Proposed Amendment to the

Airport Land Use Plan

for the

San Luis Obispo County Regional Airport

WORKING DRAFT

UPDATED AND RELEASED

SEPTEMBER 2014

THE AIRPORT LAND USE COMMISSION
of San Luis Obispo County

THE AIRPORT LAND USE PLAN

for the

SAN LUIS OBISPO COUNTY REGIONAL AIRPORT

Adopted

December, 1973

Amended

June 19,2002
July 21, 2004
May 18, 2005

The Airport Land Use Commission	Roger O. Oxborrow, *Chairman* William Borgsmiller Michael Cripe Dustin Leno Terry Orton Allen Settle Gerrit J. Vanderziel
Alternates to the Commissioners	~~Wayne Carrathers~~ David E. Chivens ~~Peter D. Keith~~ Craig Piper Robert G. Tefft, MD
County of San Luis Obispo	Bill Robeson, A/CP *Planning Supervisor* *Senior Consulting Staff to the ALUC* Xzandrea Fowler *Current & Environmental Planning* *Consulting Staff to the ALUC* ~~Victor Holanda, A/CP~~ *Director,* *Department of Planning and Building* ~~Pat Beck~~ *Assistant Director,* *Department of Planning and Building* ~~Pat Beck~~ *Assistant Director,* *Department of Planning and Building* ~~Janet Pell~~ *Deputy Director,* *Department of General Services* Erica Stuckey *Deputy County Counsel*
San Luis Obispo County Regional Airport	~~Richard Howell~~ *Airport Manager* Craig Piper *Assistant Airport Manager*

ALL TABLE OF CONTENT SECTIONS ARE SUBJECT TO REVISIONS. THIS DOCUMENT IS ONLY INTENDED FOR STUDY SESSION DISCUSSIONS.

THIS IS A WORKING DOCUMENT IN PROGRESS.

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Section 1

Introduction

1.1 The San Luis Obispo County Airport Land Use Commission

The San Luis Obispo County Airport Land Use Commission (ALUC) is an independent body of seven members which has been created in response to the mandates of The State Aeronautics Act, first enacted in 1967. Under this statute, it is the duty of the ALUC:

> *"to assist local agencies in ensuring compatible land uses in the vicinity of all new airports and in the vicinity of existing airports to the extent that the land in the vicinity is not already devoted to incompatible uses"*
>
> *"to coordinate planning at the state, regional, and local levels so as to provide for the orderly development of air transportation, while at the same time protecting the public health, safety, and welfare"; and*
>
> *"to provide for the orderly development of the area surrounding the San Luis Obispo County Regional Airport (Airport) so that new developments are not likely ultimately to cause restrictions to be placed on flight operations to or from the airport."*

As the means of fulfilling these basic obligations, the ALUC has two basic duties under the Public Utilities Code:

> *To Prepare Airport Compatibility Plans (Airport Land Use Plans)* – The Commission is required to prepare and adopt an Airport Land Use Plan (ALUP) for each of the airports within its jurisdiction. In the case of San Luis Obispo County, this requirement applies to the Sal Luis Obispo County Regional Airport (McChesney Field), the Oceano Airport, and the Paso Robles Municipal Airport.
>
> *To Review Referring Agency Actions and Airport Plans* – In addition to formulating ALUPs, the ALUC is required to review certain types of action by local counties and cities which affect the land use in the vicinity of airports to ensure that the action proposed by the referring agency is consistent with the Airport Land Use Plan.

Although the Airport Land Use Commission, by law, receives technical support from the County of San Luis Obispo, it is an autonomous body and is not part of any local governmental structure.

1.2 The Airport Land Use Plan for the San Luis Obispo County Regional Airport: Background

The Airport Land Use Plan for the Airport was initially adopted by the ALUC in 1973. The plan was subsequently amended in 1974, 1977, 2002, 2004 and 2005. The current document represents a further amendment in accord with state guidelines published by the Department of Transportation as the California Airport Land Use Handbook (CALUPH), dated October, 2011.

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Section 2

Scope of the Airport Land Use Plan

2.1 Purposes

The purposes for which this ALUP is prepared and adopted are:

- to protect the long term economic viability of the Airport by ensuring compatible land uses in the vicinity of the airport to the extent that lands in the airport area are not already devoted to incompatible uses;
- to promote the safety and well being of the public by ensuring adoption of land use regulations which minimize exposure of persons to hazards associated with the operation of the Airport;
- to provide a set of policies and criteria to assist the ALUC in evaluating the compatibility of proposed local actions on the part of referring agencies with the Airport and in determining the consistency of the proposed local action with the ALUP; and
- to provide guidance to local agencies in presenting proposed local actions to the ALUC for review.

2.2 Authorities

This Airport Land Use Plan for the San Luis Obispo County Regional Airport is prepared and adopted in accordance with:

Sections 21670 to 21679.5 of the California Public Utilities Code (also known as the California Aeronautics Act)

The California Airport Land Use Planning Handbook, October, 2011

Federal Aviation Regulations, Parts 77 and 150

Federal Aviation Administration Advisory Circular 150/5300-17, “Airport Design”

Federal Aviation Administration Advisory Circular 150/5200-33B, “Hazardous Wildlife Attractants On or Near Airports”

Proposed Federal Aviation Administration Advisory Circular 150/5200-33C, “Hazardous Wildlife Attractants On or Near Airports”

Federal Aviation Administration Memorandum of September 27, 2012, “Interim Guidance on Land Uses Within a Runway Protection Zone

The Airport Master Plan for the San Luis Obispo County Regional Airport adopted by the Board of Supervisors of the County of San Luis Obispo on January 25, 2005

The Airport Layout Plan for the San Luis Obispo County Regional Airport approved by the San Francisco, California, Airport District Office of the Federal Aviation Administration on November 4, 2010.

It is the desire and intent of the ALUC that this ALUP conform, to the greatest extent possible, with the standards and recommendations set forth in these documents, while reflecting the unique preferences and requirements of the San Luis Obispo area.

In preparing this amendment, the Airport Land Use Commission has adhered to the requirements of Section 21674.7 of the California Public Utilities Code, which states that

> *"An airport land use commission that formulates, adopts, or amends an airport land use compatibility plan shall be guided by information prepared and updated pursuant to Section 21674.5 and referred to as the Airport Land Use Planning Handbook published by the Division of Aeronautics of the Department of Transportation."*

2.3 Geographic Coverage

The geographic area encompassed by the ALUP is termed the Airport Land Use Planning Area, the Airport Influence Area, or the AIA. The Airport Land Use Planning Area includes all land area which lies any of the following:

a.) A distance of 10,000 feet or less from any point on the centerline of Runway 11-29 at the San Luis Obispo County Regional Airport or from any point on on the extended centerline of Runway 11-29 that lies within 200 feet of the extended runway threshold. The area defined by this standard corresponds to the land area beneath the imaginary horizontal surface, as defined by Part 77 of the Federal Aviation Regulations, or

b.) A distance of 0.5 nautical miles or less perpendicular to the extended centerline of Runway 11-29 at the San Luis Obispo County Regional Airport from any point on the extended centerline that is within 12,249 feet of the displaced threshold of Runway 11.

An approximate illustration of the Airport Land Use Planning Area is shown in ALUP Figure 1. The precise perimeter of the AIA, however, is defined by the statements above and by GIS data on file with the County and City of San Luis Obispo.

2.4 Jurisdictions Affected by the ALUP

The ALUP for the Airport includes areas within the jurisdictions of the County of San Luis Obispo and the incorporated city of San Luis Obispo.

2.5 Actions Reviewed by the ALUC

2.5.1 Mandatory ALUC Review

2.5.1.1 Construction Plans for New Airports – No application for the construction of a new airport or heliport within San Luis Obispo County may be submitted to any local, state, regional, or federal agency unless the layout plan for such aiport or heliport has been

submitted to and approved by the ALUC.

2.5.1.2 Airport Expansions – No application for the expansion of the Airport which entails an amendment of the Airport Permit may be submitted to any local, state, regional, or federal agency unless the propsed airport layout plan has been submitted to and approved by the ALUC.

Airport expansion is defined to include:

a.) construction of any new runway

b.) extension or realignment of an existing runway

c.) acquisition of runway protection zones or any interest in land for the purposes above

2.5.1.3 Airport Master Plans – The County of San Luis Obispo or any succeeding owner of the Airport shall, prior to modification of its master plan, refer such proposed changes to the ALUC.

2.5.1.4 Actions by Referring Agencies – The County of San Luis Obispo and the City of San Luis Obispo must, prior to enacting certain ordinances and actions that affect lands within the Airport Planning Area refer such actions to the ALUC. Those local actions include:

a.) general plans and general plan amendments

b.) specific plans and specific plan amendments

c.) zoning ordinances & zoning ordinance amendments

d.) building regulations and modifications thereof

2.5.1.5 Individual Development Projects in Areas Under Jurisdiction of the County of San Luis Obispo – The Public Utilities Code does not mandate review by the ALUC of individual development projects when such projects do not require adoption of or amendments to a general or specific plan, zoning ordinance, or building regulation. The ALUC may, however, review individual development projects when they have been referred by a local agency or under the terms of an agreement with a local agency. In the unincorporated areas of San Luis Obispo County the General Plan and supporting planning instruments do not incorporate detailed provisions for land use or development in the vicinity of the San Luis Obispo County Regional Airport, but rather state that such development be consistent with the Airport Land Use Plan. Since, under the provisions of State law, no body other than an Airport Land Use Commission is empowered to make a determination of consistency with respect to an adopted ALUP, it follows that all individual projects within portions of the Airport Planning Area which are under the jurisdiction of the County of San Luis Obispo require review by the ALUC. The county's General Plan also provides that a determination of consistency rendered by the ALUC shall be final unless the Board of Supervisors shall overrule the decision by a four-fifths majority vote.

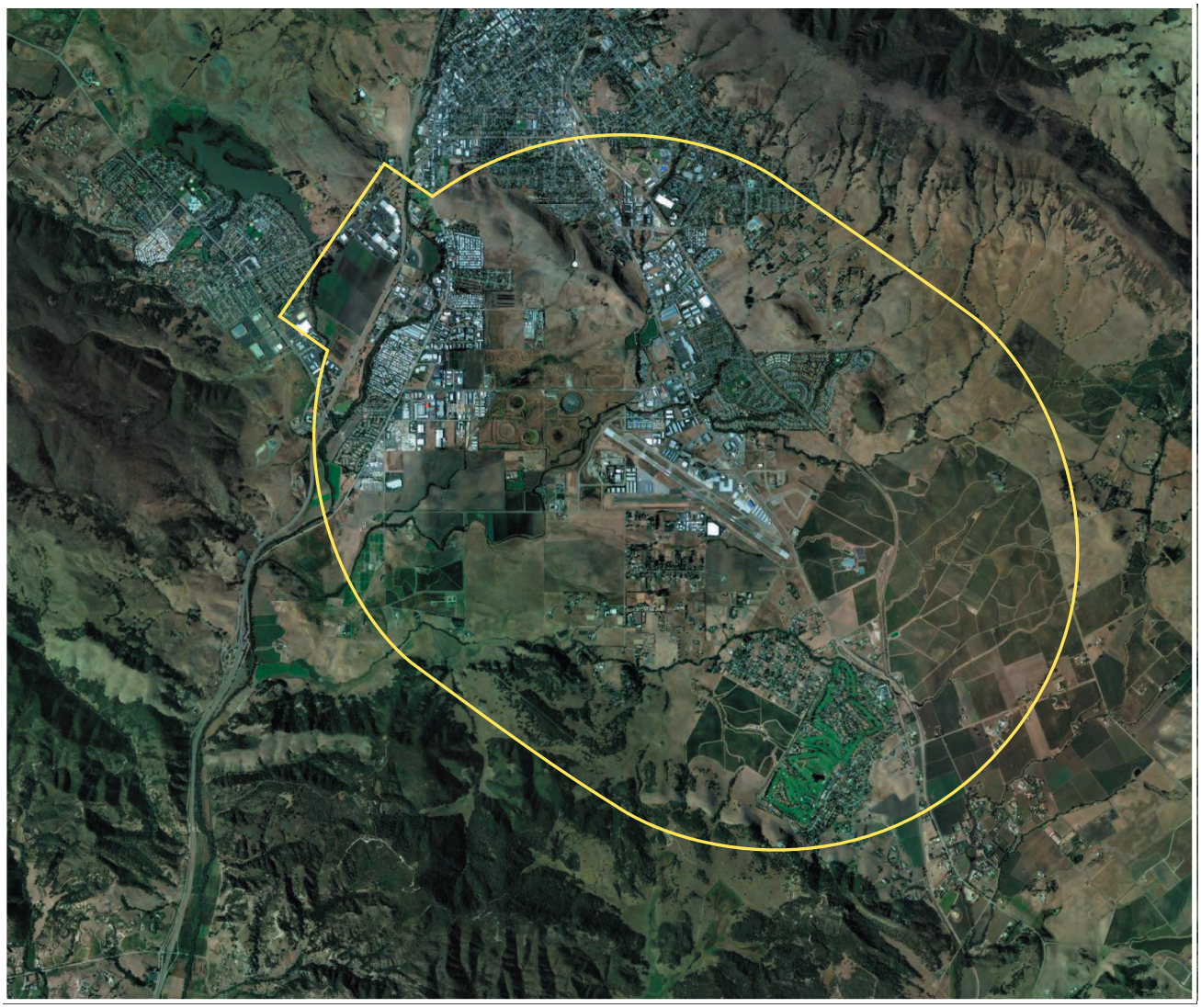
2.5.2 Optional ALUC Review

2.5.2.1 Review of Specific Proposed Development Projects in Areas Under Jurisdiction of the City of San Luis Obispo – In accordance with the recommendations of the Airport Land Use Planning Handbook of the California Department of Transportation, it shall be the policy of the ALUC to seek, encourage, negotiate, and enter into agreements with the City of San Luis Obispo to require voluntary review of proposed major individual development projects within the airport planning area which entail:

a. expansion of the sphere of influence of the City within the Airport Planning Area

b. residential development, including land divisions, consisting of five or more dwelling units or individual parcels

Figure 2-1: The Airport Land Use Planning Area



c. certain requests for variances from a referring agency's height limitation ordinances, when the allowable height of improvements prior to any variance would extend to within 50 feet of any civil airport imaginary surface

d. major capital improvements (e.g., water, sewer, roads) that would promote urban development

e. certain proposed land acquisitions by the City (including acquisition of sites intended for schools, hospitals, jails or prisons, lakes, ponds, wetlands, or sewer treatment ponds)

f. any proposal for construction or alteration of a structure (including antennae) taller than 200 feet above the ground at any location within the City

g. any other proposed land use action, as determined by the local planning agency, involving a question of compatibility with airport activities

In the case of individual project reviews undertaken as a result of these agreements, the comments, suggestions, and recommendations made by the ALUC will be presumed to be advisory in nature, unless specified otherwise in the agreement.

It is of note, however, should the ALUC determine that a general or specific plan has not been made consistent with the ALUP and when a referring agency has not adopted a general or specific plan by overriding the ALUC, the ALUC may require that the referring agency submit all subsequent actions, regulations, and permits to the ALUC for review.

2.6 Applicability of ALUP Development Standards to Projects Not Referred to the ALUC

As noted above, ALUC review of individual development projects within the City of San Luis Obispo is not mandated unless such projects require adoption of or amendments to a general or specific plan, zoning ordinance, or building regulation. The California Public Utilities Code, however, does require that the City of San Luis Obispo, prior to granting permits for the renovation or remodeling of an existing building, structure, or facility and before the construction of a new building, be guided by:

> *"the height, use, noise, safety, and density criteria that are compatible with airport operations, as established by this article [i.e., P. U. C. Sections 21670 through 21679.5], and referred to as the Airport Land Use Planning Handbook, published by the division [of Aeronautics], and any applicable federal aviation regulations, including, but not limited to, Part 77 (commencing with Section 77.1) of Title 14 of the Federal Code of Regulations, to the extent that the criteria has been incorporated into the plan prepared by a commission pursuant to Section 21675."*

As this ALUP is, in fact, a plan prepared in accord with P. U. C. Section 21675, the height, use, noise, safety, and density criteria established herein must, by State law, be adhered to in approving or denying any individual project, whether or not such project is referred to the ALUC for a determination of consistency.

2.7 ALUC Action Choices

In its consideration of any proposed local action referred to the ALUC, the ALUC shall make one of the following determinations:

- the proposed local action is consistent with the ALUP of the Airport; or
- the proposed local action is inconsistent with the ALUP of the Airport.

In addition, the ALUC may, but is not required to, make such additional comments, suggestions, or declarations with respect to the proposed local action as it shall deem fit and appropriate, and may, in particular, indicate to the referring agency, modifications in the proposed local action that would be likely to lead to a finding of consistency by the ALUC. Under no circumstances are such comments, suggestions, or declarations to be interpreted as a "conditional" or other finding of consistency. The referring agency, however, may choose, at its discretion, to amend the proposed local action in accord with the ALUC's comments and resubmit it to the ALUC for consideration.

