SAN LUIS OBISPO COUNTY

REGIONAL AIRPORT

AIRPORT MASTER PLAN

AIRPORT MASTER PLAN UPDATE

for

SAN LUIS OBISPO COUNTY REGIONAL AIRPORT
San Luis Obispo, California

FINAL REPORT

Prepared By
COFFMAN ASSOCIATES, INC.

Revised November 2004

Accepted by the Board of Supervisors of the County of San Luis Obispo on January 25, 2005

Printed Final October 2005

SAN LUIS OBISPO COUNTY
REGIONAL AIRPORT

TABLE OF CONTENTS

CONTENTS

SAN LUIS OBISPO COUNTY REGIONAL AIRPORT
San Luis Obispo, California

Airport Master Plan

Chapter One
INVENTORY

Chapter Two
FORECASTS

Chapter Three
FACILITY REQUIREMENTS

Chapter Four
AIRPORT DEVELOPMENT ALTERNATIVES

Chapter Five
RECOMMENDED MASTER PLAN CONCEPT AND FINANCIAL PLAN

EXHIBITS

Appendix A
GLOSSARY OF TERMS AND ABBREVIATIONS

Appendix B
AIRPORT AND RUNWAY DATA

Appendix C
AIRPORT LAYOUT DRAWINGS

Appendix D
ECONOMIC BENEFIT ANALYSIS

SAN LUIS OBISPO COUNTY
REGIONAL AIRPORT

Chapter One
INVENTORY

INVENTORY

SAN LUIS OBISPO COUNTY
REGIONAL AIRPORT

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

The information was obtained from several sources, including on-site inspections, airport records, review of other planning studies, the Federal Aviation Administration (FAA), various government agencies, a number of on-line (Internet) sites which presently summarize most statistical information and facts about the airport, and

interviews with airport staff, planning associations, and airport tenants. As with any airport planning study, an attempt has been made to utilize existing data or information provided in existing planning documents, to the maximum extent possible.

AIRPORT SETTING

San Luis Obispo County Regional Airport is located in the west-central portion of San Luis Obispo County, south of the City of San Luis Obispo which serves as the county seat. The county is bordered on the north by Monterey

County, on the east by Kern County, and to the south by Santa Barbara County. The Pacific Ocean forms its western border.

U.S. Highway 101 and State Highway 1 (the Pacific Coast Highway) converge in the City of San Luis Obispo. U.S. Highway 101 is a primary north-south highway linking the major coastal cities of California. The highway extends through the central portion of the county, providing access to Atascadero and Paso Robles (north of San Luis Obispo), to Arroyo Grand and Santa Maria. Several other state highways provide access to central and eastern California.

The airport encompasses approximately 340 acres of land in an unincorporated portion of San Luis Obispo County. Located 3.5 miles south of the city, vehicle access to the airport is via Highway 227 (Broad Street as it proceeds into the city). Tank Farm Road (currently two lanes) intersects with Highway 227, providing access to Highway 101 via South Higuera Street and Los Osos Valley Road. The passenger terminal building is accessed via Aero Drive, which intersects with Highway 227.

Other airport facilities located on either side of the terminal are accessed via Airport Drive. Vehicular access to the airport facilities located west of the intersection of Runways 11-29 and 7-25 is via Santa Fe Road. Santa Fe Road connects Tank Farm Road with Buckley Road. Buckley Road connects Highway 227 and Santa Fe Road. The location of the airport in its regional and national setting is presented on **Exhibit 1A**.

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.

San Luis Obispo County is bisected by the Santa Lucia Mountain Range. This contributes to several distinct local climates, ranging from year-round mild temperatures and dense seasonal fog along the 85-mile coastline, to more dramatic temperature variations in the northern inland region. Temperatures range from the low 40s in the winter months to the high 70s in the summer months. **Table 1A** summarizes climatic data for San Luis Obispo, including temperatures and precipitation.

According to data recorded at the airport weather station, the airport operates in instrument flight rule conditions ten percent of the time. Instrument flight rule conditions are defined as cloud ceilings less than 1,000 feet above the ground and/or visibility less than three statute miles.

02MP21-1A-7/7/03

Exhibit 1A
LOCATION MAP

TABLE 1A
Climate Summary
San Luis Obispo, CA

	Monthly Averages		Precipitation
Month	**Maximum (F)**	**Minimum (F)**	**Mean (inches)**
January	63.1	41.6	5.16
February	64.9	43.4	4.76
March	65.4	43.9	3.68
April	68.4	45.5	1.74
May	70.6	47.5	0.41
June	74.8	50.4	0.07
July	78.1	52.5	0.03
August	79.2	52.8	0.05
September	79.3	52.5	0.34
October	76.6	50.1	0.83
November	70.6	46.1	2.47
December	64.5	42.1	3.77
Annual	71.3	47.4	23.32

Source: Western Regional Climatic Center (period of record: 7/1/1948 – 3/31/2003).

AIRPORT HISTORY AND ADMINISTRATION

The airport was originally built in the 1930s and operated as a private airport until 1940, when the original airport site was acquired by the county. During World War II, the airport operated as an air defense facility. Improvements to the airport during the war years included paved runways, runway and obstruction lighting, and paved apron areas. The airport was returned to the county in 1946 and Southwest Airways (later known as Pacific Airlines) inaugurated a passenger and airline service that year. In 1952, a passenger terminal building was constructed to better serve air passengers. This building served as the terminal building until December 1983, when the current terminal building was constructed. Southwest Airways discontinued airline service at the airport in 1955. San Luis Obispo was then without scheduled airline service until 1969, with the advent of Swift Aire.

In 1987, the airport name was amended to San Luis Obispo County Airport - McChesney Field, in honor and memory of Leroy E. McChesney, for his leadership and dedication to aviation in California. In recent years, to reflect its regional significance, the official name was once again amended.

By the time the control tower opened in 1988, Wings West, Skywest, WestAir, and later, American Eagle were in operation. Today, three airlines serve the community: United Express (Skywest), American Eagle, and America West (Mesa). In addition to these airlines, two all-cargo opera-

tors also serve the airport; Ameriflight (UPS) and WestAir (Fed Ex).

The airport is owned and operated by San Luis Obispo County. The county also owns and operates Oceano County Airport, which is located on the coastline, south of Pismo Beach. The day-to-day administration and management of both airports is the responsibility of the Airports Manager. "Airports" is a division within the Department of General Services. Overall administration and financial oversight of the two county-owned airports falls under the jurisdiction of the County Administrative Office and five-member elected Board of Supervisors.

Several capital improvement projects have been completed since the last Master Plan was completed in 1998. These projects are summarized in **Table 1B**.

AIRPORT SYSTEM PLANNING ROLE

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

At the national level, the airport is included in the *National Plan of Integrated Airport Systems* (NPIAS). This plan identifies 3,344 existing airports which are significant to national air transportation, as well as airport development necessary to meet the present and future requirements in support of civil needs. An airport must be included in the NPIAS to be eligible for federal funding assistance. San Luis Obispo County Regional Airport is classified as a primary commercial service airport in the NPIAS.

At the state level, the California Department of Transportation (CALTRANS), Division of Aeronautics, provides statewide planning to airports through its *California Aviation System Plan* (CASP). The purpose of the CASP is to ensure that the state has an adequate and efficient system of airports to serve its aviation needs well into the future. The CASP is responsible for the general supervision of all aeronautics within the state. It is empowered by state law to make rules and regulations governing all airports, flight schools, and all other aeronautical activity. The CASP defines the specific role of each airport in the state's aviation system and develops forecasts for aviation activity in the State of California. San Luis Obispo Regional Airport is classified as a commercial service airport in the Central Coast region. These forecasts assist in the identification of airports in need of capital improvements and provide a guide for programming federal and state development funds.

TABLE 1B
Capital Projects Completed Since '98 Master Plan
San Luis Obispo County Regional Airport

Projected Completed	Date Completed
Terminal Building Remodeled	1999/2000
Runway 11-29 Extension -Land acquisition -Construction of culvert (approximately 1,100 linear feet) -500' extension of runway and parallel taxiway (east end) -Realignment of Buckley Road -Signalization of Buckley Road/Hwy 227 intersection -Construction of Taxiway I -Construction of 200-foot Blast Pad (East end, Rwy 11-29) -Installation of REILs to Runway 29 -Relocation of localizer with upgrade from 8 to 14 Antennae Array	2001
Construction of Taxiway M	2001
Expansion of Westside aircraft parking ramp	2001
Construction of aircraft wash-rack pollution discharge elimination system	2001
Publication of three GPS non-precision approaches: -RNAV (GPS) Rwy 11 -RNAV (GPS) Rwy 29 -GPS-A	2001
Construction of Taxiway H	2002
Reconstruction of Taxiway C (instead of constructing a Taxiway D)	2002
Safety Area drainage improvements	2002
Construction of service vehicle access road on west end of Rwy 11-29	2002
Construction of 200-foot Blast Pad (West end, Rwy 11-29)	2002
Pavement rehabilitation of Taxiway A (parallel taxiway to Rwy 11-29)	2002/2003
ASOS Relocation	2003

Source: Airport Records.

AIRPORT FACILITIES

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

AIRSIDE FACILITIES

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

TABLE 1C
Airside Facility Data
San Luis Obispo County Regional Airport

	Runway 7-25	Runway 11-29
Runway Length (feet)	3,260	5,300
Runway Width (feet)	100	150
Runway Surface Material	Asphalt	Asphalt (Grooved)
Condition	Fair	Good
Pavement Markings	Basic	Precision (11) Nonprecision (29)
Runway Load Bearing Strengths (lbs.)		
Single Wheel Loading (SWL)	12,500	50,000
Double Wheel Loading (DWL)	12,500	65,000
Runway Lighting	None	High Intensity
Taxiway Lighting	Medium Intensity Taxiway Lighting (MITL)	
Approach Aids	None	MALSR (11) VASI-4L (11 and 29)
Instrument Approach Procedures	ILS Runway 11 RNAV (GPS) Runway 11-29 VOR or GPS-A	
Weather or Navigational Aids	Automated Surface Observation System (ASOS) Segmented Circle Lighted Wind Cone	

Source: *Airport/Facility Directory, Southwest U.S.* (July 10, 2003).

Runways

The existing runway configuration at San Luis Obispo County Regional Airport includes two intersecting runways (Runway 7-25 and Runway 11-29). The primary runway, Runway 11-29, is oriented in a northwest-southeast manner, 5,300 feet long, 150 feet wide, and constructed of asphalt. The asphalt is grooved to aid with aircraft braking and water runoff. Runway 29 has a displaced landing threshold of 500 feet. Runway 7-25 is 3,260 feet long, 100 feet wide, oriented in an east-west manner, and constructed of asphalt.

The load bearing strengths of each runway were also examined. Single wheel loading (SWL) refers to the design of certain aircraft landing gear which has a single wheel on each main landing gear strut. Dual wheel landing (DWL) refers to the design of certain aircraft landing gear which have two wheels on each main landing gear strut. The load bearing strengths on

02MP21-1A-8/24/04

SAN LUIS OBISPO COUNTY
REGIONAL AIRPORT

Exhibit 1B
EXISTING AIRSIDE FACILITIES

Runway 11-29 are: 50,000 pounds SWL and 65,000 pounds DWL. For Runway 7-25, the load bearing strengths are: 12,500 pounds for SWL and DWL.

Both ends of Runway 11-29 are equipped with blast pads. Blast pads are paved areas beyond the runway end intended to reduce soil erosion and damage caused by the jet blast of departing aircraft. This reduces the chances for debris accumulating on the runway. Holding aprons, which allow aircraft holding for departure to be passed by other aircraft, are also available at both ends of Runway 11-29.

Taxiways

Runway 11-29 is equipped with a full-length parallel taxiway (A), which is 50 feet wide. Two sections of Taxiway A were overlaid at the beginning of 2003; however, approximately 500 feet of taxiway between the terminal ramp and control tower was not repaved.

At its closest point, the taxiway centerline is 325 feet from the runway centerline. Several entrance/exit and connector taxiways are also available. The taxiway system at the airport is identified on **Exhibit 1B**.

Airfield Lighting

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

Identification Lighting: The location of the airport at night is universally identified by a rotating beacon. A rotating beacon projects two beams of light, one white and one green, 180 degrees apart. The rotating beacon at San Luis Obispo County Regional Airport is located east of the terminal building.

Pavement Edge Lighting: Pavement edge lighting utilizes light fixtures placed near the edge of the pavement to define the lateral limits of the pavement. This lighting is essential for safe operations during night and/or times of low visibility, in order to maintain safe and efficient access to and from the runway and aircraft parking areas. Runway 7-25 does not have runway lighting and can only be used for daytime visual approach procedures. Runway 11-29 is equipped with high intensity runway lighting (HIRL). Taxiways at the airport are equipped with medium intensity taxiway lighting (MITL).

Visual Approach Lighting: Two types of approach lighting systems are available at the airport to provide the pilot with visual clues as to the aircraft's position relative to the runway. A visual approach slope indicator (VASI-4L) is installed at the approach ends of Runway 11-29. A VASI consists of a system of lights located at various distances from the runway threshold. When interpreted by the pilot, these lights give him or her an indication of being above, below, or on the designed descent path to the runway.

The approach end of Runway 11 is equipped with a Medium Intensity Approach Lighting System with Runway Alignment Indicator Lights (MALSR). A MALSR provides visual guidance to landing aircraft by radiating light beams in a directional pattern by which the pilot aligns the aircraft with the extended centerline of the runway.

Runway End Identification Lighting

Runway end identifier lights (REILs) provide rapid and positive identification of the approach end of a runway. REILs are typically used on runways without more sophisticated approach lighting systems. The REIL system consists of two synchronized flashing lights, located laterally on each side of the runway facing the approaching aircraft. REILs are installed on the end of Runway 29.

Pilot-Controlled Lighting: All airfield lighting systems are controlled through a pilot-controlled lighting system (PCL). This allows pilots to increase the intensity of the airfield lighting systems from the aircraft with the use of the aircraft's radio transmitter. At San Luis Obispo County Regional Airport, Runway 11-29 is equipped with PCL.

Pavement Markings

Pavement markings aid in the movement of aircraft along airport surfaces and identify closed or hazardous areas on the airport. The basic pavement markings on Runway 7-25 identify the runway designation, threshold, and centerline. The nonprecision markings on Runway 29 identify the runway designation, displaced threshold, centerline, side stripes, and aiming point. The precision markings (for the ILS approach) on Runway 11 identify the runway designation, threshold, centerline, side stripes, aiming point, and touchdown zone.

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

Weather Reporting

The airport is equipped with an automated surface observation system (ASOS). 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, wind speed, altimeter setting (barometric pressure), and density altitude (airfield elevation corrected for temperature). The ASOS at San Luis Obispo County Airport is located on the west side of the field, near the glideslope antenna.

Visual Aids

The airport is equipped with a lighted wind cone and segmented circle, which provides pilots with information about wind conditions. A segmented circle provides traffic pattern information to pilots. The lighted wind cone and segmented circle are located south of Runway 11-29 at mid-field. Runway 11-29 also has lighted supplemental wind cones at each end.

LANDSIDE FACILITIES

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

Passenger Terminal Building

The existing passenger terminal building faces Runway 11-29 and is accessed from Aero Drive. The terminal building totals approximately 14,400 square feet and was constructed in 1983. It was remodeled in 2000 to provide additional airline outbound bag area, arrival area (by relocating rental car counters into a new area), and departure lounge area (64 total seats). Hours of operation are from 5:00 a.m. to midnight (or the arrival of the last airline flight). A layout of the existing terminal building, as functional uses and square footage, is presented on **Exhibit 1D**. The county is in the process of developing plans to construct a new terminal facility south and east of the current structure.

General Aviation Operators

A full range of aviation services are provided at San Luis Obispo County Regional Airport. There are two fixed based operators (FBOs) available at the airport; ACI Aviation Services and San Luis Obispo Fuel Service. These two FBOs offer aviation fuel (100LL and Jet A), aircraft hangars, a passenger terminal and lounge, aircraft charters, aircraft maintenance, catering, rental cars, and courtesy transportation. In addition to these two FBOs, several additional aviation businesses are available at the airport. A brief description of these businesses and the services they offer are listed below:

- **Air San Luis** – Flight training, aircraft rental, aerial tours/sightseeing, aircraft charters, aircraft maintenance/ modifications, aircraft painting/interiors

- **Coastal Air Maintenance** – Aircraft maintenance, aircraft parts, oxygen service

- **Experimental Aircraft Association (EAA), Chapter 170** – Aviation organization

TABLE 1D
Landside Facility Inventory
San Luis Obispo County Regional Airport

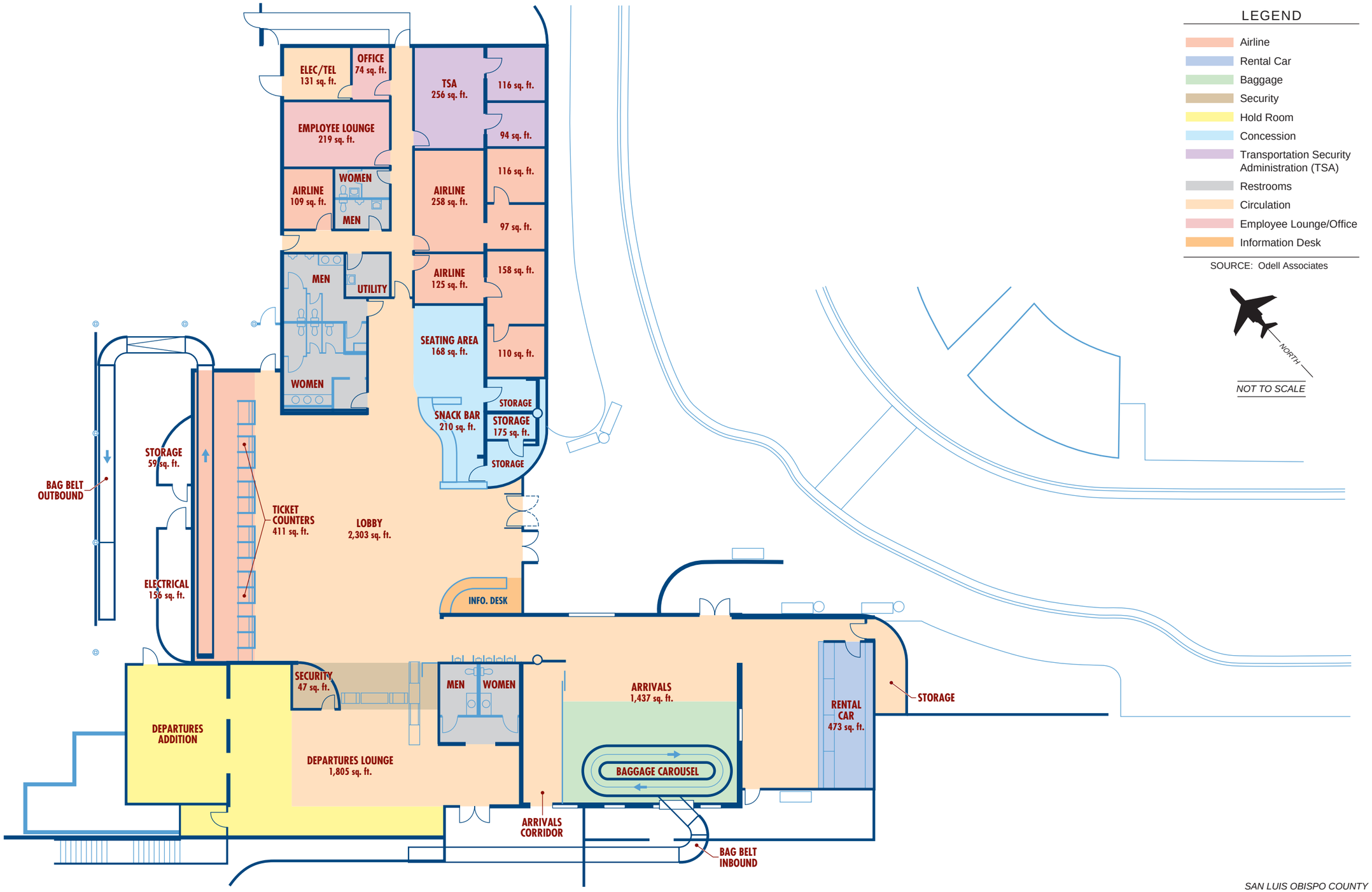
Facility No.	Facility Description	Building Area (S.F.)
1	Administration/Terminal Building	14,400
2	Spirit of San Luis Restaurant	2,200
3	Electrical Vault	400
4	Air Traffic Control Tower (ATCT)	1,900
5	Fixed Based Operator and Shop	2,300
6	Hangar and Shop	5,900
7	Hangar and Shop	3,400
8	Hangar and Shop	6,100
9	Portable Hangar and Shop	600
10	Hangar and Shop	2,100
13	T-Hangar (9 units)	10,100
14	T-Hangar (5 units)	3,000
15	T-Hangar (5 units)	3,900
17	Portable Hangar (20 units)	13,430
18	ARFF Facility - To be constructed.	8,700
19	Animal Shelter	4,500
21	Hangar (2 units)	6,400
22	Hangar (2 units)	11,100
23	Hangar (6 units)	11,100
24	Hangar (6 units)	7,300
25	T-Hangar (14 units)	12,100
26	T-Hangar (14 units)	12,100
27	Hangar (6 units)	15,100
28	Hangar/Fixed Base Operator/Shop (D) (7 units)	25,100
29	Hangar/Fixed Base Operator/Shop (C) (5 units)	14,100
30	Hangar/Fixed Base Operator/Shop (B) (3 units)	8,200
31	Hangar/Fixed Base Operator/Shop (A) (2 units)	11,100
32	Portable Hangar (7 units)	7,800
33	T-Hangar (9 units)	10,600
34	Fixed Base Operator –Air San Luis (ASL)	1,500
35	Portable Hangar (5 units)	3,600
36	T-Hangar (7 units)	7,600
37	T-Hangar (8 units)	7,600
38	Storage Sheds	3,000
39	Fuel Tanks – Above Ground (2)	-
40	American Eagle Hangar	22,500
41	Maintenance Building	3,200

02MP21-1C-8/24/04

SAN LUIS OBISPO COUNTY
REGIONAL AIRPORT

Exhibit 1C
EXISTING LANDSIDE FACILITIES

02MP21-1D-10/15/03



LEGEND

- Airline
- Rental Car
- Baggage
- Security
- Hold Room
- Concession
- Transportation Security Administration (TSA)
- Restrooms
- Circulation
- Employee Lounge/Office
- Information Desk

SOURCE: Odell Associates

NORTH

NOT TO SCALE

SAN LUIS OBISPO COUNTY
REGIONAL AIRPORT

Exhibit 1D
TERMINAL BUILDING LAYOUT

- **Golden State Propeller** – Aircraft maintenance, aircraft parts
- **Helipro Inc.** – Flight training, aircraft rental, aerial tours/ sightseeing
- **MarcAir** – Aircraft charter
- **PCF Aviation** – Passenger terminal and lounge, flight training, aircraft rental, aerial tours/sightseeing, aircraft charters, pilot supplies, Internet access
- **San Luis Avionics** – Avionics sales and service
- **San Luis Obispo Pilots Association (SLOPA)** – Aviation organization
- **Shoreline Helicopter** – Scenic tours
- **Spirit of San Luis** – Restaurant
- **Victory Aviation** – Flight Training
- **Vintage Aero** – Aircraft maintenance, aircraft parts

Aircraft Storage Facilities

Hangar space at San Luis Obispo County Regional Airport is comprised of large conventional hangars, smaller executive hangars, T-hangars, and port-a-port hangars. Conventional hangars provide a large, open space, free from roof support structures. They have the capability to accommodate several aircraft simultaneously, and are typically 10,000 square feet or greater in size. Executive hangars provide the same type of aircraft storage as conventional hangars, but are normally less than 10,000 square feet. T-hangars provide for individual hangar facilities within a larger contiguous facility. Port-a-port hangars (portables) are similar to T-hangars in that they provide individual aircraft storage, but they can be easily relocated or moved. **Exhibit 1C** (corresponds with **Table 1D**) depicts the location of aircraft storage facilities at San Luis Obispo County Regional Airport.

Maintenance/Storage

A 3,200 square-foot maintenance building is located northwest of the terminal building. This facility is used to store equipment and vehicles used in general maintenance activities at the airport.

Aircraft Parking Aprons

There are three apron areas at San Luis Obispo County Regional Airport. There is a commercial apron in front of the passenger terminal to serve scheduled flights. This concrete apron totals approximately 25,000 square yards. An apron used for general aviation and air cargo is located east of the commercial apron and totals approximately 30,000 square yards.

There are approximately 65 aircraft tiedown positions available on this apron for single/multi-engine based and transient aircraft. The third apron area, which totals approximately 40,000 square yards, is located southwest of the intersection of Runways 7-25 and 11-29. There are approximately 96 aircraft tiedown positions on this apron for single/multi-engine based and transient aircraft.

Terminal Access and Parking

Access to the terminal building is via Aero Drive from Highway 227. Aero Drive extends south along the east side of the terminal building, then turns east and loops around a parking lot to connect with Airport Drive. A curb cut along the portion of Aero Drive that parallels the ticket lobby is available for the loading and unloading of passengers and luggage. A curb cut directly opposite of this area is available for the queuing of taxis.

There are a total of approximately 566 parking spaces (public and rental car) available at San Luis Obispo County Regional Airport, in five separate parking lots. These include short-term, long-term, and handicapped spaces. Parking Lot #1 is located on the north side of the terminal building, west of Aero Drive. Based upon the current configuration, there are 84 parking spaces within this lot; 80 long-term and four handicapped parking spaces. Parking Lot #2 is circled by Aero Drive and presently has 80 24-hour metered spaces, 13 30-minute metered spaces, and six handicapped parking spaces. Patrons can also use parking envelopes to park for 72 hours maximum at any of the 24-hour meters. Parking Lot #3 is located east of Aero Drive and has 84 rental car ready spaces, and 11 restaurant employee spaces. A pedestrian ramp provides access to Parking Lot #3. Parking Lot #4, which is located at the intersection of Aero Drive and Airport Drive, has 71 long-term spaces and three recreational vehicle spaces. Parking Lot #5 is located north of Parking Lot #4 along Aero Drive and has approximately 450 long-term parking spaces. Terminal employee parking is located in a small lot west of the terminal building. Employee parking is also available along Airport Drive. The parking lots are identified on **Exhibit 1C**.

Fuel Facilities

Two 15,000-gallon aboveground fuel tanks (100LL and Jet A) are located on the west apron and provide fuel storage at San Luis Obispo County Regional Airport. Fueling to aircraft is provided by multiple fueling trucks.

Temporary fuel storage is located on the east apron and includes 12,000 gallons of 100LL fuel and 15,000 gallons of Jet A fuel. In this same location, there is also a 3,000-gallon tank of automobile gas, which is available for use by all rental car companies located on-airport.

Aircraft Rescue and Firefighting (ARFF)

The airport's previous ARFF facility, Fire Station 21, was constructed in 1977. The station, which was located on the east side of the airfield, adjacent to Highway 227, has been razed. A new facility, which is being constructed north of the old site, will total 8,700 square feet.

The airport is required to maintain airport rescue and firefighting (ARFF) capabilities under F.A.R. Part 139, which governs the operation of airports with scheduled or unscheduled passenger service by aircraft with more than 30 seats. San Luis Obispo County Regional Airport has been classified with Index A requirements, which apply to airports servicing aircraft less than 90 feet in length. The airport operates under Index A, but its equipment meets the more demanding requirements of Index B, which apply to airports servicing aircraft less than 126 feet. Specifications have been developed for the trucks in terms of dry chemicals, water, and foam application agents they are required to carry.

Utilities

Utilities on the airport property are provided by the following companies:

- Electricity – Pacific Gas & Electric
- Natural Gas – Southern California Gas Company
- Water – City of San Luis Obispo
- Telephone – Pacific Bell

ENROUTE NAVIGATION AND AIRSPACE

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

The VOR, in general, provides azimuth readings to pilots of properly equipped aircraft by transmitting a radio signal at every degree to provide 360 individual navigational courses. Frequently, distance measuring equipment (DME) is combined with a VOR facility (VOR/DME) to provide distance as well as direction information to the pilot. In addition, military TACAN and civil VORs are commonly combined to form a VORTAC. A VORTAC provides distance and direction information to civil and military pilots. Pilots flying to or from the airport can utilize the Morro Bay VORTAC located 5.5 miles west of the airport. **Exhibit 1E**, a map of the regional airspace system, depicts the location of the Morro Bay VORTAC.

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

satellites placed in orbit around the globe to transmit electronic signals, which properly equipped aircraft use to determine altitude, speed, and position information. GPS allows pilots to navigate to any airport in the country and they are not required to navigate using a specific navigational facility. The FAA is proceeding with a program to gradually replace all traditional enroute navigational aids with GPS over the next 20 years.

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

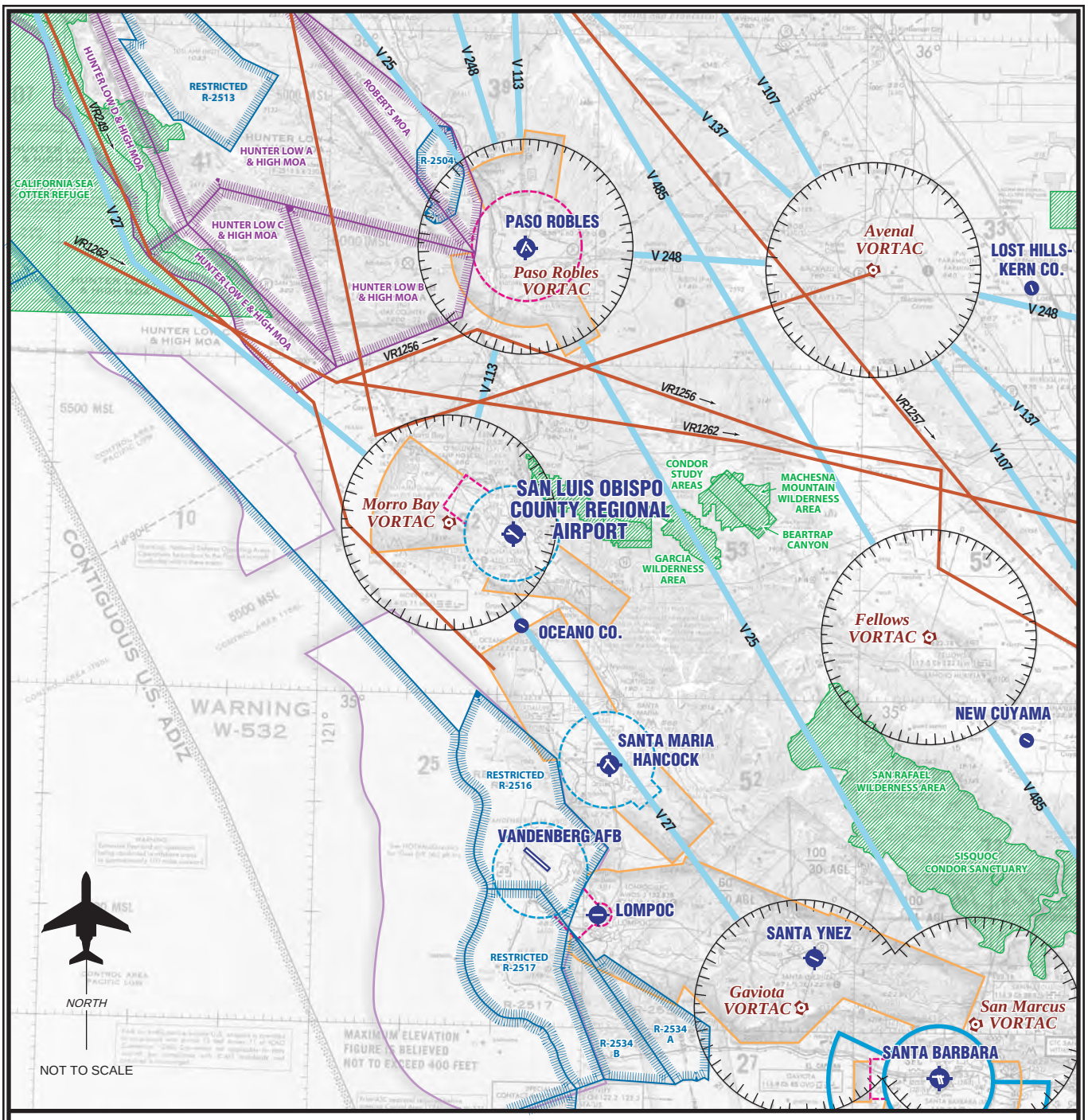
INSTRUMENT APPROACH PROCEDURES

Instrument approach procedures are a series of predetermined maneuvers established by the FAA using electronic navigational aids that assist pilots (operating properly equipped aircraft) in locating and landing at an airport during low visibility and cloud ceiling conditions. At San Luis Obispo County Regional Airport, there are four published public instrument approaches: ILS Runway 11, RNAV (GPS) Runway 11, RNAV (GPS) Runway 29, and VOR/TACAN (GPS-A). Only the approach to Runway 11 is a precision instrument approach, providing the pilot with vertical descent information as well as course guidance information.

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

The ILS Runway 11 approach provides the airport with its lowest minimums. Utilizing this approach, a properly equipped aircraft can land at the airport with 200-foot cloud ceilings and one-half mile visibility for aircraft in any category. The ILS Runway 11 approach can also be utilized as a localizer only or circling approach. When using only the localizer portion of the ILS (for course guidance only), the cloud ceilings increase to 900 feet above ground level for all aircraft categories and the visibility minimums increase to three-fourths mile for aircraft in category B; two miles for aircraft in category C; and two and

02MP21-1E-8/24/04



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'
- VORTAC
- Compass Rose
- Victor Airways
- Military Training Routes
- Wilderness Areas
- Class C Airspace
- Class D Airspace
- Class E Airspace
- Class E Airspace with floor 700 ft. above surface
- Class E Airspace with floor 1200 ft. or greater above surface that abuts Class G airspace
- Prohibited, Restricted, Warning and Alert Area
- Military Operations Ares (MOA)

Source: Los Angeles Sectional Chart, US Department of Commerce, National Oceanic and Atmospheric Administration
July 10, 2003

SAN LUIS OBISPO COUNTY REGIONAL AIRPORT

Exhibit 1E
AREA AIRSPACE

one-fourth miles for aircraft in category D. When using the ILS approaches to land at a different runway end (defined as a circling approach), the cloud ceilings increase to 900 feet above ground for aircraft in categories A and B; 1,000 feet for aircraft in category C; and 1,100 feet for aircraft in category D. The visibility minimums increase to one mile for aircraft in category A; one and one-fourth miles for aircraft in category B; two and three-fourth miles for aircraft in category C; and three miles for aircraft in category D.

Vicinity Airspace

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

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

Airspace in the vicinity of San Luis Obispo County Regional Airport is depicted on **Exhibit 1E**. Class D airspace surrounds the airport in a radius of approximately five statute miles, beginning at the surface and extending up to 2,700 feet MSL. This Class D airspace is in effect when the tower is operating (6:00 a.m. to 8:00 p.m.). During the period when the airport traffic control tower is closed, the Class D airspace surrounding the airport reverts to Class E airspace.

For aircraft arriving or departing the regional area using VOR facilities, a system of Federal Airways, referred to as Victor Airways, has been established. Victor Airways are corridors of airspace eight miles wide that extend upward from 1,200 feet AGL to 18,000 feet MSL and extend between VOR navigational facilities. As shown on **Exhibit 1E**, Victor Airways in the

area emanate from the Morro Bay VORTAC.

There are several areas of special-use airspace in the vicinity of the airport. This includes Military Operations Areas (MOAs), restricted areas, and control areas. Civil aircraft operations within these areas are specifically restricted at various times and altitudes. Located to the northwest of the airport are the Hunter Low A, Low B, Low D, Low E, and High MOAs; Roberts MOA; and restricted areas R-2504 and R-2513. To the south of the airport are restricted areas R-2516, R-2517, R-2534A, and R-2534B. West of the airport, over the Pacific Ocean, is Control Area 1155L. The hours that these areas are in use and the altitudes that are restricted vary. This information can be found on the Los Angeles Sectional Chart.

Air Traffic Control

The airport traffic control tower at San Luis Obispo County Regional Airport controls air traffic within the Class D airspace surrounding the airport. The airport does not have local radar coverage (below 5,000 feet), although the FAA is in the process of adding coverage along the Central Coast from Santa Barbara. The airport traffic control tower is located east of the passenger terminal building and operates daily from 6:00 a.m. to 8:00 p.m.

Aircraft arriving and departing the San Luis Obispo County Regional Airport area are controlled by the Los Angeles Air Route Traffic Control Center (ARTCC). ARTCCs control aircraft in a large geographic area. The Los Angeles ARTCC serves primarily the southern one-third of the State of California. All aircraft in radio communication with the ARTCC will be provided with altitude (IFR aircraft), aircraft separation (all IFR and some VFR aircraft), and route guidance (IFR aircraft) to and from the airport. The ARTCC directs aircraft until the pilot can contact the airport traffic control tower on the airport. The Hawthorne Flight Service Station (FSS) provides additional information to pilots operating in the vicinity of the airport.

AREA AIRPORTS

A review of airports within 30 nautical miles of San Luis Obispo County Regional Airport has been made to identify and distinguish the type of air service provided in the area surrounding the airport. Public-use airports within 30 nautical miles of the airport were previously illustrated on **Exhibit 1E**. Information pertaining to each airport was obtained from FAA records.

Oceano County Airport is located approximately eight nautical miles (nm) south of the airport. Oceano County Airport is owned and operated by San Luis Obispo County. Runway 11-29 is 2,325 feet long, 50 feet wide, constructed of asphalt, and limited to use by aircraft of 12,500 pounds or less. The airport is not equipped with a control tower and does not have any published instrument approaches. There are 21 aircraft based at Oceano

County Airport, all of which are single-engine. Services available at the airport include aircraft parking (ramp and tiedown) and aerial tours/ sightseeing.

Santa Maria Public/Captain G. Allan Hancock Field is located approximately 22 nm south-southeast of the airport. There are two runways available for use. The longest runway is 6,304 long, 150 feet wide, and constructed of asphalt with a grooved surface. The airport is served by a control tower which operates from 6:00 a.m. to 10:00 p.m. There are four published instrument approaches available at the airport. Approximately 198 aircraft are based at the airport, mostly single-engine. Services available at the airport include 100LL and Jet A fuel sales, tie-downs, aircraft maintenance, flight instruction, aircraft rental, aerial tours/sightseeing, aircraft painting/interior, and avionics sales and service. Scheduled airline passenger service is provided from this airport.

Paso Robles Municipal Airport is located approximately 26 nm north of the airport. There are two runways available for use. The longest runway is 6,009 feet long, 150 feet wide, and constructed of asphalt. The airport is not served by a control tower. There are three published instrument approaches to the airport. Approximately 160 aircraft are based at the airport, the majority of which are single-engine. Services available at the airport include 100LL and Jet A fuel sales, tie-downs, aircraft maintenance, flight instruction, aircraft charters, and aerial tours/sightseeing.

LAND USE REGULATIONS

The **San Luis Obispo General Plan** outlines the desired future land use patterns for the city. The most recent General Plan was adopted in December of 2001. The General Plan Map associated with that document designated the land use for the parcels immediately to the north, west, and south of the airport as Service and Manufacturing. This general plan classification includes uses such as vehicle repair and sales, fabrication, storage, and certain types of offices. Additionally, the General Plan designated the parcels to the southwest as Suburban Residential. This area will be developed with houses on one-acre lots and limited municipal services.

Northwest of the airport is an area that is subject to the **Airport Area Master Plan**. A draft version of this document was presented for comments in 2002, but a final plan has not been formally adopted.

The **Margarita Area Specific Plan** is for a residential development northwest of the airport. The Specific Plan has not been formally adopted by the City of San Luis Obispo. However, the Airport Land Use Commission has formulated specific policies for this development.

The land southeast of the airport is under the planning jurisdiction of the County of San Luis Obispo. This land is zoned for agricultural use.

San Luis Obispo County Regional Airport's rules and regulations regarding height and hazard zoning are found in

the county's General Plan, Land Use Ordinance, Title 22.

SOCIOECONOMIC CHARACTERISTICS

A variety of historical and forecast socioeconomic data related to the regional area was collected for use in various elements of this master plan. This information assists in the determination of aviation service level requirements at the airport. Aviation activity is influenced by the population base, economic strength of the region, and the ability of the region to sustain a strong economic base over an extended period of time. Historical population, employment, and economic data were obtained for use in this study.

POPULATION

Population is one of the most important elements to consider when planning for future needs of the airport. Historical population data was obtained from the U.S. Census Bureau. According to 2000 Census data, California had the largest population increase of all fifty states since 1990, adding nearly four million people, with an average annual growth rate of 1.3 percent. As a result, California's 33.9 million residents make it the most populous state in the country and account for 12 percent of the nation's total population. The California State Department of Finance, Demographic Research Unit, provided population projections through the year 2020. Extrapolation of these projections yields approximately 47.8 million people by the year 2023.

San Luis Obispo County experienced an average annual growth rate of 1.3 percent between 1990 and 2000, adding approximately 29,500 new residents. The county is expected to grow to 412,760 residents by the year 2023, an increase of 166,000 residents over the year 2000. Historical and forecast population data for San Luis Obispo County and the State of California is presented in **Table 1E**.

TABLE 1E
Historical and Forecast Population
San Luis Obispo County and State of California

	HISTORICAL		FORECAST			
Area	1990	2000	2008	2013	2023	Avg. Ann. Growth Rate (2000-2023)
San Luis Obispo County	217,162	246,681	308,140	343,030	412,760	2.26%
State of California	29,760,021	33,871,648	39,122,750	41,714,220	47,796,040	1.51%

Source: Historical – U.S. Census Bureau; Forecast – Interpolated from California State Department of Finance, Demographic Research Unit.

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 make-up and health are significantly impacted by the number of jobs, variety of employment opportunities, and types of wages provided by local employers.

Since 1993, annual average unemployment rates for both San Luis Obispo and neighboring counties have been consistently lower than California's unemployment rate, suggestive of employment opportunities in the area. The county's unemployment rate has continuously fallen since 1993, when it was at a high of 8.1 percent. Currently, the county's unemployment rate (an average of January through July) stands at 3.4 percent. While the state's unemployment rate has also decreased since 1993, it is still twice as high as that of the county's. **Table 1F** provides historical employment characteristics in San Luis Obispo County and the State of California from 1993 to present.

TABLE 1F
Historical Unemployment Rates

	1993	1995	1997	1999	2001	2003*
San Luis Obispo County	8.1%	6.6%	4.7%	3.2%	2.8%	3.4%
State of California	9.4%	7.8%	6.3%	5.2%	5.4%	6.8%

Source: California Labor Market Information.
*2003 totals are year-to-date average (January-July).

Historical and forecast employment by economic sectors for San Luis Obispo County was also examined. This information, which is presented in **Table 1G**, was obtained from the *Complete Economic and Demographic Data Source* (CEDDS) 2003.

TABLE 1G
Employment by Economic Sector
San Luis Obispo County

Economic Sector	2003	% of Total Employment	2023	% of Total Employment	Avg. Annual Growth Rate (2003-2023)
Total Employment	**138,760**	**100.0%**	**198,390**	**100.0%**	**1.8%**
Mining	320	0.2%	375	0.2%	0.8%
Construction	11,280	8.1%	14,850	7.5%	1.4%
Manufacturing	9,310	6.7%	12,680	6.4%	1.6%
Transportation & Public Utilities	6,070	4.4%	7,540	3.8%	1.1%
Wholesale Trade	4,290	3.1%	5,960	3.0%	1.7%
Retail Trade	28,580	20.6%	36,150	18.2%	1.2%
Finance, Insurance, & Real Estate	13,330	9.6%	16,940	8.5%	1.2%
Services	44,190	31.8%	74,900	37.8%	2.7%
Government	21,390	15.4%	28,995	14.6%	1.5%

Source: Complete Economic and Demographic Data Source (CEDDS) 2003.

San Luis Obispo's economy is based largely on tourism and education. As a result, services, government, and retail trade are significant industries in the county. Services, the largest industry in the county, provides over 44,000 jobs, or 31.8 percent of total employment. Retail trade, the second largest industry, accounts for just over 20 percent of total employment, with 28,850 jobs reported. Government is also a significant sector of employment in the county, with over 21,000 jobs reported in 2003. The majority of government jobs in San Luis Obispo County are in the local government sector.

The current industry projections for the county, through the year 2023, indicate that total employment will increase at an average annual rate of 1.8 percent, adding over 198,000 new jobs. The services, retail trade, and government industries will continue to dominate employment, accounting for over 70 percent of all employment in San Luis Obispo County by 2023. Strength factors for future growth in the county include education, through county and post-secondary schools, and tourism, which are expected to remain strong assets in the county's economic growth.

The major employers in San Luis Obispo County have also been examined. The 15 largest employers in the county are presented in **Table 1H**. The total number of employees was not available; therefore, the employers are listed in alphabetical order.

TABLE 1H
Major Employers in San Luis Obispo County

Employer Name	Location (city)	Industry
Arroyo Grande Community Hospital	Arroyo Grande	Hospital/Medical
Arroyo Grande High School	Arroyo Grande	Education
Atascadero State Hospital	Atascadero	Hospital/Medical
California Polytech State University	San Luis Obispo	Education
California State Prison	San Luis Obispo	Government
French Hospital Medical Center	San Luis Obispo	Hospital/Medical
JIT Manufacturing Inc.	Paso Robles	Misc. Manufacturing
Mid-State Bank	Arroyo Grande	Commercial Banking
Pacific Gas & Electric Co.	San Luis Obispo	Electric Services
Paris Precision Products	Paso Robles	Fabricated Structural Metal Products
Ramirez Farm Labor	Shandon	Personnel Supply Services
Sierra Vista Regional Medical Center	San Luis Obispo	Hospital/Medical
Talley Farms	Arroyo Grande	Wholesale Grocery & Related Prod.
Twin Cities Community Hospital	Templeton	Hospital/Medical
Wal-Mart	Paso Robles	Department Store

Source: California Labor Market Information, Employment Development Department.

INCOME

Table 1J compares the per capita personal income (PCPI), adjusted for1996 dollars, for San Luis Obispo County, the State of California, and the United States. As shown in the table, the PCPI of San Luis Obispo County has remained lower than that of both the State of California and the United States since 1990. This trend is expected to continue through the planning period. Forecasts indicate an average annual increase of 1.1 percent (2000-2023) for the county, the state, and the nation.

TABLE 1J
Personal Income Per Capita (1996$)

	HISTORICAL			FORECAST			
Area	1990	2000	Avg. Ann. Increase (1990-2000)	2008	2013	2023	Avg. Ann. Increase (2000-2023)
SLO County	$20,820	$25,070	1.9%	$27,140	$28,660	$32,130	1.1%
California	$25,550	$29,930	1.6%	$32,450	$34,250	$38,180	1.1%
United States	$22,860	$27,430	1.8%	$29,950	$31,690	$35,510	1.1%

Source: Complete Economic and Demographic Data Source (CEDDS) 2003.

SUMMARY

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

DOCUMENT SOURCES

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

1998 Airport Master Plan Update, Coffman Associates in association with Tartaglia Engineering and Dr. Lee McPheters.

Airport/Facility Directory, Southwest U.S., U.S. Department of Transportation, Federal Aviation Administration, National Aeronautical Charting Office, September 4, 2003 Edition.

Drainage Study for San Luis Obispo County Regional Airport, Tartaglia Engineering, July 2001.

Economic and Operational Analysis of Regional Jets, prepared for San Luis Obispo Council of Governments, SH&E International Air Transport Consultancy, September 2002.

Los Angeles Aeronautical Chart, U.S. Department of Transportation, Federal Aviation Administration, National Aeronautical Charting Office, 73rd Edition, July 10, 2003.

National Plan of Integrated Airport Systems (NPIAS), U.S. Department of Transportation, Federal Aviation Administration, 2001-2005.

Pavement Management System for San Luis Obispo County Regional Airport, Tartaglia Engineering, March 2001.

San Luis Obispo Airport Area Specific Plan, City of San Luis Obispo, January 2002.

San Luis Obispo County Profile, State of California Employment Development Department, 2002.

U.S. Terminal Procedures, Southwest U.S., U.S. Department of Transportation, Federal Aviation Administration, National Aeronautical Charting Office, August 8, 2003 Edition.

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

California Labor Market Information:
www.calmis.ca.gov

California State Department of Transportation:
www.dot.ca.gov/

City of San Luis Obispo (Homepage):
www.ci.san-luis-obispo.ca.us/

FAA 5010 Data:
www.airnav.com

San Luis Obispo County (Homepage):
www.co.slo.ca.us

San Luis Obispo County Regional Airport (Homepage):
www.sloairport.com
U.S. Census Bureau:
www.census.gov/

SAN LUIS OBISPO COUNTY
REGIONAL AIRPORT

Chapter Two
FORECASTS

FORECASTS

SAN LUIS OBISPO COUNTY
REGIONAL AIRPORT

This chapter will provide forecasts of aviation activity through the year 2023. Forecasts of annual enplanements, based aircraft, based aircraft fleet mix, annual aircraft operations, peak hour operations, and annual instrument approaches will serve as the basis for facility planning. The resulting forecast may be used for several purposes including facility needs assessments, airfield capacity evaluation, and environmental evaluations. The forecasts will be reviewed and approved by the Federal Aviation Administration (FAA) to ensure that they are reasonable projections of aviation activity. The intent is to permit San Luis Obispo County to make the necessary planning adjustments to ensure the facility meets projected demands in an efficient and cost-effective manner.

NATIONAL AVIATION TRENDS

Each year, the FAA publishes its national aviation forecast. Included in this publication are forecasts for air carriers, regional/commuters, general aviation, air cargo, and military activity. 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.

The FAA expects modest recovery in 2003. However, a return to pre-September 11 levels is not expected to be achieved until 2005, and even then the level of enplanements may not return to, or surpass those of 2001 until 2006. The majority of this decline is forecast to occur with the large air carriers, while the regional airline industry is expected to continue its growth, possibly returning to its long-term historical growth trend in 2004. Air cargo traffic is expected to grow faster than passenger traffic. 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.

The forecasts prepared by the FAA assume that aviation demand will follow a similar path to recovery, as with previous altering incidents such as the 1991 Gulf War, the 1997-98 Southeast Asia financial crisis, the 1998 Northwest Airlines' strike, or the September 11 terrorist attacks. However, these forecasts were prepared prior to the war in Iraq, which has had a negative impact on the commercial airline industry. How deeply the aviation industry is impacted can only be determined over time.

COMMERCIAL AVIATION

The events of September 11, 2001, had a profound effect on U.S. airlines, both domestically and internationally. While domestic capacity was up 0.9 percent for the entire year, it was down 19.0 percent in September, wiping out most of the gains recorded in the previous 11 months. Prior to this event, the commercial aviation industry recorded its seventh consecutive year of strong traffic growth in 2000. Domestic passenger enplanements declined 1.8 percent in 2001, while domestic load factors average 69.7 percent, down 1.2 percent from the previous year.

The year 2001 would also prove to have a disastrous effect on airline profits, with U.S. air carriers reporting operating losses of $4.3 billion ($3.2 billion occurred in the July-September quarter). This is down $12.2 billion from the previous seven years (1994-2000), when U.S. air carriers reported operating profits totaling $47.6 billion. However, losses in 2001 would have been significantly higher if the Federal government had not approved a $5.0 billion emergency aid package for U.S. airlines. This aid package is included in most air carriers' financial statements for the July-September quarter.

Following the events of September 11, 2001, many of the larger air carriers grounded a number of their older, less efficient aircraft, and deferred aircraft that were scheduled for delivery in 2002 and 2003. Orders for commercial jet aircraft totaled 851 in the first three quarters of 2001. This is a decrease of 40.6 percent from the same period in 2000. Regional jet orders were down 50.1 percent from the 659 aircraft ordered during the first nine months of 2000. However, the 2,301 orders over the past 19 quarters show

that the regional jets will continue to be the fastest growing segment of the aviation industry over the next several years. The number of large passenger jets (more than 70 seats) is forecast to decline by 0.3 percent (13 aircraft) in 2002. Over the 12-year forecast period, the number of large passenger jet aircraft is expected to increase from 4,069 in 2001, to 5,606 in 2013. This represents an annual average increase of 2.7 percent, or 128 aircraft per year. The demand for narrow body aircraft will continue to outpace the demand for the wide body fleet. The narrow body fleet is forecast to grow by 107 aircraft annually and the wide body fleet by 21 aircraft a year.

The FAA's projection for domestic and international commercial service passenger enplanements indicates relatively strong growth. However, air carrier operations are not expected to return to pre-September 11 activity levels until 2005. Domestic enplanements are projected to grow at an annual average rate of 3.1 percent over the 12-year forecast period, while international enplanements are projected to grow at an annual average rate of 4.7 percent.

REGIONAL/COMMUTER AIRLINES

The regional/commuter airline industry, defined as air carriers providing regularly scheduled passenger service and fleets composed primarily of aircraft having 70 seats or less, continues to be the strongest growth sector of the commercial air carrier industry. Dramatic growth in code-sharing 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.

The impact of September 11 on regional/commuter carriers was generally more positive than negative. This was largely because major carriers transferred a large number of routes to their regional partners. This allowed the larger carriers to cut capacity, while still maintaining presence in these markets.

Industry growth is expected 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 1,000 miles (or greater), is expected to open up new opportunities for growth in non-traditional markets. The regional airline industry will also continue to benefit from continued 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 the speed and comfort of a large jet. According to the *FAA Aerospace Forecasts,* this transfer of routes is expected to be one of the major drivers of growth during the early years of the forecast.

Regional/commuter revenue passenger miles (RPMs) are expected to increase 14.6 percent (to 35.3 billion) in 2003, 13.3 percent in 2004 (to 40.0 billion), and 9.9 percent in 2005 (to 43.9 billion). The high growth rates reflect the longer stage lengths being flown by the large number of regional jets continuing to enter the fleet. Over the 12-year forecast period, the average annual rate of growth in RPMs is 7.8 percent, for a total of 75.1 billion by 2014. Domestic passenger miles are forecast to increase at rates of 14.5, 13.4, and 10.0 percent over the first three years of the forecast period, and slow to 6.2 percent annually over the remainder of the forecast period.

Over the 12-year forecast period, the regional/commuter passenger fleet is projected to net an average annual increase of 126 aircraft, going from 2,521 aircraft in 2002, to 4,034 aircraft in 2014. During this same period, the overall fleet of turboprop aircraft will decrease by 324 aircraft. For the first three years of the forecast, 3.5 regional jets will enter the fleet for every one turboprop aircraft retired.

