at the curb while the driver and/or riders are inside the terminal checking in, greeting arriving passengers, or awaiting baggage pick-up. With most curbs not designed for vehicles to remain curbside for more than two to three minutes, capacity problems can ensue. Since the events of September 11, 2001, commercial service airports police the curb-front much more strictly for security reasons. This alone, has reduced the curb-front capacity problems at most airports.

At OXR, the terminal roadway provides one lane for loading and unloading of passengers. The curb frontage is approximately 160 feet in length. **Table 3N** presents the curb frontage requirements for the planning horizons. The available curb length should be adequate through the long term planning horizon.

VEHICLE PARKING

Airline Passenger Terminal

Vehicle parking in the airline passenger terminal area of the airport includes those spaces utilized by passengers, visitors, and employees of the airline terminal facilities. Parking spaces are classified as public, employee, and rental car.

Public parking is located in a surface lot immediately south of the terminal building. This parking lot contains 256 spaces including 36 rental car ready/return spaces. The 220 public spaces include 26 short term spaces where parking is limited to two hours or less.

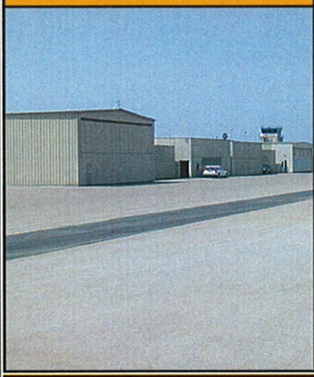
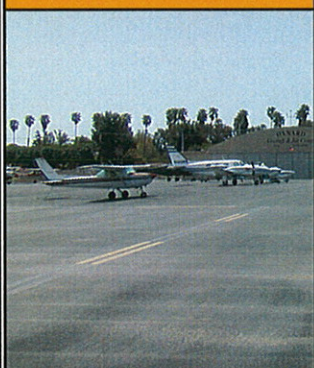
Table 3N presents the parking demand for the planning horizons. A standard ratio of 4.0 spaces per 1,000 annual enplanements was utilized for this analysis. Short term parking typically comprises 15 percent of the public

CATEGORY	EXISTING	SHORT TERM	LONG RANGE
RUNWAYS 	**Runway 7-25** 5,950' x 100' Displaced Threshold: 1,372' (25) 70,000# DWL	**Runway 7-25** Same	**Runway 7-25** Same
TAXIWAYS 	**Runway 7-25** Full Length Parallel 75' Wide Five Exits	**Runway 7-25** Same	**Runway 7-25** Same
NAVIGATIONAL AIDS 	Federal Control Tower (FCT) ASOS **Runway 7-25** ILS (25) GPS VASI-4 (7) PAPI-2 (25) VOR/DME	Federal Control Tower (FCT) ASOS **Runway 7-25** Same	Federal Control Tower (FCT) ASOS **Runway 7-25** CAT I GPS VASI-4 (7) PAPI-2 (25)
LIGHTING AND MARKING 	Wind Cone Segmented Circle Airport Beacon, MITL **Runway 7-25** MIRL MALSR (25) Precision Marking	Wind Cone Segmented Circle Airport Beacon, MITL **Runway 7-25** Same	Wind Cone Segmented Circle Airport Beacon, MITL **Runway 7-25** MIRL MALSR Precision Marking

Exhibit 3E
AIRFIELD FACILITY REQUIREMENTS

02MP09-3D-5/6/03

02MP10-3F-4/17/03

CATEGORY		AVAILABLE	CURRENT	SHORT TERM	INTERMEDIATE	LONG RANGE
HANGARS 	Conventional Hangars	±22	2	3	4	14
	T-Hangars	104	104	104	104	104
	Executive Hangars	20	26	32	38	40
	Total	**146**	**132**	**139**	**146**	**158**
APRON TIE-DOWNS 	Aircraft Positions	48	43	49	54	59
	Area (sq. yds.)	58,000	34,000	38,900	42,400	47,600
TERMINAL 	Airline Gross Area (sq. ft.)	12,250	8,000	10,800	12,100	14,800
	Aircraft Gate Positions	2	2	2	3	3
	General Aviation Gross Area (sq. ft.)	8,600	5,500	6,300	7,100	8,800
AUTO PARKING 	Public Airline	220	80	140	180	240
	Employee	43	21	28	34	42
	Rental					
	• Ready/Return	56	27	39	45	54
	• Service/ Storage (ac)	0.5	0.3	0.4	0.5	0.7
	General Aviation	186	95	105	116	138

OXNARD AIRPORT

Exhibit 3F
LANDSIDE FACILITY REQUIREMENTS

OXNARD AIRPORT

Chapter Four
ALTERNATIVES

CHAPTER FOUR

ALTERNATIVES

The previous chapter evaluated the ability of the airside and landside facilities to satisfy a demand potential reflective of the mission statements for both Oxnard Airport and the Ventura County Department of Airports. The next step in the planning process is to consider the ways that these limited needs can be provided.

The facility considerations for Oxnard Airport (OXR) can be categorized into two functional areas: The **airside** (airfield) and **landside** (terminal, hangars, apron, and auto parking). Within each of these areas, specific facilities are required for safety and security. Others are related to demand that is still likely to be generated within the constraints of the mission statements. Although each functional area is treated separately, planning must integrate the individual requirements so they complement one another.

As indicated in the introduction, this Master Plan has the specific objective of reexamining the recommended direction of the **1996 Draft Master Plan**. This will include incorporating changes where conditions and circumstances may have invalidated the previous recommendations. Still valid concepts may be retained while new concepts are developed for those concepts that are either no longer valid or considered to be unacceptable or unworkable. Thus, the discussions of this chapter lead off with a review of the **1996 Draft Master Plan**.

REVIEW OF 1996 DRAFT MASTER PLAN

The **1996 Draft Master Plan** was developed based upon a premise of serving reasonable growth in aviation demand in the Ventura County area. The study recognized the basic limitations of Oxnard Airport and examined means by which it could continue to operate as a safe, efficient facility that served its reasonable share of area aviation demand.

The draft plan was also demand-based and was designed to allow the airport to respond to aviation demand as it presented itself. **Exhibit 4A** is a drawing depicting the primary recommendations of the draft plan.

The plan did not call for any change in the runway pavement. Airfield recommendations focused on enhancing safety and approach minimums. This included recommendations to clear and control the runway object free area (OFA) to the extent practical, as well as to establish positive control over the areas within the runway protection zones (RPZs). Other airfield recommendations included improved minimums for both approaches, a perimeter service road, two additional taxiway exits, and pavement maintenance.

An alternative that was considered, but removed from the final recommendations involved relocating the Runway 25 displaced threshold further to the east. This would have provided an additional margin of safety for all landing aircraft as well as improve the landing length on the airport's instrument landing system (ILS) approach. The landing length would have been increased from 4,578 feet to 5,500 feet. This would have served to reduce the number of flight cancellations by the airlines as well as to reduce the number of diversions and delays to the business and corporate aircraft that use the airport.

On the landside, the draft plan included recommendations for passenger terminal and parking improvements that would allow the airport to serve a long-range planning horizon milestone of 130,000 enplanements. This included improvements to the existing terminal building, additional auto parking, and a redevelopment of the terminal access roadway to include an interior loop circulation system. This was designed to keep the terminal's recirculating traffic off of Fifth Street.

In the general aviation areas, the plan recommended a reconfiguration of the T-hangar area over time to provide more clearance from the runway, improve circulation, and increase hangar storage. The plan recommended acquisition of the parcel located between the terminal and the east general aviation area. It showed how the parcel could be developed for corporate aircraft storage and terminal parking and circulation. The plan included locations for a consolidated fuel farm and additional fixed base operator (FBO) development. As with the airfield, pavement maintenance and rehabilitation were also included for the terminal and general aviation aprons.

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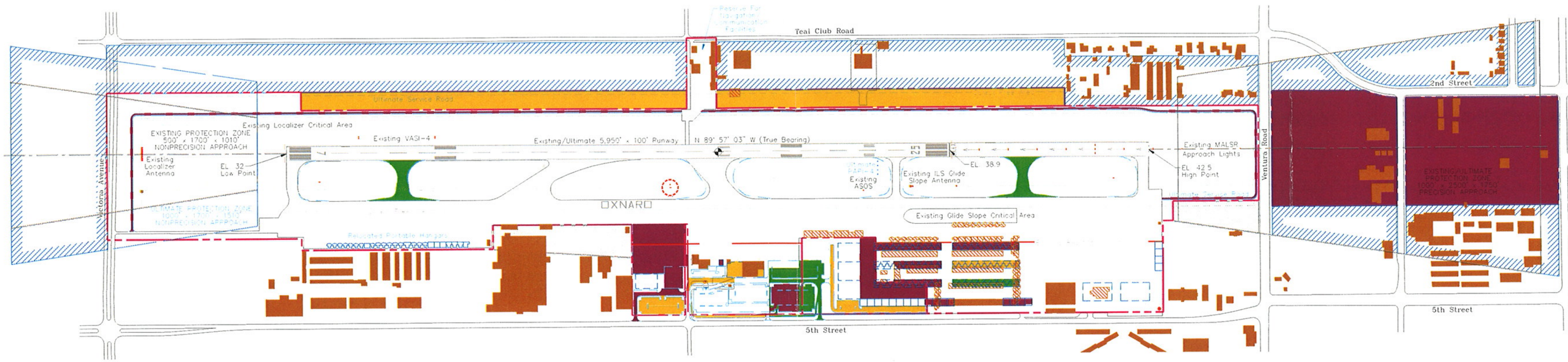

SHORT TERM IMPROVEMENTS (FY 1996-FY 2000)

- Prepare Consolidated Fuel Farm Site
- Construct Fuel Farm/FBO Access Road
- Construct ARFF Shelter
- Construct East Terminal Parking Lot (Phase I)
- Construct Perimeter Service Road
- East RPZ Acquisition Program
- Install PAPI-4 on Runway 7-25
- Hangar Area Taxiway Improvements (Phase I)
- Replace 12-unit with 20-unit T-hangar & relocate 29 port-a-ports and 8 executive hangars

INTERMEDIATE TERM HORIZON IMPROVEMENTS

- Construct Employee/Overflow Parking Lot
- Expand Terminal Building
- Straighten Terminal Access Road
- Construct Terminal Loop Return Lane
- Replace 12-unit with 20-unit T-hangar
- Extend Hangar Area Access Road
- North Property Acquisition Program

LONG RANGE HORIZON IMPROVEMENTS

- Move Terminal Entrance Road East
- Relocate Rental Car Lot
- Extend Parking Lot East
- Construct Two Exit Taxiways
- Replace 12-unit with 20-unit T-hangar

LEGEND

Short Term Improvements

Intermediate Term Horizon Improvements

Long Range Horizon Improvements

0 800 1600

SCALE IN FEET

NORTH

OXNARD AIRPORT

Exhibit 4A
1996 DRAFT AIRPORT MASTER PLAN

The **1996 Draft Master Plan** and Airport Layout Plan (ALP) contained within never received environmental concurrence from the Ventura County Board of Supervisors, so it was never officially adopted by the County, and subsequently, was never submitted to the Federal Aviation Administration (FAA) for approval of the ALP.

NON-OXR ALTERNATIVES

Alternatives that do not involve improvements at Oxnard Airport include the "No Action" alternative, transferring services to another existing airport, or developing an airport at a different location. The mission statement for the Ventura County Department of Airports recognizes the need for providing *"safe, efficient, and accessible facilities for the provision of general aviation and limited commercial service needs of the citizens of Ventura County."*

The mission statement also limits *"the development of Camarillo and Oxnard Airports to meet the forecasted needs of general aviation and commuter airline services in a manner that will complement each other."* It also calls for optimizing *"the use of present airport land, maximize safety, assure financial feasibility, and minimize the negative environmental effects on the surrounding communities."*

The Oxnard Airport Mission Statement also places *"a strong emphasis on safety, cooperation with neighbors, and responsible flight operations"* while maintaining *"a viable center for air commerce which enhances trade and business for the economic development and transportation needs of the City of Oxnard and Ventura County."*

While development may be limited, the other aspects of the mission statements render a pure "No Action" alternative impractical. There are several improvements that need to be considered for safety and security, as well as to maintain a viable aviation facility. This leaves only service from another airport as an option to at least limited improvements at Oxnard Airport.

It is not uncommon for those living closest to an airport, such as OXR, to support relocating the facility elsewhere. This has been an issue in the past and will invariably be an issue in the future. Relocating an airport, however, is a complex and expensive task. In addition to a major financial investment, a replacement airport also can require a commitment of extensive land area. Even though the ideal location for a new airport may be undeveloped, the potential for impacts to wildlife habitat, wetlands, farmland, and cultural resources will typically be higher than at an existing airport site. In addition, a new site is also likely to be more distant and less convenient to its users.

The Department of Airport's Mission Statement recognizes that Camarillo and Oxnard Airports should provide services in a manner that complement each other. Transferring services from Oxnard Airport to Camarillo Airport is not considered to be consistent with either mission statement.

The transfer of civil aviation services to Naval Base Ventura County (Pt. Mugu) has been a much discussed issue in Ventura County over the past decade with the uncertainty surrounding base closures. A joint-use feasibility study was conducted in the mid-1990s as a means to show the impact Pt. Mugu could make as a joint-use commercial service/military facility. The study concluded that Pt. Mugu could facilitate scheduled commercial air carrier service.

Recommendations by the Base Realignment and Closure Commission (BRACC), however, spared Pt. Mugu from the closure list. With the events of 9-11 leading to the ongoing war on terrorism and heightened military alert, it does not appear that Pt. Mugu will be closing anytime soon. In addition, there presently appears to be little or no desire expressed on the part of the U.S. Department of Defense to consider Pt. Mugu as a joint-use facility.

As was indicated in Chapter Two, Ventura County generates 5.2 percent of the commercial service passengers in the Los Angeles Basin, but Oxnard Airport serves only 0.1 percent. The **Regional Aviation Plan for 2001** prepared by the Southern California Council of Governments (SCAG) calls for a more decentralized airport system including former miliary bases and joint-use facilities, rather than expanding existing urban airports.

The Oxnard Airport Mission Statement recognizes the fact that the airport is limited in expansion potential, as well as the need to accommodate the commercial service demands generated in Ventura County. As a result the mission statement calls for a continued *"search for a regional airport to serve the air carrier and commercial needs of the City of Oxnard and Ventura County."*

Thus, the relocation of commercial service to another airport remains an alternative to be considered by the County at some point in the future. Even if that movement was to begin immediately, it would likely be a minimum of eight years before the site evaluations, master plan environmental impact reports, property acquisition or release, environmental mitigation, design, and construction were completed and the first commercial service aircraft landed. In the interim, the Oxnard Airport's role is to continue to provide safe and efficient commercial air service to the area.

With or without air service in the future, the purpose and scope of this Master Plan also remains to fulfill the other aspects of the two mission statements. As a result, the remainder of this chapter will focus on the issues and considerations that are a part of maintaining Oxnard Airport as a limited, but viable commercial service aviation facility, at least until a suitable commercial alternative is found. At such time, the airport may continue to serve general aviation needs in the local community.

KEY PLANNING ISSUES

With no plan on the immediate horizon for a regional airport to serve the commercial service needs of Ventura County, the existing Oxnard Airport must be maintained to accommodate not only local general aviation needs, but also limited commuter airline service in accordance with the mission statements. The previous chapter identified the facility improvements necessary to maintain a limited, but safe, secure, and efficient airport facility. **Exhibit 4B** outlines the key considerations that need to be addressed.

At the top of the list is airport operational safety. The airfield design standards review in the previous chapter indicated the runway does not meet FAA standards for runway safety area (RSA), object free area (OFA), and runway-taxiway separation. In addition, the runway protection zone (RPZ) encompasses several homes and other buildings. Alternatives need to be reviewed to ensure the airport meets the design standards to the extent practical.

Another consideration involves the installation of a blast pad off the east end of Runway 25. Approximately 80 percent of the departures from this airport use this runway. A blast pad would reduce the propensity to scour the turf beyond the runway end due to engine blast from aircraft beginning their takeoff roll. Improved approach minimums to both ends of the runway continue to be desirable.

In the passenger terminal area, security will be an ongoing issue as the airport continues to adapt to new security measures. The terminal building will be marginally adequate for the long-range planning horizon, but could become severely overextended if future changes in security require additional space. Efficiencies within the existing terminal should be considered, as well as a plan to add space if needed to meet future security mandates.

Another issue that is currently being addressed is the aircraft ramp that is currently being used to service and store rental cars. Since this ramp was built with FAA funds, the airport is required to relocate the rental cars elsewhere so the ramp can be used for aviation purposes as originally intended.

With leases for 20 new hangars at the west end of the airport approved, basic aircraft storage needs should be met in the short-to-intermediate term. Consideration should still be given to updating/redeveloping the east FBO and hangar areas. Many of these facilities are aging, thus providing an opportunity to develop a replacement plan that is more efficient.

AIRFIELD CONSIDERATIONS

With the airfield pavements to remain unchanged, the airfield considerations focus on safety, security, and navigational aids. The primary issue is safety. The runway-taxiway system currently does not fully meet FAA design standards for RSA and OFA as outlined in FAA Advisory Circular 150/5300-13, **Airport Design**, through Change 7.

The design standards can also affect any new instrument approach procedures, such as a reduction in minima. According to Appendix 16 of the above-referenced advisory circular, FAA Order 8260.19, **Flight Procedures and Airspace**, reflects the design standards as the "minimum airport landing surface requirements that must be met prior to the establishment of (new) instrument approach procedures."

The most critical safety design standard is the RSA. A runway safety area analysis is provided below.

RUNWAY SAFETY AREA ANALYSIS

The runway safety area is defined in AC 150/5300-13 as: "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."

FAA Order 5300.1F, **Modification of Agency Airport Design, Construction, and Equipment Standards** indicates in Paragraph 6.d. the following:

". . . Runway safety areas at both certificated and non-certificated airports that do not meet dimensional standards are subject to FAA Order 5200.8, **Runway Safety Area Program**. Modifications of Standards are **not** issued for nonstandard runway safety areas."

FAA Order 5200.8 establishes the procedures that the FAA will follow in implementing the Runway Safety Area Program. Paragraph 5 of this Order states:

"The objective of the Runway Safety Area Program is that all RSAs at federally obligated airports . . . shall conform to the standards contained in AC 150/5300-13, **Airport Design**, to the extent practicable."

The Order goes on to indicate in Paragraph 8.b.:

"The Regional Airports Division Manager shall review all data collected for each RSA in Paragraph 7, along with the supporting documentation prepared by the region/ADO for that RSA, and make one of the following determinations:

(1) The existing RSA meets the current standards contained in AC 150/5300-13.

(2) The existing RSA does not meet the current standards, but it is practicable to improve the RSA so that it will meet current standards.

(3) The existing RSA can be improved to enhance safety, but the RSA will still not meet current standards.

(4) The existing RSA does not meet current standards, and it is not practicable to improve the RSA."

Appendix 2 of FAA Order 5200.8 provides the direction for an RSA determination. This includes the alternatives that must be evaluated. Paragraph 3 of Appendix 2 states:

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AIRFIELD CONSIDERATIONS

- Runway Design Standards
  - Runway Safety Area (RSA)
  - Object Free Area (OFA)
  - Runway Protection Zones (RPZ)
- Runway 25 Blast Pad
- Improved Approach Minimums
  - Runway 7
  - Runway 25

TERMINAL CONSIDERATIONS

- Future Security
- Efficiency Improvements
- Move Rental Cars Off Aircraft Ramp (Under Design)

GENERAL AVIATION CONSIDERATIONS

- Redevelop/Modernize FBO/Hangar Areas

OXNARD AIRPORT

Exhibit 4B
AIRPORT IMPROVEMENT CONSIDERATIONS

"The first alternative that must be considered in every case is constructing the traditional graded runway safety area surrounding the runway. **Where it is not practicable to obtain the entire safety area in this manner, as much as possible should be obtained.** Then, the following alternatives shall be addressed in the supporting documentation . . .:

a. Relocation, shifting, or realignment of the runway.

b. Reduction in runway length where the existing runway length exceeds that which is required for the existing or projected design aircraft.

c. A combination of runway relocation, shifting, grading realignment, or reduction.

d. Declared distances.

e. Engineered Materials Arresting Systems (EMAS)."

Exhibit 4C depicts the current extended runway safety areas and object free areas off the ends of Runway 7-25. The RSA extends for the full 1,000 feet off the west end, but the localizer is located just inside the RSA. Ideally, it should be relocated outside the RSA, but the minimal improvement to be gained in the RSA may not justify the cost to relocate the localizer, until such time it needs to be replaced or removed.

The east end has room for only 750 feet of extended RSA. Extending the RSA to the east by 250 feet would require the relocation of Ventura Road, a four-lane arterial roadway. Under the pretext of the mission statements for the airport and the Department of Airports, such an alternative was not considered as prudent or feasible.

The next option is to relocate, shift, or realign the runway. Relocating or shifting the runway would require additional room off the west end of the runway. This would involve relocating Victoria Avenue, which is also a four-lane arterial roadway. Realigning the runway would gain very little room for additional RSA without affecting the same two roadways, plus it has the added cost of rebuilding the entire runway. Subsequently, these alternatives were also considered as neither prudent nor feasible.

A reduction in runway length would leave the airport with less length than it presently has, making it even less suitable to serve the aircraft presently utilizing the airport.

This next option involves the application of declared distances. Declared distances are used by the FAA to define the effective runway length for landing and takeoff when either a displaced or relocated threshold is involved. Declared distances are defined as the amount of runway that is declared available for certain takeoff and landing operations. The four types of declared distances, as defined in FAA Advisory Circular 150/530-13, **Airport Design** are as follows:

Takeoff Run 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 clearway 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.

The most critical distances to the aircraft pilot are the ASDA and the LDA. To accommodate the full RSA off the east end of the runway the threshold must be displaced at least 250 feet to the west. The current landing threshold displacement on Runway 25 is 1,372 feet. Since this is more than is needed to meet the RSA requirements, the LDA for Runway 25 would remain unchanged at 4,578 feet. Since RSA is not needed behind the start of takeoff roll, the ASDA for Runway 25 would remain the full 5,950 foot length.

The displacement for the RSA would affect LDA and ASDA for Runway 7. The minimum displacement would be 250 feet to allow room to maintain the perimeter service road along the fence line and outside the RSA. This would leave an LDA and ASDA of 5,700 feet for landing and departing from the west. Since Runway 7 is used less than 20 percent of the time, the shorter available runway length will have less of an impact on airport users than any further reduction of runway length in the Runway 25 direction.

The resulting recommendation is to continue to maintain the displaced landing threshold to Runway 25 at its present location, but to also mark and light a runway end threshold for Runway 7 at 250 feet from the east end of the runway. This would require distance-to-go markers for Runway 7 to be adjusted accordingly. In addition, the departure threshold lights would need to be moved 250 feet east and the departure threshold marked accordingly. Upon approval, the FAA would publish the declared distances for Runway 7-25 as depicted on **Table 4A**.

The segmented circle is also located within the RSA near midfield, between the runway and parallel taxiway. While the segmented circle and wind sock are on frangible mounts, they do not need to be located within the RSA, and should be relocated if possible. A location near midfield would be preferred. Potential relocation sites will be further examined later in the chapter.

TABLE 4A
Proposed Declared Distances
Oxnard Airport

	Runway 7	Runway 25
LDA	5,700'	4,578'
ASDA	5,700'	5,950'
TORA	5,950'	5,950'
TODA	5,950'	5,950'

The only other objects within the RSA are navigational aids such as the VASI and PAPI, runway lights, and the

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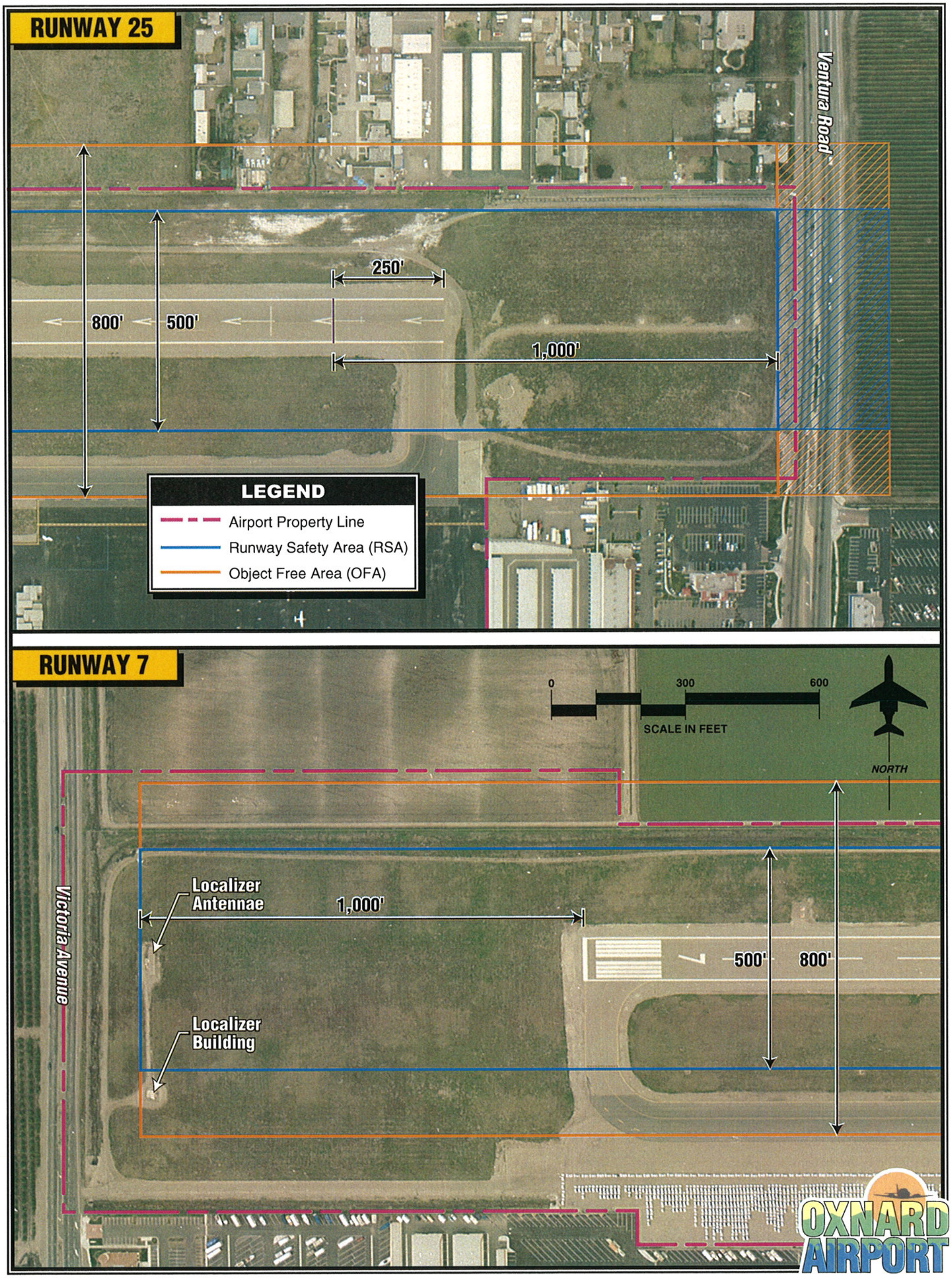

Exhibit 4C
EXTENDED RSA/OFA

MALSR. These are all fixed by their functional purpose, and are on frangible mountings, making them acceptable within the RSA.