ALUC decisions are made in accordance with the land use policies established by the ALUP. It is recognized, however, that, because the ALUP covers a wide and diverse geographical area, the strict application of ALUP policies may be inappropriate, under certain unique circumstances, in the review of small-scale individual projects. When these unique situations occur, the ALUC is authorized to find a proposed individual project (that fails to meet a land use policy of the ALUP) consistent with the ALUP. Such action shall require a two-thirds majority vote, and specific findings which justify the decision. Further, the ALUC is authorized to find consistent with the ALUP, by two-thirds majority vote, any general plan amendment, specific plan amendment, or zoning regulation which is required in order to permit the project to go forward, provided that the following conditions are met:

a. the proposed local action shall apply only to the property to be occupied by the referred individual project, and

b. the proposed local action shall contain provisions sufficient to ensure that no development other than the exact project referred to and considered by the ALUC may be established within the referral area.

The provisions of this section may not be applied by local agencies to the processing of any development application unless the proposed project has been formally referred to the ALUC for review and a determination of consistency has been rendered. The decision as to whether or not the provisions of this section are applicable to any project or local action shall be at the sole discretion of the ALUC, and the assertion that the provisions of this section should or should not apply shall not constitute grounds for appeal of a determination rendered by the ALUC nor findings for overruling such determination. No determination of consistency or inconsistency made under this section, nor any portion of the Commission's deliberations or findings associated with such determination, nor any portion of the staff report or other documentation associated with such determination shall constitute a precedent or be given any consideration with respect to the Commission's review of any other referral.

2.8 Limitations of the ALUP

2.8.1 Existing Land Use

The ALUP applies only to new development within the Planning Area. The ALUC has no authority to require modification of existing land uses, whether or not they are consistent with the ALUP.

A land use is considered to be "existing" when one or more of the following conditions has been met:

a.) The land use physically exists

b.) A vesting tentative map has been approved and all discretionary approvals have been obtained

c.) Substantial investments in physical construction were made by the landowner prior to July 21, 2004 which make it infeasible for the property to be utilized for anything other than its proposed use

d.) Prior to July 21, 2004, substantial public funds were expended for land acquisition of a project site and the controlling local agency had publicly indicated support for a proposed development or development concept, even though all discretionary approvals had not yet been obtained by that date.

Existing non-residential land uses that are inconsistent with the ALUP will be considered nonconforming land uses and will be subject to the nonconforming provisions contained in the applicable local land use regulations, with the following exceptions:

a.) Redevelopment of an existing nonconforming land use with a new use will be allowed only if the new use is consistent with the ALUP. "Redevelopment" means any construction, renovation, or other activity that entails demolition of 80% or more of the floor area of existing structures on a site.

b.) A nonconforming non-residential use may be replaced by a residential land use only if such new use is consistent with the ALUP.

c.) A lot occupied by a nonconforming non-residential use may be further developed by the addition of conforming uses and/or structures only if such new uses or structures are consistent with the ALUP.

No redevelopment of an existing residential land use that is inconsistent with the ALUP will be allowed which would result in an increase in the number of residential units or in Residential Density, unless the proposed increase is consistent with the ALUP. Redevelopment of residential land uses shall not be precluded because of location with respect to airport CNEL noise contours, but such redevelopment may not increase the number of residential units located within the 55 dB CNEL airport noise contour and the design and construction of all new dwellings shall be adequate to mitigate single-event aviation noise impacts in accordance with Section 4.3.3 of this ALUP. Redevelopment of existing residential land uses which

include structures extending to or above any civil airport imaginary surface associated with the San Luis Obispo County Regional Airport will be allowed, but such redevelopment may not increase the number of structures that penetrate airport imaginary surfaces nor the height by which airport imaginary surfaces are exceeded. In addition, redevelopment of residential units shall not create a hazard to air navigation, as defined by Section 4.5.2.2 of this ALUP, and shall comply with all requirements of Policy A-1 and Policy O-1 in the same fashion as required for new construction.

2.8.2 Airport Operations

Except for its authority to review airport master plans or modifications thereof, applications for airport expansion, and construction plans for new airports, the ALUC shall have no jurisdiction over the normal operation of the Airport.

Section 3

Airport Information

3.1 Airport Layout Plan

The Airport Land Use Plan is based upon the current Airport Master Plan and Airport Layout Plan for the San Luis Obispo County Regional Airport. These documents were adopted by the Board of Supervisors of the County of San Luis Obispo on January 25, 2005. The Airport Layout Plan was conditionally approved by the Federal Aviation Administration on November 4, 2010.

3.2 Airport History

The San Luis Obispo County Regional Airport (designated SBP) was founded shortly before World War II by Earl Thomson, William "Chris" Hoover and David Hoover – three energetic recent graduates of California Polytechnic University. The airport opened in March of 1939, on land leased from the a local farmer, with an 88-by-100 foot hangar and dirt runways.

The federal government operated the airport throughout WWII. In 1940, oiled runways and lights were installed by the War Department. During 1940 and 1941, 183 private pilots and 20 advanced students were trained here through a federally sponsored Civilian Pilot Training Program for armed services fliers. After the war, David Hoover continued the operation of the flight school up until 1961.

In 1946, the federal government turned airport operations back to the county and, later that year, San Luis Obispo's first airline passenger service was inaugurated by Southwest Airways. By 1947, county supervisors voted to authorize construction of another hangar, ramp, and eventually an administration building. The supervisors named Chris Hoover full-time airport manager in 1953.

Southwest continued to fly Douglas DC-3s in and out of San Luis Obispo until 1955, when it switched to Martin 404 aircraft. These were too long for the airport's 4000 foot runway, so service was moved to Paso Robles.

For the following twelve years, San Luis Obispo had no regularly scheduled air service. In 1967, a small company, Cal-Neva, began to offer four daily "air taxi" flights connecting San Jose, Paso Robles, San Luis Obispo, Santa Maria, and Santa Barbara. Cal-Neva operated DeHaviland Doves, carrying nine passengers and two crew members. The service, unfortunately, proved

The San Luis Obispo County Airport, circa 1963

to be short-lived.

By 1969, however, Charles A. Wiswell, a local builder and pilot, had secured the backing of local businessmen, purchased two twin-engine Piper aircraft, and hired six pilots. In March of that year, with ten paying passengers on board, Swift Aire made its maiden flight. The locally-based airline grew rapidly, replacing the two small Pipers with four-engined DeHaviland Herons, then with Aerospatiale Nord-262s, and, finally, with Fokker f-27s. Eventually, though, the company's rapid expansion, an economic recession, and an ill-advised merger with Golden Gate Airlines led to financial difficulties. By May of 1982, Swift Aire was bankrupt and its fleet of aircraft was sold at auction.

Fortunately, another carrier, Wings West, had begun flights from San Luis Obispo in 1981, and was waiting to fill the void left by the demise of Swift Aire. Over the following years, a variety of airlines, including American Eagle, United Express, U. S. Airways, and Delta Connection, have provided continuous service between SBP and major hubs

In 1987, the San Luis Obispo County Regional Airport was dedicated as McChesney Field, in honor of Leroy E. McChesney for his leadership and dedication to aviation. Mr. McChesney resided in the county since 1920 and had been a pilot since 1949. He was a longtime member of the California Aviation Council, a member of the California Aeronautics Board, and other aviation organizations. Mr. McChesney was the Grand Marshal of the first Airport Day in 1984. In 1988, an air traffic control tower was opened by the Federal Aviation Administration.

3.3 Passenger Facilities and Services

Currently, the San Luis Obispo County Regional Airport offers service by two scheduled airlines, with three daily round trips to Phoenix, five to San Francisco, and five to Los Angeles. Aircraft serving the airport include Embraer Brazilia turboprop aircraft, as well as Canadair CRJ-200 and CRJ-900 jets. First class ticketing is available on some Canadair flights.

Groundside passenger amenities include a recently-renovated 14,400 square-foot terminal building, two boarding gates, on-site rental car concessions, a snack bar in the terminal lobby, and a freestanding full-service restaurant.

At present, plans are moving forward for construction of a new passenger terminal. expanding the number of available boarding gates to six. The county has received a $2.1 milliuon grant from the federal government for design work. In addition, the local business community is actively negotiating with United Airlines for the addition of non-stop passenger service to Denver.

3.4 General Aviation Facilities and Services

The San Luis Obispo County Regional Airport provides a wide range of accessible services for private pilots. Over 200 hangars of various sizes are currently in existence on the airport, and open hangars are currently available. Ample tie-down space is present for both based and transient aircraft. There are no landing or parking fees for visiting aircraft. Fuel is available 24-

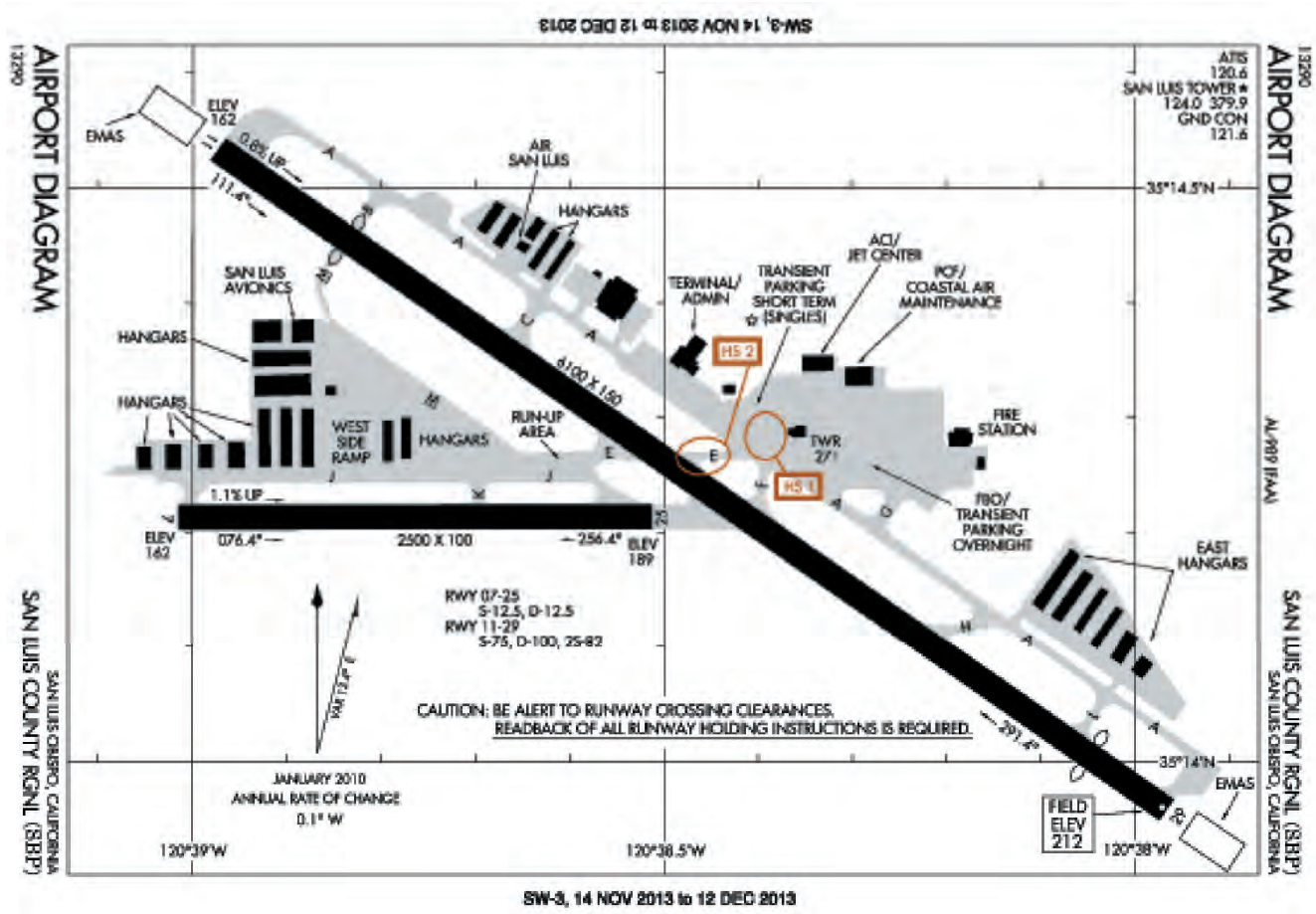
hours a day, both from trucks and from a self-service fuel island.

General aviation-oriented business at SBP include nine firms or organizations offering flight training, eight providing aircraft repair or avionics service, and four providing charter service. There are nine FAA-registered aircraft dealers or manufacturers on the airfield. A recently-constructed full service fire station is located on the southeastern perimeter of the airport.

San Luis Obispo has an active Aviation Safety Program that hold bi-monthly safety seminars and publishes a newsletter (SLO-Flight) devoted to safety and operational issues.

3.5 Runways and Taxiways

The San Luis Obispo County Regional Airport has two active runways: 11-29 and 7-25. Runway 11-29 is 6100 feet in length and 150 feet in width. It's surface is grooved asphalt and its weight limit is 75,000 pounds single-wheel and 100,000 pounds double-wheel. Runway 11-29 slopes slightly from an elevation of 159 feet above mean sea level (MSL) at its northwestern end to 212 feet MSL at its southeastern terminus. This runway is equiped with high-intensity runway lighting (HIRL) for night maneuvers. Both ends of Runway 11-29 feature engineered material arresting



FAA-Approved Airport Diagram for the San Luis Obispo County Regional Airport

systems (EMAS) to stop any aircraft that might overrun the runway end on landing. The design aircraft for this runway is a Canadair CRJ-700, with a wingspan of 76.3 feet. Runway 11-29 is utilized by virtually all commercial aircraft, both passenger and cargo, landing at or departing SBP

Runway 11-29 is accessed via a parallel taxiway running the full length of the runway along its north side (Taxiway A). Two high-speed exit ramps to Taxiway A (Taxiways F and H) are located near the midpoint of the runway. Further access to the northwest end of the Runway 11-29 is afforded from the East Side hangar area via Taxiway M. All taxiways associated with Runway 11-29 are 50 feet in width.

The threshold of Runway 11 is displaced by 800 feet. This runway features a 4-light precision approach path indicator (PAPI) with a glideslope of 3.00°, a medium-intensity approach lighting system with runway alignment indicator lights (MALSR), and runway end identifier lights (REIL). Runway 11 is a precision instrument runway, as defined by Part 77.2 of Federal Aviation Regulations (FAR), and the runway markings are consistent with this designation. Two published instrument approach procedures are available for landing on Runway 11 – an ILS/localizer (instrument landing system/localizer) approach and an RNAV(GPS) (radio area navigation/global positioning system) approach with wide area augmentation system (WAAS) vertical guidance. Decision height for the ILS approach is 200 feet above ground level (AGL). With proper avionics, the RNAV(GPS) approach approach also allows aircraft to descend to within 200 feet of ground level while in instrument meteorologic conditions. There are two charted instrument departure procedures for Runway 11, as well as a published obstacle departure.

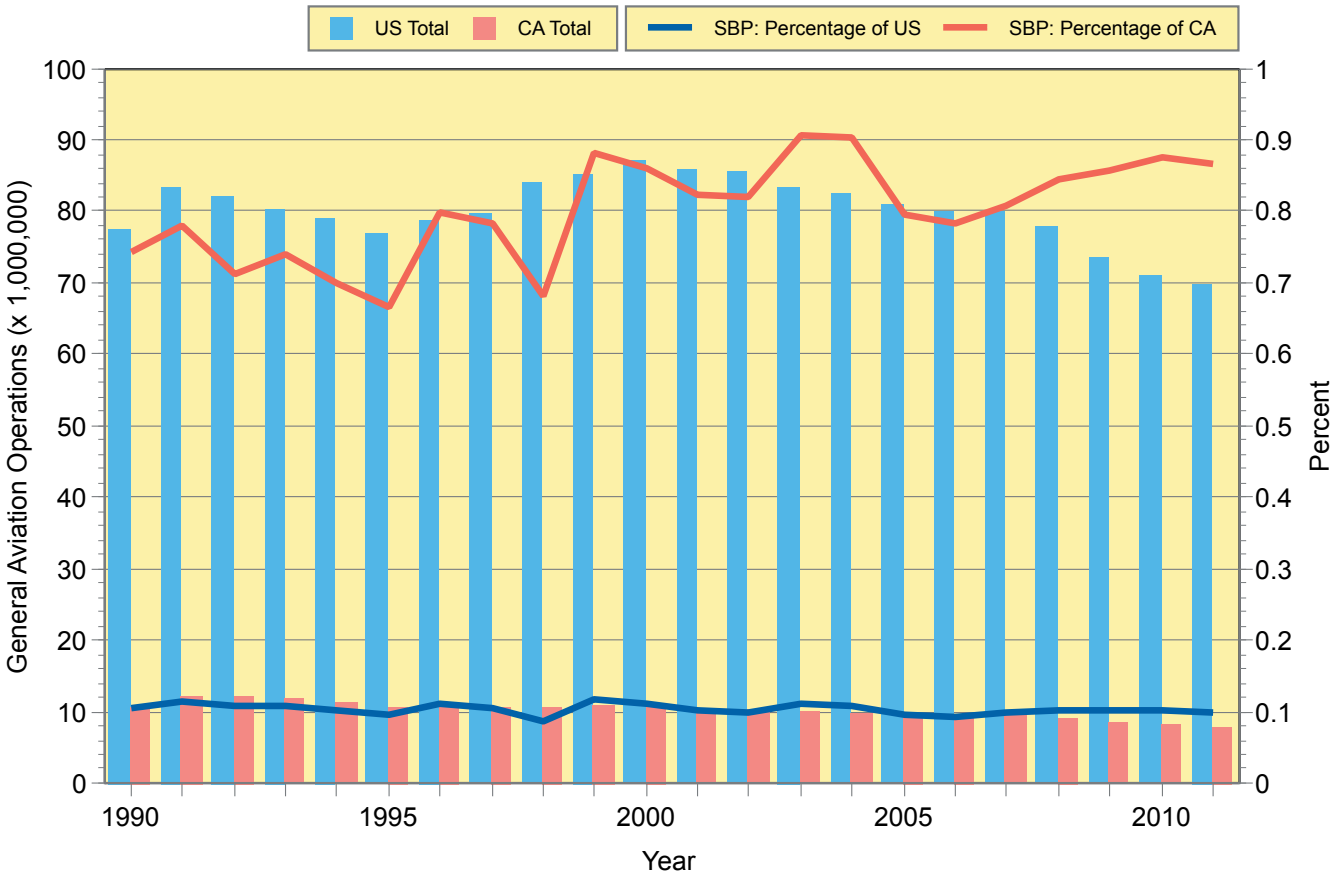
Runway 29 also features a displaced threshold – by 500 feet from end of pavement. Visual navigation is aided by a visual approach slope indicator (VASI) with a glideslope of 3.25°. There is no approach lighting or REIL on this runway. An RNAV(GPS) with WAAS is available, with a minimum descent height of 831 feet AGL. Due to prevailing winds in San Luis Obispo, however, many aircraft will fly an ILS approach to Runway 11, then circle to land on Runway 29. Circling is permitted only to the south of Runway 11-29. The minimum altitude for this maneuver is 968 feet AGL. Runway 29 is a nonprecision instrument runway under FAR 77.2, and is marked as such. There is one charted departure procedure for Runway 29, as well as an obstacle departure. Runway 29 is the designated calm wind runway for SBP.