Regional/commuter passenger enplanements are projected to increase by 7.1 percent in 2003 (to 97.1 million), 9.7 percent in 2004 (to 106.6 million), and 7.0 percent in 2005 (to 114.0 million). The strong growth rate during this three-year period reflects the transfer of additional routes from the larger air carriers and the addition of regional jet aircraft to their fleet. It is expected that enplanements will total 174.1 million by 2014. **Exhibit 2A** depicts passenger enplanements and fleet mix forecasts for the U.S. commercial and regional/commuter market.

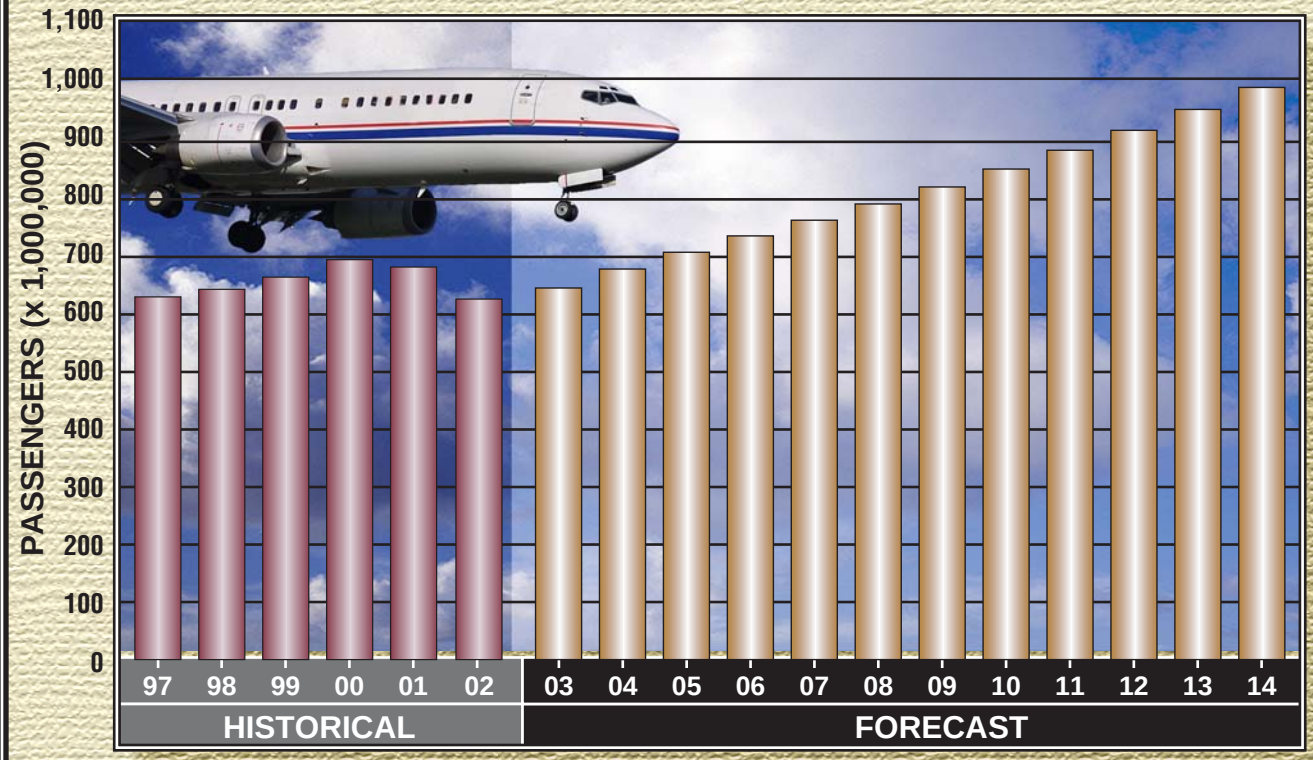
GENERAL AVIATION

Following more than a decade of decline, the general aviation industry was revitalized with the passage of the *General Aviation Revitalization Act* in 1994 (federal legislation 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.

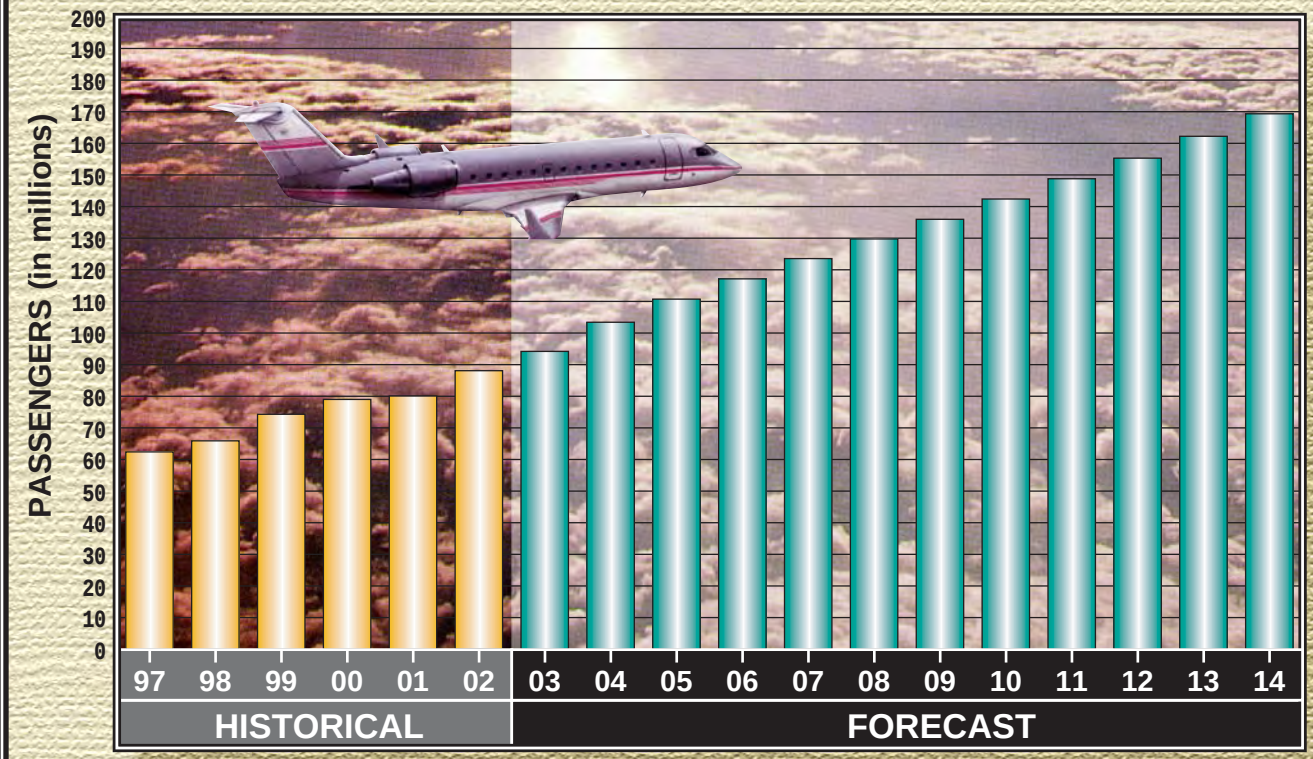
However, this continued growth in the general aviation industry slowed considerably in 2001 and 2002, negatively impacted by the events of September 11. Thousands of general aviation aircraft were grounded for weeks, due to "no-fly zone" restrictions imposed on operations of aircraft in security-sensitive areas. This, in addition to the economic recession already taking place in 2001-02, has had a profoundly negative impact on the general avia-

02MP21-2A-7/7/03

U.S. COMMERCIAL AIR CARRIERS SCHEDULED PASSENGER ENPLANEMENTS



U.S. REGIONAL/COMMUTER SCHEDULED PASSENGER ENPLANEMENTS



Source: FAA Aerospace Forecasts, FY 2003-2014

SAN LUIS OBISPO COUNTY
REGIONAL AIRPORT

Exhibit 2A
FORECAST PASSENGER ENPLANEMENTS

tion industry. Weak traffic demand, coupled with the failure of full-fare business travelers to return in any significant numbers, forced carriers to resort to discounting to fill empty seats. This had a devastating impact on both passenger yields and profits.

According to statistics released by the General Aviation Manufacturers Association (GAMA), shipments of general aviation aircraft declined for a second consecutive year in 2002. During the first three quarters of calendar year (CY) 2002, aircraft shipments and billing declined 16.9 percent and 25.2 percent, respectively. Business jet shipments were down 5.6 percent during the same period, the first reported decline since 1996. The Aerospace Industries Association of America (AIAA) expects general aviation shipments to total 2,153 in 2002, a decline of 17.7 percent. AIAA also projects that industry billings will decline 13.8 percent to $6.9 billion in 2002. This would also be the first reported decline in billings since 1990.

At the end of 2002, the total pilot population, including student, private, commercial, and airline transport, was estimated at 661,358, an increase of almost 4,000 over 2001. Student pilots were the only group to experience a significant decrease in 2002, down 8.9 percent from 2001. It is assumed that much of this decline is due to the restrictions placed on flight schools and student pilot training, particularly with regard to foreign students after September 11, 2001.

However, the events of September 11, 2001, have not had the same negative impact on the business/corporate side of general aviation. The increased security measures placed on commercial flights has increased interest in fractional and corporate aircraft ownership, as well as on-demand charter flights for short-haul routes. The most notable trend in general aviation is the continued strong use of general aviation aircraft for business and corporate uses. 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 2001, there was an estimated 211,447 active general aviation aircraft, representing a decrease of 2.8 percent from the previous year. This was the second straight year of recorded decline, following five consecutive years of growth. Single-engine piston aircraft continue to dominate the fleet, accounting for 68.6 percent of the total active fleet in 2001. The next largest groups are experimental aircraft (9.7 percent) and multi-engine piston aircraft (8.6 percent). Turboprops, rotorcraft, and turbojets make up relatively small shares of the active fleet, accounting for 3.1, 3.2, and 3.7 percent, respectively.

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 13-year forecast period, reaching 229,490 by 2014. Single-engine piston aircraft is expected to decrease from 145,034 in 2001 to 144,500 in 2002, and then begin a pe-

riod of slow recovery, reaching 149,600 in 2014. The number of multi-engine piston aircraft is expected to decline by 0.2 percent per year over the forecast period, totaling 17,810 in 2014. The turbine-powered fleet is expected to grow at an average annual rate of 2.5 percent over the forecast period. The number of turboprop aircraft is forecast to grow 1.5 percent per year, increasing from 6,596 in 2001, to 8,020 in 2014. Turbojet aircraft are expected to provide the largest portion of this growth, with an annual average growth rate of 3.6 percent. This strong growth projected for the turbojet aircraft can be attributed to a strong recovery in both the U.S. and global economy, continued success and growth in the fractional ownership industry, new product offerings (which include new entry level aircraft and long-range global jets), and a shift from commercial travel by many travelers and corporations.

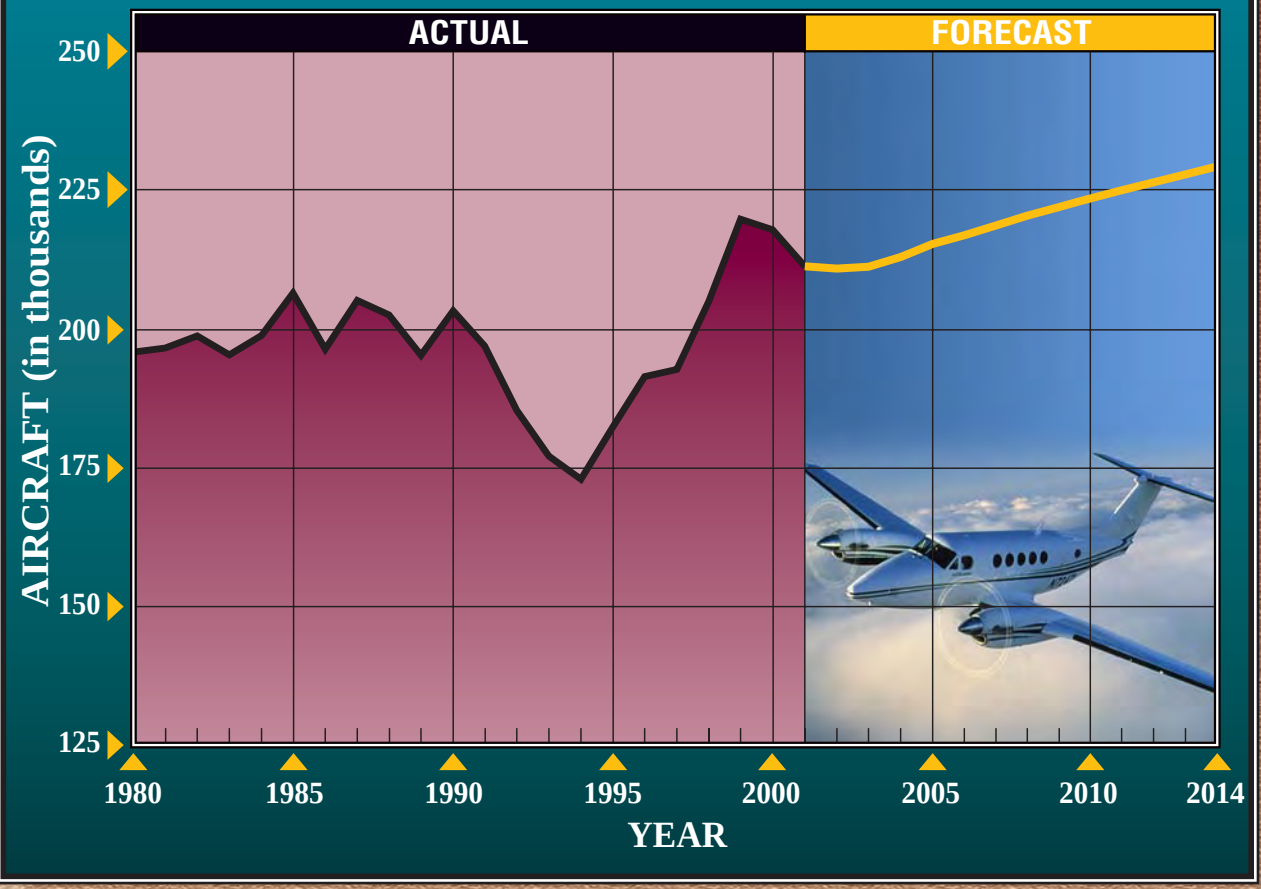
Over the past several years, manufacturer and industry programs and initiatives have continued to revitalize the general aviation industry. Notable initiatives include the "No Plane, No Gain" program promoted jointly by the General Aviation Manufacturers Association (GAMA) and the National Business Aircraft Association (NBAA). This program was designed to promote cost-effectiveness of using general aviation aircraft for business and corporate uses. Other programs, which are intended to promote growth in new pilot starts and to introduce people to general aviation include "Project Pilot," sponsored by the Aircraft Owners and Pilots Association (AOPA), "Be a Pilot," jointly sponsored and supported by more than 100 industry organizations, and "Av Kids," sponsored by the NBAA.

The general aviation industry is also launching new programs to make aircraft ownership easier and more affordable. Piper Aircraft Company has created Piper Financial Services (PFS) to offer competitive interest rates and/or leasing of Piper aircraft. The Experimental Aircraft Association (EAA) offers financing for kit-built airplanes through a private lending institution. 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.

FORECASTING APPROACH

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

ACTIVE GENERAL AVIATION AIRCRAFT



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

Year	FIXED WING				ROTORCRAFT		Experimental	Other	Total
	PISTON		TURBINE						
	Single Engine	Multi-Engine	Turboprop	Turbojet	Piston	Turbine			
2001 (Actual)	145.0	18.3	6.6	7.8	2.3	4.5	20.4	6.5	211.4
2004	144.9	18.2	6.8	8.4	2.5	4.4	20.5	6.5	213.1
2009	147.6	18.0	7.5	10.3	2.7	4.5	21.0	6.6	222.2
2014	149.6	17.8	8.0	12.3	2.8	4.6	21.5	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.

SAN LUIS OBISPO COUNTY
REGIONAL AIRPORT

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

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

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

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

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

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

AIRPORT SERVICE AREA

The service area of an airport is defined by its proximity to other airports providing similar services. The closest primary commercial service airports to San Luis Obispo County Regional Airport are Santa Maria Public Airport (22 miles SSE) and Santa Barbara Municipal Airport (63 miles SE). While Santa Maria Public Airport is only served by regional/commuters, Santa Barbara Municipal Airport offers jet service to several destinations.

The commercial service area for San Luis Obispo County Regional Airport covers the geographic areas of San Luis Obispo County, northern Santa Barbara County, and southern Monterey County.

AVIATION ACTIVITY FORECASTS

The following forecast analysis examines each of the aviation demand categories expected at San Luis Obispo County Airport over the next 20 years. Each segment will be examined individually, and then collectively, to provide an understanding of the overall aviation activity at the airport through 2023.

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

- COMMERCIAL SERVICE
  - Annual Enplaned Passengers
  - Operations and Fleet Mix
  - Peak Activity
  - Annual Instrument Approaches
- AIR CARGO
  - Enplaned Air freight
  - Annual Air Cargo Operations
- GENERAL AVIATION
  - Based Aircraft
  - Based Aircraft Fleet Mix
  - Local and Itinerant Operations
  - Peak Activity
  - Annual Instrument Approaches

COMMERCIAL SERVICE

San Luis Obispo Airport currently provides scheduled air service from three regional airlines: United Express (Skywest), American Eagle, and America West (Mesa). These regional airlines are affiliated with major airlines and connect to national and international cities. United Express offers five daily flights to San Francisco International Airport (SFO) and six daily flights to Los Angeles International Airport (LAX). American Eagle offers six daily flights to LAX and America West offers two daily flights to Phoenix Sky Harbor International Airport (PHX).

To determine the types and sizes of facilities necessary to properly accommodate present and future airline activity, two elements of commercial service must be forecast; annual enplaned passengers and annual aircraft operations. Of these, annual enplaned passengers is the most basic indicator of demand for commercial service activity. From a forecast of annual enplanements, operations and peak period activity can be projected based on the specific characteristics of passenger demand at the airport.

The term “enplanement” refers to a passenger boarding an airline flight. Enplaning passengers are then described in terms of “originating” or “transfer.” Originating passengers are those who board and depart in a commercial service aircraft from an airport. Transfer passengers are all others, including those who have departed from another location and are aboard aircraft using the airport as an intermediate stop.

Historical Enplanements

Historical passenger enplanements and the annual percentage change are presented in **Table 2A**. As shown in the table, the airport has experienced an average annual growth rate of 7.6 percent since 1982. After a 16.5 percent decrease between 1984 and 1985, enplanements rebounded and steady growth continued at the airport through 1997. These steady growth rates coincide with the entry of additional carriers into the local market and the general improvement in air service provided at the airport. The airline service history at San Luis Obispo County Regional Airport has been depicted on **Exhibit 2C**.

In the year 2000, San Luis Obispo County Regional Airport experienced a record high, with a reported 158,602 enplanements. However, the following year the airport experienced a loss of more than 5,900 enplanements, down 3.8 percent. This significant loss of enplanements in 2001 can be attributed to the events of September 11. The airport was quick to recover though, with a reported 155,177 enplanements in 2002, up 1.7 percent from 2001. Historically, enplanements at San Luis Obispo County Regional Airport have been 92 percent revenue and eight percent non-revenue.

Forecast Enplanements

Several analytical techniques have been used to examine trends in passenger growth, including several time-series and regression analyses, as well as market share analyses. Forecasts from the *FAA Terminal Area Forecasts* (TAF), the previous master plan (1998), and the 1999 *California Aviation System Plan* (CASP) were also examined.

The time-series analysis used historic enplanements data for San Luis Obispo County Airport from 1982 to 2002, and yielded a correlation coefficient (r2 value) of 0.97. As previously mentioned, if the "r2" value is greater than 0.95, it indicates good predictive reliability.

TABLE 2A
Historical Passenger Enplanements

Year	Total Enplanements	Annual % Change
1982	35,789	-
1983	48,663	+36.0
1984	59,906	+23.1
1985	50,010	-16.5
1986	59,541	+19.1
1987	76,833	+29.0
1988	78,305	+1.9
1989	85,933	+9.7
1990	93,558	+8.9
1991	97,956	+4.7
1992	107,851	+10.1
1993	109,334	+1.4
1994	120,949	+10.6
1995	132,337	+9.4
1996	137,651	+4.0
1997	154,932	+12.6
1998	149,507	-3.5
1998	152,309	+1.9
2000	158,602	+4.1
2001	152,649	-3.8
2002	155,177	+1.7

Source: Airport records.

In addition to the time-series analysis, several regression analyses were performed using socioeconomic data pertaining to population, employment, and income. These regression analyses used historic socioeconomic data

for San Luis Obispo County to analyze their correlation to historical enplanements at the airport. Correlation coefficients ranging from 0.72 to 0.78 were obtained, but were too low to be used in developing accurate forecasts.

Additional forecasting methods were also used to project future enplanements at San Luis Obispo County Regional Airport. One method examined the airport's historic market share of U.S. domestic enplanements. National forecasts of U.S. domestic enplanements are compiled each year by the FAA and consider the state of the economy, fuel prices, and prior year developments. According to the most recent publication, *FAA Aerospace Forecasts, Fiscal Years 2003*-2014, domestic passenger enplanements are forecast to increase at an average annual rate of 3.4 percent over the 12-year forecast period.

Table 2B shows San Luis Obispo County Regional Airport's share of the U.S. market for domestic annual enplaned passengers between 1992 and 2002. Overall, the airport's market share has increased since 1992. From this historical information, two projections of enplanements were developed for the airport using market share data. The first, a constant market share forecast, was prepared using 2002's market share of 0.027 percent as an indicator of future market share, and then applying that share to the forecasted U.S. domestic enplanements. This method yields 340,820 enplanements at San Luis Obispo County Regional Airport by the year 2023.

The second market share forecast, an increasing market share, was developed to represent the historical trend at the airport since 1992. This increasing market share forecast assumes that the airport will continue to increase its market share of U.S. domestic passenger enplanements and yields 441,810 enplanements by the year 2023.

As previously mentioned, the commercial service area for San Luis Obispo County Regional Airport covers the geographic areas of San Luis Obispo County, northern Santa Barbara County, and southern Monterey County. However, the majority of the airport's business is drawn from San Luis Obispo County. Therefore, only the population of San Luis Obispo County was used for comparisons with aviation activity at the airport, since it may in turn affect the demand for aviation services. Per capita ratios were determined between the population of the county and the number of reported enplanements. As shown in **Table 2C**, there were 0.48 enplanements per capita in 1992. This ratio increased through 1997, with a high of 0.65 enplanements per capita. Since 1997, the airport's ratio has decreased and was at 0.60 enplanements per capita in 2002.

In order to project future enplanements, three forecasts were developed. These forecasts are presented in **Table 2C**. The first forecast, a decreasing ratio projection, is based on the historical trend at the airport since 1997. This decreasing ratio projection assumes that the number of enplane-

02MP21-2C-7/7/03

Airlines

	1975	1980	1985	1990	1995	2000	2005
Swift Air		9/81					
Wings West Airlines / American Eagle			10/81				
Imperial Airlines – The Skyhopper			1/82-2/85				
Skywest / Delta Connection				3/86	10/97		
West Air / United Express				5/86	6/98		
Mesa Airlines / United Express					2/93	11/96	
TSA Trans States Airlines					10/94	7/95	
Skywest / United Express						10/97	
Mesa Airlines / America West Express						4/99	
Pacific Skyway						12/99	1/00

SAN LUIS OBISPO COUNTY
REGIONAL AIRPORT

Exhibit 2C
AIRLINE SERVICE HISTORY

ments per capita at San Luis Obispo County Regional Airport will continue to decrease through the planning period and yields 210,510 annual enplanements by the year 2023. A second forecast, a constant ratio projection, considers that enplanements per capita will remain static at 0.60, resulting in 247,660 annual enplanements by the year 2023. A third forecast assumes that the airport's ratio will increase, as was the overall trend between 1992 and 2002. This increasing ratio projection yields 330,210 annual enplanements by the year 2023.

TABLE 2B
Market Share Enplanements Forecasts
San Luis Obispo County Regional Airport (SBP)

Year	SBP Enplanements	U.S. Domestic Passenger Enplanements (Millions)	SBP Market Share of U.S.
1992	107,851	464.7	0.023%
1993	109,334	470.4	0.023%
1994	120,949	511.3	0.024%
1995	132,337	531.1	0.025%
1996	137,651	558.1	0.025%
1997	154,932	577.8	0.027%
1998	149,507	590.4	0.025%
1999	152,309	610.9	0.025%
2000	158,602	639.8	0.025%
2001	152,649	626.7	0.024%
2002	155,177	576.8	0.027%
Constant Market Share Projection			
2008	196,020	726.0	0.027%
2013	235,710	873.0	0.027%
2023	340,820	1,262.3	0.027%
Increasing Market Share Projection			
2008	210,540	726.0	0.029%
2013	270,630	873.0	0.031%
2023	441,810	1,262.3	0.035%

Source: Historical enplanements at SBP – airport records; Historical and forecast U.S. domestic enplanements – FAA Aerospace Forecasts – Fiscal Years 2003-2014, FAA Long-Range Aerospace Forecasts – Fiscal Years 2015, 2020, and 2025.

Another method used to forecast enplanements at San Luis Obispo County Airport examined the historical growth rate. Between 1992 and 2002, the airport experienced a 3.7 percent annual growth rate in enplanements. This growth rate was applied to the forecast years and yields 332,800 annual enplanements by the year 2023.

Previous forecasts of passenger enplanements were also examined for this study. The FAA *Terminal Area Forecasts (TAF)* present enplanements projections for all commercial service

airports in the United States. The FAA TAF for San Luis Obispo County Regional Airport projects 188,570 annual enplanements by the year 2020. Extrapolation of the FAA TAF forecast yields 202,190 annual enplanements by the year 2023. Because the airport's annual enplanements for 2002 (155,177) exceed the number of enplanements forecasted in the FAA TAF for 2008 (138,920), a comparison is not considered relevant to this analysis.

TABLE 2C
Enplanements Per Capita Forecast (San Luis Obispo County)
San Luis Obispo County Regional Airport

Year	SBP Enplanements	SLO County Population	Enplanements Per Capita
1992	107,851	222,768	0.48
1993	109,334	225,626	0.48
1994	120,949	228,520	0.53
1995	132,337	231,451	0.57
1996	137,651	234,420	0.59
1997	154,932	237,427	0.65
1998	149,507	240,472	0.62
1999	152,309	243,556	0.63
2000	158,602	246,681	0.64
2001	152,649	253,636	0.60
2002	155,177	260,788	0.60
Decreasing Ratio Projection			
2008	178,720	308,140	0.58
2013	192,100	343,030	0.56
2023	210,510	412,760	0.51
Constant Ratio Projection			
2008	184,880	308,140	0.60
2013	205,820	343,030	0.60
2023	247,660	412,760	0.60
Increasing Ratio Projection			
2008	200,290	308,140	0.65
2013	240,120	343,030	0.70
2023	330,210	412,760	0.80

Source: Historical Enplanements – Airport Records; Historical Population – U.S. Census Bureau; Forecast Population - California State Department of Finance, Demographic Research Unit.

The 1998 Airport Master Plan was also examined. This plan projected annual enplanements through the year 2020, with enplanements forecasted to reach 376,400 that year. This forecast seems somewhat high considering the airport has yet to achieve the level of enplanements forecasted in the plan for the year 2000 (196,400).

Forecasts included in the 1999 *California Aviation System Plan* (CASP) were also examined. These forecasts were developed by the California Department of Transportation Aeronautics Program. The 1999 CASP used actual enplanement totals from 1995 (132,337) as the basis for its forecasts. Both a low and a high forecast were developed and yield 240,810 and 315,180 annual enplanements, respectively, by the year 2023.

The spread within the high and low forecasts is a reasonable window within which actual enplanements may fall in the future, based upon several factors: number of local airlines, frequency, equipment, fares, non-stop destinations, and the local economy.

For planning purposes, a mid-range forecast is generally chosen if it provides a reasonable growth rate. The preferred planning forecast is an average of the forecasts and is as follows: 198,000 annual enplanements by 2008; 232,000 annual enplanements by 2013; and 301,100 annual enplanements by 2023. **Table 2D** and **Exhibit 2D** summarize the passenger enplanement forecasts developed for San Luis Obispo County Regional Airport, as well as the preferred planning forecast. As previously mentioned, revenue enplanements have historically represented 92 percent of total enplanements, while non-revenue have represented eight percent. This percentage is expected to continue through the planning period.

TABLE 2D
Summary of Passenger Enplanement Forecasts
San Luis Obispo County Regional Airport

	2002	2008	2013	2023
Time Series Analysis 1982-2002 (r2=0.97)		209,680	242,200	307,250
Market Share of U.S. Domestic Enplanements				
Constant Share Projection		196,020	235,710	340,820
Increasing Share Projection		210,540	270,630	441,810
Enplanements Per Capita				
Decreasing Ratio Projection		178,720	192,100	210,510
Constant Ratio Projection		184,880	205,820	247,660
Increasing Ratio Projection		200,290	240,120	330,210
FAA *Terminal Area Forecast*		138,920	159,610	202,190[2]
Historical Growth Rate (1992-2002) 3.7%		192,970	231,420	332,800
1998 Airport Master Plan		284,940[1]	349,360[1]	-
1999 CASP Low Forecast		192,180[1]	238,370[1]	240,810[2]
1999 CASP High Forecast		215,130[1]	247,580[1]	315,180[2]
Average Annual Growth Rate of Preferred Forecast		1.4%	3.2%	2.6%
Preferred Planning Forecast	**155,177**	**198,000**	**232,000**	**301,100**

[1]Interpolated/[2]Extrapolated

Fleet Mix and Operations Forecast

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 San Luis Obispo County Regional Airport has been developed by reviewing the aircraft historically used by airlines serving the airport.

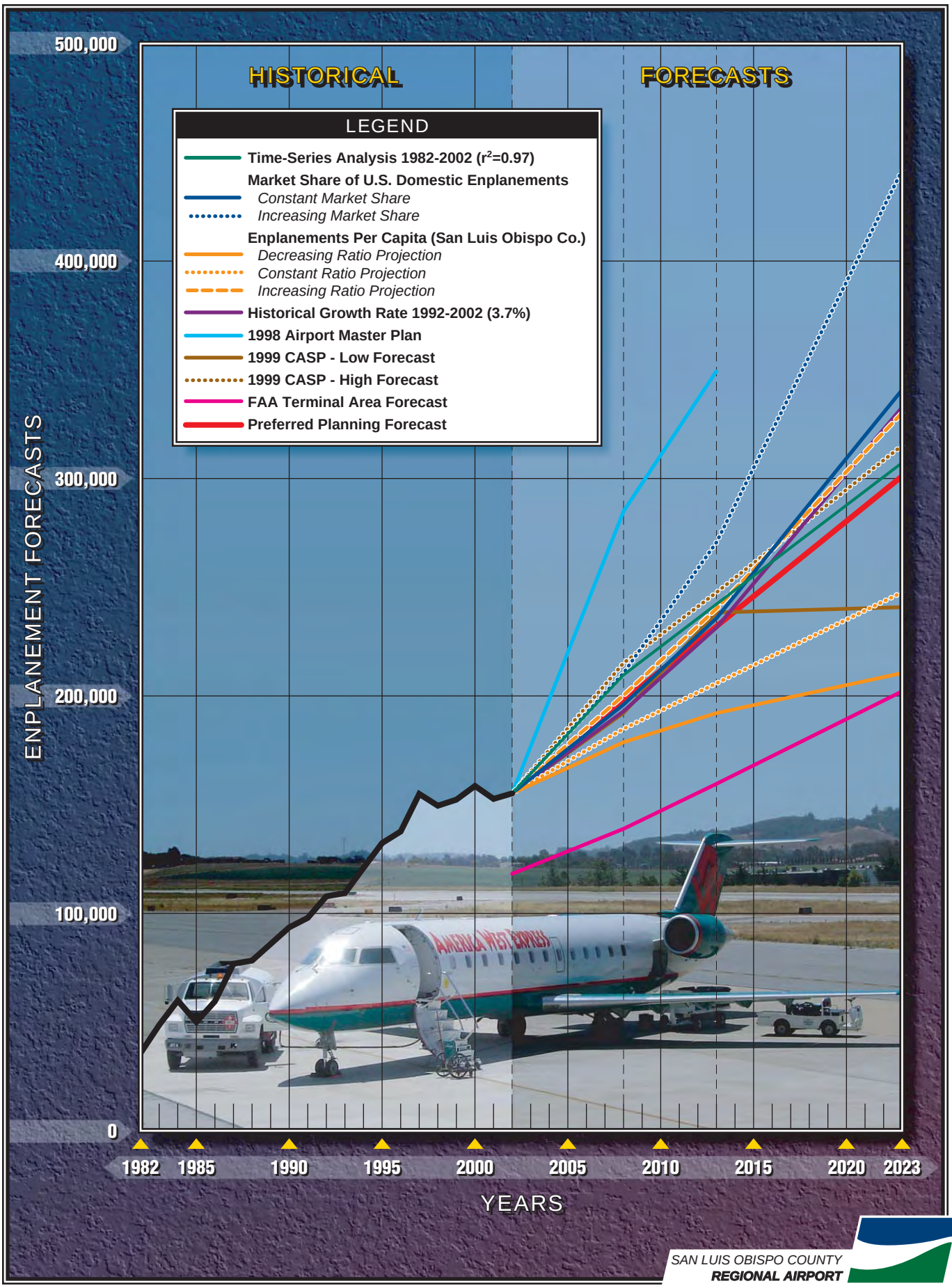
As previously mentioned, San Luis Obispo County Regional Airport provides scheduled air service from three regional airlines: United Express (Skywest), American Eagle, and America West (Mesa). Skywest Airlines operates the 30-seat Embraer Brasilia 120, American Eagle operates the 34-seat Saab 340, and Mesa Airlines operates the 50-seat Canadair Regional Jet (CRJ-200). The addition of the CRJ-700 (64-70 seats) and the ERJ-145 (50 seats), are anticipated as the airlines transition to all-RJ fleets. With room for 20-25 additional passengers, these aircraft offer operators a significant reduction in seat-mile operating costs. However, the long-term outlook in fleet transition is dependent on traffic growth, technological improvements, and airfield facilities which can meet aircraft demand.

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, already at a high level, is not expected to increase through the planning period. Annual operations were calculated by applying the boarding load factor to the average seats per departure and projected enplanements. **Table 2E** summarizes the fleet mix operations forecast for the airport.

AIR CARGO

There are presently two all-cargo airlines operating at San Luis Obispo County Regional Airport; West Air (Fed Ex) and Ameriflight (UPS). West Air operates Cessna 208 caravans, while Ameriflight operates a mixture of aircraft (Beech 1900 and 99, Piper Navajo, Chieftain, and Lance are the types most commonly reported). Historical airport records were examined to provide information on annual all-cargo aircraft operations and the total air freight handled by these two companies at the airport. Air cargo traffic is comprised of domestic and international revenue freight/express and air mail.

02MP21-2D-10/15/03



SAN LUIS OBISPO COUNTY
REGIONAL AIRPORT

Exhibit 2D
ENPLANEMENT FORECAST SUMMARY

TABLE 2E
Airline Fleet Mix and Operations Forecast
San Luis Obispo County Regional Airport

		FORECAST		
Fleet Mix Seating Capacity	**2002/2003**	**2008**	**2013**	**2023**
< 50 seats (32 average) (EMB 120, Saab 340)	80%	40%	00%	0%
50-70 seats (60 average) (CRJ-200, CRJ-700, ERJ-145)	20%	60%	100%	100%
Totals	100%	100%	100%	100%
Average Seats Per Departure	32	44	55	60
Boarding Load Factor	0.66	0.66	0.66	0.66
Enplanements Per Departure	21	29	36	40
Annual Enplanements	155,177	198,000	232,000	301,000
Annual Departures	7,355	6,800	6,500	7,500
Annual Operations	14,710	13,600	13,000	15,000

Source: Coffman Associates Analysis.

Historical and forecast enplaned air cargo totals (in pounds) for the two all-cargo operators at the airport are presented in **Table 2F**. Since 1997, enplaned air cargo at San Luis Obispo County Regional Airport has grown at an average annual rate of 2.4 percent. This percentage was applied to the forecast years and yields 2,000,000 pounds of enplaned air cargo by the year 2023.

TABLE 2F
Air Cargo Forecasts
(All –Cargo Airlines)
San Luis Obispo County Regional Airport

Year	Enplaned Air Cargo (lbs.)
1997	1,101,335
1998	1,281,222
1999	1,424,660
2000	1,393,683
2001	1,215,224
2002	1,242,592
FORECAST	
2008	1,400,000
2013	1,600,000
2023	2,000,000

Source: Airport Records.

GENERAL AVIATION

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 at the airport 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. In 1993, San Luis Obispo

County Regional Airport reported 259 based aircraft. Over the next several years, the number of based aircraft fluctuated between a high of 264 in 1994 and a low of 242 in 2001. According to airport records, there are currently 301 based aircraft at San Luis Obispo County Airport. Because of this fluctuation, time-series and regression analyses were not performed, as they would not provide useful projections of based aircraft numbers. Instead, other methods were used to forecast based aircraft at San Luis Obispo County Regional Airport.

The first method used to project based aircraft examined registered aircraft in San Luis Obispo County, which is the local service area for the airport. A forecast of county-registered aircraft had to be determined first. According to the FAA, there are currently 596 aircraft registered in the county, as compared to 520 registered in 1993. This increase represents an average annual growth rate of 1.4 percent. Applying this growth rate to the forecast years yields 640 registered aircraft by 2008; 685 registered aircraft by 2013; and 790 registered aircraft by 2023.

The next step was to examine the airport's market share of registered aircraft in San Luis Obispo County. In 1993, the airport captured 50 percent of aircraft registered in the county. Since then, the airport's market share has remained fairly constant and is currently at 51 percent. Forecasts of based aircraft were developed based on registered aircraft projections and the airport's market share. The first forecast assumes the airport's market share will remain constant at 51 percent, yielding 403 based aircraft by 2023. The second forecast uses an increasing market share projection to reflect the increase in the past couple of years and yields 435 based aircraft by the year 2023. These market share forecasts are presented in **Table 2G**.

TABLE 2G
Based Aircraft Market Share of Registered Aircraft (San Luis Obispo County)
San Luis Obispo County Regional Airport (SBP)

Year	SBP Based Aircraft	SLO County Registered Aircraft	Market Share of Registered Aircraft
1993	259	520	50%
1994	264	503	52%
1995	263	508	52%
2003	301	596	51%
Constant Share Projection			
2008	326	640	51%
2013	349	685	51%
2023	403	790	51%
Increasing Share Projection			
2008	333	640	52%
2013	363	685	53%
2023	435	790	55%

Source: Historical Based Aircraft – 1998 Airport Master Plan (1993-1995), Airport Records (2003); Registered Aircraft – Census of U.S. Civil Aircraft (1993-1994), Aviation Goldmine CD (1995), FAA (2003).

Projections of based aircraft were also made in comparison to the percentage of U.S. active general aviation aircraft based at San Luis Obispo County Airport. In 1993, based aircraft at the airport represented 0.15 percent of U.S. active general aviation aircraft. This percentage has fluctuated very little over the years and is currently at 0.14 percent, from which three forecasts were developed. The first forecast, a decreasing market share projection, was developed to represent the historical trend at the airport. This forecast shows based aircraft falling to 232 by the year 2023. A second forecast, a constant share projection, assumes the airport's market share will remain constant at 0.14 percent, which yields 329 based aircraft by the year 2023. A third forecast assumes the airport's market share will increase, as it has since 2001. This increasing market share projection yields 417 based aircraft by the year 2023. These three market share projections are presented in **Table 2H**.

TABLE 2H
Based Aircraft Market Share of U.S. Active General Aviation (GA) Aircraft
San Luis Obispo County Regional Airport (SBP)

Year	SBP Based Aircraft	U.S. Active GA Aircraft	% of U.S. Active GA Aircraft
1993	259	177,719	0.15%
1994	264	172,936	0.15%
1995	263	188,089	0.14%
2003	301	211,370	0.14%
Decreasing Share Projection			
2008	280	215,490	0.13%
2013	268	223,720	0.12%
2023	232	231,617[1]	0.10%
Constant Share Projection			
2008	306	215,490	0.14%
2013	318	223,720	0.14%
2023	329	231,617[1]	0.14%
Increasing Share Projection			
2008	323	215,490	0.15%
2013	358	223,720	0.16%
2023	417	231,617[1]	0.18%

Source: Historical Based Aircraft – 1998 Airport Master Plan (1993-1995), Airport Records (2003); Historical and Forecast U.S. Active Aircraft – FAA Aerospace Forecasts, Fiscal Years 2003-2014.
[1]Extrapolated by Coffman Associates.

A third forecast examined historical based aircraft totals to residents in San Luis Obispo County. This forecasting technique examined historical based aircraft as a ratio of 1,000 residents. Currently, the county's population is estimated at 268,140, which equates to 1.12 based aircraft per 1,000 residents. A decreasing market share projection was first developed to

represent the historical trend since 1993 and yields 442 based aircraft by the year 2023. A constant market share projection and a decreasing market share projection were also developed and yields 462 and 479 based aircraft, respectively. **Table 2J** presents these three market share projections.

TABLE 2J
Based Aircraft Per 1,000 Residents (San Luis Obispo County)
San Luis Obispo County Regional Airport (SBP)

Year	SBP Based Aircraft	SLO County Population	Based Aircraft Per Capita
1993	259	225,626	1.15
1994	264	228,520	1.16
1995	263	231,451	1.14
2003	301	268,140	1.12
Decreasing Share Projection			
2008	339	308,140[1]	1.10
2013	374	343,030[1]	1.09
2023	442	412,760[2]	1.07
Constant Share Projection			
2008	345	308,140[1]	1.12
2013	384	343,030[1]	1.12
2023	462	412,760[2]	1.12
Increasing Share Projection			
2008	348	308,140[1]	1.13
2013	391	343,030[1]	1.14
2023	479	412,760[2]	1.16

Source: Historical Based Aircraft – FAA/APO (1993-2002), Airport Records (2003); Historical Population - U.S. Census Bureau; Forecast Population - California State Department of Finance, Demographic Research Unit.
[1] Interpolated by Coffman Associates; [2] Extrapolated by Coffman Associates.

An additional method used to project based aircraft at San Luis Obispo County Regional Airport examined the historical growth rate between 1993 and 2003. During this time, based aircraft grew at an average annual rate of 1.5 percent. This growth rate was applied to the forecast period and yields 405 based aircraft by the year 2023.

The FAA's *Terminal Area Forecast* (TAF) was also examined. The TAF projects based aircraft each year for airports included in the National Plan of Integrated Airport Systems (NPIAS). The TAF's forecast used 2001 as the base year for its projections, when the airport had an estimated 242 based aircraft. Forecasts included in the TAF project based aircraft at San Luis Obispo County Regional Airport to reach 279 by the year 2023. Because the current number of based aircraft (301) has already exceeded this forecast, a comparison is not considered relevant to this forecast.

The *1998 Airport Master Plan* was also examined. The base year for this forecast was 1995, when there were an estimated 263 aircraft based at San Luis Obispo County Regional Airport. Projections were provided through the year 2015 and yielded 375 based aircraft. Extrapolation of this forecast yields 437 based aircraft by the year 2023.

A summary of all forecasts for based aircraft at San Luis Obispo County Airport, as well as the preferred planning forecast is presented in **Table 2K** and **Exhibit 2E**. As shown on the exhibit, the combination of forecasts represents a "forecast envelope." The forecast envelope represents the area in which future based aircraft at the airport should be found. For planning purposes, a mid-range forecast is generally chosen, as is the case with San Luis Obispo County Regional Airport. The preferred planning forecast, which closely follows the historical growth rate, is an average of all the forecasts and is as follows: 320 based aircraft by the year 2008; 350 based aircraft by the year 2013; and 400 based aircraft by the year 2023.

TABLE 2K
Summary of Based Aircraft Forecasts
San Luis Obispo County Regional Airport

	2008	2013	2023
Market Share of Registered Aircraft (San Luis Obispo Co.)			
Constant Market Share	326	349	403
Increasing Market Share	333	363	435
Market Share of U.S. Active General Aviation Aircraft			
Decreasing Market Share	280	268	232
Constant Market Share	306	318	329
Increasing Market Share	323	358	417
Aircraft Per 1,000 Population (San Luis Obispo Co.)			
Decreasing Ratio Projection	339	374	442
Constant Ratio Projection	345	384	462
Increasing Ratio Projection	348	391	479
FAA *Terminal Area Forecast*	245	252	260[2]
Historical Growth Rate (1993-2003) 1.5%	324	349	405
1998 Airport Master Plan	328[1]	361[1]	437[2]
Preferred Planning Forecast	**320**	**350**	**400**

[1] Interpolated by Coffman Associates, [2] Extrapolated by Coffman Associates.

Based Aircraft Fleet Mix

While the number of general aviation aircraft basing at San Luis Obispo County Regional Airport is projected to increase, it is important to know the fleet mix of the aircraft expected to use the airport. This will ensure the proper facilities in the future.

According to airport records, the fleet mix at the airport consists of the fol-

lowing: 241 single-engine aircraft, 44 multi-engine aircraft, nine jets, and seven helicopters. The forecast mix of based aircraft was determined by comparing existing and forecast U.S. general aviation trends. The trend in general aviation is toward a greater percentage of larger, more sophisticated aircraft as part of the national fleet. This can be noted by the projection of additional multi-engine and jet aircraft at San Luis Obispo County Regional Airport. An increase in both single-engine and helicopters can also be expected at the airport. General aviation fleet mix projections for the airport are presented in **Table 2L**.

TABLE 2L
General Aviation Fleet Mix Forecast
San Luis Obispo County Regional Airport

	EXISTING		FORECAST					
Type	**2003**	**%**	**2008**	**%**	**2013**	**%**	**2023**	**%**
Single-Engine	241	80.1%	246	77.0%	259	74.0%	282	70.5%
Multi-Engine	44	14.6%	53	16.5%	64	18.5%	80	20.0%
Jets	9	3.0%	13	4.0%	18	5.0%	28	7.0%
Helicopters	7	2.3%	8	2.5%	9	2.5%	10	2.5%
Total	**301**	**100.0%**	**320**	**100.0%**	**350**	**100.0%**	**400**	**100.0%**

*Multi-engine category includes turboprops.

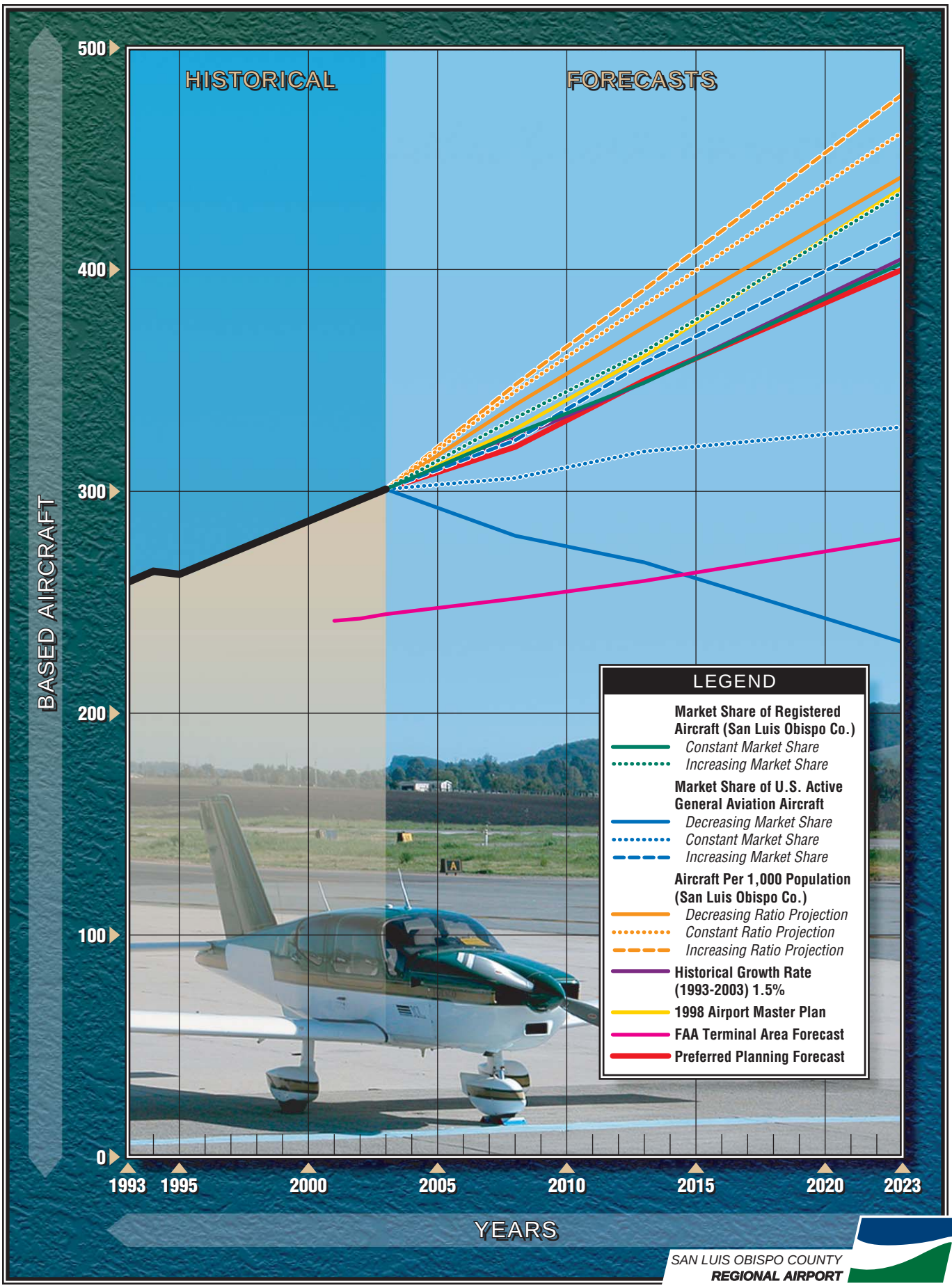
Annual Operations

General aviation operations are classified as either local or itinerant. A local operation is a take-off or landing performed by an aircraft that operates within sight of the airport, or which executes simulated approaches or touch-and-go operations at the airport. Itinerant operations are those performed by aircraft with a specific origin or destination away from the airport. Generally, local operations are characterized by training operations. Typically, itinerant operations increase with business and commercial use, since business aircraft are operated on a high frequency.

Previous forecasts were first examined, including the *1998 Airport Master Plan* and the FAA *Terminal Area Forecast* (TAF). Forecasts included in the 1998 plan used 1995's total of 72,743 operations as a basis for projections through the year 2015. Extrapolation of this plan yields 98,480 operations by the year 2023. Forecasts included in the FAA TAF used 2001 as the base year for its projections, with an estimated 87,469 operations that year. Forecasts included in the FAA TAF were provided through the year 2015. However, the number of annual operations in 2002 (92,155) already exceeds the forecasts included in the FAA TAF and therefore, a comparison is not considered relevant to this analysis.

In order to develop an updated forecast, the FAA's projections for operations at towered airports were examined, along with the airport's general aviation operations and market shares. As shown in **Table 2M**, the

02MP21-2E-10/15/03



SAN LUIS OBISPO COUNTY
REGIONAL AIRPORT

Exhibit 2E
BASED AIRCRAFT FORECAST SUMMARY

airport's market share has fluctuated over the past ten years, varying between a low of 0.20 percent and a high of 0.25 percent. Because the airport's market share has fluctuated so much in the past ten years, three projections were developed; a constant market share, an increasing market share, and a decreasing market share. These projections yield 122,000 annual operations, 141,500 annual operations, and 102,500 annual operations, respectively, by the year 2023.

TABLE 2M
General Aviation Operations Forecasts
San Luis Obispo County Regional Airport (SBP)

Year	Itinerant Operations	Local Operations	Total Operations	GA Operations (U.S.) at Towered Airports	SBP Market Share %
1992	52,129	35,534	87,663	38,400,000	0.23%
1993	50,897	36,759	87,656	36,700,000	0.24%
1994	48,450	32,190	80,640	36,300,000	0.22%
1995	43,314	29,480	72,794	36,000,000	0.20%
1996	48,747	42,666	91,413	35,900,000	0.25%
1997	45,969	40,645	86,614	36,800,000	0.24%
1998	47,687	31,729	79,416	38,000,000	0.21%
1999	51,845	45,829	97,674	40,000,000	0.24%
2000	55,173	42,602	97,775	39,900,000	0.25%
2001	50,629	40,238	90,867	37,600,000	0.24%
2002	56,991	35,164	92,155	37,600,000	0.25%
Constant Market Share Projection					
2008	60,800	40,500	101,300	40,500,000	0.25%
2013	64,700	43,100	107,800	43,100,000	0.25%
2023	73,200	48,800	122,000	48,800,000[1]	0.25%
Increasing Market Share Projection					
2008	63,200	42,100	105,300	40,500,000	0.26%
2013	69,800	46,500	116,300	43,100,000	0.27%
2023	84,900	56,600	141,500	48,800,000[1]	0.29%
Decreasing Market Share Projection					
2008	58,300	38,900	97,200	40,500,000	0.24%
2013	59,500	39,700	99,200	43,100,000	0.23%
2023	61,500	41,000	102,500	48,800,000[1]	0.21%

Source: GA Operations at SBP – FAA TAF for years 1992-1995, airport records for years 1996-2002; GA Operations at Towered Airports – FAA Aerospace Forecasts, Fiscal Years 2003-2014.
[1]Extrapolated by Coffman Associates.

As previously mentioned, a mid-range forecast is generally chosen. The preferred planning forecast of general aviation operations at San Luis Obispo County Regional Airport, which is presented in **Table 2N**, is an average of the forecasts and yields 122,000 annual operations by the year 2023.

Local and itinerant operations at San Luis Obispo County Regional Airport were examined as a percentage of total general aviation operations. Since

1992, the split of general aviation operations at the airport has averaged 60 percent itinerant and 40 percent local. This percentage has been applied to future operations.

Air Taxi and Military Operations

Air taxi activity is independently recorded by the airport traffic control tower. Locally, the majority of the air taxi operations recorded at the tower are performed by the commercial airlines. However, this category also includes the cargo operators and "for-hire" general aviation operators, but can also include operations by Part 135 operators and Part 121 operators (less that 60 seats). Since the commercial airline and air cargo operations have been handled in previous sections of this chapter, the only remaining portion of the air taxi category to be considered is "for-hire," which was estimated as ten percent of total air taxi operations. This percentage was applied to forecasts by the FAA of future air taxi operations at San Luis Obispo County Regional Airport and yields 2,200 "for-hire" operations by the year 2023.