RUNWAY OBJECT FREE AREA

Exhibit 4C also depicts the runway object free area (OFA) requirements off the end of each runway. While the OFA standard extends the same distance beyond the runway as the RSA, the OFA is 150 feet wider on each side, for a total width of 800 feet. The OFA must provide clearance of all ground-based objects protruding above the RSA edge elevation unless the object is fixed by purpose serving air or ground navigation.

The remedies for the extended RSA also apply to the extended OFA. The primary OFA concern is along the length of the runway. As shown on **Exhibit 4D**, the OFA along much of the north side and a section of the southeast side of the runway is not within the confines of the airport property. Several residences and off-airport industrial/commercial buildings are within the OFA on the northeast side of the runway. Other areas are in agricultural uses. Portions of the auto and truck parking lots are within the OFA on the southeast side.

Ideally, the Department of Airports should seek to acquire any property that is within the OFA, and remove all objects. In locations where the acquisition of property is not practical, however, the Department of Airports should request a "modification of design standards" from the FAA for the off-airport areas of the OFA that are currently developed. While the modification may be granted, it should be noted that failure to meet the design standard could still preclude obtaining improved approach minima.

The undeveloped agricultural property within the OFA should be acquired to maintain as much of the OFA within airport property as possible. This would comprise approximately 10 acres of property that is presently farmed or undeveloped. Avigation easements should also be considered for all other properties located between the airport and Teal Club Road.

RUNWAY PROTECTION ZONES

As indicated in the previous chapter, the runway protection zone (RPZ) is defined as an area off the runway end to enhance the protection of people and property on the ground. This is achieved through airport sponsor control of the RPZ. Control is preferably exercised through the acquisition of sufficient property interest in the RPZ.

The visibility minimums of the runway approach establish the dimensional standards of the RPZ. The present visibility minimums at Oxnard Airport are one mile or greater for each runway end, even though Runway 25 has an instrument landing system (ILS). Thus, the current RPZs have an inner width of 500 feet, an outer width of 1,010 feet, and are 1,700 feet long beginning two hundred feet behind the end of the runway or displaced threshold. The

RPZs at Oxnard Airport are depicted on **Exhibit 4D.**

Off the west end of the runway, the westernmost 750 feet of the RPZ is outside of the airport's boundaries. This area is presently in agricultural use, a land use that is typically compatible with the RPZ.

The displaced threshold results in the east approach having two RPZs. Both presently have the same dimensions, but the RPZ begins 200 feet behind the displaced threshold, while the departure RPZ begins 200 hundred feet beyond the physical end of the runway. Both RPZs extend beyond the existing airport boundaries, and encompass land uses considered as incompatible with the purpose of the RPZ.

For a Category I instrument approach with visibility minimums less than 3/4 mile, the approach RPZ dimensions are 1,000 feet inner width, 1,750 feet outer width, and 2,500 feet long. Off the west end, this is over compatible agricultural uses. Off the east end, however, are more incompatible uses.

If the airport is to obtain Category I instrument approach minimums, Runway 7 appears to have the best potential. Several obstructions combined with the incompatible uses within the RPZ, could make it difficult to achieve Category I minimums on Runway 25.

PARALLEL TAXIWAY SEPARATION

The present parallel Taxiway A centerline is located 365 feet from the runway centerline. With the present instrument minimums of one mile visibility, this separation exceeds the minimum standard separation of 350 feet. If the runway visibility minimums are improved to less than 3/4 mile, the design standard would increase to 400 feet.

Presently, the distance from the Taxiway A centerline to the closest fixed object is 135 feet. There is a row of tie-downs to the west of the terminal area and two helicopter parking spaces on Aspen Helicopter's ramp that would be closer. The design standard separation for ADG III aircraft is 93 feet. Moving the taxiway out 35 more feet to meet the standard would still leave the closest object 100 feet from the taxiway centerline. **Exhibit 4E** depicts this relocation.

There are other advantages to be gained with the relocation of the parallel taxiway. It would provide more space between the hold lines on the taxiway exits and the parallel taxiway. This would help improve ground circulation.

The primary drawback could be the development cost. While much of the pavement is in place, some of it may have to be rehabilitated to be put back

Exhibit 4D
SAFETY ZONES / PROPERTY CONTROL

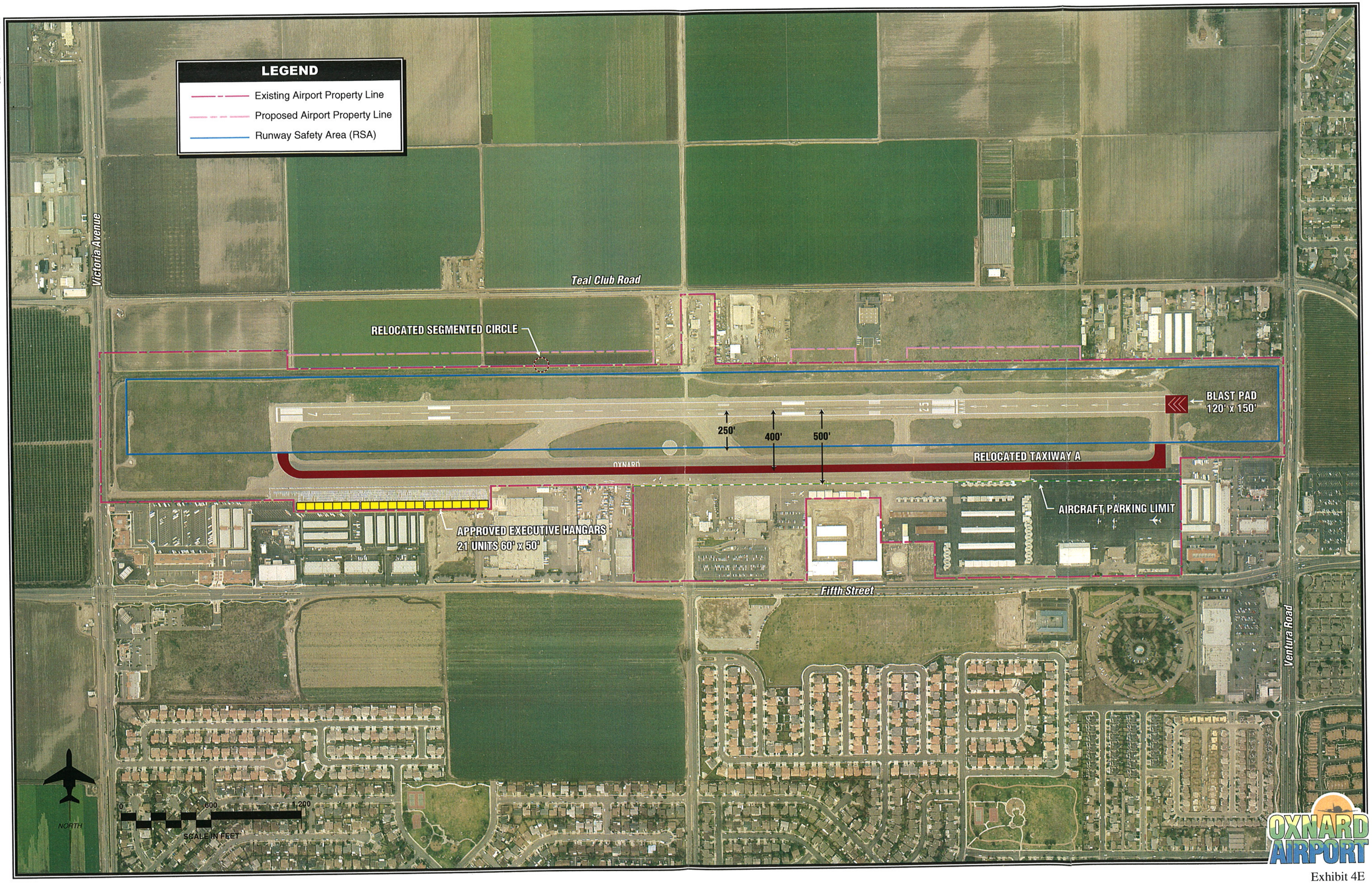

Exhibit 4E
OTHER AIRFIELD CONSIDERATIONS

into service. The drainage system may also need to be modified for the shift in pavement. Several tie-downs, including two of Aspen's helicopter spaces would need to be relocated. The other option would be to request a "modification to standards" from the FAA, if a Category I instrument approach is to be implemented.

OTHER AIRFIELD CONSIDERATIONS

Two other improvements that should be considered for the airfield are the relocation of the segmented circle and the installation of a blast pad beyond the east end of the runway.

The segmented circle presently encroaches upon the RSA and OFA. While it would be preferred to remove the segmented circle entirely outside both areas, there is no suitable location that would not require additional property acquisition. At a minimum, the segmented circle should be relocated from the RSA.

Exhibit 4E depicts a potential location on the north side of the airfield. This location is within the area recommended earlier for property acquisition. The site would be visible from the air, as well as from the control tower, and would still be near midfield. While located within the OFA, it is outside the RSA. The location in the OFA would still require a modification to design standards.

A blast pad 120 feet wide and 150 long, extending from the west end of the runway would keep the engine blast of departing business aircraft from scouring and damaging the turf in the proximity of the runway end. Since this runway end is used over 80 percent of departures, the blast pad would be most advantageous.

PASSENGER TERMINAL AREA

With the passenger terminal marginally adequate through the long-range planning horizon, internal modifications will be limited to requirements for security and efficient circulation. It is not the scope or purpose of this Master Plan to develop alternative internal floor plan layouts. That is reserved for terminal designers when the need for security or circulation adaptations present themselves. Rather, the Master Plan will focus on the exterior layout and needs of the terminal area.

If space should be needed in the future to meet security mandates, consideration should first be given to enclosing the space between the terminal building and the apron. If this is not practical for the need, space could be added to the west, as previously determined in the **1996 Draft Master Plan**. This direction would have the least impact on other terminal area uses and functions.

As with the terminal building, the facility requirements found the terminal parking and circulation to be at least marginally adequate through the long range horizon of 60,000 annual enplanements. A relocation of the rental car return and service area is under design. Presently, the return and service area is located on pavement that was constructed with federal funds as aircraft parking apron. The grant agreement attached to the construction of the apron requires it to be used for that purpose. The FAA has directed that the ramp area be returned to aviation uses.

Exhbit 4F depicts how the rental car return and service lot can be relocated immediately south of the parking ramp. The size of the lot would also allow the provision of twelve parking spots for restaurant patrons. This would allow the existing restaurant in the terminal building to have dedicated and convenient public parking.

This relocation remains within existing airport property and room remains for the development of additional parking should demand require. Other on-airport alternatives would require either additional property or the transport of passengers to a remote lot well away from the terminal. Similarly, off-airport locations for rental cars would require transporting passengers elsewhere. This would increase the amount of shuttle bus traffic on Fifth Street and other streets. Remote locations could also increase rental car costs, as well as significantly reduce airport revenues from rental car fees.

GENERAL AVIATION CONSIDERATIONS

The general aviation (GA) considerations focus primarily on re-use and modernization of facilities, as well as ensuring that setbacks meet current design standards.

All new or relocated tie-downs and buildings will need to be planned at least 500 feet from the runway centerline, to allow for the parallel taxiway to ultimately be relocated in the future. Any building that would penetrate the imaginary surfaces as outlined in F.A.R. Part 77 will be subject to an aeronautical study by the FAA before approval.

For a structure reaching 20 feet above the runway elevation, the Part 77 setback would be 640 feet from the runway centerline for a Category I instrument approach. For a structure 35 feet above the runway elevation, the setback would be 745 feet.

Leases for 20 additional hangars have been previously approved for Oxnard Airport. These hangars are intended to be developed on the existing apron at the west end of the airport as shown on **Exhibit 4E.**

The relocation of the rental car facility will return a section of apron to aviation uses. The apron is highlighted on **Exhibit 4F.** This apron will provide aircraft parking spaces, wash rack, and self-maintenance area.

Much of the improvements in the east GA area should involve redevelopment and modernization of the facilities. The completion of a new replacement fixed base operator (FBO) hangar indicates how the area can be updated. As older facilities become impractical to maintain, they should be replaced by

Exhibit 4F
TERMINAL/GA CONSIDERATIONS

similar new facilities. This could eventually include several older T-hangars, as well as the remaining large World War II hangar.

Exhibit 4F also depicts an area where additional airport facilities can be developed if and when the need arises. This area is on the east side of the terminal area and would be reserved for development as needed to meet future demand or to replace facilities that need to be relocated for safety-related improvements. All the landside development options remain on the south side of the runway and within existing airport property.

SUMMARY

The process utilized in formulating and assessing airport improvement considerations involved an analysis of need based upon the mission statements of Oxnard Airport and the Ventura County Department of Airports. Operational safety was the highest priority, followed by maintaining and preserving the existing airport functions. Updating to current airport design standards was considered at every stage.

After further discussion with the Planning Advisory Committee, a concept will be recommended. The ultimate plan should represent an airport facility that fulfills safety design standards and carries out the goals and objectives of the mission statements.

The final two chapters will be dedicated to refining a basic concept into a final plan that can be approved and implemented by Ventura County with assistance from the FAA.

Chapter Five
DEVELOPMENT PLANNING PROGRAM

CHAPTER FIVE

DEVELOPMENT PLANNING PROGRAM

The airport master planning process for Oxnard Airport has evolved through the analytic efforts in the previous chapters, intended to establish potential aviation demand, establish airside and landside facility needs, and evaluate options for the improvement of airside and landside facilities. The planning process to this point, has included a presentation and review of phase reports (representing the first four chapters of the master plan) to the Planning Advisory Committee (PAC). A conceptual plan for Oxnard Airport has evolved, considering PAC input. The purpose of this chapter is to describe, in narrative and graphic form, the development plan and capital improvement program for the airport.

RECOMMENDED MASTER PLAN CONCEPT

The recommended master plan concept provides for anticipated facility needs, in concert with the airport's and Department of Aviation's mission statements. A review of how the master plan concept fits with the mission statements is included in the conclusions at the end of this chapter. The recommended concept is depicted on **Exhibit 5A**. The following section summarizes the airport design standards, as well as airside and landside recommendations.

DESIGN STANDARDS

Oxnard Airport (OXR) is identified as a primary commercial service airport in the FAA's **National Plan of Integrated Airport Systems** (NPIAS). As a commercial service airport certificated under Federal Aviation Regulation (FAR) Part 139, OXR must comply with FAA design and safety standards. Advisory Circular 150/5300-13, *Airport Design*, is the key reference used to ensure compliance with these standards. These design and safety standards are based primarily upon the characteristics of the aircraft that are expected to use the airport on a regular basis. As previously discussed in Chapter Three, the design airport reference code (ARC) is based upon the approach speed and wingspan of the "critical" aircraft. Frequently, as is the case at Oxnard Airport, more than one aircraft can make up the design aircraft.

The critical ARC for planning at OXR was determined to be a combination of D-II and B-III. This includes a range of general aviation aircraft up to the Gulfstream IV, as well as commuter turboprops such as the Dash 8.

Since a number of design standards are affected by these classifications, a summary of the runway and taxiway standards (as they will be applied to the airfield) has been provided in **Table 5A**. It is possible that some areas on the airfield (such as T-hangar storage areas) may be designed to a lesser Group I standard, requiring lower setback requirements. This has been noted in the table, under the taxiway and taxilane design standards.

AIRFIELD RECOMMENDATIONS

The principal airfield recommendations focus upon safety, security, and compatibility. It is of key importance to ensure that airport design standards are upheld to the maximum extent feasible, particularly in relation to the runway safety area (RSA). Other recommendations are provided to improve the efficiency and circulation on the airfield. **Exhibit 5A** depicts the airfield recommendations. The following subsections discuss the recommendations as they pertain to the runway and taxiway system.

Runway 7-25 will remain the only runway at Oxnard Airport. The runway is 5,950 feet long and 100 feet wide, with a pavement strength of 70,000 pounds dual wheel loading. It is planned to remain at this pavement strength to continue to accommodate the design aircraft indicated earlier.

An analysis of the runway's safety area requirements indicated that the runway does not meet the FAA design standard for approach category C and D aircraft. The RSA beyond the east end of the runway extends for approximately 750 feet before reaching the airport's perimeter service road. Immediately east of the service road, the perimeter fence and Ventura Road also lie within the RSA. On the west end, the localizer is 970 feet from the end of Runway 7.

Exhibit 5A
RECOMMENDED AIRFIELD PLAN

TABLE 5A
Runway Design Standards
Oxnard Airport

	D-II, B-III	
Runway		
Width (ft.)	100	
Runway Blast Pad		
Width (ft.)	140	
Length Beyond End (ft.)	200	
Runway Safety Area (RSA)		
Width (centered on runway centerline) (ft.)	500	
Length Beyond Runway End (ft.)	1,000	
Object Free Area (OFA)		
Width (ft.)	800	
Length Beyond Runway End (ft.)	1,000	
Obstacle Free Zone (OFZ)		
Width (ft.)	400	
Length Beyond Runway End (ft.)	200	
Runway Centerline to:		
Parallel Taxiway Centerline (ft.)	400	
Edge of Aircraft Parking Apron (ft.)	500	
Runway Protection Zones (RPZ)	Approach	Departure
Inner Width (ft.)	1,000	500
Outer Width (ft.)	1,425	1,010
Length (ft.)	1,700	1,700

Taxiway and Taxilane Design Standards

	ADG III	ADG II	ADG I
Taxiways			
Width (ft.)	50	35	25
Shoulder Width (ft.)	20	10	10
Safety Area Width (ft.)	118	79	49
Object Free Area Width (ft.)	186	131	89
Taxiway Centerline to:			
Parallel Taxiway/Taxilane (ft.)	152	105	69
Fixed or Moveable Object (ft.)	93	65.5	44.5
Taxilanes			
Taxilane Centerline to:			
Parallel Taxilane Centerline (ft.)	140	97	64
Fixed or Moveable Object (ft.)	81	57.5	39.5

Source: FAA Airport Design Software Version 4.2D

The recommended plan for the east end involves relocating the departure end threshold for Runway 7, 250 feet to the west. Besides marking the departure threshold, the departure end threshold lights will be moved to the new threshold and the distance-to-go markers for Runway 7 will need to be relocated accordingly.

Off the west end of the runway, the localizer penetrates the west end of the RSA by just 30 feet, and the utility of the localizer will ultimately be replaced by GPS. With these circumstances, as long as the localizer is on fragile mountings, there is little margin of safety gained by relocating it 30 feet further west.

As a result of the runway safety area improvements, the takeoff and landing capabilities of Runway 25 remain the same. The landing length and accelerate-stop-distance-available for takeoff on Runway 7 are reduced by 250 feet, to 5,700 feet.

The segmented circle should be removed from the RSA and relocated on the north side of the airport. Relocation will be dependent upon the acquisition of property within the OFA that is discussed in the following paragraphs.

Exhibit 5A depicts the property acquisition recommendations. All property acquisitions are related to direct control of land use for the enhancement of safety. With the exception of relocation of the segmented circle and an approach-light lane for Runway 7, none of the property acquisitions proposed will be used for airport development. In fact, the ultimate intent is to clear the properties, or at least maintain current uses, with no new development.

The most critical property is that within the runway object free area (OFA). It is desirable to hold fee simple ownership of the entire object free area. The plan recommends acquisition of approximately ten (10.0) acres of undeveloped property within the OFA on the north side of the airport. Avigation easements are recommended for developed off-airport properties within the OFA. Still, the County should consider fee simple acquisition of properties from willing sellers within these areas when opportunities arise.

Another area where more positive control of property is necessary is in the approaches to the runway. The function of the runway protection zone (RPZ) is to enhance the protection of people and property on the ground. FAA Advisory Circular 150/5300-13, **Airport Design,** indicates that, "control is preferably exercised through the acquisition of sufficient property interest in the RPZ."

While fee simple acquisition is desirable, at a minimum, avigation easements should be obtained over all property within the RPZ. For Oxnard Airport, avigation easements should be obtained within the RPZs, both east and west of the airport. As with the OFA, however, the County should consider fee simple acquisition of properties from willing sellers within the RPZ. Because these areas are intended to be kept clear, no airport development is planned for these areas, other than the relocation of the segmented circle and the future installation of a medium intensity approach light system with runway alignment indicator lights (MALSR) on the Runway 7 approach.

Additional easements are recommended for approximately 57 acres on the north side between the airport and Teal Club Road. Like the easements currently being acquired in the Runway 25 approach, these easements are designed to control development heights.

The MALSR is recommended to provide for Category I instrument approach minimums from the west. This approach provides 5,700 feet for landing, compared to just 4,578 feet on Runway 25. While Runway 25 will remain the primary direction of operations, an instrument approach to Runway 7 would allow it to be used more during wet runway conditions. Runways are more slippery during wet conditions, and the additional landing length would provide a higher margin of safety for operations.

The location of the future MALSR is depicted on **Exhibit 5A**. This approach light system would have light stations extending outward from the end of the runway for every 200 feet along the runway centerline, to a distance of 2,400 feet. This would include a series of light stations west of Victoria Avenue. Property acquisition of a 200-foot-wide path centered on the light lane is preferred, however, a right-of-way easement for the light stations and a service road would be the minimum requirement.

Exhibit 5A also depicts the proposed blast pad at the east end of the runway. This is recommended to protect the ground immediately behind the runway from being eroded by the blast of wind created as aircraft begin their takeoff roll. Since this end is used by 80 percent of the airport's takeoffs, the blast pad is warranted.

LANDSIDE RECOMMENDATIONS

Recommended landside improvements are primarily associated with maintenance, redevelopment, and modernization of existing facilities. The facility requirements indicated that, with the addition of previously approved executive hangars and the replacement of Hangar One, facilities' area should be adequate from a space standpoint. Older hangar facilities may require replacement during the planning period. In addition, future mandates in security could require alterations in the terminal area.

The terminal building footprint is not planned for any changes unless required for security. It may become necessary to modify the interior for security and/or circulation over the planning period. It should be remembered that the terminal building will be marginally adequate at 60,000 annual enplanements. If demand continues to grow beyond this level, the County will need to seriously consider its options for providing for air service in the region. If a new commercial service airport site is not in place by that time, it may become necessary to reconsider the facility needs for maintaining commercial service at Oxnard Airport.

The pending construction of a new rental car parking lot will allow the return to aviation use of the apron on the east side of the terminal building. This will be used to support general aviation activity. It will re-establish transient parking, as well as include a wash rack and self-maintenance area.

The recent completion of the new fixed base operator (FBO) hangar is an example of the modernization of facilities that can be expected in the future. This hangar was actually a replacement of Hangar One, which was lost to a fire in 1994. The new hangar is designed to better accommodate the modern aircraft and the services that an FBO provides today. The flexibility to work with the other FBOs and tenants to redevelop and modernize the airport's general aviation facilities is recommended. This will improve safety, energy efficiency, and functionality, as well as the architecture and aesthetics associated with the airport.

Exhibit 5B depicts the ongoing development and proposed plans for the landside facilities discussed above. Other improvements include the replacement of the existing ARFF shelter, located to the west of the tower. In addition, the Port-a-Ports closest to the taxiway will be relocated further south to improve runway safety and taxiway circulation.

THROUGH-THE-FENCE ACTIVITIES

There are instances when adjacent landowners may wish to gain direct airfield access to a publicly-owned landing area such as the Oxnard Airport. This type of an arrangement is commonly called a through-the-fence operation, whether the perimeter fence is imaginary or real. It is Federal Aviation Administration (FAA) policy to discourage through-the-fence activities.

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.

Allowing private property owners to gain a competitive advantage could

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Exhibit 5B
RECOMMENDED TERMINAL AREA PLAN

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, so that they do not gain an unfair economic advantage over on-airport operators.