Runway 7-25 is 2500 feet X 100 feet, with an ungrooved asphalt surface. The runway slopes slightly to the east, from 162.2 feel MSL to 197.0 feet MSL. Both Runway 7 and Runway 29 are designated as visual runways under FAR Part 77.2. There are no approved instrument approaches or instrument departure procedures published for Runway 7-25, although the VOR (VHF omnidirectional range) approach to the airport terminates near the approach end of Runway 7. The runway is accessed via a full length parallel taxiway (Taxiway J), which is 25 feet in width. The design aircraft for this runway is a Cessna 421, with a wingspan of 41.7 feet. Runway 7-25 is primarily utilized by private pilots whose aircraft are based in the East Side hangar area and by pilots who are practicing landing in crosswind conditions.

3.6 Aviation Activity: Type of Operation

Figure 3-2: General Aviation Operations, 1990-2011

Total Itinerant and Local GA Operations for the United States and California, and SBP Operations as Percentage of State and National Totals



According to data compiled by the Federal Aviation Agency, annual operations at the San Luis Obispo County Regional Airport exhibit considerable annual fluctuation. Between 1990 and 2011 (the last year for which data is available), mean annual operations were 101,109.

With regard to the specific types of operations conducted at the San Luis Opispo County Regional Airport, data from the Federal Aviation Administration for the year 2011 are as follow:

TABLE 3-1: Airport Operations at the San Luis Opispo County Regional Airport, 2011

Type of Operation		Percent of Airport Activity
Itinerant		64.1
	Air Carrier	1.2
	Air Taxi and Commercial	13.4
	General Aviation	49.2
	Military	0.4
Local		35.9
	General Aviation	35.7
	Military	0.2

3.7 Airport Activity Forecasts

As required by Section 21675(a) of the Public Utilities Code of the State of California and by the decision of the Court of Appeal of California, Fourth Appelate District, Division Two in *City of Coachella v. Riverside County Airport Land Use Commission*, the following airport activity forecast data has been constructed from information and projections presented in the January, 2005 Airport Master Plan for the San Luis Obispo County Regional Airport. For purposes of the Airport Land Use Plan, these data have been extrapolated to provide an appropriate planning horizon and have been shifted to provide greater congruence with observed airport operations since 2005. Additional information regarding the methodology for these forecasts is provided in the Airport Master Plan (which is included by reference in this Airport Land Use Plan) and in Appendix B.

TABLE 3-2: Summary Airport Activity Forecast

Data taken from Table 2D, Table 2E, Table 2F, Table 2K, and Table 2N, Airport Master Plan for the San Luis Obispo County Regional Airport, January, 2005. Forecasts for 2044 and 2054 extrapolated.

Year	Projected Airport Activity							
	Operations		Emplanements		Cargo Volume		Based Aircraft	
	Number (x 1000)	Growth[a]	Number (x 1000)	Growth[a]	Lbs. (x 1000)	Growth[a]	Number	Growth[a]
2019	114.9	*1.22%*	198.0	*4.14%*	1,400	*2.01%*	320	*1.25%*
2024	120.8	*1.00%*	232.0	*3.22%*	1,600	*2.71%*	350	*1.78%*
2034	137.0	*1.26%*	301.1	*2.64%*	2,000	*2.25%*	400	*1.35%*
2044	155.3	*1.26%*	390.7	*2.64%*	2,498	*2.25%*	457	*1.35%*
2054	176.0	*1.26%*	507.0	*2.64%*	3,121	*2.25%*	523	*1.35%*

[a] Yearly growth rate, compounded annually, during the period preceding the forecast data

TABLE 3-3: Expected Rate of Growth of Airport Operations – Annual rate of growth for operations at the San Luis Obispo County Regional Airport (compounded annually)

Data taken from Table 2E, Table 2K, Table 2M, Table 2N, and Table 2P, Airport Master Plan for the San Luis Obispo County Regional Airport, January, 2005. Forecasts for years 21 - 41 extrapolated.

Operations Category	Forecast Year			
	0 - 6	6 - 11	11 - 21	21 - 41
Air Carrier	-1.32%	-0.91%	1.44%	1.44%
Air Taxi	+1.67%	+2.13%	+0.96%	+0.96%
General Aviation - Total	+1.59%	+1.25%	+1.25%	+1.25%
General Aviation - Itinerant	+1.09%	+1.25%	+1.24%	+1.24%
General Aviation - Local	+2.38%	+1.25%	+1.25%	+1.25%
Military	0.00%	0.00%	0.00%	0.00%
All operations	**+1.22%**	**+1.00%**	**+1.26%**	**+1.26%**

TABLE 3-4: Forecast Number of Airport Operations

Data taken from Table 2E, Table 2K, Table 2M, Table 2N, and Table 2P, Airport Master Plan for the San Luis Obispo County Regional Airport, January, 2005. Forecasts for 2044 and 2054 extrapolated.

Operations Category	Year				
	2019	2024	2034	2044	2054
Air Carrier	13,600	13,000	15,000	17,305	19,965
Air Taxi	1,800	2,000	2,200	2,421	2,663
General Aviation - Total	101,300	107,800	122,000	138,137	156,409
General Aviation - Itinerant	60,800	64,700	73,200	82,800	93,660
General Aviation - Local	40,500	43,100	48,800	55,255	62,563
Military	850	850	850	850	850
TOTAL	**117,550**	**123,650**	**140,050**	**158,713**	**179,887**

TABLE 3-5: General Aviation Based Fleet Mix Forecast

Data taken from Table 2L, Airport Master Plan for the San Luis Obispo County Regional Airport, January, 2005. Forecasts for 2044 and 2054 extrapolated.

Year	Fixed-Wing Aircraft						Helicopters		Total
	Single-Engine[a]		Multi-Engine[b]		Jet				
	N	%	N	%	N	%	N	%	
2019	246	77.0	53	16.5	13	4.0	8	2.5	320
2024	259	74.0	64	18.5	18	5.0	9	2.5	350
2034	282	70.5	80	20.0	28	7.0	10	2.5	400
2044	304	66.5	98	21.4	44	9.7	11	2.5	457
2054	323	61.8	118	22.6	69	13.2	13	2.4	523

[a] "Single-Engine" category appears to include experimental, as well as certificated aircraft.
[b] "Multi-Engine" category includes all turbo-prop powered aircraft, in addition to multi-engine piston-powered craft.

The methodology of Airport Master Plan based fleet mix forecast differs somewhat from FAA forecasts, as it combines both experimental and certificated aircraft into the "Single-Engine" category and includes all turbo-prop aircraft in the "Multi-Engine" classification, regardless of the actual number of engines. (In contrast, the FAA includes turbo-prop aircraft as a sub-category of "Jets"). When FAA fleet mix data is arranged to correspond to the system of aircraft classification employed by the Airport Master Plan, however, it is clear that the general aviation aircraft fleet mix in San Luis Obispo is, in fact, very consistent with the mix of aircraft seen in the national database (Table 3-6).

TABLE 3-6: Comparison with GA Based Fleet Mix at SBP and U.S. National General Aviation Fleet Mix

Data taken from Table 2L, Airport Master Plan for the San Luis Obispo County Regional Airport, January, 2005, and from the FAA database.

SBP Master Plan Category	% of SBP Fleet	Corresponding FAA Classifications	% of U.S. Fleet	Subtotal
Fixed-Wing, Single-Engine	80.1	Piston, Single-Engine	68.3	78.1
		Experimental	9.8	
Fixed-Wing, Multi-Engine	14.6	Piston, Multi-Engine	8.3	12.0
		Turbo-prop	3.7	
Jet	3.0	Turbojet	3.8	3.8
Helicopter	2.3	Rotorcraft	3.1	3.1

In light of the congruence between local and national fleet mix data, it is possible and potentially useful to construct a more detailed GA fleet mix forecast for the San Luis Obispo County Regional Airport by combining data from Table 2L (page 2-20) of the Airport Master Plan with FAA's Aerospace Forecast for Fiscal Years 2013-2033, as shown in Table 3-6:

TABLE 3-7: Revised General Aviation Fleet Mix Forecast

Data taken from Table 2L, Airport Master Plan for the San Luis Obispo County Regional Airport, January, 2005, and from the FAA Aerospace Forecast, FY 2013-2033. Data for 2044 and 2054 are extrapolated.

Aircraft Classification	Year									
	2019		2024		2034		2044		2054	
	%	N	%	N	%	N	%	N	%	N
Piston-Engine, Total	*64.8*	207	*62.1*	217	*57.5*	230	*52.5*	240	*47.4*	248
Piston, Single-Engine	*58.1*	186	*55.8*	195	*52.0*	208	*47.9*	219	*43.4*	227
Piston, Multi-Engine	*6.7*	21	*6.3*	22	*5.5*	22	*4.7*	21	*4.0*	21
Turbine-Powered, Total	*11.4*	36	*12.8*	44	*15.9*	64	*19.5*	89	*23.5*	123
Turbo-Prop	*4.8*	15	*5.2*	18	*5.6*	22	*5.9*	27	*6.2*	32
Turbojet	*6.6*	21	*7.6*	27	*10.2*	41	*13.5*	62	*17.7*	93
Rotorcraft	*5.8*	19	*6.5*	23	*7.6*	30	*8.8*	40	*10.0*	52
Experimental	*11.8*	38	*12.3*	43	*12.6*	50	*12.7*	58	*12.7*	66
Sport Aircraft	*3.6*	12	*3.9*	14	*4.2*	17	*4.4*	20	*4.7*	25
Other	*2.5*	8	*2.4*	8	*2.2*	9	*2.0*	9	*1.7*	9
Total based aircraft	–	320	–	350	–	400	–	457	–	523

3.8 Airport Environs

The purpose of the California State Aeronautics Act is set forth in 21670(a)(2) of the Public Utilities Code, as follows:

> *"It is the purpose of this article to protect public health, safety, and welfare by ensuring the orderly expansion of airports and the adoption of land use measures that minimize the public's exposure to excessive noise and safety hazards within areas around public airports to the extent that these areas are not already devoted to incompatible uses."*

An important element of airport land use compatibility for any specific airport, therefore, is an examination of existing land uses in the airport vicinity. In situations where a much of the property adjacent to the airport is already occupied by incompatible land uses, the opportunities to protect the public from noise and safety hazards will be limited. On the other hand, when substantial areas of compatible land use are present within an airport planning area, airport

land use commissions and local governments are obligated by PUC 21670(a)(2) to prevent the replacement of these with land uses that are may be adversely impacted by airport operations.

It is important to note that, under the provisions of the State Aeronautics Act, airport land use commissions and local agencies are directed to consider only *"the extent that these areas are not already devoted to incompatible uses."* Accordingly, the only relevant issue for airport land use compatibility planning is the actual pattern of land use that exists on the ground or for which development rights have been vested. Assertions that a given local agency may have contemplated establishment of airport-incompatible land uses in a particular area or that individual land owners or real estate developers might, for reasons of personal profit, wish to occupy properties in the vicinity of a public use airport with inappropriate land uses may not enter into consideration. According to the California Supreme Court, the right to develop becomes vested when all discretionary approvals for a project have been obtained and only ministerial approvals remain. More specifically, vested rights have not been established unless the developer has:

- Obtained a valid building permit (as distinguished from merely a foundation or other specific permit); *and*
- Performed substantial work; *and*
- Incurred substantial liabilities in good faith reliance upon the permit.

When determining the airport compatibility of potential land uses, therefore, assertions that a given local agency may have contemplated establishment of airport-incompatible land uses in a particular area or that individual land owners or real estate developers might, for reasons of personal profit, wish to occupy properties in the vicinity of a public use airport with inappropriate land uses may not enter into consideration. Under State law, the goal of protecting public health, safety, and welfare requires individuals and local agencies to plan for future land use that will be consistent with the adopted Airport Land Use Plan.

In the State of California, multiple State and local agencies may be involved in land use planning. Each of these entities may have a preferred methodology for characterizing the nature or intensity of development within a particular area. For purposes of airport land use compatibility planning, Public Utilities Code Section 21674.7(a) indicates that the most appropriate methodology for assessing properties in the vicinity of a public use airport is provided by the categories developed by the Division of Aeronautics of the California Department of Transportation and presented on page 4-18 of the California Airport Land Use Planning Handbook. The State Handbook categorizes existing land use as follows:

Table 3-8: California Airport Land Use Planning Handbook Land Use Categories

Category	Definition
Rural	Areas where the predominant land uses are natural or agricultural; buildings are widely scattered
Suburban	Areas characterized by low-rise (1 or 2 story) development and surface parking lots
Urban	Areas characterized by mid-rise (up to 5 stories) development; generally surface vehicle parking, but potentially some parking structures
Dense Urban	City core areas characterized by extensive mid- and high-rise buildings; often with 100 percent lot coverage and limited surface parking

According to the above criteria, there are no areas within the San Luis Obispo airport planning area that could be considered “urban” or “dense urban”. Although the greatest portion of the land area encompassed by the airport planning area is rural in nature, substantial ares of suburban development exist to the north, northwest, and south of the airport. Figure 3-3, which follows, demonstrates the relative proportions of existing rural and suburban land uses within the airport planning area. Figures 3-4 through 3-8 show the location of existing suburban land uses at the parcel level, and are to be consulted for airport land use compatibility planning purposes.