TABLE 2N
Summary of General Aviation Operations Forecasts
San Luis Obispo County Regional Airport

	2002	2008	2013	2023
1998 Airport Master Plan		88,170[1]	91,480[1]	98,480[2]
Market Share of GA Ops at Towered Airports				
Constant Market Share		101,300	107,800	122,000
Increasing Market Share		105,300	116,300	141,500
Decreasing Market Share		97,200	99,200	102,500
Preferred Planning Forecast	**92,155**	**101,300**	**107,800**	**122,000**

[1]Interpolated/[2]Extrapolated

Military operations at the airport were obtained from the FAA. Military operations have declined at the airport in the past few years. The FAA projects military operations to increase slightly in the short-term, but remain stagnant after that. Historical and forecast air taxi ("for-hire") and military operations are presented in **Table 2P**.

TABLE 2P
Air Taxi & Military Operations
San Luis Obispo County Regional Airport

Year	"For-Hire" Air Taxi Ops	Military Ops
1999	1,475	950
2000	1,625	958
2001	1,670	948
2002	1,630	769
FORECAST		
2008	1,800	850
2013	2,000	850
2023	2,200	850

Source: FAA TAF.

PEAKING CHARACTERISTICS

Most facility planning relates to levels of peak activity. The following planning definitions apply to the peak periods:

- Peak Month – The calendar month when peak aircraft operations occur.
- 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.

It is important to note that only the peak month is an absolute peak within a given year. All other peak periods will be exceeded at various times during the year. However, they do represent reasonable planning standards that can be applied without overbuilding or being too restrictive.

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

Airline Peaks

Historical airport records were examined to determine the peak month for passenger enplanements at San Luis Obispo County Regional Airport. Since 1999, the peak month at the airport has typically been August, when the airport captured an average of 10.3 percent of total enplanements for each year. Design day enplanements were calculated by dividing the number of enplanements in the peak month by the number of days in the month. Design hour enplanements were estimated at 15 percent of the design day.

The peak month for airline operations in 2000 and 2002 was January, when the airport captured approximately nine percent of annual operations each year. Other months with high levels of airline operations included June and July, which is typical of these two months. Design hour operations have been calculated at 15 percent of design day activity, based upon current airline schedules. This percentage has been applied to the forecasts of design hour operations at San Luis Obispo County Regional Airport. A summary of the forecasts for airline enplanements and operations is presented in **Table 2Q**.

General Aviation Peaks

According to airport records, July and August have been the peak months at the airport in the past four years, averaging 10.3 percent of total general aviation operations. Forecasts of peak activity have been developed by applying this percentage to the forecasts of annual operations. As previously mentioned, design day operations were calculated by dividing the total number of operations in the peak month by the number of days in the month. The design hour was esti-

mated at 15 percent of the design day operations. Busy day operations were calculated as 1.25 times the design day activity. **Table 2Q** summarizes the general aviation peak activity forecasts.

TABLE 2Q
Peak Period Forecasts
San Luis Obispo County Regional Airport

		FORECASTS		
	2002	**2008**	**2013**	**2023**
Airline Enplanements				
Annual	155,177	198,000	232,000	301,000
Peak Month (9.5%)	14,347	18,810	22,040	28,595
Design Day	463	607	711	922
Design Hour (15.0%)	69	91	107	138
Airline Operations				
Annual	14,710	13,600	13,000	15,000
Peak Month (9.0%)	1,324	1,224	1,170	1,350
Design Day	43	41	39	45
Design Hour (15.0%)	7	6	6	7
General Aviation Operations				
Annual	92,155	101,300	107,800	122,000
Peak Month (10.3%)	9,492	10,434	11,103	12,566
Design Day	306	337	358	405
Busy Day	383	421	448	507
Design Hour (15.0%)	46	50	54	61

ANNUAL INSTRUMENT APPROACHES

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

In 2002, the airport reported 2,669 AIAs, which accounted for 3.6 percent of total itinerant operations. While AIAs can be partially attributed to weather, they may be expected to increase as transient operations and operations by more sophisticated aircraft increase throughout the planning period. Therefore, AIAs as a percentage of itinerant operations are expected to increase throughout the planning period, along with the expected increase in more sophisticated aircraft. The projections of AIAs for San Luis Obispo County Regional Airport are summarized in **Table 2R**.

TABLE 2R
Annual Instrument Approaches (AIAs)
San Luis Obispo County Regional Airport

Year	AIAs	Itinerant Operations	AIAs % of Itinerant Operations
2002	2,699	74,100	3.6%
FORECAST			
2008	2,900	79,650	3.7%
2013	3,200	84,150	3.8%
2023	3,700	93,650	4.0%

Source: Airport Records.

SUMMARY

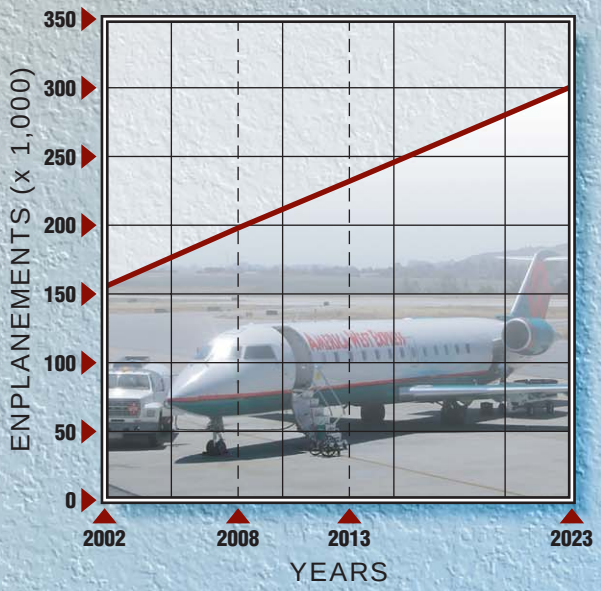
This chapter has provided forecasts for each sector of aviation demand anticipated over the planning period. **Exhibit 2F** presents a summary of the aviation forecasts developed for San Luis Obispo County Regional Airport. The airport is expected to experience an increase in total based aircraft, annual operations, and annual enplaned passengers throughout the planning period. The next step in this study is to assess the capacity of the existing facilities to accommodate forecast demand and determine what types of facilities will be needed to meet these demands. This is considered a preliminary draft until submitted and approved by the FAA.

SUMMARY OF AVIATION ACTIVITY FORECASTS

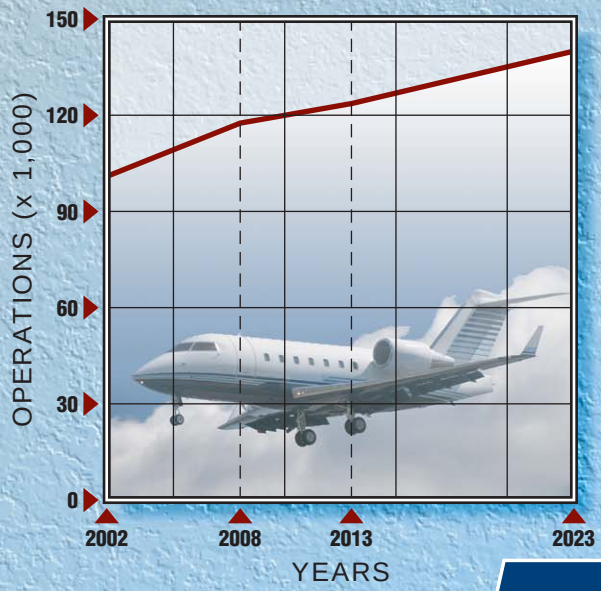
CATEGORY	Historical 2002	Forecasts 2008	2013	2023
Annual Enplanements				
Airport Total	155,177	198,000	232,000	301,000
Annual Operations				
Itinerant				
Air Carrier	14,710	13,600	13,000	15,000
General Aviation	56,991	60,800	64,700	73,200
Air Taxi	1,630	1,800	2,000	2,200
Military	769	850	850	850
Total Itinerant	***74,100***	***77,050***	***80,550***	***91,250***
Local				
General Aviation	35,164	40,500	43,100	48,800
Total Operations	***109,264***	***117,550***	***123,650***	***140,050***
Air Cargo				
Airport Total (in pounds)	1,242,592	1,400,000	1,600,000	2,000,000
Annual Instrument Approaches (AIAs)				
Airport Total	2,669	2,900	3,200	3,700

CATEGORY	2003	2008	2013	2023
Based Aircraft				
Single Engine	241	246	259	282
Multi-Engine	44	53	64	80
Jet	9	13	18	28
Helicopter	7	8	9	10
Total Based Aircraft	***301***	***320***	***350***	***400***

ENPLANEMENTS FORECAST



OPERATIONS FORECAST



SAN LUIS OBISPO COUNTY
REGIONAL AIRPORT

Exhibit 2F
FORECAST SUMMARY

SAN LUIS OBISPO COUNTY
REGIONAL AIRPORT

Chapter Three
FACILITY REQUIREMENTS

FACILITY REQUIREMENTS

SAN LUIS OBISPO COUNTY
REGIONAL AIRPORT

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

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

The cost-effective, efficient, and orderly development of an airport should rely more upon actual demand at an airport than on a time-based forecast figure. In order to develop a master plan that is demand-based rather than time-based, a series of planning horizon milestones have been established for San Luis Obispo County Regional Airport that take into consideration the reasonable range of aviation demand projections prepared in Chapter Two. It is important to consider that

the actual activity at the airport may be higher or lower than projected activity levels. By planning according to activity milestones, the resultant plan can accommodate unexpected shifts, or changes in the area's aviation demand.

It is important that the plan accommodate these changes so that San Luis Obispo County can respond to unexpected changes in a timely fashion. These milestones provide flexibility, while potentially extending this plan's useful life if aviation trends slow over time.

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

TABLE 3A
Planning Horizon Activity Levels
San Luis Obispo County Regional Airport

	Current Levels	Short Term	Intermediate Term	Long Term
Passenger Enplanements	155,177	204,700	240,800	301,100
Annual Operations	109,264	117,550	123,650	140,050
Based Aircraft	301	320	350	400

AIRFIELD REQUIREMENTS

Airfield requirements include the need for those facilities related to the arrival and departure of aircraft. These facilities are comprised of the following items:

- Runways (including safety areas)
- Taxiways
- Navigational Aids
- Airfield Lighting and Marking

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

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

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

Category A: Speed less than 91 knots.

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

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

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

Category E: Speed greater than 166 knots.

The airplane design group (ADG) is based upon the aircraft's wingspan. The six ADG's used in airport planning 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.

In order to determine facility requirements, an ARC should first be determined, and then appropriate airport design criteria can be applied. This begins with a review of the type of aircraft using and expected to use San Luis Obispo County Regional Airport. **Exhibit 3A** summarizes representative aircraft by ARC. Aircraft within the higher ARCs are not expected to comprise the critical design aircraft at the airport. While aircraft within these ARCs may occasionally use the airport, they are not expected to contribute more than 500 annual itinerant operations (the threshold used by the FAA to define critical aircraft).

The FAA recommends designing airport functional elements to meet the requirements of the most demanding ARC for that airport. San Luis Obispo County Regional Airport currently accommodates a wide variety of civilian aircraft use. Aircraft using the airport include small single and multi-engine aircraft (which fall within approach categories A and B and airplane design group I) and business turboprop and jet aircraft (which fall within approach categories B, C, and D and airplane design groups I and II). The airport is also used by jet and prop-jet aircraft for transporting passengers in scheduled service by the three airlines operating at the airport; United Express (Skywest), American Eagle, and America West (Mesa). Skywest Airlines operates the 30-seat Embraer Brasilia 120, American Eagle Airlines operates the 34-seat Saab 340, and Mesa Airlines operates the 50-seat Canadair Regional Jet (CRJ-200).

As determined by the fleet mix forecast in Chapter Two, continued service by aircraft with an average of 32 seats is expected to continue through the short to intermediate term. However, the addition of the CRJ-700 (64-70 seats) and the ERJ (50 seats) are expected as the airlines transition to higher percentages of RJ fleets. This is consistent with national trends.

The San Luis Obispo Council of Governments (SLOCOG) prepared a Regional Jet Study in February 2003, which evaluated the economic and operational performance of Regional Jets. The study was done to determine approximately how long the existing airlines will continue to serve the airport with turboprop aircraft, if the carriers will serve the market with RJs (and if so, when), examine the economic impact to the airport and the region, and the operational implications for the airport.

Mesa transitioned to all-RJ service at San Luis Obispo County Regional Airport in October 2002, while Skywest and American Eagle continue to operate turboprop aircraft. The study expects that all three airlines serving the airport will transition to an RJ fleet during the planning period. This is, provided the airport can accommodate the performance characteristics of the various RJ aircraft flown by each operator and the market demand can support the increased seat capacity.

Regional jets offer increased operating range over turboprops and their higher speeds can shorten trip times, resulting in lower operating costs, and increase the number of daily trips per aircraft. The study showed that RJ service shortened travel time from San Luis Obispo to Phoenix by 60 minutes, resulting in a savings of approximately $502,000 to the airlines (and savings to travelers). It should also be noted that no significant noise increase would result with the upgrade from turboprop to jet aircraft.

As previously mentioned, if the market demand and operational requirements exist, carriers will replace current turboprop aircraft with regional jet service. It is important to the economy of San Luis Obispo County that airport improvements are made to accommodate these regional jets.

02MP21-3A-8/24/04

A-I

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

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

B-II less than 12,500 lbs.

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

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 Brasilia 120

A-III, B-III

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

C-I, D-I

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

C-II, D-II

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

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

C-IV, D-IV

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

D-V

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

Note: Aircraft pictured is identified in bold type.

SAN LUIS OBISPO COUNTY
REGIONAL AIRPORT

Exhibit 3A
AIRPORT REFERENCE CODES

AIRFIELD DESIGN STANDARDS

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

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

Table 3B summarizes the design requirements of these safety areas by airport reference code for Runway 11-29. The FAA expects these areas to be free from obstructions. As shown in the table, Runway 11 meets the required ARC B-II standards for an ILS approach with ½ statute mile visibility minimum, and Runway 29 meets the ARC B-II standards for a GPS approach with ¾ statute mile visibility minimum. However, the RSA and the OFA will need to be upgraded to comply with ARC C-II standards.

Table 3C summarizes the design requirements of the safety areas by airport reference code for Runway 7-25. Runway 7-25 currently meets the required dimensions for ARC B-I standards (small aircraft only). This will be sufficient through the planning period.

AIRFIELD CAPACITY

An airport's airfield capacity is expressed in terms of its annual service volume (ASV). Annual service volume is a reasonable estimate of the maximum number of operations that can be accommodated in a year. Annual service volume accounts for annual differences in runway use, aircraft mix, and weather conditions. The airport's annual service volume was examined utilizing FAA Advisory Circular (AC) 150/5060-5, *Airport Capacity and Delay*.

TABLE 3B
Airfield Safety Area Dimensional Standards (feet)
Runway 11-29

	RUNWAY 11		RUNWAY 29	
	ARC B-II Standards (1/2 statute mile vis.)	**ARC C-II Standards (1/2 statute mile vis.)**	**ARC B-II Standards (3/4 statute mile vis.)**	**ARC C-II Standards (3/4 statute mile vis.)**
Runway Safety Area (RSA)				
Width	300	400	300	400
Length Beyond Runway End	600	1,000	600	1,000
Runway Object Free Area (OFA)				
Width	800	800	800	800
Length Beyond Runway End	600	1,000	600	1,000
Runway Obstacle Free Zone (OFZ)				
Width	400	400	400	400
Length Beyond Runway End	200*	200*	200	200
Runway Protection Zone (RPZ)				
Inner Width	1,000	1,000	1,000	1,000
Outer Width	1,750	1,750	1,510	1,510
Length	2,500	2,500	1,700	1,700

Source: FAA Airport Design Computer Program, Version 4.2D.
*OFZ for approach with lights extends 200 feet beyond last light unit with 50:1 slope.

TABLE 3C
Airfield Safety Area Dimensional Standards (feet)
Runway 7-25

	Runway 7-25	**ARC B-I Standards (small aircraft)**	**Standards Met**
Runway Safety Area (RSA)			
Width	120	120	Yes
Length Beyond Runway End	240	240	Yes
Runway Object Free Area (OFA)			
Width	250	250	Yes
Length Beyond Runway End	240	240	Yes
Runway Obstacle Free Zone (OFZ)			
Width	250	250	Yes
Length Beyond Runway End	200	200	Yes
Runway Protection Zone (RPZ)			
Inner Width	250	250	Yes
Outer Width	450	450	Yes
Length	1,000	1,000	Yes

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

FACTORS AFFECTING ANNUAL SERVICE VOLUME

Exhibit 3B graphically represents the various factors included in the calculation of an airport's annual service volume. These include: airfield characteristics, meteorological conditions, aircraft mix, and demand characteristics (aircraft operations). These factors are described below.

Airfield Characteristics

The layout of the runways and taxiways directly affects an airfield's capacity (as does radar coverage). This not only includes the location and orientation of the runways, but the percentage of time that a particular runway or combination of runways is in use. Additional airfield characteristics include the length, width, load bearing strength, and instrument approach capability of each runway at the airport, which determine the type of aircraft that may operate on the runway and if operations can occur during poor weather conditions.

- RUNWAY CONFIGURATION

The existing runway configuration at San Luis Obispo County Regional Airport consists of two intersecting runways: Primary Runway 11-29 and Crosswind Runway 7-25. Runway 7-25 intersects Runway 11-29, 2,550 feet from the Runway 11 threshold. A full-length parallel taxiway is available to each runway.

- RUNWAY USE

Runway use relates to the type of aircraft operating on that runway and the amount of time that runway is in use. Aircraft operations to a particular runway are determined by the load bearing strength of the runway, instrument approach capability, and wind conditions. Wind conditions are examined for both visual and inclement weather conditions.

Runway 11 is equipped with an instrument approach to the Runway 11 end and has a load bearing strength capable of accommodating all regional airline aircraft currently serving the airport and common business aircraft operating at the airport. A GPS approach is available to Runway 29 with ¾ statute mile visibility. Runway 7-25 has no designated instrument approaches and is limited to small aircraft (12,500 pounds or less). Therefore, during poor weather conditions, only Runway 11-29 is available for use.

Ideally, maximum runway capacity is achieved when all runways at an airport are able to accommodate the entire fleet mix of aircraft. Since operations by larger general aviation and regional airline aircraft can only be accommodated on Runway 11-29, the capacity of the existing runway system is less than if these aircraft could operate on both runways. Maximum runway capacity is also achieved when more than one runway can be used simultaneously (i.e., a takeoff on one runway and a landing on the other runway) in all weather conditions.

Lack of local radar coverage affects spacing of aircraft during IFR conditions, reducing airfield capacity. Intersecting Runway 7-25 limits capacity slightly in crosswind conditions, as aircraft handling and spacing efforts must increase to ensure proper clearance between aircraft.

Runway use is normally dictated by wind conditions. The number of takeoffs and landings are generally determined by the speed and direction of the wind. It is generally safest for aircraft to takeoff and land into the wind, avoiding crosswind (wind that is blowing perpendicular to the travel of the aircraft) or tailwind components during these operations. Prevailing winds at San Luis Obispo County Regional Airport are in a northwest-southeast direction, leading to greater use of Runway 11-29. However, during light wind conditions or situations when the crosswind to Runway 11-29 exceeds allowable thresholds, Runway 7-25 is used simultaneously with Runway 11-29.

- EXIT TAXIWAYS

Exit taxiways have a significant impact on airfield capacity since the number and location of exits directly determines the occupancy time of an aircraft on the runway. The airfield capacity analysis gives credit to exits located within a prescribed range from a runway's threshold. This range is based upon the mix index of the aircraft that use the runway. The exits must be at least 750 feet apart to count as separate exits. Under these criteria, Runway 11-29 is credited with four exits and Runway 7-25 is credited with two exits.

Meteorological Conditions

Weather conditions have a significant affect on airfield capacity. Airfield capacity is usually highest in clear weather, when flight visibility is at its best. Airfield capacity is diminished as weather conditions deteriorate and cloud ceilings and visibility are reduced. As weather conditions deteriorate, the spacing of aircraft must increase to provide allowable margins of safety. The increased distance between aircraft reduces the number of aircraft which can operate at the airport during any given period. Consequently, this reduces overall airfield capacity.

There are three categories of meteorological conditions, each defined by the reported cloud ceiling and flight visibility. Visual flight rule (VFR) conditions exist whenever the cloud ceiling is greater than 1,000 feet above ground level and visibility is greater than three statute miles. VFR flight conditions permit pilots to approach, land, or takeoff by visual reference and to see and avoid other aircraft.

Instrument flight rule (IFR) conditions exist when the reported cloud ceiling is less than 1,000 feet above ground level and/or visibility is less than three statute miles. Under IFR conditions, pilots must rely on instruments for navigation and guidance to the runway. Safe separations between aircraft must be assured by following air traffic control rules and procedures.

AIRFIELD LAYOUT

Runway Configuration

Runway Use

Number of Exits

WEATHER CONDITIONS

VFR

IFR

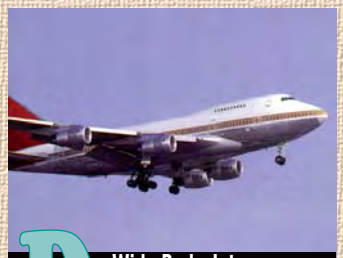
PVC

AIRCRAFT MIX

A&B

C

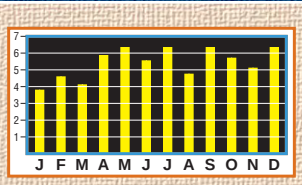
D



OPERATIONS

Arrivals and Departures

Total Annual Operations



Touch-and-Go Operations

SAN LUIS OBISPO COUNTY
REGIONAL AIRPORT

Exhibit 3B
AIRFIELD CAPACITY FACTORS

This leads to increased distances between aircraft, which diminishes airfield capacity. The third category, poor visibility conditions (PVC), exists when cloud ceilings are less than 500 feet above ground level and visibility is less than one mile.

According to data recorded at the airport between 1986 and 1995, VFR conditions have occurred 88 percent of the time, whereas IFR conditions have occurred ten percent of the time, and PVC conditions have occurred two percent of the time.

Aircraft Mix

Aircraft mix refers to the speed, size, and flight characteristics of aircraft operating at the airport. As the mix of aircraft operating at an airport increases to include larger aircraft, airfield capacity begins to diminish. This is due to larger separation distances that must be maintained between aircraft of different speeds and sizes.

Aircraft mix for the capacity analysis is defined in terms of four aircraft classes. Classes A and B consist of single and multi-engine aircraft weighing less than 12,500 pounds. Aircraft within these classifications are primarily associated with general aviation operations, but this classification also includes some air taxi and regional airline aircraft (i.e., Cessna Caravan used for air cargo service). Class C consists of multi-engine aircraft weighing between 12,500 pounds and 300,000 pounds. This broad classification includes turboprops, business jets, and large commercial airline aircraft. All scheduled airline and cargo aircraft operating at San Luis Obispo County Regional Airport are included within Class C. All aircraft over 300,000 pounds are in Class D, including wide-body and jumbo jets. There are no Class D aircraft operating at the airport.

For the capacity analysis, the percentage of Class C and D aircraft operating at the airport is critical in determining the annual service volume, as these classes include the larger and faster aircraft in the operational mix. The existing and projected operational fleet mix for the airport is summarized in **Table 3D**. Consistent with projections prepared in the previous chapter, the operational fleet mix at the airport is expected to slightly increase its percentage of Class C aircraft as regional airline operations increase and the business and corporate use of general aviation aircraft increases at the airport. The percentage of Class C aircraft is higher during IFR conditions as some general aviation operations are suspended.

TABLE 3D
Aircraft Operational Mix
San Luis Obispo County Regional Airport

Weather	Year	A&B	C	D
VFR (Visual)	Existing (2003)			
	Short Term	75%	25%	0%
	Intermediate	73%	27%	0%
	Term	70%	30%	0%
	Long Term	65%	35%	0%
IFR	Existing (2003)			
(Instrument)	Short Term	55%	45%	0%
	Intermediate	53%	47%	0%
	Term	50%	50%	0%
	Long Term	45%	55%	0%

Demand Characteristics

Operations, not only the total number of annual operations, but the manner in which they are conducted, have an important effect on airfield capacity. Peak operational periods, touch-and-go operations, and the percent of arrivals impact the number of annual operations that can be conducted at the airport.

- PEAK PERIOD OPERATIONS

For the airfield capacity analysis, average daily operations during the peak month is calculated based upon data recorded by the air traffic control tower. These peak operational levels were calculated in Chapter Two for existing and forecast levels of operations. Typical operational activity is important in the calculation of an airport's annual service level, as "peak demand" levels occur sporadically. The peak periods used in the capacity analysis are representative of normal operational activity and can be exceeded at various times through the year.

- TOUCH-AND-GO OPERATIONS

A touch-and-go operation involves an aircraft making a landing and an immediate takeoff without coming to a full stop or exiting the runway. These operations are normally associated with general aviation training operations and are included in local operations data recorded by the air traffic control tower.

Touch-and-go activity is counted as two operations as there is an arrival and a departure involved. A high percentage of touch-and-go traffic normally results in a higher operational capacity because one landing and one takeoff occurs within a shorter time than individual operations. Touch-and-go operations are recorded by the air traffic control tower and currently

account for approximately 30 percent of annual operations.

- PERCENT OF ARRIVALS

The percentage of arrivals as they relate to the total number of operations in the design hour is important in determining airfield capacity. Under most circumstances, the lower the percentage of arrivals, the higher the hourly capacity. Except in unique circumstances, the aircraft arrival-departure split is typically 50-50. At San Luis Obispo County Regional Airport, traffic information indicated no major deviations from this pattern, and arrivals were estimated to account for 50 percent of design period operations.

CALCULATION OF ANNUAL SERVICE VOLUME

The preceding information was used in conjunction with the airfield capacity methodology developed by the FAA to determine airfield capacity for San Luis Obispo County Regional Airport.

Hourly Runway Capacity

The first step in determining annual service volume involves the hourly capacity of each runway configuration in use. The percentage use of each runway configuration in VFR and IFR weather, the amount of touch-and-go training activity, and the number and locations of runway exits become important factors in determining the hourly capacity of each runway configuration.

Considering the existing and forecast mix and the additional factors discussed above, the hourly capacity of each runway configuration was computed. The use of both runways during VFR weather conditions results in the highest hourly capacity of the airfield. The 1998 Airport Master Plan estimated this at 98 hourly operations. The VFR hourly capacity is affected by the restricted use of Runway 7-25 to small aircraft (12,500 pounds or less) only. During low visibility conditions, only Runway 11-29 can be used, which considerably reduces the hourly capacity of the runway system.

As the mix of aircraft operating at an airport changes to include an increasing percentage of Class C aircraft, the hourly capacity of the runway system is also reduced. This is because larger aircraft require longer utilization of the runway for takeoffs and landings, and because the greater approach speeds of the aircraft require increased separation. This contributes to a slight reduction in the hourly capacity of the runway system over the planning period.

Annual Service Volume

Once the weighted hourly capacity is calculated (based upon hourly runway capacities, percent usage, and weighting factors defined in AC 5060-5), the annual service volume can be determined. Annual service volume is calculated by the following equation:

Annual Service Volume = C x D x H
C = Weighted hourly capacity D = Ratio of annual demand to average daily demand during the peak month H = Ratio of average daily demand to peak hour demand during the peak month

The 1998 Airport Master Plan estimated the airport's ASV for several conditions. One of the conditions considered IFR capacity of 48 hourly operations, full radar, ILS, and additional taxiway exits. Under these conditions, which used the projected number of 133,800 annual operations by the year 2015, the ASV as a percentage of capacity was projected to reach 55 percent. Considering the additional runway exits added since the last master plan, the ASV was reexamined. Using the projected number of 140,050 annual operations by the year 2023, the ASV as a percentage of capacity was projected to reach 58 percent in the long term.

FAA Order 5090.3B, *Field Formulation of the National Plan of Integrated Airport Systems* (NPIAS), indicates that improvements for airfield capacity purposes should be considered when operations reach 60 percent of the annual service volume. The addition of full radar coverage will ensure the ASV remains below 60 percent.

AIRSIDE FACILITIES

Airside facilities include those facilities that are related to the arrival, departure, and ground movement of aircraft. These components include:

- Runways
- Taxiways
- Navigational Approach Aids and Instrument Approaches
- Airfield Lighting, Marking, and Signage

RUNWAY REQUIREMENTS

Based upon the airfield capacity evaluations undertaken in the previous chapter, it is not necessary to plan for a parallel runway to increase the annual service volume of the airfield. Therefore, this analysis will concentrate on the adequacy of the existing two-runway system, which was analyzed from a number of perspectives including runway orientation, runway length, runway width, and pavement strength.

Runway Orientation

For the operational safety and efficiency of an airport, it is desirable for the primary runway of an airport's runway system to be oriented as close as possible to the direction of the prevailing wind. This reduces the impact of wind components perpendicular to the direction of travel of an aircraft that is landing or taking off (defined as a crosswind).

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

Table 3E summarizes the wind coverage for San Luis Obispo County Regional Airport during all-weather conditions. As shown in the table, the combined wind coverage exceeds 95 percent for all crosswind components. During low visibility conditions, Runway 11-29 provides greater than 99 percent coverage. Therefore, based on this analysis, the runway system at the airport is properly oriented to prevailing wind flows and aircraft operational safety is maximized. No new runway orientations are needed at the airport.

TABLE 3E
All-Weather Wind Coverage
San Luis Obispo County Regional Airport

Runways	10.5 knots	13 knots	16 knots	20 knots
Runway 11-29	98.91%	99.52%	99.90%	99.98%
Runway 7-25	91.70%	96.10%	98.74%	99.74%
Runways Combined	99.16%	99.71%	99.94%	99.99%

Source: NOAA National Climatic Center (observations: 1994-2003).

Runway Length

Runway length is the most important consideration when evaluating the facility requirements for RJs at San Luis Obispo County Regional Airport. Runway length requirements are based upon five primary elements: airport elevation, the mean maximum daily temperature of the hottest month, runway gradient, critical aircraft type expected to use the runway, and the stage length of the longest non-stop trip destination.

Aircraft performance declines as elevation, temperature, and runway gradient factors increase. For calculating runway length requirements at San Luis Obispo County Regional Airport, elevation is 212 feet above mean sea level (MSL); the mean maximum daily temperature of the hottest month (September) is 79 degrees Fahrenheit. Runway end elevations vary by 46 feet (Runway 11-29) and 35 feet (Runway 7-25) across the airfield.

There is a displaced threshold for Runway 29 arrivals, resulting in a landing distance of 4,800 feet when operating to the west. Runway 11 provides 5,300 feet of pavement for landing and takeoff when operating to the east.

In examining runway length requirements at the airport, the primary runway should be designed to accom-

modate the most demanding aircraft currently serving the airport, as well as aircraft expected to serve the airport in the future. As previously mentioned, the current mix of aircraft operating at San Luis Obispo County Regional Airport includes prop-jet aircraft such as the Embraer Brasilia 120 and the Saab 340 and the Canadair Regional Jet (CRJ 200). Future aircraft operating at the airport may include the Canadair Regional Jet (CRJ-700) and the Embraer Regional Jet (ERJ-145). While RJs offer several advantages over turboprop aircraft, these aircraft have different operating characteristics and facility requirements.

The FAA's design software was used to verify general aircraft runway length requirements, which are summarized in **Table 3F**. A typical FAA runway length planning category for Runway 11-29 is "100 percent of large airplanes 60,000 pounds or less at 60 percent useful load." As shown in the table, the FAA recommends a minimum runway length of 5,530 feet for this runway length category. However, as load factors increase (to 90%) the recommended length is 7,930 feet. For Runway 7-25, "95 percent of small airplanes," recommends a runway length of 3,000 feet, although 75 percent of the fleet is accommodated at 2,460 feet.

TABLE 3F
Runway Length Requirements
San Luis Obispo County Regional Airport

AIRPORT AND RUNWAY DATA	
Airport elevation	212 feet
Mean daily maximum temperature of the hottest month	79° F
Maximum difference in runway centerline elevation	46 feet
Length of haul for airplanes of more than 60,000 pounds	1000 miles
RUNWAY LENGTHS RECOMMENDED FOR AIRPORT DESIGN	
Small airplanes with less than 10 passenger seats	
75 percent of these small airplanes	2,460 feet
95 percent of these small airplanes	3,000 feet
100 percent of these small airplanes	3,570 feet
Small airplanes with 10 or more passengers seats	4,110 feet
Large airplanes of 60,000 pounds or less	
75 percent of large airplanes at 60 percent useful load	5,300 feet
100 percent of large airplanes at 60 percent useful load	**5,530 feet**
100 percent of large airplanes at 90 percent useful load	**7,930 feet**
Airplanes of more than 60,000 pounds	6,040 feet

Reference: FAA's airport design computer software utilizing Chapter Two of AC 150/5325-4A, *Runway Length Requirements for Airport Design*.

In addition to the FAA software, required take-off and landing runway lengths of typical RJ aircraft used for passenger services (existing and/or forecast) have been calculated and are summarized in **Table 3G**. Only the CRJ service to Phoenix is currently in service.

TABLE 3G
Runway Length Requirements – Individual RJ Aircraft Performance

	CRJ 200 (to PHX)	CRJ 700 (to DFW)	ERJ 145 (to LAX)
Runway 11 **(uphill gradient)**			
Takeoff distance required for max. LF (80°F)	6,200'	6,875'	8,050'
Landing distance required for maxi. LF (low vis.)	5,570'	5,720'	5,320'
LF limitation with 5,800' of takeoff run	88.4%	80.2%	70.5%
LF limitation with 6,000' of takeoff run	95.0%	83.7%	73.1%
Runway 29 **(downhill gradient)**			
Takeoff distance required for 100% LF (80°F)	5,630'	5,980'	6,100'
Landing distance required for 100% LF (low vis.)	5,570'	5,720'	5,320'
LF limitation with 5,800' of takeoff run	100.0%	94.5%	89.2%
LF limitation with 6,000' of takeoff run	100.0%	94.5%	97.4%

Source: Runway Length Analysis prepared by Aero Data, Inc.
* Load Factor (LF) represents the ratio of number of seats filled versus total number of available seats.

As indicated in the table, aircraft which are expected to operate at San Luis Obispo County Regional Airport in the future require a runway length of more than 5,300 feet. Given the need to accommodate these aircraft, consideration should be given to providing available runway length of at least 6,000 feet and as much as 6,500 feet. This length will also benefit many business jet operators on hot days, allowing them greater operational flexibility. The alternatives analysis to be conducted in the following chapter will consider the potential for extending Runway 11-29 to provide useable runway length of at least 6,000 feet.

Runway Width

Runway width is primarily determined by the planning ARC for the particular runway. FAA design standards specify a minimum width of 100 feet for runways with lower than ¾ statute mile visibility minimums which fall within Runway 11-29's design group (II), while a minimum of 60 feet should be provided for Runway 7-25's design group (I). Each runway currently exceeds the standard established by the FAA. However, with itinerant aircraft of higher ARC using Runway 11-29, it is recommended that the primary runway width remain unchanged.

Pavement Strength

The most important feature of airfield pavement is its ability to withstand repeated use by aircraft of significant weight. The current strength rating on Runway 11-29 is 50,000 pounds single wheel loading (SWL) and 65,000 pounds dual wheel loading (DWL). Runway 7-25 has a current strength rating of 12,500 pounds and is for use by small aircraft exclusively. The current strength ratings on both runways are sufficient for the fleet of aircraft currently serving, and expected to serve, the airport in the future.

TAXIWAYS

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

Both runways are supported by full-length parallel taxiways and a system of entrance/exit taxiways. Most taxiways are 50 feet wide, with some taxiways on the west side at 40 feet, and exit taxiways along Runway 11-29 at greater widths.

Design standards for separation between the runways and parallel taxiways are based upon the wingspan of the critical aircraft using the runway. Since this varies between the two runways, different standards apply. For Runway 11-29, the standard specifies a runway/taxiway centerline separation of 400 feet. The parallel Taxiway (A) is only 325 feet from the runway centerline along most of its length, and 290 feet in front of the passenger terminal.

Runway 7-25 serves only small aircraft. The design standard specifies a minimum runway/taxiway separation of 150 feet. The parallel Taxiway (J) is at 200-foot separation.

The type and frequency of runway entrance/exit taxiways can affect the efficiency and capacity of the runway system. Right-angled exits require an aircraft to be nearly stopped before exiting the runway. Acute-angled (high speed) exits allow aircraft to slow to a safe speed, without stopping, before exiting the runway. An acute-angled exit (Taxiway H) and a right-angled exit (Taxiway I) were recommended in the last Master Plan and have since been added to Runway 11-29. Taxiway C was realigned at a 90 degree angle to Runway 11-29.

AIRFIELD MARKING, LIGHTING, AND SIGNAGE

In order to facilitate the safe movement of aircraft about the field, airports use pavement markings, lighting, and signage to direct pilots to their destinations. Runway markings are designed according to the type of instrument approach available on the runway. FAA Advisory Circular 150/5340-1H, *Marking of Paved Areas on Airports*, provides the guidance necessary to design airport markings.

Runway 11-29 has the necessary markings for the instrument landing system (ILS) and global positioning system (GPS) approaches which serve the runway, while basic markings exist on Runway 7-25. The markings on both of these runways will suffice through the planning period.

Taxiway and apron areas also require marking. Yellow centerline stripes are currently painted on all taxiway surfaces at the airport to provide this guidance to pilots. Hold lines along Runway 11-29 are located 200 feet from the centerline. However, they need to be relocated to 250 feet, pursuant to current criteria. The apron areas also have centerline markings to indicate the alignment of taxilanes within these areas. Besides routine maintenance of the taxiway striping, these markings will be sufficient through the planning period.

Airport lighting systems provide critical guidance to pilots during nighttime and low visibility operations. Runway 11-29 is equipped with high intensity runway lighting (HIRL). There is no lighting on Runway 7-25. This will be adequate through the planning period.

Effective ground movement of aircraft at night is enhanced by the availability of taxiway lighting. Medium intensity taxiway lighting (MITL) is installed on some taxiways, with edge lighting or reflectors in use on taxilanes. The existing airfield lighting systems, while adequate in intensity, will require routine maintenance and upgrades during the planning period.

Airfield signage provides another means of notifying pilots as to their location on the airport. A system of signs placed at several airfield intersections on the airport is the best method available to provide this guidance. Signs located at intersections of taxiways provide crucial information to avoid conflicts between moving aircraft. Directional signage instructs pilots as to the location of taxiways and terminal aprons. At San Luis Obispo County Regional Airport, not all signs installed at the taxiway and runway intersections are lit.

NAVIGATIONAL AND APPROACH AIDS

Electronic and visual guidance to arriving aircraft enhance the safety and capacity of the airfield. Such facilities are vital to the success of the airport, and provide additional safety to passengers using the air transportation system. While instrument approach aids are especially helpful during poor weather, they are often used by commercial pilots when visibility is good. There are currently four published instrument approaches to San Luis Obispo County Regional Airport.

Instrument approaches are categorized as either precision or nonprecision. Precision instrument approach aids provide an exact alignment and descent path for an aircraft on final approach to a runway, while nonprecision instrument approach aids provide only runway alignment information. Most existing precision instrument

approaches in the United States are instrument landing systems (ILS). At San Luis Obispo County Regional Airport, Runway 11 is equipped with a precision instrument approach, while Runway 29 is equipped with a nonprecision instrument approach and Runway 7-25 is visual only.

With the advent of the Global Positioning System (GPS), stand-alone instrument assisted approaches that provide vertical guidance down to visibility minimums currently associated with precision runways, will eventually be established. As a result, airport design standards that formerly were associated with a type of instrument procedure (precision/ nonprecision) are now revised, to relate instead to the designated or planned approach visibility minimums.

Existing Instrument Approaches

As previously mentioned, a precision instrument approach is available to Runway 11. Utilizing this approach, a properly equipped aircraft can land at the airport with 200-foot cloud ceilings and one-half mile visibility for aircraft in any category. The ILS Runway 11 approach can also be utilized as a localizer only or circling approach. When using only the localizer portion of the ILS (for course guidance only), the cloud ceilings increase to 900 feet above ground level for all aircraft categories and the visibility minimums increase to ¾ statute mile for aircraft in category B; two miles for aircraft in category C; and 2¼ statute miles for aircraft in category D. When using the ILS approaches to land at a different runway end (defined as a circling approach), the cloud ceilings increase to 900 feet above ground for aircraft in categories A and B; 1,000 feet for aircraft in category C; and 1,100 feet for aircraft in category D. The visibility minimums increase to one mile for aircraft in category A; 1¼ statute miles for aircraft in category B; 2¾ statute miles for aircraft in category C; and 3 miles for aircraft in category D.

Global Positioning System

The advent of technology has been one of the most important contributing factors in the growth of the aviation industry. Much of civil aviation and aerospace technology has been derived and enhanced from the initial development of technological improvements for military purposes. The use of orbiting satellites to confirm an aircraft's location is the latest military development to be made available to the civil aviation community.

The FAA has already approved the publication of thousands of "overlay" GPS instrument approach procedures. Stand-alone GPS approaches using the Wide-Area Augmentation System (WAAS) will gradually be phased in to provide Category I approaches, while Local Area Augmentation Systems (LAAS) will provide Category I/II/III approaches. Approach lighting and runway lighting systems in use today will continue to be required for the desired approaches.

Visual Approach Aids

In most instances, the landing phase of any flight must be conducted in visual conditions. To provide pilots with visual guidance information during landings to the runway, electronic visual approach aids are commonly provided at airports. Both ends of Runway 11-29 are equipped with a four-light precision approach path indicator (VASI-4L) system on the left hand side of the runway.

As most airports are replacing older VASIs with the PAPI system, consideration should be given to replacing the existing VASI-4 on the approach ends of Runway 11-29 with a PAPI-4, which is less costly to maintain and operate.

Approach Lighting

Approach lighting systems provide the basic means to transition from instrument flight to visual flight for landing. The approach end of Runway 11 is equipped with a medium intensity approach lighting system (MALS) with runway alignment indicator lights (RAIL), or (MALSR). The existing MALSR at the end of Runway 11 should be sufficient throughout the planning period.

Runway end identifier lights (REILs) are flashing lights that facilitate identification of the runway end. Runway 29 is the only runway presently equipped with REILs. The existing REILs installed at the end of Runway 29 are sufficient and should be maintained throughout the planning period.

Weather Reporting

The airport is equipped with an Automated Surface Observation System (ASOS), which 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, wind speed, altimeter setting (barometric pressure), and density altitude (airfield elevation corrected for temperature). The ASOS at San Luis Obispo County Regional Airport is located on the west side of the airfield, near the glideslope antenna.

LANDSIDE REQUIREMENTS

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

TERMINAL AREA REQUIREMENTS

Components of the terminal area complex include the terminal apron, vehicle parking area, and the various functional elements within the terminal building. This section identifies the terminal area facilities required to meet the airport's needs throughout the planning period.

The requirements for the various terminal complex functional areas were determined with the guidance of FAA Advisory Circular 150/5360-13, *Planning and Design Guidelines for Airport Terminal Facilities*. The consultant's database for space requirements was also considered.

Facility requirements were developed for the planning period based upon the forecast enplanement levels. It should be noted that actual need for construction of facilities will be based upon enplanement levels rather than a forecast year. It is also important to note the impact that increased security is placing on facility requirements. Future requirements will include increased areas for the queuing of passengers and additional security screening equipment.

Exhibit 3C, which summarizes passenger terminal building functional area requirements for forecast enplanement levels, depicts the need for additional terminal area in the short term. The various functional areas of the terminal building are summarized as follows:

- **Ticketing -** includes estimates of the space necessary for the queuing of passengers at ticket counters, the linear footage of ticket counters, and the space necessary to accommodate baggage make-up and airline ticket offices.

- **Departure Facilities -** includes estimates of the space necessary for departure holdroom and the number of aircraft gate positions. Holdroom space and gate positions in excess of the requirements presented in the exhibit are frequently necessary to accommodate individual airline demands.

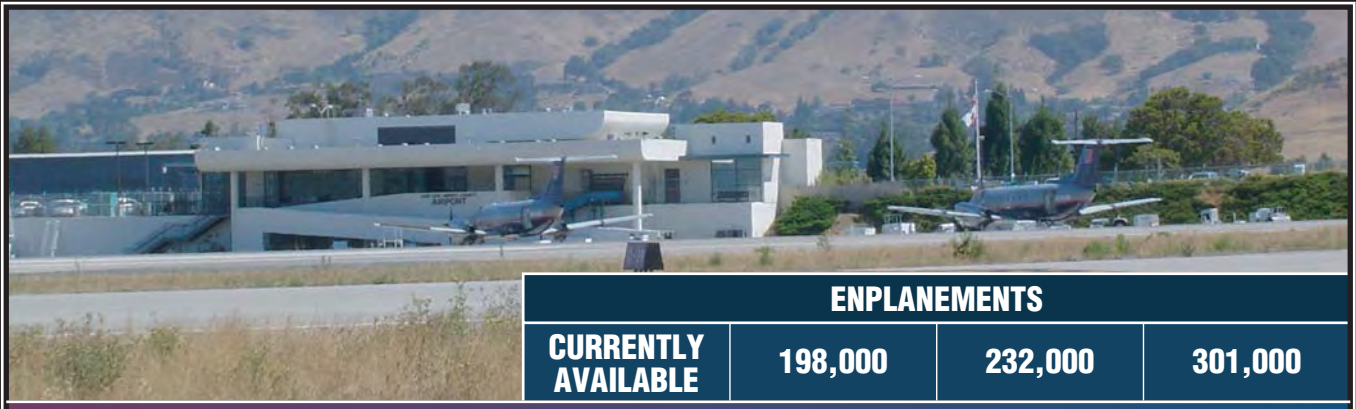
- **Baggage Claim -** includes estimates of the linear footage of baggage claim needed and space for passengers to claim baggage.

- **Rental Cars -** includes estimates of space necessary for the queuing of passengers at rental car counters, the space necessary for rental car offices, and the linear footage for rental car counters.

- **Concessions -** includes estimates of the space necessary to provide adequate concession services such as restaurant and retail facilities.

- **Security Screening -** includes estimates of the amount of space required to accommodate passenger screening devices, the queuing of passengers, and security officers' office area.

02MP21-3C-8/24/04



	ENPLANEMENTS			
	CURRENTLY AVAILABLE	198,000	232,000	301,000
TICKETING				
Counter Length (l.f.)	80	90	90	95
Counter Area (s.f.)	410	880	900	960
Ticket Lobby (s.f.)	700	2,200	2,200	2,400
Airline Operations/Bag Make-up (s.f.)	1,600	3,900	4,100	5,400
DEPARTURE FACILITIES				
Aircraft Gates	4	5	6	7
Holdroom Area (s.f.)	1,100	4,000	4,700	6,100
BAGGAGE CLAIM				
Claim Display (l.f.)	70	90	110	140
Claim Lobby Area (s.f.)	1,400	2,460	2,880	3,700
TERMINAL SERVICES				
Rental Car				
Counter Length (l.f.)	50	55	60	65
Office Area (s.f)	500	1,580	1,700	1,940
Lobby (s.f.)	600	530	570	650
Food/Beverage (s.f.)	440	6,600	7,800	10,100
Retail (s.f.)	0	1,700	2,000	2,500
Restrooms (s.f.)	900	1,150	1,350	1,750
PUBLIC LOBBY				
Greeting Lobby/Seating (s.f.)	1,600	3,400	3,900	5,100
Security Queuing Area (s.f.)	220	2,700	3,200	4,200
AIRPORT ADMINISTRATION				
Offices/Conference Room (s.f.)	1,100	3,000	3,400	4,000
TOTAL PROGRAMMED TERMINAL AREA (Excludes maintenance, storage, misc. areas).	**10,570**	**34,100**	**38,700**	**48,800**
GROSS TERMINAL AREA	**14,400**	**46,000**	**52,000**	**66,000**
AUTO PARKING				
Public				
Short Term	71	100	120	150
Long Term	445	615	720	930
Rental Car	50	120	140	180
Employee	30	100	120	150

Source: Coffman Associates Analysis

Exhibit 3C
PASSENGER TERMINAL
BUILDING REQUIREMENTS

- **Public Waiting Lobby -** includes estimates of the amount of space to accommodate arriving and departing passengers.

- **Terminal Area Automobile Parking -** space required for long-term and short-term public parking, employee parking, and rental car parking.

- **Terminal Curb Frontage** - includes estimates of the linear footage of curb required to accommodate the queuing of enplaning and deplaning passenger vehicles. At San Luis Obispo County Regional Airport, the length of the terminal curb frontage is a function of the length of the terminal building.

San Luis Obispo County is currently pursuing designs for a new terminal building. The preliminary plan, developed by Odell Associates, proposes constructing the new terminal building in the area identified by the 1998 Master Plan – southeast of the current location. The preliminary dimensional area requirements identified by Odell Associates, which also substantiate the need for additional terminal area, are listed in Table 3H. It should be noted that the functional requirements developed by Coffman Associates from FAA guidance documents and empirical formulas may vary from preliminary requirements developed by Odell Associates, which reflect input from individual carriers and terminal tenants.

TABLE 3H
New Terminal Building Area Requirements - Preliminary
San Luis Obispo County Regional Airport

Area	Square Feet
Ticketing	6,750
Airline Operations	1,500
Baggage	
Claim/display/circulation	7,800
Outbound	2,250
Inbound	2,500
Lobby	
Non-secure/circulation	4,000
Secure/circulation	4,000
Concessions	
Snack/gift	1,000
Food	2,500
Security	
Checkpoint	1,500
Support	500
Administration	4,560
Holdroom	11,050
Restrooms	500
Subtotal	50,410
+ 20% (circulation)	10,180
+ 10% (mechanical)	6,060
Total (Gross Area)	66,650

Source: Odell Associates.

Terminal Gate Capacity

Several methods for estimating the number of required aircraft gate positions were used to determine future gate requirements at the airport. Using figures 4.1- 4.4 in *Advisory Circular* 150/5360-13, these methods estimated the required number of gates

based on peak hour utilization, daily utilization, and annual utilization. By examining airline flight schedules, peak hour operations were estimated at seven operations. It should also be noted that four or five aircraft typically remain overnight (R.O.N.) at the gates. Using these formulas ten and 20-year forecasts (of both low and high utilization) were determined. It was estimated that seven gates will be needed at San Luis Obispo County Regional Airport by the end of the planning period.

GENERAL AVIATION REQUIREMENTS

The purpose of this section is to determine the landside space requirements for general aviation hangar and apron parking facilities during the planning period. In addition, the total surface area needed to accommodate general aviation activities throughout the planning period is estimated.

HANGARS

Utilization of hangar space varies as a function of local climate, security, and owner preferences. The trend in general aviation aircraft, whether single or multi-engine, is towards more sophisticated aircraft (and, consequently, more expensive aircraft); therefore, many aircraft owners prefer enclosed hangar space to outside tiedowns.

The demand for aircraft storage hangars is dependent upon the number and type of aircraft expected to be based at the airport in the future. For planning purposes, it is necessary to estimate hangar requirements based upon forecast operational activity. However, hangar development should be based upon actual demand trends and financial investment conditions. While a majority of aircraft owners prefer enclosed aircraft storage, a number of based aircraft will still tiedown outside (due to the lack of hangar availability, hangar rental rates, and/or operational needs). Therefore, enclosed hangar facilities should not be planned for each based aircraft. At San Luis Obispo County Regional Airport, approximately 50 percent of the based aircraft are currently stored in enclosed hangar facilities. It is estimated that the percentage of based aircraft stored in hangars should be near 70 percent.

Approximately 66 percent of the hangared aircraft at San Luis Obispo County Regional Airport are currently stored in T-hangars and port-a-port hangars. The majority of aircraft currently stored in these hangars are single-engine. A planning standard of 1,200 square feet per based aircraft has been used to determine future requirements.

Approximately 17 percent of hangared aircraft are stored in executive hangars, while approximately 17 percent are stored in conventional hangars. Each of these types of hangars is designed for multiple aircraft storage. Executive hangars are generally less than 10,000 square feet. As the trend towards more sophisticated aircraft continues throughout the planning period, it is important to determine the

need for more conventional and executive hangars. For executive and conventional hangars, a planning standard of 1,200 square feet was used for single-engine aircraft, while a planning standard of 2,500 square feet was used for multi-engine, jet, and helicopters. These planning standards recognize that some of the larger business jets require a greater amount of space.

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

Future hangar requirements for the airport are summarized in **Table 3J**. As shown in the table, additional hangar space will be required in the short term. Chapter Four, Airport Development Alternatives, will examine the options available for hangar development at the airport and determine the best location for each type of hangar facility.

TABLE 3J
Aircraft Storage and Maintenance Requirements
San Luis Obispo County Regional Airport

		Future Requirements		
	Currently Available	**Short Term**	**Intermediate Term**	**Long Term**
Aircraft to be Hangared	150	224	245	280
T-Hangar Positions (Includes port-a-port hangars)	91	152	167	196
Executive Hangar Positions	30	36	39	42
Conventional Hangar Positions	30	36	39	42
Hangar Area Requirements (s.f.)				
T-Hangar Area (Includes port-a-port hangars)	75,890	208,400	228,300	260,700
Executive Hangar Area	54,250	61,200	73,800	102,600
Conventional Hangar Area	51,200	61,200	73,800	99,000
Maintenance Area*	20,600	49,620	56,380	69,340
Total Hangar/Maintenance Area (s.f.)	201,400	380,420	432,280	531,640

* Does not include American Eagle Hangar (22,500 sq. ft.)

Building space requirements for the sorting and transfer of air cargo was also examined. As mentioned in Chapter One, two all-cargo operators (Fed Ex and UPS) offer air service at San Luis Obispo County Regional Airport. Because the air cargo sorting is handled in the general aviation areas, a planning standard of 800 pounds of enplaned air cargo per square foot was used to determine building requirements. This results in an additional

area requirement of 2,500 square feet in the long term, which should be easily absorbed in the overall general aviation space needs. Separate air cargo sorting facilities are not anticipated.

AIRCRAFT PARKING APRON

A parking apron should provide for the number of locally-based aircraft that are not stored in hangars, and for those aircraft used for air taxi and training activity. Parking should be provided for itinerant aircraft (passenger and air freight) as well. As mentioned in the previous section, approximately 50 percent of based aircraft at San Luis Obispo County Regional Airport are currently stored in hangars. It is estimated that the percentage of based aircraft stored in hangars should be near 70 percent.

A planning criterion of 650 square yards per aircraft was used to determine the apron requirements for local and itinerant aircraft not stored in hangars.

A planning criterion of 1,000 square yards was used for itinerant jets.

Total aircraft parking apron requirements are presented in **Table 3K**. Currently, apron area at the airport totals approximately 95,000 square yards, with approximately 161 total tie-down positions, which will be sufficient through the end of the planning period.