For all the above reasons, it is recommended that Ventura County adopt a general policy to discourage the consideration of through-the-fence activities at Oxnard Airport.

CAPITAL IMPROVEMENT PROGRAM

Once the specific needs and improvements for the airfield have been established, the next step is to determine a realistic schedule and costs for implementing the plan. This subsection examines the overall cost of development and a demand-based schedule for airport improvements.

The development schedule can be initially established by dividing the improvement needs into three planning horizons of short term, intermediate term, and long range. For the airfield, the key activity indicator is aircraft operations. For hangar development, based aircraft will be the indicator. **Table 5B** summarizes the operational milestones for each planning horizon.

It should be remembered that most of the activity levels in the planning horizons have been experienced by the airport in the past. Thus, there are actually minimal improvements needed, based upon the activity levels. Rather, it is a matter of responding to rehabilitation and modernization, as well as safety and security enhancements.

TABLE 5B
Aviation Demand Planning Horizons
Oxnard Airport

	2002	Short Term	Intermediate Term	Long Term
ANNUAL OPERATIONS				
Commuter	3,650	4,500	5,600	6,500
Air Taxi	9,756	11,500	12,600	14,500
Military	1,541	1,500	1,500	1,500
General Aviation	73,803	78,200	83,900	92,700
Total Operations	88,750	95,700	103,600	115,200
ANNUAL PASSENGERS/BASED AIRCRAFT				
Enplanements	22,829	35,000	45,000	60,000
Based Aircraft	142	150	158	170

Table 5C summarizes capital needs for Oxnard Airport through the planning horizons of this master plan. An estimate has been included with each project of federal and state funding eligibility, although this amount is not guaranteed. For larger capital projects, it may be necessary for Ventura County to apply for discretionary funds (discussed in more detail in the following paragraphs).

Individual project cost estimates account for engineering and other contingencies that may be experienced during the implementation of the project, and are in current (2004) dollars. Due to the conceptual nature of a master plan, implementation of capital improvement projects should occur only after further refinement of their design and costs through engineering and/or architectural analyses. Capital costs in this chapter should be viewed only as estimates subject to further refinement during design.

The short term horizon covers items of highest priority, as well as items that should be developed as the airport approaches the short term activity milestones. Priority items should include improvements related to the runway safety areas and the approaches. Improvements to facilities that are inadequate for present demand should also be included in the short term. Because of their priority, these items will need to be incorporated into FAA and Department of Airports five-year programming. With improvements to the airfield in the short term, there are no airfield projects listed in the long term.

TABLE 5C
Capital Improvement Program
Oxnard Airport

No.	Project	Total Costs	FAA Eligible	Airport Share
FY 2003-04				
1	Apron Pavement/Drainage Rehabilitation	$336,000	$302,400	$33,600
2	North OFA Property Acquisition	715,000	643,500	71,500
3	Replace ARFF Vehicle	528,000	475,200	52,800
4	Gate/Access Control Security Improvements	35,000	31,500	3,500
5	Rehabilitate Runway and Exit Taxiways	485,000	436,500	48,500
6	Aircraft Wash Rack	30,000	27,000	3,000
7	Security Improvements	50,000	0	50,000
8	Torbit South Hangar Roof	75,000	0	75,000
9	Parking Lot Slurry Seal	40,000	0	40,000
10	Rehabilitate Terminal Loop Road	191,000	171,900	19,100
11	Hangar #3 Lower South Roof	24,000	0	24,000
Subtotal FY 2003-04		**$2,509,000**	**$2,088,000**	**$421,000**
FY 2004-05				
1	Apron Pave/Drainage Rehab/Blast Pad Design	$277,000	$263,150	$13,850
2	Obstruction Removal (Relocate Port-a-Ports)	25,000	22,500	2,500
3	Relocate Runway 7 Departure Threshold	35,000	33,250	1,750
4	Torbit North Hangar Roof	75,000	0	75,000
5	Aspen, Midfield West Hangar Roof	17,000	0	17,000
Subtotal FY 2004-05		**$429,000**	**$318,900**	**$110,100**
FY 2005-06				
1	Apron Pave/Drainage Rehab/Blast Pad	$1,350,000	$1,282,500	$67,500
2	Upgrade Security Fencing	370,000	351,500	18,500
3	Relocate Segmented Circle	20,000	19,000	1,000
4	Pavement Rehabilitation Design	41,000	38,950	2,050
5	Maintenance Facility Roof	34,000	0	34,000
Subtotal FY 2005-06		**$1,815,000**	**$1,691,950**	**$123,050**
FY 2006-07				
1	Pavement Rehabilitation	$960,000	$912,000	$48,000
2	Overlay Taxiways A and C Design	40,000	38,000	2,000
Subtotal FY 2006-07		**$1,000,000**	**$950,000**	**$50,000**
FY 2007-08				
1	Northside Avigation Easement Program	$674,000	$640,300	$33,700
2	West End Drainage Improvements Design	105,000	99,750	5,250
3	Overlay Taxiways A and C	220,000	209,000	11,000
4	ATCT Roof and Deck Repairs	5,000	0	5,000
Subtotal FY 2007-08		**$1,004,000**	**$949,050**	**$54,950**
SHORT TERM HORIZON TOTAL		**$6,757,000**	**$5,977,900**	**$759,100**

TABLE 5C (Continued) Capital Improvement Program Oxnard Airport				
No.	Project	Total Costs	FAA Eligible	Airport Share
INTERMEDIATE HORIZON				
1	Runway 7 RPZ Avigation Easements	$718,000	$682,100	$35,900
2	West End Drainage Improvements	993,000	943,350	49,650
3	Install Runway 7 MALSR	650,000	617,500	32,500
4	Runway 7 Precision Marking	60,000	57,000	3,000
5	Rehabilitate Runway Lighting	150,000	142,500	7,500
6	Terminal Remodel	600,000	570,000	30,000
7	FBO Hangar Rehab/Modernization (By Lessee)	0	0	0
INTERMEDIATE HORIZON TOTAL		**$3,171,000**	**$3,012,450**	**$158,550**
LONG RANGE HORIZON				
1	FBO Hangar Rehab/Modernization (By Lessee)	$0	$0	$0
2	T-Hangar Improvements	2,000,000	1,900,000	100,000
3	ARFF Vehicle Replacement	600,000	570,000	30,000
4	Runway/Taxiway Rehabilitation	2,000,000	1,900,000	100,000
5	Apron Rehabilitation	1,500,000	1,425,000	75,000
6	Parking Lot Pavement Rehabilitation	400,000	0	400,000
LONG RANGE HORIZON TOTAL		**$6,500,000**	**$5,795,000**	**$705,000**
TOTAL PROGRAM COSTS		**$16,428,000**	**$14,805,350**	**$1,622,650**

When short term horizon activity milestones are reached, it will be time to program for the intermediate term based upon the next milestones. Maintenance and rehabilitation projects that are not likely to be necessary within the next five years, are also included in the intermediate term.

CAPITAL IMPROVEMENTS FUNDING

Financing for capital improvements comes from several sources. Contributors to the airport's development are its users, through a system of user taxes, lease rents, fees, and charges. These sources include not only the rates and charges for airport use imposed by the Ventura County Department of Airports, but also federal airport improvement programs and passenger facility charges. The following paragraphs outline the key sources for 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 reauthorization enacted in late 2003. It is entitled the *Vision 100 - Century of Aviation Reauthorization Act*. The new four-year program covers FAA fiscal years 2004 through 2007.

The source for AIP funds is the Aviation Trust Fund. The Trust Fund is the depository for all federal aviation taxes such as those on airline tickets, aviation fuel, lubricants, tires and tubes, aircraft registrations, and other aviation-related fees. The funds are distributed under appropriations set by Congress to airports in the United States which have certified eligibility. The distribution of grants is administered by the Federal Aviation Administration.

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 a limited amount of FAA funding. However, improvements such as automobile parking, fueling facilities, utilities, hangar buildings, airline ticketing and airline operations areas, are not generally eligible for AIP funds. Under Vision 100, Oxnard Airport is eligible for 95 percent funding assistance, an increase from the previous 90 percent level.

AIP provides funding for eligible projects at airports through an entitlement program. Primary commercial service airports receive a guaranteed minimum of federal assistance each year, based on their enplaned passenger levels and Congressional appropriation levels. A primary airport is defined as any commercial service airport enplaning at least 10,000 passengers annually.

Under the formula, if AIP is appropriated at the authorized levels, airports enplaning at least 10,000 passengers annually are entitled to a minimum of $1,000,000 annually. (If AIP was funded below the authorized levels, the minimum is $650,000.)

In addition, airports that have over 100 million pounds of landed weight by all-cargo carriers, receive a cargo entitlement. This entitlement is based upon the airport's percentage of the total landed weight at all eligible airports.

Vision 100 also establishes special set-asides for noise programs, general aviation and non-primary airports, and other special programs.

In a number of cases, airports face major projects that will require funds in excess of the airport's annual entitlements. Thus, additional funds from discretionary apportionments under AIP become desirable. The primary feature about discretionary funds is that they are distributed on a priority basis. These priorities are established by the FAA, utilizing a priority code system. Under this system, projects are ranked by their purpose. Projects ensuring airport safety and security are ranked as the most important priorities, followed by maintaining current infrastructure development, mitigating noise and other environmental impacts, meeting standards, and increasing system capacity.

Other funds can come through the Facilities and Equipment (F&E) section of the FAA. As activity conditions warrant, the airport will be considered by F & E for various navigational aids to be installed, owned, and maintained by the FAA.

Whereas entitlement monies are guaranteed on an annual basis, discretionary funds are not assured. If the combination of entitlement and discretionary funding does not provide enough capital for planned development, projects would either be delayed, or require funding from the airport's revenues or other authorized sources such as those described in the following subsections.

PASSENGER FACILITY CHARGES

The **Aviation Safety and Capacity Expansion Act of 1990** contained a provision for airports to levy passenger facility charges (PFCs) for the purposes of enhancing airport safety, capacity, or security or to reduce noise or enhance competition.

14 CFR Part 158 of May 29, 1991, establishes the regulations that must be followed by airports choosing to levy PFCs. Passenger facility charges may be imposed by public agencies controlling a commercial service airport with at least 2,500 annual passengers with scheduled service. Authorized agencies were allowed to impose a charge of $1.00, $2.00, or $3.00 per enplaned passenger. Legislation (AIR 21) passed in early 2000, allowed the cap to increase to $4.50.

Prior approval is required from the Department of Transportation (DOT) before an airport is allowed to levy a PFC. The DOT must find that the projected revenues are needed for specific, approved projects. Any AIP-eligible project, whether development or planning related, is eligible for PFC funding. Gates and related areas for the movement of passengers and baggage are eligible, as are on-airport ground access projects. Any project approved must preserve or enhance safety, security, or capacity; reduce/mitigate noise impacts; or enhance competition among carriers.

PFCs may be used only on approved projects. However, PFCs can be utilized to fund 100 percent of a project. They may also be used as matching funds for AIP grants or to augment AIP-funded projects. PFCs can be used for debt service and financing costs of bonds for eligible airport development. These funds may also be commingled with general revenue for bond debt service. Before submitting a PFC application, the airport must give notice and an opportunity for consultation with airlines operating at the airport.

PFCs are to be treated similar to other airport improvement grants, rather than as airport revenues, and will be administered by the FAA. Participating airlines are able to retain up to eight cents per passenger for administrative handling purposes.

The Ventura County Department of Airports imposes the maximum PFC of $4.50 per enplanement, to support improvements at Oxnard Airport. The funds from the PFC are currently obligated to a total of $872,000 to fund several projects including this Master Plan. Also included are two projects within fiscal year (2003-04) of the Master Plan CIP; the runway and exit taxiway rehabilitation, and the terminal loop road rehabilitation. With this PFC, the Department of Airports should annually collect funds between $90,000 and $250,000 depending upon enplanements each year. The PFC authorization runs through 2010. If the passenger levels forecast in Chapter Two are achieved, the committed funds could be collected by as early as 2008.

STATE FUNDS

In support of the state airport system, the California Transportation Commission (CTC) also participates in state airport development projects. An aeronautics account has been established within the state transportation fund, from which all airport improvement monies are drawn. Tax revenues have been collected and deposited in the aeronautics account from the sale of general aviation jet fuel ($0.02 per gallon) and avgas ($0.18 per gallon). The CTC has established three grant programs to distribute funds deposited in the aeronautics account: annual grants, acquisition and development (A & D) grants, and AIP matching grants. Another funding source provided by the CTC is low-interest loans. Because Oxnard Airport is a commercial service airport, it is ineligible to receive annual and AIP matching grants from the State Aeronautics Account. However, the airport is eligible to receive A&D Grants and low-interest loans from the state. Each of these is discussed below.

Acquisition and Development (A & D) Grants

A & D grants are designed to provide funding to airports for the purpose of land acquisition and development. This grant has a minimum allocation level of $10,000 and provides up to $500,000 per fiscal year (maximum allowable funding to a single airport yearly). Grant requests are initiated through the CIP process and require a local match of 10 to 50 percent of the project's cost (the level has been 10 percent for the last 10+ years). Unlike annual and AIP matching grants, reliever and commercial service airports are eligible for the A & D grant. Oxnard Airport could utilize these grants as a means to acquire land listed in the CIP. Considering the current financial crisis facing the State of California, no assumption should be made that any funding will be available to Oxnard Airport through this program, at least in the short term.

California Airport Loan Program

The loan program provides funding for all airports within the State of California which are owned by an eligible public agency and open to the public without exception. These loans provide funding to eligible airports for construction and land acquisition projects which will benefit the airport and improve its self-sufficiency. The loans can be used for nearly any airport-related project and the funding limits are not bound by law or regulation. The amount of the loan is determined in accordance with project feasibility and the sponsor's financial status. Terms of the loan provide eight to 15 years for its payback and the interest rate is based upon the most recent State of California bond sale.

FUNDING PLAN

The underlying strategy used to develop the financial plan of the capital improvement program involves first applying projected annual entitlement funding to eligible project costs. Potential state funding is then considered. The net balances of AIP eligible costs, local matching shares, and the costs of non-eligible projects result in the remaining costs to be funded.

Table 5D outlines the maximum potential FAA entitlement funding that could be attained during each planning horizon, based upon the activity levels forecast. Funding from the state is assumed to be zero. This analysis assumes that the short term horizon would be attained in five years, the intermediate horizon would be achieved in another seven years, and the long range horizon would be achieved in an additional 10 years.

TABLE 5D
CIP Financial Assumptions (2004 $)

	Short Term	Intermediate Term	Long Range
Total Project Costs	$6,757,000	$3,171,000	$6,500,000
Grant Eligible	$5,997,900	$3,012,450	$5,795,000
AIP Entitlements	$5,000,000	$7,000,000	$10,000,000
State Funding	$0	$0	$0
Remaining Grant Eligible Costs	$997,900	$0	$0
Matching Share Costs	$439,100	$158,550	$305,000
Remaining PFC-Eligible Costs	$1,437,000	$158,550	$305,000
Passenger Facility Charges (PFC)	$722,400	$1,227,650	$2,289,750
Remaining Matching Share	$714,600	$0	$0
Non-Eligible Costs	$320,000	$0	$400,000
Remaining Airport CIP Costs	$1,034,600	$0	$400,000

The airport's entitlement funding of $1.0 million annually will be more than sufficient to fund FAA-eligible projects for the intermediate and long term planning horizons. The short term projects, however, exceed the entitlement funding by $997,900. This combined with matching share costs of $439,100 will total $1,437,000 that would be eligible for funding by PFC's. With an estimated $722,400 in PFC's in the short term, this will leave approximately $714,600 to be funded. The County will still be able to seek discretionary funding from the FAA for up to 95 percent of this total.

If the PFCs are renewed beyond 2010 for use in funding other projects, it should provide more than adequate monies to fund the matching share through the remainder of the planning period. This leaves costs that are not eligible for funding. Most of these projects have to do with maintenance and modernization of hangar facilities. Since these projects are related to revenue-producing facilities, they would need to be funded through the rates and charges of the airport. Over the course of the intermediate and long range planning horizons, this is estimated to be approximately $720,000.

CONCLUSIONS

In conclusion, the Master Plan is reviewed with regard to the Department of Airports and Oxnard Airport Mission Statements.

DEPARTMENT OF AIRPORTS MISSION STATEMENT

- ***To provide safe, efficient, maintained, and accessible facilities for the provision of general aviation and limited commuter airline service needs of the citizens of Ventura County.***

The Master Plan concept preserves the current general aviation and commuter activities for which Oxnard Airport is used. It includes recommendations to enhance safety and efficiency, as well as to maintain existing facilities.

- ***To limit the development of Camarillo and Oxnard Airports to meet the forecasted needs of general aviation and commuter airline services in a manner that will complement each other.***

The Master Plan utilizes a forecast that takes into account the following development qualifiers:

- No increase in runway length.
- No significant increase in terminal space.
- Planning to maintain and serve based aircraft levels equal to its current market share of registered aircraft in the county.

- ***To optimize the use of present airport land, maximize safety, assure financial feasibility, and minimize the negative environmental effects on the surrounding communities.***

With the exception of an approach light system, segmented circle relocation, and perimeter fencing, all development in the Master Plan will occur on current airport property. The only property acquisitions recommended are those designed to enhance operational safety.

OXNARD AIRPORT MISSION STATEMENT

Oxnard Airport shall:

- ***be a publicly owned, operated, and managed general aviation airport with a strong emphasis on safety, cooperation with its neighbors, and responsible flight operations.***

The Master Plan is based upon maintaining the Oxnard Airport as a County-owned and operated airport. It remains open to general aviation activity that can operate within the constraints of its facilities. The major improvement recommendations for the airfield are based upon meeting airport design standards to the extent feasible.

- ***maintain a viable center for air commerce, which enhances trade and business for the economic development and transportation needs of the City of Oxnard and Ventura County.***

The Master Plan continues to provide for maintenance and modernization of existing terminal area facilities to serve the needs of its users. The plan does consider growth in traffic beyond the current levels of activity in support of economic development and transportation needs of the City and County.

- ***make every reasonable effort to limit the hours of air operations through a curfew, and to reduce noise and air pollution nuisances caused by airport users and operations.***

Since the Master Plan is primarily a facility-related plan, the consideration of limited hours and/or curfews is beyond the purview of the Master Plan. The Master Plan is also limited in means to reduce noise and air pollution. The Master Plan, however, does not recommend any improvements that would increase the potential for noise and air pollution.

- ***provide the region with safe and efficient access to the national air transportation system and general aviation.***

Safety, maintenance, and modernization of the Oxnard Airport is the primary emphasis of the Master Plan. The plan will allow the airport to continue to be a regional access to the national air transportation system.

- ***continue to search for a regional airport to serve the air carrier and commercial needs of the City of Oxnard and Ventura County.***

The limited development recommendations of the Master Plan are based in large part on the continued search for a new airport. The Master Plan recognizes that the forecasts for Oxnard Airport fall well short of meeting the commercial service demand in Ventura County. As other commercial airports in the Los Angeles Basin reach their capacities, it will become more incumbent upon the County to have access to adequate airport facilities to serve the needs of its citizens, businesses, and economic well-being.

Appendix A
GLOSSARY AND ABBREVIATIONS

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Appendix A
GLOSSARY OF TERMS

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

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) transport 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.

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 ELEVATION: The highest point on an airport's usable runway expressed in feet above mean sea level (MSL).

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

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.

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.

AIR TAXI: An air carrier certificated in accordance with 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.

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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 (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 enroute phase of flight.

ALERT AREA: see special-use airspace.

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.

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

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

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.

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

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."

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.

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

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.

CROSSWIND: wind flow that is not parallel to the runway of the flight path of an aircraft.

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

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.

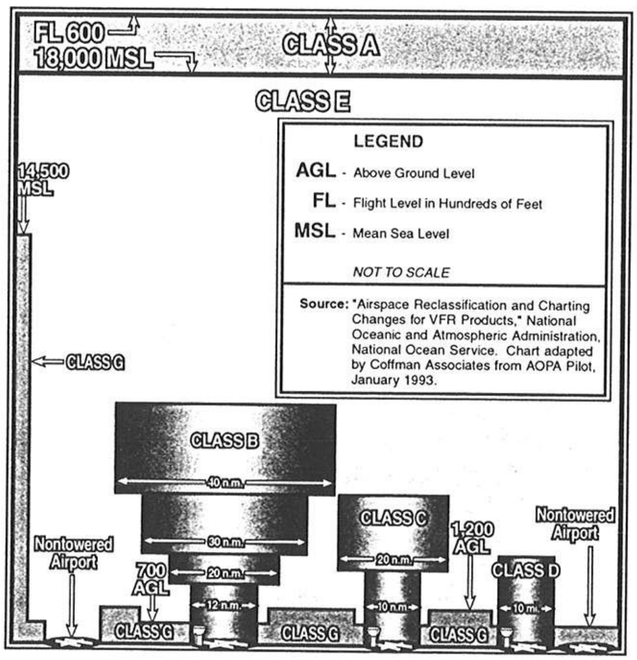
- *CLASS C:* generally, the airspace from the surface to 4,000 feet above the air port elevation (charted as MSL) surrounding those airports that have an operational control tower and radar approach control and are served by a qualifying number of IFR operations or passenger enplanements. Although individually 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 airport that have an operational control tower. Class D air space is individually tailored and configured to encompass published instrument approach procedures.
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 LEG: A flight path at right angles to the landing runway off its upwind end. See "traffic pattern."

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;

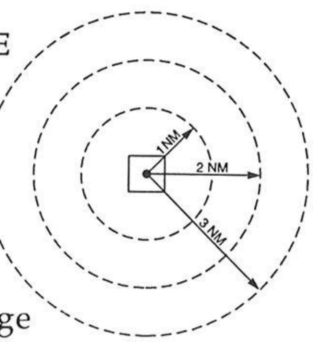
- *TAKEOFF DISTANCE AVAILABLE (TODA):* The TORA plus the length of any remaining runway and/or clear way beyond the far end of the TORA;

- *ACCELERATE-STOP DISTANCE AVAILABLE (ASDA):* The runway plus stopway length declared available for the acceleration and deceleration of an aircraft aborting a takeoff; and

- *LANDING DISTANCE AVAILABLE (LDA):* The runway length declared available and suitable for landing.

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 A-weighted 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."

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.

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

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."

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.

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.

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.

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: See "GPS."

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

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

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.

INSTRUMENT APPROACH: 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): Rules governing the procedures for conducting instrument flight. Also a term used by pilots and controllers to indicate type of flight plan.

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.

LANDING DISTANCE AVAILABLE (LDA): see declared distances.

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.

LORAN: long range navigation, 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 enroute navigation.

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

MILITARY OPERATIONS AREA (MOA): see special-use airspace.

MISSED APPROACH COURSE (MAC): The flight route to be followed if, after an instrument approach, a landing is not effected, 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.

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..)

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

NONDIRECTIONAL 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.

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

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.

OPERATION: a take-off or a landing.

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.

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 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.

PROHIBITED AREA: see special-use airspace.

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 enroute 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 enroute 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 BLAST PAD: a surface adjacent to the ends of runways provided to reduce the erosive effect of jet blast and propeller wash.

RUNWAY END IDENTIFIER LIGHTS (REIL): Two synchronized flashing lights, one on each side of the runway threshold, which provide rapid and positive identification of the approach end of a particular runway.

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

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.

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.

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 pre-planned IFR departure procedure.

STANDARD TERMINAL ARRIVAL (STAR): a pre-planned IFR arrival procedure.

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.

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.

TACTICAL AIR NAVIGATION (TACAN): An ultra-high 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.

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

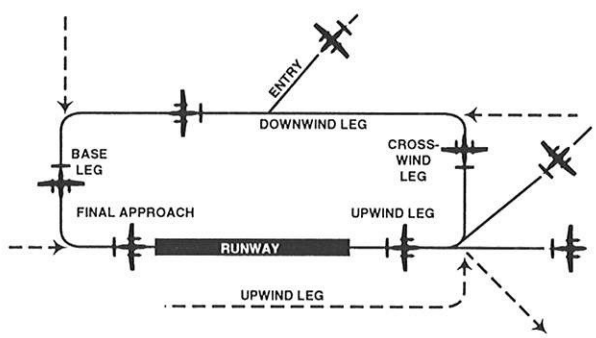
THRESHOLD: the beginning of that portion of the runway available for landing. In some instances the landing threshold may be displaced.

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 take-off.

TOUCHDOWN ZONE LIGHTING (TDZ): 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.

UNICOM: A nongovernment communication facility which may provide

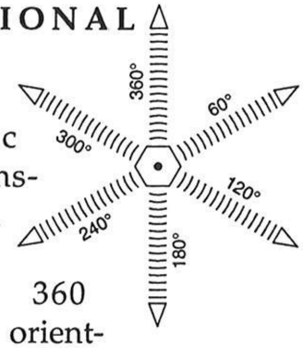


airport information at certain airports. Locations and frequencies of UNICOM's are shown on aeronautical charts and publications.

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

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

VERY HIGH FREQUENCY/ OMNIDIRECTIONAL RANGE STATION (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 OMNIDIRECTIONAL RANGE STATION/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.

VOR: See "Very High Frequency Omnidirectional Range Station."

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

WARNING AREA: see special-use airspace.