Figure 3-3 – Land Use Densities in the Airport Planning Area
Shaded area represents suburban land uses; unshaded area denotes rural land uses

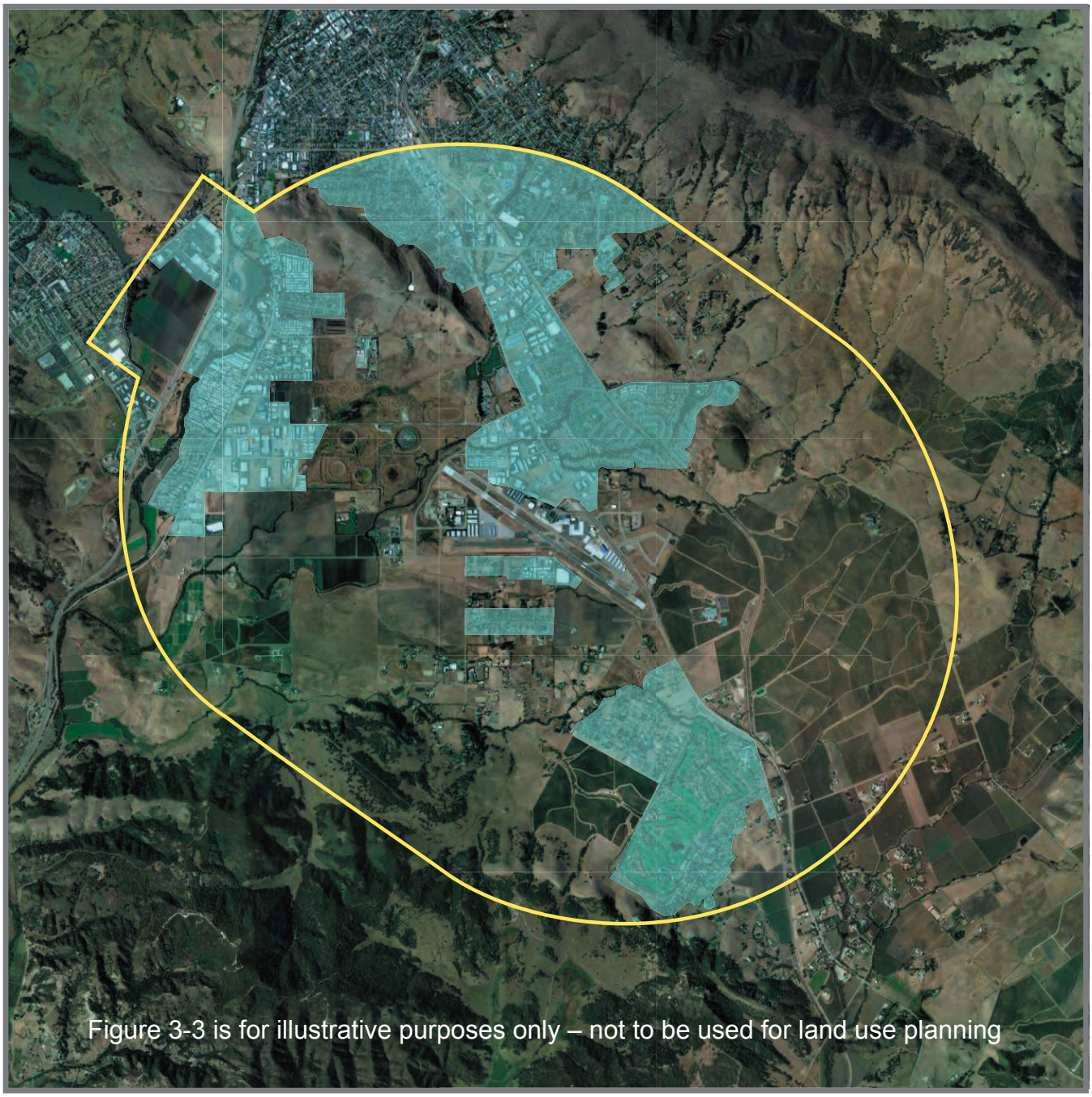


Figure 3-4: Existing Suburban Land Uses to the West of San Luis Obispo County Regional Airport

Suburban areas defined by blue shading

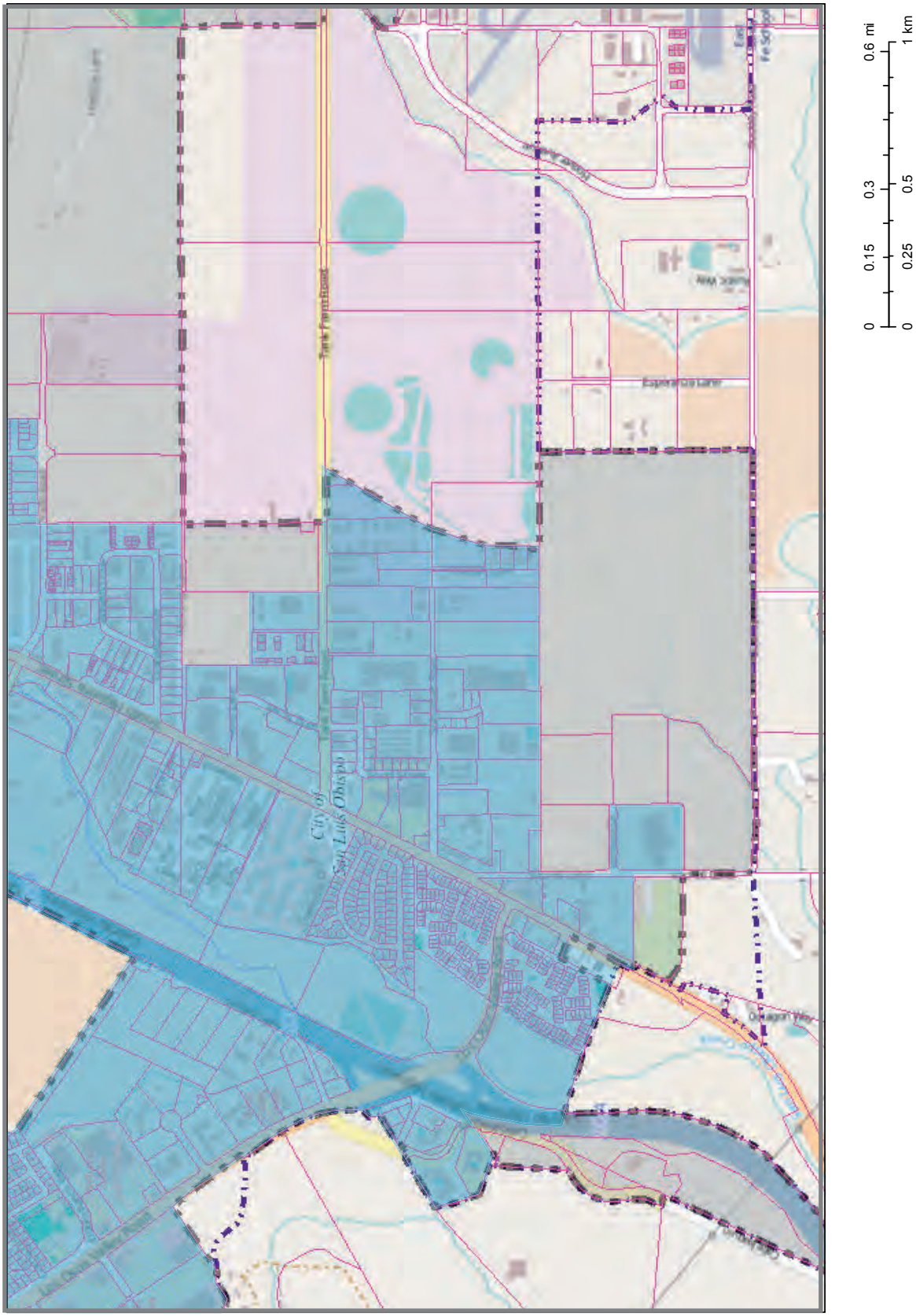
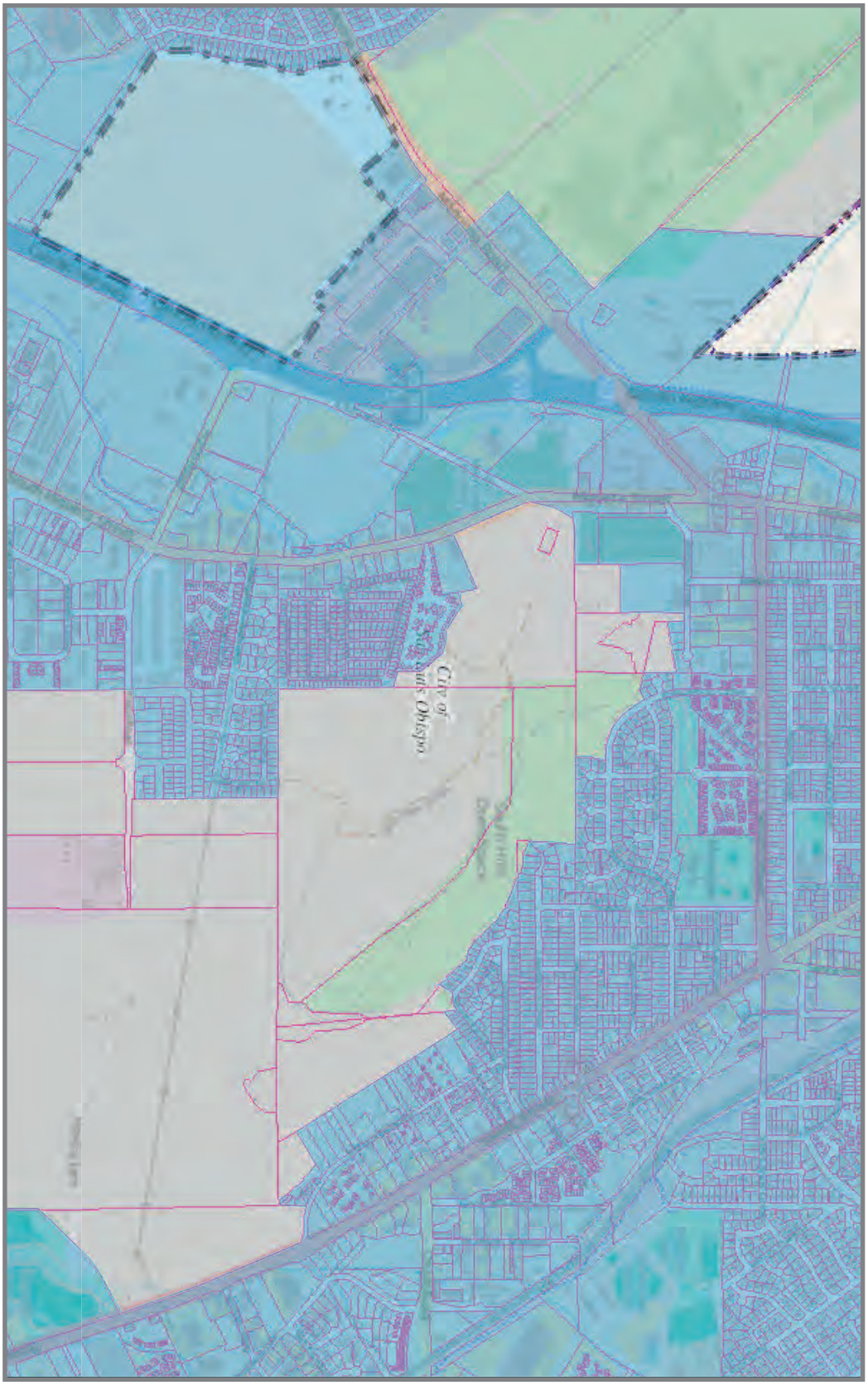


Figure 3-5: Existing Suburban Land Uses to the North of San Luis Obispo County Regional Airport
Suburban areas defined by blue shading



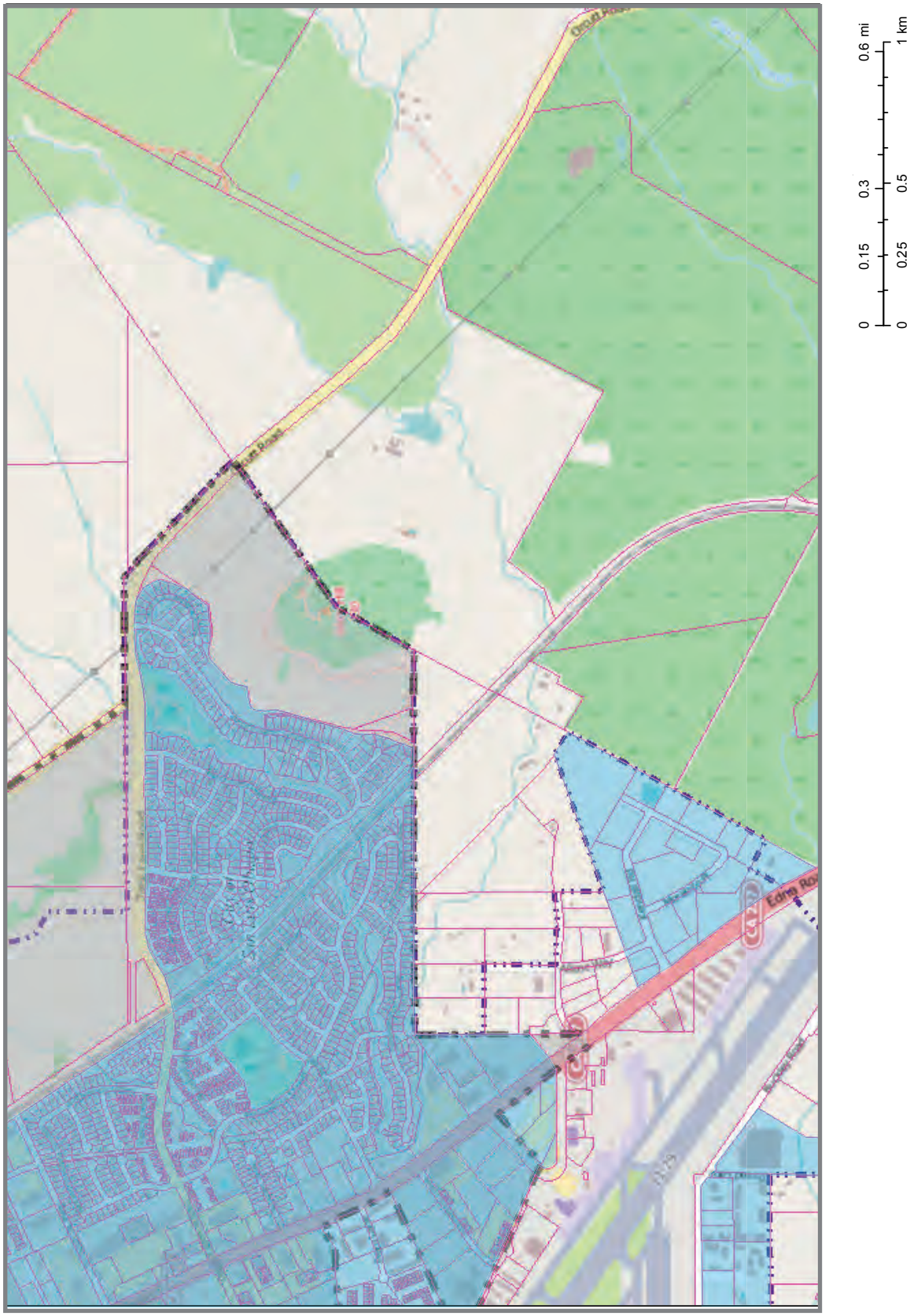


Figure 3-6: Existing Suburban Land Uses to the East of San Luis Obispo County Regional Airport

Suburban areas defined by blue shading

Figure 3-7: Existing Suburban Land Uses to the South of San Luis Obispo County Regional Airport

Suburban areas defined by blue shading

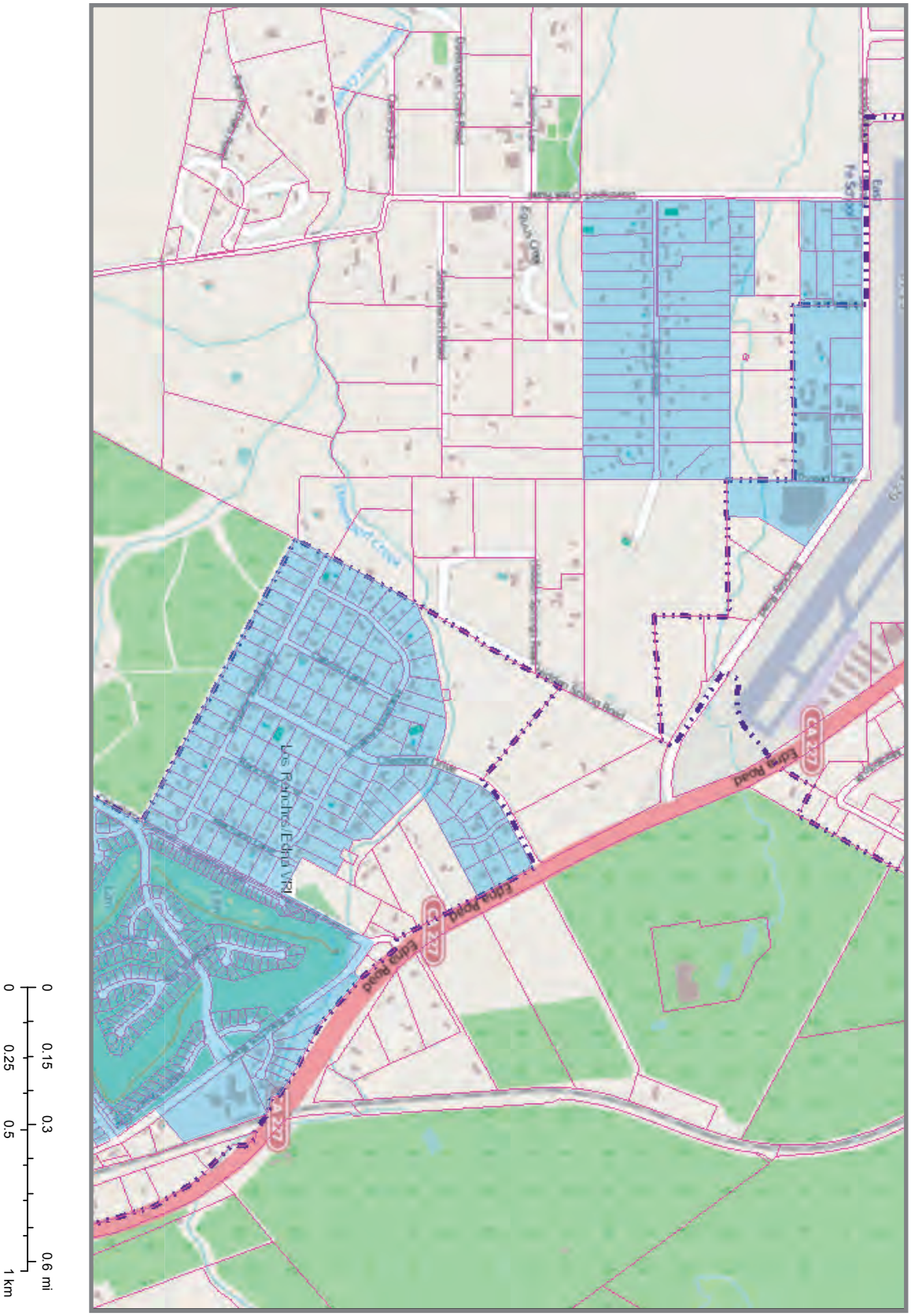
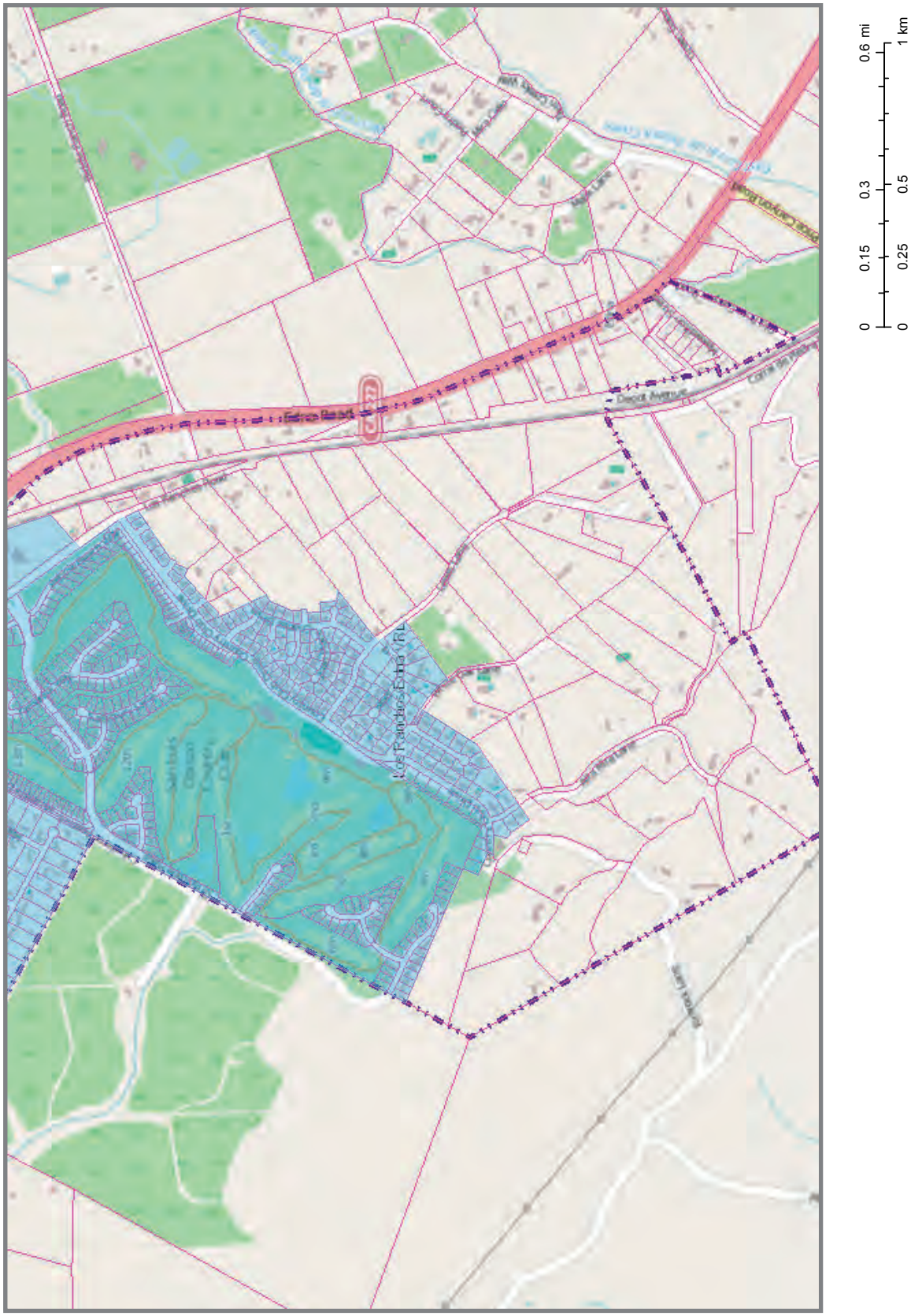