SUPPORT REQUIREMENTS

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

AIRCRAFT RESCUE AND FIREFIGHTING

Requirements for aircraft rescue and firefighting (ARFF) services at an airport are established under Federal Aviation Regulations (FAR) Part 139, which applies to the certification and operation of land airports served by any scheduled or unscheduled passenger operation of an air carrier using an aircraft with more than 30 seats. Paragraph 139.315 establishes ARFF index ratings, based on the length of the largest aircraft with an average of five or more daily departures. As mentioned in the inventory chapter, a new ARFF facility is currently being constructed on the airfield and will total approximately 8,700 square feet. Once completed, this facility will meet Index B requirements (with equipment and personnel). The introduction of RJs with lengths between 90 and 125 feet (ERJ 145, CRJ 700 and 900, etc.) will require that the airport meets ARFF Index B.

TABLE 3K
Aircraft Parking Apron Requirements
San Luis Obispo County Regional Airport

	Currently Available	Short Term	Intermediate Term	Long Term
Fixed Wing Aircraft Positions		93	100	111
Apron Area (s.y.)		60,200	64,500	72,500
Transient Jet Aircraft Positions		8	8	9
Apron Area (s.y.)		7,900	8,300	9,100
Total Positions	**161**	**101**	**108**	**120**
Total Apron Area (s.y.)	**95,000**	**68,100**	**72,800**	**81,600**

AIRPORT MAINTENANCE/ STORAGE FACILITIES

Currently, San Luis Obispo County Regional Airport has a 3,200 square-foot maintenance/ storage building, which is located northwest of the current terminal building. Although portions of conventional hangars are also used for maintenance purposes, adequate area needs to be reserved in an alternate location should a larger facility need to be constructed.

FUEL STORAGE

Fuel storage facilities for San Luis Obispo County Regional Airport are located on the west apron and include two aboveground fuel tanks with a total capacity of 30,000 gallons (15,000 gallons avgas (100 LL) and 15,000 gallons Jet A fuel). Temporary fuel storage includes 12,000 gallons of 100LL and 15,000 gallons of Jet A. Aircraft refueling is provided from several fueling trucks.

Storage requirements are normally based upon two-week usage requirements. Based upon peak month flowage in 2002, this would require a minimum storage capacity of 22,000 gallons for avgas and 63,000 gallons for Jet A fuel. Therefore, area should be reserved to allow for expansion of the fuel farm.

SUMMARY

The intent of this chapter has been to outline the facilities required to meet potential aviation demands projected for the airport through the planning horizon. The next step is to develop a direction for implementation that will best meet these projected needs. The remainder of the master plan will be devoted to outlining this direction, its schedule, and costs.

SAN LUIS OBISPO COUNTY
REGIONAL AIRPORT

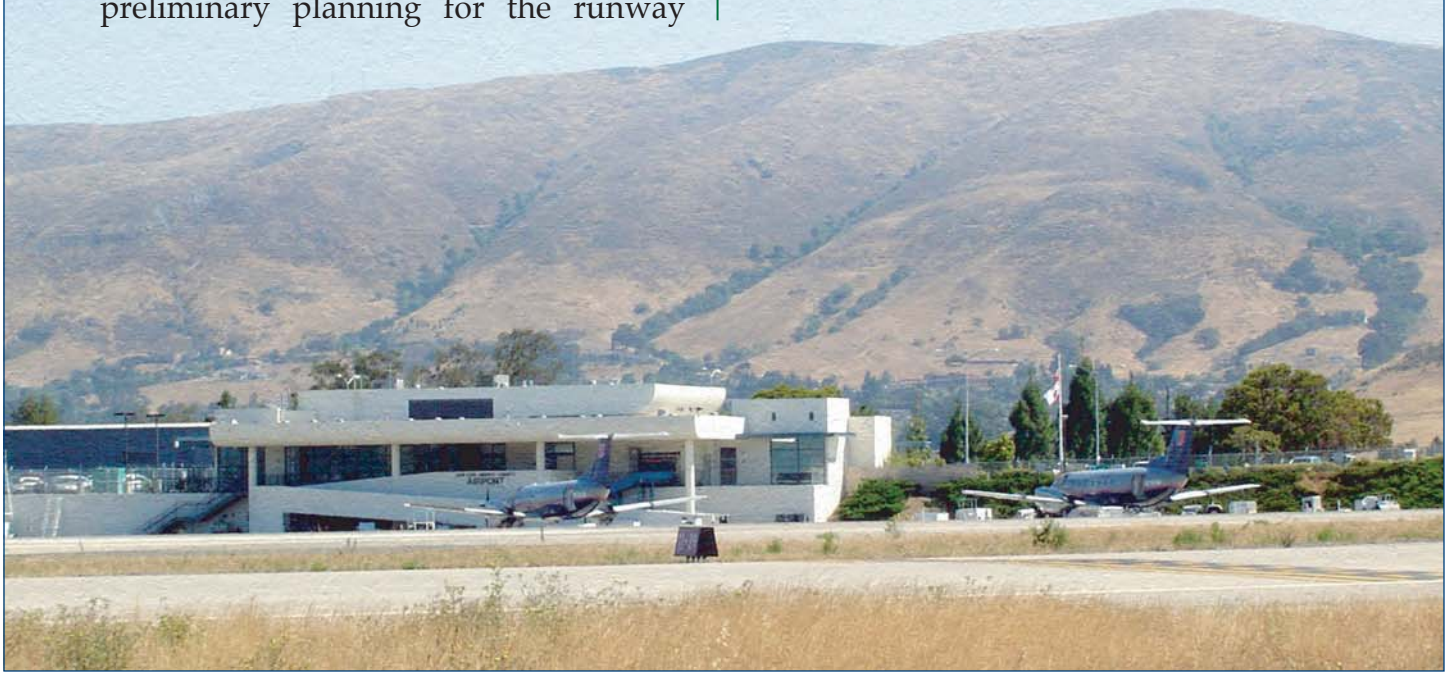
Chapter Four
AIRPORT DEVELOPMENT ALTERNATIVES

AIRPORT DEVELOPMENT ALTERNATIVES

SAN LUIS OBISPO COUNTY
REGIONAL AIRPORT

The previous chapter has identified several facility needs based upon forecasts of passengers, aircraft transitions in both the general aviation and commercial fleets, and commercial and general aviation operations. The Planning Advisory Committee (PAC) has provided input to the process by submitting comments on the Phase I Report, while the general public has participated by attending a public workshop. In this chapter, a series of alternative development scenarios will be examined which can in turn provide the basis for a final master planning concept. San Luis Obispo County has initiated early planning for two projects which will influence other airport development alternatives: the extension of Runway 11-29 and the development of a new passenger terminal. Following more detailed analysis, the results of these two efforts will be reflected on the final master planning concept. The results of preliminary planning for the runway

extension project is noted in the following text and exhibits, as is the location and footprint of the new terminal building, concourse, parking ramp, and structured parking deck. This chapter will review these efforts, while evaluating other airfield enhancements and general aviation development alternatives. Following meetings with the Planning Advisory Committee and the general public, the master planning concept will be refined, the airport layout plans updated, and the airport's capital improvement program will be updated.



NON-DEVELOPMENT ALTERNATIVES

While an evaluation of alternatives may also include a no action alternative, this would effectively reduce the quality of services being provided to the general public, affect the aviation facility's ability to meet Federal Aviation Administration (FAA) design standards, and potentially affect the San Luis Obispo area's ability to support commercial and general aviation needs. The ramifications of the no action alternative extend into impacts on the well-being of the region. If facilities are not maintained and improved so that the airport maintains a pleasant experience to the visitor or business traveler, or if delays become unacceptable, then these individuals may consider doing their business elsewhere.

Likewise, this study will not consider the relocation of services to another airport or development of a new airport site. The development of a new commercial service airport is a very complex and expensive development option. A new site will require greater land area, duplication of investment in airport facilities, supporting infrastructure that are already available at the existing site, and greater potential for impacts to natural, biological, and cultural resources.

However, the final decision with regard to pursuing a development plan which meets the needs of general and commercial aviation rests with San Luis Obispo County.

RECENT AIRPORT IMPROVEMENTS

Since the last master plan was completed in 1998, San Luis Obispo County has pursued a number of airport improvement projects, which were identified in **Table 1B**. Of significance was the extension of Runway 11-29 to 5,300 feet, remodeling of the terminal building and expansion of several areas in the building, the construction of Taxiway M on the west side (which improved general aviation traffic flow from the primary runway onto the west ramp), expansion of the west side parking ramp, construction of an aircraft wash-rack pollution discharge elimination system, taxiway and safety area improvements, and construction of a service vehicle access road to the west side. Each of these projects was directly attributable to increased demands on the facility, providing for expanded general aviation facilities and improved efficiencies on the airfield and in the terminal building.

REGIONAL JET EFFECTS

With current transitions in the commercial fleet to regional jets, the primary runway is once again being reviewed to meet FAA design standards and to provide runway length requirements. Based upon critical aircraft and stage lengths, the length available for takeoff should be at least 6,000 feet, with 5,500 feet available for landing. However, as noted in the previous chapter and on **Table 4A**,

greater runway length is required for various aircraft/stage length combinations and load factors. Above 80 degrees, regional jets in current service at the airport (the CRJ 200) begin to incur payload limitations. Therefore the runway extension alternatives will attempt to maximize available departure lengths (providing at least 6,000 feet, and as much as 6,500 feet) while meeting current design standards and minimizing potential environmental impacts.

TABLE 4A
Regional Jet Performance
San Luis Obispo Regional Airport

	CRJ 200 (to Phoenix)	CRJ 200 (to Denver)	ERJ 145 (to Los Angeles)
Runway 11 (uphill gradient)			
Takeoff distance required for max. LF (80° F)	6,200'	7,570'	8,050'
Landing distance required for max. LF (low vis.)	5,570'	5,550'	5,320'
LF limitation with 5,800' of takeoff run	88.4%	67.7%	70.5%
LF limitation with 6,000' of takeoff run	95.0%	74.5%	73.1%
Runway 29 (downhill gradient)			
Takeoff distance required for 100% LF (80° F)	5,630'	6,330'	6,100'
Landing distance required for 100% LF (low vis.)	5,570'	5,550'	5,320'
LF limitation with 5,800' of takeoff run	100.0%	85.7%	89.2%
LF limitation with 6,000' of takeoff run	100.0%	93.2%	93.2%

Source: Runway Length Analysis prepared by Aero Data, Inc.
* Load factor (LF) represents the ratio of number of seats filled versus total number of available seats.

CONCURRENT PLANNING EFFORTS

San Luis Obispo County has initiated three studies concurrently to address the need for additional runway length: the update of the master plan, an environmental assessment addressing the extension of Runway 11-29, and preliminary planning for the runway extension project. Since the preliminary planning and environmental assessment processes are currently underway, the master plan effort will reflect on the evaluations which have already been undertaken. Some of the issues which are being evaluated on these on-going studies are noted in the following paragraphs, since they may have a bearing on all alternatives which are examined. The preferred runway extension alternative will be integrated into the overall master plan development concept.

Also, based upon the original recommendation in the **1998 Master Plan**, a new terminal building, structured parking lot, and airport fire station are being planned on the east side of the airfield. This move will transition a portion of the general aviation demand to the west side, although both sides of the airfield will need to continue to provide support to general aviation needs. Within this alternatives evaluation, the footprint of the new terminal building and the new fire station will be depicted on exhibits. On-going terminal planning stud-

ies will consider the exact layout of the building and automobile parking for the new site.

CURRENT DEVELOPMENT ISSUES

The preliminary planning for the runway extension has reiterated a number of local development issues which reflect on other potential airport development alternatives. These issues were also present during the development of the **1998 Master Plan**:

- Terrain surrounding the airport, which favors approaches to Runway 11. When the runway was extended to the east in 2001, the landing threshold was not relocated due to limited clearance over terrain within one mile of the runway end. Bridging Highway 227 (or relocating the highway) does not alleviate the need to clear terrain on a 34:1 approach slope, thus reducing the amount of pavement which could effectively be gained with an extension to the southeast. Therefore, preliminary planning for the runway extension has concentrated on extension of pavement to the northwest.

- Runway gradient on Runway 11-29, which slopes downward from east to west at 0.85 percent. Runway length requirements are affected by direction of aircraft operation as a result of the gradient. Departures are estimated to occur on Runway 11 only 15 percent of the time, while instrument approaches in low visibility conditions favor Runway 11 because of the instrument landing system.

- Acacia Creek, which borders the airport on the northwest and west side, requires the County to coordinate with the U.S. Army Corps of Engineers when examining options with regard to the creek. There must be adequate room beyond the runway safety area for the realignment of Santa Fe Road and the airport perimeter road, otherwise the creek is affected.

- Drainage, which is complicated by the rolling topography and limited areas available for detention basins.

- Contaminated soil beyond Acacia Creek, from the old tank farm which was destroyed by a major fire in the 1920s. Use of this property (which is owned by Unocal) for runway or extended safety area is considered unlikely, since it would be subject to the Unocal Remediation Plan.

- Extension of parallel taxiways (A and M). Taxiway A is located at a non-standard distance (325 feet) from the runway centerline, while extension of Taxiway M to the north will need to meet object clearing standards to the Fisher hangar (nearest to the runway/taxiway). The extension of Taxiway A at the standard runway-taxiway separation (400 feet) will require acquisition of properties.

- Relocation of navigational aids and approach lights will be required on the northwest end of the runway. This includes the glide slope antenna for the instrument approach and the medium intensity approach light system with runway alignment indicator lights (MALSR). The total length of the MALSR is 2,400 feet from the runway threshold.

AIRFIELD DESIGN CONSIDERATIONS

The airfield system requires a significant commitment of land area when consideration is given to navaid critical areas, runway safety areas and protection zones, and lateral clearances over buildings. Furthermore, aircraft operations dictate the FAA design criteria that must be considered for airport improvements. Safety area design standards and adjacent development can ultimately impact the viability of various alternatives.

San Luis Obispo County Regional Airport has previously been designed to ARC B-II standards, but is now considered a C-II facility with the introduction of regularly scheduled service by regional jets and regular use by private jet aircraft in the C-II category.

The FAA has placed a high priority on establishing and maintaining adequate safety areas at all airports due to recent aircraft accidents. Under *Order 5200.8*, effective October 1, 1999, the FAA established a *Runway Safety Area Program.* The Order states, "The goal of the Runway Safety Area Program is that all RSAs at federally obligated airports and all RSAs at airports certificated under 14 CFR Part 139 shall conform to the standards contained in Advisory Circular 150/5300-13, *Airport Design*, to the extent practical." Under the Order, each FAA Regional Office's Airports Division is obligated to collect and maintain data on the RSA of each airport for federally-obligated airports.

The runway safety area (RSA) standard for Runway 11-29 is 400 feet wide and extends 1,000 feet beyond the runway end. The runway object free area (ROFA) standard is 800 feet wide and extends 1,000 feet beyond the runway end. FAR Part 139.309(b) indicates that the airport shall maintain its safety area cleared and graded, with no potentially hazardous ruts, humps, depressions, or other surface variations. The safety area must be drained so that water does not accumulate. It must also be capable, under dry conditions, of supporting emergency equipment and the occasional passage of aircraft without causing major damage to the aircraft. No object may be located in the safety area except those that need to be because of their function in airport operations. In those cases, they must be constructed on frangibly-mounted structures where practical. (Note: The localizer antenna at the south end of the runway is not waived from this requirement.)

For new precision instrument approaches, a precision object free area

(POFA) must also be maintained. The POFA is 800 feet wide and extends 200 feet beyond the landing threshold. It must remain free of objects (such as taxiing aircraft) when an aircraft is using the ILS approach.

The runway must also consider the obstacle free zone (OFZ) which extends along the entire length of the runway transitional surfaces on a 6:1 slope beginning at a point 200 feet from the runway centerline, and a 50:1 clearance surface across the length of the approach lighting system. The OFZ will be depicted in detail on one of the official airport layout plan drawings.

RUNWAY 11-29

The evaluation of runway extension options undertaken for the project formulation has considered several primary runway alternatives that increase the available runway length.

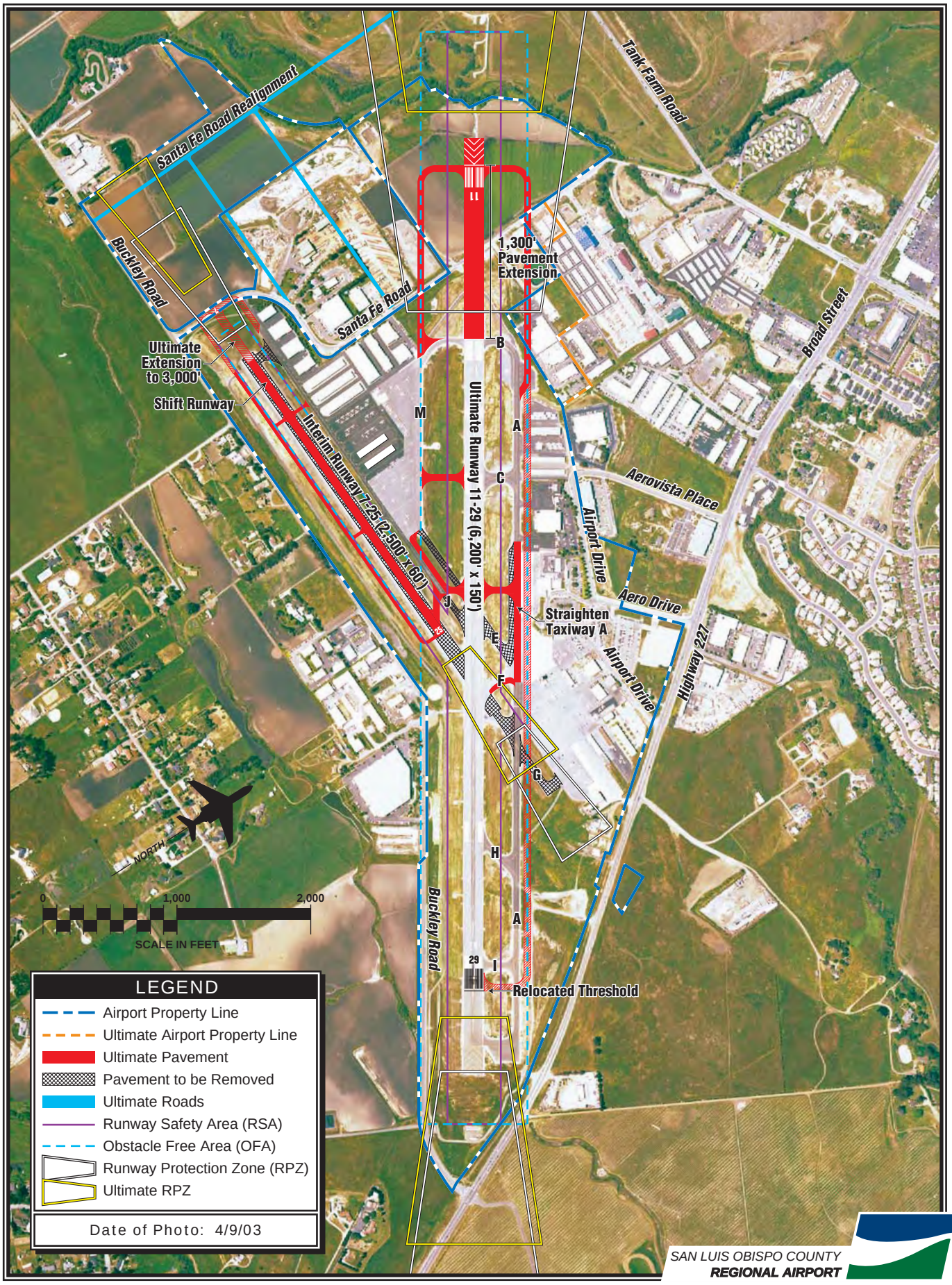
If standard RSAs are provided at each end of the runway, the southeast end of the runway needs to be shortened by 400 feet. To provide 6,200 feet of runway, a total extension of 1,300 feet needs to be provided on the northwest end. Santa Fe Road and the airport perimeter road need to be re-aligned beyond the RSA and ROFA, requiring crossings of Acacia Creek. As with all alternatives which include pavement extension on the northwest end, navigational aids and approach lights will need to be relocated. To provide a full RSA beyond extended runway pavement on the northwest end of the runway will require extensive mitigation of Acacia Creek, such as diversion of the creek or piping of the creek under the extended RSA. This alternative has been depicted on **Exhibit 4A**.

On March 15, 2004, the FAA issued *Order 5200.9, Financial Feasibility and Equivalency of Runway Safety Area Improvements and Engineered Material Arresting Systems*. The document provides guidance for comparing runway safety area improvement alternatives with improvements that use Engineered Material Arresting Systems (EMAS). EMAS is designed to stop an aircraft overrun by exerting predictable deceleration forces on the landing gear as the EMAS material crushes. It must be designed to minimize the potential for structural damage to aircraft, since such damage could result in injuries to passengers and/or affect the predictability of deceleration forces.

EMAS is located beyond the end of the runway, centered on the extended centerline. It typically is designed to begin at some distance beyond the runway end to avoid damage by jet blast or short landings. The end of the EMAS bed needs to be no further than 600 feet from the runway end. This also reduces initial construction costs and recurring maintenance costs for the EMAS installation.

The minimum width of EMAS is the same width as the runway, plus any sloped area as necessary. The system should be designed to decelerate jet aircraft expected to use the runway at exit speeds of 70 knots or less, without

02MP21-4A-8/24/04



SAN LUIS OBISPO COUNTY
REGIONAL AIRPORT

Exhibit 4A
AIRFIELD ALTERNATIVE A
(6,200 ft.-Runway 11-29, Standard RSA)

imposing loads that exceed the aircraft's structural design limits. The total length of the EMAS bed (at each runway end) at San Luis Obispo has been estimated at 240 feet. Paved overruns leading into the EMAS beds will total 360 feet at each end.

Installation of EMAS on each end of the runway will provide the required safety area to meet current C-II design standards. A total pavement extension of 1,000 feet is shown on the northwest end, providing a total runway length of 6,300 feet. This has been depicted on **Exhibit 4B**. The landing threshold on Runway 29 will need to remain displaced (due to terrain in the approach).

Another alternative which extends runway pavement to the northwest is depicted on **Exhibit 4C**. This provides the maximum amount of pavement (6,500 feet) for landing and departure operations without impacting Acacia Creek. Standard EMAS installation is included on the southeast runway end, as in the previous alternative. This alternative also involves the use of declared distances, which must be approved by the FAA.

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 AC 150/5300-13, *Airport Design* are as follows:

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 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 following declared distances apply to the runway extension alternative presented on **Exhibit 4C**:

	Runway 11	**Runway 29**
TORA	6,500 ft.	5,900 ft.
TODA	6,500 ft.	6,500 ft.
ASDA	6,500 ft.	5,900 ft.
LDA	5,900 ft.	5,400 ft.
Threshold Displacement	600 ft.	500 ft.
Published Runway Length	6,500 ft.	6,500 ft.

The extension alternative will require the realignment of Santa Fe Road and the airport perimeter road. It will also require the relocation of a secondary road which provides access to businesses on the east side of the runway.

Depicted at each runway end are the runway protection zones (RPZ) which vary in size based upon the size of aircraft and visibility minimums which

are published for each approach. The RPZ is trapezoidal in shape, centered on the runway centerline, and begins 200 feet beyond the usable runway end. Consequently, when it is necessary to use a portion of the runway as the safety area at the runway end, the RPZ moves down the runway to the appropriate threshold point (as depicted on **Exhibit 4C**).

The RPZ is two-dimensional and has no associated approach surface. FAA design standards limit the types of development within the RPZ to uses which are compatible with aircraft operations. Residential land uses with high concentrations of people are discouraged. The RPZ was established by the FAA to provide an area clear of obstructions and incompatible land uses in order to enhance the protection of approaching aircraft as well as people and property on the ground. The FAA does not necessarily require fee simple acquisition of the RPZ, but requests that the airport sponsor maintain some form of land use control (such as with avigation easements).

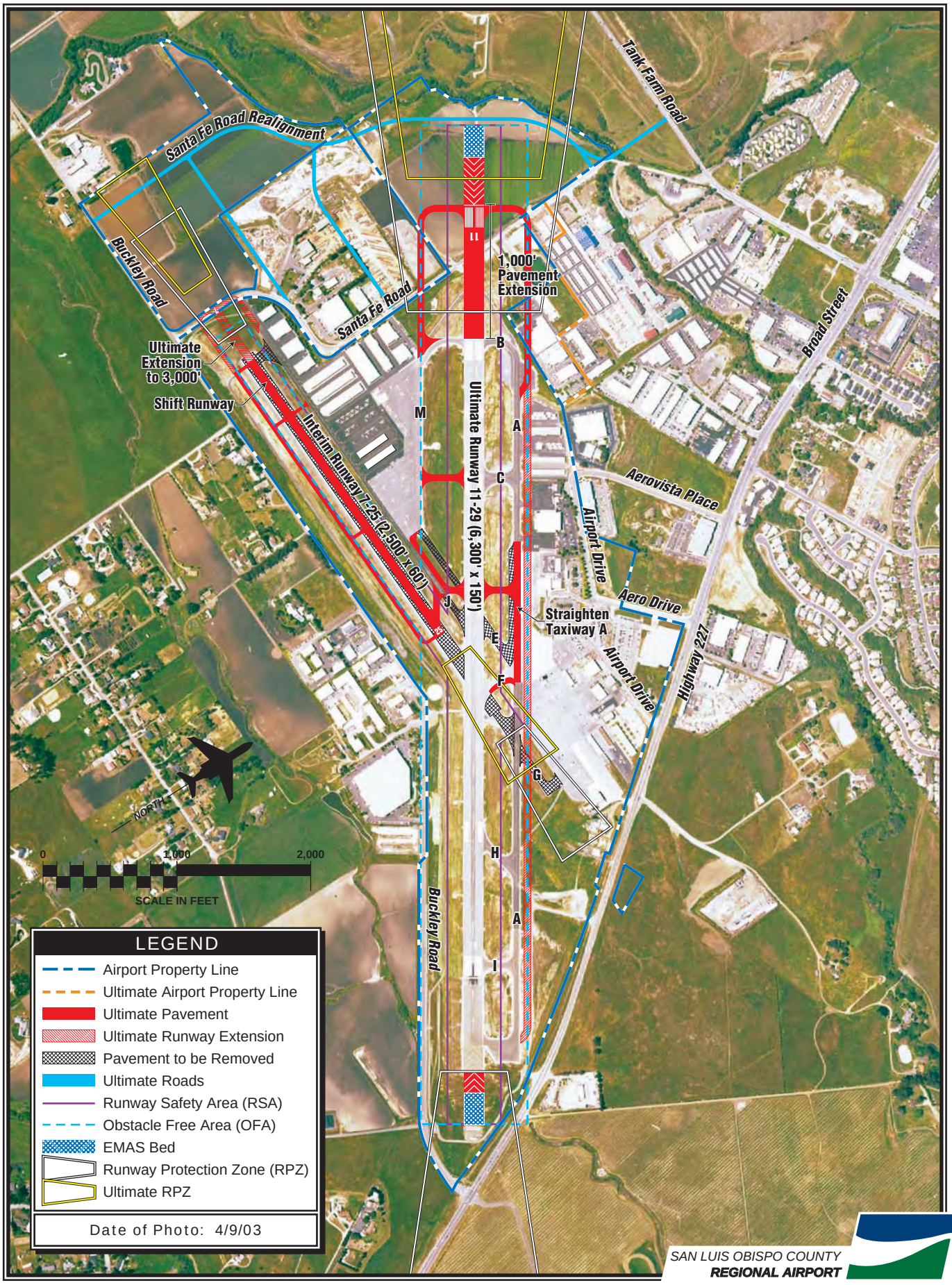
RUNWAY 7-25

The previous chapter identified that the secondary (crosswind) runway for the airfield should be planned for ARC B-I standards (limited to small aircraft). To accommodate 75 percent of the small aircraft fleet, the runway should be a minimum of 2,500 feet in length (by 60 feet in width). To accommodate 95 percent of the small aircraft fleet, the runway should be 3,000 feet in length (by 60 feet in width).

At current dimensions of 3,260 feet by 100 feet, consideration may be given to both shortening and narrowing the runway. To avoid potential clearance conflicts with development along the east side of the airport, consideration should also be given to shifting the runway threshold to the west side of Runway 11-29, outside of the runway safety area. This will initially provide a length of 2,500 feet. Upon realignment of Santa Fe Road, it will be possible to extend the runway west by 500 feet, providing for a total length of 3,000 feet. This runway shift and narrowing of the runway has been depicted on **Exhibits 4A, 4B,** and **4C**. Included with this alternative is a parallel taxiway on the south side of the runway, at a 150-foot separation distance (consistent with B-I standards). This taxiway will allow for future development of general aviation executive hangars adjacent to Buckley Road.

Based upon the wind rose analysis presented in *Chapter Three*, the primary runway provides 98.85 percent coverage at 10.5 knot crosswind components. This exceeds the FAA recommendation to provide 95 percent coverage with the runway configuration, thus providing the opportunity for consideration of future closure of the crosswind runway. Closure of the runway would provide the opportunity for additional hangar development on the west side of the airfield, and additional parking apron. This alternative has been depicted on **Exhibit 4D**.

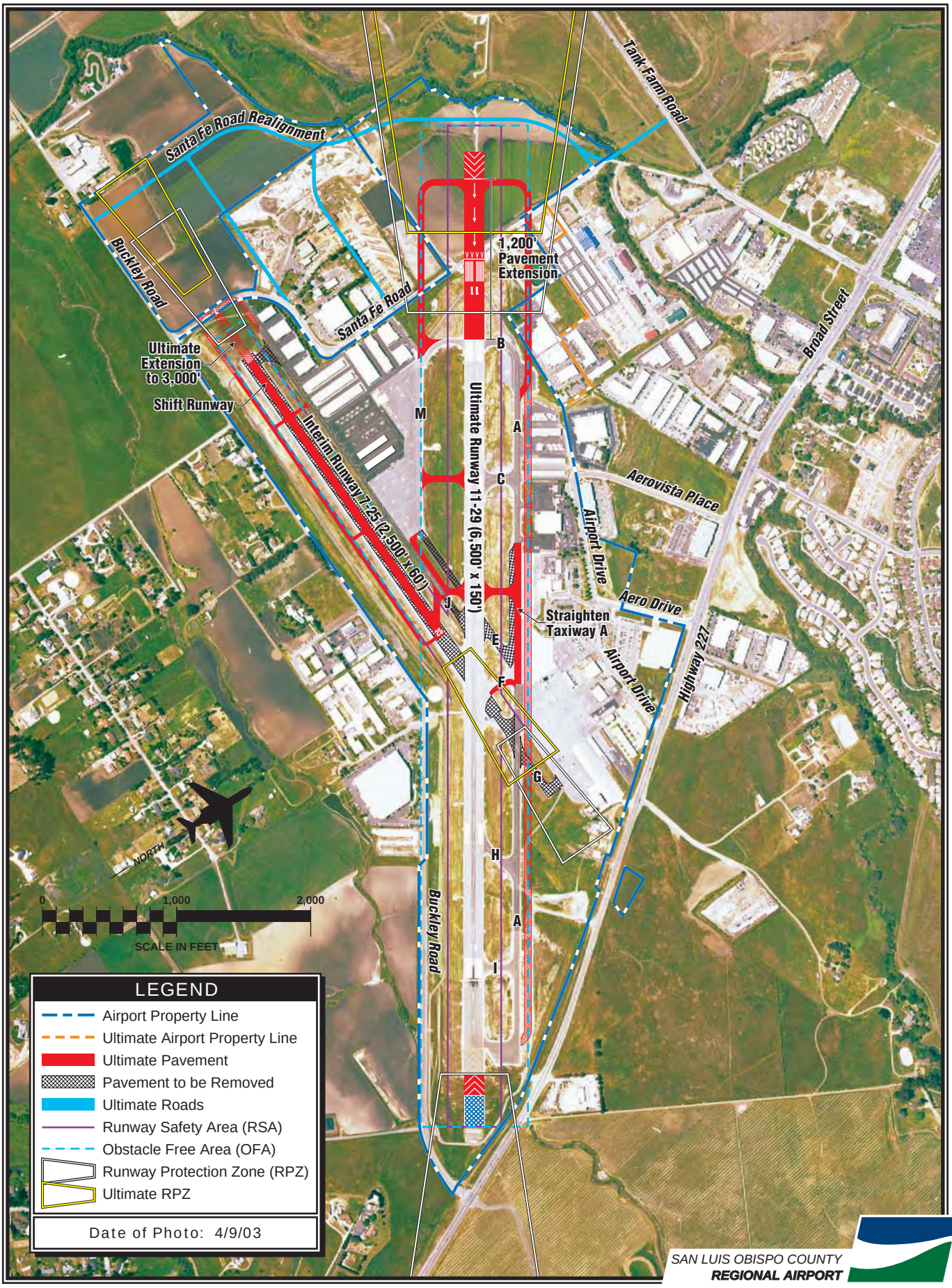
02MP21-4B-8/24/04



SAN LUIS OBISPO COUNTY
REGIONAL AIRPORT

Exhibit 4B
AIRFIELD ALTERNATIVE B
(6,300 ft.-Runway 11-29, Standard EMAS)

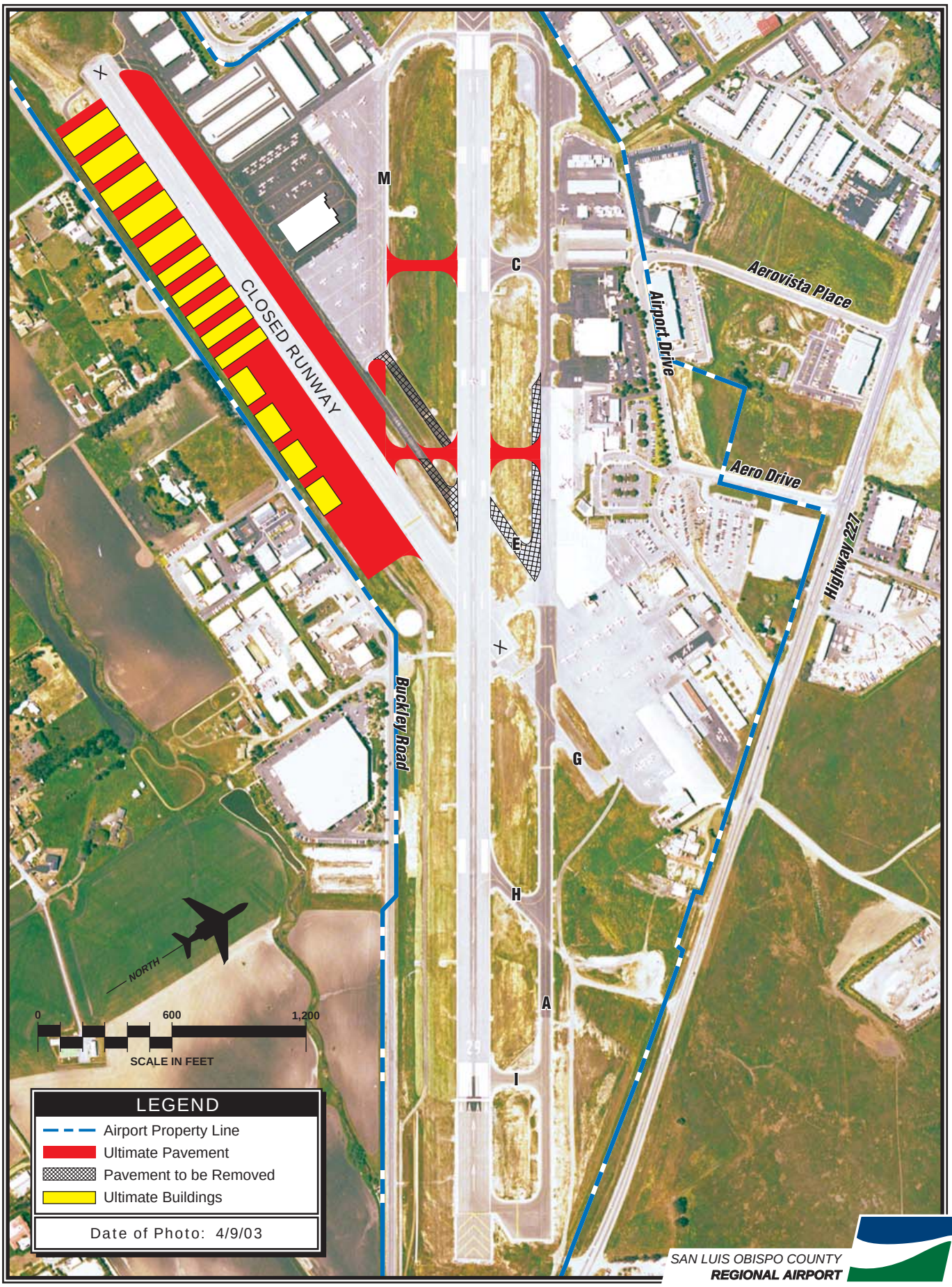
02MP21-4C-8/24/04



SAN LUIS OBISPO COUNTY
REGIONAL AIRPORT

Exhibit 4C
AIRFIELD ALTERNATIVE C
(6,500 ft.-Runway 11-29, Declared Distances)

02MP21-4D-8/24/04



SAN LUIS OBISPO COUNTY
REGIONAL AIRPORT

Exhibit 4D
AIRFIELD ALTERNATIVE D

TAXIWAY CONSIDERATIONS

Taxiway improvements to improve movement of aircraft on the airfield have been shown on **Exhibits 4A, 4B,** and **4C.** Included is a straightening of Taxiway A in front of the existing terminal to maintain consistent separation between the runway and taxiway (325 feet) along its full length. This project may not proceed until commercial airline operations are relocated to the new terminal. An extension of Taxiway C (from edge of runway to Taxiway M) is also depicted on the exhibits.

Long term, Taxiway A should be relocated to provide the standard runway-taxiway separation of 400 feet. This will require the redevelopment of general aviation areas at the north end of the airfield and possible reconfiguration of other facilities that may fall within clearing standards from the taxiway.

In addition to the straightening of Taxiway A and potential addition and/or extension of parallel taxiways along Runway 11-29, other taxiway improvements may be considered to the airfield to improve traffic flow.

When Taxiway C was reconstructed in 2002, it was converted to a right-angled exit, allowing it to be used more effectively for landings on Runway 29. A new angled taxiway (H) was constructed for more efficient exits from the runway when landing on Runway 11. These were the only recommendations to exit taxiways included in the **1998 Master Plan**. However, depending upon the final airfield concept, Taxiways E, F, and G will need to be examined for a simplified configuration, possibly creating a single right-angled exit which eliminates the potential for converging traffic at the edge of the runway or at Taxiway A. This simplification of the midfield intersection has been depicted on each of the airfield exhibits.

The fillet on Taxiway F should be widened to improve exiting capability for landings on Runway 29. In addition, since Taxiway E will be located exactly at midfield of an extended Runway 11-29, the taxiway could be used more efficiently if it is converted to a right-angled exit taxiway and extended to either side of Runway 11-29 (as depicted on the exhibits).

The parallel taxiway shown on the south side of Runway 7-25 is provided to allow for small hangar development between the runway and Buckley Road. Exit taxiways are evenly spaced along the runway. One taxiway aligns with Taxiway K, while the other is shown crossing the runway and connecting with Taxiway J.

AIRPORT TRAFFIC CONTROL TOWER SITING CONSIDERATIONS

While the existing location of the control tower provides a nearly ideal centralized location on the airfield, it falls at the edge of the primary surface, and by its position with respect to the fu-

ture terminal building location, creates potential conflicts on the apron; therefore, consideration should be given to tower relocation. While siting is traditionally undertaken with an independent FAA tower siting study, the master plan provides the opportunity to examine siting considerations, and a cursory review of potential relocation options. The following are operational and spatial requirements per *FAA Order 6480.4, Airport Traffic Control Tower Siting Criteria*, used generally for locating potential control tower sites:

Mandatory Siting Requirements:

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

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

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

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

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

The existing tower cab height is 67 feet above the runway centerline elevation. To clear FAR Part 77 surfaces, the tower would need to be located nearly 1,000 feet from the runway centerline, which does not appear practical when visibility requirements to active runways and taxiways are taken into consideration. If an airfield configuration involving closure of Runway 7-25 is considered, then a new tower could be sited farther south of the current location. However, this does not seem practical if Runway 7-25 remains open. The west side of the airfield may provide some opportunities, although staying under FAR Part 77 surfaces while maintaining visibility requirements is not realistic. A final decision will likely require a compromise with respect to the aforementioned criteria

SUMMARY OF AIRFIELD ALTERNATIVES

The preceding analysis of airfield alternatives, while presented on only three exhibits, actually presents a series of alternatives for the future airfield configuration. Among these is the do nothing or no build alternative, which would eventually reduce the quality of air services to the community by not meeting the facility needs identified in *Chapter Three*. An extension of Runway 11-29 may be combined with one of three options for Runway 7-25: a) do nothing, b) shifting the runway to the west, while shortening and narrowing to 3000 feet

by 60 feet, and c) closure. It is difficult to compare the alternatives directly; however, the key alternatives can be considered with regard to the following factors: efficiency, cost, noise, safety, and capacity.

Efficiency is not enhanced by the do nothing alternative; however, an extension to Runway 11-29 will create a more efficient airfield system which can respond to changing airline and general aviation fleet composition. Shifting the threshold of Runway 25 will provide the option of departing traffic from Runway 25 without having to cross Runway 11-29 (if originating from the west ramp). Closing Runway 7-25 will also eliminate conflicts between the intersecting runways.

Cost will be lowest with the do nothing and highest with the extension of Runway 11-29. A shift of Runway 7-25 will require the construction of new pavement on the west end of the runway; however, closure of the runway will cost very little.

Noise exposure is expected to change very little with any of the alternatives. The extension of Runway 11-29 is designed for regional jets, which are the quietest jet aircraft in the commercial fleet. Departures on Runway 11 will be able to start takeoff roll 1,200 feet farther north than is currently possible, allowing all aircraft to increase altitude over areas south of the airport. Closure of Runway 7-25 will simplify and reduce the traffic patterns around the airport, although total noise exposure (which is defined by operations on Runway 11-29) is not expected to change.

Safety will be enhanced with the extension of Runway 11-29, as the project will provide enhanced safety areas at each end of the runway. The do nothing option will do little to improve safety; the runway shift will increase the altitude of approaches over development on the east side of the runway. The Runway 7-25 closure option eliminates overflights east and west of the airport.

Capacity of the airfield is not expected to be affected significantly by any of the alternatives. Crosswind runways (or longer primary runways) do little to increase airfield capacity. However, by shifting the threshold of Runway 25, the control tower will have the option of departing traffic on Runway 25 and 29 simultaneously.

GENERAL AVIATION DEVELOPMENT ALTERNATIVES

The general aviation requirements analysis identified increasing demand for nested T-hangars, executive hangars, and larger conventional hangars throughout the planning period. The net increase in hangar space demand (including maintenance areas) was estimated at 330,000 square feet. However, the capacity on the east side of the airfield will be reduced temporarily with the construction of the new terminal, reducing hangar/ maintenance areas by approximately 25,000 square feet. Therefore, over the plan-

ning period, a total of 355,000 square feet of new hangar/ maintenance area will need to be provided on the airfield.

The **1998 Master Plan** proposed general aviation facilities on the east side, south of the future terminal area. A configuration for nested T-hangars adjacent to Taxiway A has been included on **Exhibit 4E**. This development has been set back to the edge of the primary surface, which extends 500 feet on either side of Runway 11-29. The total hangar area depicted is 64,700 square feet, and will accommodate 50 hangar positions (a majority with 42-foot doors). The area will also provide for 27 tie-down positions and off-road parking of vehicles adjacent to the end of each hangar row.

Additional fixed base operations hangars, airport maintenance building, fuel farm, aircraft tie-downs and automobile parking area is also identified on **Exhibit 4E**. This development would not be able to proceed until Runway 7-25 is shifted to the west to allow for development potential beyond the end of the runway protection zone. The additional hangar area provided is approximately 24,000 square feet.

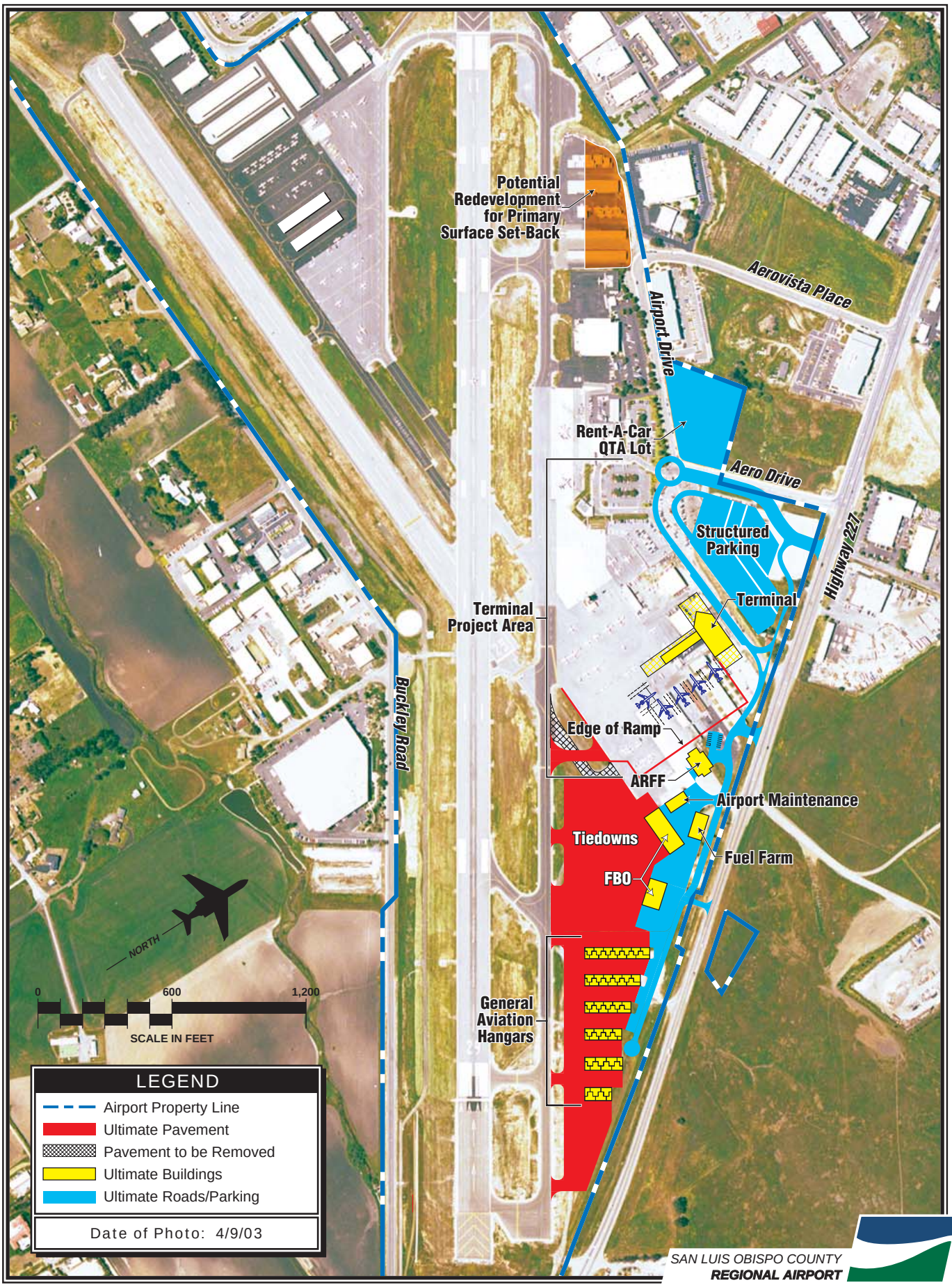
The existing general aviation hangars at the north end of Taxiway A have been identified on **Exhibit 4E** as an area for future redevelopment, since these hangars are located within the primary surface of Runway 11-29. Future hangar development should maintain a 500-foot setback from the runway centerline.

Full closure of Runway 7-25 provides for additional hangar development on the west side. This option was presented on **Exhibit 4D**. The concept as depicted would provide an additional 260,000 square feet of hangar and maintenance area along the closed runway.

The **1998 Master Plan** identified a parallel taxiway on the south side of Runway 7-25 at a 200-foot separation, to allow future hangar parcels adjacent to Buckley Road. However, when taxiway to building clearances are taken into consideration, placement of a taxiway at this separation does not create adequate room for both hangars and parking. However, when the separation is reduced to 150 feet (the minimum allowed in FAA design for B-I aircraft not exceeding 12,500 pounds), then adequate room is provided for hangar development. A total hangar area of 120,000 square feet is depicted along Buckley Road on **Exhibit 4F**. Limited access points are provided onto Buckley Road. Automobile parking is shared between each pair of hangars.

The airfield improvements depicted on **Exhibit 4B** have also been reflected on **Exhibit 4F**, which provides for an additional 113,750 square feet of hangars adjacent to the extension of Taxiway M, and an additional 60,000 square feet of hangars adjacent to the extension of Taxiway J, after Santa Fe Road is realigned. This alternative also reflects an extension of the perimeter road past the American Eagle maintenance hangar.

02MP21-4E-8/24/04



SAN LUIS OBISPO COUNTY
REGIONAL AIRPORT

Exhibit 4E
LANDSIDE ALTERNATIVE A

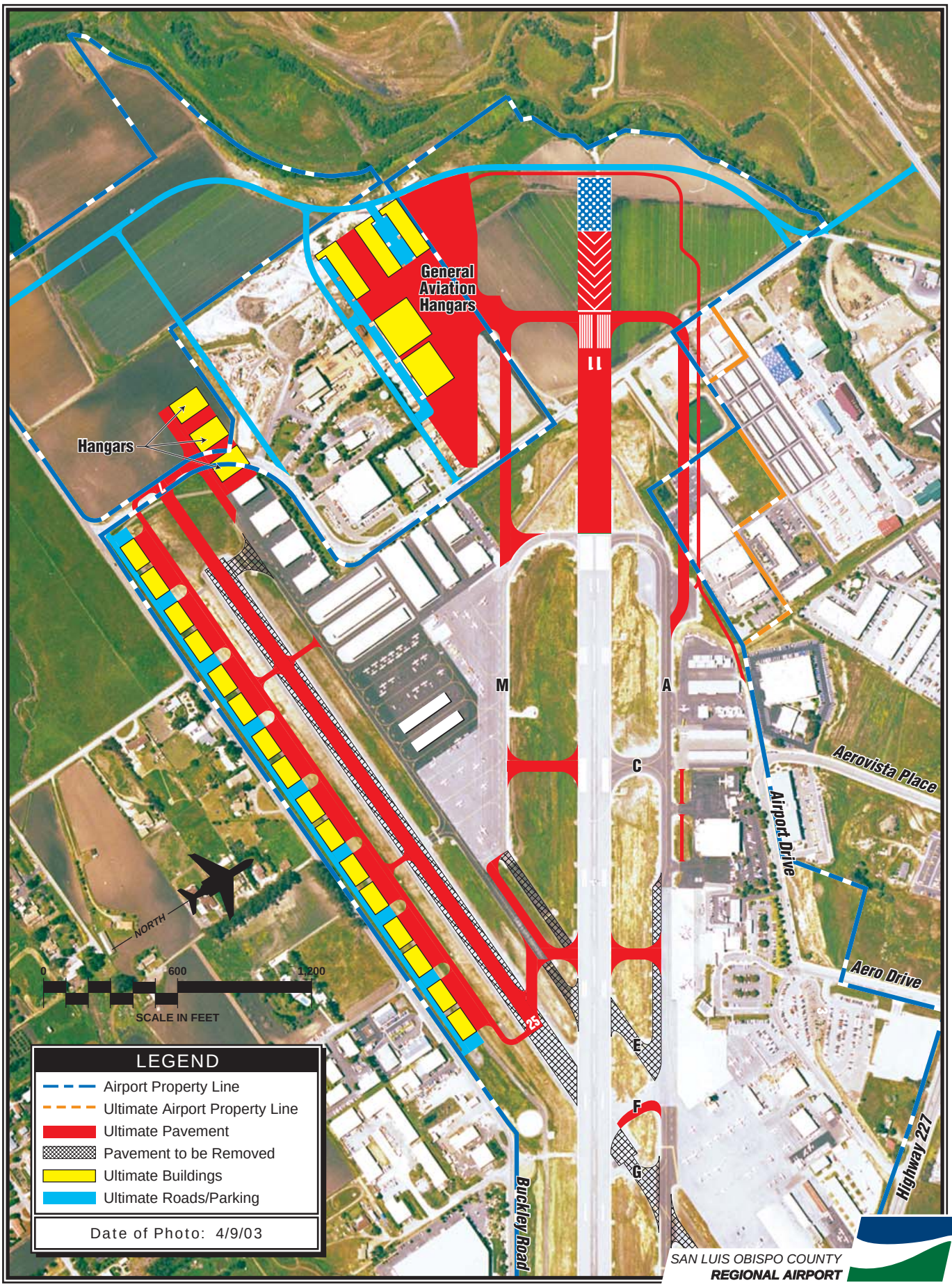


Exhibit 4F
LANDSIDE ALTERNATIVE B

Combined, the new general aviation hangar area created in the preceding alternatives is 382,450 square feet (this assumes the shift of Runway 7-25 to the west). *This represents 108 percent of projected demand*. If Runway 7-25 is closed, an additional 260,000 square feet of hangar space is created, for a combined total of 602,550 square feet. *This would represent 170 percent of projected demand*.

Much of the future general aviation hangar development will be dependent on projects to purchase property, reroute roads, and extend taxiways. Until these projects are completed, additional general aviation hangar development can be pursued along Taxiway A at the south end of the airfield, and on the west side of the airfield, adjacent to Buckley Road.

NEW PASSENGER TERMINAL COMPLEX

As mentioned earlier in this chapter, San Luis Obispo County is pursuing preliminary design of a new terminal facility in a location on the east side of the airfield, as identified by the **1998 Master Plan**. Adjacent to the terminal site, a new ARFF (airport rescue and firefighting) facility is being developed, which replaces the facility which was removed in 2003, and the temporary facility currently in use. The new 57,000 square foot terminal building**,** ramp, and structured parking lot are designed to meet future needs in a phased manner, with additional building and concourse to be added as required to meet long term needs. With added set-back from the runway, the ramp will easily handle as many as a dozen aircraft parking positions, which far exceeds the capacity of the current ramp while not penetrating the F.A.R. Part 77 transitional clearance surfaces. The location for the new terminal building, ramp, structured parking lot, and ARFF facility has been depicted on **Exhibit 4E**.

With heightened interest in security due to recent terrorist attacks in the U.S., many commercial service airports (including San Luis Obispo County Regional Airport) lack adequate terminal space to meet increased security equipment and personnel requirements. One of the considerations in the terminal design is to provide adequate space for these needs, although offices for the Transportation Security Administration (TSA) will be maintained in the current terminal building.