ABBREVIATIONS

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 light ing system with sequenced flashers (CAT II configuration)

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 (100LL)

AWOS: automated weather observation station

BRL: building restriction line

CFR: Code of Federal Regulations

CIP: capital improvement program

DME: distance measuring equipment

DNL: day-night noise level

DWL: runway weight bearing capacity for air

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	craft with dual-wheel type landing gear
DTWL:	runway weight bearing capacity for 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 middle marker
LOC:	ILS localizer
LOM:	compass locator at ILS outer marker
LORAN:	long range navigation
MALS:	medium intensity approach lighting system
MALSR:	medium intensity approach lighting system with sequenced flashers
MALSR:	medium intensity approach lighting system with runway alignment 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
MSL:	mean sea level
NAVAID:	navigational aid
NDB:	nondirectional radio beacon
NM:	nautical mile (6,076 .1 feet)
NPIAS:	National Plan of Integrated Airport Systems
NPRM:	notice of proposed rulemaking

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
RCO:	remote communications outlet
REIL:	runway end identifier lighting
RNAV:	area navigation
RPZ:	runway protection zone
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 sequenced flashers
SSALR:	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 type landing gear
STWL:	runway weight bearing capacity for aircraft with single-wheel tandem type landing gear
TAF:	Federal Aviation Administration (FAA) Terminal Area Forecast

TACAN: tactical air navigational aid

TORA: takeoff runway available

TODA: takeoff distance 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
PAC COMMENTS

PHASE I PAC COMMENTS

OXNARD AIRPORT
Oxnard, California

Airport Master Plan
Planning Advisory Committee Members

May 15, 2003

Transmitted herewith is the Phase One Report for the Airport Master Plan. This draft document will be presented at the first PAC meeting on **Thursday, May 15, 2003 at 10:00 a.m.** As a reminder, it will be held at the City of Oxnard Main Library, 251 South A Street in Oxnard.

PHASE ONE REPORT
INTRODUCTION
CHAPTER ONE - INVENTORY
CHAPTER TWO - FORECASTS
CHAPTER THREE - FACILITY REQUIREMENTS
APPENDIX A - GLOSSARY OF TERMS

☐ *I have read the Phase One Report and have no comments.*

☒ *I have read the Phase One Report and have the following comments. (Please add extra sheets if necessary.)*

Somewhat dissapointed that the report appeared to be constrained and does not reflect in my opinion the many possibilities available and necessary in the near future.

Please send this response sheet by May 30, 2003 to:

COFFMAN ASSOCIATES, INC.
4835 E. Cactus Road, Suite 235
Scottsdale, AZ 85254
FAX: (602) 993-7196
Attn: Steve Benson
stevebenson@coffmanassociates.com

Name: Eugene Russell
Representing: ____________
Phone: ____________

TIMOTHY CLIFFORD RILEY
ATTORNEY AT LAW

MEMBER OF THE NEW YORK BAR

5246 OUTRIGGER WAY
* CHANNEL ISLANDS HARBOR *
OXNARD SHORES
CALIFORNIA 93035

MEMBER OF THE CALIFORNIA BAR

TELEPHONE (805) 984-2350 • FACSIMILE (805) 984-2FAX • EMAIL Tim.Riley@gte.net

Coffman Associates, Inc.
4835 East Cactus Road, Suite 235
Scottsdale, AZ 85254

Via Facsimile Only: 602-993-7196
Attention: Steve Benson

May 19, 2003

Re: Oxnard Airport Master Plan
From: Tim Riley, Planning Advisory Committee Member from the Neighborhood Oxnard Shores

I have read the Phase One Report and have the following comments:

The Mission statements for Oxnard Airport and Ventura County Department of Airports make it clear that Oxnard Airport airside as well as landside facilities should not be further developed.

This conclusion is further supported by the fact that the forecasted activity levels are less than those which have already been accommodated by the existing airport facilitities in the past. This conclusion is supported and documented in the Airport Master Plan for Oxnard Airport, Phase One draft at p. 3-1.

"It is important to note that most of the activity levels forecast in the previous chapter have been exceeded in the past." It then soundly reasons, "Since most of the forecast activity has been accommodated at this airport before, the emphasis will be more on re-development to ensure a safe, secure, and efficient operation."

Accordingly, the Master Plan should provide for safe, secure, and efficient operation - without any airside or landside expansion or development.

Also, and most importantly, the Master Plan should include a detailed plan with timetables describing the plan that will be implemented in order to comply with the Oxnard Airport Mission Statement mandate, "Oxnard airport shall: continue to search for a regional airport to serve the air carrier and commercial needs of the City of Oxnard and Ventura County."

The Master Plan should also include detailed plans and timetables on how to scale down the Oxnard Airport facilities and phase-out Oxnard Airport activities once that Oxnard Airport Mission Statement goal has been achieved.

Sincerely,

Timothy Clifford Riley
TCR/mc

10. Pg. 2-8. Please explain the purpose of using a 12-month moving total. The last paragraph should state "...SkyWest's enplanements declined <u>to</u> an average of 586 per month." The new text is underlined.
11. Pg. 2-11. We support the qualifiers listed for examining passenger potential in the Master Plan.
12. Pg. 2-12. The selected growth forecast projects a "recapture scenario." We believe the constant share growth rate of 0.004% is more realistic than the selected recapture market scenario of escalating percentages to 0.005% over 20 years in light of the County Board of Supervisors' directions to the Department of Airports and the Oxnard Airport mission statement. Consequently, we recommend that the Master Plan projections be revised slightly downward to reflect the constant share growth rate of 0.004%.
13. Exhibit 2D should identify that the selected forecast is actually the "market share recapture projection."
14. Pg. 2-13. What does SkyWest say specifically about its planes serving Oxnard, do they intend to continue with turboprop planes? Where is the term "load factor" defined in the text?
15. Pg. 2-17. In the Based Aircraft Forecast, last paragraph, the text states Table 2H says the airport's share has continued to drop and was 12.9 percent in 2001. The Table 2H indicates the share was 12.6%. Which figure is correct?
16. Pg. 2-19. The text states a constant market share of 12.9% was used in Table 2H and Exhibit 2F. However, the previous comment No. 15 indicates the constant market share is not clear (it is either 12.6% in 2001 or 12.9% in 2001, but in 2002 it was 12.8%). Why is the 12.9% based aircraft market share forecast used if the latest data show a declining trend? Exhibit 2F and Table 2H demonstrate a 16-year decline. The text does not appear to support its use of the 12.9% market share. The evidence suggests the market share should be a constant of 12.8%.
17. Pg. 2-25 Revise Table 2P to reflect the City's suggested growth rates.
18. Pg. 3-13. In the Pavement Strength section, the text should explain to the public why airplanes weighing more than Runway 7-25's strength rating of 70,000 pounds per dual wheel loading are allowed to land and are considered a safe landing at the airport.
19. Pg. 3-14 Table 3H. Why are some numbers in bold and italic type? The table should have a legend explaining the importance of different typefaces.
20. Pg. 3-19 Table 3J. Same comment as No. 19 above for Table 3H.
21. Pg. 3-20. The Hangars section uses the term "rustic" incorrectly. We suggest using a clearer term to explain that the salt air causes airplanes to corrode.
22. Pg. 3-21, 3-22. Tables 3K and 3L and 3M have a column for "available" with a blank area next to the left-hand column. It is unclear what the difference is in the first row between "available" and "current," and why one square of the table is blank in each table.
23. Pg. 3-23. In the Airport Access Routes, correct the street name to say "Channel Islands Boulevard."

PHASE II PAC COMMENTS

oxnard neighborhood councils

Wilson Neighborhood Council

Chair
Bill Winter
486-9415

Vice Chair
Betty Payne
487-8435

Secretary
Harriet Feather
486-8567

Treasurer
Jane Buratti
483-2012

August 8, 2003

James M. Harris, P.E.
Coffman Associates
4835 E. Cactus Road, Suite 235
Scottsdale, Arizona 85254

RE: Oxnard Airport Master Plan

Dear Mr. Harris:

As Chairman of a neighborhood directly impacted by the Oxnard Airport, I would like to bring to your attention the inconvenience of the PAC mid morning meeting times. Wilson Neighborhood Council has several residents interested in participating in the Airport Master Plan Advisory Committee, however their daily work schedules, in and out of Ventura County, prevent their attendance. Wilson Neighborhood then has no representation.

Wilson Neighborhood Council would like to recommend that a more convenient evening meeting be scheduled to allow full participation and fair representation.

Steve Fleischer has resigned his position as the Wilson PAC representative due to scheduling conflicts. Steve Buratti will now represent the Wilson Neighborhood Council on the Planning Advisory Committee. Mr. Buratti's address is 234 South "F" Street, Oxnard, CA 93030, for all future correspondence.

In addition to scheduling difficulties, the reports to be reviewed should be provided in a more timely manner. Here it is the 8th of August, and neither Steve Fleischman or Tim Reily have received their report to review as promised.

I ask that these accommodations be made in the interest of fairness and a true desire to obtain valuable neighborhood input.

Sincerely,

Bill Winter

Bill Winter
Chairman, Wilson Neighborhood Council

Cc: Scott Smith – Ventura County Department of Airports
Andres Herrera, Oxnard City Councilmember
Edmund F. Sotelo – City of Oxnard, City Manager
Granville Bowman – City of Oxnard, Director of Public Works
Donna Helms – City of Oxnard, Neighborhood Services

OXNARD AIRPORT
Oxnard, California

Airport Master Plan
Planning Advisory Committee Members

August 6, 2003

Transmitted herewith is the Phase Two Report for the Airport Master Plan. This draft document will be presented at the second PAC meeting on **Thursday, August 14, 2003 at 10:00 a.m.** As a reminder, it will be held at the City of Oxnard Main Library, 251 South A Street in Oxnard.

PHASE TWO REPORT
CHAPTER FOUR - ALTERNATIVES
APPENDIX B - PHASE ONE PAC COMMENTS

☐ *I have read the Phase Two Report and have no comments.*

☒ *I have read the Phase Two Report and have the following comments. (Please add extra sheets if necessary.)*

- WOULD LIKE TO SEE THE THRESHOLD FOR RWY 25 REMOVED
- SEE ATTACHED LETTER FOR ADDITIONAL COMMENTS.

Please send this response sheet by August 30, 2003 to:

COFFMAN ASSOCIATES, INC.
4835 E. Cactus Road, Suite 235
Scottsdale, AZ 85254
FAX: (602) 993-7196
Attn: Steve Benson
stevebenson@coffmanassociates.com

Name: STEVE SARCHETT
Representing: [illegible]
Phone: 805 382 [illegible]

OXNARD AIRPORT
Oxnard, California

Airport Master Plan
Planning Advisory Committee Members

August 6, 2003

Transmitted herewith is the Phase Two Report for the Airport Master Plan. This draft document will be presented at the second PAC meeting on **Thursday, August 14, 2003 at 10:00 a.m.** As a reminder, it will be held at the City of Oxnard Main Library, 251 South A Street in Oxnard.

PHASE TWO REPORT
CHAPTER FOUR - ALTERNATIVES
APPENDIX B - PHASE ONE PAC COMMENTS

☑ *I have read the Phase Two Report and have no comments.*

☐ *I have read the Phase Two Report and have the following comments. (Please add extra sheets if necessary.)*

Please send this response sheet by August 30, 2003 to:

COFFMAN ASSOCIATES, INC.
4835 E. Cactus Road, Suite 235
Scottsdale, AZ 85254
FAX: (602) 993-7196
Attn: Steve Benson
stevebenson@coffmanassociates.com

Name: STEVE KINNEY
Representing: ECONOMIC DEVELOPMENT CORP.
Phone: 805 · 385 · 7444

Phase II Comments, continued:

Issue: Runway Protection Zones (RPZ)
Issue: Property Within the Object Free Area (OFA)

Recommendation:

First Option: Request "modification of design standards" from the FAA for the RPZ and the OFA;
Second Option: Reduce runway length to accommodate for the RPZ and OFA;
Third Option: Adjust declared distances to accommodate the RPZ and OFA

Discussion:

An issue relative to the sufficient control of property in the Runway Protection Zone (RPZ), and within the Object Free Area (OFA) has been raised in the Phase II report.

I am against the purchase of any property or procurement of any avigational easements over property for the purposes of the RPZ or the OFA

A purchase of property or easement is unnecessary and would be wasteful of public funds. Moreover, it would be contrary to the mission statements, which have limited expansion of the airport. If it were argued that said purchase would be required for safety reasons, then those proponents would have to publicly admit that thus far the Oxnard Airport has been operating in an unsafe and dangerous manner, which presents an embarrassing position for the Department of Airports to take.

The options stated above, would be less embarrassing for the Department of Airports, more practical to implement, more cost effective for the taxpayer, more consistent with the mission statements, less inflammatory to the community, and would resolve the issue readily.

Sincerely,

Timothy Clifford Riley
TCR/mc

OXNARD AIRPORT
Oxnard, California

Airport Master Plan
Planning Advisory Committee Members

August 6, 2003

Transmitted herewith is the Phase Two Report for the Airport Master Plan. This draft document will be presented at the second PAC meeting on **Thursday, August 14, 2003 at 10:00 a.m.** As a reminder, it will be held at the City of Oxnard Main Library, 251 South A Street in Oxnard.

PHASE TWO REPORT
CHAPTER FOUR - ALTERNATIVES
APPENDIX B - PHASE ONE PAC COMMENTS

☐ *I have read the Phase Two Report and have no comments.*

☒ *I have read the Phase Two Report and have the following comments. (Please add extra sheets if necessary.)*

I THINK THE COMMITTEE IS TO NARROW. THERE IS NO REPRESENTATION FROM THE GENERAL OXNARD COMMUNITY, NOR IS THERE ANY REPRESENTATION FROM COMMUNITIES OUTSIDE THE CITY OF OXNARD WHO USE THE AIRPORT OR DERIVE ECONOMIC BENEFITS FROM THE AIRPORT.

Please send this response sheet by August 30, 2003 to:

COFFMAN ASSOCIATES, INC.
4835 E. Cactus Road, Suite 235
Scottsdale, AZ 85254
FAX: (602) 993-7196
Attn: Steve Benson
stevebenson@coffmanassociates.com

Name: GARY JACOBS
Representing: AIRPORT ADVISORY COM
Phone: 641-9400

PHASE III PAC COMMENTS

OXNARD AIRPORT
Oxnard, California

Airport Master Plan
Planning Advisory Committee Members

November 6, 2003

Transmitted herewith is the Draft Report for the Airport Master Plan. This draft document will be presented at the second PAC meeting on **Wednesday, November 19, 2003 at 3:00 p.m.** As a reminder, it will be held at the Oxnard City Hall Council Chambers, 305 West 3rd Street in Oxnard. The Draft Report contains revisions to the chapters in the Phase One and Two Reports as well as the following new information:

DRAFT FINAL MASTER PLAN
CHAPTER FIVE - AIRPORT PLANS
APPENDIX B-2 - PHASE TWO PAC COMMENTS
APPENDIX C - AIRPORT LAYOUT PLAN

☐ *I have read the Draft Final Report and have no comments.*

☑ *I have read the Draft Final Report and have the following comments. (Please add extra sheets if necessary.)*

1. A GOOD DOCUMENT THAT SHOULD BE ADOPTED WITHOUT CONTROVERSY
2. ADDITION OF AN EXHIBIT THAT COMPARES PROJECTED SHORT, MEDIUM & LONG TERM TOTAL OPERATIONS WITH PAST PEAKS WOULD BE HELPFUL. I BELIEVE IT WOULD DEMONSTRATE THAT EVEN THE LONG TERM PROJECTION IS WITHIN PAST PEAK VOLUMES & FITS WITHIN OUR CAPACITY
3. LARGER-(QUIETER) EQUIPMENT RESULTS IN FEWER A/C OPERATIONS & LESS ENVIRONMENTAL IMPACT.

Please send this response sheet by December 8, 2003 to:

COFFMAN ASSOCIATES, INC.
4835 E. Cactus Road, Suite 235
Scottsdale, AZ 85254
FAX: (602) 993-7196
Attn: Steve Benson
stevebenson@coffmanassociates.com

Name: MARK FINGERLIN
Representing: OXNARD AIRPORT ASSOCIATION
Phone: ____________

OXNARD AIRPORT

Appendix C
AIRPORT LAYOUT PLAN

AIRPORT LAYOUT PLANS

FOR

OXNARD AIRPORT

OXNARD, CALIFORNIA

Prepared for the

County of Ventura
Department of Airports

INDEX OF DRAWINGS

1. AIRPORT LAYOUT PLAN
2. TERMINAL AREA DRAWING
3. PART 77 AIRSPACE DRAWING
4. APPROACH SURFACE PROFILE DRAWING
5. INNER PORTION OF RUNWAY 7 APPROACH SURFACE
6. INNER PORTION OF RUNWAY 25 APPROACH SURFACE
7. AIRPORT LAND USE PLAN
8. AIRPORT PROPERTY MAP

Coffman Associates
Airport Consultants
www.coffmanassociates.com

RUNWAY DATA	RUNWAY 7-25	
	EXISTING	ULTIMATE
AIRCRAFT APPROACH CATEGORY-DESIGN GROUP	D-II	D-II/B-III
RUNWAY AZIMUTH	270.54°/ 90.52°	SAME
RUNWAY BEARING	N90.52°W	SAME
RUNWAY DIMENSIONS	5,950' x 100'	5,950' x 100'
RUNWAY INSTRUMENTATION	Nonprecison/Precision	Precision
FAR PT77 CATEGORY	34:1/50:1	50:1
RUNWAY THRESHOLD DISPLACEMENT	0'/1,372'	0'/1,372'
RUNWAY SAFETY AREA (RSA)	7,700' x 500'	7,700' x 500'
RUNWAY OBSTACLE FREE ZONE (OFZ)	6,350' x 400'	6,350' x 400'
RUNWAY OBJECT FREE AREA (OFA)	7,630' x 800'	7,700' x 800'
TAKEOFF RUN AVAILABLE (TORA)	NA	5,950'/ 5,950'
TAKEOFF DISTANCE AVAILABLE (TODA)	NA	5,950'/ 5,950'
ACCELERATE-STOP DISTANCE AVAILABLE (ASDA)	NA	5,750'/ 5,950'
LANDING DISTANCE AVAILABLE (LDA)	NA	5,750'/ 4,578'
PAVEMENT MATERIAL	Asphalt	Asphalt
RUNWAY SURFACE TREATMENT	Grooved	Grooved
PAVEMENT STRENGTH (in thousand lbs.)[1]	50(S)/70(D)	50(S)/70(D)
RUNWAY EFFECTIVE GRADIENT	0.19%	0.19%
RUNWAY TOUCHDOWN ZONE ELEVATION	38.0MSL/38.9MSL	38.0MSL/38.9MSL
RUNWAY MARKING	Nonprecison/Precision	Precision
RUNWAY LIGHTING	MIRL	MIRL
TAXIWAY SURFACE TREATMENT	Asphalt	Asphalt
TAXIWAY LIGHTING	MITL	MITL
TAXIWAY MARKING	Centerline, Signage	Centerline, Signage
RUNWAY NAVIGATIONAL AIDS	GPS VOR (25) ILS (25)	GPS CAT I GPS --
RUNWAY VISUAL AIDS	VASI-4 (7) PAPI-2 (25) MALSR	VASI-4 (7) PAPI-4 (25) MALSR

[1]Pavement strengths are expressed in Single(S), Dual(D), Dual Tandem(DT), and/or Double Dual Tandem(DDT), wheel loading capacities.

AIRPORT DATA

Oxnard Airport (OXR)			
CITY: Oxnard, California		COUNTY: Ventura, California	
RANGE: 21 West TOWNSHIP: 2 North		CIVIL TOWNSHIP: N/A	
		EXISTING	ULTIMATE
AIRPORT SERVICE LEVEL		Commercial	Commercial
AIRPORT REFERENCE CODE		D-II	D-II/B-III
AIRPORT ELEVATION		42.5' MSL	42.5' MSL
MEAN MAXIMUM TEMPERATURE OF HOTTEST MONTH		75° F (July)	75° F (July)
AIRPORT REFERENCE POINT (ARP) COORDINATES (NAD 83)	Latitude	34° 12' 02.883" N	34° 12' 02.883" N
	Longitude	119° 12' 25.979" W	119° 12' 25.979" W
AIRPORT and TERMINAL NAVIGATIONAL AIDS		Rotating Beacon ILS ASOS GPS	Rotating Beacon GPS ASOS

RUNWAY END COORDINATES (NAD 83)

RUNWAY		EXISTING	ULTIMATE
Runway 7	Latitude	34°12'03.1500"N	SAME
	Longitude	119°13'01.3900"W	SAME
Runway 25	Latitude	34°12'02.6200"N	SAME
	Longitude	119°11'50.5700"W	SAME
Runway 25 Dspl	Latitude	34°12'02.7400"N	SAME
	Longitude	119°12'06.9100"W	SAME

BUILDINGS/FACILITIES

EXISTING	ULTIMATE	DESCRIPTION
1		TERMINAL BUILDING
2		AIR TRAFFIC CONTROL TOWER (ATCT)
3	11	AIRPORT RESCUE and FIREFIGHTING (ARFF)
4	12	FIXED BASE OPERATION HANGAR
5		CONVENTIONAL HANGAR
6	13	PORTABLE HANGARS
7		AIRPORT MAINTENANCE
8		FUEL FACILITY
9		ELECTRICAL VAULT
10		WELL
	14	EXECUTIVE HANGAR
	15	SELF MAINTENANCE HANGAR

LEGEND

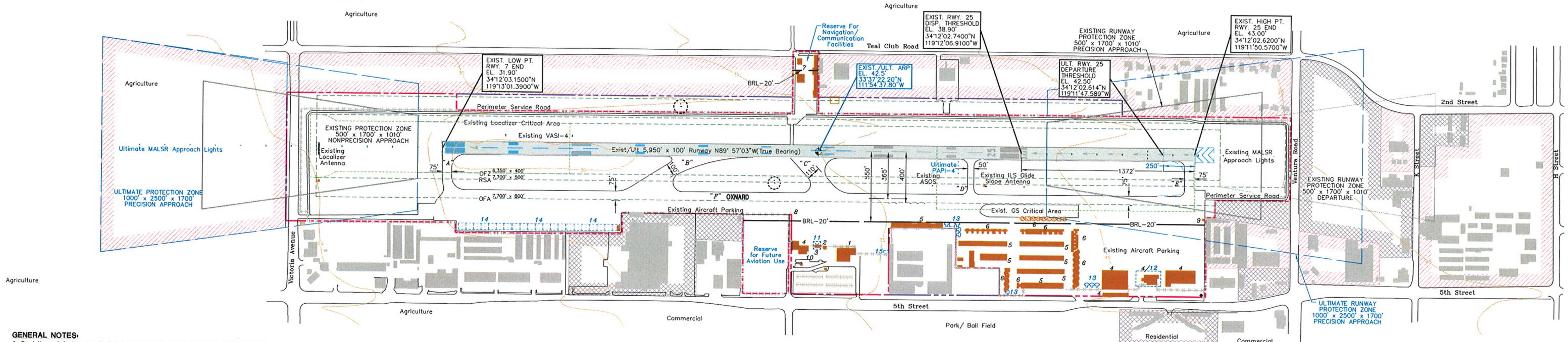
EXISTING	ULTIMATE	DESCRIPTION
		PAVEMENT TO BE REMOVED
		AIRPORT PROPERTY LINE
		AIRPORT REFERENCE POINT (ARP)
		AIRPORT ROTATING BEACON
		AVIGATION EASEMENT
		BUILDING TO BE REMOVED OR RELOCATED
		BUILDING
	BRL	BUILDING RESTRICTION LINE (BRL)
		PAVEMENT
		FENCING
VASI-4	PAPI-4	NAVIGATIONAL AID INSTALLATION
		RUNWAY END IDENTIFICATION LIGHTS (REIL)
		RUNWAY THRESHOLD LIGHTS
		SEGMENTED CIRCLE/WIND INDICATOR
1080	1080	TOPOGRAPHY (USGS Maps)
		WIND INDICATOR (Lighted)

APPROVED MODIFICATION TO FAA AIRPORT DESIGN STANDARDS

DEVIATION DESCRIPTION	EFFECTED DESIGN STANDARD	EXISTING CONDITION	PROPOSED DISPOSITION	APPROVAL DATE
None	--	--	--	--

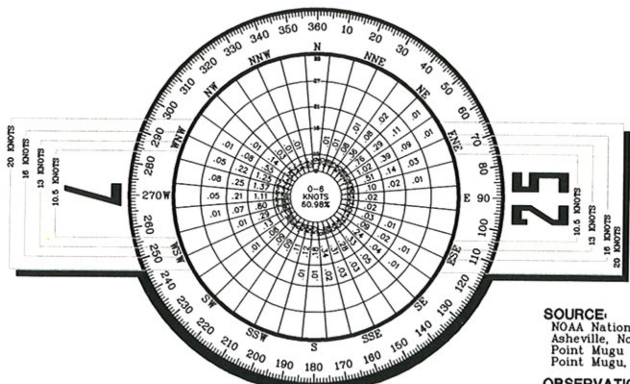
DEVIATIONS TO FAA AIRPORT DESIGN STANDARDS

DEVIATION DESCRIPTION	EFFECTED DESIGN STANDARD	STANDARD	EXISTING	PROPOSED DISPOSITION
Commercial/Residential	Runway Object Free Area	400' North of Runway ℄	340' North of Runway ℄	Request Modification to Standards
Commercial Parking Lot	Runway Object Free Area	400' South of Runway ℄	370' South of Runway ℄	Request Modification to Standards
Perimeter Service Road	Runway Object Free Area	400' North of Runway ℄	275' North of Runway ℄	Request Modification to Standards
Perimeter Service Road	Runway Object Free Area	400' South of Runway ℄	345' South of Runway ℄	Request Modification to Standards
Fence Line and Non-airport Property	Runway Object Free Area	400' North of Runway ℄	300' North of Runway ℄	Aquire Property/Relocate Fence
Segmented Circle	Runway Safety Area	250' South of Runway ℄	200' South of Runway ℄	Relocate 300' North of Runway ℄
Segmented Circle	Runway Object Free Area	400' South of Runway ℄	200' South of Runway ℄	Request Modification to Standards
Perimeter Service Road / Ventura Road	Extended Runway Safety Area	1000' Beyond Runway End	750' Beyond Runway End	Displace Rwy 7 Departure Threshold 250'



GENERAL NOTES:

1. Depiction of features and objects, including related elevations and clearances, within the runway protection zones are depicted on the PROTECTION ZONES PLANS.
2. Details concerning terminal improvements are depicted on the TERMINAL AREA PLAN.
3. Recommended land uses within the airport environs are depicted on the AIRPORT LAND USE PLAN.
4. Building Restriction Line (BRL) is established in accordance with F.A.R. Part 77 criteria, location utilizes 35 foot vertical object height. Building Restriction Line location may be reduced in accordance to Part 77 criteria, to limits of the Runway Object Free Area, Runway Safety Area, and/or Runway Protection Zone criteria.