Edna Road
Edna Road
Edna Road
Edna Road
Los Ranchos/Edna VRI
Edna Creek
Edna Creek
Edna Creek

Figure 3-8: Existing Suburban Land Uses to the South of San Luis Obispo County Regional Airport *(Continued)*

Suburban areas defined by blue shading



THE FOLLOWING GENERAL LAND USE POLICY SECTION 4 IS SUBJECT TO CHANGE PENDING THE COMPLETION OF GIS MAPPING AND EVALUATION OF GENERAL LAND USE POLICIES.

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Section 4

General Land Use Policies

4.1 Policies

Policy G-1: A proposed project or local action will be determined to be inconsistent with the ALUP if the information required for review of the proposed local action is not provided by the referring agency

Policy G-2: A proposed project or local action will be determined to be inconsistent with the ALUP if the proposal would, in the considered opinion of ALUC, present specific incompatibilities to the continued economic vitality and efficient operation of the Airport with respect to safety, noise, overflight or obstacle clearance.

Policy G-3: A proposed project or local action will be determined to be inconsistent with the ALUP if the proposal is not in conformance with all applicable Specific Land Use Policies. In the event that the site affected by a proposed project or local action is located in more than one noise exposure area or aviation safety area, the standards for each such area will be applied separately to the land area lying within each noise or safety zone.

Policy G-4: A parcel located within two or more safety zones or noise contours shall be considered as if it were multiple parcels divided at the safety zone boundary line or noise contour. If no part of the building(s) proposed on the parcel fall within the more restrictive safety zone or noise contour, the criteria for the site where the proposed building(s) are located shall apply for the purposes of evaluation. If the building(s) proposed on the parcel fall within multiple safety zones or noise contours, the criteria for the most restrictive safety zone or noise contour where the building(s) proposed are located shall apply for the purposes of evaluation.

Policy G-5: When the site affected by a proposed project or local action is located in more than one noise exposure area or aviation safety zone, the Airport Land Use Commission may, at its sole discretion, elect not to apply the requirements of Policy G-4 if:

i. the total gross area(s) within the more restrictive area(s) is 1 acre or less, and

ii. the land area(s) within the more restrictive area(s) is less than 50% of the total gross land area affected by the referred project or local action

In such instance, the ALUC may elect to apply the policies applicable to the least restrictive noise and/or safety zone to the entire site affected by the project or local action. The ALUC must adopt specific findings that the proposed project or local action, so considered, would not result in the potential development of land uses incompatible with current or future airport operations.

THE FOLLOWING NOISE POLICY SECTION 5 IS SUBJECT TO CHANGE PENDING THE COMPLETION OF THE NOISE CONTOUR STUDY AND THE FORECAST ANAYLSIS.

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Section 5

Noise Policies

5.1 Objective

The objective of the noise policies of this ALUP is to minimize the number of people exposed to frequent and/or high levels of airport noise or to frequent and/or high cumulative noise levels of which airport noise is one component. The basic strategy for achieving noise compatibility is to limit the development of land uses that are particularly sensitive to noise. The most acceptable land uses are ones that either involve few people (especially people engaged in outdoor activities), or generate significant noise levels themselves (such as transportation facilities or industrial uses).

5.2 Regulatory Guidance for Airport Noise Compatibility Planning

"Noise is one of the most basic airport land use compatibility concerns. Moreover, at major air carrier airports, many busy general aviation airports, and most military airfields, noise is usually the most geographically extensive form of airport-related impact"

California Airport Land Use Planning Handbook, October, 2011, page 3-2

"The basic strategy for achieving noise compatibility in the vicinity of an airport is to prevent or limit development of land uses that are particularly sensitive to noise."

California Airport Land Use Planning Handbook, October, 2011, page 4-1

"For quieter settings and many—if not most—airports in California, 65 dB CNEL is too high of a noise level to be appropriate as a standard for land use compatibility planning. This view is particularly evident with respect to the evaluation of proposed new land use development."

California Airport Land Use Planning Handbook, October, 2011, page 4-3

"For purposes of airport land use compatibility planning, Caltrans advises that 65 dB CNEL is not an appropriate criterion for new noise-sensitive development around most airports."

California Airport Land Use Planning Handbook, October, 2011, page 4-7

"Federal policy articulated by the Federal Aviation Administration (FAA) has evolved to where the agency now will "respect and support" local establishment of a lower threshold of noise exposure acceptability."

California Airport Land Use Planning Handbook, October, 2011, page 4-3

"Residential structures to be located where the annual Ldn or CNEL exceeds 60 dB shall require an acoustical analysis showing that the proposed design will achieve the prescribed allowable interior level. For public use airports or heliports, the Ldn or CNEL shall be determined from the airport land use plan prepared by the county wherein the airport is located."

California Building Code, California Code of Regulations, Title 24

"Outdoor yearly levels on the Ldn scale are sufficient to protect public health and welfare if they do not exceed 55 dB in sensitive areas (residences, schools, and hospitals). Inside buildings, yearly levels on the Ldn scale are sufficient to protect public health and welfare if

they do not exceed 45 dB."

Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety, Environmental Protection Agency, March, 1974

"Interior noise levels attributable to exterior sources shall not exceed 45 dB in any habitable room. The noise metric shall be either the Day-Night Average Sound Level (Ldn) or the Community Noise Equivalent Level (CNEL), consistent with the noise element of the local general plan. Worst-case noise levels, either existing or future, shall be used as the basis for determining compliance with [these standards]. Future noise levels shall be predicted for a period of at least 10 years from the time of a building permit application."

California Building Code, California Code of Regulations, Title 24

"For compatibility planning, however, 20 years may be shortsighted. For most airports, a lifespan of more than 20 years can reasonably be presumed. Moreover, the need to avoid incompatible land use development will exist for as long as an airport exists. Once development occurs near an airport, it is virtually impossible—or, at the very least, costly and time consuming—to modify the land uses to ones that are more compatible with airport activities."

California Airport Land Use Planning Handbook, October, 2011, page 3-5

"The "at least" phrase in the statute warrants emphasis. The 20-year time frame should be considered a minimum for compatibility plans. Noise impacts (as well as other compatibility concerns) should be viewed from the longest practical time perspective."

California Airport Land Use Planning Handbook, October, 2011, page 3-6

"In conducting noise analyses for ALUCPs, the long-range time frame is almost always of greatest significance."

California Airport Land Use Planning Handbook, October, 2011, page 3-6

"ALUCs are encouraged to consider the normalization factors listed in Table 4A when setting noise level limits for new noise-sensitive development in the vicinity of an airport."

California Airport Land Use Planning Handbook, October, 2011, page 4-6

"At the present time, normalization is the best method available for quantitatively adjusting noise levels to account for local conditions in an effort to establish appropriate noise limits for noise-sensitive land uses near airports."

California Airport Land Use Planning Handbook, October, 2011, page 4-6

"Installation of special sound insulation in structures is often thought to be broadly suitable as a land use compatibility measure for highly noise-impacted locations. It should not be viewed that way, however."

California Airport Land Use Planning Handbook, October, 2011, page 4-11

"Because helicopters have distinct noise characteristics and usually follow different flight tracks than those used by airplanes, their noise can be particularly noticeable. Inclusion of helicopter noise in computation of airport noise contours is desirable, especially at airports having moderate or high levels of helicopter activity."

California Airport Land Use Planning Handbook, October, 2011, page 3-7

"Because helicopters have distinct noise characteristics and usually follow different flight

Figure 5-1: Airport Noise Contours

Airport Noise Contours Pending

tracks than those used by airplanes, their noise can be particularly noticeable. Inclusion of helicopter noise in computation of airport noise contours is desirable, especially at airports having moderate or high levels of helicopter activity."

California Airport Land Use Planning Handbook, October, 2011, page 3-7

"Including helicopter operations in noise contour calculations generally will not have much effect on the size or shape of noise contours unless the traffic volumes are quite high. In these instances, the location of common helicopter flight tracks and the single-event noise levels of helicopter overflights may be appropriate to consider in compatibility planning."

California Airport Land Use Planning Handbook, October, 2011, page 4-11

5.3 Definitions

Extremely Noise Sensitive Land Uses – land uses for which customary or anticipated activities may be disrupted to a significant degree by aviation noise impacts and for which sufficient mitigation to ensure compatibility with current or future airport operations is not feasible. Extremely Noise Sensitive Land Uses are defined as any land use characterized by:

a. an expectation by occupants of a quiet or peaceful environment (either continuously or at certain times during the day or night), and

b. difficulty in providing sufficient noise mitigation due to structures with openable windows or outdoor activity areas.

Land uses categorized as Extremely Noise Sensitive Land Uses include, but are not limited to:

- all residential land uses (rural residential, suburban residential, single-family, multifamily, mobilehomes and mobilehome parks, caretakers quarters ans second units)
- outdoor theatres, amphitheaters, and public assembly areas (does not include sports stadiums, athletic fields, playgrounds, public swimming pools, tennis courts, golf courses, or small picnic areas)
- restaurants, bars, taverns, food takeouts, wine tasting rooms, and similar business, if such business include outdoor eating or drinking areas
- campgrounds (with overnight sleeping facilities)
- bed and breakfast inns, homestay facilities

Moderately Noise Sensitive Land Uses – land uses for which customary or anticipated activities may be disrupted to a significant degree by aviation noise impacts, but for which sufficient mitigation to ensure compatibility with current or future airport operations is feasible by the incorporation of special design features and construction techniques. Moderately Noise Sensitive Land Uses are defined as any land use characterized by:

a. an expectation by occupants of a quiet or peaceful environment (either

continuously or at certain times during the day or night), and

b. activities associated with the land use are confined exclusively or almost exclusively to indoor areas, and

c. structures associated with the land use feature fixed windows and central climate control systems.

Land uses categorized as Moderately Noise Sensitive Land Uses include, but are not limited to:

- hotels and motels
- restaurants, bars, taverns, food takeouts, wine tasting rooms, and similar business, without outdoor eating or drinking areas
- temporary sleeping quarters for air crews and other employees in transit
- offices, office buildings
- hospitals, nursing homes, residential care facilities and other medical facilities offering 24-hour care
- churches, synagogues, temples, monasteries and convents
- mortuaries, funeral parlors
- indoor theatres, music halls, meeting halls, and other indoor public assembly facilities (but not including facilities utilized exclusively by pilots' organizations, airport or airline employees, or other airport related groups)
- studios – radio, television, recording, rehearsal, and performance facilities
- schools and day care centers (but not including flight schools, aviation mechanics training schools, airline orientation facilities or other institutions offering instruction only in aviation-related fields)
- libraries and museums (excluding aviation-oriented facilities)

Projected 55 dB CNEL Contour - For purposes of this ALUP, the term projected 55 dB CNEL contour shall mean a 55 dB CNEL contour which has been constructed by a firm or individual with recognized expertise in airport noise analysis, which reflects the airport activity forecasts to the year 2054 provided in Section 3.3 of this Airport Land Use Plan, and which has been accepted as valid by a majority vote of the Airport Land Use Commission.

Projected 60 dB CNEL Contour - For purposes of this ALUP, the term projected 60 dB CNEL contour shall mean a 60 dB CNEL contour which has been constructed by a firm or individual with recognized expertise in airport noise analysis, which reflects the airport activity forecasts to the year 2054 provided in Section 3.3 of this Airport Land Use Plan, and which has been accepted as valid by a majority vote of the Airport Land Use Commission.

Area of Demonstrated Noise Incompatibility - For purposes of this ALUP, the term area of demonstrated noise incompatibility shall be defined to be any community or neighborhood which has shown itself to be affected by airport-related noise concerns by:

a. a substantial ongoing pattern of noise complaints received and logged by airport administration from multiple members of the community, or

b. multiple airport noise concerns from the area recorded verbally or in written form on the public records of the ALUC or any referring agency, or

c. the filing, by a member or members of the community, of a lawsuit, request for restraining order, or other legal action which is intended to or would have the effect of reducing airport- or aviation-related noise impacts.

5.4 Noise Mitigation

Any proposed general plan, general plan amendment, specific plan, specific plan amendment, zoning ordinance or zoning ordinance amendments, building regulation modification, or individual development proposal which would allow development of Moderately or Extremely Noise Sensitive Land Uses with the 55-dBA airport noise contour, or would establish a Designated Residential Infill Area which includes property within the 55-dBA airport noise contour, must include sufficient provisions to ensure that interior aviation-related single-event noise levels will be mitigated to be no higher than the levels specified in Table 5-1. Provisions for noise mitigation must:

a. be based upon and in conformance with a valid aviation noise study submitted for review to the Airport Land Use Commission, as described in Section 5.4.1., and

b. include a requirement for the specific features and construction techniques needed to acheive the necessary degree of noise attenuation, and

c. include a specific mechanism by which the local agency will ensure compliance with required noise mitigation measures.

5.4.1 Aviation Noise Study

A proposed general plan, general plan amendment, specific plan, specific plan amendment, zoning ordinance or zoning ordinance amendments, building regulation modification, or individual development proposal which would allow development of Moderately or Extremely Noise Sensitive Land Uses with the 55-dBA airport noise contour, or would establish a Designated Residential Infill Area that includes property within the 55-dBA airport noise contour, must be based upon an aviation noise study performed at the site and submitted for review by the Airport Land Use Commission. The aviation noise study must:

a. Be performed by an individual or firm with demonstrated expertise in aviation noise monitoring and analysis

b. Include data collected continuously for a minimum period of ten days

c. Contain noise data which is representative of the entire area included in the proposed

local action

d. Indicate the number and intensity of aviation-related noise events which exceeded an exterior sound pressure level of 55 and 60 dBA Lmax, together with the time and date that each event occurred

e. Indicate specific features and construction techniques which will mitigate interior noise limpacts to less than the levels indicated in Table 5-1.