In addition, concession space in the new terminal will be limited, since the existing airport restaurant (Spirit of San Luis Restaurant) will remain in its current location. Current terminal space allocation summaries indicate that only 4,500 square feet of space in the new terminal will be dedicated to concessions.

The automobile traffic will be directed in a counterclockwise direction past the new terminal building, encircling the parking lot. Traffic entering and exiting the terminal area will use a relocated intersection 180 feet south-

east of Aero Drive at Highway 227. A quick turnaround (QTA) lot for rental car companies will be provided on the north side of Aero Drive. An internal roadway will be extended parallel with Highway 227 to provide access to the ARFF facility and aircraft storage hangars located farther south on the property. Another access point along Highway 227 has been proposed adjacent to the ARFF facility.

LAND ACQUISITION CONSIDERATIONS

As part of the alternatives analysis, consideration was given to ultimate property needs for the airport. Based upon the preceding development alternatives, several parcels have been identified. Land acquisition on the north end of the airfield is required to allow for the extension of parallel Taxiways A and M, and the relocation of Santa Fe Road. Areas at the south end of Runway 11-29, in the approach and transitional surface areas, were recommended for acquisition in the **1998 Master Plan**.

In formulating future airport land use development alternatives, it will be necessary to consider the impact of FAA regulations on land acquired with FAA grants, the conditions under which the County accepts federal grants, and the highest and best use of available property in terms of location, facilities available, functional capabilities, and revenue potential.

Unlike development grants, assurances remain in effect permanently for land acquired with federal airport aid programs. Such land can be used only for aeronautical purposes unless released by the FAA. Changes made to non-aeronautical uses may be approved by the FAA if, in its judgment, aeronautical functioning of the airport is not impaired. The FAA will not approve a change to an airport layout plan (ALP) where a non-aeronautical property usage option would result in the reduction of an airport's ability to meet aeronautical need.

FUTURE LAND USE DESIGNATIONS

Future use of the airport property may be categorized as follows:

Airfield, Approach Protection, and Open Space - This broad category encompasses the runways, taxiways, safety and object free areas, runway visibility zones, and runway protection zones. The approach protection areas may be extended beyond the runway protection zones to further protect the runway approach. Open space designations may be applied to areas within 100-year floodplains or roadway right-of-ways.

General Aviation - The general aviation category is a broad category which includes aircraft storage hangars, aircraft maintenance, parking ramp for local and itinerant aircraft, aviation fuel storage areas, automobile

parking for hangars, and vehicular circulation. While larger commercial airports may have separate areas designated for air cargo, at San Luis Obispo these activities coexist with other general aviation activities. Currently, an estimated 46.9 acres are dedicated to this land use. Under the future land use concept, this will increase to 98.8 acres.

Passenger Terminal Complex - The passenger terminal complex includes the terminal building, concourses, apron and aircraft circulation areas, automobile parking lots, rental car ready/return and service areas, and vehicular circulation. Also included in this category are airport management, airport rescue and firefighting, and airfield maintenance. Currently, an estimated 15.4 acres are dedicated to this land use. Under the future land use concept, this will increase to 22.8 acres.

Aviation-Related Businesses (with airfield access) - This category is generally assigned to aviation-related activities which possess direct airfield access.

Aviation-Related Businesses (with no airfield access) - This category is assigned to aviation-related activities which do not possess airfield access.

The future land use concept has been depicted on **Exhibit 4G**. This concept exhibit assumes that Runway 11-29 will be extended to the northwest, Runway 7-25 will be shifted to the west, and several properties will be acquired on the northwest side of the airport to accommodate the relocation of Santa Fe Road and extension of parallel Taxiways A and M. Following refinement of the master plan concept, a future land use plan will be developed and included in the set of airport layout plan drawings.

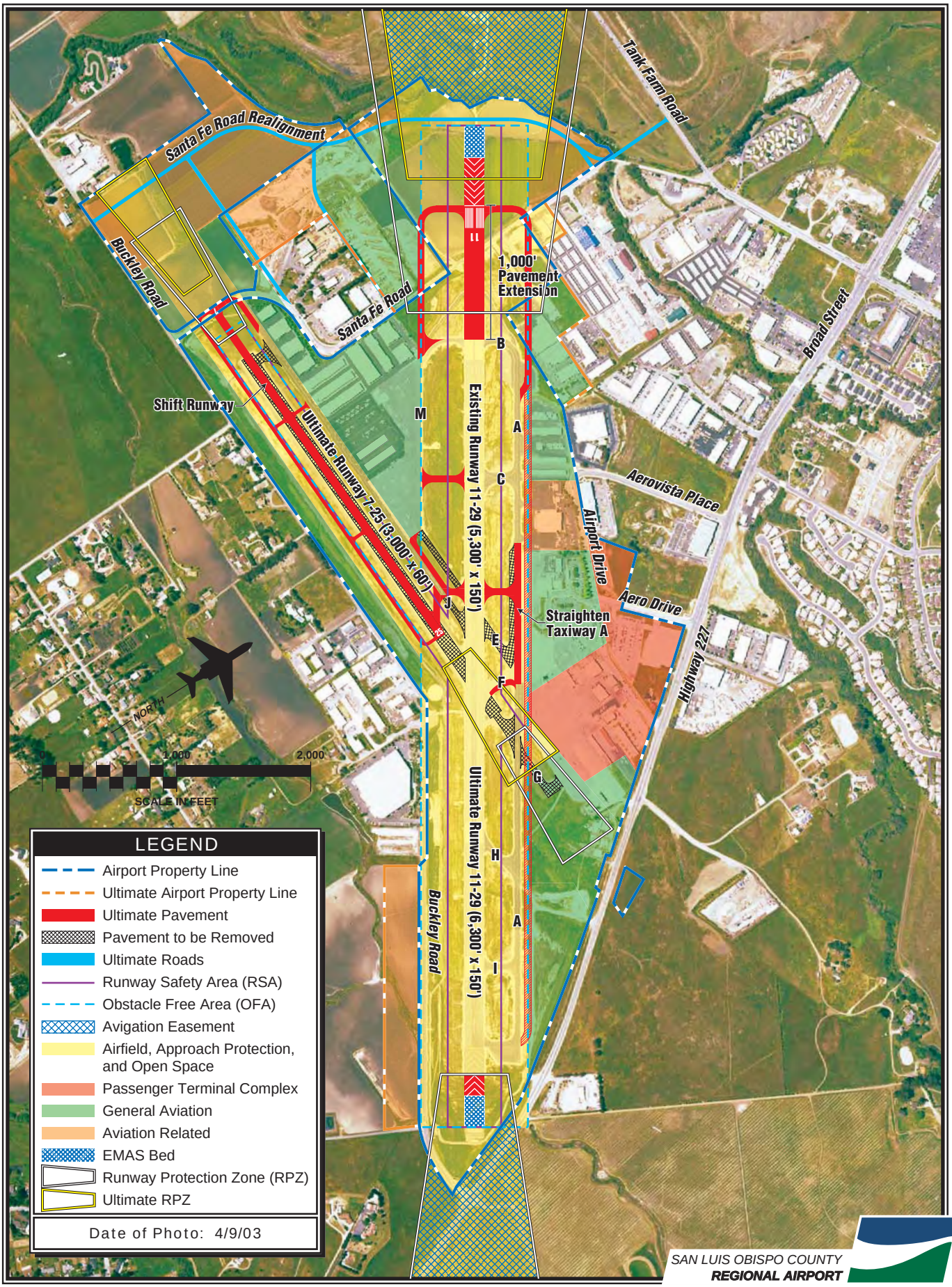
SUMMARY

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

Upon review of the chapter by the Planning Advisory Committee, the County, and the public, a final master planning concept will be developed.

The final concept must represent a means by which the airport can grow in a balanced manner, both on the airside and landside. In addition, it must provide for flexibility to meet activity which may not be anticipated at this time. The remaining chapters will provide a refinement of the final concept, recommend an implementation schedule, and provide detailed cost estimates and capital program financing assumptions.

02MP21-4G-8/24/04



SAN LUIS OBISPO COUNTY
REGIONAL AIRPORT

Exhibit 4G
FUTURE LAND USE CONCEPT

SAN LUIS OBISPO COUNTY
REGIONAL AIRPORT

Chapter Five
RECOMMENDED MASTER PLAN CONCEPT & FINANCIAL PLAN

RECOMMENDED MASTER PLAN CONCEPT & FINANCIAL PLAN

SAN LUIS OBISPO COUNTY
REGIONAL AIRPORT

The master planning process for San Luis Obispo County Regional Airport has evolved through the development of forecasts of future demand, facility needs assessments, and the evaluation of airport development alternatives. The planning process has included the development of two phase reports, distributed to the Planning Advisory Committee (PAC), and discussed at three planning meetings. In addition, the material was presented to the general public through two public information workshops.

The coordination of the planning effort has allowed the direct input of each participant, resulting in the development of a master plan concept, as presented in **Exhibit 5A**. The purpose of this chapter is to describe the concept, present the detailed cost estimates which have been prepared for the proposed development, and describe the potential funding mechanisms for the master planning recommendations.

The Federal Aviation Administration (FAA) requires the airport to submit a five-year Airport Capital Improvement Program (ACIP) each year. The master plan affords the opportunity to examine potential projects beyond the short term planning horizon (five years). Since many factors may influence the timing of projects in the intermediate and long term planning periods, greater flexibility must be considered with regard to their implementation.

The timing of capacity-related projects will need to be based upon activity

levels (e.g., passengers, operations/ fleet mix, based aircraft, or cargo), while the timing of other projects may focus on the need to upgrade security, improve airfield or landside efficiencies, or rehabilitate infrastructure. However, the timing of all projects will be influenced by existing lease agreements, airport earnings (and passenger facility charge revenues), and the availability of federal entitlement and discretionary grants.

AIRPORT DESIGN STANDARDS

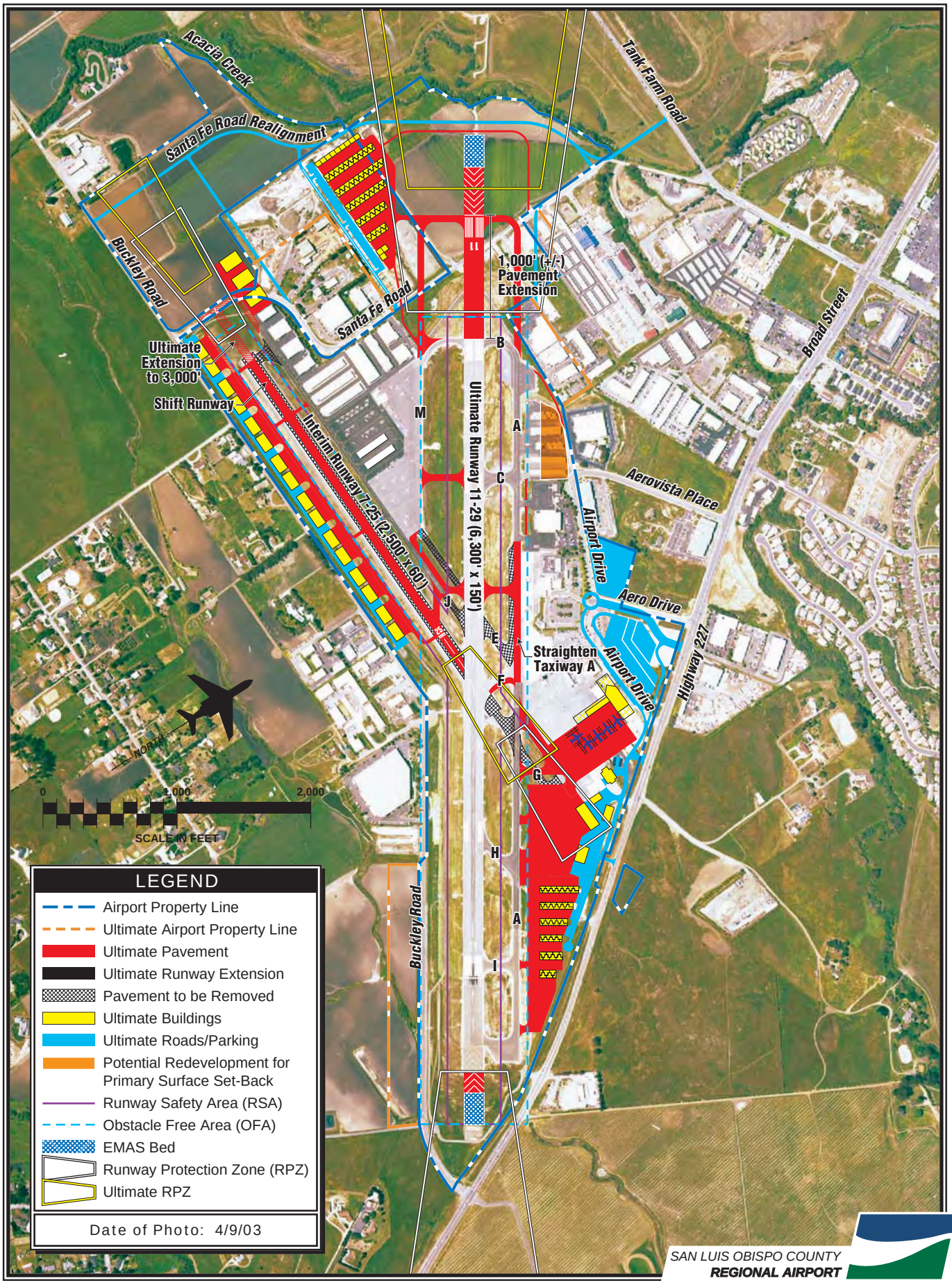
The FAA has established design standards which define the physical dimensions of runways and taxiways, and the imaginary clearance surfaces adjacent to operations areas. The design standards also define the separation criteria for the placement of landside facilities. As discussed in the preceding chapters, the FAA design criteria is a function of the critical design aircraft, or "family" of aircraft which conduct a minimum of 500 or more itinerant operations (landings and takeoffs) each year. The design category is defined by the aircraft wingspan and the approach speed. For San Luis Obispo County Regional Airport, the current design standard is C-II, and the critical aircraft is the CRJ-200 (50 passenger) regional jet. For future planning, the CRJ-700 (70 passenger) regional jet has been used, since it has slightly greater overall dimensions and tail height. The design standards have been summarized and compared to existing airport conditions in **Table 5A**, which is a summary of the FAA's design software program, Version 4.2D. Existing design standard deficiencies have been noted in bold, with footnotes added for clarification.

Prior to submitting the airport layout plan (ALP) drawing to the FAA for approval, San Luis Obispo County will be required to submit a listing of the standards which cannot be met, defined as a "modification to standards." These must be approved by the FAA, and listed on the official ALP, to recognize the national design standards which cannot be met at this location. A "modification to standards" applies to any change in FAA standards, **other than dimensional standards for the runway safety area,** applicable to an airport design, construction, or equipment procurement project, that results in lower costs, greater efficiency, or is necessary **to accommodate an unusual local condition** on a specific project, when adopted on a case-to-case basis.

The request to the FAA must be accompanied by a description of the proposed modification, a discussion of viable alternatives for accommodating the unusual conditions, and an assurance that the **modification to design standards will provide an acceptable level of safety.** It is the intent of San Luis Obispo County to pursue a permanent "modification to standards" for the runway-taxiway separation on Runway 11-29.

As a commercial service airport, the facility must also comply with the requirements of F.A.R. Part 139, *Certification and Operations: Land Airports Serving Certain Air Carriers.* This regulation prescribes the rules governing the certification and operation of land airports which serve scheduled or unscheduled passenger operations. Under Part 139, the airport must

02MP21-5A-8/24/04



SAN LUIS OBISPO COUNTY
REGIONAL AIRPORT

Exhibit 5A
MASTER PLAN CONCEPT

TABLE 5A
Design Standards Comparison
San Luis Obispo County Regional Airport (SBP)
San Luis Obispo, CA
Prepared By Coffman Associates
August 2004/Revised October 2004

	C-II Design Standard	CRJ-700[1]	Existing Condition
AIRPORT DESIGN AIRPLANE AND AIRPORT DATA			
Aircraft Approach Category C			
Airplane Design Group II			
Airplane Wingspan	78.99 ft.	76.30 ft.	
Primary runway end approach visibility minimums are not lower than CAT I (Runway 11)			
Other runway end approach visibility minimums are not lower than 1 mile (Runway 29)			
Airplane undercarriage width (1.15 x main gear track)	25.30 ft.	12.10 ft.	
Airport elevation	212 ft.	212 ft.	212 ft.
Airplane tail height	24.02 ft.	24.70 ft.	
RUNWAY AND TAXIWAY WIDTH AND CLEARANCE STANDARD DIMENSIONS			
Runway centerline to parallel runway centerline simultaneous operations when wake turbulence is not treated as a factor:			
VFR operations with no intervening taxiway	700 ft.	700 ft.	n/a
VFR operations with one intervening taxiway	800 ft.	800 ft.	n/a
VFR operations with two intervening taxiways	905 ft.	905 ft.	n/a
IFR approach and departure with approach to near threshold	2,500 feet less 100 feet for each 500 feet of threshold stagger to a minimum of 1,000 feet	2,500 feet less 100 feet for each 500 feet of threshold stagger to a minimum of 1,000 feet	n/a
Runway centerline to parallel runway centerline simultaneous operations when wake turbulence is treated as a factor:			
VFR operations	2,500 ft.	2,500 ft.	n/a
IFR departures	2,500 ft.	2,500 ft.	n/a
IFR approach and departure with approach to near threshold	2,500 ft.	2,500 ft.	n/a
IFR approach and departure with approach to far threshold	2,500 feet plus 100 feet for each 500 feet of threshold stagger	2,500 feet plus 100 feet for each 500 feet of threshold stagger	n/a
IFR approaches	3,400 ft.	3,400 ft.	n/a
Runway centerline to parallel taxiway/taxilane centerline	400 ft.	238.1 ft.	**325 ft./ 290.6**[2]
Runway centerline to edge of aircraft parking	500 ft.	400.0 ft.	**383.5 ft.**[3]
Runway width	100 ft.	100 ft.	150 ft.
Runway shoulder width	10 ft.	10 ft.	10 ft.
Runway blast pad width	120 ft.	120 ft.	150 ft.
Runway blast pad length	150 ft.	150 ft.	200 ft.
Runway safety area width	400 ft.	400 ft.	400 ft.
Runway safety area length beyond each runway end or stopway end, whichever is greater	1,000 ft.	1,000 ft.	**600 ft./ 471.6 ft.**[4]

TABLE 5A (Continued)
Design Standards Comparison
San Luis Obispo County Regional Airport (SBP)
San Luis Obispo, CA
Prepared By Coffman Associates
August 2004/Revised October 2004

	C-II Design Standard	CRJ-700[1]	Existing Condition
RUNWAY AND TAXIWAY WIDTH AND CLEARANCE STANDARD DIMENSIONS (Cont.)			
Runway object free area width	800 ft.	800 ft.	**741 ft.**[5]
Runway object free area length beyond each runway end or stopway end, whichever is greater	1,000 ft.	1,000 ft.*	**0 ft./ 256.8 ft.**[6]
Clearway width	500 ft.	500 ft.	500 ft.
Stopway width	100 ft.	100 ft.	100 ft.
Obstacle free zone (OFZ):			
Runway OFZ width	400 ft.	400 ft.	400 ft.
Runway OFZ length beyond each runway end	200 ft.	200 ft.	200 ft.
Inner-approach OFZ width	400 ft.	400 ft.	400 ft.
Inner-approach OFZ length beyond approach light system	200 ft.	200 ft.	200 ft.
Inner-approach OFZ slope from 200 feet beyond threshold	50:1	50:1	50:1
Inner-transitional OFZ height	52.9 ft.	53.2	53.2
Inner-transitional OFZ slope	6:1	6:1	6:1
Runway protection zone at the primary runway end (Runway 11):[7]			
Width 200 feet from runway end	1,000 ft.		
Width 2,700 feet from runway end	1,750 ft.		
Length	2,500 ft.		
Runway protection zone at other runway end (Runway 29):[7]			
Width 200 feet from runway end	500 ft.		
Width 1,900 feet from runway end	1,010 ft.		
Length	1,700 ft.		
Departure runway protection zone (both ends):[7]			
Width 200 feet from the far end of TORA	500 ft.		
Width 1,900 feet from the far end of TORA	1,010 ft.		
Length	1,700 ft.		
Threshold surface at primary runway end (Runway 11):[8]			
Distance out from threshold to start of surface	200 ft.		
Width of surface at start of trapezoidal section	800 ft.		
Width of surface at end of trapezoidal section	3,800 ft.		
Length of trapezoidal section	10,000 ft.		
Length of rectangular section	0 ft.		
Slope of surface	34:1		
Threshold surface at other runway end (Runway 29):[9]			
Distance out from threshold to start of surface	200 ft.		
Width of surface at start of trapezoidal section	800 ft.		
Width of surface at end of trapezoidal section	3,800 ft.		
Length of trapezoidal section	10,000 ft.		
Length of rectangular section	0 ft.		
Slope of surface	20:1		

TABLE 5A (Continued)
Design Standards Comparison
San Luis Obispo County Regional Airport (SBP)
San Luis Obispo, CA
Prepared By Coffman Associates
August 2004/Revised October 2004

	C-II Design Standard	CRJ-700[1]	Existing Condition
RUNWAY AND TAXIWAY WIDTH AND CLEARANCE STANDARD DIMENSIONS (Cont.)			
Taxiway centerline to parallel taxiway/taxilane centerline	105 ft.	101.6 ft.	**80 ft.**
Taxiway centerline to fixed or movable object	65.5 ft.	63.5 ft.	100 ft.
Taxilane centerline to fixed or movable object	57.5 ft.	55.8 ft.	n/a
Taxiway width	35 ft.	27.2 ft.	50 ft.
Taxiway shoulder width	10 ft.	10 ft.	10 ft.
Taxiway safety area width	79 ft.	76.3 ft.	79 ft.
Taxiway object free area width	131 ft.	126.9 ft.	131 ft.
Taxilane object free area width	115 ft.	111.5 ft.	n/a
Taxiway edge safety margin	7.5 ft.	7.5 ft.	7.5 ft.
Taxiway wingtip clearance	26 ft.	25.3 ft.	26 ft.
Taxilane wingtip clearance	18 ft.	17.6 ft.	n/a

REFERENCE: AC 150/5300-13, *Airport Design*, including Changes 1 through 7, *Airport Design*, Version 4.2D.

Notes:

[1] The calculated design values for the rationale method provide an acceptable level of safety for the specified conditions and may be used as part of the justification for modification of standards to meet unusual conditions or accommodate a specific airplane (from guidance provided with *Airport Design* Version 4.2D).

[2] 290.6 feet along portion in front of existing passenger terminal ramp.

[3] At passenger terminal ramp.

[4] Limited to 471.6 ft. on north end next to Santa Fe Road.

[5] Limited by perimeter fence on west side parallel to Buckley Road

[6] No OFA available on north end. Limited by perimeter fence next to Highway 227 on south end.

[7] Portions outside airport property.

[8] No threshold displacement. 3° approach. ½-mile vis. min.

[9] Landing threshold displaced 500 ft. 3.47° approach. 1-mile vis. min.

* Installation of EMAS at each runway end will limit length of OFA beyond runway end to 600 feet.

complete (and maintain) a certification manual which outlines their compliance under each provision of the regulation. This compliance level required is dependent on the airport's design standards and the size and frequency of aircraft in scheduled service. The master plan and airport layout drawings provide a means by which to present this information.

Runway 11-29, as the air carrier use runway, is required to have safety areas in compliance with Part 139. The certification manual also addresses the maintenance and inspection program, operational safety, handing of hazardous materials, aircraft rescue and firefighting equipment, snow and ice control, the airport emergency plan, wildlife hazard management,

and maintenance of the certification manual.

The Airport Improvement Program (AIP) provides funding to airports for the purpose of complying with Part 139. Items frequently funded under the AIP include: airport rescue and firefighting equipment (and buildings), security fences and gates, ice and snow removal equipment, and airport maintenance equipment (and buildings).

THE MASTER PLAN CONCEPT

The master plan concept, as presented in **Exhibit 5A**, reflects the preferred airfield and landside planning recommendations resulting from the coordinated efforts of the consultants, San Luis Obispo County officials, the PAC, and the general public. Following the coordination meetings held in summer and fall 2004, the concept was refined from the development alternatives which had originally been presented in the second phase report and draft final master plan. It should be noted that the master plan concept is conceptual in nature and subject to change as the County pursues pre-design of facilities. The key components of the concept include:

- A 1,000-foot (+/-) pavement extension on the northwest end of Runway 11-29, providing a total runway pavement length of 6,300 feet. An engineered material arresting system (EMAS) is recommended, providing 600 feet of runway safety area (RSA). A paved overrun of 360 feet will lead into 240 feet of EMAS bed (150 feet in width) at the far end of the RSA. The primary advantage to this concept is that it totally avoids Acacia Creek. The initial cost of this concept is significant, but is offset by the savings from costly environmental mitigation and acquisition of additional land which would be required for a standard safety area. The pavement extension will require the relocation of the glide slope antenna and approach lighting system for the precision instrument approach (PIR) on Runway 11, the relocation of Santa Fe Road, the relocation of the airport perimeter road, and the relocation of the airport perimeter fence.

- Install EMAS at the south end of Runway 11-29 to meet the current RSA requirement for a C-II runway. The localizer antenna at the south end of the runway is not expected to be affected by the EMAS installation. The landing displacement will remain on Runway 29.

- Extension of parallel Taxiways A and M to the northwest end of the extended runway, at the existing separation distances from the runway centerline. Land acquisition will be required prior to extension of the taxiways. The relocated glide slope antenna will need to be placed between the runway and the extended Taxiway M, northwest of the current runway threshold/taxiway exit location.

- Straightening of Taxiway A at the current terminal ramp. Upon relocation of passenger terminal facilities to the new terminal, the portion of Taxiway A in front of the existing terminal may be aligned with the remainder of the taxiway.

- Other taxiway improvements include the extension of Taxiway C to the west ramp, closing of Taxiway E and replacement with a right-angled taxiway between Taxiway A and Taxiway J, and reconfiguration of Taxiway F. Taxiway J will be widened next to the west ramp to provide two-way taxiing.

- A new passenger terminal, ramp, and structured parking deck will be constructed in the location originally recommended in the **1998 Airport Master Plan**. The new 66,350-square foot terminal is designed to meet increased space needs for post 9-11 security requirements (including inline bag screening) and future passenger demands in a phased manner, with additional building and concourse added as required to meet long term needs.

- A new airport rescue and firefighting (ARFF) station is under construction to the southeast of the future terminal building. The new structure will be approximately 8,700 square feet.

- Shifting of the Runway 25 threshold, creating an interim length of 2,500 feet on Runway 7-25. In addition, consistent with the runway's B-I design category, the runway may be narrowed to 60 feet. Upon completion of the relocation of Santa Fe Road, the runway pavement may be extended 500 feet on the west end to provide an ultimate runway length of 3,000 feet. Additional exit taxiways have been placed on either side of the runway.

- Upon completion of the westerly shift of the threshold of Runway 25, new general aviation fixed base operations facilities may be constructed southeast of the new passenger terminal ramp and ARFF facility. The facilities may include large span hangars (a minimum of 24,000 square feet), office area, ramp for itinerant aircraft, and automobile parking. An entrance/exit point onto Highway 227 may be provided near these facilities.

- Hangar facilities totaling 82,000 square feet (+/-) for general aviation aircraft southeast of the fixed base facilities. These facilities will provide 65 (+/-) individual storage units on the east side of the airfield. Parking ramp will also be provided southeast of the hangars. The hangars will be located outside of the primary surface area for Runway 11-29 (500 feet from runway centerline).

- Lease parcels along the south side of Runway 7-25 will provide for potential construction of 120,000 square feet of individual hangars, with access from Buckley Road. Each hangar is estimated at 7,500

square feet, and may be used for storage of multiple aircraft.

- Upon relocation of Santa Fe Road, extension of aircraft storage hangars adjacent to Taxiway J, providing a potential 60,000 square feet of hangar area.

- Upon acquisition of property and relocation of Santa Fe Road, construction of additional hangars along extended Taxiway M. As depicted on the plan, the area should provide capacity for 83 (+/-) individual hangar units (117,000 square feet).

- Acquisition of property in support of runway/taxiway extensions, hangar development, and approach protection.

- Construction of new detention basins and airfield drainage improvements.

- Installation of new navigational aids or lighting systems to support instrument approaches.

- Several access improvements have been noted on the master plan concept (in addition to the relocation of Santa Fe Road): relocation of the airport entrance, new frontage roads south of the new terminal site, new access for businesses on the west side (south of Santa Fe Road), and new connections from the realigned Santa Fe Road to existing or future hangar sites.

UPDATED AIRPORT LAYOUT PLAN DRAWINGS

Updated airport layout plan drawings have been prepared for submittal to the FAA. These drawings have been updated to reflect the ultimate airport layout, imaginary airport and approach surfaces, and future use of airport property. A reduced size set of these drawings have been included in the **Appendix.** These drawings were originally prepared for the **1998 Airport Master Plan**, and were prepared on a computer-aided drawing system to allow for easier updates. The drawings should continually be updated to reflect the development of new facilities.

AIRPORT DEVELOPMENT SCHEDULE AND COST SUMMARIES

Once the specific needs and improvements for the airport have been established, the next step is to determine a realistic schedule and costs for implementing the plan. This section examines the overall development, and a demand-based schedule. The development schedule is initially divided into the three planning horizons: short term (0-5 years), intermediate term (6-10 years), and long term (11-20 years). **Table 5B** summarizes the key activity milestones for each planning horizon.

The highest priority development items are generally reflected in the

first five years of the plan, even though they may not be completed until the intermediate planning period. In addition, the development schedule for the short term planning period is shown annually, to be consistent with FAA programming needs.

TABLE 5B
Aviation Activity Planning Horizons
San Luis Obispo County Regional Airport

	Current Levels	Short Term	Intermediate Term	Long Term
Annual Enplanements	155,177	198,000	232,000	301,000
Commercial Operations	14,710	13,600	13,000	15,000
Air Taxi Operations	1,630	1,800	2,000	2,200
Military Operations	769	850	850	850
General Aviation Operations	92,155	101,300	107,800	122,000
Total Operations	109,264	117,550	123,650	140,050
Total Air Cargo (pounds)	1,242,592	1,400,000	1,600,000	2,000,000
Based Aircraft	301	320	350	400

Due to the conceptual nature of a master plan, implementation of capital projects should occur only after further refinement of design and cost estimates. In an effort to provide more accurate cost estimates for the runway extension and new terminal projects, the consultant has reflected preliminary cost estimates which have already been prepared by the airport engineer and terminal architect. Other costs in the intermediate and long term planning periods should only be viewed as preliminary estimates, and subject to further refinement at a later date.

Cost estimates for the projects which have been identified in the master plan have been summarized in **Table 5C**. All costs are presented in current (2004) dollars, and subject to CPI adjustments at a later date.

CAPITAL IMPROVEMENTS FUNDING

Financing of the capital improvements comes from several sources. Contributors to the airport's development are its users, through a system of aircraft taxes, leases, and fees. These sources include not only the rates and charges imposed by San Luis Obispo County, but also federal airport improvement programs. The following paragraphs outline the key sources for funding.

FEDERAL GRANTS

The U.S. 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 pro-

TABLE 5C
San Luis Obispo County Regional Airport
Capital Improvement Program

Year	Project Description	Total Cost	AIP Eligible	Local Share
2005	Midfield Taxiway Construction	$1,500,000	$1,425,000	$75,000
	East Hangar/Tie-Down Area	$1,500,000	$1,425,000	$75,000
	East Hangar Construction	$2,670,000	$0	$2,670,000
	Sub-Total	$5,670,000	$2,850,000	$2,820,000
2006	Land Acquisition (3 Parcels)	$12,500,000	$11,875,000	$625,000
	EMAS Installation (Runway 29)	$3,000,000	$2,850,000	$150,000
	Runway 11-29 Design (Phases I&II)	$500,000	$475,000	$25,000
	Santa Fe Relocation/Rwy 11-29/Twy A Extension	$15,000,000	$14,250,000	$750,000
	Sub-Total	$31,000,000	$29,450,000	$1,550,000
2007	Terminal Design (Phase II)	$2,500,000	$2,375,000	$125,000
	Terminal Construction (Phase I)	$5,000,000	$4,750,000	$250,000
	Sub-Total	$7,500,000	$7,125,000	$375,000
2008	Terminal Construction (Phase II)	$16,000,000	$14,400,000	$1,600,000
	Sub-Total	$16,000,000	$14,400,000	$1,600,000
2009	Terminal Construction (Phase III)	$16,000,000	$14,400,000	$1,600,000
	Sub-Total	$16,000,000	$14,400,000	$1,600,000
2010	Airport Sweeper	$200,000	$180,000	$20,000
	Sub-Total	$200,000	$180,000	$20,000
	Sub-Total Phase I (2005-2010)	$76,370,000	$68,405,000	$7,965,000
2011-2015	**Project Description**	**Total Cost**	**AIP Eligible**	**Local Share**
	Relocation of Taxiway A (Partial at Terminal)	$1,000,000	$900,000	$100,000
	Buckley Road Site Development	$1,000,000	$900,000	$100,000
	Extension of Taxiway M	$3,000,000	$2,700,000	$300,000
	Navaid/Lighting Upgrade - Runway 11-29	$1,000,000	$900,000	$100,000
	West Side Hangar Development (Phase I)	$3,000,000	$1,000,000	$2,000,000
	Pavement Rehabilitation	$5,000,000	$4,500,000	$500,000
	Equipment Replacement	$1,000,000	$900,000	$100,000
	Land Acquisition	$5,000,000	$4,500,000	$500,000
	Master Plan Update/Environmental Evaluations	$1,000,000	$900,000	$100,000
	Sub-Total Phase II (2011-2015)	$21,000,000	$17,200,000	$3,800,000
2016-2025	**Project Description**	**Total Cost**	**AIP Eligible**	**Local Share**
	Runway 7-25 Parallel Taxiway	$1,000,000	$900,000	$100,000
	West Side Hangar Development (Phase II)	$3,000,000	$1,000,000	$2,000,000
	Runway 7-25/Taxiway J Extension	$2,500,000	$2,250,000	$250,000
	ATCT Siting Study	$200,000	$180,000	$20,000
	ATCT Relocation	$5,000,000	$4,500,000	$500,000
	Pavement Rehabilitation	$5,000,000	$4,500,000	$500,000
	Equipment Replacement	$1,000,000	$900,000	$100,000
	Land Acquisition	$5,000,000	$4,500,000	$500,000
	Master Plan Update/Environmental Evaluations	$1,000,000	$900,000	$100,000
	Sub-Total Phase III (2016-2025)	$23,700,000	$19,630,000	$4,070,000
	Totals	$121,070,000	$105,235,000	$15,835,000

Revised 11/18/04

grams to public use airports have been established over the years for this purpose. The most recent legislation was the Airport Improvement Program (AIP) of 1982. AIP has been reauthorized by Congress several times. The latest reauthorization is for the fiscal years 2004 through 2007, and is entitled *Vision 100 - Century of Aviation Reauthorization Act.*

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 U.S. which have certified eligibility. The distribution of grants is administered by the FAA.

Under the AIP program, examples of eligible development projects include runway and taxiway projects on the airfield, air carrier and general aviation ramps, and public access roads. Passenger terminal building improvements (in public areas) are also eligible. However, automobile parking, fueling facilities, utilities, hangar buildings (in most situations), and airline ticketing and operations areas are not generally eligible for AIP funds. The airport is eligible for 95 percent funding participation under *Vision 100*, although the FAA has recommended that airports only assume 90 percent participation after 2007 (when the current bill expires).

Through an entitlement program, primary commercial service airports received a guaranteed minimum of federal assistance each year, based upon their preceding year enplanement levels and Congressional appropriations levels. A primary airport is defined as a commercial service airport enplaning at least 10,000 passengers annually. San Luis Obispo was the 189th busiest commercial service airport in the U.S. based upon calendar year 2002 boardings. They are further classified as a non-hub type, enplaning greater than 10,000 passengers but less than .05 percent of the U.S. total.

Under the current formula, airports enplaning at least 10,000 passengers are entitled to a minimum annual level of $1,000,000. This figure is then adjusted upward as more passenger boardings are recorded. In addition, airports with more than 100 million pounds of landed weight receive special cargo entitlements. San Luis Obispo does not receive special cargo funds. Special set-asides are also established for noise compatibility programs, non-primary commercial service airports, general aviation airports, and other special programs.

In situations where a project exceeds anticipated entitlement funding, the airport may qualify for discretionary funding. Since these funds are distributed on a priority basis, with the FAA establishing priorities based upon the type of project, the airport must demonstrate need and priority for the project over other airports in the region which may be competing for these limited funds. Projects related to safety or security receive the highest priority, followed by maintaining current infrastructure, mitigating

noise and other environmental impacts, meeting design standards, and increasing system capacity. Projects requiring greater than $5 million in discretionary funding generally require a benefit-cost ratio greater than 1.0 (this does not apply to pavement rehabilitation projects). Funding for navigational aids can originate from the Facilities and Equipment (F&E) branch of the FAA.

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 purpose 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. These may be imposed by public agencies controlling a commercial service airport with at least 2,500 annual passengers with scheduled service. Legislation passed by Congress in 2000 has allowed the cap to increase to $4.50 per passenger.

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

While use of PFCs is limited to approved projects, they may be used to fund up to 100 percent of the project, or as matching funds for other AIP projects. PFCs may be used for debt service, or commingled with general revenue to service bond debt. Before submitting a PFC application, the airport must give notice and an opportunity for consultation to airlines operating at the airport.

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

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. An-

other funding source provided by the CTC is low interest loans. Because San Luis Obispo County Regional 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. San Luis Obispo County Regional Airport could utilize these grants as a means to acquire land listed in the CIP.

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 8 to 15 years for its payback and the interest rate is based upon the most recent State of California bond sale.

AIRPORT OPERATING FUND/ FUTURE REVENUE SOURCES

San Luis Obispo County has established a separate fund for the operation of the airport. Included in the airport fund are a number of various revenue and expense accounts. Included in the revenue accounts are space rentals, concession fees, hangar rentals, rental car fees, automobile parking, airline landing fees, fuel flowage fees, and land leases. The direct cost centers include airfield, terminal building, and other buildings on the airport, while indirect cost centers include administration and safety.

While the airport should be able to generate sufficient revenues from its operating sources to cover operating expenses, it will be dependent upon AIP grants and PFC revenues to fund the majority of the capital projects recommended in this plan.

The airport also has the ability to develop land parcels not required for future aeronautical purposes in commercial/retail development.

SAN LUIS OBISPO COUNTY
REGIONAL AIRPORT

Appendix A
GLOSSARY OF TERMS AND ABBREVIATIONS

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.

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.

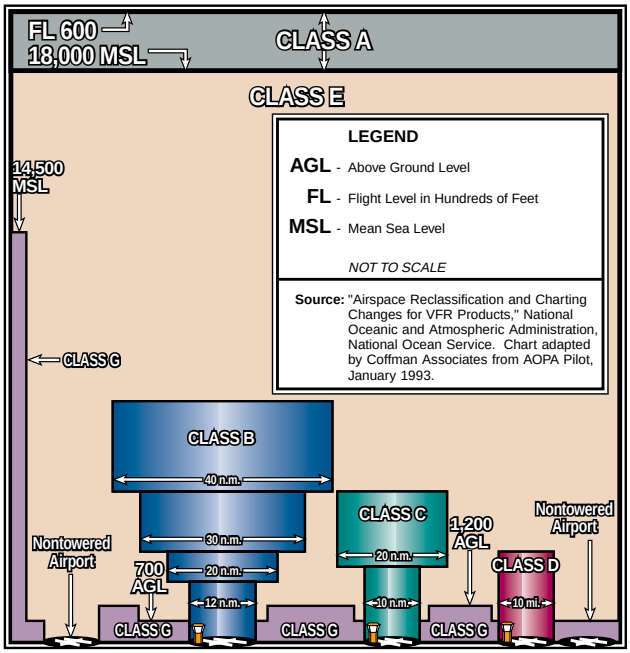
- *CLASS C:* generally, the airspace from the surface to 4,000 feet above the air port elevation (charted as MSL) surrounding those airports that have an operational control tower and radar approach control and are served by a qualifying number of IFR operations or passenger enplanements. Although individually 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;

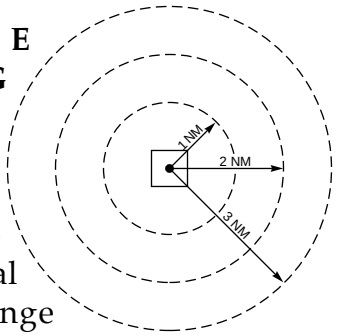
- *TAKEOFF DISTANCE AVAILABLE (TODA):* The TORA plus the length of any remaining runway and/or clear way beyond the far end of the TORA;

- *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 affected, and occurring normally:

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

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

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

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 preplanned coded air traffic control IFR departure routing, preprinted for pilot use in graphic and textual form only.

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

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

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.

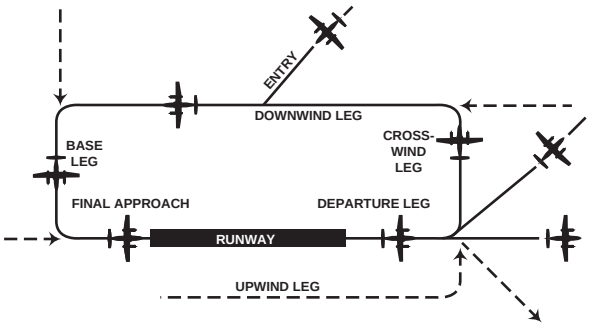
TOUCH-AND-GO: an operation by an aircraft that lands and departs on a runway without stopping or exiting the runway. A touch-and-go is recorded as two operations: one operation for the landing and one operation for the takeoff.

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

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

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

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

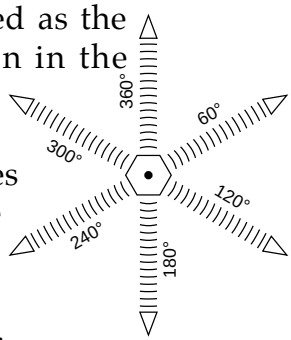


UNICOM: A nongovernment communication facility which may provide airport information at certain airports. Locations and frequencies of UNICOM's are shown on aeronautical charts and publications.

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 firefighting

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 aircraft 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 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)

NPES: National Pollutant Discharge Elimination System

NPIAS: National Plan of Integrated Airport Systems

NPRM: notice of proposed rule-making

ODALS: omnidirectional approach lighting system

OFA: object free area

OFZ: obstacle free zone

OM: outer marker

PAC: planning advisory committee

PAPI: precision approach path indicator

PFC: porous friction course

PFC: passenger facility charge

PCL: pilot-controlled lighting

PIW: public information workshop

PLASI: pulsating visual approach slope indicator

POFA: precision object free area

PVASI: pulsating/steady visual approach slope indicator

RCO: remote communications outlet

REIL: runway end identifier lighting

RNAV: area navigation

RPZ: runway protection zone

RSA: Runway Safety Area

RTR: remote transmitter/receiver

RVR: runway visibility range

RVZ: runway visibility zone

SALS: short approach lighting system

SASP: state aviation system plan

SEL: sound exposure level

SID: standard instrument departure

SM: statute mile (5,280 feet)

SRE: snow removal equipment

SSALF: simplified short approach lighting system with 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

TACAN: tactical air navigational aid

TDZ: touchdown zone

TDZE: touchdown zone elevation

TAF: Federal Aviation Administration (FAA) Terminal Area Forecast

TODA: takeoff distance available

TORA: takeoff runway available

TRACON: terminal radar approach control

VASI: visual approach slope indicator

VFR: visual flight rules (FAR Part 91)

VHF: very high frequency

VOR: very high frequency omni-directional range

VORTAC: VOR and TACAN collocated

SAN LUIS OBISPO COUNTY
REGIONAL AIRPORT

Appendix B
AIRPORT AND RUNWAY DATA

AIRPORT AND RUNWAY DATA

Airport elevation	212 feet
Mean daily maximum temperature of the hottest month	79.00 F.
Maximum difference in runway centerline elevation	46 feet
Length of haul for airplanes of more than 60,000 pounds	1000 miles
Wet and slippery runways	

RUNWAY LENGTHS RECOMMENDED FOR AIRPORT DESIGN

Small airplanes with approach speeds of less than 30 knots	310 feet
Small airplanes with approach speeds of less than 50 knots	820 feet
Small airplanes with less than 10 passenger seats	
75 percent of these small airplanes	2460 feet
95 percent of these small airplanes	3000 feet
100 percent of these small airplanes	3570 feet
Small airplanes with 10 or more passenger seats	4110 feet
Large airplanes of 60,000 pounds or less	
75 percent of these large airplanes at 60 percent useful load	5300 feet
75 percent of these large airplanes at 90 percent useful load	6880 feet
100 percent of these large airplanes at 60 percent useful load	5530 feet
100 percent of these large airplanes at 90 percent useful load	7930 feet
Airplanes of more than 60,000 pounds Approximately	6040 feet

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

AIRPORT DESIGN AIRPLANE AND AIRPORT DATA

Aircraft Approach Category B
Airplane Design Group II
Airplane wingspan . . . . . 78.99 feet
Primary runway end approach visibility minimums are not lower than CAT I
Other runway end approach visibility minimums are not lower than 3/4 mile
Airplane undercarriage width (1.15 x main gear track) . . . 25.30 feet
Airport elevation . . . . . 212 feet
Airplane tail height . . . . . 24.02 feet

RUNWAY AND TAXIWAY WIDTH AND CLEARANCE STANDARD DIMENSIONS

	Airplane Group/ARC	
Runway centerline to parallel runway centerline simultaneous operations when wake turbulence is not treated as a factor:		
VFR operations with no intervening taxiway		700 feet
VFR operations with one intervening taxiway		700 feet
VFR operations with two intervening taxiways		705 feet
IFR approach and departure with approach to near threshold		2500 feet less 100 ft for each 500 ft of threshold stagger to a minimum of 1000 feet.
Runway centerline to parallel runway centerline simultaneous operations when wake turbulence is treated as a factor:		
VFR operations		2500 feet
IFR departures		2500 feet
IFR approach and departure with approach to near threshold		2500 feet
IFR approach and departure with approach to far threshold		2500 feet plus 100 feet for each 500 feet of threshold stagger.
IFR approaches		3400 feet
Runway centerline to parallel taxiway/taxilane centerline	239.5	300 feet
Runway centerline to edge of aircraft parking	400.0	400 feet
Runway width		100 feet
Runway shoulder width		10 feet
Runway blast pad width		120 feet
Runway blast pad length		150 feet
Runway safety area width		300 feet
Runway safety area length beyond each runway end or stopway end, whichever is greater		600 feet
Runway object free area width		800 feet
Runway object free area length beyond each runway end or stopway end, whichever is greater		600 feet
Clearway width		500 feet
Stopway width		100 feet
Obstacle free zone (OFZ):		
Runway OFZ width		400 feet
Runway OFZ length beyond each runway end		200 feet
Inner-approach OFZ width		400 feet
Inner-approach OFZ length beyond approach light system		200 feet
Inner-approach OFZ slope from 200 feet beyond threshold		50:1
Inner-transitional OFZ height H	52.9	52.9 feet
Inner-transitional OFZ slope		6:1
Runway protection zone at the primary runway end:		

Width 200 feet from runway end		1000 feet
Width 2700 feet from runway end		1750 feet
Length		2500 feet

Runway protection zone at other runway end:

Width 200 feet from runway end		1000 feet
Width 1900 feet from runway end		1510 feet
Length		1700 feet

Departure runway protection zone:

Width 200 feet from the far end of TORA		500 feet
Width 1200 feet from the far end of TORA		700 feet
Length		1000 feet

Threshold surface at primary runway end:

Distance out from threshold to start of surface		200 feet
Width of surface at start of trapezoidal section		1000 feet
Width of surface at end of trapezoidal section		4000 feet
Length of trapezoidal section		10000 feet
Length of rectangular section		0 feet
Slope of surface		34:1

Threshold surface at other runway end:

Distance out from threshold to start of surface		200 feet
Width of surface at start of trapezoidal section		1000 feet
Width of surface at end of trapezoidal section		4000 feet
Length of trapezoidal section		10000 feet
Length of rectangular section		0 feet
Slope of surface		20:1

Taxiway centerline to parallel taxiway/taxilane centerline	104.8	105 feet
Taxiway centerline to fixed or movable object	65.3	65.5 feet
Taxilane centerline to parallel taxilane centerline	96.9	97 feet
Taxilane centerline to fixed or movable object	57.4	57.5 feet
Taxiway width	40.3	40.3 feet
Taxiway shoulder width		10 feet
Taxiway safety area width	79.0	79 feet
Taxiway object free area width	130.6	131 feet
Taxilane object free area width	114.8	115 feet
Taxiway edge safety margin		7.5 feet
Taxiway wingtip clearance	25.8	26 feet
Taxilane wingtip clearance	17.9	18 feet

REFERENCE: AC 150/5300-13, Airport Design, including Changes 1 through 4.

AIRPORT DESIGN AIRPLANE AND AIRPORT DATA

Aircraft Approach Category C
Airplane Design Group II
Airplane wingspan . . . . . 78.99 feet
Primary runway end approach visibility minimums are not lower than CAT I
Other runway end approach visibility minimums are not lower than 3/4 mile
Airplane undercarriage width (1.15 x main gear track) . . . 25.30 feet
Airport elevation . . . . . 212 feet
Airplane tail height . . . . . 24.02 feet

RUNWAY AND TAXIWAY WIDTH AND CLEARANCE STANDARD DIMENSIONS

	Airplane Group/ARC	
Runway centerline to parallel runway centerline simultaneous operations when wake turbulence is not treated as a factor:		
VFR operations with no intervening taxiway		700 feet
VFR operations with one intervening taxiway		800 feet
VFR operations with two intervening taxiways		905 feet
IFR approach and departure with approach to near threshold		2500 feet less 100 ft for each 500 ft of threshold stagger to a minimum of 1000 feet.
Runway centerline to parallel runway centerline simultaneous operations when wake turbulence is treated as a factor:		
VFR operations		2500 feet
IFR departures		2500 feet
IFR approach and departure with approach to near threshold		2500 feet
IFR approach and departure with approach to far threshold		2500 feet plus 100 feet for each 500 feet of threshold stagger.
IFR approaches		3400 feet
Runway centerline to parallel taxiway/taxilane centerline	239.5	400 feet
Runway centerline to edge of aircraft parking	400.0	500 feet
Runway width		100 feet
Runway shoulder width		10 feet
Runway blast pad width		120 feet
Runway blast pad length		150 feet
Runway safety area width		400 feet
Runway safety area length beyond each runway end or stopway end, whichever is greater		1000 feet
Runway object free area width		800 feet
Runway object free area length beyond each runway end or stopway end, whichever is greater		1000 feet
Clearway width		500 feet
Stopway width		100 feet
Obstacle free zone (OFZ):		
Runway OFZ width		400 feet
Runway OFZ length beyond each runway end		200 feet
Inner-approach OFZ width		400 feet
Inner-approach OFZ length beyond approach light system		200 feet
Inner-approach OFZ slope from 200 feet beyond threshold		50:1
Inner-transitional OFZ height H	52.9	52.9 feet
Inner-transitional OFZ slope		6:1
Runway protection zone at the primary runway end:		

Width 200 feet from runway end		1000 feet
Width 2700 feet from runway end		1750 feet
Length		2500 feet

ınway protection zone at other runway end:

Width 200 feet from runway end		1000 feet
Width 1900 feet from runway end		1510 feet
Length		1700 feet

Departure runway protection zone:

Width 200 feet from the far end of TORA		500 feet
Width 1900 feet from the far end of TORA		1010 feet
Length		1700 feet

Threshold surface at primary runway end:

Distance out from threshold to start of surface		200 feet
Width of surface at start of trapezoidal section		1000 feet
Width of surface at end of trapezoidal section		4000 feet
Length of trapezoidal section		10000 feet
Length of rectangular section		0 feet
Slope of surface		34:1

Threshold surface at other runway end:

Distance out from threshold to start of surface		200 feet
Width of surface at start of trapezoidal section		1000 feet
Width of surface at end of trapezoidal section		4000 feet
Length of trapezoidal section		10000 feet
Length of rectangular section		0 feet
Slope of surface		20:1

Taxiway centerline to parallel taxiway/taxilane centerline	104.8	105 feet
Taxiway centerline to fixed or movable object	65.3	65.5 feet
Taxilane centerline to parallel taxilane centerline	96.9	97 feet
Taxilane centerline to fixed or movable object	57.4	57.5 feet
Taxiway width	40.3	40.3 feet
Taxiway shoulder width		10 feet
Taxiway safety area width	79.0	79 feet
Taxiway object free area width	130.6	131 feet
Taxilane object free area width	114.8	115 feet
Taxiway edge safety margin		7.5 feet
Taxiway wingtip clearance	25.8	26 feet
Taxilane wingtip clearance	17.9	18 feet

REFERENCE: AC 150/5300-13, Airport Design, including Changes 1 through 4.