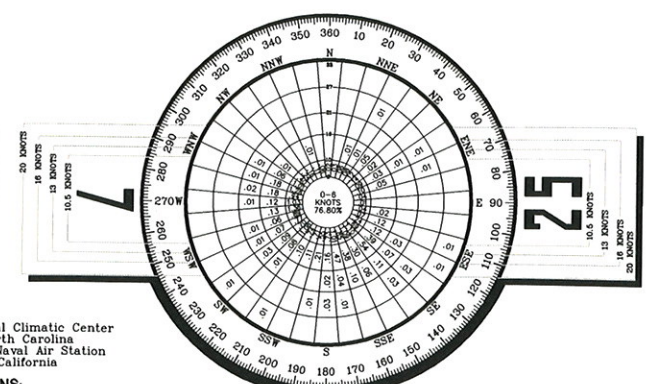


ALL WEATHER WIND COVERAGE

Runways	10.5 Knots	13 Knots	16 Knots	20 Knots
	12 MPH	15 MPH	18 MPH	23 MPH
Runway 7-25	97.05%	98.64%	99.69%	99.93%

SOURCE:
NOAA National Climatic Center
Asheville, North Carolina
Point Mugu Naval Air Station
Point Mugu, California

OBSERVATIONS:
78,602 All Weather Observations
1989 - 1998



IFR CAT-I WIND COVERAGE

Runways	10.5 Knots	13 Knots	16 Knots	20 Knots
	12 MPH	15 MPH	18 MPH	23 MPH
Runway 7-25	97.40%	98.60%	99.61%	99.88%

SUBMITTED BY: ON THE DATE OF:
Coffman Associates November 11, 2003
FOR APPROVAL BY:
County of Ventura
Department of Airports
APPROVED BY: ON THE DATE OF:
Scott Smith A.A.E.
Director of Airports

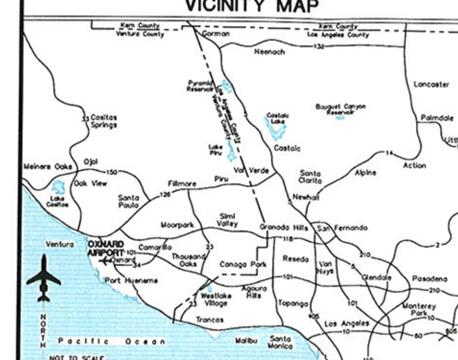
FAA APPROVAL STAMP

NORTH

MAGNETIC VARIANCE
13° 22' East (November 2003)

0 400 800
SCALE IN FEET

VICINITY MAP



LOCATION MAP

No.	REVISIONS	DATE	BY	APP'D.

THE PREPARATION OF THESE DOCUMENTS WAS FINANCED IN PART THROUGH A PLANNING GRANT FROM THE FEDERAL AVIATION ADMINISTRATION AS PROVIDED UNDER SECTION 505 OF THE AIRPORT AND AIRWAY IMPROVEMENT ACT OF 1982, AS AMENDED. THE CONTENTS DO NOT NECESSARILY REFLECT THE OFFICIAL VIEWS OR POLICY OF THE FAA. ACCEPTANCE OF THESE DOCUMENTS BY THE FAA DOES NOT IN ANY WAY CONSTITUTE A COMMITMENT ON THE PART OF THE UNITED STATES TO PARTICIPATE IN ANY DEVELOPMENT DEPICTED HEREIN NOR DOES IT INDICATE THAT THE PROPOSED DEVELOPMENT IS ENVIRONMENTALLY ACCEPTABLE IN ACCORDANCE WITH APPROPRIATE PUBLIC LAWS.

OXNARD AIRPORT

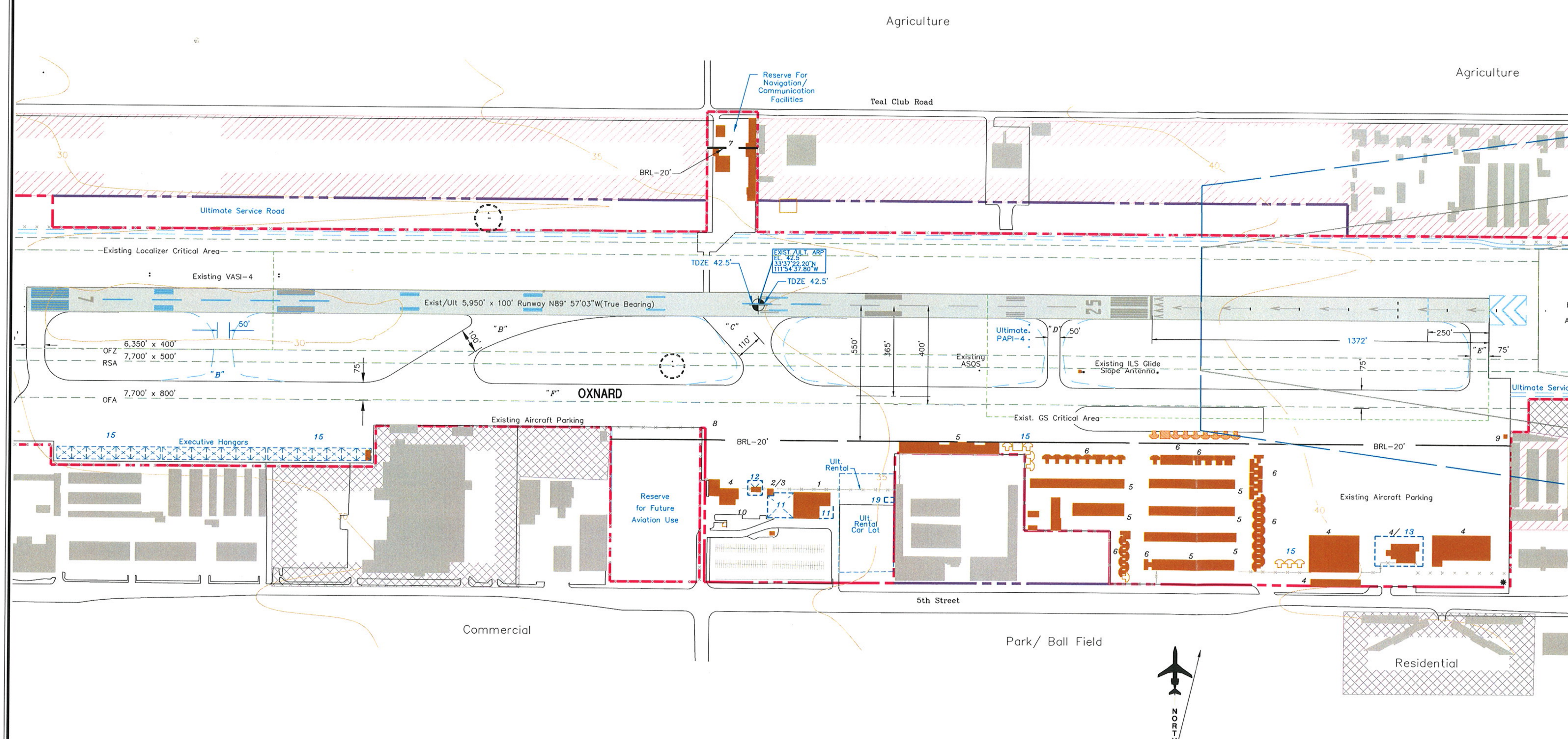
AIRPORT LAYOUT PLAN

OXNARD, CALIFORNIA

PLANNED BY: Steven G. Benson P.E.
DETAILED BY: Maggie Rogers
APPROVED BY: James M. Harris P.E.

August 9, 2004 SHEET 1 OF 8

Coffman Associates
Airport Consultants
www.coffmanassociates.com



MAGNETIC VARIANCE
13° 22' East (November 2003)

0 200 400 600
SCALE IN FEET

BUILDINGS/FACILITIES

EXISTING	ULTIMATE	DESCRIPTION
1	11	TERMINAL BUILDING
2		AIR TRAFFIC CONTROL TOWER (ATCT)
3	12	AIRPORT RESCUE and FIREFIGHTING (ARFF)
4	–	FIXED BASE OPERATION HANGAR
5	14	CONVENTIONAL HANGAR
6	15	PORTABLE HANGARS
7		AIRPORT MAINTENANCE
8	16	FUEL FACILITY
9		ELECTRICAL VAULT
10		WELL
	17	T-HANGAR (20 Unit Nested)
	18	CORPORATE PARCEL
	19	SELF MAINTENANCE HANGAR

LEGEND

EXISTING	ULTIMATE	DESCRIPTION
		PAVEMENT TO BE REMOVED
		AIRPORT PROPERTY LINE
		AIRPORT REFERENCE POINT (ARP)
		AIRPORT ROTATING BEACON
		AVIGATION EASEMENT
		BUILDING TO BE REMOVED OR RELOCATED
		BUILDING
	BRL	BUILDING RESTRICTION LINE (BRL)
		PAVEMENT
		FENCING
VASI-4	PAPI-4	NAVIGATIONAL AID INSTALLATION
		RUNWAY END IDENTIFICATION LIGHTS (REIL)
		RUNWAY THRESHOLD LIGHTS
		SEGMENTED CIRCLE/WIND INDICATOR
1080	1080	TOPOGRAPHY (USGS Maps)
		WIND INDICATOR (Lighted)

GENERAL NOTES:

1. Depiction of features and objects, including related elevations and clearances, within the runway protection zones are depicted on the PROTECTION ZONES PLANS.
2. Details concerning terminal improvements are depicted on the TERMINAL AREA PLAN.
3. Recommended land uses within the airport environs are depicted on the AIRPORT LAND USE PLAN.
4. Building Restriction Line (BRL) is established in accordance with F.A.R. Part 77 criteria, location utilizes 35 foot vertical object height. Building Restriction Line location may be reduced in accordance to Part 77 criteria, to limits of the Runway Object Free Area, Runway Safety Area, and/or Runway Protection Zone criteria.

No.	REVISIONS	DATE	BY	APP'D.

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OXNARD AIRPORT

TERMINAL AREA DRAWING

OXNARD, CALIFORNIA

PLANNED BY: Steven G. Benson P.E.
DETAILED BY: Maggie Rogers
APPROVED BY: James M. Harris P.E.

August 9, 2004 | SHEET 2 OF 8

Coffman Associates
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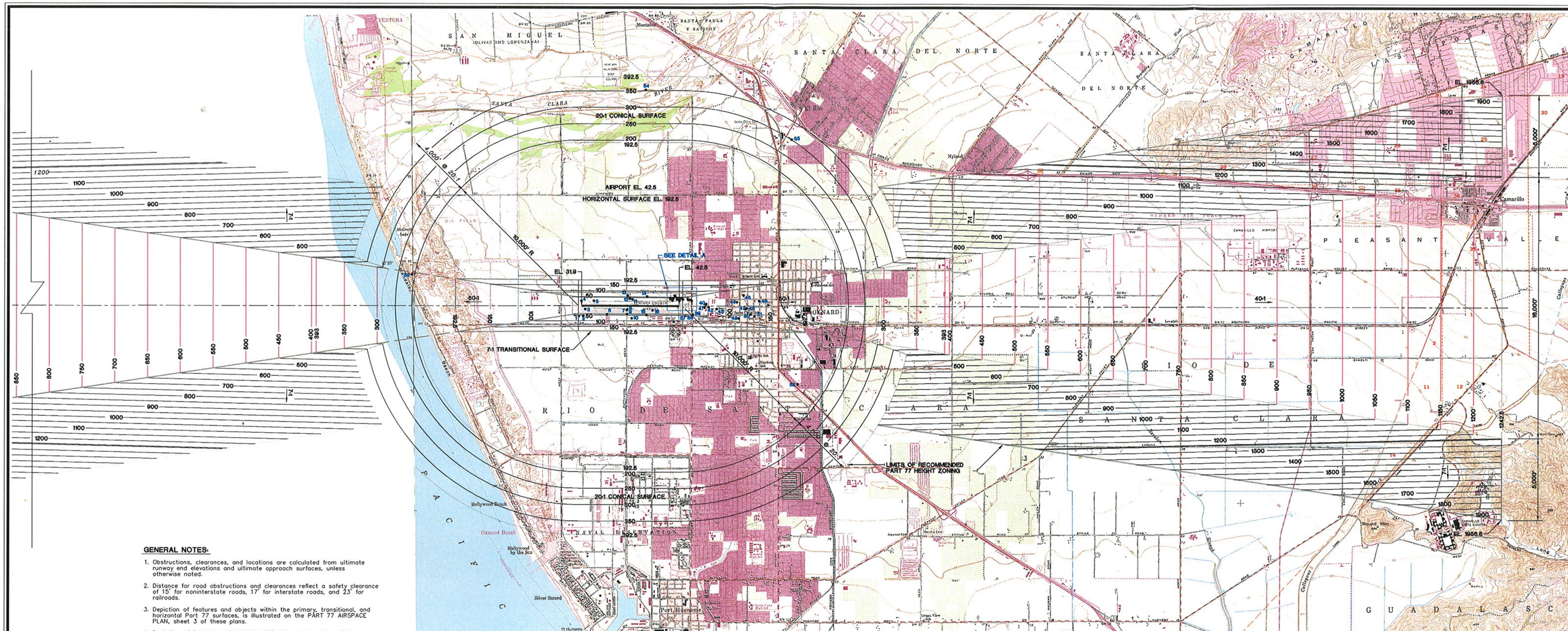
www.coffmanassociates.com



GENERAL NOTES:

1. Obstructions, clearances, and locations are calculated from ultimate runway end elevations and ultimate approach surfaces, unless otherwise noted.
2. Distance for road obstructions and clearances reflect a safety clearance of 15' for noninterstate roads, 17' for interstate roads, and 23' for railroads.
3. Depiction of features and objects within the primary, transitional, and horizontal Part 77 surfaces, is illustrated on the PART 77 AIRSPACE PLAN, sheet 3 of these plans.
4. Depiction of features and objects within the outer portion of the approach surfaces, is illustrated on the APPROACH SURFACE PROFILES, sheet 4 of these plans.
5. Depiction of features and objects within the inner portion of the approach surfaces, is illustrated on the INNER PORTION OF RUNWAY 7-25 APPROACH SURFACE, sheet 5 and 6 of these plans.
6. Additional obstruction data is illustrated on National Ocean Survey document OC 674, AIRPORT OBSTRUCTION CHART dated May 1991.
7. Existing and future height and hazard ordinances are to be amended and/or referenced upon approval of updated PART 77 AIRSPACE PLAN.

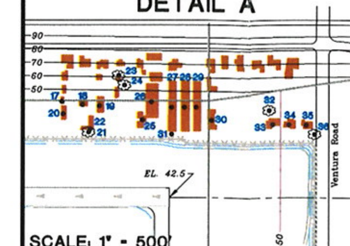
OBSTRUCTION TABLE

Object Description	Object Elevation	Obstructed Part 77 Surface	Surface Elevation	Object Penetration	Proposed Object Disposition
1. OL ON LIGHT STANDARD	58 MSL	7:1 TRANSITIONAL SURFACE	52 MSL	6'	TO REMAIN LIGHTED
2. OL ON LIGHT STANDARD	59 MSL	7:1 TRANSITIONAL SURFACE	49 MSL	10'	TO REMAIN LIGHTED
3. WINDSOCK	41 MSL	PRIMARY SURFACE	32 MSL	9'	FIX BY FUNCTIONAL PURPOSE
4. FENCE	34 MSL	PRIMARY SURFACE	32 MSL	2'	TO BE RELOCATED
5. FENCE	37 MSL	PRIMARY SURFACE	33 MSL	4'	TO BE RELOCATED
6. VENT ON BUILDING	51 MSL	7:1 TRANSITIONAL SURFACE	38 MSL	13'	TO BE LIGHTED
7. OL ANEMOMETER	57 MSL	PRIMARY SURFACE	36 MSL	21'	TO REMAIN LIGHTED
8. OL WINDSOCK	52 MSL	PRIMARY SURFACE	36 MSL	16'	TO REMAIN LIGHTED
9. FENCE	40 MSL	7:1 TRANSITIONAL SURFACE	38 MSL	2'	TO BE RELOCATED
10. ATCT	115 MSL	7:1 TRANSITIONAL SURFACE	75 MSL	40'	TO REMAIN LIGHTED
11. BUILDING	53 MSL	PRIMARY SURFACE	36 MSL	17'	REQUEST AERONAUTICAL STUDY
12. VENT ON BUILDING	60 MSL	PRIMARY SURFACE	36 MSL	24'	TO BE LIGHTED
13. ANTENNA	97 MSL	7:1 TRANSITIONAL SURFACE	55 MSL	42'	TO BE LIGHTED
14. OL HANGAR	83 MSL	7:1 TRANSITIONAL SURFACE	51 MSL	32'	TO REMAIN LIGHTED
15. WINDVANE ON HANGAR	62 MSL	7:1 TRANSITIONAL SURFACE	46 MSL	16'	TO BE LIGHTED
16. OL GLIDE SLOPE	71 MSL	PRIMARY SURFACE	39 MSL	32'	FIX BY FUNCTIONAL PURPOSE
17. BUILDING	50 MSL	PRIMARY SURFACE	41 MSL	9'	REQUEST AERONAUTICAL STUDY
18. BUILDING	55 MSL	PRIMARY SURFACE	41 MSL	14'	REQUEST AERONAUTICAL STUDY
19. BUILDING	60 MSL	PRIMARY SURFACE	42 MSL	18'	REQUEST AERONAUTICAL STUDY
20. BUILDING	50 MSL	PRIMARY SURFACE	41 MSL	9'	REQUEST AERONAUTICAL STUDY
21. TREE	77 MSL	PRIMARY SURFACE	41 MSL	36'	TO BE REMOVED
22. BUILDING	52 MSL	PRIMARY SURFACE	41 MSL	11'	REQUEST AERONAUTICAL STUDY
23. TREE	102 MSL	7:1 TRANSITIONAL SURFACE	61 MSL	41'	TO BE REMOVED
24. TREE	109 MSL	7:1 TRANSITIONAL SURFACE	54 MSL	55'	TO BE REMOVED
25. BUILDING	50 MSL	PRIMARY SURFACE	43 MSL	7'	REQUEST AERONAUTICAL STUDY
26. BUILDING	61 MSL	PRIMARY SURFACE	43 MSL	18'	REQUEST AERONAUTICAL STUDY
27. BUILDING	52 MSL	PRIMARY SURFACE	43 MSL	9'	REQUEST AERONAUTICAL STUDY
28. BUILDING	52 MSL	PRIMARY SURFACE	43 MSL	9'	REQUEST AERONAUTICAL STUDY

OBSTRUCTION TABLE

Object Description	Object Elevation	Obstructed Part 77 Surface	Surface Elevation	Object Penetration	Proposed Object Disposition
29. BUILDING	52 MSL	PRIMARY SURFACE	43 MSL	9'	REQUEST AERONAUTICAL STUDY
30. BUILDING	52 MSL	PRIMARY SURFACE	43 MSL	9'	REQUEST AERONAUTICAL STUDY
31. SIGN/LIGHT	68 MSL	PRIMARY SURFACE	43 MSL	25'	TO BE REMOVED
32. TREE	105 MSL	50:1 APPROACH SURFACE	49 MSL	56'	THRESHOLD DISPLACED
33. BUILDING	56 MSL	PRIMARY SURFACE	49 MSL	7'	REQUEST AERONAUTICAL STUDY
34. BUILDING	56 MSL	PRIMARY SURFACE	51 MSL	5'	REQUEST AERONAUTICAL STUDY
35. BUILDING	56 MSL	PRIMARY SURFACE	53 MSL	3'	REQUEST AERONAUTICAL STUDY
36. TREE	92 MSL	50:1 APPROACH SURFACE	53 MSL	39'	THRESHOLD DISPLACED
37. SPIRE	72 MSL	7:1 TRANSITIONAL SURFACE	50 MSL	22'	REQUEST AERONAUTICAL STUDY
38. SPIRE	73 MSL	7:1 TRANSITIONAL SURFACE	50 MSL	23'	REQUEST AERONAUTICAL STUDY
39. LIGHT POLE	76 MSL	50:1 APPROACH SURFACE	55 MSL	21'	THRESHOLD DISPLACED
40. FLAG POLE	88 MSL	50:1 APPROACH SURFACE	71 MSL	17'	THRESHOLD DISPLACED
41. UTILITY POLE	87 MSL	50:1 APPROACH SURFACE	69 MSL	18'	THRESHOLD DISPLACED
42. UTILITY POLE	93 MSL	50:1 APPROACH SURFACE	74 MSL	19'	THRESHOLD DISPLACED
43. FLOODLIGHT	116 MSL	50:1 APPROACH SURFACE	84 MSL	32'	THRESHOLD DISPLACED
44. TREE	144 MSL	50:1 APPROACH SURFACE	109 MSL	35'	THRESHOLD DISPLACED
45. TREE	143 MSL	50:1 APPROACH SURFACE	117 MSL	26'	THRESHOLD DISPLACED
46. TREE	175 MSL	50:1 APPROACH SURFACE	136 MSL	39'	THRESHOLD DISPLACED
47. CHURCH SPIRE	154 MSL	50:1 APPROACH SURFACE	121 MSL	33'	THRESHOLD DISPLACED
48. TREE	163 MSL	50:1 APPROACH SURFACE	121 MSL	42'	THRESHOLD DISPLACED
49. TREE	132 MSL	50:1 APPROACH SURFACE	111 MSL	21'	THRESHOLD DISPLACED
50. TREE	150 MSL	50:1 APPROACH SURFACE	126 MSL	24'	THRESHOLD DISPLACED
51. TREE	140 MSL	50:1 APPROACH SURFACE	131 MSL	9'	THRESHOLD DISPLACED
52. OL RADIO TOWER	196 MSL	HORIZONTAL SURFACE	193 MSL	3'	TO REMAIN LIGHTED
53. OL BUILDING	381 MSL	CONICAL SURFACE	301 MSL	80'	TO REMAIN LIGHTED
54. OL RADIO MAST	366 MSL	CONICAL SURFACE	353 MSL	13'	TO REMAIN LIGHTED
55. OL ROD ON STACK	218 MSL	CONICAL SURFACE	209 MSL	9'	TO REMAIN LIGHTED

DETAIL A



SCALE: 1" = 500'

NORTH

0 3000 6000
SCALE IN FEET

OBSTRUCTION LEGEND

- OBSTRUCTION
- GROUP or MULTIPLE OBSTRUCTIONS
- TOPOGRAPHIC OBSTRUCTION

No.	REVISIONS	DATE	BY	APP'D.

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OXNARD AIRPORT

PART 77 AIRSPACE DRAWING

OXNARD, CALIFORNIA

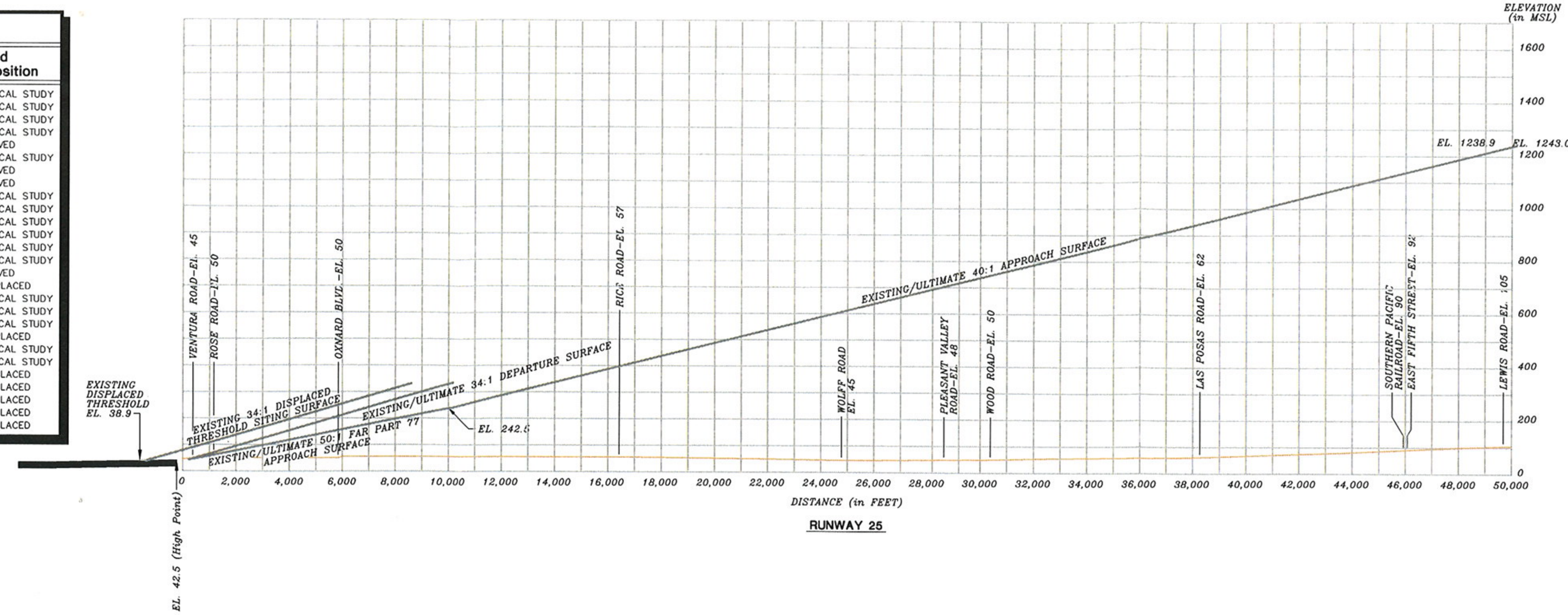
PLANNED BY: Steven G. Benson P.E.
DETAILED BY: Maggie Rogers
APPROVED BY: James M. harris P.E.