Note, however, that neither an aviation noise study nor single-event noise mitigation is required for the approval of a Small-Scale Infill Project, as defined in Section 9.3.

TABLE 5-1: Maximum Allowable Aviation-Related Single-Event Noise Levels

Table 5-1 indicates Lmax values which are not to be exceeded more frequently than once in any ten day period.

Environment	Maximum Allowable Interior Noise Levels	
	Single Event (dBA Lmax)	CNEL (dB)
Extremely Noise-Sensitive Land Uses		
Primary Noise Impact: Impaired Speech Communication in Large Groups		
School classrooms[1]	55[2]	45[2]
Churches, synagogues, temples, monasteries and convents	55	
Indoor theatres, music halls, meeting halls, and other indoor public assembly facilities3	55	35
Mortuaries, funeral parlors	55	
Primary Noise Impact: Sleep Disturbance		
Residential dwelling	60	45
Hotel, motel sleeping room	60	45
Temporary sleeping quarters for air crews and other employees in transit	60	
Sleeping rooms in hospitals, nursing homes, residential care facilities and other medical facilities	60	
Primary Noise Impact: Disruption of Anticipated Quiet Environment		
Libraries[3], Museums[4]	60	
Moderately Noise Sensitive Land Uses		
Primary Noise Impact: Impaired Face-to Face Speech Communication		
All moderately noise-sensitive land uses	65	

[1] Excludes facilities intended exclusively or primarily for use by pilots, aviation service personnel, airline personnel, airport employees, or other aviation-related persons
[2] During hours when classrooms are in use
[3] Excludes flight planning rooms and other aviation-related libraries
[4] Excludes air museums

5.6 Noise Policies

Notwithstanding any other provision of this ALUP except for the specific provisions set forth in Section 6 (Specific Land Use Provisions for the Margarita Area), a proposed general plan, general plan amendment, specific plan, specific plan amendment, zoning ordinance or zoning ordinance amendments, building regulation modification, or individual development proposal will be determined to be inconsistent with the ALUP if the proposed project or local action:

Policy N-1 – Would permit or fail to sufficiently prohibit establishment within the projected 60-dB CNEL contour of any Extremely Noise-Sensitive Land Use.

Policy N-2 – Would permit or fail to sufficiently prohibit any Extremely Noise-Sensitive Land Use within the projected 60-dB CNEL contour

Policy N-3 – Would permit or fail to sufficiently prohibit any Extremely Noise-Sensitive Land Use within the projected 55-dB CNEL contour, with the exception of developments that would be located entirely within the area of existing suburban land use, as defined in Section 3.8 and Appendix B of this Plan. The Airport Land Use Commission may, however, find a proposed development that would result in the establishment of Extremely Noise-Sensitive Land Uses within the projected 55-dB CNEL contour, or a local action that would permit such development, to be consistent with the Airport Land Use Plan if a credible noise study demonstrates that all portions of the property to be occupied by an Extremely Noise-Sensitive Land Use are already exposed to a CNEL of 55 dB or greater from non-aviation related sources. Such noise study must be performed by a firm or individual with expertise in environmental noise analysis and must be based upon actual measurements of existing 24-hour noise impacts at the site.

Policy N-4 – Would permit or fail to sufficiently prohibit any Moderately Noise-Sensitive Land Use within the projected 60-dB CNEL contour, with the exception of developments which meet the requirements for mitigation of interior noise levels specified in Table 5-1 and in Section 5.4 of this Plan.

Policy N-5 – Would permit or fail to sufficiently prohibit, in any location which is within or adjacent to an area of demonstrated noise incompatibility or in an acoustic environment substantially similar to an area of demonstrated noise incompatibility:

a. Any new residential or other Extremely Noise-Sensitive Land Use
b. Any new Moderately Noise-Sensitive Land Use, unless meeting the requirements for mitigation of interior noise levels specified in Table 5-1 and in Section 5.4.

TABLE 5-2: Summary of Compatibility of Land Uses with CNEL Contours

Noise Environment	In Areas of Existing Rural Character		In Aras of Existing Suburban Development	
	Extremely Noise-Sensitive	Moderately Noise-Sensitive		
Inside 60 dB CNEL contour	Prohibited	Allowable with mitigation		
Between 55 and 60 db CNEL contours	Allowable only within a Designated Residential Infill Area (with appropriate noise mitigation) or as a Small-Scale Residential Project	Allowed		
Outside 55 CNEL dB countour	Allowed	Allowed		
Within or adjacent to an area of demonstrated noise incompatibility	Prohibited	Allowable with mitigation		

Section 6 (SUBJECT TO CHANGE PENDING COMPLETION OF GIS MAPPING.)

Specific Land Use Policies: Safety

6.1 Objective

The objective of the safety policies of this ALUP is to minimize the risks to the safety and property of persons on the ground associated with potential aircraft accidents and to enhance the chances for survival of the occupants involved in an accident which takes place beyond the immediate runway environment.

An effective approach to accomplishing this objective must include all of the following elements:

a. identifying areas of aviation safety risk

b. limiting the number of persons on the ground who are exposed to aviation safety hazards by restricting the allowable density of residential and nonresidential development in these areas

c. reducing the potential severity of an aviation-related incident by prohibiting, in areas of aviation safety hazard, land uses characterized by a limited ability of occupants to evacuate an accident scene

d. reducing the potential severity of an aviation-related incident by prohibiting, in areas of aviation safety hazard, land uses which include features such as above ground storage of flammable materials, fuel pumping facilities, above ground electric transmission lines or switching facilities, and above ground pipelines carrying flammable materials, which could substantially contribute to the severity of an aircraft accident

e. preserving, in areas subject to aviation safety risk, sufficient open space to afford the pilot of a disabled aircraft a reasonable opportunity to effect an emergency off-airport landing without impacting occupied structures or objects which would reduce the likelihood that the crew and passengers will survive the incident.

A full discussion of the development of Aviation Safety Areas for the San Luis Obispo County Regional Airport is provided in Appendix Z.

6.2 Regulatory Guidance – Airport Safety Compatibility Planning

6.2.1 General Provisions

"Converting the above concepts into a set of safety zones for a specific airport is, unfortunately, not a simple task. There is no computer model akin to those for creating noise contours into which airport data can be inserted and a set of safety zones are produced as the output. While accident location data provides a solid foundation for delineation of safety zones, considerable judgment is required when creating zones for a particular airport."

California Airport Land Use Planning Handbook, October, 2011, page 3-16

"To assist ALUCs in delineation of safety zones for a given airport, this Handbook provides sets of generic zones intended to serve as a starting place for the exercise."

California Airport Land Use Planning Handbook, October, 2011, page 3-16

"The generic safety zones .... are intended just as a starting place for the development of zones appropriate for a particular airport. In some cases, the zones might be quite suitable as is. In most instances, however, some degree of adjustment of the generic zones is necessary in recognition of the physical and operational characteristics of the airport."

California Airport Land Use Planning Handbook, October, 2011, page 3-20

"The generic sets of compatibility zones .... may need to be adjusted to take into account various operational characteristics of a particular airport runway."

California Airport Land Use Planning Handbook, October, 2011, page 3-22

6.2.1 Specific Requirements for Consideration of Local Condition

The California Airport Land Use Planning Handbook (pages 3-21 and 3-22) explicitly mandates that an Airport Land Use Commission, in formulating an ALUP, analyze the following local factors that affect aviation safety and modify generic airport safety zones as necessary to accomodate conditions that exist at the specific airport under consideration:

- Airport area topography
- Local geographic features
- Instrument approach procedures – circling approaches, non-precision approaches at low altitudes, non-precision approaches not aligned with the runway
- Special flight procedures or limitations – single-sided traffic patterns, nearby airports, high terrain, noise-sensitive land uses
- Runway use by special-purpose aircraft – helicopters; fire-attack, agricultural, and military aircraft
- Small aircraft using long runways
- Runways used predominantly in one direction
- Displaced landing thresholds

In addition, the Division of Aeronautics of the California Department of Transportation has indicated (private communication) that the ALUC is obligated to identify and consider any additional local factors that might reasonably be expected to affect local aircraft activity or flight paths or otherwise impact aviation safety risks within the airport planning area.

6.3 Definitions

Special Function Land Use - For purposes of this ALUP, the term special function land use shall be defined to include certain types of land use which require special protection from hazards such as aircraft accidents. These uses fall into three categories:

a. *Impaired Egress Uses* – land uses for which the significant common element is

the relative inability of the people occupying the space to move out of harm's way because of age, limited understanding of potentially perilous circumstances, physical disability, or physical confinement. Examples of Impaired Egress Uses include, but are not limited to, elementary and secondary schools, hospitals, convalescent facilities, nursing homes, jails and prisons; and

b. *Unusually Hazardous Uses* – land uses which include features which could substantially contribute to the severity of an aircraft accident if they were to be involved in one. Examples of Unusually Hazardous Uses include, but are not limited to, above-ground storage of substantial quantities of flammable materials, fuel pumping facilities, above ground electric transmission lines or switching facilities, above ground pipelines carrying flammable materials, and other similar uses; and

c. *High Intensity Land Uses* – For purposes of this ALUP, the term high intensity land use shall be defined as any use which is characterized by a potential to attract dense concentrations of persons to an indoor or outdoor area, even for a limited period of time. Such uses include, but are not limited to:

- amusement parks, fairgrounds
- convention/exhibit halls. major auditoriums
- stadiums and arenas
- temporary events attracting dense concentrations of people – fairs, circuses, carnivals, revival meetings, sports tournaments, conventions, but not including events for which exposure to aviation safety hazard is a well-known expectation (air shows, airport open houses, pilots meetings, etc.)

Building Coverage - For purposes of this ALUP, a the term "building coverage" shall mean the total percentage of the gross area of a designated property or group of properties which is encompassed by the footprint of any structure, whether or not such structure is intended for human habitation.

Dwelling Unit - For purposes of this ALUP, a dwelling unit is defined as a structure or part of a structure intended to serve as the residence of an individual, family, or group of unrelated individuals sharing living quarters by mutual consent. For specific housing types, number of dwelling units is to be enumerated as follows:

a. Single family detached housing – Each structure shall be counted as one dwelling unit.

b. Single family detached housing with secondary units allowed– Each primary residential structure shall be counted as one dwelling unit and each actual or allowable secondary residential structure shall count as one dwelling unit.

c. Duplexes, triplexes, quadriplexes, apartment buildings, condominiums, and town houses – Each structure or part of a structure which can be rented, leased, or sold independently shall be counted as one dwelling unit.

d. Rooming houses, boarding houses, long-term residential hotels, dormitories – Each

bedroom shall be counted as 0.5 dwelling unit.

Gross Land Area/Gross Acreage - For purposes this ALUP, gross land area or gross acreage is defined as the total area of a given tract of land, including portions to be utilized for construction of roads, utility easements, parks, schools, and other amenities. For purposes of determining densities allowable under the provisions of the Airport Land Use Plan, gross land area or gross acreage shall be the total land area which is assigned to a given zoning/land use designation by a general plan, specific plan, or zoning ordinance, or the total land area in a given zoning/land use category encompassed by the project site of an individual development proposal.

Net Land Area/net Acreage - For purposes this ALUP, net land area or net acreage is defined as the total area of all of the legal lots within the area encompassed by a general plan, specific plan, zoning ordinance, or individual development proposal that are assigned to a given zoning/land use category. The area of land to be utilized for construction of roads, utility easements, parks, schools, and other amenities is excluded.

Residential Development/Residential Land Use – For purposes of this ALUP, the terms residential development and residential land use are defined as projects which consist of and will result in establishment of only structures intended and used for human habitation.

Residential Density – For purposes of this ALUP, the term residential density is defined as the maximum number of dwelling units per acre allowable under the provisions of a referral to the ALUC.

Maximum Density of Residential Development – For purposes of this ALUP, the term "maximum density of residential development" denotes the maximum number of dwelling units per acre which may be permitted within any development or on any parcel by a project or action referred to the ALUC. A project or local action which lacks provisions to ensure that any and all future development projects within the referral will be restricted to a density equal to or less than the maximum residential density will be determined to be inconsistent with the ALUP.

Non-Residential Development/Non-Residential Land Use – For purposes of this ALUP, the terms non-residential development and non-residential land use are defined as projects which consist of and will result in establishment of only structures intended and used for commercial purposes, and which do not include structures or other facilities for human habitation.

Non-Residential Land Use Intensity - For purposes of this ALUP, the the term non-residential land use intensity is defined as the maximum number of persons per acre that a nonresidential development is expected to attract during periods of use.

Mixed-Use Development/Mixed-Use Land Use – For purposes of this ALUP, the terms

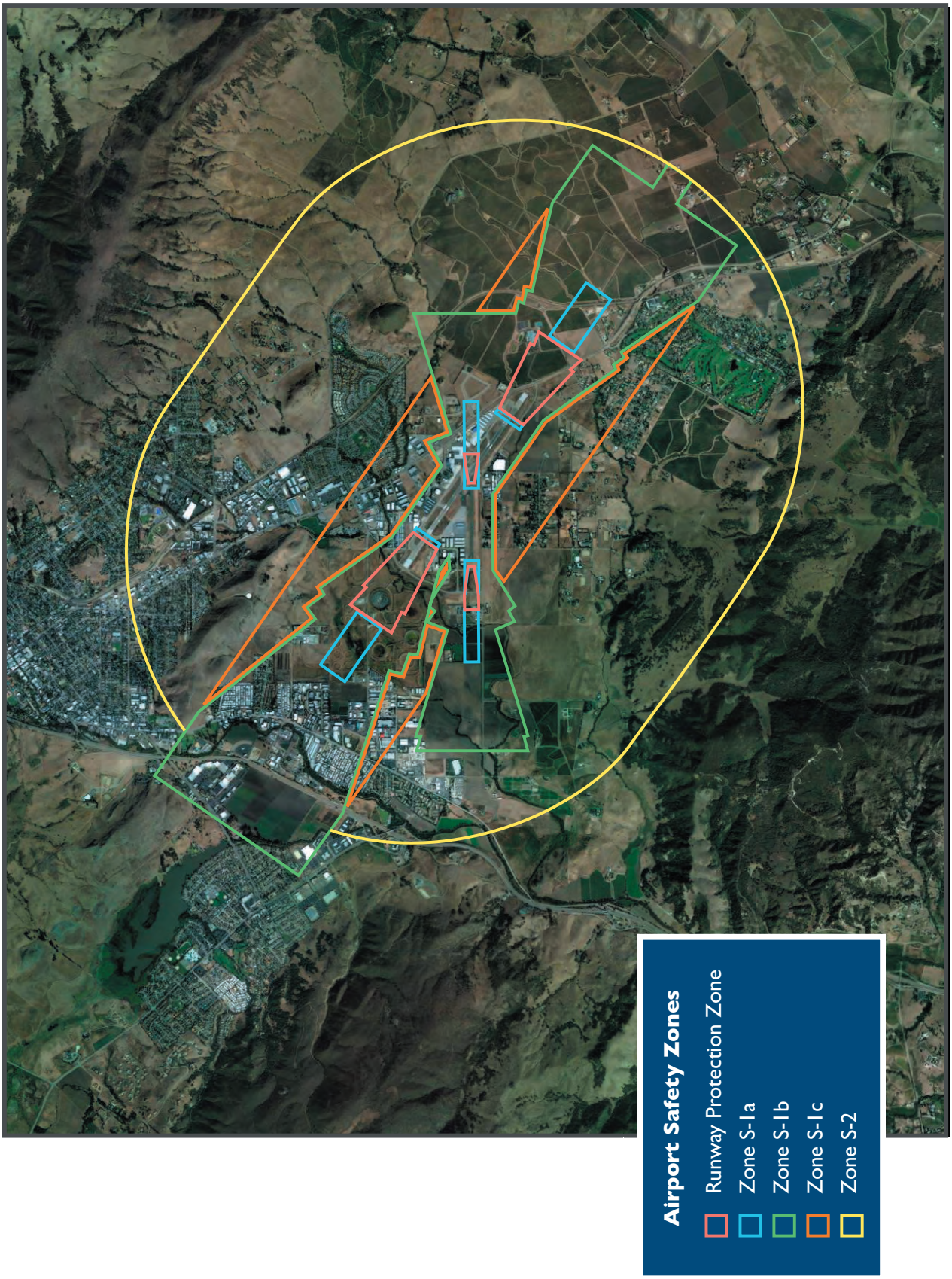

Figure 6-1: Graphic Representation of Safety Zones, San Luis Obispo County Regional Airport

mixed-use development and mixed-use land use are defined as projects which consist of and will result in establishment of structures intended and used both for commercial purposes, and for human habitation. A project wihich includes both commercial and residential components will be considered as a mixed-use development or land use regardless of whether the commercial and residential components are contained within single structures or are separated into individual structures.

Mixed-Use Intensity - For purposes of this ALUP, the the term mixed-use intensity is defined as the maximum number of persons per acre that a mixed-use development is expected to attract during periods of use.

Maximum Area Land Use Intensity/Density - For purposes of this ALUP, the term maximum area land use intensity/density is defined as the maximum non-residential land use intensity, mixed-use intensity, or residential density that is allowable within a specified land area when the area is taken as a whole. This term may be considered as the maximum average land use density/intensity that can be allowed within a given land area.