AIRPORT DESIGN AIRPLANE AND AIRPORT DATA

Aircraft Approach Category B
Airplane Design Group I (Small Airplanes Exclusively)
Airplane wingspan . . . . . 48.99 feet
Primary runway end approach visibility minimums are visual exclusively
Other runway end approach visibility minimums are visual exclusively
Airplane undercarriage width (1.15 x main gear track) . . . 9.00 feet

RUNWAY AND TAXIWAY WIDTH AND CLEARANCE STANDARD DIMENSIONS

	Airplane	Group/ARC
Runway centerline to parallel runway centerline simultaneous operations when wake turbulence is not treated as a factor:		
VFR operations with no intervening taxiway		700 feet
VFR operations with one intervening taxiway		700 feet
VFR operations with two intervening taxiways		700 feet
IFR approach and departure with approach to near threshold		2500 feet less 100 ft for each 500 ft of threshold stagger to a minimum of 1000 feet.
Runway centerline to parallel runway centerline simultaneous operations when wake turbulence is treated as a factor:		
VFR operations		2500 feet
IFR departures		2500 feet
IFR approach and departure with approach to near threshold		2500 feet
IFR approach and departure with approach to far threshold		2500 feet plus 100 feet for each 500 feet of threshold stagger.
IFR approaches		3400 feet
Runway centerline to parallel taxiway/taxilane centerline	149.5	150 feet
Runway centerline to edge of aircraft parking	125.0	125 feet
Runway width		60 feet
Runway shoulder width		10 feet
Runway blast pad width		80 feet
Runway blast pad length		60 feet
Runway safety area width		120 feet
Runway safety area length beyond each runway end or stopway end, whichever is greater		240 feet
Runway object free area width		250 feet
Runway object free area length beyond each runway end or stopway end, whichever is greater		240 feet
Clearway width		500 feet
Stopway width		60 feet
Obstacle free zone (OFZ):		
Runway OFZ width		250 feet
Runway OFZ length beyond each runway end		200 feet
Inner-approach OFZ width		250 feet
Inner-approach OFZ length beyond approach light system		200 feet
Inner-approach OFZ slope from 200 feet beyond threshold		50:1
Inner-transitional OFZ slope		0:1
Runway protection zone at the primary runway end:		
Width 200 feet from runway end		250 feet
Width 1200 feet from runway end		450 feet
Length		1000 feet

Runway protection zone at other runway end:

Width 200 feet from runway end	250 feet
Width 1200 feet from runway end	450 feet
Length	1000 feet

Departure runway protection zone:

Width 200 feet from the far end of TORA	250 feet
Width 1200 feet from the far end of TORA	450 feet
Length	1000 feet

Threshold surface at primary runway end:

Distance out from threshold to start of surface	0 feet
Width of surface at start of trapezoidal section	250 feet
Width of surface at end of trapezoidal section	700 feet
Length of trapezoidal section	2250 feet
Length of rectangular section	2750 feet
Slope of surface	20:1

Threshold surface at other runway end:

Distance out from threshold to start of surface	0 feet
Width of surface at start of trapezoidal section	250 feet
Width of surface at end of trapezoidal section	700 feet
Length of trapezoidal section	2250 feet
Length of rectangular section	2750 feet
Slope of surface	20:1

Taxiway centerline to parallel taxiway/taxilane centerline	68.8	69 feet
Taxiway centerline to fixed or movable object	44.3	44.5 feet
Taxilane centerline to parallel taxilane centerline	63.9	64 feet
Taxilane centerline to fixed or movable object	39.4	39.5 feet
Taxiway width	19.0	25 feet
Taxiway shoulder width		10 feet
Taxiway safety area width	49.0	49 feet
Taxiway object free area width	88.6	89 feet
Taxilane object free area width	78.8	79 feet
Taxiway edge safety margin		5 feet
Taxiway wingtip clearance	19.8	20 feet
Taxilane wingtip clearance	14.9	15 feet

REFERENCE: AC 150/5300-13, Airport Design, including Changes 1 through 4.

SAN LUIS OBISPO COUNTY
REGIONAL AIRPORT

Appendix C
AIRPORT LAYOUT DRAWINGS

U.S. Department
of Transportation
**Federal Aviation
Administration**

San Francisco Airports District Office
831 Mitten Road, Room 210
Burlingame, California 94010-1303

November 2, 2005

Ms. Klaasje Nairne
Airports Manager
County of San Luis Obispo
Department of General Services
903-5 Airport Drive
San Luis Obispo, CA 93401

Ms. Klaasje Nairne,

Subject: FAA Approval of Airport Layout Plan (ALP) for the San Luis Obispo County Airport:
Airspace Case Number(s): 2005-AWP-491-NRA; 2005 –AWP-492-NRA

We have completed our review of the Airport Layout Plan for the San Luis Obispo County Airport. The FAA finds the ALP acceptable from a planning standpoint. Accordingly, a Conditional Approval is issued for the subject ALP, dated 11/02/2005.

This approval is subject to the condition that any proposed airport development, requiring NEPA environmental processing, shall not be undertaken without prior written environmental approval by the FAA.

This approval considers only the safety, utility, and efficiency of the airport. The following Modification to Standards is approved with this ALP approval.

Standard Being Modified	FAA Standard ARC C-II	Proposal Approved
Runway 11/29 Taxiway "A" Separation	400 feet	290.6'/325' (variable separations)
Runway 11/29 Centerline to Aircraft Parking Area Separation	500 feet	383.5' /390.5'(variable separations)
Runway 11/29 – Object Free Area	1000'L x 800'W	600'L x 741' W

Any airport construction or alteration undertaken requires FAA notification and review as per FAR Part 77. The Airport Sponsor is encouraged to coordinate with appropriate agencies and local government to promote adoption of height and zoning restrictions within and outside of the airport property boundary.

This approval does not represent a commitment to provide federal financial assistance to implement the proposed plan. FAA funding for any development or FAA approval for any

development will be determined at the time of the request, based on the existing regulations, project justification, and eligibility at the time of the request.

The enclosed ALP has been stamped with FAA approval. Please attach this letter to the ALP and retain it in your files. If you have any questions, please contact Mr. Fernando Yanez, FAA Airport Planner at 650 876-2803, ext 667.

Sincerely,

Andrew M. Richards
Manager, San Francisco Airports District Office

Attachment: Approved ALP for **San Luis Obispo County Airport**

AIRPORT LAYOUT PLANS
FOR
SAN LUIS OBISPO COUNTY REGIONAL AIRPORT

Prepared for

SAN LUIS OBISPO COUNTY
SAN LUIS OBISPO, CALIFORNIA

INDEX OF DRAWINGS

November 2005

Coffman Associates

GENERAL NOTES:

1. http://avnwww.jccbi.gov/datasheet/ and http://www.ngs.noaa.gov/aero/uddf/western-pacific Airport Data, Runway Data and Airport ADS Sheets.
2. NGVD29 to NAVD88 (Data Shift 2.9') http://www.ngs.noaa.gov/cgi-bin/VERTCON/vert_con.prl
3. Details concerning terminal improvements are depicted on the TERMINAL AREA DRAWING.
4. Recommended land uses within the airport environs are depicted on the AIRPORT LAND USE PLAN.

LEGEND

EXISTING	ULTIMATE	DESCRIPTION
		ABANDONED PAVEMENT (To Be Removed)
		AIRPORT PROPERTY LINE
		AIRPORT REFERENCE POINT (ARP)
		AIRPORT ROTATING BEACON
		AVIATION EASEMENT (if applicable)
		BUILDING ABANDONMENT (To Be Removed)
		BUILDING CONSTRUCTION
		DRAINAGE
		FACILITY CONSTRUCTION
		FENCING
VAS-4	PAPI-4	NAVIGATIONAL AID INSTALLATION (GVGI)
		RUNWAY THRESHOLD LIGHTS and REIL
		SEGMENTED CIRCLE/WIND INDICATOR
		WIND INDICATOR (Lighted)
		HOLDING POSITION MARKING
		LIGHT POLES
		TREES
		AIRPORT PROPERTY LINE/FENCE
		SURVEY MONUMENT
		TOPOGRAPHY
OFZ		RUNWAY OBSTACLE FREE ZONE
RSA		RUNWAY SAFETY AREA
OFA		RUNWAY OBJECT FREE AREA
BRL-35'		BUILDING RESTRICTION LINE (BRL-35')
		SECTION CORNER

AIRPORT DATA

SAN LUIS OBISPO COUNTY REGIONAL AIRPORT (SBP)

CITY: San Luis Obispo | COUNTY: San Luis Obispo
RANGE: 12,13 East | TOWNSHIP: 31S South | CIVIL TOWNSHIP: Corral De Piedra

		EXISTING	ULTIMATE
AIRPORT SERVICE LEVEL		Commercial Service	
AIRPORT REFERENCE CODE		C-II	C-II
DESIGN AIRCRAFT		CRJ-200	CRJ-700
AIRPORT ELEVATION (NAVD-88)		212.4 MSL	212.4 MSL
MEAN MAXIMUM TEMPERATURE OF HOTTEST MONTH		79° F	79° F
AIRPORT REFERENCE POINT (ARP) COORDINATES (NAD 83)	Latitude	35° 14' 12.6" N	35° 14' 14.582" N
	Longitude	120° 38' 30.7" W	120° 38' 35.162" W
AIRPORT and TERMINAL NAVIGATIONAL AIDS		GPS-A ILS (11) VORTAC ROTATING BEACON ATCT	GPS ILS (11) VORTAC ROTATING BEACON ATCT
Runway 11 Ultimate 925' Extension	Latitude	35° 14' 27.430" N	35° 14' 32.651" N
	Longitude	120° 38' 50.490" W	120° 38' 59.662" W
Runway 29	Latitude	35° 13' 57.550" N	35° 13' 57.550" N
	Longitude	120° 37' 58.010" W	120° 37' 58.010" W
Runway 29 Threshold-EL. 211.9 Est. Runway 29 displacement 500'	Latitude	35° 14' 00.370" N	35° 14' 00.370" N
	Longitude	120° 38' 02.980" W	120° 38' 02.980" W
Runway 7 Ultimate Relocate Runway End 450'	Latitude	35° 14' 12.676" N	35° 14' 12.985" N
	Longitude	120° 38' 00.948" W	120° 38' 06.375" W
Runway 25 Ultimate Relocate Runway End 710'	Latitude	35° 14' 12.799" N	35° 14' 12.775" N
	Longitude	120° 38' 21.650" W	120° 38' 30.210" W

FAA APPROVAL STAMP

APPROVED BY: DATE:

Duane P. Leib
Director, Dept. of General Services

RUNWAY DATA

	Runway 11-29		Runway 7-25	
	EXISTING	ULTIMATE	EXISTING	ULTIMATE
AIRCRAFT APPROACH CATEGORY-DESIGN GROUP	C-II	C-II	B-I	B-I
DESIGN AIRCRAFT	Regional Jet CRJ-200	Regional Jet CRJ-700	Cessna 421	Cessna 421
APPROACH SPEED (Knots) OF DESIGN A/C	91 Knots - 120.7 Knots	91 Knots - 120.7 Knots	91 Knots - 120.7 Knots	90.7 Knots
MAX CERTIFIED TAKEOFF WEIGHT OF DESIGN A/C	44,700	75,500	12,500	12,500
RUNWAY (ALL WEATHER) WIND COVERAGE	SEE WIND DATA BELOW	SEE WIND DATA BELOW	SEE WIND DATA BELOW	SEE WIND DATA BELOW
RUNWAY DIMENSIONS (L x W)	5300' x 150'	6225' x 150'	3260' x 100'	3000' x 60'
RUNWAY TRUE BEARING (NGS SURVEY 02/04/03)	124.76° / 304.76°	124.76° / 304.76°	89.78° * / 269.78° *	89.78° * / 269.78° *
MAXIMUM RUNWAY ELEVATION/LOW POINT OF RUNWAY	212.4 MSL / 166.6 MLS	212.4 MSL / 169.0 MSL	197.0 MSL / 162.2 MSL	189.0 MSL / 157.0 MSL
RUNWAY LIGHTING	MIRL	MIRL	NONE	NONE
RUNWAY EFFECTIVE GRADIENT/MAXIMUM GRADIENT	0.9% / 1.04%	0.89% / 1.04%	1.1% / 1.1%	1.28% / 1.1%
RUNWAY PAVEMENT MATERIAL / SURFACE TREATMENT	Asphalt / Grooved	Asphalt / Grooved	Asphalt	Asphalt
RUNWAY PAVEMENT STRENGTH (in thousand lbs.)[1]	60(S)/86(D)	76(S)/100(D)	12.5(S)/30(D)	12.5(S)/30(D)
LINE OF SIGHT REQUIREMENT MET	Yes	Yes	Yes	Yes
FAR PART-77 APPROACH SURFACES	1,000' x 50,000' x 16,000' 1000' x 5000' x 1500' 1,000' x 2500' x 1750' 500' x 1700' x 1010'	1,000' x 50,000' x 16,000' 1000' x 5000' x 1500' 1,000' x 2500' x 1750' 500' x 1700' x 1010'	250' x 5000' x 1250' 250' x 5000' x 1250' 250' x 1000' x 450' 250' x 1000' x 450'	250' x 5000' x 1250' 250' x 5000' x 1250' 250' x 1000' x 450' 250' x 1000' x 450'
RUNWAY PROTECTION ZONES	60'	60'	25'	25'
TAXIWAY WIDTH	MITL	MITL	NONE	NONE
TAXIWAY LIGHTING	Centerline/Signage	Centerline/Signage	Centerline/Signage	Centerline/Signage
TAXIWAY MARKING	Asphalt	Asphalt	Asphalt	Asphalt
TAXIWAY SURFACE MATERIAL	79'	79'	49'	49'
TAXIWAY SAFETY AREA WIDTH	131'	131'	89'	89'
TAXIWAY OBJECT FREE AREA WIDTH	200'	262'	125'	125'
TAXIWAY HOLDING POSITION MARKING/HOLDSIGN	RUNWAY 11 / RUNWAY 29	RUNWAY 11 / RUNWAY 29	RUNWAY 7 / RUNWAY 25	RUNWAY 7 / RUNWAY 25
F.A.R. PART-77 CATEGORY	P / BV (NP)	P / BV (NP)	Visual / Visual	Visual / Visual
F.A.R. PART-77 APPROACH SLOPE (Supplemental)	50:1/ 40:1 / 50:1 (34:1)	50:1/ 40:1 / 20:1 (34:1)	20:1 / 20:1	20:1 / 20:1
WINGSPAN OF DESIGN AIRCRAFT	69.7'	76.3'	41.7'	41.7'
RUNWAY INSTRUMENTATION	Precision / Visual	Precision / Visual	Visual / Visual	Visual / Visual
RUNWAY MARKING	Precision / NonPrecision	Precision / NonPrecision	Basic / Basic	Basic / Basic
RUNWAY APPROACH VISIBILITY MINIMUMS (Lowest)	1/2 mile / 1 mile	1/2 mile / 1 mile	Visual / Visual	Visual / Visual
RUNWAY APPROACH LIGHTING	MALSR / None	MALSR / None	None / None	None / None
PRECISION OBJECT FREE AREA (800' x 200')	POFZ / N/A	POFZ / N/A	N/A / N/A	N/A / N/A
THRESHOLD SITING REQUIREMENTS (Appendix 2)	Par-5g / Par-5e	Par-5g / Par-5e	Par-5b / Par-5b	Par-5b / Par-5b
THRESHOLD SITING SURFACE OBJECT PENETRATIONS	None / None	None / None	None / None	None / None
RUNWAY THRESHOLD DISPLACEMENT	None / 500'	None / 500'	None / None	None / None
RUNWAY DISPLACED THRESHOLD ELEVATION	N/A / 211.9 MSL	N/A / 211.9 MSL	N/A / N/A	N/A / N/A
RUNWAY END ELEVATION	166.6 MSL / 212.3 MSL	169.0 MSL / 212.3 MSL	162.2 MSL / 197.0 MSL	157.0 MSL / 189.0 MSL
RUNWAY TOUCHDOWN ZONE ELEVATION	198.1 MSL / 211.9 MSL	190.0 MSL / 211.9 MSL	194.7 MSL / 197.0 MSL	189.0 MSL / 189.0 MSL
RUNWAY SAFETY AREA (RSA Beyond Stop End) [2]	600' x 400' / 600' x 400'	600' x 400' / 600' x 400'	240' x 120' / 240' x 120'	240' x 120' / 240' x 120'
RUNWAY OBJECT FREE AREA (OFA Beyond Stop End)	800' x 800' / 800' x 800'	800' x 800' / 800' x 800'	240' x 400' / 240' x 400'	240' x 250' / 240' x 250'
RUNWAY OBSTACLE FREE ZONE (Beyond Stop End)	200' x 400' / 200' x 400'	200' x 400' / 200' x 400'	200' x 250' / 200' x 250'	200' x 250' / 200' x 250'
TAKEOFF RUN AVAILABLE (TORA)	5300' / 5300'	6300' / 6300'	3260' / 3260'	3000' / 3000'
TAKEOFF DISTANCE AVAILABLE (TODA)	5300' / 5300'	6300' / 6300'	3260' / 3260'	3000' / 3000'
ACCELERATE-STOP DISTANCE AVAILABLE (ASDA)	5300' / 4800'	6225' / 5800'	3260' / 3260'	3000' / 3000'
LANDING DISTANCE AVAILABLE (LDA)	5300' / 4800'	6225' / 5800'	3260' / 3260'	3000' / 3000'
ELECTRONIC NAVIGATIONAL AIDS	ILS (11)/GPS RNAV(GPS) NDB, VORTAC / RNAV(GPS)	ILS (11)/GPS RNAV(GPS) NDB, VORTAC / RNAV(GPS)	NONE / NONE	NONE / NONE
RUNWAY VISUAL NAVIGATIONAL AIDS	VASI-4L / VASI-4L REIL	PAPI / PAPI REIL	NONE / NONE	CVGI / CVGI

[1] Pavement strengths are expressed in Single (S), Dual (D), Dual Tandem (2T), and/or Double Dual Tandem (2D7) wheel loading capacities.
[2] Runway Safety Area limited to 600' beyond runway ends, 200' paved overrun with 240' EMAS.

BUILDINGS/FACILITIES

NO.	DESCRIPTION	ELEVATION
1	ADMINISTRATION/TERMINAL BUILDING	217.7 MSL
2	RESTAURANT	213.8 MSL
3	ELECTRICAL VAULT	N/A
4	AIR TRAFFIC CONTROL TOWER (ATCT)	258.8 MSL
5	FBO and SHOP	206.1 MSL
6	HANGAR and SHOP	216.3 MSL
7	HANGAR and SHOP	208.1 MSL
8	HANGAR and SHOP	216.3 MSL
9	~~PORTABLE HANGAR (REMOVED)~~	209.8 MSL
10	HANGAR and SHOP	220.3 MSL
11	~~PEP CEMETERY (REMOVED)~~	207.6 MSL
12	RELOCATED PORTABLE HANGARS	197.2 MSL
13	T-HANGAR (12 units)	214.8 MSL
14	T-HANGAR (6 units)	212.1 MSL
15	T-HANGAR (6 units)	216.3 MSL
16	T-HANGAR (6 units)	211.4 MSL
17	~~PORTABLE HANGAR (21 units) (RELOCATED)~~	N/A
18	AIRCRAFT RESCUE and FIREFIGHTING (ARFF)	217.7 MSL
19	ANIMAL SHELTER	214.5 MSL
20	~~HANGAR (REMOVED)~~	222.0 MSL
21	HANGAR (2 units)	181.4 MSL
22	HANGAR (6 units)	181.8 MSL
23	HANGAR (6 units)	182.2 MSL
24	HANGAR (6 units)	184.1 MSL
25	T-HANGAR (14 units)	180.5 MSL
26	T-HANGAR (14 units)	181.3 MSL
27	HANGAR (6 units)	186.3 MSL
28	HANGAR (D) (8 units)	187.3 MSL
29	HANGAR/FBO/SHOP (C) (6 units)	186.0 MSL
30	HANGAR/FBO/SHOP (B) (8 units)	182.1 MSL
31	HANGAR/FBO/SHOP (A) (2 units)	181.4 MSL
32	PORTABLE HANGAR (7 units)	192.1 MSL
33	T-HANGAR (10 units)	193.7 MSL
34	FBO (ASL)	193.7 MSL
35	PORTABLE HANGAR (5 units)	189.6 MSL
36	T-HANGAR (8 units)	192.9 MSL
37	T-HANGAR (8 units)	193.5 MSL
38	STORAGE SHEDS (8 units)	N/A
39	FUEL STORAGE FACILITY	N/A
40	HANGAR/SHOP/OFFICE	218.6 MSL
41	MAINTENANCE HANGAR	214.1 MSL
42	TEMPORARY FUEL STORAGE FACILITY	

ULTIMATE BUILDINGS/FACILITIES

NO.	DESCRIPTION
57	FUTURE HELIPADS (2)
58	FUTURE T-HANGAR (13 units)
59	FUTURE T-HANGAR (13 units)
60	FUTURE T-HANGAR (11 units)
61	FUTURE T-HANGAR (9 units)
62	FUTURE T-HANGAR (7 units)
63	FUTURE T-HANGAR (5 units)
64	--
65	--
66	FUTURE HANGAR
67	FUTURE HANGAR
68	FUTURE FUEL STORAGE FACILITY
69	FUTURE AIRPORT MAINTENANCE BUILDING
70	FUTURE TERMINAL
71	FUTURE HANGAR/FBO
72	--
73	FUTURE T-HANGAR (19 units)
74	FUTURE T-HANGAR (19 units)
75	FUTURE T-HANGAR (16 units)
76	FUTURE T-HANGAR (11 units)
77	FUTURE T-HANGAR (7 units)
78	FUTURE BOX HANGARS (3)
79	FUTURE HANGAR
80	FUTURE HANGAR
81	FUTURE HANGAR
82-97	FUTURE CORPORATE HANGARS/PARCELS
98	FUTURE PARKING DECK

ALL WEATHER WIND COVERAGE

Runways	10.5 Knots	13 Knots	16 Knots	20 Knots
Runway 7-25	91.70%	96.10%	98.74%	99.74%
Runway 11-29	96.91%	99.52%	99.90%	99.98%
Combined	99.16%	99.71%	99.94%	99.98%

SOURCE:
NOAA National Climatic Center
Asheville, North Carolina
San Luis Obispo County Regional Airport
San Luis Obispo, California

OBSERVATIONS:
72,149 All Weather Observations
7,352 IFR Observations
1994-2003

IFR WIND COVERAGE

Runways	10.5 Knots	13 Knots	16 Knots	20 Knots
Runway 7-25	97.69%	98.85%	99.66%	99.92%
Runway 11-29	99.19%	99.63%	99.88%	99.95%
Combined	99.36%	99.75%	99.90%	99.96%

THRESHOLD SITING SURFACE OBJECT PENETRATIONS

OBJECT	PENETRATION	DISPOSITION
None		

MODIFICATION OF AIRPORT DESIGN STANDARDS TABLE

DEVIATION DESCRIPTION	EFFECTED DESIGN STANDARD	EXISTING	PROPOSED DISPOSITION	APPROVAL DATE
Runway (11-29)-Taxiway Separation	400' For Design Group C-II Precision	290.5'(1)/325'	Requested Modification of Airport Design Standards (12/10/2004)	--
Runway (11-29) Object Free Area Length	1000' For Design Group C-II Precision	600'	Requested Modification of Airport Design Standards (12/10/2004)	--
Runway (11-29) Object Free Area width	800' For Design Group C-II Precision	741'	Requested Modification of Airport Design Standards (12/10/2004)	--
Runway (11-29) to Aircraft Parking	500' For Design Group C-II Precision	383.5'(1)/390.5'	Requested Modification of Airport Design Standards (12/10/2004)	--

(1) At Existing Terminal Only.

14.1822° East (April 2004)
Magnetic Declination 2.5314' West

SCALE IN FEET

VICINITY MAP

LOCATION MAP

No.	REVISIONS	DATE	BY	APP'D.

San Luis Obispo County Regional Airport

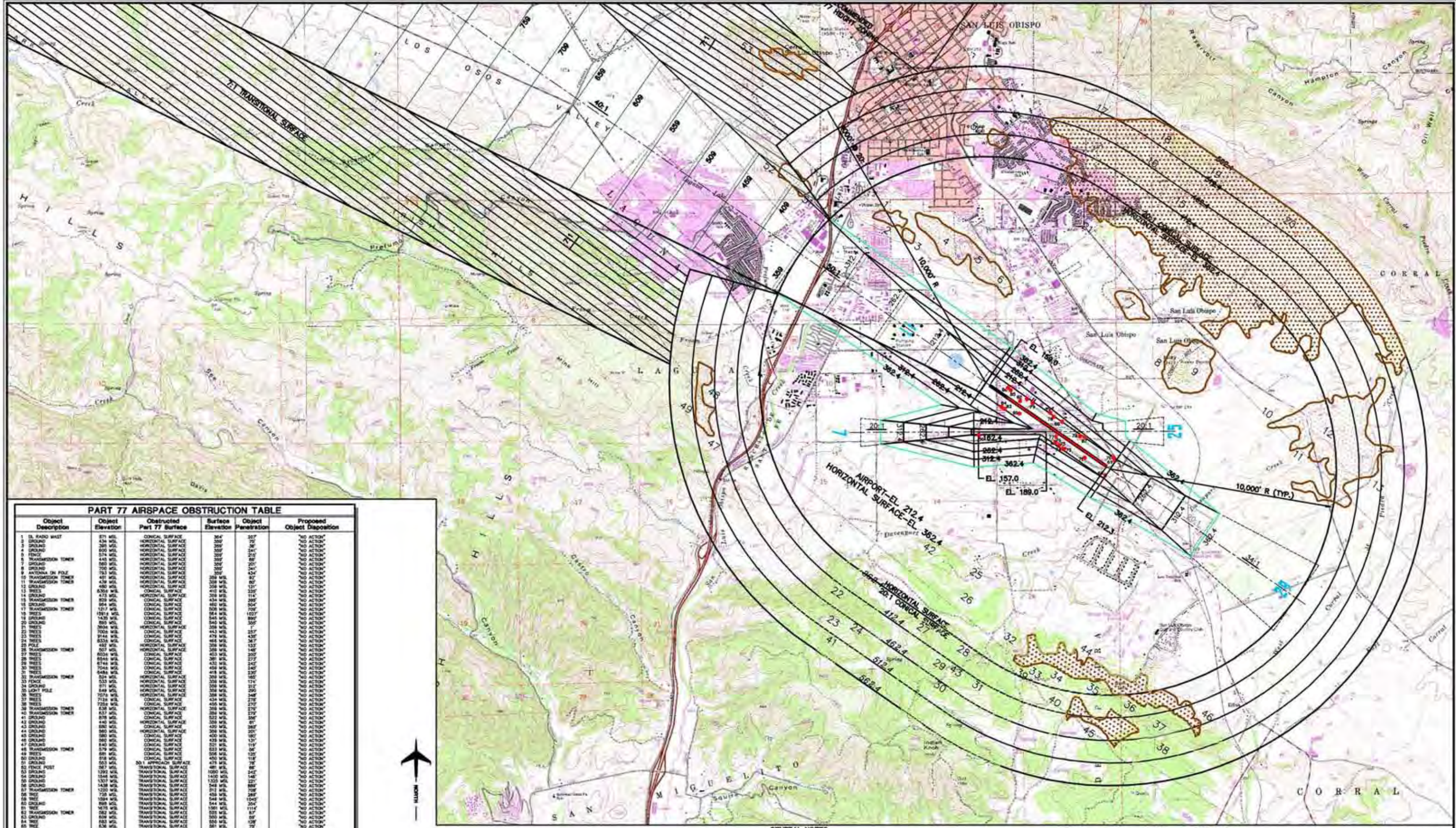
AIRPORT LAYOUT DRAWING

San Luis Obispo, California

PLANNED BY: Stephen C. Wagner
DETAILED BY: Larry Burnell Johnson/Maggie Beaver
APPROVED BY: James M. Harris, P.E.

November 2, 2005 | SHEET 1 OF 13

Coffman Associates
Airport Consultants
www.coffmanassociates.com



PART 77 AIRSPACE OBSTRUCTION TABLE

	Object Description	Object Elevation	Obstructed Part 77 Surface	Surface Elevation	Object Penetration	Proposed Object Disposition
1	DL RADIO MAST	871 MSL	CONICAL SURFACE	364'	307'	"NO ACTION"
2	GROUND	436 MSL	HORIZONTAL SURFACE	359'	79'	"NO ACTION"
3	GROUND	359 MSL	HORIZONTAL SURFACE	359'	38'	"NO ACTION"
4	GROUND	600 MSL	HORIZONTAL SURFACE	359'	241'	"NO ACTION"
5	FENCE	574 MSL	HORIZONTAL SURFACE	359'	215'	"NO ACTION"
6	TRANSMISSION TOWER	445 MSL	HORIZONTAL SURFACE	359'	86'	"NO ACTION"
7	GROUND	580 MSL	HORIZONTAL SURFACE	359'	221'	"NO ACTION"
8	GROUND	700 MSL	HORIZONTAL SURFACE	359'	341'	"NO ACTION"
9	ANTENNA ON POLE	783 MSL	HORIZONTAL SURFACE	359'	424'	"NO ACTION"
10	TRANSMISSION TOWER	621 MSL	CONICAL SURFACE	2561 MSL	82'	"NO ACTION"
11	TRANSMISSION TOWER	438 MSL	CONICAL SURFACE	2558 MSL	80'	"NO ACTION"
12	GROUND	680 MSL	CONICAL SURFACE	2558 MSL	121'	"NO ACTION"
13	TREES	6306' MSL	CONICAL SURFACE	410' MSL	235'	"NO ACTION"
14	GROUND	473 MSL	HORIZONTAL SURFACE	359' MSL	114'	"NO ACTION"
15	TRANSMISSION TOWER	828 MSL	CONICAL SURFACE	434' MSL	395'	"NO ACTION"
16	GROUND	984 MSL	CONICAL SURFACE	460' MSL	524'	"NO ACTION"
17	TRANSMISSION TOWER	1217 MSL	CONICAL SURFACE	509' MSL	708'	"NO ACTION"
18	TREES	1981.6' MSL	CONICAL SURFACE	564' MSL	1037'	"NO ACTION"
19	GROUND	1435 MSL	CONICAL SURFACE	540' MSL	895'	"NO ACTION"
20	GROUND	895 MSL	CONICAL SURFACE	540' MSL	355'	"NO ACTION"
21	TREES	3606' MSL	HORIZONTAL SURFACE	359' MSL	1'	"NO ACTION"
22	TREES	7006' MSL	CONICAL SURFACE	443' MSL	257'	"NO ACTION"
23	TREES	6744' MSL	CONICAL SURFACE	476' MSL	268'	"NO ACTION"
24	TREES	6536' MSL	CONICAL SURFACE	468' MSL	261'	"NO ACTION"
25	POLE	482' MSL	HORIZONTAL SURFACE	359' MSL	123'	"NO ACTION"
26	TRANSMISSION TOWER	507' MSL	HORIZONTAL SURFACE	359' MSL	148'	"NO ACTION"
27	TREES	6036' MSL	CONICAL SURFACE	463' MSL	200'	"NO ACTION"
28	TREES	6546' MSL	CONICAL SURFACE	481' MSL	273'	"NO ACTION"
29	TREES	6746' MSL	CONICAL SURFACE	476' MSL	270'	"NO ACTION"
30	TREES	7046' MSL	CONICAL SURFACE	450' MSL	340'	"NO ACTION"
31	TREES	6486' MSL	CONICAL SURFACE	418' MSL	330'	"NO ACTION"
32	TRANSMISSION TOWER	524' MSL	HORIZONTAL SURFACE	359' MSL	165'	"NO ACTION"
33	FENCE	533' MSL	HORIZONTAL SURFACE	359' MSL	174'	"NO ACTION"
34	GROUND	671' MSL	HORIZONTAL SURFACE	359' MSL	312'	"NO ACTION"
35	LIGHT POLE	648' MSL	HORIZONTAL SURFACE	359' MSL	290'	"NO ACTION"
36	TREES	7076' MSL	HORIZONTAL SURFACE	359' MSL	348'	"NO ACTION"
37	TREES	7126' MSL	CONICAL SURFACE	434' MSL	278'	"NO ACTION"
38	TREES	7256' MSL	CONICAL SURFACE	425' MSL	270'	"NO ACTION"
39	TRANSMISSION TOWER	537' MSL	HORIZONTAL SURFACE	359' MSL	178'	"NO ACTION"
40	TRANSMISSION TOWER	537' MSL	CONICAL SURFACE	359' MSL	178'	"NO ACTION"
41	GROUND	878' MSL	CONICAL SURFACE	533' MSL	345'	"NO ACTION"
42	GROUND	718' MSL	HORIZONTAL SURFACE	359' MSL	81'	"NO ACTION"
43	GROUND	898' MSL	CONICAL SURFACE	439' MSL	282'	"NO ACTION"
44	GROUND	880' MSL	HORIZONTAL SURFACE	359' MSL	201'	"NO ACTION"
45	GROUND	980' MSL	CONICAL SURFACE	450' MSL	180'	"NO ACTION"
46	GROUND	940' MSL	CONICAL SURFACE	435' MSL	131'	"NO ACTION"
47	GROUND	940' MSL	CONICAL SURFACE	521' MSL	119'	"NO ACTION"
48	TRANSMISSION TOWER	579' MSL	CONICAL SURFACE	533' MSL	06'	"NO ACTION"
49	TREES	688' MSL	CONICAL SURFACE	533' MSL	125'	"NO ACTION"
50	GROUND	518' MSL	CONICAL SURFACE	450' MSL	118'	"NO ACTION"
51	GROUND	518' MSL	50:1 APPROACH SURFACE	450' MSL	78'	"NO ACTION"
52	FENCE POST	587' MSL	TRANSITIONAL SURFACE	481' MSL	86'	"NO ACTION"
53	GROUND	1293' MSL	TRANSITIONAL SURFACE	1080' MSL	242'	"NO ACTION"
54	GROUND	1546' MSL	TRANSITIONAL SURFACE	1400' MSL	146'	"NO ACTION"
55	GROUND	1553' MSL	TRANSITIONAL SURFACE	1320' MSL	231'	"NO ACTION"
56	GROUND	1438' MSL	TRANSITIONAL SURFACE	1343' MSL	888'	"NO ACTION"
57	TRANSMISSION TOWER	1220' MSL	TRANSITIONAL SURFACE	813' MSL	708'	"NO ACTION"
58	TREE	728' MSL	TRANSITIONAL SURFACE	636' MSL	385'	"NO ACTION"
59	TREE	1094' MSL	TRANSITIONAL SURFACE	644' MSL	1045'	"NO ACTION"
60	GROUND	898' MSL	TRANSITIONAL SURFACE	544' MSL	304'	"NO ACTION"
61	TREE	1675' MSL	TRANSITIONAL SURFACE	1561' MSL	1114'	"NO ACTION"
62	TRANSMISSION TOWER	582' MSL	TRANSITIONAL SURFACE	533' MSL	97'	"NO ACTION"
63	GROUND	638' MSL	TRANSITIONAL SURFACE	533' MSL	05'	"NO ACTION"
64	TREE	682' MSL	TRANSITIONAL SURFACE	559' MSL	108'	"NO ACTION"
65	TREE	674' MSL	TRANSITIONAL SURFACE	559' MSL	73'	"NO ACTION"
66	FENCE	570' MSL	TRANSITIONAL SURFACE	483' MSL	87'	"NO ACTION"
67	GROUND	1,220' MSL	TRANSITIONAL SURFACE	1081' MSL	214'	"NO ACTION"
68	POLE	228' MSL	PRIMARY SURFACE	213' MSL	15'	ADD DL (Obstruction Light)
69	FENCE	213' MSL	PRIMARY SURFACE	213' MSL	0'	"NO ACTION"
70	FENCE	215' MSL	PRIMARY SURFACE	213' MSL	2'	ADD DL (Obstruction Light)
71	DL ON LTD WHDSOCK	228' MSL	PRIMARY SURFACE	213' MSL	15'	TO REMAIN LIGHTED
72	GROUND	212' MSL	PRIMARY SURFACE	209' MSL	0'	"NO ACTION"
73	TREE	218' MSL	PRIMARY SURFACE	209' MSL	15'	ADD DL (Obstruction Light)
74	BUILDING	218' MSL	PRIMARY SURFACE	209' MSL	8'	ADD DL (Obstruction Light)
75	TREE	218' MSL	PRIMARY SURFACE	193' MSL	25'	ADD DL (Obstruction Light)
76	TREE	218' MSL	PRIMARY SURFACE	193' MSL	25'	ADD DL (Obstruction Light)
77	ROD ON DL ANEM	228' MSL	PRIMARY SURFACE	196' MSL	32'	TO REMAIN LIGHTED
78	LT ON BUILDING	219' MSL	PRIMARY SURFACE	196' MSL	23'	ADD DL (Obstruction Light)
79	HANGAR	185' MSL	PRIMARY SURFACE	179' MSL	15'	ADD DL (Obstruction Light)
80	ROD ON GLIDE SLOPE	194' MSL	PRIMARY SURFACE	179' MSL	15'	TO REMAIN LIGHTED
81	HANGAR	179' MSL	PRIMARY SURFACE	173' MSL	20'	ADD DL (Obstruction Light)
82	DL ON LTD WHDSOCK	179' MSL	PRIMARY SURFACE	173' MSL	6'	TO REMAIN LIGHTED
83	DL HANGAR	187' MSL	PRIMARY SURFACE	168' MSL	19'	TO REMAIN LIGHTED
84	TREE	182' MSL	PRIMARY SURFACE	167' MSL	20'	ADD DL (Obstruction Light)
85	LT POLE	175' MSL	PRIMARY SURFACE	167' MSL	7'	ADD DL (Obstruction Light)
86	LT POLE	175' MSL	PRIMARY SURFACE	167' MSL	8'	ADD DL (Obstruction Light)
87	ANT ON DL MO	242' MSL	TRANSITIONAL SURFACE	194' MSL	06'	TO REMAIN LIGHTED
88	ANT ON DL ATCT	242' MSL	TRANSITIONAL SURFACE	194' MSL	06'	TO REMAIN LIGHTED
89	ANT ON BUILDING	232' MSL	TRANSITIONAL SURFACE	188' MSL	43'	ADD DL (Obstruction Light)

OBSTRUCTION LEGEND

- OBSTRUCTION
- GROUP or MULTIPLE OBSTRUCTIONS
- TOPOGRAPHIC OBSTRUCTION

RUNWAY END COORDINATES (NAD 1983)

		ULTIMATE
Runway 11–EL 156.0 Runway End Relocate 1000'	Latitude	35° 14' 33.074" N
	Longitude	120° 39' 00.404" W
Runway 29–EL 212.3	Latitude	35° 15' 57.550" N
	Longitude	120° 37' 58.010" W
Runway 7–EL 157.0 Runway End Relocate 450'	Latitude	35° 14' 12.663" N
	Longitude	120° 39' 05.375" W
Runway 25–EL 193.0 Runway End Relocate 730'	Latitude	35° 14' 12.775" N
	Longitude	120° 38' 30.210" W

GENERAL NOTES:

1. Obstructions, clearances, and locations are calculated from ultimate runway end elevations and ultimate approach surface, unless otherwise noted.
2. Depiction of features and objects within the primary, transitional, and horizontal Part 77 surfaces, is illustrated on the AIRPORT AIRSPACE DRAWING, sheet 2 and 3 of these plans.
3. Depiction of features and objects within the outer portion of the approach surfaces, is illustrated on the APPROACH SURFACE PROFILES DRAWING, sheets 4, 5 and 6 of these plans.
4. Depiction of features and objects within the inner portion of the approach surfaces, is illustrated on the INNER PORTION OF THE APPROACH SURFACE DRAWING, sheets 7, 8 and 9 of these plans.
5. Airport Datum is NAD-83 AND NAVD-88, USGS MAPS NAD-27.

SCALE IN FEET: 0 2000 4000 8000

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 HEREON NOR DOES IT INDICATE THAT THE PROPOSED DEVELOPMENT IS ENVIRONMENTALLY ACCEPTABLE IN ACCORDANCE WITH APPROPRIATE PUBLIC LAWS.

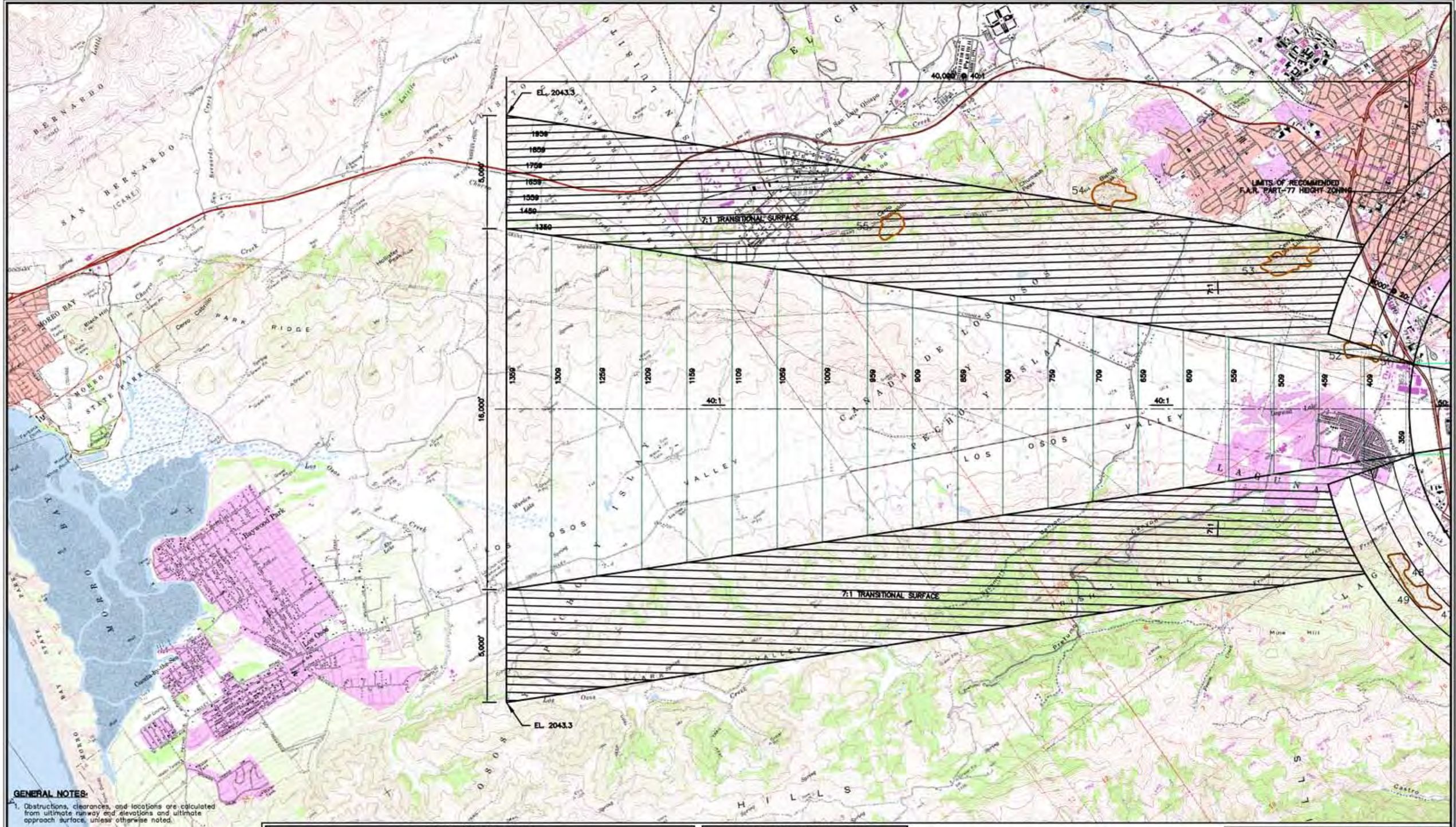
SAN LUIS OBISPO COUNTY REGIONAL AIRPORT

AIRPORT AIRSPACE DRAWING
FAR PART-77 INNER SURFACES

San Luis Obispo, California

PLANNED BY: Stephen K. Wagner
DETAILED BY: Larry S. Johnson
APPROVED BY: James M. Harris, P.E.
November 2, 2005 SHEET 2 OF 13

Coffman Associates
Airport Consultants
www.coffmanassociates.com



GENERAL NOTES:

1. Obstructions, clearances, and locations are calculated from ultimate runway end elevations and ultimate approach surface, unless otherwise noted.
2. Depiction of features and objects within the primary, transitional, and horizontal Part 77 surfaces, is illustrated on the AIRPORT AIRSPACE DRAWING, sheet 2 and 3 of these plans.
3. Depiction of features and objects within the outer portion of the approach surfaces, is illustrated on the "APPROACH SURFACE PROFILES DRAWING, sheets 4, 5, and 6 of these plans.
4. Depiction of features and objects within the inner portion of the approach surfaces, is illustrated on the INNER PORTION OF THE APPROACH SURFACE DRAWING, sheets 7, 8 and 9 of these plans.
5. Airport Datum in NAD-83 AND NAVD-88, USGS MAPS NAD-27.

OBSTRUCTION TABLE

Object Description	Object Elevation	Obstructed Part 77 Surface	Surface Elevation	Object Penetration	Proposed Object Disposition
53 GROUND	1292 MSL	TRANSITIONAL SURFACE	1050'	242'	"NO ACTION"
54 GROUND	1546 MSL	TRANSITIONAL SURFACE	1400'	146'	"NO ACTION"
55 GROUND	1307 MSL	TRANSITIONAL SURFACE	1328'	221'	"NO ACTION"

OBSTRUCTION LEGEND

- OBSTRUCTION
- GROUP or MULTIPLE OBSTRUCTIONS
- TOPOGRAPHIC OBSTRUCTION

NORTH

0 2000 4000 6000
SCALE IN FEET

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.

SAN LUIS OBISPO COUNTY REGIONAL AIRPORT

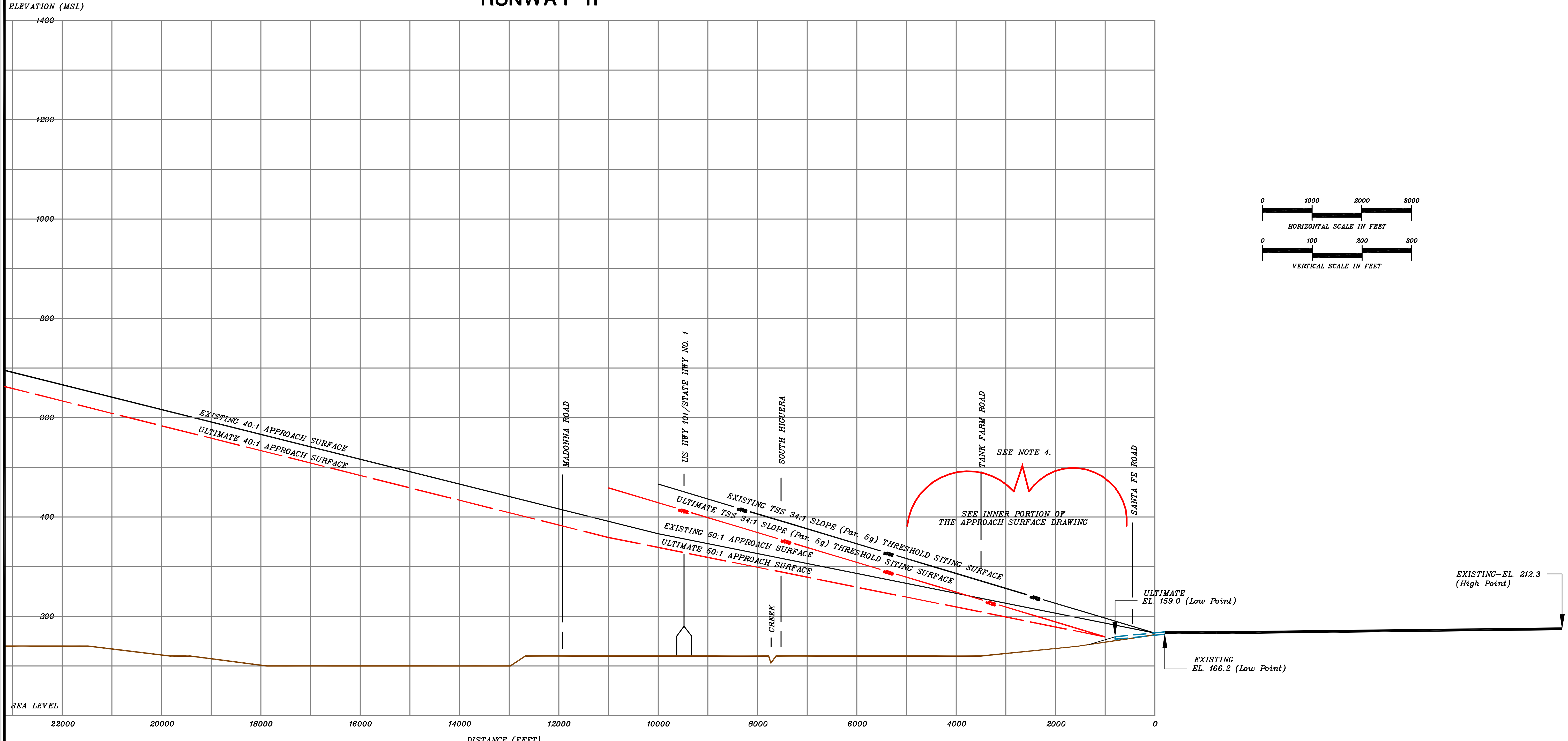
AIRPORT AIRSPACE DRAWING
RUNWAY 11 APPROACH FAN

San Luis Obispo, California

PLANNED BY: Stephen E. Wagner
DETAILED BY: Larry D. Johnson
APPROVED BY: James M. Harris, P.E.
November 2, 2005

Coffman Associates
Airport Consultants
www.coffmanassociates.com

RUNWAY 11



GENERAL NOTES:

1. Obstructions, clearances, and locations are calculated from ultimate runway end elevations and ultimate approach surface, unless otherwise noted.
2. Depiction of features and objects within the primary, transitional, and horizontal Part 77 surfaces, is illustrated on the AIRPORT AIRSPACE DRAWING, sheet 2 and 3 of these plans.
3. Depiction of features and objects within the outer portion of the approach surfaces, is illustrated on the APPROACH SURFACE PROFILES DRAWING, sheets 4, 5 and 6 of these plans.
4. Depiction of features and objects within the inner portion of the approach surfaces, is illustrated on the INNER PORTION OF THE APPROACH SURFACE DRAWING, sheets 7, 8 and 9 of these plans.
5. Airport Datum in NAD-83 and NAVD-88, USGS MAPS NAD-27.

RUNWAY 11 OUTER APPROACH OBSTRUCTION TABLE

Object Description	Object Elevation	Obstructed Part 77 Surface	Surface Elevation	Object Penetration	Proposed Object Disposition
– NONE	–	SEE NOTE 4.	–	–	–

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.

SAN LUIS OBISPO COUNTY REGIONAL AIRPORT

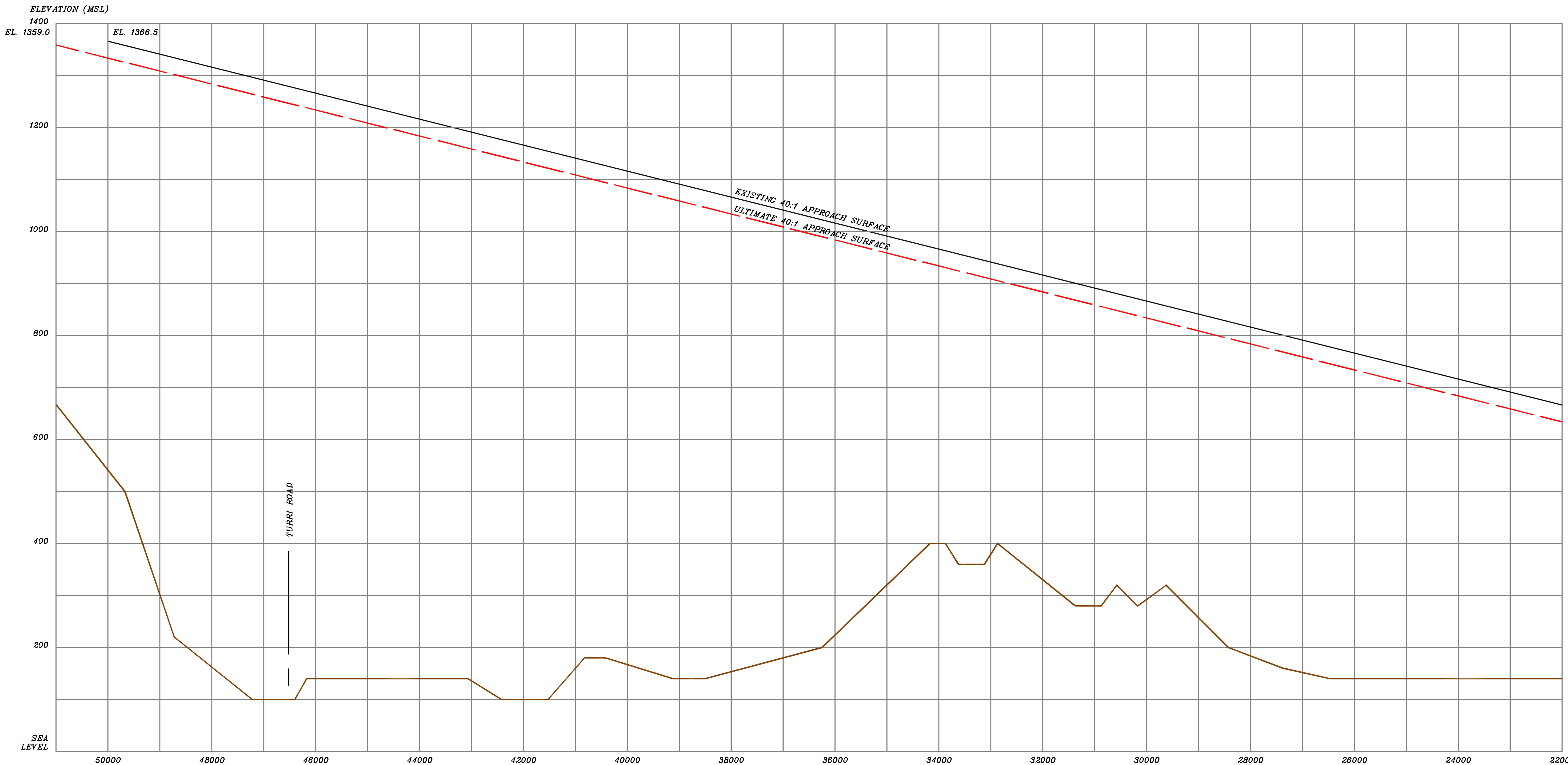
RUNWAY 11 PRECISION (50:1) APPROACH SURFACE PROFILE

San Luis Obispo, California

PLANNED BY: Stephen C. Wagner
DETAILED BY: Larry D. Johnson
APPROVED BY: James M. Harris, P.E.

November 2, 2005 SHEET 4 OF 13

Coffman Associates
Airport Consultants
www.coffmanassociates.com



RUNWAY 11

GENERAL NOTES:

1. Obstructions, clearances, and locations are calculated from ultimate runway end elevations and ultimate approach surface, unless otherwise noted.
2. Depiction of features and objects within the primary, transitional, and horizontal Part 77 surfaces, is illustrated on the AIRPORT AIRSPACE DRAWING, sheet 2 and 3 of these plans.
3. Depiction of features and objects within the outer portion of the approach surfaces, is illustrated on the APPROACH SURFACE PROFILES DRAWING, sheets 4, 5 and 6 of these plans.
4. Depiction of features and objects within the inner portion of the approach surfaces, is illustrated on the INNER PORTION OF THE APPROACH SURFACE DRAWING, sheets 7, 8 and 9 of these plans.
5. Airport Datum in NAD-83 AND NAVD-88, USGS MAPS NAD-27.

RUNWAY 11 OUTER APPROACH OBSTRUCTION TABLE

Object Description	Object Elevation	Obstructed Part 77 Surface	Surface Elevation	Object Penetration	Proposed Object Disposition
– NONE	–	SEE NOTE 4.	–	–	–

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.