August 9, 2004 | SHEET 3 OF 8

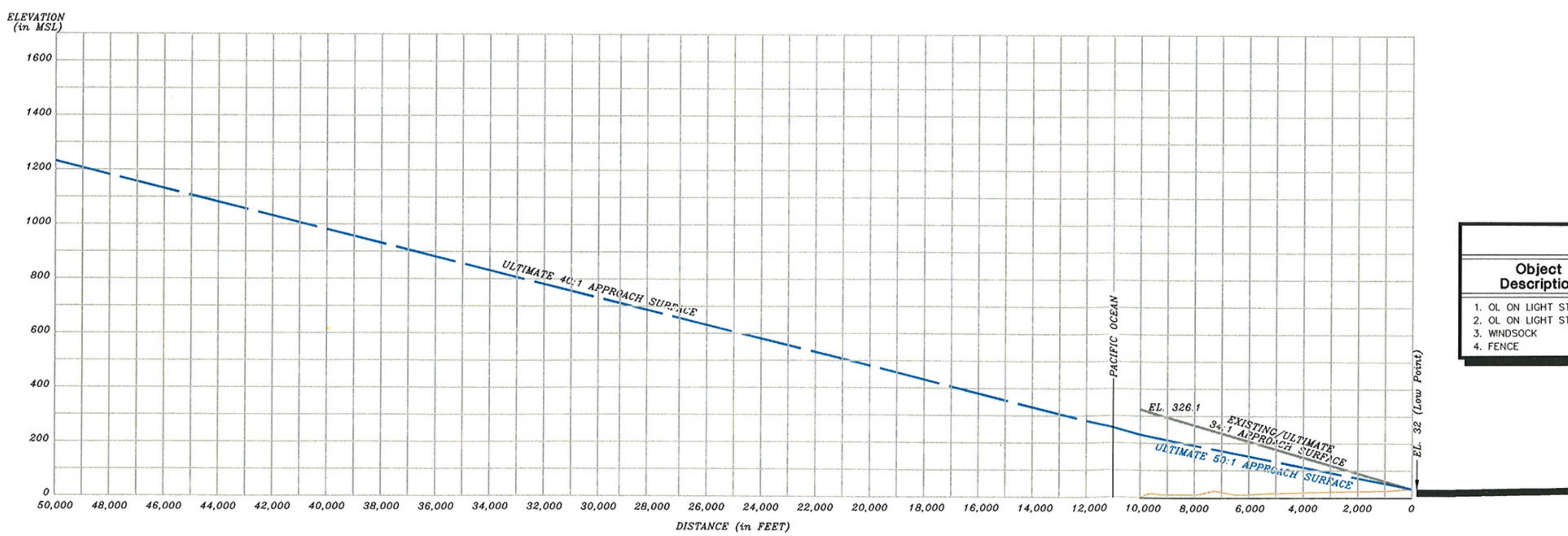
Coffman Associates
Airport Consultants
www.coffmanassociates.com

RUNWAY 25 OBSTRUCTION TABLE

Object Description	Object Elevation	Obstructed Part 77 Surface	Surface Elevation	Object Penetration	Proposed Object Disposition
17. BUILDING	50 MSL	PRIMARY SURFACE	41 MSL	9'	REQUEST AERONAUTICAL STUDY
18. BUILDING	55 MSL	PRIMARY SURFACE	41 MSL	14'	REQUEST AERONAUTICAL STUDY
19. BUILDING	60 MSL	PRIMARY SURFACE	42 MSL	18'	REQUEST AERONAUTICAL STUDY
20. BUILDING	50 MSL	PRIMARY SURFACE	41 MSL	9'	REQUEST AERONAUTICAL STUDY
21. TREE	77 MSL	PRIMARY SURFACE	41 MSL	36'	TO BE REMOVED
22. BUILDING	52 MSL	PRIMARY SURFACE	41 MSL	11'	REQUEST AERONAUTICAL STUDY
23. TREE	102 MSL	7:1 TRANSITIONAL SURFACE	61 MSL	41'	TO BE REMOVED
24. TREE	109 MSL	7:1 TRANSITIONAL SURFACE	54 MSL	55'	TO BE REMOVED
25. BUILDING	50 MSL	PRIMARY SURFACE	43 MSL	7'	REQUEST AERONAUTICAL STUDY
26. BUILDING	61 MSL	PRIMARY SURFACE	43 MSL	18'	REQUEST AERONAUTICAL STUDY
27. BUILDING	52 MSL	PRIMARY SURFACE	43 MSL	9'	REQUEST AERONAUTICAL STUDY
28. BUILDING	52 MSL	PRIMARY SURFACE	43 MSL	9'	REQUEST AERONAUTICAL STUDY
29. BUILDING	52 MSL	PRIMARY SURFACE	43 MSL	9'	REQUEST AERONAUTICAL STUDY
30. BUILDING	52 MSL	PRIMARY SURFACE	43 MSL	9'	REQUEST AERONAUTICAL STUDY
31. SIGN/LIGHT	68 MSL	PRIMARY SURFACE	43 MSL	25'	TO BE REMOVED
32. TREE	105 MSL	50:1 APPROACH SURFACE	49 MSL	56'	THRESHOLD DISPLACED
33. BUILDING	56 MSL	PRIMARY SURFACE	49 MSL	7'	REQUEST AERONAUTICAL STUDY
34. BUILDING	56 MSL	PRIMARY SURFACE	51 MSL	5'	REQUEST AERONAUTICAL STUDY
35. BUILDING	56 MSL	PRIMARY SURFACE	53 MSL	3'	REQUEST AERONAUTICAL STUDY
36. TREE	92 MSL	50:1 APPROACH SURFACE	53 MSL	39'	THRESHOLD DISPLACED
37. SPIRE	72 MSL	7:1 TRANSITIONAL SURFACE	50 MSL	22'	REQUEST AERONAUTICAL STUDY
38. SPIRE	73 MSL	7:1 TRANSITIONAL SURFACE	50 MSL	23'	REQUEST AERONAUTICAL STUDY
39. LIGHT POLE	76 MSL	50:1 APPROACH SURFACE	55 MSL	21'	THRESHOLD DISPLACED
40. FLAG POLE	88 MSL	50:1 APPROACH SURFACE	71 MSL	17'	THRESHOLD DISPLACED
41. UTILITY POLE	87 MSL	50:1 APPROACH SURFACE	69 MSL	18'	THRESHOLD DISPLACED
42. UTILITY POLE	93 MSL	50:1 APPROACH SURFACE	74 MSL	19'	THRESHOLD DISPLACED
43. FLOODLIGHT	116 MSL	50:1 APPROACH SURFACE	84 MSL	32'	THRESHOLD DISPLACED



RUNWAY 25



RUNWAY 7

RUNWAY 7 OBSTRUCTION TABLE

Object Description	Object Elevation	Obstructed Part 77 Surface	Surface Elevation	Object Penetration	Proposed Object Disposition
1. OL ON LIGHT STANDARD	58 MSL	7:1 TRANSITIONAL SURFACE	52 MSL	6'	TO REMAIN LIGHTED
2. OL ON LIGHT STANDARD	59 MSL	7:1 TRANSITIONAL SURFACE	49 MSL	10'	TO REMAIN LIGHTED
3. WINDSOCK	41 MSL	PRIMARY SURFACE	32 MSL	9'	FIX BY FUNCTIONAL PURPOSE
4. FENCE	34 MSL	PRIMARY SURFACE	32 MSL	2'	TO BE RELOCATED

RUNWAY 7-25 APPROACH SURFACE PROFILES

0 300 600
VERTICAL SCALE IN FEET

0 3000 6000
HORIZONTAL SCALE IN FEET

No.	REVISIONS	DATE	BY	APP'D.

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OXNARD AIRPORT

APPROACH SURFACE PROFILE DRAWING

OXNARD, CALIFORNIA

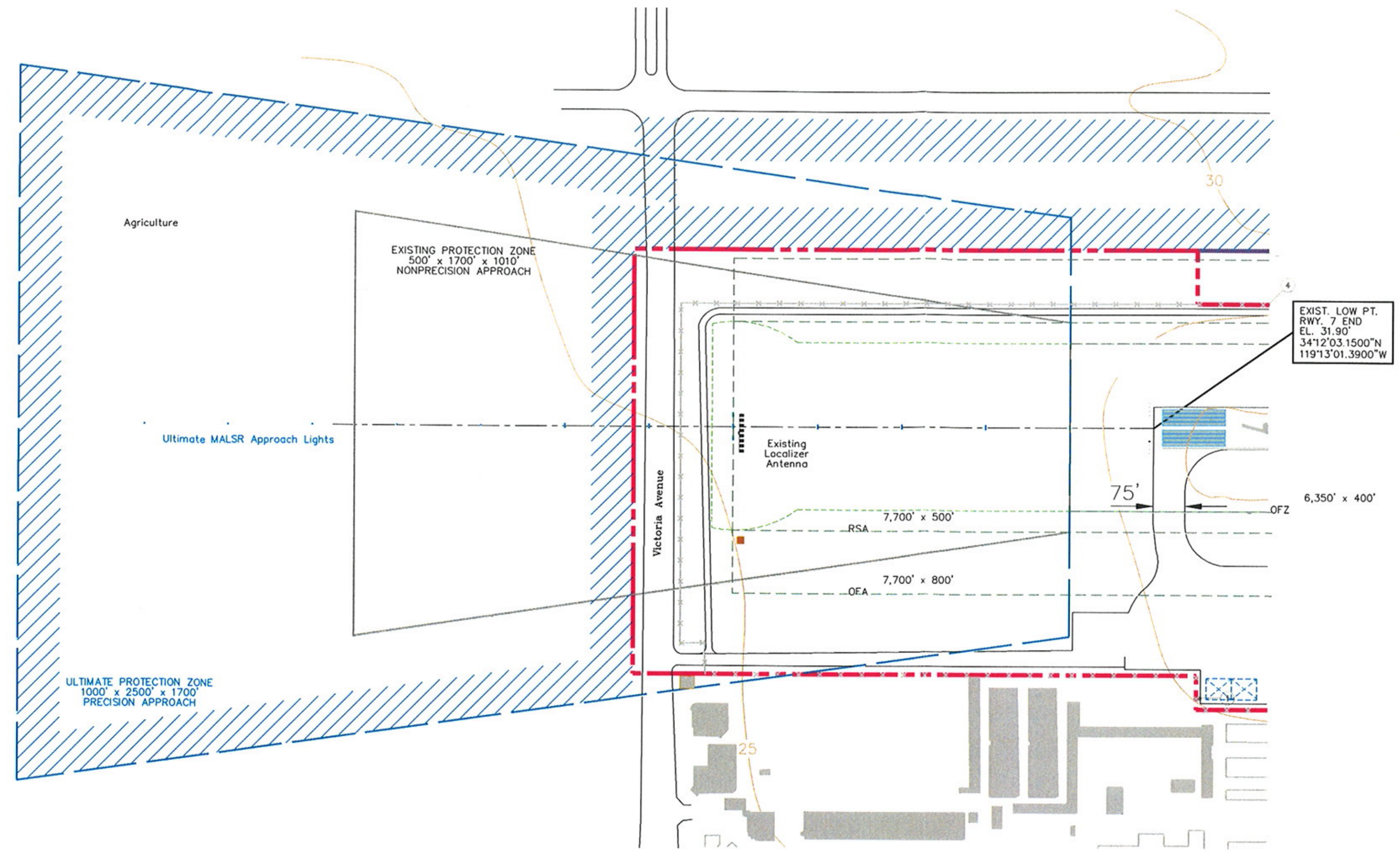
PLANNED BY: Steven G. Benson P.E.
DETAILED BY: Maggie Rogers
APPROVED BY: James M. Harris P.E.

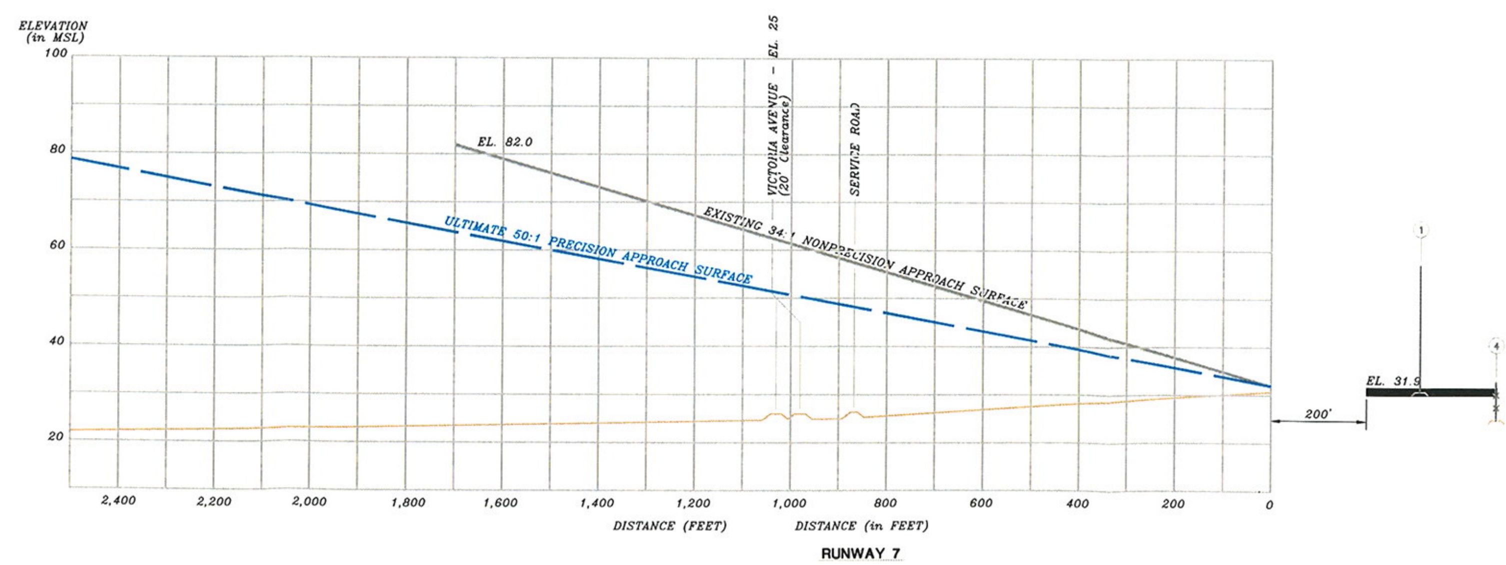
August 9, 2004 | SHEET 4 OF 8

Coffman Associates
Airport Consultants
www.coffmanassociates.com

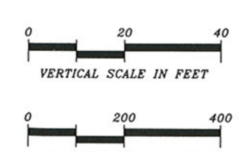
RUNWAY 7 OBSTRUCTION TABLE

Object Description	Object Elevation	Obstructed Part 77 Surface	Surface Elevation	Object Penetration	Proposed Object Disposition
1. OL ON LIGHT STANDARD	58 MSL	7:1 TRANSITIONAL SURFACE	52 MSL	6'	TO REMAIN LIGHTED
2. OL ON LIGHT STANDARD	59 MSL	7:1 TRANSITIONAL SURFACE	49 MSL	10'	TO REMAIN LIGHTED
3. WINDSOCK	41 MSL	PRIMARY SURFACE	32 MSL	9'	FIX BY FUNCTIONAL PURPOSE
4. FENCE	34 MSL	PRIMARY SURFACE	32 MSL	2'	TO BE RELOCATED





RUNWAY 7 APPROACH SURFACE PLAN and PROFILE



GENERAL NOTES:

1. Obstructions, clearances, and locations are calculated from ultimate runway end elevations and ultimate approach surfaces, unless otherwise noted.
2. Distance for road obstructions and clearances reflect a safety clearance of 15' for noninterstate roads, 17' for interstate roads, and 23' for railroads.
3. Depiction of features and objects within the primary, transitional, and horizontal Part 77 surfaces, is illustrated on the PART 77 AIRSPACE DRAWING.
4. Depiction of features and objects within the outer portion of the approach surfaces, is illustrated on the APPROACH SURFACE PROFILES, sheet 4 of these plans.
5. Depiction of features and objects within the inner portion of the approach surfaces, is illustrated on the INNER PORTION OF RUNWAY APPROACH SURFACE sheet 5 and 6 of these plans.
6. Additional obstruction data is illustrated on National Ocean Survey document OC 674, AIRPORT OBSTRUCTION CHART dated May 1991.
7. Existing and future height and hazard ordinances are to be amended and/or referenced upon approval of updated PART 77 AIRSPACE PLAN.

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OXNARD AIRPORT

INNER PORTION OF RUNWAY 7 APPROACH SURFACE

OXNARD, CALIFORNIA

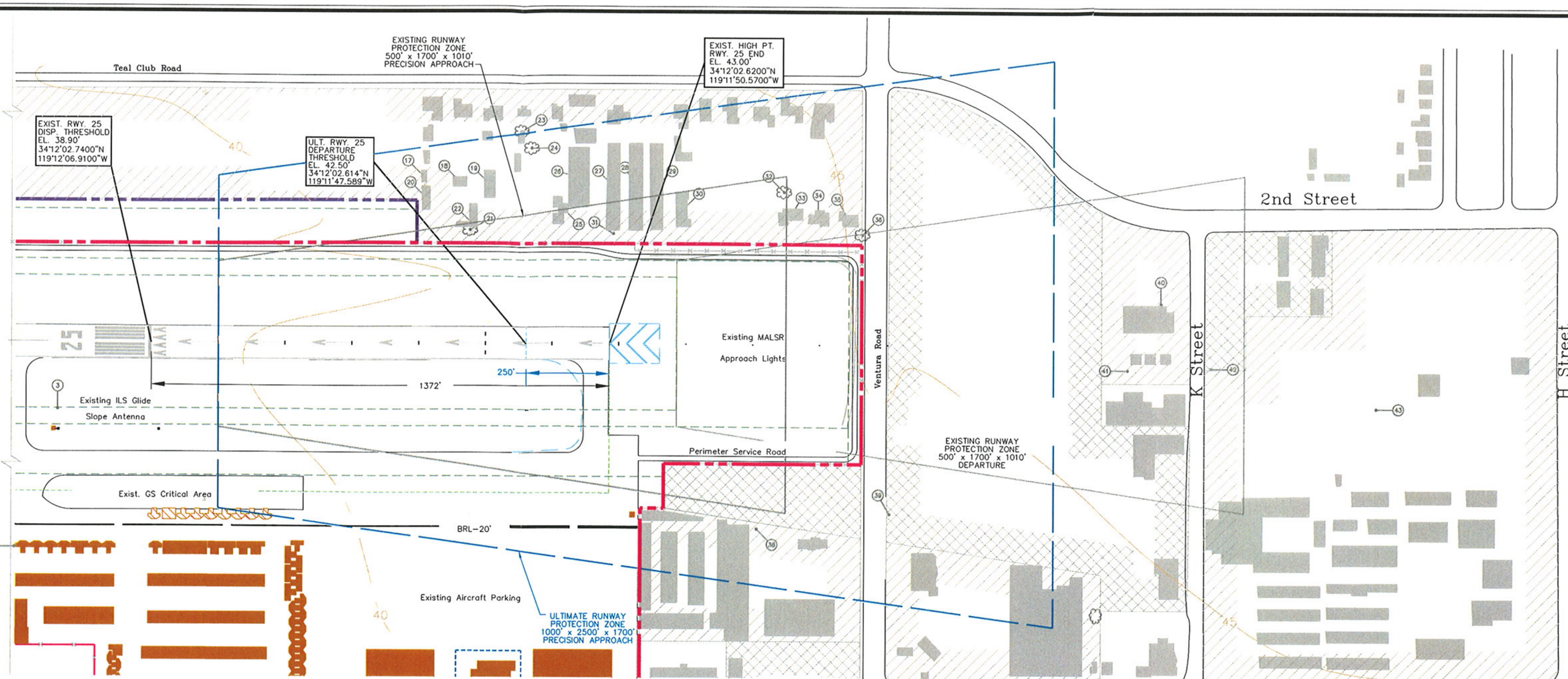
PLANNED BY: Steven G. Benson P.E.
DETAILED BY: Maggie Rogers
APPROVED BY: James M. Harris P.E.

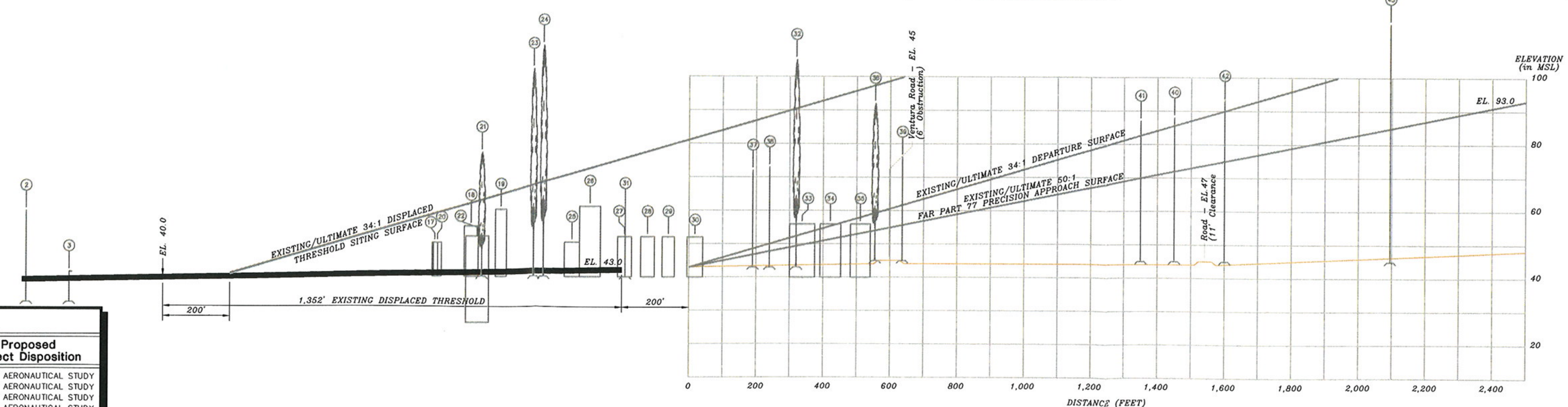
August 9, 2004 SHEET 5 OF 8

Coffman Associates
Airport Consultants
www.coffmanassociates.com

GENERAL NOTES:

1. Obstructions, clearances, and locations are calculated from ultimate runway end elevations and ultimate approach surfaces, unless otherwise noted.
2. Distance for road obstructions and clearances reflect a safety clearance of 15' for noninterstate roads, 17' for interstate roads, and 23' for railroads.
3. Depiction of features and objects within the primary, transitional, and horizontal Part 77 surfaces, is illustrated on the PART 77 AIRSPACE DRAWING.
4. Depiction of features and objects within the outer portion of the approach surfaces, is illustrated on the APPROACH SURFACE PROFILES, sheet 4 of these plans.
5. Depiction of features and objects within the inner portion of the approach surfaces, is illustrated on the INNER PORTION OF RUNWAY APPROACH SURFACE sheet 5 and 6 of these plans.
6. Additional obstruction data is illustrated on National Ocean Survey document OC 674, AIRPORT OBSTRUCTION CHART dated May 1991.
7. Existing and future height and hazard ordinances are to be amended and/or referenced upon approval of updated PART 77 AIRSPACE PLAN.