Maximum Single Acre Land Use Intensity/Density - For purposes of this ALUP, the term maximum single-acre land use intensity/density is defined as the maximum non-residential land use intensity, mixed-use intensity, or residential density that is allowable on any given acre of a specified area of land. This term is roughly equivalent to the absolute maximum land use density/intensity that can be allowed at any point within a given land area.

6.4 Aviation Safety Areas

The Aviation Safety Areas of the Airport Land Use Plan are based on the generic safety areas presented on page 3-17 of the California Airport Land Use Planning Handbook (October, 2011). The dimensions of these zones has, as required by the Handbook, been modified to account for local conditions at the San Luis Obispo County Regional Airport. The precise, GIS-compatible location and dimensions of each Aviation Safety Area are provided in Appendix A of this Airport Land Use Plan, and this data is adopted as the official standard for determining consistency with ALUP Safety Policies. Detailed information regarding the considerations which have dictated the size and shape of the individual Aviation Safety Zones is provided in Appendix C. Consistency of the Aviation Safety Zones established by this Airport Land Use Plan with the generic safety zones described in the California Airport Land Use Planning Handbook (October, 2011) is described in Appendix D. An approximate illustration of the Safety Zones is provided in Figure 6-1.

For the convenience of the reader, a brief description each zone is provided below:

The Runway Protection Zones – Areas immediately adjacent to the ends of each active runway, within which the level of aviation safety risk is very high and in which, consequently, structures are prohibited and human activities are restricted to those which require only very low levels of occupancy. The size and configuration of the Runway

Protection Zones are specified by Federal Aviation Regulations and by Federal Aviation Administration Advisory Circular 150/5300-13A. The central portions of the Runway Protection Zones for each runway are also referred to as the "clear zones".

Safety Area S-1 – The area where aircraft operate frequently or in conditions of reduced visibility at altitudes ≤ 500 feet above ground level (AGL). Safety Area S-1 comprises three sub-areas:

Safety Area S-1a – Those portions of Safety Area S-1 which are located outside of the Runway Protection Zones, but are within 500 feet of the extended runway centerline of Runway 11-29 and within 5000 feet of an existing or planned runway end or are within 250 feet of the extended runway centerline of Runway 7-25 and within 3000 feet of the runway end.

Safety Area S-1b – Those portions of Safety Area S-1 which are not included in Safety Area S-1a, but are within probable gliding distance for aircraft on expected approach or departure courses; also includes State-defined sideline safety areas, inner turning zones and outer safety zones for both Runway 11-29 and Runway 7-25 and portions of existing Airport Land Use Zone 3. Aviation safety hazards to be particularly considered in this area include mechanical failures, fuel exhaustion, deviation from glideslope or MDA during IFR operations (due to pilot error or equipment malfunction), loss of control during short approach procedures, stall/spin incidents during engine-out maneuvers in multi-engine aircraft, loss of control during "go around" or missed approach procedures, and midair collisions.

Safety Area S-1c – Those portions of Safety Area S-1 which are not included in Safety Areas S-1a or S-1b, but are adjacent (within 0.5 nm) to frequent or low-visibility aircraft operations at less than 500 feet above ground level. Aviation safety hazards to be considered in this area include mechanical failures, deviation from localizer or VOR during IFR operations (due to pilot error or equipment malfunction), stall/spin incidents during engine-out maneuvers in multi-engine aircraft, loss of control during "go around" or missed approach procedures, and loss of visual references by aircraft performing circle-to-land procedures.

Safety Area S-2 – The area within the vicinity of which aircraft operate frequently or in conditions of reduced visibility at altitudes between 501 and 1000 feet above ground level (AGL). Aviation safety hazards to be considered in this area include mechanical failures, fuel exhaustion, loss of control during turns from downwind to base legs or from base to final legs of the traffic pattern, stall/spin incidents during engine-out maneuvers in twin engine aircraft, and midair collisions. Operational factors of concern include circle-to-land instrument approaches south of Runway 11-29, frequent "pattern work" by student pilots in fixed-wing aircraft, and extensive practice flight by students in rotary-wing aircraft to the north of the airport. Nonetheless, because aircraft in Area S-2 are at greater altitude and are less densely concentrated than in other portions of the Airport Planning Area, the overall level of aviation safety risk is considered to be lower than that in Area S-1 or the Runway Protection Zones.

6.5 Calculation of Residential, Non-Residential and Mixed Use Intensity/Density

Just as no regulation can ensure the absolute safety of persons in the vicinity of a highway or an industrial plant, it is impossible for the Airport Land Use Plan to ensure that no resident of the County or City of San Luis Obispo will ever be endangered by an airport-related safety incident. The Airport Land Use Plan, however, can require that potential development in the vicinity be examined to ensure that persons who live or work within the airport planning are will not be exposed to an unreasonable risk of injury due to aircraft accidents. The critical elements in this evaluation are :

a. The likelihood of an aviation-related event, and
b. The number of people who might be exposed to injury if an aviation accident should occur

The likelihood of an aircraft crash is addressed by the delineation of Aviation Safety Zones, as outlined in the preceding section. Consideration of the number of persons who might be killed or injured in the event of an accident requires an examination of the number of people who might be present when the accident occurs. A reasonable approach to airport land use planning (and the approach endorsed by the California Department of Transportation) would be to limit the land uses in areas at high risk of an aviation safety event to those that involve relatively few people, while allowing denser congregations of people in locations that are less likely to be impacted by an airport-related event.

Table 6-3 of this Plan indicates maximum Non-Residential Land Use Intensities (NRI) Residential Densities (RD), and Mixed-Use Intensities (MUI) that are acceptable within each Aviation Safety Area. The following text provides guidance for the calculation of NRI, RD, and MUI for proposals submitted to the ALUC by local agencies or individual developers:

Non-Residential Land Use Intensity (NRI) – for use with projects (or defined portions of a project) which include no residential uses

1. Determine the square feet of floor area within the proposed profect which will be devoted to each type of non-residential land use category (see ALUP Table 6-1).
2. For each land use category, determine the number of square feet which correspond to one person on site (ALUP Table 6-1).
3. For each land use category, determine the potential persons on site by dividing the number of square footage within the proposed project (Step 1) by the number of feet which correspond to one person on site (Step 2).
4. Add the potential persons on site for all land use categories.
5. Divide the total potential persons on site obtained in Step 4 by the net or gross acreage of the proposed project site to yield the non-residential land use intensity (NRI), expressed as persons per acre. (Note that 43,560 square feet = 1 acre).
6. Compare the calculated NRI to the maximum allowable NRI listed in Table 6-3 or 6-4, as appropriate.

TABLE 6-1: Non-Residential Land Use Intensity by Type of Use

Type of Use	Examples	Non-Residential Land Use Intensity
Agriculture	Agricultural processing	One person per 200 sq. ft. of gross floor area, plus one person per 1000 sq. ft. of outdoor processing area
	Grazing, outdoor crops	One person per acre of gross land area
	Greenhouse culture Livestock barns or raising	One person per acre of gross land area
Entertainment, Indoor	Amusement arcades Hot tubs (commercial use) Pool halls and billiard parlors Skating rinks	One person per 60 sq. ft. of gross floor area
Entertainment, Outdoor	Stadiums Athletic fields with bleachers	One person per 10 sq. ft. of spectator area (bleachers)
	Public swimming pools	One person per 70 sq. ft. of pool surface
	Amusement parks Athletic fields without bleachers Carnivals Circuses Drive-In theatres Fairgrounds Festivals Parade grounds	One person per 300 sq. ft. of outdoor use area
Food and Beverage Service	Bars, taverns Catering services Ice cream parlors Nightclubs Restaurants, sandwich shops Food take-out	One person per 60 sq. ft. of gross floor area
Hospitals	Acute care hospitals Convalescent hospitals Residential treatment centers	Two persons per patient bed
Hotels	Hotels and motels Bed and breakfast inns	1.8 persons for each guest room or group of rooms to be occupied as a suite; plus one person per 60 sq. ft. of the total gross floor area of any coffee shops, restaurants, bars, or night clubs; plus one person for every 10 sq. ft. of floor area of meeting rooms
	Hostels	One person per 100 sq. ft. of gross floor area
Indoor-Outdoor Uses	Auto dismantling Recycling centers Scrap dealers	One person per 5000 sq. ft. of land area
	Contractors' yards Containerized gas distributors Equiptment rental yards Government agency or corporation yards	One person per 1000 sq. ft. of land area
	Service stations	One person per 60 sq. ft. of gross land area

TABLE 6-1 (*continued*): Non-Residential Land Use Intensity by Type of Use

Type of Use	Examples	Non-Residential Land Use Intensity
Laboratories	Medical, analytical, research and development	One person per 200 sq. ft. of gross floor area
Libraries		One person per 50 sq. ft. of gross floor area
Manufacturing	Manufacturing plants Laundry/dry-cleaning plants Tallow works Tire re-capping	One person per 200 sq. ft. of gross floor area; plus one person per 1000 sq.ft. of outdoor manufacturing or storage area
Museums		One person per 50 sq. ft. of gross floor area
Offices	Contractors' offices Government offices and meeting rooms Organization offices and meeting rooms Professional offices Utility company engineering and administrative offices	One person per 200 sq. ft. of gross floor area; plus one person per 10 sq.ft. of meeting rooms intended for use by the general public. If it is unknown wherther meeting rooms are present, one person per 100 sq. ft. of gross floor area
Public Assembly	Auditoriums Concert halls Convention/exhibit halls Churches, synagogues, temples Community meeting rooms Mortuaries Theatres (indoor)	One person per 200 sq. ft. of gross floor area
Residential		Non-residential standards are not applicable
Retail Sales	Aircraft sales or rental Appliances, furniture, home furnishings Automobile parts and accessories Bicycles - sales and repair Building and landscape materials Catalog stores Feed and farm supplies General merchandize (grug, discount, department, variety stores, etc.) Grocery and convenience stores Liquor stores Motor vehicles, motor homes - sales or rental Musical instruments Office/data processing supplies and equipment Sporting and outdoor goods Specialized food stores (bakeries, meats, dairy items, etc.) Specialty retail (shoes, clothing, books, records, videos, toys, stationery, etc.) Warehous ("big box") stores	One person per 300 sq. ft. of gross floor area; plus one person per 1000 sq.ft. of outdoor sales or storage area
Schools		One person per 45 sq. ft. of gross floor area

TABLE 6-1 (*continued*): Non-Residential Land Use Intensity by Type of Use

Type of Use	Examples	Non-Residential Land Use Intensity
Service Uses	Advertising and related services Animal hospitals, boarding and grooming (large or small animal) Athletic and health clubs, gymnasiums, fitness centers, tanning salons Auto repair and related services Banks, saving and loans, credit unions, finance companies Barbers, hairstylists, manicurists Broadcast studios Building and landscape maintenance services Cemeteries, mausoleums, columbariums Computer services Detective and security services Exterminators Employment agencies Florists Insurance services (local or regional office) Laundry/dry-cleaner: pick-up point or office Laundry/dry-cleaner: self-service Medical or dental offices; ambulance service Photocopy, blueprinting, or microfilming services Pharmacies (prescription drugs only) Photofinishing (wholesale or retail) Photography studios Police and fire stations and training facilities Post offices, telegraph offices, private delivery and postal services Printing and publishing Realty offices and title companies Refuse hauling, septic tank/portable toilet services Repair services - household appliance repair, locksmiths, seamstresses Secretarial and related services Ticket or travel agency Utility company customer account services	One person per 200 sq. ft. of gross floor area
Transportation	Bus stations Railroad yards, stations, crew facilities Trucking and taxi services	One person per 200 sq. ft. of gross floor area (excluding garage); plus one person per 700 sq. ft. of enclosed garage area
Warehousing	Mini-storage facility Moving company Warehouse	One person per 1000 sq. ft. of gross floor area
Wholesaling	Mail-order houses Wholesale sales	One person per 300 sq. ft. of gross floor area; plus one person per 1000 sq.ft. of outdoor sales or storage area

Example 1

A project is proposed to develop a commercial building on a lot of 32,000 square feet net area in Aviation Safety Area S-1c. An approved ACOS Plan is in place.

Step 1 – Review of blueprints show that the proposed building would include 2000 square feet of retail space, 1400 square feet of storage area, and 4500 square feet of office space (with no common meeting rooms open to the general public).

Step 2 – From ALUP Table 6-1, it is determined that the number of square feet corresponding to one person on site is 300 for retail uses, 1000 for storage space (warehouse), and 200 for offices.

Step 3 – The potential number of persons on site for each use is calculated as:

Retail space: 2000 ÷ 300 = 6.67 persons

Storage area: 1400 ÷ 1000 = 1.40 persons

Offices: 4500 ÷ 200 = 22.50 persons

Step 4 – The total potential number of persons on site would, therefore be (6.67 + 1.40 + 22.50), or 30.57 persons.

Step 5 – Since 32,000 square feet is equal to (32,000 ÷ 43,560), or 0.7346 acres, the non-residential land use intensity, or NRI, is (30.57 persons ÷ 0.7346 acres) – equal to 41.61 persons per acre.

*Since the maximum net non-residential density allowable in Area S-1b with an adopted ACOS Plan is 131 persons per acre, the project would be **consistent** with Table 6-4.*

Residential Density (RD) – for use with projects (or defined portions of a project) which include no non-residential uses

1. Divide the number of dwelling units proposed by the gross acreage of the proposed project site to yield the residential density (RD), expressed as dwelling units per acre. (Note that 43,560 square feet = 1 acre).
2. Compare the calculated RD to the maximum allowable RD listed in Table 6-3 or 6-4, as appropriate.

Example 2

An alternative proposal for the 32,000 square foot lot is for construction of four single-family homes.

Step 1 – Dividing the 4 proposed dwelling units by the 0.7346 acre size of the project site gives a residential density, or RD, of (4 dwelling units ÷ 0.7346 acres) – equal to 5.44 dwelling units per acre.

*Since the maximum net residential density allowable in Area S-1b with an adopted ACOS Plan is 0.17 dwelling units per acre, the project would be **inconsistent** with Table 6-4.*

Mixed-Use Intensity (MUI) – for use with projects (or defined portions of a project) which include both residential and significant non-residential uses

1. Calculate non-residential intensity (NRI) of use and the residential density (RD) as outlined above.
2. From ALUP Table 6-2, determine Residential Correction Factor (*f*) for the Safety Area(s) in which the proposed development will be located.
3. Multiply the residential density obtained in Step 1 by the correction factor, *f*, to obtain a corrected residential density (corrRD) in persons/acre.
4. Add the non-residential intensity of use (NRI) obtained in Step 1 to the corrected residential obtained in Step 4 (corrRD) to yield the mixed-use intensity (MUI = NRI + corrRD), expressed as persons per acre.

TABLE 6-2: Conversion Factors for Calculating

Aviation Safety Area	Residential Conversion Factor
Runway Protection Zone	n/a
Safety Area S-1a	150
With approved ACOS	200
Safety Area S-1b	250
With approved ACOS	350
Infill density (with ACOS)	300
Safety Area S-1c	500
With approved ACOS	750
With approved ACOS and DAP	1000
Within approved CDZ	1250
Infill density (with ACOS)	1250
Safety Area S-2	12.5
With approved ACOS	n/a

ACOS = Airport-Compatible Open Space Plan
DAP = Detailed Area Plan
CDZ = Clustered Development Zone

5. Compare the calculated MUI to the maximum allowable MUI listed in Table 6-3 or 6-4, as appropriate.

Example 3

A third alternative proposal for the site is a mixed-use development that would combine the commercial space described in Example 1 with four upper-story residential units.

Step 1 – As shown in Examples 1 and 2 above, the NRI for this proposal would be 110.96 persons per acre, and the RD would be 5.44 dwelling units per acre.

Step 2 – From ALUP Table 6-2, it is determined that, in Area S-1c with an approved ACOS Plan, the correction factor (f) is 750 persons/dwelling unit.

Step 3 – The corrected residential density (corrRD) is determined by multiplying f times RD: 750 persons/dwelling unit x 5.44 dwelling units per acre = 4080.00 persons per acre.

Step 5 – Adding corrRD to NRI yeilds a mixed-use intensity (MUI) of (110.96 persons per acre + 4080.00 persons per acre), or 4190.96 persons per acre.

Since the maximum net mixed-use intensity allowable in Area S-1b with an adopted ACOS Plan is 151 persons per acre, the project would be ***inconsistent*** *with Table 6-4.*

TABLE 6-3: Maximum Allowable Land Use Intensities and Residential Densities per Gross Acre

Aviation Safety Area	Non-Residential Intensity of Use (Persons/Acre)		Residential Density (Dwelling Units/Acre)		Mixed-Use Intensity (Persons/Acre)		Special Land Use Functions
	Area Maximum[a]	Single-Acre[b]	Area Maximum[a]	Single-Acre[b]	Area Maximum[a]	Single-Acre[b]	
Runway Protection Zone	0	0	0	0	0	0	Prohibited
Safety Area S-1a	30	50	0.2	0.2	35	58	Prohibited
With approved ACOS	40	80	0.2	0.2	46	92	
Safety Area S-1b	50	150	0.2	0.2	58	173	Prohibited
With approved ACOS	70	210	0.2	0.2	81	242	
Infill density (with ACOS)	150[c]	450[d]	0.5[c]	1.5[d]	173[c]	518[d]	
Safety Area S-1c	100	300	0.2	0.2	115	345	Prohibited
With approved ACOS	150	450	0.2	0.2	173	518	
With approved ACOS and DAP	200	600	0.2	0.2	230	690	
Within approved CDZ	250	750	0.2	0.2	288	863	
Infill density (with ACOS)	300[c]	1200[d]	No limit[c]	No limit[d]	345[c]	1380[d]	
Safety Area S-2	150	600	12	24	173	690	Conditional[e]
With approved ACOS	No limit	No limit	No limit	No limit	No limit	No limit	

ACOS = Airport-Compatible Open Space Plan **DAP = Detailed Area Plan** **CDZ = Clustered Development Zone**

[a] The Area Maximum indicates the highest permissible residential density, non-residential land-use intensity or mixed-use intensity allowable for the entire area encompassed by a proposed project or local agency plan.