SAN LUIS OBISPO COUNTY REGIONAL AIRPORT

RUNWAY 11 PRECISION (40:1) APPROACH SURFACE PROFILE

San Luis Obispo, California

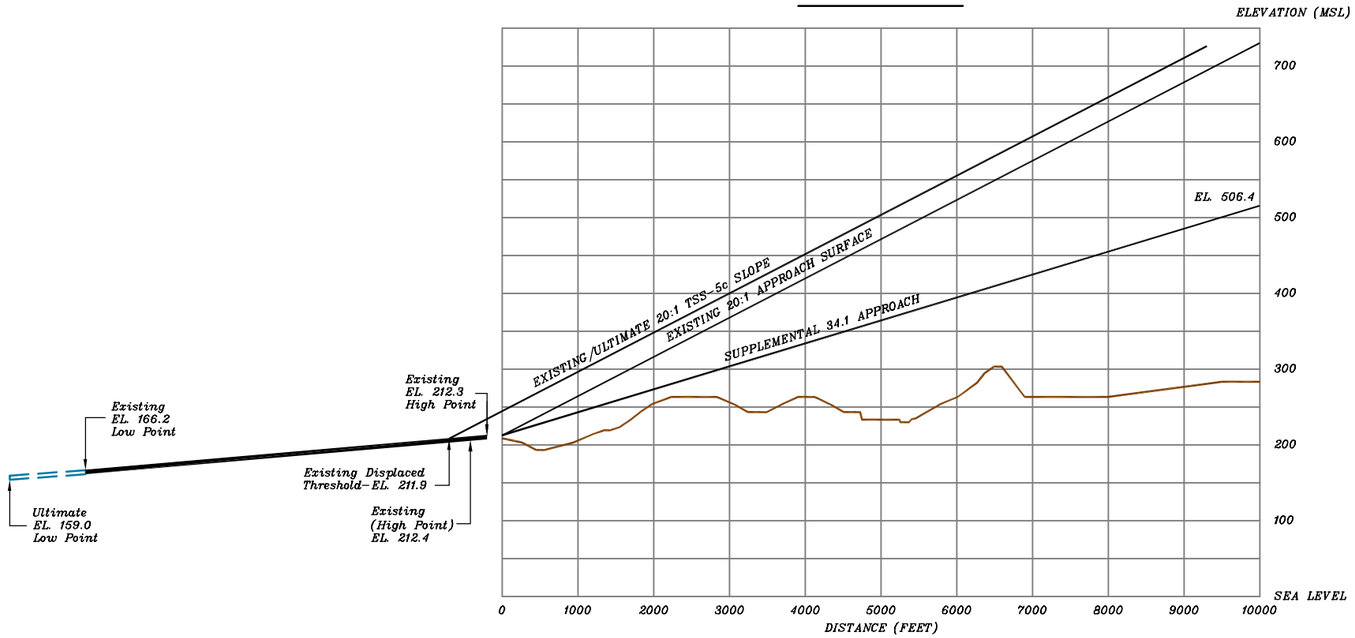
PLANNED BY: Stephen C. Wagner
DETAILED BY: Larry D. Johnson
APPROVED BY: James M. Harris, P.E.

November 2, 2005 SHEET 5 OF 13

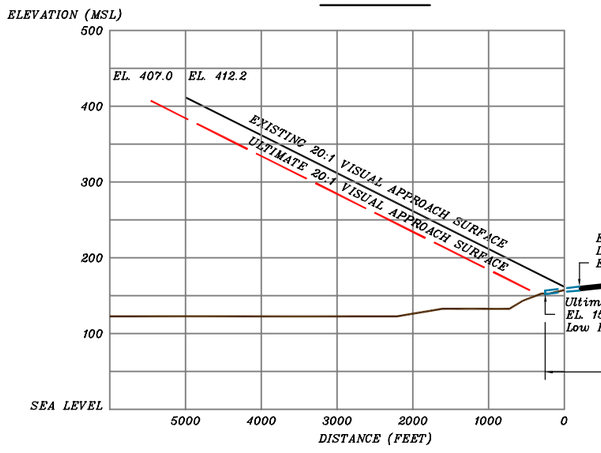
Coffman Associates
Airport Consultants
www.coffmanassociates.com

RUNWAY 29 OUTER APPROACH OBSTRUCTION TABLE					
Object Description	Object Elevation	Obstructed Part 77 Surface	Surface Elevation	Object Penetration	Proposed Object Disposition
1 NONE	–	See Note 4.	–	–	–

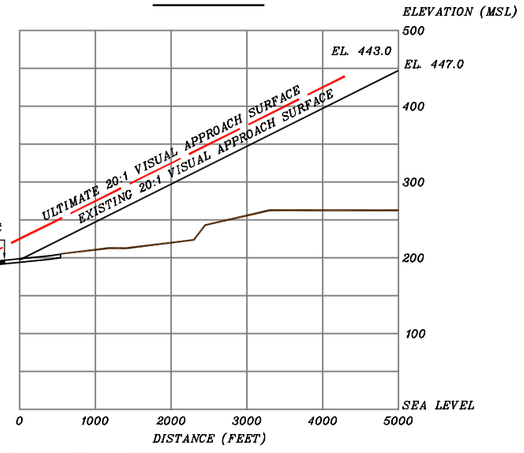
RUNWAY 29



RUNWAY 7



RUNWAY 25



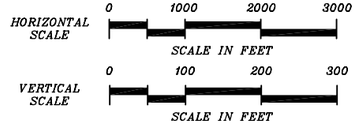
RUNWAY 7-25 APPROACH ZONES PROFILES

GENERAL NOTES:

1. Obstructions, clearances, and locations are calculated from ultimate runway end elevations and ultimate approach surface, unless otherwise noted.
2. Depiction of features and objects within the primary, transitional, and horizontal Part 77 surfaces, is illustrated on the AIRPORT AIRSPACE DRAWING, sheet 2 and 3 of these plans.
3. Depiction of features and objects within the outer portion of the approach surfaces, is illustrated on the APPROACH SURFACE PROFILES DRAWING, sheets 4, 5 and 6 of these plans.
4. Depiction of features and objects within the inner portion of the approach surfaces, is illustrated on the INNER PORTION OF THE APPROACH SURFACE DRAWING, sheets 7, 8 and 9 of these plans.
5. Airport Datum in NAD-83 AND NAVD-88, USGS MAPS NAD-27.

RUNWAY 7 OUTER APPROACH OBSTRUCTION TABLE					
Object Description	Object Elevation	Obstructed Part 77 Surface	Surface Elevation	Object Penetration	Proposed Object Disposition
1 NONE	–	See Note 4.	–	–	–

RUNWAY 25 OUTER APPROACH OBSTRUCTION TABLE					
Object Description	Object Elevation	Obstructed Part 77 Surface	Surface Elevation	Object Penetration	Proposed Object Disposition
1 NONE	–	See Note 4.	–	–	–



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.

SAN LUIS OBISPO COUNTY REGIONAL AIRPORT

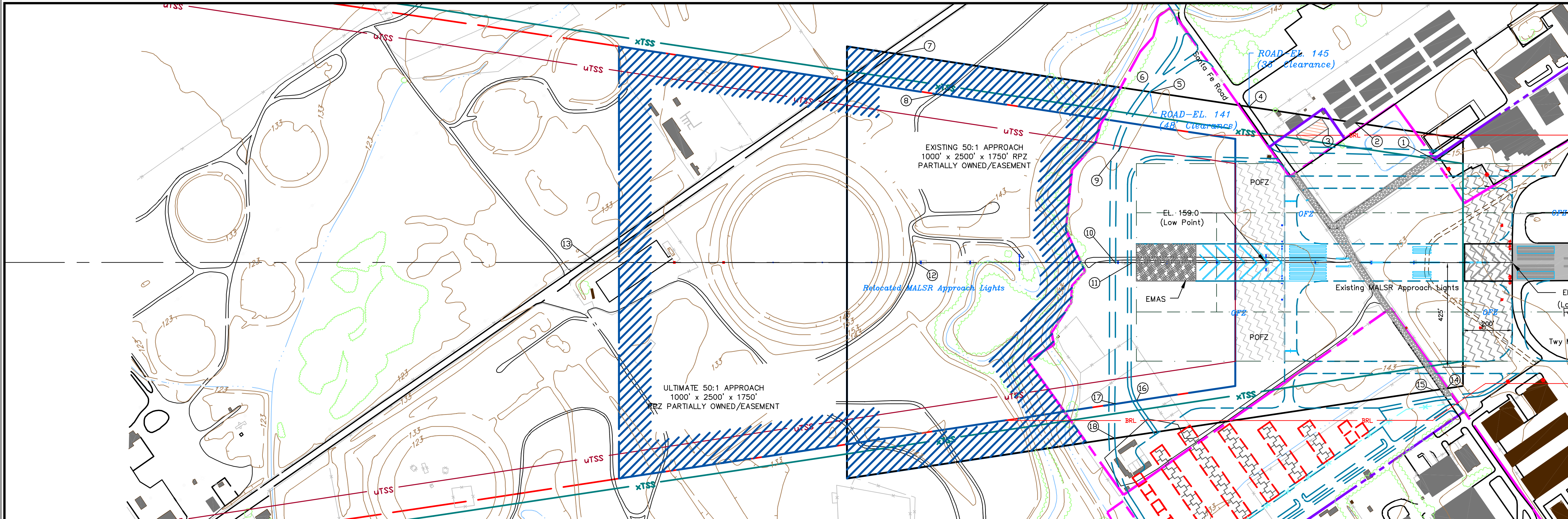
RUNWAY 29 AND RUNWAY 7-25 APPROACH SURFACE PROFILES

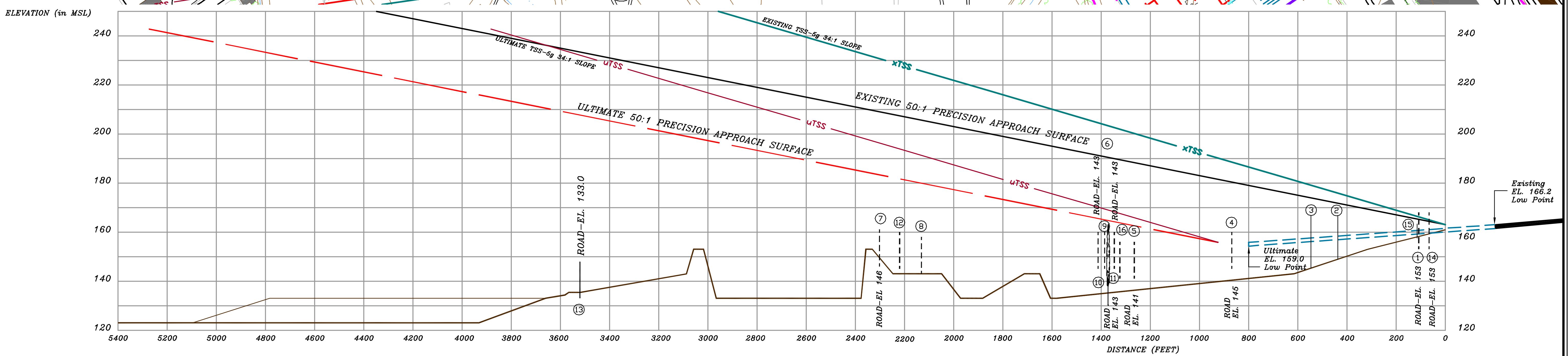
San Luis Obispo, California

PLANNED BY: Stephen C. Wagner
DETAILED BY: Larry D. Johnson
APPROVED BY: James M. Harris, P.E.

November 2, 2005 | SHEET 6 OF 13

Coffman Associates
Airport Consultants
www.coffmanassociates.com

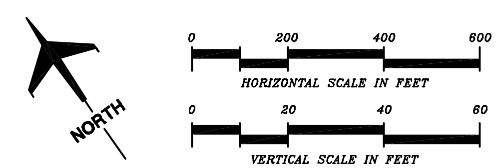




OBSTRUCTION TABLE					
Object Description	Object Elevation	Obstructed Part 77 Surface	Surface Elevation	Object Penetration	Proposed Object Disposition
1 ROAD-EL 153	168 MSL	50:1 APPROACH SURFACE	165 MSL	3'	RELOCATE ROAD
2 BUILDING	–	50:1 APPROACH SURFACE	175 MSL	–	THRESHOLD REOLCATED
3 BUILDING	–	50:1 APPROACH SURFACE	177 MSL	–	ABANDON BUILDING
14 ROAD-EL. 153	168 MSL	50:1 APPROACH SURFACE	164 MSL	4'	RELOCATE ROAD

GENERAL NOTES:

1. Obstructions, clearances, and locations are calculated from ultimate runway end elevations and ultimate approach surface, unless otherwise noted.
2. Depiction of features and objects within the primary, transitional, and horizontal Part 77 surfaces, is illustrated on the AIRPORT AIRSPACE DRAWING, sheet 2 and 3 of these plans.
3. Depiction of features and objects within the outer portion of the approach surfaces, is illustrated on the APPROACH SURFACE PROFILES DRAWING, sheets 4, 5 and 6 of these plans.
4. Depiction of features and objects within the inner portion of the approach surfaces, is illustrated on the INNER PORTION OF THE APPROACH SURFACE DRAWING, sheets 7, 8 and 9 of these plans.
5. Airport Datum in NAD-83 AND NAVD-88, USGS MAPS NAD-27.



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.

SAN LUIS COUNTY REGIONAL AIRPORT

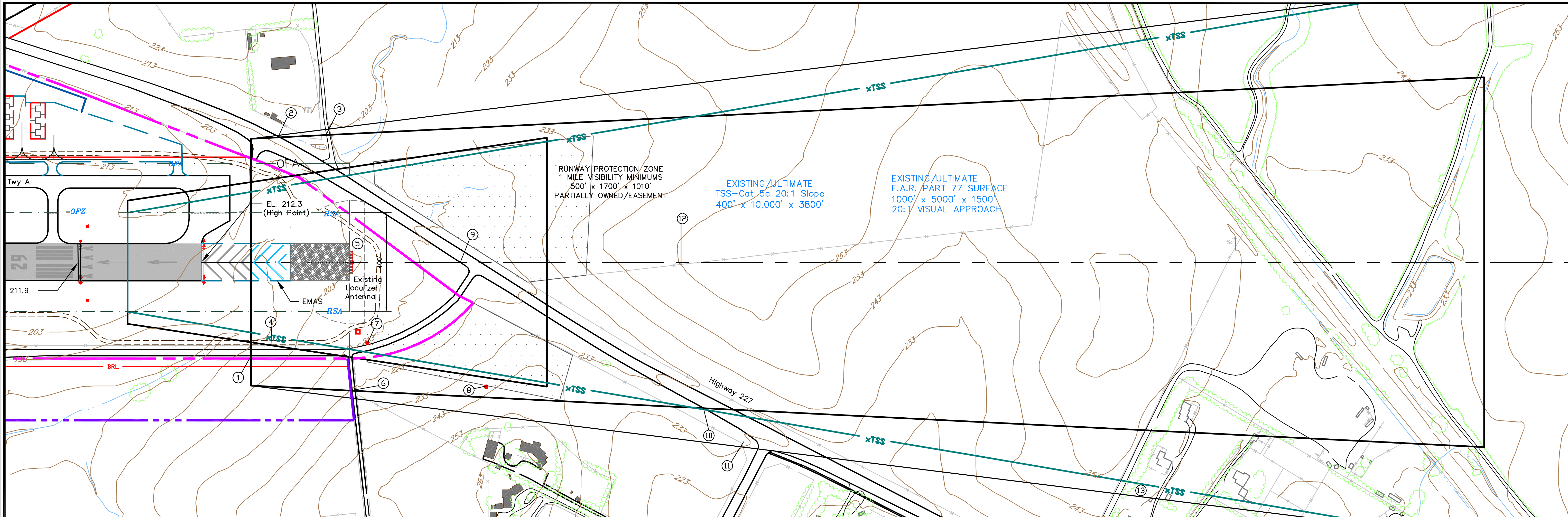
INNER PORTION OF RUNWAY 11 APPROACH SURFACES DRAWING

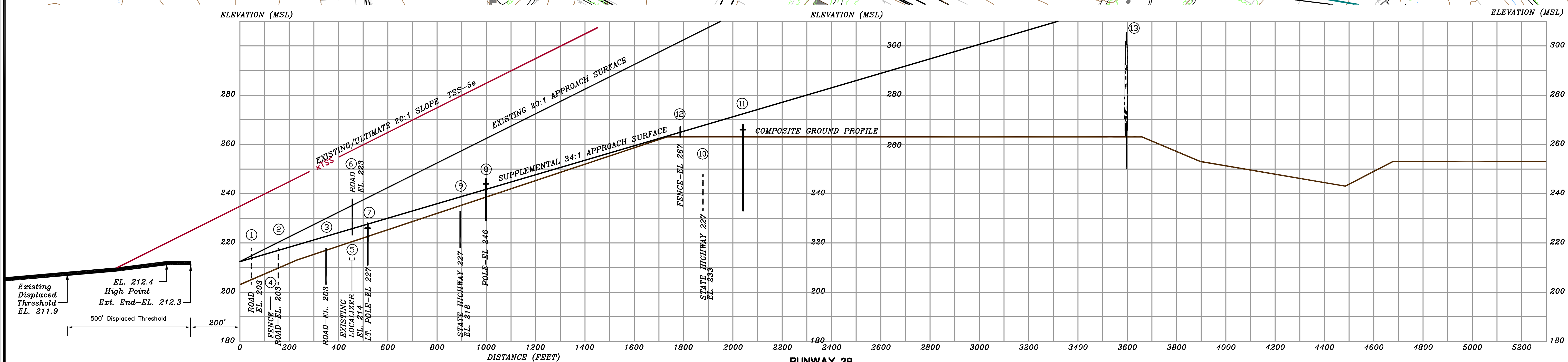
San Luis Obispo, California

PLANNED BY: Stephen C. Wagner
DETAILED BY: Larry D. Johnson
APPROVED BY: James M. Harris, P.E.

November 2, 2005 SHEET 7 OF 13

Coffman Associates
Airport Consultants
www.coffmanassociates.com





RUNWAY 29

OBSTRUCTION TABLE

Object Description	Object Elevation	Obstructed Part 77 Surface	Surface Elevation	Object Penetration	Proposed Object Disposition
1 ROAD-EL 203	218 MSL	20:1 APPROACH	215 MSL	3'	DISPLACED THRESHOLD (TO REMAIN)
2 ROAD-EL 203	218 MSL	SUPPLEMENTAL 34:1 SLOPE	217 MSL	1'	NO ACTION
6 ROAD-EL 223	238 MSL	20:1 APPROACH	212 MSL	3'	NO ACTION
7 LIGHT POLE	227 MSL	SUPPLEMENTAL 34:1 SLOPE	236 MSL	1'	NO ACTION
8 LIGHT POLE	246 MSL	SUPPLEMENTAL 34:1 SLOPE	235 MSL	4'	NO ACTION
12 FENCE	267 MSL	SUPPLEMENTAL 34:1 SLOPE	265 MSL	2'	NO ACTION

GENERAL NOTES:

1. Obstructions, clearances, and locations are calculated from ultimate runway end elevations and ultimate approach surface, unless otherwise noted.
2. Depiction of features and objects within the primary, transitional, and horizontal Part 77 surfaces, is illustrated on the AIRPORT AIRSPACE DRAWING, sheet 2 and 3 of these plans.
3. Depiction of features and objects within the outer portion of the approach surfaces, is illustrated on the APPROACH SURFACE PROFILES DRAWING, sheets 4, 5 and 6 of these plans.
4. Depiction of features and objects within the inner portion of the approach surfaces, is illustrated on the INNER PORTION OF THE APPROACH SURFACE DRAWING, sheets 7, 8 and 9 of these plans.
5. Airport Datum in NAD-83 AND NAVD-88, USGS MAPS NAD-27.

NORTH

HORIZONTAL SCALE IN FEET

VERTICAL SCALE IN FEET

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.

SAN LUIS OBISPO COUNTY REGIONAL AIRPORT

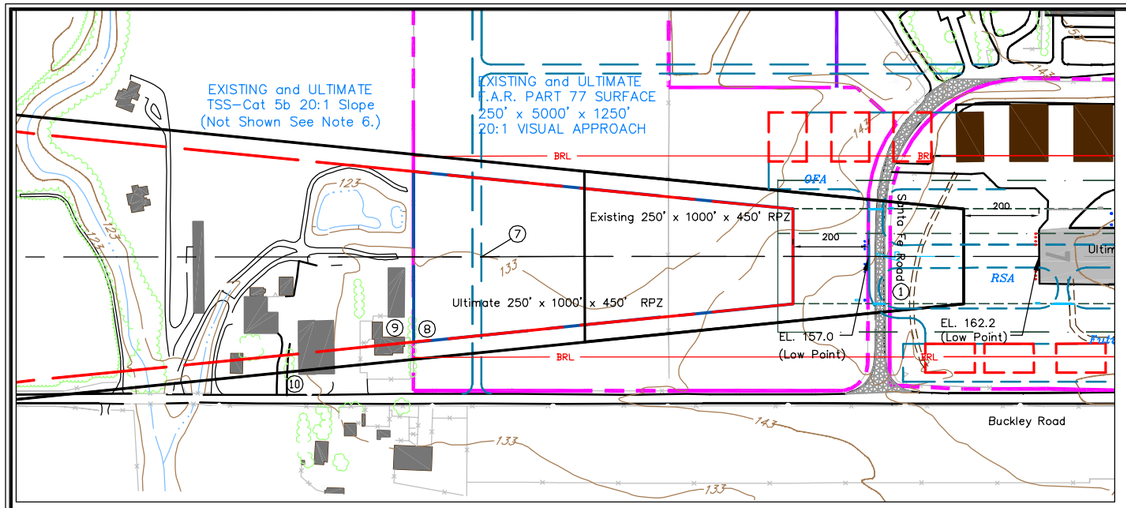
INNER PORTION OF RUNWAY 29 APPROACH SURFACES DRAWING

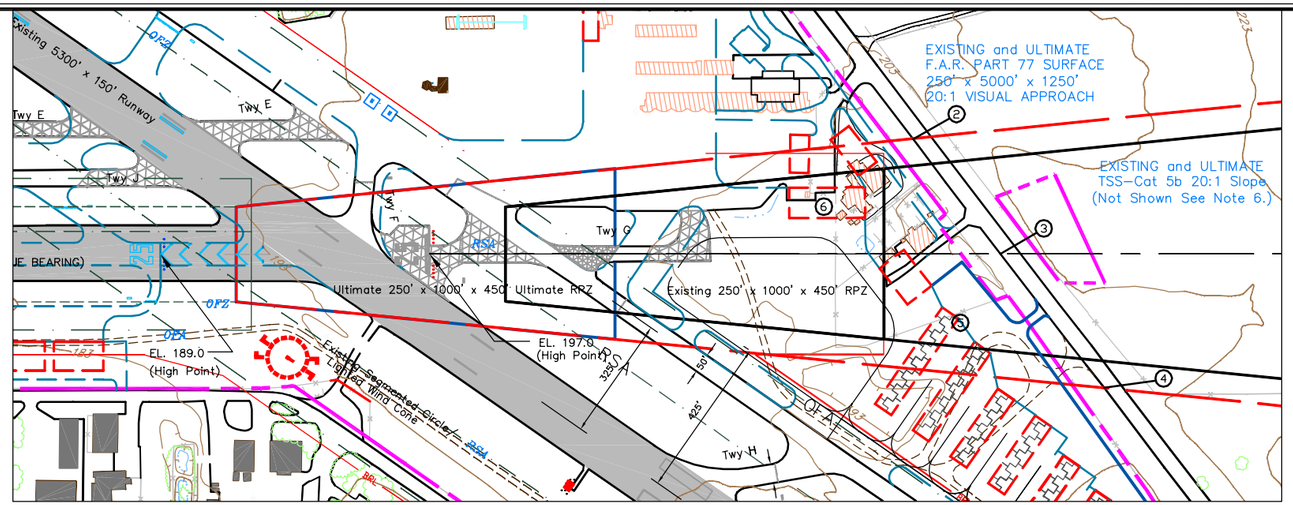
San Luis Obispo, California

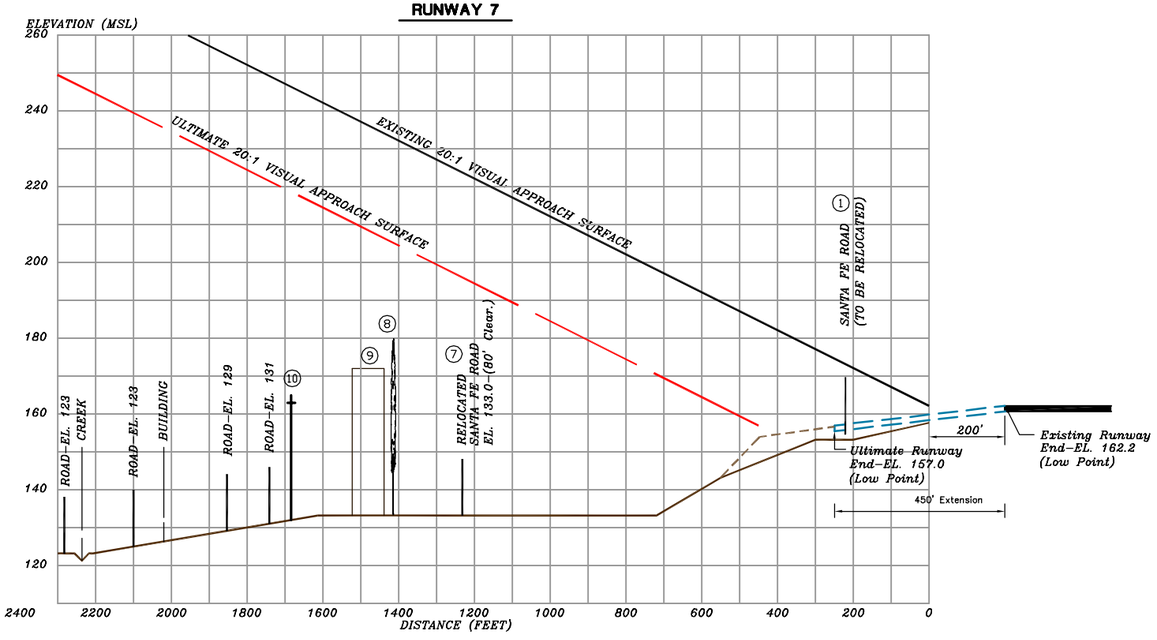
PLANNED BY: Stephen C. Wagner
DETAILED BY: Larry D. Johnson
APPROVED BY: James M. Harris, P.E.

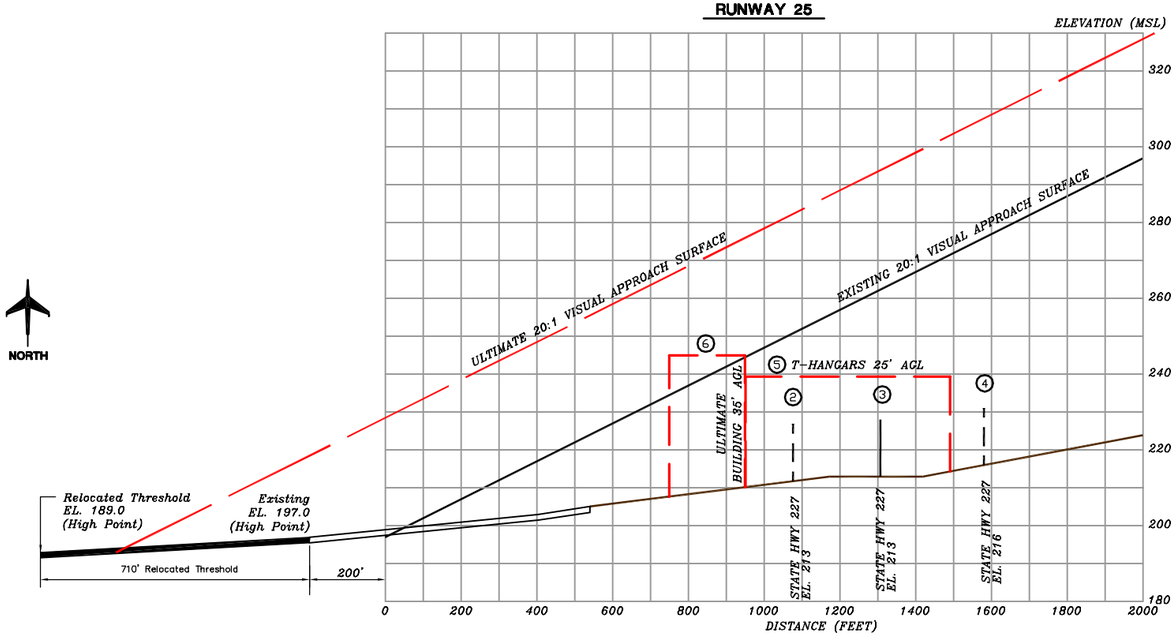
November 2, 2005 — SHEET 8 OF 13

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) ROAD	173 MSL	PRIMARY SURFACE	157.0 MSL	16'	TO BE RELOCATED

RUNWAY 25 OBSTRUCTION TABLE

Object Description	Object Elevation	Obstructed Part 77 Surface	Surface Elevation	Object Penetration	Proposed Object Disposition
(6) PROPOSED BUILDING	244 MSL	EXT 20:1 APPROACH	234 MSL	10'	ULT. THRESHOLD RELOCATED

GENERAL NOTES:

1. Obstructions, clearances, and locations are calculated from ultimate runway end elevations and ultimate approach surface, unless otherwise noted.
2. Depiction of features and objects within the primary, transitional, and horizontal Part 77 surfaces, is illustrated on the AIRPORT AIRSPACE DRAWING, sheet 2 and 3 of these plans.
3. Depiction of features and objects within the outer portion of the approach surfaces, is illustrated on the APPROACH SURFACE PROFILES DRAWING, sheets 4, 5 and 6 of these plans.
4. Depiction of features and objects within the inner portion of the approach surfaces, is illustrated on the INNER PORTION OF THE APPROACH SURFACE DRAWING, sheets 7, 8 and 9 of these plans.
5. Airport Datum in NAD–83 AND NAVD–88, USGS MAPS NAD–27.
6. Threshold Siting Surface for Runway 7–25 is clear of obstructions.

0 200 400 600
HORIZONTAL SCALE IN FEET

0 20 40 60
VERTICAL SCALE IN FEET

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.

SAN LUIS OBISPO COUNTY REGIONAL AIRPORT

INNER PORTION OF RUNWAY 7-25 APPROACH SURFACES DRAWING

San Luis Obispo, California

PLANNED BY: Stephen C. Wagner
DETAILED BY: Larry D. Johnson
APPROVED BY: James M. Harris, P.E.
November 2, 2005
SHEET 9 OF 13

Coffman Associates
Airport Consultants
www.coffmanassociates.com

LEGEND

EXISTING	ULTIMATE	DESCRIPTION
		ABANDONED PAVEMENT (To Be Removed)
		AIRPORT PROPERTY LINE
		AIRPORT REFERENCE POINT (ARP)
		AIRPORT ROTATING BEACON
		AVIATION EASEMENT (if applicable)
		BUILDING ABANDONMENT (To Be Removed)
		BUILDING CONSTRUCTION
		DRAINAGE
		FACILITY CONSTRUCTION
		FENCING
VASI-4	PAPI-4	NAVIGATIONAL AID INSTALLATION (GVGI)
		RUNWAY THRESHOLD LIGHTS and REIL
		SEGMENTED CIRCLE/WIND INDICATOR
		WIND INDICATOR (Lighted)
		HOLDING POSITION MARKING
		LIGHT POLES
		TREES
		AIRPORT PROPERTY LINE/FENCE
		SURVEY MONUMENT
1865		TOPOGRAPHY
OFZ		RUNWAY OBSTACLE FREE ZONE
RSA		RUNWAY SAFETY AREA
OFA		RUNWAY OBJECT FREE AREA
BRL-20'		BUILDING RESTRICTION LINE (BRL-35')
		SECTION CORNER

ULTIMATE BUILDINGS/FACILITIES

NO.	DESCRIPTION
57	FUTURE HELIPADS (2)
58	FUTURE T-HANGAR (13 units)
59	FUTURE T-HANGAR (13 units)
60	FUTURE T-HANGAR (11 units)
61	FUTURE T-HANGAR (9 units)
62	FUTURE T-HANGAR (7 units)
63	FUTURE T-HANGAR (5 units)
64	FUTURE BOX HANGARS (2)
65	FUTURE BOX HANGARS (2)
66	FUTURE HANGAR
67	FUTURE HANGAR
68	FUTURE HANGAR
69	FUTURE HANGAR
70	FUTURE TERMINAL
71	FUTURE HANGAR/FBO
72	--
73	FUTURE T-HANGAR (19 units)
74	FUTURE T-HANGAR (19 units)
75	FUTURE T-HANGAR (15 units)
76	FUTURE T-HANGAR (11 units)
77	FUTURE T-HANGAR (7 units)
78	FUTURE BOX HANGARS (3)
79	FUTURE HANGAR
80	FUTURE HANGAR
81	FUTURE HANGAR
82-97	FUTURE CORPORATE HANGARS/PARCELS
98	FUTURE PARKING DECK

BUILDINGS/FACILITIES

NO.	DESCRIPTION	ELEVATION
1	ADMINISTRATION/TERMINAL BUILDING	217.7 MSL
2	RESTAURANT	213.8 MSL
3	ELECTRICAL VAULT	N/A
4	AIR TRAFFIC CONTROL TOWER (ATCT)	256.8 MSL
5	FBO and SHOP	206.1 MSL
6	HANGAR and SHOP	216.3 MSL
7	HANGAR and SHOP	208.1 MSL
8	HANGAR and SHOP	216.3 MSL
9	~~PORTABLE HANGAR~~ (REMOVED)	209.8 MSL
10	HANGAR and SHOP	220.3 MSL
11	~~PET CEMETERY~~ (REMOVED)	207.6 MSL
12	RELOCATED PORTABLE HANGARS	197.2 MSL
13	T-HANGAR (12 units)	214.8 MSL
14	T-HANGAR (5 units)	212.1 MSL
15	T-HANGAR (5 units)	216.3 MSL
16	T-HANGAR (5 units)	211.4 MSL
17	~~PORTABLE HANGAR (21 units)~~ (RELOCATED)	N/A
18	AIRCRAFT RESCUE and FIREFIGHTING (ARFF)	217.7 MSL
19	ANIMAL SHELTER	214.5 MSL
20	~~HANGAR~~ (REMOVED)	222.0 MSL
21	HANGAR (2 units)	181.4 MSL
22	HANGAR (6 units)	181.6 MSL
23	HANGAR (6 units)	182.2 MSL
24	HANGAR (6 units)	184.1 MSL
25	T-HANGAR (14 units)	180.5 MSL
26	T-HANGAR (14 units)	181.3 MSL
27	HANGAR (6 units)	185.3 MSL
28	HANGAR (D) (8 units)	187.3 MSL
29	HANGAR/FBO/SHOP (C) (6 units)	186.0 MSL
30	HANGAR/FBO/SHOP (B) (3 units)	182.1 MSL
31	HANGAR/FBO/SHOP (A) (2 units)	181.4 MSL
32	PORTABLE HANGAR (7 units)	192.1 MSL
33	T-HANGAR (10 units)	193.7 MSL
34	FBO (ASL)	193.7 MSL
35	PORTABLE HANGAR (5 units)	189.6 MSL
36	T-HANGAR (8 units)	192.9 MSL
37	T-HANGAR (8 units)	193.5 MSL
38	STORAGE SHEDS (8 units)	N/A
39	FUEL STORAGE FACILITY	N/A
40	HANGAR/SHOP/OFFICE	218.6 MSL
41	MAINTENANCE HANGAR	214.1 MSL
42	TEMPORARY FUEL STORAGE FACILITY	

Aero Drive
Airport Drive
Broad Street
AUTO PARKING
SURFACE PARKING
PARKING DECK
Twy E
Twy F
Twy J
ASOS
Ultimate 3000' x 60' Runway
Existing 3260' x 100' Runway
Ultimate 6225' x 150' Runway
Existing 5300' x 150' Runway
Ultimate 250' x 1000' x 450' RPZ
Existing 250' x 1000' x 450' RPZ
Ultimate CVGI
BRL
400' OFA
400' RSA
200' OFZ/RSA
325' TW CL
475.5'
65.5'
250' (Typ.) Hold/Rwy and Twy
NORTH
0 100 200 300
SCALE IN FEET

SAN LUIS OBISPO COUNTY REGIONAL AIRPORT

TERMINAL AREA DRAWING

San Luis Obispo, California

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.

PLANNED BY: Stephen C. Wagner
DETAILED BY: Larry D. Johnson
APPROVED BY: James M. Harris, P.E.
November 2, 2005
SHEET 10 OF 13

Coffman Associates
Airport Consultants
www.coffmanassociates.com

Coffman Associates-DJ ots_04eh1-10_top.dwg 11/2/2005

SERVICES & MANUFACTURING

Business Park

Medium Density Residential

Medium Density Residential

PUBLIC

SERVICES & MANUFACTURING

Medium Density Residential

OS PUBLIC

AIRPORT AREA

Tank Farm Road

EXISTING 50:1 APPROACH 1000' x 2000' x 1750' RPZ PARTIALLY OWNED / EASEMENT

ULTIMATE 50:1 APPROACH 1000' x 2000' x 1750' RPZ PARTIALLY OWNED / EASEMENT

AVIGATION EASEMENT

Low Density Residential

AIRFIELD OPERATION

EL. 156.6 (Low Point)

RSA

EMAS

AIRFIELD OPERATION

Aerostar Place

Aero Drive

Airport Drive

Arroyo Grande Creek

OPEN SPACE

SERVICES & MANUFACTURING

GENERAL AVIATION

AVIATION RELATED

Ultimate 6300' x 150' Runway

Relocate Runway 12-30

EL. 186.5 (High Point)

EL. 157.0 (Low Point)

AIRFIELD OPERATION

GENERAL AVIATION

PASSENGER TERMINAL COMPLEX

EXT./ULT. 20:1 APPROACH 250' x 1000' x 450' RPZ

GENERAL AVIATION

Existing 6300' x 150' Runway

Twy C

Twy J

Twy E

Twy M

3260' x 100' Runway

Ultimate 3000' x 60' Runway

EL. 162.7

EL. 157.0 (Low Point)

AIRFIELD OPERATION

EXT./ULT. 20:1 APPROACH 250' x 1000' x 450' RPZ

200

OFZ

RSA

Buckley Road

OPEN SPACE

SUBURBAN RESIDENTIAL

Ultimate ARP 35° 14' 14.476" N 120° 38' 35.353" W

SERVICES & MANUFACTURING

EL. 211.9

EL. 197.0 (High Point)

AIRFIELD OPERATION

EMAS

1000'

EXT./ULT. 34:1 APPROACH 1 MILE VISIBILITY MINIMUMS 500' x 1750' x 1010' RPZ PARTIALLY OWNED / EASEMENT

AVIGATION EASEMENT

Highway 227

OPEN SPACE

RURAL RESIDENTIAL

NORTH

0 400 800 1200

SCALE IN FEET

DATE OF AERIAL 4/9/2003

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.

San Luis Obispo County Regional Airport

AIRPORT LAND USE DRAWING

San Luis Obispo, California

PLANNED BY: Stephen C. Wagner

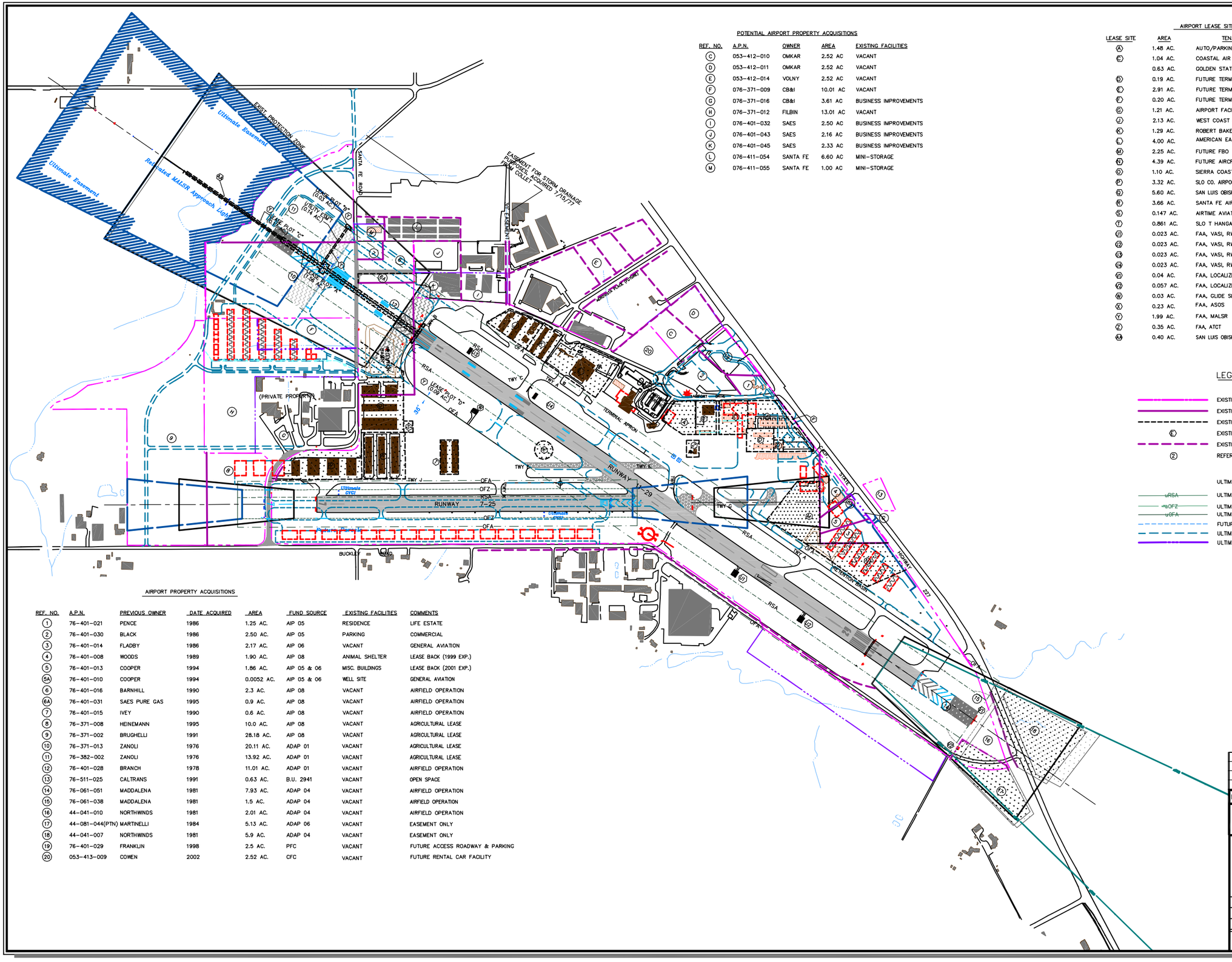
DETAILED BY: Larry Bennett Johnson

APPROVED BY: James M. Harris, P.E.

November 2, 2005

SHEET 11 OF 13

Coffman Associates
Airport Consultants
www.coffmonassociates.com



POTENTIAL AIRPORT PROPERTY ACQUISITIONS

REF. NO.	A.P.N.	OWNER	AREA	EXISTING FACILITIES
C	053-412-010	OMKAR	2.52 AC	VACANT
D	053-412-011	OMKAR	2.52 AC	VACANT
E	053-412-014	VOLNY	2.52 AC	VACANT
F	076-371-009	CB&I	10.01 AC	VACANT
G	076-371-016	CB&I	3.61 AC	BUSINESS IMPROVEMENTS
H	076-371-012	FILBIN	13.01 AC	VACANT
I	076-401-032	SAES	2.50 AC	BUSINESS IMPROVEMENTS
J	076-401-043	SAES	2.16 AC	BUSINESS IMPROVEMENTS
K	076-401-045	SAES	2.33 AC	BUSINESS IMPROVEMENTS
L	076-411-054	SANTA FE	6.60 AC	MINI-STORAGE
M	076-411-055	SANTA FE	1.00 AC	MINI-STORAGE

AIRPORT LEASE SITES – TENANTS & LEASES

LEASE SITE	AREA	TENANT	EXPIRATION DATE
A	1.48 AC.	AUTO/PARKING	.
E	1.04 AC.	COASTAL AIR MAINT. (FUTURE TERMINAL)	8/31/2003
	0.63 AC.	GOLDEN STATE PROP. (FUTURE TERMINAL)	8/31/2003
D	0.19 AC.	FUTURE TERMINAL/ARFF STATION	--
E	2.91 AC.	FUTURE TERMINAL/ARFF STATION	--
F	0.20 AC.	FUTURE TERMINAL/ARFF STATION	--
G	1.21 AC.	AIRPORT FACILITIES ASSOCIATES	5/30/2010
J	2.13 AC.	WEST COAST AIR SERVICE	12/31/2016
K	1.29 AC.	ROBERT BAKER (BARON EQUIPMENT)	12/31/2010
L	4.00 AC.	AMERICAN EAGLE	1/16/2015
M	2.25 AC.	FUTURE FBO	.
N	4.39 AC.	FUTURE AIRCRAFT STORAGE	.
O	1.10 AC.	SIERRA COASTAL	8/31/2003
P	3.32 AC.	SLO CO. AIRPORT HANGARS OWNERS ASSOC.	5/31/2015
Q	5.60 AC.	SAN LUIS OBISPO HANGAR OWNERS ASSOC.	6/30/2017
R	3.66 AC.	SANTA FE AIRPARK OWNER ASSO.	1/31/2026
S	0.147 AC.	AIRTIME AVIATION, INC.	6/30/2008
T	0.861 AC.	SLO T HANGARS ASSO.	8/31/2018
11	0.023 AC.	FAA, VASI, RWY	YEARLY TO 9/30/2020
12	0.023 AC.	FAA, VASI, RWY	YEARLY TO 9/30/2020
13	0.023 AC.	FAA, VASI, RWY	YEARLY TO 9/30/2020
14	0.023 AC.	FAA, VASI, RWY	YEARLY TO 9/30/2020
V1	0.04 AC.	FAA, LOCALIZER ANTENNA	YEARLY TO 9/30/2012
V2	0.057 AC.	FAA, LOCALIZER SHELTER	YEARLY TO 9/30/2012
W	0.03 AC.	FAA, GLIDE SLOPE	YEARLY TO 9/30/2014
X	0.23 AC.	FAA, ASOS	YEARLY TO 9/30/2021
Y	1.99 AC.	FAA, MALSR	YEARLY TO 9/30/2020
Z	0.35 AC.	FAA, ATCT	9/30/2006
AA	0.40 AC.	SAN LUIS OBISPO/UNOCAL	RENEWED ANNUALLY

LEGEND

- EXISTING AIRPORT BOUNDARY LINE
- EXISTING SLO COUNTY ASSESSORS PARCEL LINE
- EXISTING LEASE SITE LINE
- (E) EXISTING LEASE SITE DESIGNATION
- EXISTING PRIVATE PROPERTY LINE
- (2) REFERENCE NUMBER FOR SPECIFIC PARCELS
- ULTIMATE BUILDINGS
- uRSA ULTIMATE RUNWAY SAFETY AREA
- uOFZ ULTIMATE OBSTACLE FREE ZONE
- uOFA ULTIMATE OBJECT FREE AREA
- FUTURE ROAD
- ULTIMATE PAVEMENT
- ULTIMATE PROPERTY LINE

AIRPORT PROPERTY ACQUISITIONS

REF. NO.	A.P.N.	PREVIOUS OWNER	DATE ACQUIRED	AREA	FUND SOURCE	EXISTING FACILITIES	COMMENTS
1	76-401-021	PENCE	1986	1.25 AC.	AIP 05	RESIDENCE	LIFE ESTATE
2	76-401-030	BLACK	1986	2.50 AC.	AIP 05	PARKING	COMMERCIAL
3	76-401-014	FLADBY	1986	2.17 AC.	AIP 06	VACANT	GENERAL AVIATION
4	76-401-008	WOODS	1989	1.90 AC.	AIP 08	ANIMAL SHELTER	LEASE BACK (1999 EXP.)
5	76-401-013	COOPER	1994	1.86 AC.	AIP 05 & 06	MISC. BUILDINGS	LEASE BACK (2001 EXP.)
5A	76-401-010	COOPER	1994	0.0052 AC.	AIP 05 & 06	WELL SITE	GENERAL AVIATION
6	76-401-016	BARNHILL	1990	2.3 AC.	AIP 08	VACANT	AIRFIELD OPERATION
6A	76-401-031	SAES PURE GAS	1995	0.9 AC.	AIP 08	VACANT	AIRFIELD OPERATION
7	76-401-015	IVEY	1990	0.6 AC.	AIP 08	VACANT	AIRFIELD OPERATION
8	76-371-008	HEINEMANN	1995	10.0 AC.	AIP 08	VACANT	AGRICULTURAL LEASE
9	76-371-002	BRUGHELLI	1991	28.18 AC.	AIP 08	VACANT	AGRICULTURAL LEASE
10	76-371-013	ZANOLI	1976	20.11 AC.	ADAP 01	VACANT	AGRICULTURAL LEASE
11	76-382-002	ZANOLI	1976	13.92 AC.	ADAP 01	VACANT	AGRICULTURAL LEASE
12	76-401-028	BRANCH	1978	11.01 AC.	ADAP 01	VACANT	AIRFIELD OPERATION
13	76-511-025	CALTRANS	1991	0.63 AC.	B.U. 2941	VACANT	OPEN SPACE
14	76-061-051	MADDALENA	1981	7.93 AC.	ADAP 04	VACANT	AIRFIELD OPERATION
15	76-061-038	MADDALENA	1981	1.5 AC.	ADAP 04	VACANT	AIRFIELD OPERATION
16	44-041-010	NORTHWINDS	1981	2.01 AC.	ADAP 04	VACANT	AIRFIELD OPERATION
17	44-081-044(PTN)	MARTINELLI	1984	5.13 AC.	ADAP 06	VACANT	EASEMENT ONLY
18	44-041-007	NORTHWINDS	1981	5.9 AC.	ADAP 04	VACANT	EASEMENT ONLY
19	76-401-029	FRANKLIN	1998	2.5 AC.	PFC	VACANT	FUTURE ACCESS ROADWAY & PARKING
20	053-413-009	COWEN	2002	2.52 AC.	CFC	VACANT	FUTURE RENTAL CAR FACILITY

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.

San Luis Obispo County Regional Airport

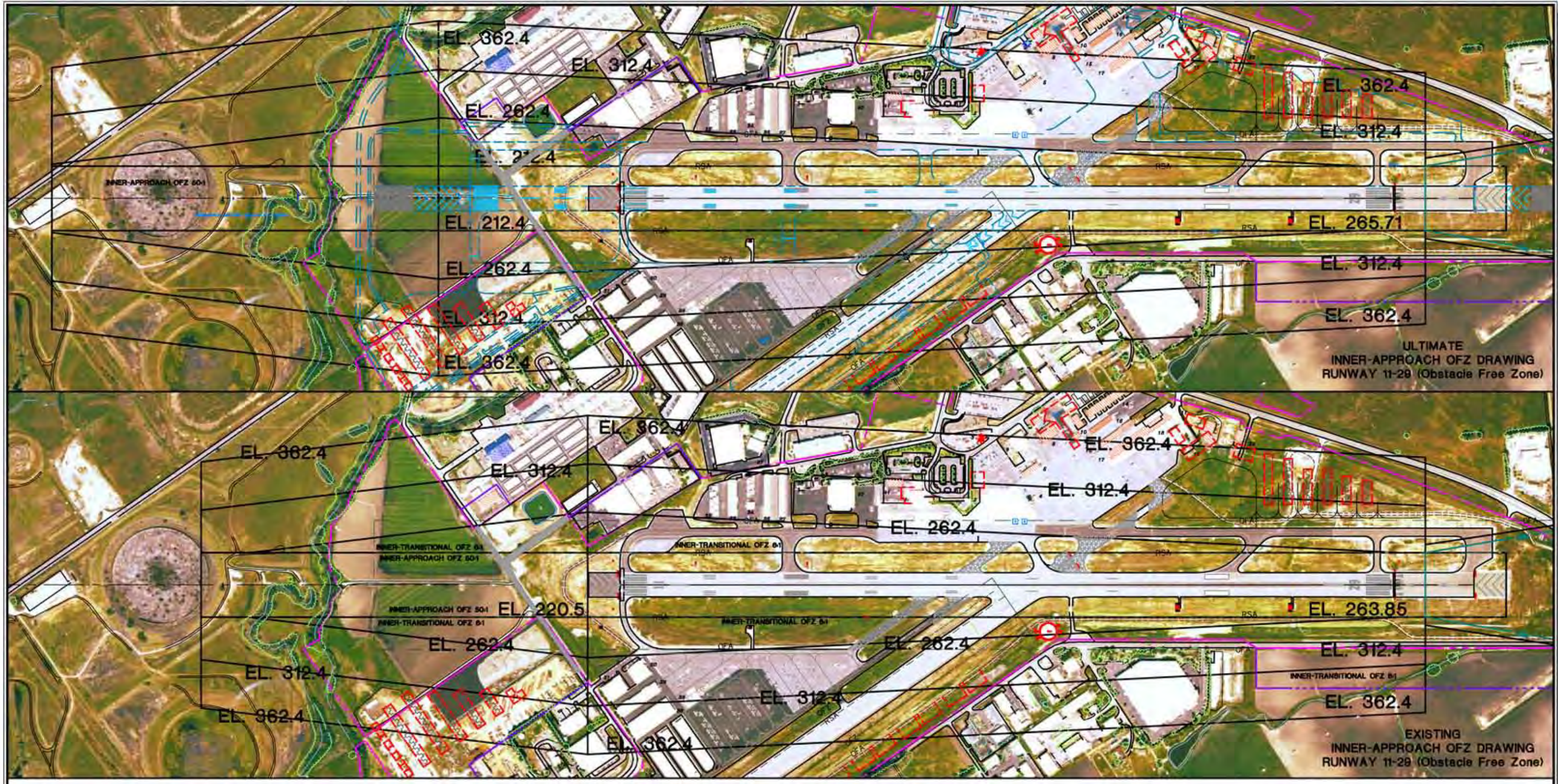
AIRPORT PROPERTY MAP

San Luis Obispo, California

PLANNED BY: Stephen E. Wagner
DETAILED BY: Larry Sarnell Johnson/Maggie Beaver
APPROVED BY: James M. Harris, P.E.