RUNWAY 25 APPROACH SURFACE PLAN and PROFILE

VERTICAL SCALE IN FEET (0, 20, 40)

HORIZONTAL SCALE IN FEET (0, 200, 400)

RUNWAY 25 OBSTRUCTION TABLE

Object Description	Object Elevation	Obstructed Part 77 Surface	Surface Elevation	Object Penetration	Proposed Object Disposition
17. BUILDING	50 MSL	PRIMARY SURFACE	41 MSL	9'	REQUEST AERONAUTICAL STUDY
18. BUILDING	55 MSL	PRIMARY SURFACE	41 MSL	14'	REQUEST AERONAUTICAL STUDY
19. BUILDING	60 MSL	PRIMARY SURFACE	42 MSL	18'	REQUEST AERONAUTICAL STUDY
20. BUILDING	50 MSL	PRIMARY SURFACE	41 MSL	9'	REQUEST AERONAUTICAL STUDY
21. TREE	77 MSL	PRIMARY SURFACE	41 MSL	36'	TO BE REMOVED
22. BUILDING	52 MSL	PRIMARY SURFACE	41 MSL	11'	REQUEST AERONAUTICAL STUDY
23. TREE	102 MSL	7:1 TRANSITIONAL SURFACE	61 MSL	41'	TO BE REMOVED
24. TREE	109 MSL	7:1 TRANSITIONAL SURFACE	54 MSL	55'	TO BE REMOVED
25. BUILDING	50 MSL	PRIMARY SURFACE	43 MSL	7'	REQUEST AERONAUTICAL STUDY
26. BUILDING	61 MSL	PRIMARY SURFACE	43 MSL	18'	REQUEST AERONAUTICAL STUDY
27. BUILDING	52 MSL	PRIMARY SURFACE	43 MSL	9'	REQUEST AERONAUTICAL STUDY
28. BUILDING	52 MSL	PRIMARY SURFACE	43 MSL	9'	REQUEST AERONAUTICAL STUDY
29. BUILDING	52 MSL	PRIMARY SURFACE	43 MSL	9'	REQUEST AERONAUTICAL STUDY
30. BUILDING	52 MSL	PRIMARY SURFACE	43 MSL	9'	REQUEST AERONAUTICAL STUDY
31. SIGN/LIGHT	68 MSL	PRIMARY SURFACE	43 MSL	25'	TO BE REMOVED
32. TREE	105 MSL	50:1 APPROACH SURFACE	49 MSL	56'	THRESHOLD DISPLACED
33. BUILDING	56 MSL	PRIMARY SURFACE	49 MSL	7'	REQUEST AERONAUTICAL STUDY
34. BUILDING	56 MSL	PRIMARY SURFACE	51 MSL	5'	REQUEST AERONAUTICAL STUDY
35. BUILDING	56 MSL	PRIMARY SURFACE	53 MSL	3'	REQUEST AERONAUTICAL STUDY
36. TREE	92 MSL	50:1 APPROACH SURFACE	53 MSL	39'	THRESHOLD DISPLACED
37. SPIRE	72 MSL	7:1 TRANSITIONAL SURFACE	50 MSL	22'	REQUEST AERONAUTICAL STUDY
38. SPIRE	73 MSL	7:1 TRANSITIONAL SURFACE	50 MSL	23'	REQUEST AERONAUTICAL STUDY
39. LIGHT POLE	76 MSL	50:1 APPROACH SURFACE	55 MSL	21'	THRESHOLD DISPLACED
40. FLAG POLE	88 MSL	50:1 APPROACH SURFACE	71 MSL	17'	THRESHOLD DISPLACED
41. UTILITY POLE	87 MSL	50:1 APPROACH SURFACE	69 MSL	18'	THRESHOLD DISPLACED
42. UTILITY POLE	93 MSL	50:1 APPROACH SURFACE	74 MSL	19'	THRESHOLD DISPLACED
43. FLOODLIGHT	116 MSL	50:1 APPROACH SURFACE	84 MSL	32'	THRESHOLD DISPLACED

No.	REVISIONS	DATE	BY	APP'D.

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OXNARD AIRPORT

INNER PORTION OF RUNWAY 25 APPROACH SURFACE

OXNARD, CALIFORNIA

PLANNED BY: Steven G. Benson P.E.
DETAILED BY: Maggie Rogers
APPROVED BY: James M. Harris P.E.

August 9, 2004

Coffman Associates Airport Consultants www.coffmanassociates.com

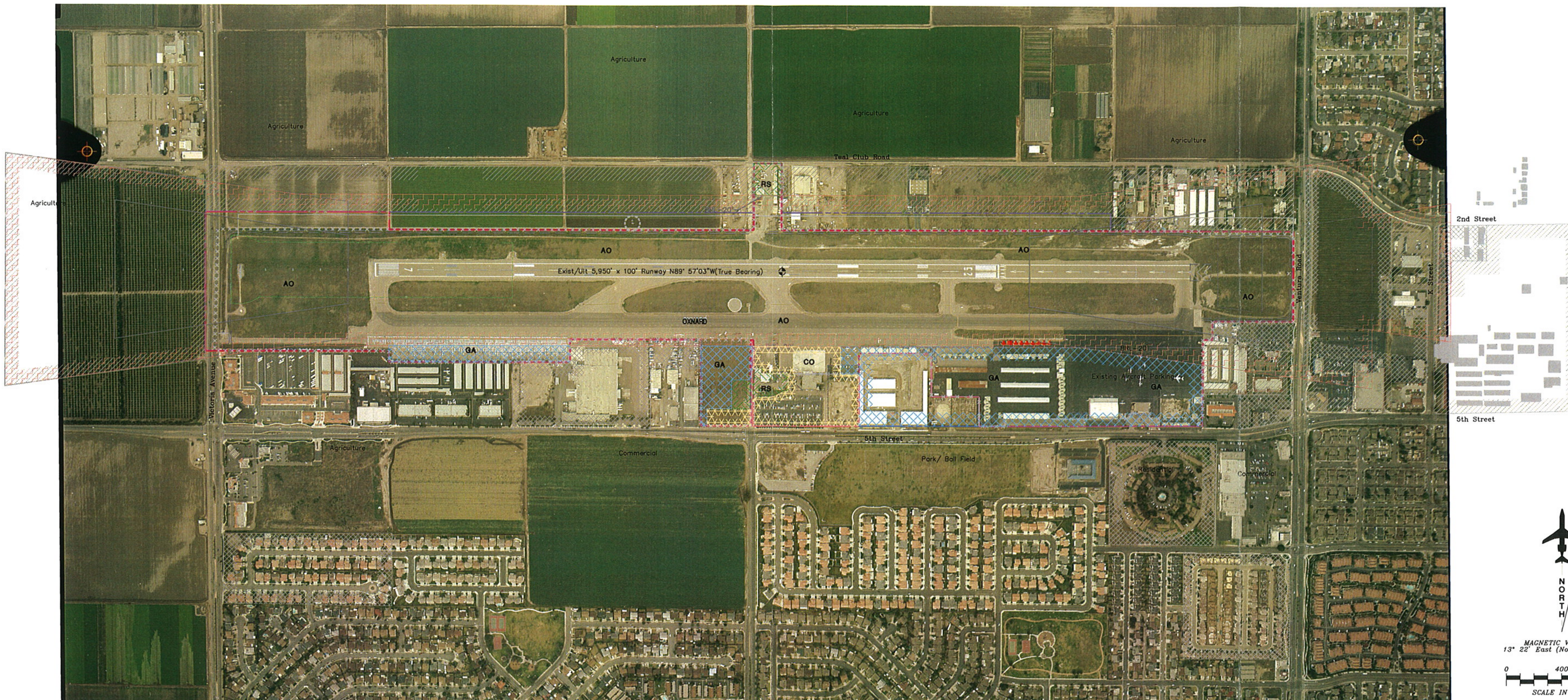
ON-AIRPORT LAND USE LEGEND

AO — AIRFIELD OPERATIONS (293.95 ACRES)	GA — GENERAL AVIATION AREA (39.55 ACRES)
RS — REVENUE SUPPORT (2.79 ACRES)	CO — COMMERCIAL AREA (9.53 ACRES)

BASE MAP: AERIAL PHOTO

LEGEND

EXISTING	ULTIMATE	DESCRIPTION
		PAVEMENT TO BE REMOVED
		AIRPORT PROPERTY LINE
		AIRPORT REFERENCE POINT (ARP)
		AIRPORT ROTATING BEACON
		AVIGATION EASEMENT
		BUILDING TO BE REMOVED OR RELOCATED
		BUILDING
	BRL	BUILDING RESTRICTION LINE (BRL)
		PAVEMENT
		FENCING
VASI-4	PAPI-4	NAVIGATIONAL AID INSTALLATION
		RUNWAY END IDENTIFICATION LIGHTS (REIL)
		RUNWAY THRESHOLD LIGHTS
		SEGMENTED CIRCLE/WIND INDICATOR
1050	1080	TOPOGRAPHY (USGS Maps)
		WIND INDICATOR (Lighted)



NORTH

MAGNETIC VARIATION
13° 22' East (November 2003)

0 400 800
SCALE IN FEET

GENERAL NOTES:

1. Depiction of features and objects, including related elevations and clearances, within the runway protection zones are depicted on the PROTECTION ZONES PLANS.
2. Details concerning terminal improvements are depicted on the TERMINAL AREA PLAN.
3. Recommended land uses within the airport environs are depicted on the AIRPORT LAND USE PLAN.
4. Building Restriction Line (BRL) is established in accordance with F.A.R. Part 77 criteria, location utilizes 35 foot vertical object height. Building Restriction Line location may be reduced in accordance to Part 77 criteria, to limits of the Runway Object Free Area, Runway Safety Area, and/or Runway Protection Zone criteria.

No.	REVISIONS	DATE	BY	APP'D.

THE PREPARATION OF THESE DOCUMENTS WAS FINANCED IN PART THROUGH A PLANNING GRANT FROM THE FEDERAL AVIATION ADMINISTRATION AS PROVIDED UNDER SECTION 505 OF THE AIRPORT AND AIRWAY IMPROVEMENT ACT OF 1982, AS AMENDED. THE CONTENTS DO NOT NECESSARILY REFLECT THE OFFICIAL VIEWS OR POLICY OF THE FAA. ACCEPTANCE OF THESE DOCUMENTS BY THE FAA DOES NOT IN ANY WAY CONSTITUTE A COMMITMENT ON THE PART OF THE UNITED STATES TO PARTICIPATE IN ANY DEVELOPMENT DEPICTED HEREIN NOR DOES IT INDICATE THAT THE PROPOSED DEVELOPMENT IS ENVIRONMENTALLY ACCEPTABLE IN ACCORDANCE WITH APPROPRIATE PUBLIC LAWS.

OXNARD AIRPORT

ON-AIRPORT LAND USE DRAWING

OXNARD, CALIFORNIA

PLANNED BY: Steven G. Benson P.E.
DETAILED BY: Maggie Rogers
APPROVED BY: James M. Harris P.E.

August 9, 2004

SHEET 7 OF 8

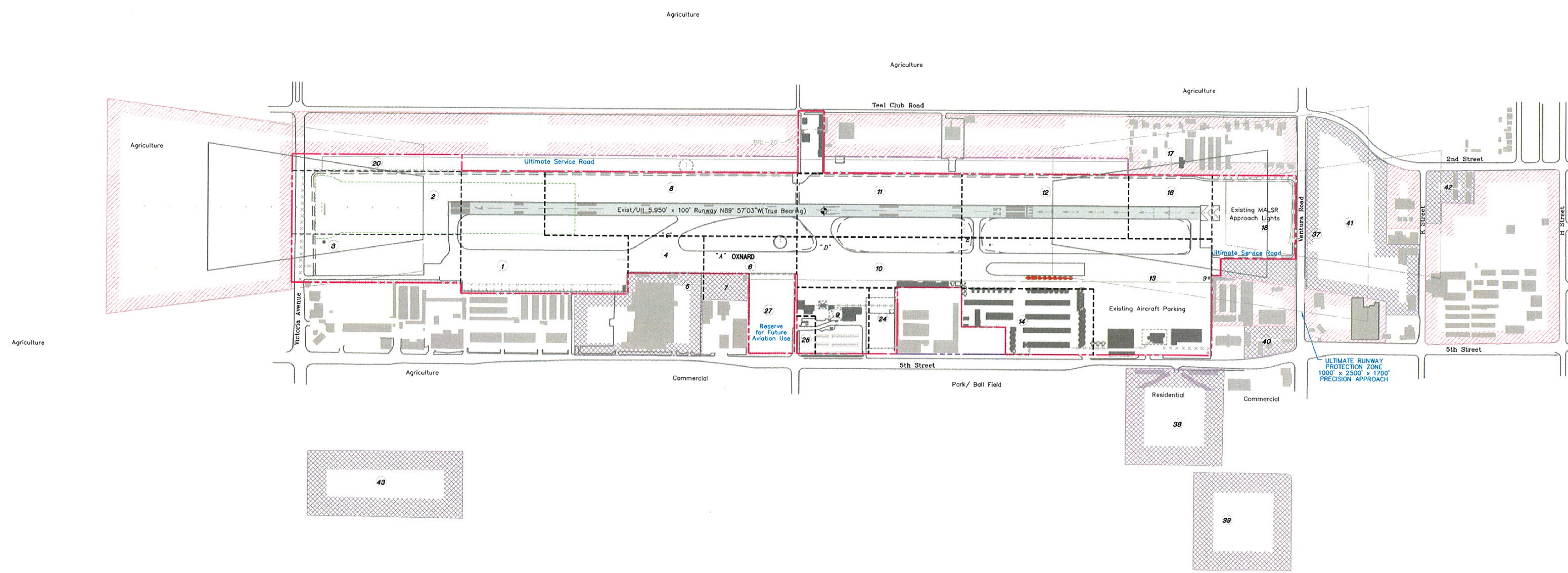
Coffman Associates
Airport Consultants
www.coffmanassociates.com

KEY:

- Existing Airport Property
- Ultimate Land Acquisition
- Parcel Boundary
- Existing Airport Avigation Easement
- Ultimate Airport Avigation Easment

LEGEND

EXISTING	ULTIMATE	DESCRIPTION
		PAVEMENT TO BE REMOVED
		AIRPORT PROPERTY LINE
		AIRPORT REFERENCE POINT (ARP)
		AIRPORT ROTATING BEACON
		AVIGATION EASEMENT
		BUILDING TO BE REMOVED OR RELOCATED
		BUILDING
		BUILDING RESTRICTION LINE (BRL)
		PAVEMENT
		FENCING
VASI-4	PAPI-4	NAVIGATIONAL AID INSTALLATION
		RUNWAY END IDENTIFICATION LIGHTS (REIL)
		RUNWAY THRESHOLD LIGHTS
		SEGMENTED CIRCLE/WIND INDICATOR
		TOPOGRAPHY (USGS Maps)
		WIND INDICATOR (Lighted)



EXISTING PROPERTY DATA				
PARCEL	ACREAGE	PROPERTY INTEREST	ACQUISITION DATE	FEDERAL PROJECT NUMBER
1	21.71	FEE SIMPLE	3-14-1961	–
2	15.38	FEE SIMPLE	12-5-1961	–
3	11.81	FEE SIMPLE	7-25-1961	–
4	4.13	FEE SIMPLE	1-25-1960	–
6	5.10	FEE SIMPLE	10-21-1959	–
8	22.73	FEE SIMPLE	2-11-1941	–
9	6.30	FEE SIMPLE	9-29-1958	–
10	11.48	FEE SIMPLE	3-20-1936	–
11	14.92	FEE SIMPLE	7-30-1940	–
12	15.15	FEE SIMPLE	7-30-1940	–
13	30.80	FEE SIMPLE	3-16-1934	–
14	11.97	FEE SIMPLE	6-3-1947	–
15	2.31	FEE SIMPLE	3-18-12941	–
16	7.50	FEE SIMPLE	7-30-1940	–
17	0.08	FEE SIMPLE	7-30-1940	–
18	9.99	FEE SIMPLE	12-7-1971	–
20	3.94	FEE SIMPLE	6-3-1964	–
24	2.88	FEE SIMPLE	10-12-1982	–
25	1.03	FEE SIMPLE	6-6-1985	–
27	5.49	FEE SIMPLE	8-30-1994	–
28	0.21	FEE SIMPLE	11-7-1995	–
37	0.014	FEE SIMPLE	3-14-1975	–

AVIGATION EASEMENT DATA			
PARCEL	ACREAGE	ACQUISITION DATE	FEDERAL PROJECT NUMBER
5	±12.72	1-25-1960	–
7	±2.55	10-21-1959	–
26	±2.38	4-7-1993	–
38	±13.58	--	–
39	±13.69	--	–
40	±2.03	--	–
41	±21.93	--	–
42	±2.70	--	–
43	±14.70	--	–

GENERAL NOTES:

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No.	REVISIONS	DATE	BY	APP'D.

OXNARD AIRPORT

AIRPORT PROPERTY MAP

OXNARD, CALIFORNIA

PLANNED BY: Steven G. Benson P.E.
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August 9, 2004 | SHEET 8 OF 8

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Appendix D

ENVIRONMENTAL EVALUATION

Appendix D
ENVIRONMENTAL EVALUATION

A review of the potential environmental impacts associated with proposed airport projects is an important consideration in the Airport Master Plan process. The primary purpose of this Appendix is to review the proposed program for the Oxnard Airport to determine whether the proposed actions could, individually or collectively, have the potential to significantly affect the quality of the environment.

A key component of this overview is coordination with appropriate federal, state, and local agencies to identify potential environmental concerns that should be considered prior to the design and construction of new facilities at the airport. Agency coordination consisted of a letter requesting comments and/or information regarding the proposed airport projects. Issues of concern that were identified as part of this process are presented in the following discussion. The letters received from various agencies are included at the end of this Appendix.

Once the airport begins receiving federal funding, improvements planned for Oxnard Airport, as depicted on the Airport Layout Plan (ALP), will require compliance with the *National Environmental Policy ACT (NEPA) of 1969,* as amended. For projects not categorically excluded under FAA Order 5050.4A, *Airport Environmental Handbook*, compliance with NEPA is generally satisfied with the preparation of an Environmental Assessment (EA). In cases where a categorical exclusion is issued, environmental issues such as wetlands, threatened or endangered species, and cultural resources are further evaluated during the federal, state, and/or local permitting processes. This master plan and any major improvements will also be subject to the requirements of

- Construct blast pad at the east end of the runway to protect the ground immediately behind the runway from being eroded by the blast wind created as aircraft begin their takeoff roll.

Landside Recommendations

Recommended landside improvements are primarily associated with maintenance, redevelopment, and modernization of existing facilities. The following outlines the proposed landside improvements at the airport.

- No change to the terminal building footprint, unless required for compliance with federal security mandates.
- Relocate port-a-ports closest to the taxiway to improve runway safety and taxi circulation.
- Construct a new rental car parking lot to allow the return of aviation use of the apron on the east side of the terminal building, which will be used to support general aviation activities.
- Redevelopment of older hangars as needed.

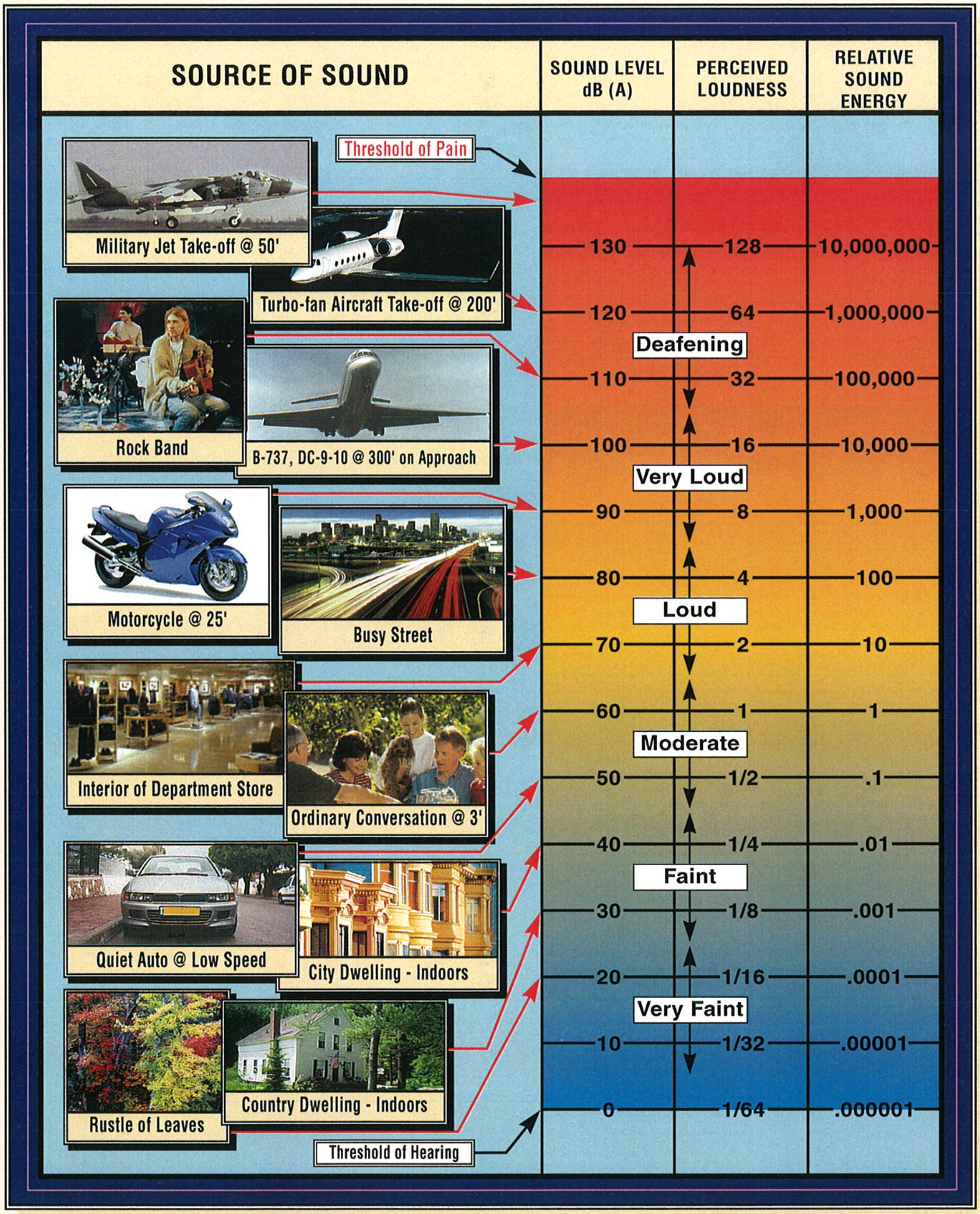
This Plan is based upon maintaining the Oxnard Airport as a County-owned and operated airport, open to general aviation and commuter airline activity that can operate within the constraints of the facility pursuant to both the Ventura County Department of Airports and Oxnard Airport Mission Statements. The draft Oxnard Airport Master Plan 2004 update continues to provide for maintenance and modernization of the existing terminal area facilities to serve the needs of the users with no plans for physical expansion.

ENVIRONMENTAL CONSEQUENCES - SPECIFIC IMPACTS

This environmental evaluation has been prepared using FAA Order 1050.1E, *Environmental Impacts: Policies and Procedures* and FAA Order 5050.4A, *Airport Environmental Handbook*, as guidelines. Several factors are considered in a formal NEPA environmental document, such as an EA or an Environmental Impact Statement (EIS), which are not included in an Environmental Evaluation. These factors include details regarding the project location, historical perspective, existing conditions at the airport, and the purpose and need for the project. This information is available within the Oxnard Airport Master Plan document. A formal environmental document also includes the resolution of issues/impacts identified as significant during the environmental process.

Consequently, this Environmental Evaluation only identifies potential environmental issues and ***does not*** address mitigation or the resolution of environmental impacts. Each of the specific impacts categories outlined in FAA Order 5050.4A are addressed. The following table includes a discussion of each environmental category.

02MP01-D1-7/15/04



Source: Coffman Associates 1990

OXNARD AIRPORT

Exhibit D1
TYPICAL SOUND LEVELS

ber of seconds in a 24-hour day. The multiplication factor applied to nighttime sound events is intended to account for the increased annoyance attributable to noise occurring at night when ambient (background) noise levels are low and people are trying to sleep.

- In California, the Community Noise Equivalent Level (CNEL) metric is used instead of the DNL metric. The two are actually very similar. DNL accumulates the total noise occurring during a 24-hour period, with a 10 decibel weight applied to noise occurring during the nighttime (2200 - 0700 hours), The CNEL metric is the same except it also adds a 4.8 decibel weight for noise occurring between 1900 and 2200 hours. There is little actual difference between the two metrics in practice. Calculations of CNEL and DNL from the same data generally yield values with less than a 0.7 decibels difference (Metropolitan Transportation Commission 1983, p. 37).

CNEL is the metric currently accepted by the Federal Aviation Administration (FAA), Environmental Protection Agency (EPA), and Department of Housing and Urban Development (HUD) as an appropriate measure of cumulative average noise exposure in the State of California. These three federal agencies have each identified the 65 DNL noise contour as the threshold of incompatibility.

Since noise decreases at a constant rate in all directions from a source, points of equal CNEL noise levels are routinely indicated by means of a contour line. The various contour lines are then superimposed on a map of the airport and its environs. It is important to recognize that a line drawn on a map does not imply that aircraft noise stops at that line. Nevertheless, CNEL contours can be used to: (1) highlight existing or potential incompatibilities between an airport and any surrounding development; (2) assess relative noise exposure levels; (3) assist in the preparation of airport environs land use plans; and (4) provide guidance in the development of land use control devices, such as zoning ordinances, subdivision regulations, and building codes.

The noise contours for Oxnard Airport have been developed using the Integrated Noise Model (INM), Version 6.1. The INM is a computer model which accounts for each aircraft along approach, departure, and touch-and-go flight tracks during an average 24-hour period. These flight tracks are coupled with separate tables contained in the database of the INM which relate to noise, distances, and engine thrust for each make and model of aircraft selected.

The input files contain operational data, runway utilization, aircraft flight tracks, and fleet mix as projected in the plan. **Table D1** summarizes the fleet mix percentages used in the noise contour development for Oxnard Airport. While the federal control tower (FCT) maintains records of aircraft operations (landing and departures), the FCT does not record operations by aircraft type (piston engine, turboprop, or jet). Therefore, the fleet mix percentages included in **Table D1** are estimates based upon the 1998 noise compatibility study. As shown in the table, single and multi-engine piston air-

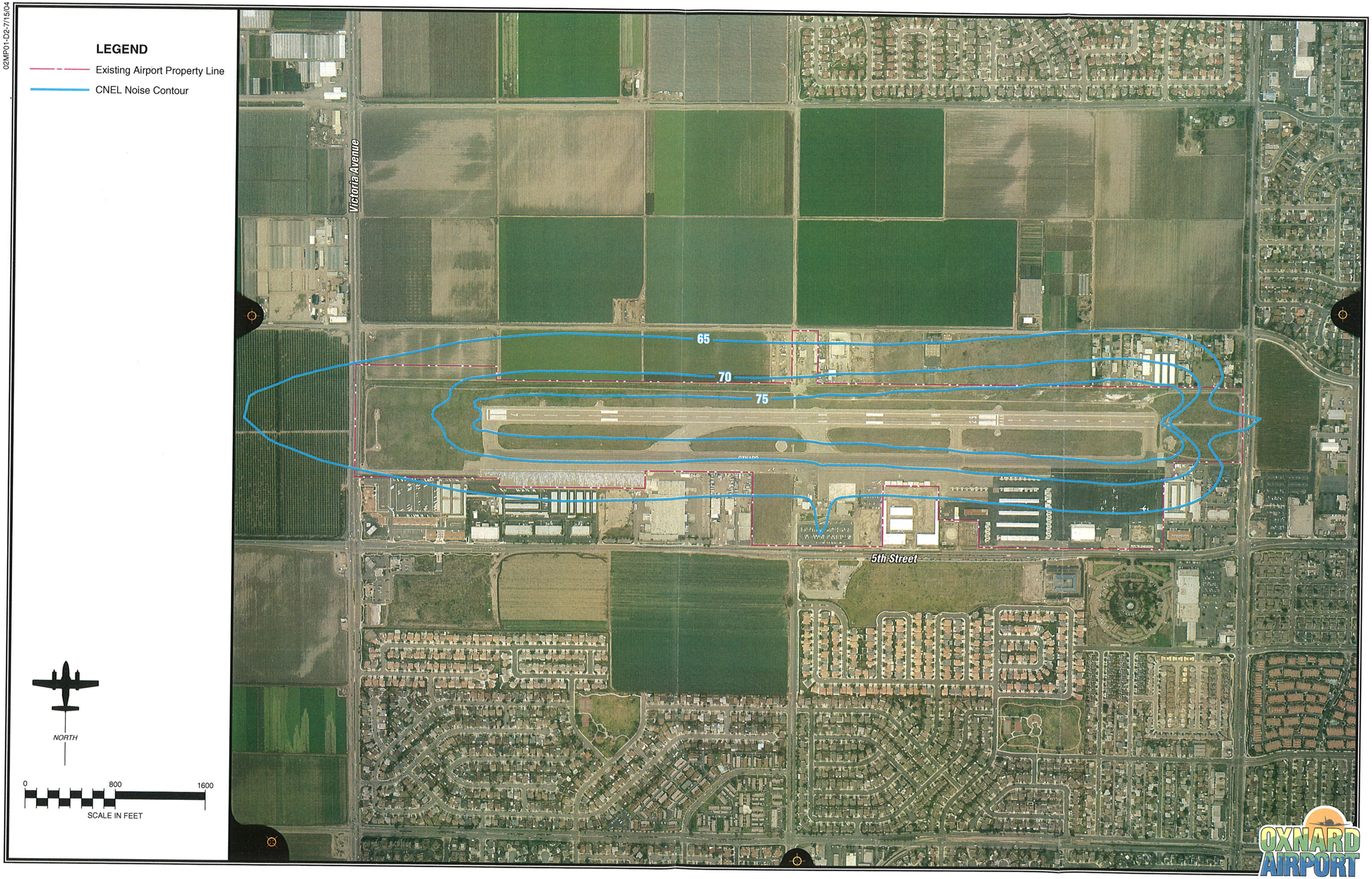


Exhibit D2
2002 NOISE EXPOSURE CONTOURS

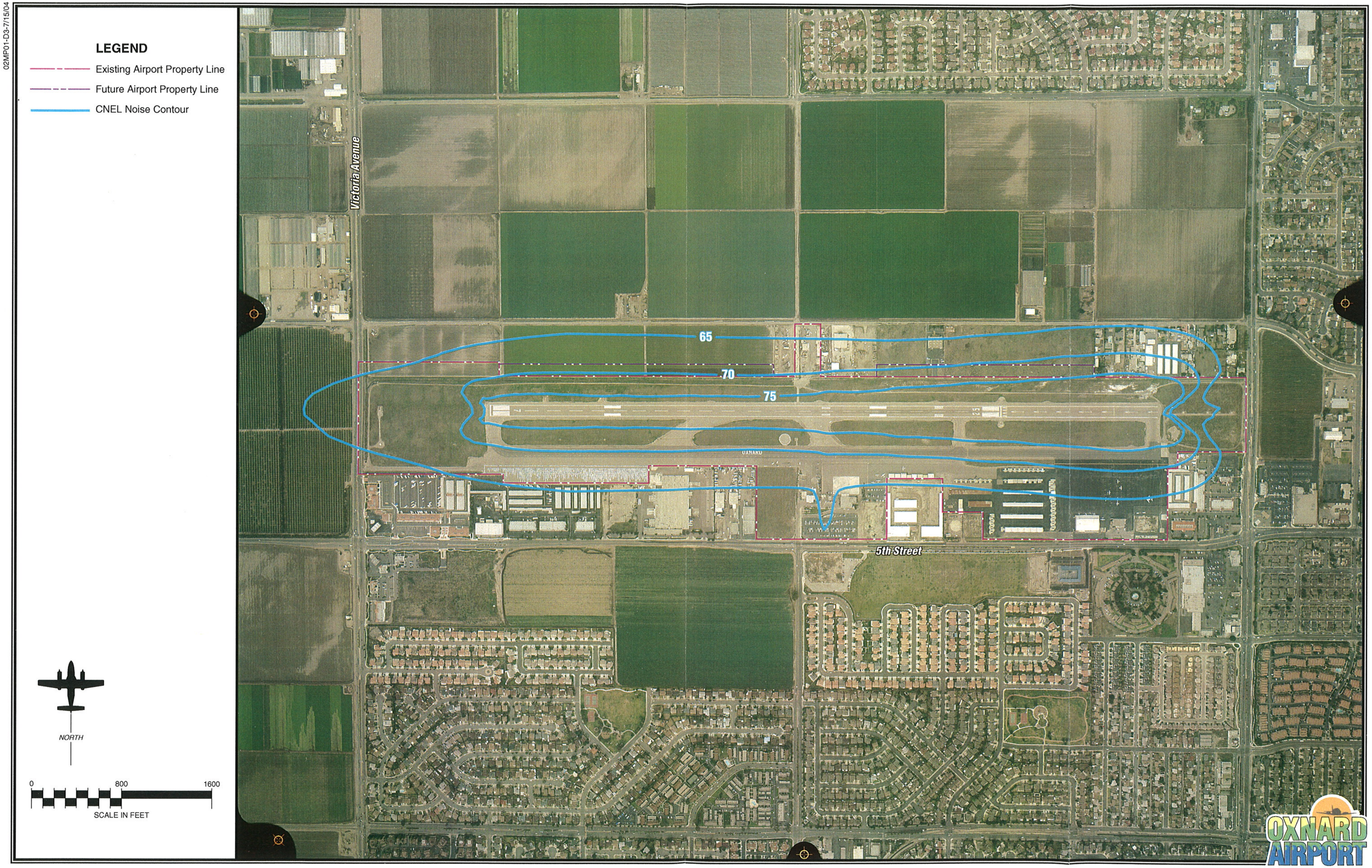


Exhibit D3
2010 NOISE EXPOSURE CONTOURS

02MP01-D4-7/15/04

Exhibit D4
2025 NOISE EXPOSURE CONTOURS

TABLE D3 CNEL Contour Coverage (in acres)			
	65 CNEL	70 CNEL	75 CNEL
2002	265.2	130.9	68.7
2010	235.7	116.3	58.5
2025	200.7	98.6	43.5

The intermediate 65 CNEL noise contour extends beyond the airport property boundary approximately 400 feet to the west. To the north, the noise contour extends off airport property slightly less than 400 feet. The noise contour to the south extends the same distance as in the existing contour. The ultimate noise contours are contained within the airport property boundary to the west and east. To the north and south, the 65 CNEL extend beyond airport property slightly less than they do in the intermediate contours.

As shown on the exhibits, the 65 CNEL noise contour extends beyond the existing airport boundaries into areas of existing residential development northeast of the airport. As mentioned previously, the 65 CNEL threshold is used to identify areas of incompatibility and noise exposure impacts.

FAA's threshold of significance has been determined to be a 1.5 CNEL increase in noise over any noise-sensitive area located in the 65 CNEL. As depicted on **Table D3**, the contours are reduced in size, therefore, indicating a reduction in overall noise. Less-than-significant impacts are anticipated as future noise exposure will not increase 1.5 CNEL over the residential (noise- sensitive) areas.

COMPATIBLE LAND USE

Federal Aviation Regulations (F.A.R.) Part 150 recommends guidelines for planning land use compatibility within various levels of aircraft noise exposure as summarized on **Exhibit D5**. These are guidelines only inasmuch as F.A.R. Part 150 explicitly states that determinations of noise compatibility regulation of land uses are purely local responsibilities.

North of the airport is an existing agricultural tract. This area is likely to file for a Specific Plan and be fully developed within ten years as a mix of residential and commercial uses. This area is known as the Proposed Teal Club Specific Plan. East of the airport is the former site of the Oxnard High School campus. The high school was relocated in 2002 and the city has purchased the property. Currently known as the Former Oxnard High School Site, the city is considering options including residential development. Based on FAA criteria, neither of these areas will be negatively impacted by the proposed safety improvements at the airport. Additionally, the acquisition of the pro-

02MP10-D5-7/15/04

LAND USE	Yearly Day-Night Average Sound Level (DNL) in Decibels					
	Below 65	65-70	70-75	75-80	80-85	Over 85
RESIDENTIAL						
Residential, other than mobile homes and transient lodgings	Y	N[1]	N[1]	N	N	N
Mobile home parks	Y	N	N	N	N	N
Transient lodgings	Y	N[1]	N[1]	N[1]	N	N
PUBLIC USE						
Schools	Y	N[1]	N[1]	N	N	N
Hospitals and nursing homes	Y	25	30	N	N	N
Churches, auditoriums, and concert halls	Y	25	30	N	N	N
Government services	Y	Y	25	30	N	N
Transportation	Y	Y	Y[2]	Y[3]	Y[4]	Y[4]
Parking	Y	Y	Y[2]	Y[3]	Y[4]	N
COMMERCIAL USE						
Offices, business and professional	Y	Y	25	30	N	N
Wholesale and retail-building materials, hardware and farm equipment	Y	Y	Y[2]	Y[3]	Y[4]	N
Retail trade-general	Y	Y	25	30	N	N
Utilities	Y	Y	Y[2]	Y[3]	Y[4]	N
Communication	Y	Y	25	30	N	N
MANUFACTURING AND PRODUCTION						
Manufacturing, general	Y	Y	Y[2]	Y[3]	Y[4]	N
Photographic and optical	Y	Y	25	30	N	N
Agriculture (except livestock) and forestry	Y	Y[6]	Y[7]	Y[8]	Y[8]	Y[8]
Livestock farming and breeding	Y	Y[6]	Y[7]	N	N	N
Mining and fishing, resource production and extraction	Y	Y	Y	Y	Y	Y
RECREATIONAL						
Outdoor sports arenas and spectator sports	Y	Y[5]	Y[5]	N	N	N
Outdoor music shells, amphitheaters	Y	N	N	N	N	N
Nature exhibits and zoos	Y	Y	N	N	N	N
Amusements, parks, resorts, and camps	Y	Y	Y	N	N	N
Golf courses, riding stables, and water recreation	Y	Y	25	30	N	N

The designations contained in this table do not constitute a federal determination that any use of land covered by the program is acceptable under federal, state, or local law. The responsibility for determining the acceptable and permissible land uses and the relationship between specific properties and specific noise contours rests with the local authorities. FAA determinations under Part 150 are not intended to substitute federally-determined land uses for those determined to be appropriate by local authorities in response to locally-determined needs and values in achieving noise compatible land uses.

See other side for notes and key to table.

OXNARD AIRPORT

Exhibit D5

LAND USE COMPATIBILITY GUIDELINES

Numerous avigation easements are proposed for areas surrounding the airport. Like the avigation easements currently being acquired, these easements are designed to control development heights. Height limits will remain unchanged from those currently in place.

The proposed improvements and associated land acquisition and avigation easements are not anticipated to divide or disrupt an established community, interfere with orderly planned development, or create a short-term, appreciable change in employment.

Less-than-significant impacts to the surrounding traffic network are anticipated. The proposed construction of a blast pad at the east end of the runway will not impact traffic on Ventura Road. The purpose of the blast pad is to reduce soil erosion. Forecast increases in annual operations and passengers are not expected to cause a noticeable increase in congestion or access time to community facilities, recreation areas, or places of residence or business or other disruption. A significant increase in traffic on nearby U.S. Highway 101 and State Highway 1 is not anticipated as the forecasts demonstrate a minimal amount of growth.

INDUCED SOCIOECONOMIC IMPACTS

These impacts address those secondary impacts to surrounding communities resulting from the proposed improvements, including shifts in patterns of population growth, public service demands, and changes in business and economic activity to the extent influenced by the airport improvements. Significant shifts in patterns of population movement or growth, or public service demands are not anticipated as a result of the proposed improvements.

The surrounding transportation network will experience an increase in use as the surrounding community continues to develop. As plans for residential development are carried through, traffic surrounding the airport will increase. It is not anticipated that traffic resulting from airport use will contribute significantly to the increase of the area transportation network.

AIR QUALITY

The U.S. Environmental Protection Agency (EPA) has adopted air quality 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 (PM10), and Lead (Pb). Various levels of review apply within both NEPA and permitting requirements. For example, an air quality analysis is typically required during the preparation of a NEPA document if enplanement levels exceed 3.2 million enplanements or general aviation operations exceed 180,000.

SECTION 4(f) LANDS

The Department of Transportation Act of 1966 states that, "the Secretary of Transportation will not approve any program or projects that requires the use of any publicly owned land from a public park, recreation area, or wildlife and waterfowl refuge of national, state, or local significance unless there is not feasible and prudent alternative." The proposed improvements will not require the use of Section 4(f) lands.

HISTORICAL AND CULTURAL RESOURCES

Proposed projects at the airport do not include the disturbance of previously undisturbed land. Therefore, impacts to cultural resources are not anticipated.

For safety reasons, aging hangar facilities may need to be replaced. Some of these buildings meet the age requirement criteria for listing within the National Register of Historic Places. However, other criteria, such as a significance in American history, have not been determined. Further coordination with the State Historic Preservation Office (SHPO) will need to be completed prior to any building replacement to determine the historical significance.

THREATENED OR ENDANGERED SPECIES AND BIOLOGICAL RESOURCES

The U.S. Fish and Wildlife Service (USFWS) database lists 13 threatened or endangered animal species in Ventura County. These species are comprised of birds, amphibians, reptiles, fish, and one mammal. Numerous plants which are known to occur in Ventura County are also listed as threatened or endangered.

No response was received from the California Department of Game and Fish or the USFWS regarding the potential likelihood of these species occurring on airport property or in the vicinity. However, previous correspondence received from the USFWS indicated that the Ventura marsh milkvetch has been located west of the airport, beneath the extended Runway 25 centerline. In previous correspondence, the USFWS did not indicate that this, or any other listed species, occurs on airport property. Further coordination and possibly a biological survey may need to be completed before acquisition or development on previously undeveloped land can occur.

WATERS OF THE U.S. INCLUDING WETLANDS

There are no wetlands or waters of the U.S. located in the project area; therefore, no impacts are anticipated.

including a farmland conversion impact rating, will need to be completed prior to any property acquisition or construction.

The proposed relocation of the Runway 7 departure threshold will not impact agricultural uses to the west. The Runway 7 departure end is located at the east end of the runway. The start of takeoff roll will remain the same. Lighting equipment proposed to be installed in the agricultural area to the west will not be impeded by surrounding crops. Crops such as strawberries and other low profile plants currently planted in this area will not pose a problem for airport lights.

ENERGY SUPPLY AND NATURAL RESOURCES

Energy requirements generally fall into two categories: (1) those which relate to changed demands for stationary facilities; and (2) those which involve the movement of air and ground vehicles. According to FAA Order 5050.4A, an impact arises where a project will have a measurable effect on local energy supplies or would require the use of an unusual material or one in short supply. Increased consumption of fuel by aircraft is examined where ground movement or run-up times increase substantially without offsetting efficiencies in operational procedures, or if the action would add appreciably to access time, or if there would be a substantial change in movement patterns for on-airport service or other vehicles. The proposed alternative will result in a less-than-significant impact to energy supply and natural resources. Impacts are a result of increased operations and upgraded facilities.

LIGHT EMISSIONS

The proposed improvements include the installation of the MASLR on the Runway 7 approach. This installation will slightly increase the amount of light generated by the airport over undeveloped areas.

Demand based hangars will introduce additional lighting to the south side of the landside facility area. This lighting would be similar to what already exists at the airport; therefore, a less-than- significant impact to light emissions are anticipated.

SOLID WASTE

As operations continue to increase at Oxnard Airport, so will the generation of solid waste.

However, these impacts are expected to be less-than significant.

4. The inclusion of all appropriate traffic volumes analysis should include traffic from the project, cumulative traffic generated from all specific approved developments in the area, and traffic growth other than from the project and developments. That is, include: existing + project + other projects + other growth.

5. The discussion of mitigation measures appropriate to alleviate the anticipated traffic impacts should include, but not be limited to, the following:

   - Description of Transportation Infrastructure Improvements
   - Financial Costs, Funding Sources and Financing
   - Sequence and Scheduling Considerations
   - Implementation Responsibilities, Controls, and Monitoring

Any mitigation involving transit, HOV, or Transportation Demand Management must be rigorously justified and its effects conservatively estimated. Improvements involving dedication of land or physical construction may be favorably considered.

6. With respect to the specification of the developer's percent share of the cost, as well as a plan of realistic mitigation measures under the control of the developer, the following ratio should be estimated: additional traffic volume due to project implementation is divided by the total increase in the traffic volume (see Appendix "B" of the Guidelines). That ratio would be the project equitable share responsibility.

   Items 7-13 list environmental/airport environmental land use planning issues:

7. The environmental evaluation will be a part of the Oxnard Airport Master Plan. In addition to this master planning effort, the Federal Aviation Administration and Ventura County will also prepare environmental documents to satisfy the requirements of the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA), respectively.

8. The Federal Aviation Administration's Advisory Circular (AC) 150/5070-6A, Airport Master Plans, provides national guidance for the preparation of airport master plans, pursuant to the provisions of the Airport and Airway Improvement Act of 1982. In AC 150/5070-6A, Chapter 4, Topics 5 and 7 explain land use and environmental issues that should be discussed in an airport master plan.

9. The land use discussion in AC 150/5070-6A states that "the existence of any governmental programs designed to direct land use patterns in the area under review should be noted." Therefore, we recommend that you cross-reference the airport land use compatibility planning strategies of the Ventura County Airport Land Use Commission (ALUC) in your study. When complete, the Airport Master Plan should be submitted to the Ventura County

If you have any further questions, please feel free to call Rose Casey, Deputy District Director of Planning, at (213) 897-0970.

Sincerely,

DOUGLAS R FAILING
District Director

"Caltrans improves mobility across California"

Ventura County Air Pollution Control District
669 County Square Drive
Ventura, California 93003
tel 805/645-1400
fax 805/645-1444
www.vcapcd.org
Michael Villegas
Air Pollution Control Officer

May 24, 2004

Angela Steele
Airport/Environmental Planner
237 N.W. Blue Parkway, Suite 100
Lee's Summit, MO 64063

Subject: Request for Review of Oxnard Airport Master Plan Environmental Evaluation

Dear Ms. Steele:

The Ventura County Air Pollution Control District staff has reviewed your request for comments or concerns regarding potential air quality impacts associated with proposed improvements at the Oxnard Airport. The proposed update to the current Oxnard Airport Master Plan is intended to identify potential future facility demands and provide the airport with the means to address those demands. Oxnard Airport is located on approximately 216 acres of land in the northwestern portion of the City of Oxnard. The airport's terminal building is accessible from West Fifth Street. Patterson road provides a secondary access option.

The following comments are based on the 2003 *Ventura County Air Quality Assessment Guidelines* (2003 Guidelines), which describes what constitutes a significant air quality impact. The 2003 Guidelines is the advisory document for preparing air quality evaluations of environmental documents. A copy of the 2003 Guidelines can be accessed from the downloadable materials section of the APCD website at www.vcapcd.org. We recommend you use the Guidelines in your environmental evaluation of the potential air quality impacts associated with the Oxnard Airport's proposed improvements.

Based on the information provided to the District, the Oxnard Airport Master Plan Update would be expected to have a less than significant impact on regional air quality. The Draft Master Plan update does not anticipate additional growth of the airport above the originally forecasted growth contained in the 1983 Oxnard Airport Master Plan.

Cumulative Regional Air Quality Impacts

Based on data provided by the County Planning Department, the estimated population of the Oxnard Growth Area is 166,260 persons (December 31, 2003). The forecasted Oxnard Growth Area population for 2005 is 167,918 persons. This project is not expected to result in any increase in population. Therefore, this project would not result in population growth above that forecasted in the Ventura County Air Quality Management Plan (AQMP). For that reason, this project is consistent with the AQMP and therefore expected to have a less than significant impact on cumulative regional air quality.

Nuisance Condition

8) Facilities shall be constructed and operated in accordance with the Rules and Regulations of the Ventura County Air Pollution Control District, with emphasis on Rule 51, *Nuisance.*

"A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number of persons or to the public or which endangers the comfort, repose, health or safety of any such persons or the public or which cause or have a natural tendency to cause injury or damage to business or property."

Demolition Condition

9) The applicant shall notify the District prior to issuance of demolition permits for any onsite structures. Demolition and/or renovation activities shall be conducted in compliance with District Rule 62.7, *Asbestos – Demolition and Renovation.*

Rule 62.7 governs activities related to demolition of buildings with asbestos-containing materials. This rule establishes the notification and emission control requirements for demolition activities. Specifically, this rule requires that the owner or operator of a facility shall remove all asbestos-containing material from a facility being demolished. For additional information on asbestos, or to download a copy of Rule 62.7, please visit our website at www.vcapcd.org/asbestos.htm. You can also contact the District's Asbestos Coordinator, Jay Nicholas at (805) 645-1443 or by email at jay@vcapcd.org.

Construction Equipment Permit Requirements

Any combustion equipment onsite, which is rated at 50 horsepower (HP) or greater, must have either an APCD Permit to Operate (PTO), or be registered with the California Air Resources Board's (CARB) Portable Equipment Registration Program (PERP). Examples of such equipment include portable electrical generators, and portable air compressors.

For more information on obtaining an APCD PTO please contact the District's Permitting Engineering Division at (805) 645-1401 or (805) 645-1481. Additional information can also be accessed from the Permits section of the APCD website at www.vcapcd.org. For more information on CARB's PERP program, please visit the CARB website at http://www.arb.ca.gov/perp/perp.htm, or call (916) 324-5869.

Planning and Environmental Services Division
305 West Third Street • Oxnard, CA 93030 • (805) 385-7858 • Fax (805) 385-7417

May 28, 2004

Ms. Angela Steele
Airport/Environmental Planner
Coffman Associates
237 N.W. Blue Parkway, Suite 100
Lee's Summit, MO 64063

Re: *Comments Regarding Environmental Resources and Issues Associated with the Proposed Improvements to the Oxnard Airport.*

Thank you for the opportunity to comment on the proposed improvements to the Oxnard Airport as outlined in your letter of April 26, 2004 to Planning and Environmental Services.

We have several comments and questions:

1. Please provide the approximate number of years associated with the three planning horizons: short, intermediate, and long term. It is our understanding that they are increments of roughly five years. As we are updating our General Plan, we should be able to match your planning horizon operations projections with our planning horizon year of 2025, which is probably your "long term."
2. Immediately north and abutting the airport is an agricultural tract bounded by Teal Club Road, Ventura Road, Patterson Road, and Doris Avenue. This area is likely to file for a Specific Plan and be fully developed within ten years as a mix of residential and commercial uses. This area is within the city's Sphere of Influence and designated for development under our General Plan. Please refer to this area as the "Proposed Teal Club Specific Plan" and document how the airport operations and improvements would impact this area, especially in terms of noise and safety.
3. Immediately east and abutting the airport is the former site of the Oxnard High School campus, bounded by K, H, 2nd and 5th Streets. The high school was relocated in 2002, the city has purchased the property, and we are now considering options including residential development. Please refer to this area as the "Former Oxnard High School Site" and document how the airport operations and improvements would impact this area, especially in terms of noise and safety.
4. How would the proposed relocation of the Runway 7 departure end threshold 250 feet westward impact ongoing agricultural use in that area? Are there agricultural activities that pose a problem for the airport lights and equipment?
5. Would the proposed purchase of 10 acres on the north side of the airport displace any residences or businesses? If so, please document.
6. Would the proposed height limits for approximately 57 acres on the north side of the airport south of Teal Club Road impact any existing buildings? If so, please document. What would be the recommended height limit in this area?

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