November 2, 2005

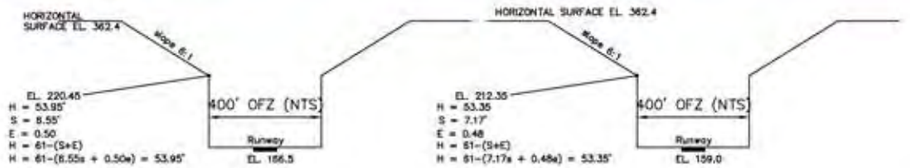
Coffman Associates
Airport Consultants
www.coffmanassociates.com



BUILDINGS/FACILITIES		
NO.	DESCRIPTION	ELEVATION
1	ADMINISTRATION/TERMINAL BUILDING	217.7 MSL
2	RESTAURANT	213.8 MSL
3	ELECTRICAL VAULT	N/A
4	AIR TRAFFIC CONTROL TOWER (ATCT)	256.8 MSL
5	FBO and SHOP	208.1 MSL
6	HANGAR and SHOP	216.3 MSL
7	HANGAR and SHOP	208.1 MSL
8	HANGAR and SHOP	216.3 MSL
9	~~PORTABLE HANGAR (REMOVED)~~	209.6 MSL
10	HANGAR and SHOP	220.3 MSL
11	~~PET CEMETERY (REMOVED)~~	207.6 MSL
12	RELOCATED PORTABLE HANGARS	197.2 MSL
13	T-HANGAR (12 units)	214.8 MSL
14	T-HANGAR (6 units)	212.1 MSL
15	T-HANGAR (6 units)	216.3 MSL
16	T-HANGAR (6 units)	211.4 MSL
17	~~PORTABLE HANGAR (21 units) (RELOCATED)~~	N/A
18	AIRCRAFT RESCUE and FIREFIGHTING (ARFF)	217.7 MSL
19	ANIMAL SHELTER	214.5 MSL
20	~~HANGAR (REMOVED)~~	222.0 MSL
21	HANGAR (2 units)	181.4 MSL
22	HANGAR (6 units)	181.6 MSL

BUILDINGS/FACILITIES		
NO.	DESCRIPTION	ELEVATION
23	HANGAR (6 units)	182.2 MSL
24	HANGAR (6 units)	184.1 MSL
25	T-HANGAR (14 units)	180.5 MSL
26	T-HANGAR (14 units)	181.3 MSL
27	HANGAR (6 units)	185.3 MSL
28	HANGAR (D) (6 units)	187.3 MSL
29	HANGAR/FBO/SHOP (C) (6 units)	186.0 MSL
30	HANGAR/FBO/SHOP (B) (3 units)	182.1 MSL
31	HANGAR/FBO/SHOP (A) (2 units)	181.4 MSL
32	PORTABLE HANGAR (7 units)	192.1 MSL
33	T-HANGAR (10 units)	193.7 MSL
34	FBO (ASI)	193.7 MSL
35	PORTABLE HANGAR (5 units)	189.6 MSL
36	T-HANGAR (8 units)	192.9 MSL
37	T-HANGAR (6 units)	193.5 MSL
38	STORAGE SHEDS (5 units)	N/A
39	TEMPORARY FUEL STORAGE FACILITY	N/A
40	HANGAR/SHOP/OFFICE	215.6 MSL
41	MAINTENANCE HANGAR	214.1 MSL

OBSTACLE FREE ZONE (OFZ) OBJECT PENETRATIONS		
OBJECT	PENETRATION	DISPOSITION
Santa Fe Road	EXISTING INNER APPROACH-OFZ	RELOCATE ROAD



0 300 600 900
SCALE IN FEET

SAN LUIS OBISPO COUNTY REGIONAL AIRPORT

INNER-APPROACH OFZ DRAWING
RUNWAY 11-29 (Obstacle Free Zone)

San Luis Obispo, California

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 OF 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.

PLANNED BY: Stephen E. Wagner
DETAILED BY: Larry D. Johnson
APPROVED BY: James M. Herron, P.E.
November 2, 2005
SHEET 13 OF 13

Coffman Associates
Airport Consultants
www.coffmanassociates.com

SAN LUIS OBISPO COUNTY
REGIONAL AIRPORT

Appendix D
ECONOMIC BENEFIT ANALYSIS

EXECUTIVE SUMMARY

This report presents an analysis of the economic benefits of San Luis Obispo County Regional Airport for the airport service area, including the City of San Luis Obispo, the county of San Luis Obispo, as well as parts of Monterey County to the north, Kern County to the east, and Santa Barbara County to the south.

At the time this economic benefit study was undertaken (2003) there were 302 based aircraft on the airport, including 241 single engine planes, 45 multi-engine aircraft, 9 jets and 7 rotary craft.

In 2000, San Luis Obispo County Regional Airport recorded more than 158,000 commercial airline passenger enplanements, followed by a decline of some 6,000 enplanements in 2001. In FY 2003, the study period for this analysis, there were 152,607 enplanements. Approximately 4 out of ten of these (39.9%) were visitors to the region.

Total Economic Benefits

Economic benefits (revenues, employment and earnings) are created when economic activity takes place both on and off the airport. The economic benefits of San Luis Obispo County Regional Airport for FY 2003 are shown in Table B1.

The total benefits of the airport, the sum of the direct benefits and the indirect benefits, which result as dollars recirculate in the regional economy, were calculated to be:

- **$142 Million Revenues**
- **$38.3 Million Earnings**
- **1,541 Total Employment**

Measuring Economic Benefits

San Luis Obispo County Regional Airport serves as a gateway that welcomes commerce and visitors into the region and provides access for the citizens and businesses of the area to travel outward to the economy at large.

Commercial airline travelers from San Luis Obispo County can make connections for national and global flights. General aviation allows business travelers to reach destinations without the delays and uncertainty of today's airline flights and provides access to more than 5,300 airports in the nation, compared to approximately 565 served by scheduled airlines.

The presence of an airport creates benefits for a community in other ways. Airports bring essential services, including enhanced medical care (such as air ambulance service), support for law enforcement and fire control, and courier delivery of mail and high value parcels. These services raise the quality of life for residents and maintain a competitive environment for economic development.

Although qualitative advantages created by the presence of an airport are important, they are also difficult to measure. In studying airport benefits, regional analysts have emphasized indicators of economic activity for airports that can be quantified, such as dollar value of output, number of jobs created,

TABLE B1
Summary of Economic Benefits: FY 2003
San Luis Obispo County Regional Airport

	BENEFIT MEASURES		
Source	**Revenues**	**Earnings**	**Employment**
On-Airport Aviation Employers	**$51,406,000**	**$10,029,000**	**347**
Capital Projects	**2,599,000**	**374,000**	**18**
All On-Airport Economic Benefits	**54,005,000**	**10,403,000**	**365**
Air Visitor Benefits	**19,717,000**	**8,210,000**	**457**
Direct Benefits: Sum of On-Airport & Air Visitor Benefits	**73,722,000**	**18,613,000**	**822**
Indirect Benefits (Multiplier Effects of Secondary Spending)	***68,327,000***	***19,690,000***	***719***
TOTAL BENEFITS	**$142,049,000**	**$38,303,000**	**1,541**

and earnings of workers and proprietors of businesses.

Economic benefit studies differ from cost-benefit analyses, which are often called for to support decision-making, typically for public sector capital projects. Study of economic benefit is synonymous with measurement of economic performance. The methodology was standardized in the publication by the Federal Aviation Administration, *Estimating the Regional Economic Significance of Airports*, Washington DC, 1992.

Following the FAA methodology, this study views San Luis Obispo County Regional Airport as a source of measurable economic output (the production of aviation services) that creates revenues for firms, and employment and earnings for workers on and off the airport.

Business spending on the airport injects revenues into the community when firms buy products from suppliers and again when employees of the airport spend for household goods and services. In addition, spending by air visitors produces revenues for firms in the hospitality sector as well as employment and earnings for workers.

Benefit Measures

The quantitative measures of economic benefits of the San Luis Obispo County Regional Airport are each described below.

Revenue is the value in dollars of the output of goods and services produced by businesses. For government units, the budget is used as the value of output.

Output is equivalent to revenue or spending or sales. From the perspective of the business that is the supplier of goods and services, the dollar value of output is equal to the revenues received by that producer. From the viewpoint of the consumer, the dollar value of the output is equal to the amount that the consumer spent to purchase those goods and services from the business.

Earnings are a second benefit measure, made up of employee compensation (the dollar value of payments received by workers as wages and benefits) and proprietor's income of business owners.

Employment is the third benefit measure, the number of jobs supported by the revenues created by the airport.

To measure the economic benefits of the airport, information on revenues, employment and earnings was obtained directly from suppliers and users of aviation services including private sector firms on the airport, government agencies, airport staff, commercial and general aviation air travelers, and based aircraft owners.

On-Airport Direct Benefits

Operations on San Luis Obispo County Regional Airport supported a total of 29 private and public employers including passenger services such as airline ticketing and auto rental, FBO services, charter, aircraft rental and sales, aviation training, avionics, maintenance, storage, air cargo and express delivery services as well as government agencies such as police, fire, airport administration and the tower. In addition, on-going airport capital improvement projects created benefits on the airport during the year.

Including the revenues and employment created by outlays for airport capital projects, these economic units were responsible for on-

airport benefits of:

- **$54 Million Revenues**
- **$10.4 Million Earnings**
- **365 On-Airport Jobs**

Air Visitor Direct Benefits

An important source of aviation-related spending comes from visitors to the area that arrive at San Luis Obispo County Regional Airport. When air travelers make off-airport expenditures these outlays create revenues (sales) for firms that supply goods and services to visitors. During a typical year, there are more than 77,000 air visitors that arrive at the airport by commercial, private, or chartered aircraft.

Visitors traveling for business or personal reasons spend for lodging, food and drink, entertainment, retail goods and services, and ground transportation including auto rental and taxis, creating annual airport service area output, employment and earnings of:

- **$19.7 Million Revenues**
- **$8.2 Million Earnings**
- **457 Off-Airport Jobs**

Combined Direct Benefits

The combined direct benefits represent the sum of on-airport and off-airport (visitor) revenues, earnings and employment due to the presence of the airport. Direct benefits are the "first round" impacts and do not include any multiplier effects of secondary spending. The direct benefits of on-airport and off-airport economic activity related to San Luis Obispo County Regional Airport were:

- **$72.7 Million Revenues**
- **$18.6 Million Earnings**
- **822 Jobs**

Indirect Benefits (Multiplier Effects)

Indirect benefits (multiplier effects) are created when the initial spending by airport employers or visitors circulates and recycles through the economy. In contrast to initial or direct benefits, the indirect benefits measure the magnitude of successive rounds of re-spending as those who work for or sell products to airport employers or the hospitality sector spend dollars.

For example, when an aircraft mechanic's wages are spent to purchase food, housing, clothing, and medical services, these dollars create more jobs and income in the general economy of the region through multiplier effects of re-spending.

The initial direct revenue stream in the service area of $72.7 million created by the presence of San Luis Obispo County Regional Airport was estimated to stimulate indirect benefits from multiplier effects within the airport service area of:

- **$68.3 Million Revenues**
- **$19.6 Million Earnings**
- **719 Jobs**

Value of Based Aircraft Travel

The general aviation aircraft based at the airport logged 46,206 hours in FY2003. The Charter Equivalent Value of this travel was computed as $22.2 million.

ON-AIRPORT BENEFITS

This section provides more detail on the economic benefits associated with activity on site at San Luis Obispo County Regional Airport.

Table B2 illustrates the annualized employment, earnings and value of output (revenues) produced by airport tenants in FY 2003. Values shown for revenues, employment and earnings are the direct benefits and do not include multiplier effects of indirect benefits.

On-Airport Output

On-airport economic activity created annual output of $54 million, including $2.6 million budgeted for capital projects. Private sector aviation revenues were $46.9 million and governmental budgets were $4.5 million.

Businesses at San Luis Obispo County Regional Airport offer passenger services including airline ticketing, auto rental and food services. Based on figures from the U. S. Department of Transportation, the dollar value of outbound airline travel tickets from San Luis Obispo County Regional Airport was over $33.1 million in FY 2003.

Full FBO services available for the aviation community include aircraft rental, maintenance, avionics, storage, and fueling for various categories of aircraft including piston, turboprop, jet and rotary.

Aviation activities on the airport include corporate hangars for private aircraft and firms that provide services to the public such as flight training for those interested in learning to fly and sales, leasing and exchange of aircraft, as well as pilot supplies. Air cargo and expedited delivery services are available for consumers, business, and medical users requiring secure and speedy transport of packages and products.

There are several government agencies supporting aviation, including the San Luis Obispo County Regional Airport staff, police and fire, the Transportation Security Administration (TSA) and the airport tower.

Capital Projects

Capital projects are vital for airports to maintain safety and provide for growth. Recent projects include taxiway pavement rehabilitation, drainage improvements, and roadway construction. Capital spending for such airport improvements creates jobs and injects dollars into the local economy. Spending for improvements for FY 2003 were budgeted at $2.6 million.

Employment and Earnings

There were 23 private sector aviation employers on the airport in FY 2003, and 5 administrative or government units.

Surveys and interviews with on-airport employers provided a tally of 365 jobs on the airport (including 18 workers for capital projects). These employees brought home annual earnings of $10.4 million.

Summary of On-Airport Benefits

On-airport activity created $54 million in value of output. This activity supported employment of 365 workers on the airport, with 82.7% of these jobs in the private sector.

TABLE B2
On-Airport Benefits: Revenues, Earnings and Employment
San Luis Obispo County Regional Airport

	BENEFIT MEASURES		
Sources of On-Airport Benefits	**Revenues**	**Earnings**	**Employment**
Private Aviation Employers **Commercial Airlines** **Auto Rental & Parking** **FBO Services & Fueling** **Avionics & Maintenance** **Aircraft Rental & Sales** **Food Services & Retailing** **Aircraft Storage**	**$46,897,000**	**$7,596,000**	**288**
Capital Projects	**2,599,000**	**374,000**	**18**
Government Agencies/Services **Airport Management & Administration** **Police** **Fire** **TSA** **Tower**	**4,509,000**	**2,433,000**	**59**
ON-AIRPORT BENEFITS	**$54,005,000**	**$10,403,000**	**365**

Source: Survey of Employers, San Luis Obispo County Regional Airport, 2003

AIR VISITOR BENEFITS

San Luis Obispo County Regional Airport attracts commercial airline and general aviation visitors from throughout the region and the nation who come to the area for business, recreational and personal travel.

This section provides detail on economic benefits from commercial and general aviation air travelers who use the airport. Values shown for spending (revenues), employment and earnings are direct benefits of initial visitor outlays and do not include multiplier effects of indirect benefits.

Commercial Airline Visitors

During FY 2003 there were 152,607 airline enplanements at San Luis Obispo County Regional Airport. According to an analysis of the air traveler origin and destination data bank of the U. S. Department of Transportation, 39.9 percent or 60,890 enplaning passengers were visitors to the area (Table B3).

Based on figures provided for San Luis Obispo County by the California Division of Tourism, the average length of stay for travel parties in FY 2003 was 2.8 days.

The average spending per visitor per trip was $249. Travel party information on air visitor spending for lodging, food, retail goods and services and ground transportation was based on figures compiled for this study from various sources, including the California Division of Tourism, San Luis Obispo County revenue records, Dean Runyon Associates, and University of California, Santa Barbara.

Multiplication of $248 by 60,890 annual airline passenger visitors, times length of stay, yields total airline visitor spending of $15.1 million for the year.

Airline travelers contributed 170,492 visitor days in FY 2003. On a typical day, there were 467 airline travelers in the San Luis Obispo County area spending an average of $89 per person per day, creating revenues exceeding $41,000 each day.

TABLE B3
Airline Visitor Travel Patterns

Category	Value
Enplanements	**152,607**
Percent Visitors	**39.9%**
Number of Visitors	**60,890**
Average Stay (Nights)	**2.8**
Spending per Trip	**$249**
Visitor Spending	**$15,100,000**

Source: U. S. Department of Transportation; California Division of Tourism; San Luis Obispo County; Dean Runyon Associates; University of California, Santa Barbara

The figures for spending per person per trip can be used to derive the economic value of visitor expenditures from a typical passenger aircraft arriving at San Luis Obispo County Regional Airport (Table B4).

Based on current characteristics of arriving passenger aircraft, the average passenger

TABLE B4
Economic Value of Arriving Airliner

Item	Value
Passengers/Aircraft	**20**
Percent Visitors	**39.9%**
Number of Visitors/Aircraft	**8**
Trip Expenditures/Person	**$249**
Value of Arriving Airliner	**$1,992**

Source: US Dept. Transportation and visitor spending data

count is 20 persons of which 8 are visitors. These 8 visitors per aircraft will spend on average $248 per person per trip to the area.

Total airline visitor spending of $1,992 is brought into the local economy by each arriving airliner, on average.

Total visitor spending to the airport service area accounts for $15.1 million injected into the regional economy. Spending per person per day by category and resulting economic benefits from all airline visitors are shown in Table B5. The largest spending category is lodging ($28 per person per day), which is also the source of the greatest annual revenues (at $4.8 million), and earnings to workers ($1.9 million).

TABLE B5
Airline Visitors: Revenues, Earnings and Employment
San Luis Obispo County Regional Airport

Category	Spending Per Day	Revenues	Earnings	Jobs
Lodging	**$28**	**$4,800,000**	**$1,953,000**	**79**
Food/Drink	**24**	**4,020,000**	**1,694,000**	**92**
Retail Sales	**18**	**3,120,000**	**1,387,000**	**84**
Entertainment	**6**	**997,000**	**338,000**	**40**
Ground Trans	**13**	**480,000**	**75,000**	**6**
TOTAL	**$89**	**$13,417,000**	**$5,447,000**	**301**

Note: Earnings and employment figures were derived from the IMPLAN input-output model based on data for San Luis Obispo County and the United States Bureau of Economic Analysis. Employment includes full and some part time workers, figures rounded to head counts. Ground transportation figures do not include On-Airport car rental expenditures by visitors.

Airline visitor spending in food and beverage establishments created the second largest revenues ($4.0 million) and earnings ($1.6 million) and the greatest number of jobs (92). The $13.4 million of off-airport visitor spending by airline travelers created a total of 301 direct jobs in the service area, with earnings to workers and proprietors of $5.5 million.

General Aviation Visitors

In order to analyze general aviation traffic patterns at the airport, a database of 1,500 general aviation flight plans, designating San Luis Obispo County Regional Airport as either destination or origin for travel, was obtained from the FAA.

In this sample for 2003, the most frequent source of itinerant flights arriving at San Luis Obispo County Regional Airport was Los Angeles International Airport. Second in importance was San Francisco International, followed by Phoenix Sky Harbor, Oakland International and Ontario International Airports, rounding out the top five (Table B6).

Overall, general aviation aircraft arriving at SBP during the study period originated at more than 125 airports around the nation.

Past years have often seen more than 50,000 itinerant general aviation operations annually at San Luis Obispo County Regional Airport. Operations involve both arrivals and departures. It is necessary to differentiate between itinerant operations by based and transient aircraft. An itinerant operation typically involves an origination or destination airport other than San Luis Obispo County Regional Airport. However, both based and non-based aircraft contribute to itinerant activity in any given day.

TABLE B6
GA Aircraft Origination

Rank and Origin	State
1. Los Angeles Int'l	CA
2. San Francisco Int'l	CA
3. Phoenix Sky Harbor	AZ
4. Oakland Int'l	CA
5. Ontario Int'l	CA
6. John Wayne Orange County	CA
7. Van Nuys	CA
8. Santa Monica Municipal	CA
9. Santa Barbara Municipal	CA
10. San Jose Int'l	CA

Source: FAA Flight Plan Data Base for San Luis Obispo County Regional Airport

When a based aircraft returns to San Luis Obispo County Regional Airport from LAX (Los Angeles) for example, that is an itinerant operation. When an aircraft based at an airport other than San Luis Obispo County Regional arrives at San Luis Obispo County Regional Airport that aircraft is classified as a transient itinerant.

According to analysis of flight records, there were 24,212 itinerant arrivals with 18,688 transient aircraft arrivals at San Luis Obispo County Regional Airport in FY 2003. Of these, 3,336 brought overnight visitors and 15,352 were one-day visitors (Table B7).

Separate analyses were conducted for those GA visitors with an overnight stay and those whose visit was one day or less in duration.

To compute economic benefits based on visitor spending, one day aircraft were further partitioned into those staying less than 4 hours and 4 hours or more. Visitor spending estimates were computed only for those aircraft staying 4 hours or longer at San Luis Obispo County Regional Airport, reflecting the fact that many aircraft stop only for fuel and travelers do not spend for food, retail shopping, or ground transportation off the airport.

There were 2,816 general aviation aircraft that stayed on the ground 4 hours or more during the year (see below, Table B10).

TABLE B7
General Aviation Transient Aircraft

Item	Annual Value
Itinerant AC Arrivals	24,212
Transient AC Arrivals	18,688
Overnight Transient AC	3,336
One Day Transient AC	15,352

Source: Derived from FAA Flight Plan Data Base and San Luis Obispo County Regional Airport Records

Overnight GA Visitors

Information on visiting general aviation aircraft was derived from a mail survey of visiting aircraft owners and pilots. Visitors were asked about the purpose of their trip, the size of the travel party, length of stay, type of lodging, and outlays by category.

The travel patterns underlying the calculation of overnight GA visitor economic benefits are shown in Table B8, for the 3,336 transient overnight aircraft arrivals during the year.

TABLE B8
General Aviation Overnight Visitors (Including Crew)

Item	Annual Value
Transient AC Arrivals	18,688
Overnight Transient AC	3,336
Avg. Party Size	2.7
Number of Visitors	8,940
Average Stay (nights)	2.7
Visitor Days (Inc. Crew)	25,594
Spending per Aircraft	$1,930
Total Expenditures	$6,437,000

Source: Derived from FAA Flight Plan Data Base ,San Luis Obispo County Regional Airport Records, GA Visitor Survey

The average party size was 2.7 persons and the average overnight travel party stayed in the area for 2.7 days. There were 8,940 overnight visitors for the year, including crew, with a combined total of 25,594 visitor days. Spending per overnight travel party per aircraft averaged $1,930. Total spending by all GA overnight visitors summed to $6.4 million for the year.

Table B9 shows the percentage distribution of outlays by overnight travel parties at San Luis Obispo County Regional Airport. Lodging

accounts for 32 percent of visitor spending, averaging $629 per aircraft travel party.

Food and drink, at $475 per overnight aircraft, was 24 percent of each dollar spent. Retail, at $398 and 21 percent of spending was next in importance, followed by ground transportation at $237 and 12 percent and entertainment at $191 and 10 percent spending per aircraft for the average travel party.

TABLE B9
Spending Per Overnight GA Aircraft

Category	Spending	Percent
Lodging	**$629**	**32%**
Food/Drink	**475**	**25**
Retail	**398**	**21**
Entertainment	**191**	**10**
Transportation	**237**	**12**
TOTAL	**$1,930**	**100%**

Source: GA Visitor Survey

Day GA Visitors

According to flight operations records, 63 percent of itinerant general aviation, or 82 percent of transient general aviation aircraft arriving at San Luis Obispo County Regional Airport were transients that stayed on the airport for one day or less.

During the year, there were 15,352 aircraft that stopped at the airport for one day. Some were only on the ground for a few minutes while others were parked several hours when the travel party had their aircraft serviced, pursued a personal activity or conducted business in the San Luis Obispo area.

The economic benefits from arriving aircraft travel parties are of two types. Those pilots or aircraft owners that buy fuel or have their aircraft serviced on the airport are making purchases which contribute to the revenue stream received by aviation businesses on the airport. That type of spending creates output, employment, and earnings directly on the airport. Those economic benefits are shown in Table B2 as on-airport benefits.

TABLE B10
General Aviation Day Visitors

Item	Annual Value
Transient AC Arrivals	**18,688**
One Day Transient AC	**15,352**
Stay >/= 4 Hours	**2,816**
Average Stay (Hours)	**6.5**
Avg. Party Size	**2.6**
Number of GA Visitors (Inc. Crew)	**7,745**
Spending per Aircraft	**$168**
Total Expenditures	**$473,000**

Source: Source: Derived from FAA Flight Plan Data Base and GA Visitor Survey

However, if the aircraft travel party leaves the airport to visit a corporate site, conduct a business meeting, or attend a sporting or cultural event, these off-airport activities may

generate off-airport spending that create jobs and earnings in the local community.

For the purposes of this study, those travel parties that arrived and departed within four hours were assumed to have not left the airport and not contributed any significant spending off the airport.

Of the 18,688 transient aircraft that stopped at San Luis Obispo County Regional Airport during the past year, there were 2,816 that were parked for more than four hours but not overnight (Table B10). The average stay in the area for those travel parties was 6.5 hours, according to arrival and departure records, with a range of 4 to 12 hours.

TABLE B11
Spending Per Day Visitor Aircraft

Category	Spending	Percent
Lodging	**0**	
Food/Drink	**$98**	**58%**
Retail	**34**	**20**
Entertainment	**5**	**3**
Transportation	**31**	**19**
TOTAL	**$168**	**100%**

Source: GA Visitor Survey

Day trip aircraft brought 7,745 visitors, including crew, to the San Luis Obispo County Regional area during the year. The average spending per one-day aircraft averaged $168. The total economic benefits created by off-airport spending by one-day general aviation visitors tallied to $473,000 of output (revenues or sales off the airport).

The largest expenditure category for one-day visiting travel parties was food and beverage, which averaged $98 per aircraft travel party for the day and accounted for 58 percent of outlays (Table B11). Spending for retail was the second largest category, at $34 per aircraft, or 20 percent.

Combined GA Visitor Spending

Table B12 shows the economic benefits resulting from spending in the region by combined overnight and day general aviation visitors arriving at San Luis Obispo County Regional Airport.

To recap, there were 18,688 transient general aviation aircraft that brought visitors to the airport during the year. Of these, 3,336 were arriving overnight general aviation aircraft and 2,816 were one day visiting aircraft that were parked more than 4 hours, long enough to make off-airport expenditures.

Each overnight travel party spent an average of $1,930 during their trip to the airport service area and travelers on each day visitor aircraft reported spending $168 per trip.

Multiplying the expenditures for each category of spending by the number of aircraft yields the total outlays for lodging, food and drink, entertainment, retail spending, and ground transportation due to GA visitors during the year. This spending summed to $6.3 million in revenues.

There were 33,339 visitor days attributable to general aviation travelers during the year. Seventy-six percent of visitor days (25,594) were due to overnight GA travelers and thirty-

four percent (7,745) were from one-day visitors.

On an average day, there were 91 visitors in the service area that had arrived by general aviation aircraft. Average daily spending by all GA air travelers was $17,260 within the airport service area. The average economic impact of any arriving GA transient aircraft (combined overnight and day visitors staying more than 4 hours) was $1,024 for each trip.

The largest spending category by general aviation visitors was expenditures for lodging, with outlays of $2.1million or 33 percent of the total. Spending for food and beverages accounted for 30 percent of GA visitor spending and was the second largest category, with outlays of $1.9 million for the year.

Taken together, these two categories accounted for nearly two-thirds of the economic benefits from GA visitors to San Luis Obispo County Regional Airport.

Of total spending of $6.3 million created by GA visitors, an average of 44 cents of each dollar was used within the service area by employers as earnings paid out to workers.

Wages taken home by tourism/visitor sector workers for spending in their own community summed to $2.7 million during the year. Earnings in the lodging industry accounted for 36 percent of total earnings from visitor spending. The largest number of jobs created was in food and drink, with 46. In total there were 156 jobs created by general aviation visitor spending.

TABLE B12
Economic Benefits from GA Visitors - Revenues, Earnings and Employment
San Luis Obispo County Regional Airport

Category	Spending per AC		Revenues	Earnings	Employment
	Overnight	Day			
Lodging	**$629**		**$2,100,000**	**$989,000**	**40**
Food/Drink	**475**	**$98**	**1,900,000**	**847,000**	**46**
Retail Sales	**398**	**34**	**1,568,000**	**677,000**	**41**
Entertainment	**191**	**5**	**655,000**	**237,000**	**28**
Ground Trans.	**237**	**31**	**77,000**	**13,000**	**1**
TOTAL	**$1,930**	**$168**	**$6,300,000**	**$2,763,000**	**156**

Note: Earnings and employment figures were derived from the IMPLAN input-output model based on data for San Luis Obispo County and the United States Bureau of Economic Analysis. Employment includes full and some part time workers, figures rounded to head counts. Ground transportation spending is off-airport only.

Combined Airline and GA Visitors

There were 203,831 visitor days attributable to commercial and general aviation travelers during the year. Eighty-three percent of visitor days (170,492) were due to commercial air travelers and seventeen percent (33,339) were from general aviation visitors.

On an average day, there were 558 visitors in the service area. Average daily spending by all air travelers was $54,000 within the airport service area.

Table B13 shows that the largest spending category by aviation visitors was expenditures for lodging, with outlays of $6.7 million, or 36 percent of the total. Spending on food and beverage accounted for 30 percent of visitor spending and was the second largest category, with outlays of $5.9 million for the year.

Airline and general aviation visitors combined to spend $19.7 million in the service area during the year, creating 457 jobs with earnings to workers of $8.2 million.

TABLE B13
Economic Benefits from Airline and GA Visitors: Revenues, Earnings and Employment
San Luis Obispo County Regional Airport

Category	Revenues	Earnings	Employment
Lodging	**$6,900,000**	**$2,942,000**	**119**
Food/Drink	**5,920,000**	**2,541,000**	**138**
Retail Sales	**4,688,000**	**2,064,000**	**125**
Entertainment	**1,652,000**	**575,000**	**68**
Ground Transport	**557,000**	**88,000**	**7**
TOTAL	**$19,717,000**	**$8,210,000**	**457**

Note: Earnings and employment figures were derived from the IMPLAN input-output model based on data for San Luis Obispo County and the United States Bureau of Economic Analysis. Employment includes full and some part time workers, figures rounded to head counts. Ground transportation adjusted to show expenditures off airport only.

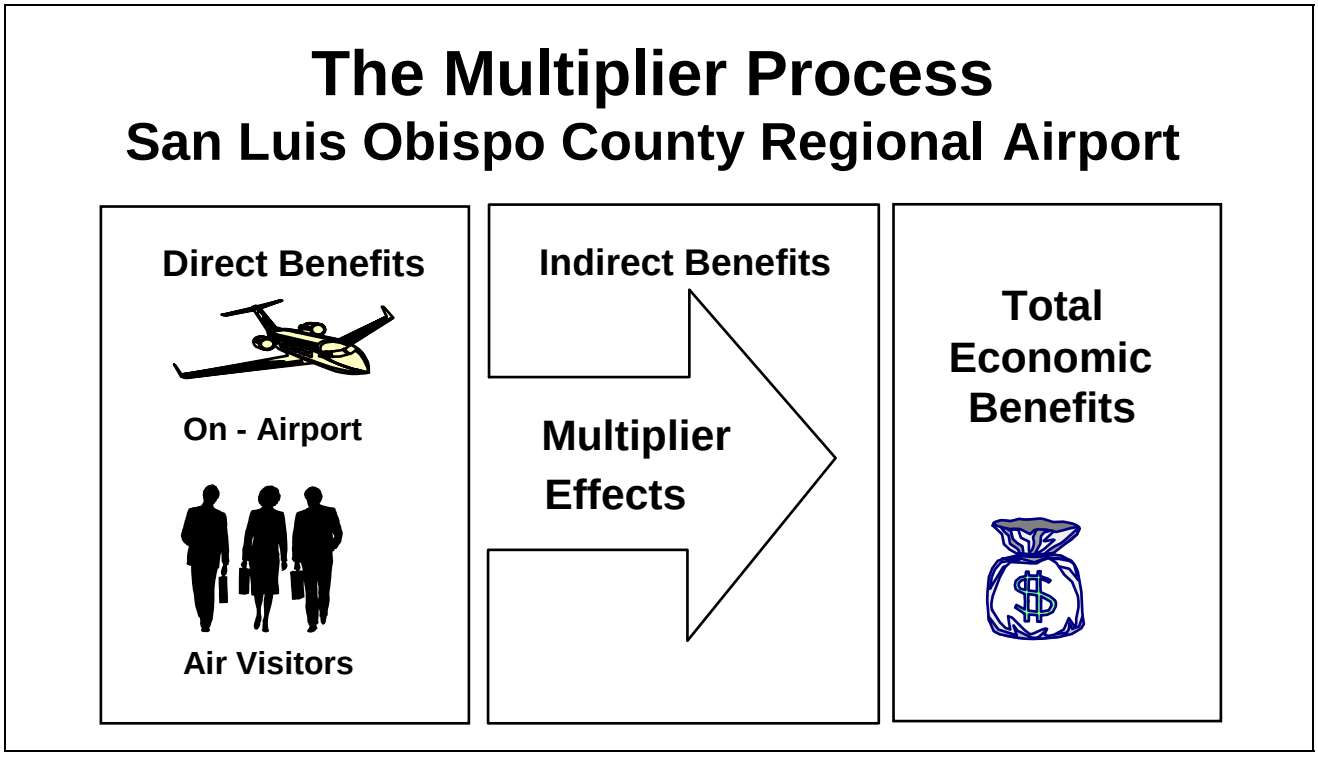
INDIRECT BENEFITS: MULTIPLIER EFFECTS

The output, employment, and earnings from on-airport activity and off-airport visitor spending represent the computed direct benefits from the presence of San Luis Obispo County Regional Airport. For the service area, these direct benefits summed to $73.7 million of output (measured as revenues to firms and budgets of administrative units), 822 jobs, and earnings to workers and proprietors of $18.6 million. These figures for initial economic activity created by the presence of the airport do not include the "multiplier effects" that result from additional spending induced in the economy to produce the initial goods and services.

Production of aviation output requires inputs in the form of supplies and labor. Purchase of inputs by aviation firms has the effect of creating secondary or indirect revenues and employment that should be included in total benefits of the airport.

Airport benefit studies rely on multiplier factors from input-output models to estimate the impact of secondary spending on output, earnings and employment to determine indirect and total benefits, as illustrated in the figure below.

The multipliers used for this study were from the IMPLAN input-output model based on data for San Luis Obispo from the California Employment Development Department and the U. S. Bureau of Economic Analysis. To demonstrate the methodology, average county multipliers are shown in Table B14.



The multipliers represent weighted averages for combined industries in each category. For example, the visitor benefits multipliers shown combine lodging, food services, retailing, auto rental and entertainment multipliers used in the analysis.

The multipliers in this table illustrate the process for calculating the indirect and total impacts on all industries of the regional economy resulting from the direct impact of each aviation related industry. The multipliers for output show the average dollar change in revenues for all firms in the service area due to a one-dollar increase in revenues either on the airport or through visitor spending.

For example, each dollar of new output (revenue) created by on-airport employers circulates through the economy until it has stimulated total output in all industries in the service area of $1.9550 or, put differently, the revenue multiplier of 1.9550 for on-airport activity shows that for each dollar spent on the airport there is additional spending created of $0.9550 or 95.50 cents of indirect or multiplier spending.

Direct revenues from all sources associated with the presence of San Luis Obispo County Regional Airport were $73.7 million for the year. After accounting for the multiplier effect, total revenues created within the service area were $142 million. Indirect or secondary revenues were $68.3 million, the difference between total and direct revenues.

The multiplier for earnings shows the dollar change in earnings for the service area economy due to a one-dollar increase in earnings either on the airport or in the visitor sector. The earnings multipliers determine how wages paid to workers on or off the airport stay within the economy and create additional spending and earnings for workers in non-aviation industries. For example, each dollar of wages paid for workers on the airport stimulates an additional $1.1315 of earnings in the total economy.

The initial direct wages of $10.4 million for aviation workers and proprietors on the airport were spent for consumer goods and services that in turn created additional earnings of $11.7 million for workers and proprietors in the general economy.

The total earnings benefit of the airport was $38.3 million, consisting of $18.6 million of direct benefits and $19.7 million of indirect benefits. The economic interpretation is that the presence of the airport provided employment and earnings for workers, who then re-spent these dollars in the service area.

The multipliers for employment show the total change in jobs for the service area economy due to an increase of one job on or off the airport. Each job on the airport is associated with 1.2904 additional jobs in the rest of the airport service area economy. Similarly, each job in the hospitality industry supported by air visitor spending is associated with 0.5426 additional jobs in the general economy.

The overall result is that the 822 direct jobs created by the airport supported an additional 719 jobs in the service area as indirect employment. The sum of the direct aviation related jobs and indirect jobs created in the general economy is the total employment of 1,541 workers that can be attributed to the presence of the airport.

The information above is intended for illustration only. In the full analysis separate multipliers were used for on-airport aviation employers and visitor spending categories (lodging, eating places, retail, entertainment, and ground transportation).

TABLE B14
Average Multipliers and Indirect Benefits Within the Airport Service Area
San Luis Obispo County Regional Airport

Revenue Source	Direct Revenues	Average Output Multipliers	Indirect Revenues	Total Revenues
On-Airport Benefits	**$54,005,000**	**1.9550**	**$50,587,000**	**$105,582,000**
Visitor Benefits	**19,717,000**	**1.8495**	**17,740,000**	**36,467,000**
Revenues	***$73,722,000***		***$68,327,000***	***$142,049,000***
Earnings Source	**Direct Earnings**	**Average Earnings Multipliers**	**Indirect Earnings**	**Total Earnings**
On-Airport Benefits	**$10,403,000**	**2.1315**	**$11,771,000**	**$22,174,000**
Visitor Benefits	**8,210,000**	**1.9646**	**7,919,000**	**16,129,000**
Earnings	***$18,613,000***		***$19,690,000***	***$38,303,000***
Employment Source	**Direct Employment**	**Average Employment Multipliers**	**Indirect Employment**	**Total Employment**
On-Airport Benefits	**365**	**2.2904**	**471**	**836**
Visitor Benefits	**457**	**1.5426**	**248**	**705**
Employment	***822***		***719***	***1,541***

Notes: Multipliers above are weighted averages to illustrate how indirect and total benefits were calculated for San Luis Obispo County Regional Airport. In the full analysis, separate multipliers were used for on-airport employers (airlines, FBO, other aviation businesses), and visitor spending (lodging, eating places, retailing, entertainment, and ground transportation). Multipliers for San Luis Obispo County Regional Airport service from IMPLAN input-output model based on data from California Employment Development Department and U. S. Bureau of Economic Analysis.

BASED AIRCRAFT BENEFITS

A survey of owners of aircraft based at San Luis Obispo County Regional Airport was conducted to compile information on private aircraft usage patterns, including number of trips per year, purpose of travel, average party size, and average hours and miles flown per trip. Questions were also posed concerning the importance of the airport for residential location and businesses of flyers.

The survey was conducted by mail using addresses of aircraft owners provided by the airport administration. All survey responses were anonymous. A total of 48 aircraft owners returned surveys for this study, to provide a response rate of 39.3 percent.

TABLE B15
Based Aircraft Profile

Type	Number
Total Based Aircraft	**302**
Single Engine Piston	**241**
Twin Engine Piston	**45**
Jet	**9**
Helicopter	**7**

Source: San Luis Obispo County Regional Airport and Coffman Associates, 2003

There were 302 based-aircraft at San Luis Obispo County Regional Airport at the time the survey was administered in 2003 (Table B15). Of these, 241 were single engine, 45 were multiengine aircraft, 9 were business jets and 7 were rotary aircraft.

The presence of the airport as a factor affecting the personal quality of life and business success of aircraft owners was measured by survey questions asking respondents to rate the airport as "very important, important, slightly important, or not important" to their residential location decision and their business.

The survey results show that San Luis Obispo County Regional Airport is a significant factor in influencing the success of business and professional activity of aircraft owners.

- Seven out of ten of all responding based aircraft owners (77%) said that the airport is "very important" or "important" to the success of their business location.

- Further, six out of ten aircraft owners (67%) stated that the airport is "very important" or "important" to their residential location decision.

Those who reported the airport as important to their business were also asked for information about their business.

- Firms represented by users of based aircraft for business purposes accounted for 498 employees in the county and surrounding area, and the businesses of the combined respondents accounted for a reported $62.6 million of annual sales.

Drawing from these results, it is evident that San Luis Obispo County Regional Airport plays a key role in the overall quality of life and level of economic activity in the San Luis Obispo County area.

TABLE B16
Based Aircraft Characteristics And Business Activity
San Luis Obispo County Regional Airport

Category	All Based Aircraft
Average Reported Aircraft Value	**$90,254**
Maintenance Outlays per Year	**$10,315**
Business Hours Flow per Year (Per AC)	**62**
Business Trips – Party Size	**1.3**
Airport "Very Important or "Important" to Business	**67.4%**
Employees of Owners of Based Aircraft	**492**
Annual Sales of Firms with Aircraft	**$62,600,000**

Source: Based Aircraft Owner Survey, 2003. Based on 39.4% response rate.

Characteristics of based aircraft at San Luis Obispo County Regional Airport are set out in Table B16. The table illustrates that the average value for an individual aircraft was $90,254 and annual outlays were $10,315 for maintenance, upkeep, storage, and other expenses such as insurance.

Multiplying the average expenditures per aircraft of $10,315 times 302 aircraft gives total outlays by aircraft owners of more than $3.1 million injected into the economy, much of it going to the airport local service area.

The aircraft based at San Luis Obispo County Regional Airport represent assets to their owners with estimated total value of $15.5 million. Many based aircraft are viewed as investments by their owners that provide returns through enhanced revenues and timesavings when compared to scheduled airline travel. The table illustrates the relation between private aircraft ownership and business activity in the area served by the airport.

Aircraft owners contribute to the economy when they use their aircraft for business purposes. Faster travel and more responsive businesses make the entire region more competitive. According to the aircraft owner survey, the average aircraft is used for business 62 hours per year, or 5 hours per month.

Based aircraft owners at San Luis Obispo County Regional Airport reported flying an average of 153 non-training hours per year (Table B17), or 3 hours per week. The range of annual hours reported by aircraft owners included some who used one plane for up to 300 hours or more per year.

TABLE B17
Based Aircraft Use Patterns

Usage Measure	Annual Hours
Avg. Number of Hours	153
Avg. Business Hours	62
Avg. Personal Hours	91
Percent Business Hours	41%
Percent Personal Hours	59%
Source: Based Aircraft Owner Survey, 2003	

The average aircraft based at San Luis Obispo County Regional Airport was flown 91 hours on personal trips per year. The typical round trip for pleasure, recreation or other personal reasons had 2.1 persons in the travel party (Table B18).

There were an estimated 27,482 aircraft hours flown for personal reasons that originated at San Luis Obispo County Regional Airport during the year, and 56,948 passenger hours.

The typical business use for a general aviation aircraft had 1.3 persons in the travel party (Table B19). San Luis Obispo County Regional Airport based aircraft flew 18,724 business hours for the year and 24,341 passenger hours.

(Note: Passenger hours flown on business or personal use were computed from multiplying average party size by hours flown, to obtain total passenger hours.)

TABLE B18
Based Aircraft - Personal Use

Usage Measure	Annual Value
Avg. Party Size	2.1
Avg. Round Trip Hours/Year	91
AC Personal Hours	27,482
Passenger Hours	57,712
Source: Based Aircraft Owner Survey, 2003	

TABLE B19
Based Aircraft - Business Use

Item	Annual Value
Avg. Party Size	1.3
Avg. Round Trip Hours/Year	62
AC Business Hours	18,724
Passenger Hours	24,341
Source: Based Aircraft Owner Survey, 2003	

An estimate of the economic value of travel on based aircraft may be obtained by computing the cost of making these same trips on chartered flights with total travel time of 27,482 + 18,724 = 46,206 flight hours. This is one approach approved by the Internal Revenue Service for valuation of aircraft travel use by corporate executives.

The cost of charter flights varies by distance and type of aircraft. Table B20 shows hourly charter rates for round trips from San Luis Obispo County Regional Airport during 2003. A weighted average charter cost was determined by assigning a cost equivalent to the number of each aircraft type based at the airport.

For example, since 82% of the aircraft are single engine, the cost of a single engine charter had a weight of .82 in the overall charter cost. Single engine charters had the lowest hourly cost and also had the highest weight in the calculations. Jet aircraft had the highest hourly cost but only accounted for three percent of based aircraft.

The weighted average charter value was $480 per hour. Multiplied over a total of 46,206 hours during the year, the "charter equivalent value" of general aviation travel originating at San Luis Obispo County Regional Airport for the year totaled $22.2 million.

This value of travel estimate, while very large, does not accurately measure all the associated economic gains and benefits that can result from business trips, which may be substantial. A single air trip can result in additional revenues and profits to a business firm. Trips for medical reasons often have high economic value as well. Further, the flexibility compared to scheduled airline travel and the time saved by general aviation travel compared to automobile use is not calculated here, but certainly has economic significance.

TABLE B20
Charter Equivalent Value of General Aviation Travel For Business
San Luis Obispo County Regional Airport

Aircraft Type	Number	Weights	Hourly Charter Cost	Weighted Cost
Single Engine	**241**	**0.82**	**$298**	**$241**
Twin Engine	**45**	**0.15**	**564**	**85**
Jet	**9**	**0.03**	**3,829**	**154**
TOTAL	**295**	**1.00**		**$480**

Charter Equivalent Value Based On Above Cost Per Flight

	Hours	Hourly Cost	Total Value	
	46,206	**$480**	**$22,178,000**	

Note: Charter costs by aircraft type for average of various charter firms, spring 2003. Does not include standby time, landing fees, other charges. Distance range based on 350 miles. Rotary aircraft not included.

SUMMARY & FUTURE BENEFITS

Airports are available to serve the flying public and support the regional economy every day of the year. On a typical day at San Luis Obispo County Regional Airport, there are 300 operations by aircraft involved in local or itinerant activity including flight training, cargo and courier service, corporate travel, or commercial aircraft bringing passengers visiting the area for personal travel or on business.

During each day of the year, San Luis Obispo County Regional Airport generates $389,000 of revenues within its service area (see box). Revenues and production support jobs, not only for the suppliers and users of aviation services, but throughout the economy.

Each day San Luis Obispo County Regional Airport provides 365 jobs directly on the airport and in total supports 1,541 local jobs in the airport service area. Service area workers bring home daily earnings of $105,000 for spending in their home communities.

On an average day during the year, there are 558 visitors in the area who arrived at San Luis Obispo County Regional Airport. Some will stay in the San Luis Obispo County area for only a few hours while they conduct their business, and others will stay overnight. The average spending by these visitors on a typical day injects $54,000 into the local economy.

Table B21 shows a summary of current economic benefits associated with the airport. Direct benefits to the service area, without multiplier effects, include revenues of $73.7 million, 822 jobs and earnings to workers and proprietors of $18.1 million.

Daily Economic Benefits
San Luis Obispo County Regional Airport

- **$389,000 Revenue**
- **1,541 Local Jobs Supported**
- **$54,000 Visitor Spending**
- **588 Air Visitors**

TABLE B21
Summary of Economic Benefits: FY 2003
San Luis Obispo County Regional Airport

	Revenues	Earnings	Employment
On-Airport Activity	**$54,005,000**	**$10,403,000**	**365**
Air Visitors	**19,717,000**	**8,210,000**	**457**
Direct Benefits	***73,722,000***	***18,613,000***	***822***
Indirect Benefits	**68,327,000**	**19,690,000**	**719**
Total Benefits	**$142,049,000**	**$38,303,000**	**1,541**

Note: Revenues, earnings and employment benefits include activity associated with capital improvement budget of $2.6million.

Including indirect or multiplier effects, total benefits to the service area are $142 million in revenues, 1,541 jobs and earnings of $38.3 million.

San Luis Obispo County Regional Airport is the origin of thousands of general aviation trips per year. Corporate and other private aircraft are used to visit other parts of the nation and the globe, and to bring visitors, customers and employees to the San Luis Obispo County area. The estimated cost of chartering aircraft to serve the business needs of these travelers was found to be $22.2 million. In addition, the presence of the San Luis Obispo County Regional Airport provides unmeasured benefits in the form of flexibility in travel not found through reliance on scheduled air carriers.

It is important for citizens and policy makers to be aware that there are unmeasured but qualitative benefits from aviation that represent significant social and economic value created by airports for the regions which they serve. In addition to exerting a positive influence on economic development in general, aviation often reduces costs and increases efficiency in individual firms. Annual studies by the National Business Aviation Association show that those firms with business aircraft have sales 4 to 5 times larger than those that do not operate aircraft.

In 2000, the net income of aircraft operating companies was 6 times larger than non-operators. Two thirds of the *Fortune* 500 firms operate aircraft and 88 percent of the top100 have business aircraft (see National Business Aviation Association, *Fact Book*, 2003).

As aviation activity increases in the airport service area, the economic benefits of the airport to the regional economy can be expected to increase (forecasts below do not

include capital projects pending approval).

The short term planning horizon for the airport is associated with an increase in operations to an annual level of 117,550. Not including outlays for capital projects, on-airport revenues will be $55.6 million, employment on the airport will be 375 workers and jobs related to air visitors will increase to 494 (Table B22).

Visitor spending will reach $20.2 million (measured in 2003 dollars) and the revenue benefits due to the presence of the airport will rise to $148 million, including all multiplier effects.

The intermediate term planning horizon is based on 123,650 operations (Table B23). Employment on the airport will rise to 395 jobs and the total employment impact on and off the airport after all multiplier effects is 1,714 jobs, with earnings rising to $42.6 million. Revenues will increase to $155.7 million (2003 dollars) in the intermediate term.

The long term is defined as an airport activity level of 140,050 operations per year. The long-term projections imply on-airport employment of 447 workers with earnings from on-airport jobs reaching $12.9 million. Spending by air visitors will be $24.1 million, with employment of 589 workers in visitor industries.

Accounting for all multiplier effects, jobs supported in the airport service area under the long-term assumptions total 1,942. Revenues will be $176.4 million, and earnings will be $48.3 million, measured in FY 2003 dollars (see table B24).

TABLE B22
Summary of Economic Benefits: Short Term
San Luis Obispo County Regional Airport

	Revenues	Earnings	Employment
On-Airport Activity	**$55,571,000**	**$10,842,000**	**375**
Air Visitors	**20,244,000**	**8,875,000**	**494**
Direct Benefits	*75,815,000*	*19,712,000*	*869*
Indirect Benefits	**72,257,000**	**20,859,000**	**761**
Total Benefits	**$148,072,000**	**$40,576,000**	**1,630**

Note: Revenues, earnings and employment for short-term forecast period reflect activity associated with117,550 operations per year (projected for 2008)

TABLE B23
Summary of Economic Benefits: Intermediate Term
San Luis Obispo County Regional Airport

	Revenues	Earnings	Employment
On-Airport Activity	**$58,455,000**	**$11,404,000**	**395**
Air Visitors	**21,294,000**	**9,336,000**	**520**
Direct Benefits	***79,749,000***	***20,740,000***	***895***
Indirect Benefits	**76,007,000**	**21,941,000**	**819**
Total Benefits	**$155,756,000**	**$42,681,000**	**1,714**

Note: Revenues, earnings and employment for intermediate term forecast period reflect activity associated with 123,650 operations per year (projected for 2013)

TABLE B24
Summary of Economic Benefits: Long Term
San Luis Obispo County Regional Airport

	Revenues	Earnings	Employment
On-Airport Activity	**$66,208,000**	**$12,917,000**	**447**
Air Visitors	**24,119,000**	**10,574,000**	**589**
Direct Benefits	***90,327,000***	***23,491,000***	***1,036***
Indirect Benefits	**86,087,000**	**24,851,000**	**906**
Total Benefits	**$176,414,000**	**$48,342,000**	**1,942**

Note: Revenues, earnings and employment for long term forecast period reflect activity associated with 140,050 operations per year (projected for 2023)

Tax Impacts

Because of the spending, jobs, and earnings created by the presence of San Luis Obispo County Regional Airport, the facility is an important source of public revenues. As airport activity expands, tax revenues will continue to grow.

Estimated tax potential is set out in Table B25. The table shows the revenues for each tax category that could potentially be collected based on current average tax rates relative to output and personal income (earnings) for San Luis Obispo County.

The first column in Table B25 shows tax revenues associated with the current level of San Luis Obispo County Regional Airport operations. The total of 1,541 workers with jobs supported by the presence of the airport have earnings of $38.3 million. Federal social security taxes are estimated at $5.2 million, the second largest component of federal taxes. The largest federal tax category is the personal income tax of $6.1 million. Corporate profits taxes on a revenue base of $142 million are estimated as $755,000.

Overall, federal tax revenues collected due to economic activity associated with San Luis Obispo County Regional Airport are estimated to be $12.9 million (2003 dollars).

State and local tax revenues are shown in the lower portion of the table. State and local tax revenues sum to $7.9 million for the current level of airport operations.

The largest single component is sales taxes of $2.7 million (this figure includes combined estimates for both state and local sales taxes). Property taxes are the second largest source of revenues, estimated as $1.8 million.

Combined federal, state, and local taxes are $20.8 million at the current level of operations and are projected to rise to $22.5 million at the short term operations level of 117,550. The long-term level of 140,050 operations would bring tax revenues of $16.6 million federal taxes and $10.2 million state and local revenues, which figures sum to total tax revenue potential at long run operations levels of $26.8 million per year.

TABLE B25
Tax Impacts From On-airport and Air Visitor Economic Activity
San Luis Obispo County Regional Airport

Federal Taxes				
Revenue Category	**Current**	**Short Term**	**Intermediate Term**	**Long Term**
Corporate Profits Tax	**$755,000**	**$816,000**	**$859,000**	**$973,000**
Personal Income Tax	**6,121,000**	**6,617,000**	**6,961,000**	**7,884,000**
Social Security Taxes	**5,285,000**	**5,713,000**	**6,010,000**	**6,807,000**
All Other Federal Taxes	**755,000**	**795,000**	**834,000**	**947,000**
Total Federal Taxes	**$12,896,000**	**$13,941,000**	**$14,664,000**	**$16,611,000**
State and Local Taxes				
Revenue Category	**Current**	**Short Term**	**Intermediate Term**	**Long Term**
Corporate Profits Tax	**$185,000**	**$200,000**	**$210,000**	**$238,000**
Motor Vehicle Taxes	**93,000**	**100,000**	**105,000**	**119,000**
Property Taxes	**1,889,000**	**2,042,000**	**2,148,000**	**2,432,000**
Sales Taxes	**2,755,000**	**2,978,000**	**3,133,000**	**3,549,000**
Personal Income Tax	**1,772,000**	**1,916,000**	**2,016,000**	**2,283,000**
All Other State & Local Taxes	**1,273,000**	**1,376,000**	**1,447,000**	**1,639,000**
Total State & Local Taxes	**7,967,000**	**8,612,000**	**9,059,000**	**10,260,000**
TOTAL TAX REVENUES	**$20,863,000**	**$22,553,000**	**$23,723,000**	**$26,871,000**

Notes: All figures are derived from average tax rates in California, San Luis Obispo County and federal sources. Current impact estimate based on economic activity associated with 108,739 operations. Short term operations = 117,550; intermediate term = 123,650; long term = 140,050.

KANSAS CITY
(816) 524-3500

237 N.W. Blue Parkway
Suite 100
Lee's Summit, MO 64063

PHOENIX
(602) 993-6999

4835 E. Cactus Road
Suite 235
Scottsdale, AZ 85254