[b] The Single-Acre Maximum specifies the highest permissible residential density, non-residential land-use intensity or mixed-use intensity allowable at any point within the area encompassed by a proposed project or local agency plan.

[c] The overall residential density, non-residential land-use intensity or mixed-use intensity within a designated infill area, an exempt infill development or a small scale infill development may not exceed the average density/intensity of surrounding land uses or by the figure listed in this table, whichever is less. For further details, see ALUP Section 9.

[d] The single-acre residential density, non-residential land-use intensity or mixed-use intensity within a designated infill area, an exempt infill development or a small scale infill development may not exceed twice the average density/intensity of surrounding land uses or by the figure listed in this table, whichever is less. For further details, see ALUP Section 9.

[e] The location and type of Special Function Land Uses shall be specifically designated by a General Plan, Specific Plan, Zoning Ordinance, or other planning instrument subject to ALUC approval.

TABLE 6-4: Maximum Allowable Land Use Intensities and Residential Densities per Net Acre

Aviation Safety Area	Non-Residential Intensity of Use (Persons/Acre)		Residential Density (Dwelling Units/Acre)		Mixed-Use Intensity (Persons/Acre)		Special Land Use Functions
	Area Maximum[a]	Single-Acre[b]	Area Maximum[a]	Single-Acre[b]	Area Maximum[a]	Single-Acre[b]	
Runway Protection Zone	0	0	0	0	0	0	Prohibited
Safety Area S-1a	26	44	0.17	0.17	30	51	Prohibited
With approved ACOS	35	70	0.17	0.17	40	81	
Safety Area S-1b	44	131	0.17	0.17	51	151	Prohibited
With approved ACOS	61	183	0.17	0.17	70	210	
Infill density (with ACOS)	131[c]	392[d]	0.44[c]	1.3[d]	151[c]	451[d]	
Safety Area S-1c	87	261	0.17	0.17	100	300	Prohibited
With approved ACOS	131	392	0.17	0.17	151	451	
With approved ACOS and DAP	174	522	0.17	0.17	200	600	
Within approved CDZ	218	653	0.17	0.17	251	751	
Infill density (with ACOS)	261[c]	1044[d]	No limit[c]	No limit[d]	300[c]	1201[d]	
Safety Area S-2	131	522	10	21	151	600	Conditional[e]
With approved ACOS	No limit	No limit	No limit	No limit	No limit	No limit	

ACOS = Airport-Compatible Open Space Plan **DAP = Detailed Area Plan** **CDZ = Clustered Development Zone**

[a] The Area Maximum indicates the highest permissible residential density, non-residential land-use intensity or mixed-use intensity allowable for the entire area encompassed by a proposed project or local agency plan.

[b] The Single-Acre Maximum specifies the highest permissible residential density, non-residential land-use intensity or mixed-use intensity allowable at any point within the area encompassed by a proposed project or local agency plan.

[c] The overall residential density, non-residential land-use intensity or mixed-use intensity within a designated infill area, an exempt infill development or a small scale infill development may not exceed the average density/intensity of surrounding land uses or by the figure listed in this table, whichever is less. For further details, see ALUP Section 9.

[d] The single-acre residential density, non-residential land-use intensity or mixed-use intensity within a designated infill area, an exempt infill development or a small scale infill development may not exceed twice the average density/intensity of surrounding land uses or by the figure listed in this table, whichever is less. For further details, see ALUP Section 9.

[e] The location and type of Special Function Land Uses shall be specifically designated by a General Plan, Specific Plan, Zoning Ordinance, or other planning instrument subject to ALUC approval.

6.6 Net Land Area vs. Gross Land Area

Gross Land Area (Gross Acreage) - When calculating non-residential land use intensity, mixed-use intensity, or residential density, the size of the property under review and of the land area within each zoning or land use category should be expressed as gross acreage if the proposed planning area or project site includes roads, utility easements, schools, parks, or other amenities, either existing or to be constructed. In general, the use of gross land area will be most appropriate for referral of general plans, specific plans, zoning ordinances, and building codes and for amendments to these types of planning instruments.

Net Land Area (Net Acreage) - When calculating land use intensity or residential density, the size of the property under review and of the land area within each zoning or land use category should be expressed as gross acreage if the proposed plan area or project site does not encompass roads, schools, utility easements, parks, or other amenities, either existing or to be constructed. In general, the use of net land area will be most appropriate for referral of individual projects.

6.7 Density Adjustments – Conceptual Basis

It is a goal of the Airport Land Use Commission to protect the long-term viability of the San Luis Obispo County Regional Airport, not only by prohibiting inappropriate development in the airport planning area, but by also encouraging land development which has been specifically planned to be compatible with current and future airport operations. The underlying principle of this effort is that a higher level of planning which involves multiple properties may allow development of a nature or intensity of land use which would otherwise be inconsistent with the Airport Land Use Plan. The special planning mechanisms which have been developed to provide a basis for density adjustments include:

a. the Airport Compatible Open Space Plan

b. clustered development zones

c. preparation of specific area plans to afford more precise regulation of land use than would otherwise be the case

Although the adjustments to ALUP safety policy requirements which result from the incorporation of these planning elements are collectively referred to as “density adjustments”, the actual modifications to development standards may (depending on the area and on the specific planning elements) include:

a. an increase in allowable nonresidential land use intensity, residential land use density, and/or mixed use intensity

c. rendering of high intensity land uses as permissible in areas where they are otherwise inconsistent with the ALUP

d. rendering of special function land uses as permissible in areas where they are otherwise inconsistent with the ALUP

6.8 Mechanisms for Density Adjustment – the Airport-Compatible Open Space Plan

6.8.1. Purpose

The purposes of an Airport Compatible Open Space Plan ("ACOS Plan") shall be:

a. To increase the safety of persons on the ground within the Airport Land Use Planning Area by providing areas of open land which will afford the pilot of an aircraft in distress an opportunity to avoid an off-airport landing in sites that have been developed for commercial or residential uses, and

b. To maximize the potential for a successful off-airport landing for aircraft which become disabled while operating in the vicinity of the San Luis Obispo County Regional Airport.

c. To comply with the requirements of the California Airport Land Use Planning Handbook and the State Aeronautics Act of the State of California with regard to the preservation of open space in the vicinity of public-use airports

6.8.2 Definitions

Airport Compatible Open Space Plan (or ACOS Plan) – A written plan initiated and prepared by a local agency, approved by the Airport Land Use Commission, and incorporated in full or by reference into the General Plan of such local agency which permanently establishes areas of open space within or adjacent to the Airport Land Use Planning Area for the purpose of reducing the risk of injury to persons on the ground and to aircraft occupants in the event of an off-airport aircraft landing.

Airport Compatible Open Space Plan Area (or ACOS Plan Area) – A defined geographic area included in and governed by an ACOS Plan.

Airport Compatible Open Space Site (or ACOS Site) – An area of open space which is defined by an approved ACOS Plan and is protected by such plan in order to provide the pilot of an aircraft in distress with an opportunity to avoid impacting areas that have been developed for commercial or residential use and to afford the pilot of such an aircraft with an opportunity to carry out an off-airport landing with maximal survival potential for passengers and crew, irrespective of potential damage to the aircraft itself.

Potential Off-Airport Landing Site (or POL) – A designated site within an approved ACOS Site which has been improved and maintained in accord with the requirements set forth in ALUP Table 6-5 to provide the pilot of an aircraft in distress an opportunity to carry out an off-airport landing with maximal survival potential for passengers and crew on board, irrespective of potential damage to the aircraft itself.

6.8.3 Requirements for Airport Compatible Open Space Plans

Minimum land area devoted to ACOS Sites

The requirement for minimum land are devoted to ACOS sites is expressed as the minimum percentage of land which is both a.) included in the proposed ACOS Plan and b.) located within each of the Airport Safety Zones listed below. A proposed Airport

Compatible Open Space Plan must provide ACOS Sites whose total land area is equal or greater than the following:

TABLE 6-6: Minimum Required Open Space Percentages

Aviation Safety Area	Required Open Space	
	Improved Open Space[a]	Unimproved Open Space[b]
Runway Protection Zone	20%	80%
Safety Area S-1a	10%	15%
Safety Area S-1b	5%	15%
Safety Area S-1c	5%	10%
Safety Area S-2	3%	7%

[a] Open space which meets or will meet the requirements of Table 6-5
[b] Open space which is not intended to meet the requirements of Table 6-5

Characteristics of ACOS Sites

i.) The size, topography, obstructions, and land uses within each ACOS site should conform, to the greatest extent feasible, to the specificatons provided in ALUP Table 6-5.

ii.) Each ACOS site must contain at least one POL, which conforms, to the greatest extent feasible, to the specifications provided in ALUP Table 6-5.

Contents of an ACOS Plan

A proposed Airport Compatible Open Space Plan should include:

i.) A precise definition of the boundary of the ACOS Area. Proposed projects located outside of the defined ACOS Area will not be entitled to density bonuses provided by the ACOS Plan.

ii.) A precise definition of each area designated as an ACOS site, including

- The boundaries of the ACOS site
- A review of the characteristics of the site which are compatible with the size, topography, obstruction, and land use requirements specified in ALUP Table 6-5.
- A review of the characteristics of the site which are not currently compatible with the size, topography, obstruction, and land use requirements specified in ALUP Table 6-5. This review should also contain a good faith estimate

TABLE 6-5: Characteristics of ACOS and POL Sites

Property	ACOS Site	POL Site
Size	The minimum size for any proposed ACOS site is 50 x 1000 feet. The suggested size, however, is at least 100 x 2000 feet. The Airport Land Use Commission may withold approval of a proposed ACOS Plan if an excessive number of ACOS sites or ACOS sites in critical areas fail to meet the suggested size.	The minimum size for any proposed POL will be 50 x 1000 feet. The suggested size, however, is at least 100 x 2000 feet.
Distribution	The density of ACOS sites should be greatest in areas where aircraft overflight occurs at low altitude (i.e., closer to the airport).	One POL is required within each ACOS site. To the extent possible, the longer dimension of a POL should be aligned with the most frequently-used flight paths in the area.
Topography	The terrain of a proposed ACOS sites should be generally level or gently rolling. Abrupt changes in slope, such as cliffs, bluffs, berms, ravines, or creek beds, are not optimal, and should be avoided or mitigated if possible.	The terrain of a POL should, ideally, be flat and smooth, much like a grass runway. The slope of the POL should not, at any point, exceed 5% in a lengthwise direction or 2% side-to-side.
Obstructions	The ACOS site should be substantially free of structures, parked vehicles, and transmission towers.	The POL site should be free of structures, parked vehicles, fences, light fixtures, utility lines or poles, crop stakes, equiptment, large rocks, and other obstructions which would increase the risk of injury or death to the occupants of an aircraft attempting to execute an off-airport landing. The approaches to either end of the POL should be free of towers, light poles, drilling rigs, transmission lines, and other obstructions which would create a collision hazard for an aircraft attempting an off-airport landing, regardless of whether these obstructions are within or adjacent to the ACOS site.
Land Uses	An ACOS site should not include land uses which might be expected to attract large numbers or dense concentrations of people, even if such uses occur only intermittently. Examples of such inappropriate land uses would include facilities for team sports and children's playgrounds. Manufacture and bulk storage of hazardous materials, whether or not within structures is prohibited within an ACOS site. Aside from these considerations, there are no specific restrictions on land uses within an ACOS site, so long as prohibited obstructions are not created. While it is anticipated that most ACOS sites will be devoted to passive open space, agriculture, or low-density recreational uses, other uses (e.g., mineral extraction, storage of nursery materials) that do not require structures may be compatible, as well.	From a practical viewpoint, land uses in a POL will likely be limited to open space, agriculture, and low-density recreation. This is not necessarily always the case, however. It is conceivable that a small ACOS site and POL could be provided by a wide, grassy roadway median, even within an area that is otherwise devoted to commercial or residential development.

as to when and how such incompatible characteristics will be brought into conformance with ALUP Table 6-5. While it is recognized that it may not be feasible for a local agency to provide a specific timeline for needed improvements, an effort should be made to explain how future events will trigger the needed improvements.

iii) An indication of the percentage of land within each Aviation Safety Area encompassed by the proposed ACOC Plan that will be devoted to ACOS Sites

iii.) A precise definition of each area designated as a POL, including

- The boundaries of the POL
- A review of the characteristics of the POL which are compatible with the size, topography, obstruction, and land use requirements specified in ALUP Table 6-5.
- A review of the characteristics of the POL which are not currently compatible with the size, topography, obstruction, and land use requirements specified in ALUP Table 6-5. This review should also contain a good faith estimate as to when and how such incompatible characteristics will be brought into conformance. While it is recognized that it may not be feasible for a local agency to provide a specific timeline for needed improvements, an effort should be made to explain how future events will trigger the needed improvements.

iv.) An indication as to how each ACOS site will be preserved in perpetuity as open space.

v.) Provisions sufficient to ensure that all development within the ACOS Area will conform to the Noise, Airspace Protection, and Overflight Policies of this ALUP.

6.8.4. Adoption of an ACOS Plan

A proposed ACOS Plan will be deemed to be adopted and valid when:

a.) The Plan has been approved by majority vote of the Airport Land Use Commission, and

b.) The Plan has been incorporated by the referring local agency, in full or by reference, into a general plan, specific plan, zoning ordinance or other planning instrument which is subject to mandatory review by the Airport Land Use Commission.

No density adjustments may by approved or granted by a local agency based upon a proposed ACOS Plan that has not been fully approved as above.

If a proposed ACOS Plan includes ACOS Sites or POLS which do not conform with the specifications provided in ALUP Table 6-5, the Airport Land Use Commission may approve the ACOS Plan for a limited period of time. Such limitation must be incorporated into the local agency's general plan, specific plan, zoning ordinance or other planning

instrument which is subject to mandatory review by the Airport Land Use Commission. No density adjustments may by approved or granted by a local agency based upon a proposed ACOS Plan following expiration of ALUC approval of such Plan.

6.7.5. Modification of an ACOS Plan

A local agency that proposes to modify an approved ACOS Plan will submit the revised Plan, in its entirety, to the Airport Land Use Commission for approval. In addition to the proposed modifications, the revised ACOS Plan should contain an update on the status of any ACOS sites or POLs which were not compatible with ALUP Tables 6 and 7 at the time the Plan was initially approved by the ALUC. No density adjustments may by approved or granted by a local agency based upon a proposed ACOS Plan that has not been fully approved as above, or for which a time-limited ALUC approval has expired.

6.8. Mechanisms for Density Adjustment – Clustered Development Zones

Additional density adjustments within an ACOS Area may also be attained through the designation of Clustered Development Zones (CDZ). A CDZ may include any part or all of the area encompassed by an ACOS, and the geographic extent of each CDZ will be determined and specified by the responsible local agency.

In order to be approved by the ALUC, an Airport-Compatible Open Space Plan which proposes to establish one or more CDZs must provide for the establishment, protection, and maintenance in perpetuity of the following percentages of each proposed CDZ as ACOS Sites:

a. in Aviation Safety Area S-1c ..... 35% of the gross area of the CDZ
b. in Aviation Safety Area S-2 ..... 25% of the gross area of the CDZ.

The additional open space established by a CDZ should:

a. Be large enough to qualify as an ACOS site (see Table 6) or contiguous with and additive to an ACOS site otherwise established by the ACOS Plan
b. Meet the topographical, obstruction, and land use requirements of an ACOS site

Small areas of property adjacent to structures, such as yards, courtyards, break areas, and parking areas may not be included in the calculation of open space for purposes of establishing a CDZ.

6.8. Mechanisms for Density Adjustment – Detailed Area Plan

The development of a Detailed Area Plan is a process which affords local agencies an opportunity to work with the ALUC in planning for development that meets local needs with respect to density while, by virtue of an increased level of specificity, protects the public against undue aviation safety hazards.

A Detailed Area Plan proposed by a local agency shall meet the following criteria:

a. The Detailed Area Plan shall be contained within a general plan or amendment thereto, a specific plan or amendment thereto, or a local zoning ordinance which must, under the terms of the California Public Utilities Code, be referred to the ALUC for a mandatory

determination of consistency with respect to the ALUP.

b. Input from the ALUC should be sought throughout the development of a Detailed Area Plan.

c. The Detailed Area Plan shall, at a minimum, provide:

   i. Specific indication of the maximum density of residential and nonresidential development that will be permitted at each parcel within the Detailed Plan area, together with provision that no building, use, or occupancy permit will be issued for any development which exceeds the established maximum densities of development

   ii. Sufficient information to enable the ALUC to determine that the nonresidential intensities of use allowed within the Detailed Plan area are in conformance with the Non-Residential Maximum Intensities of Use figures specified in Tables 6-3 and 6-4 of this ALUP

   iii. Sufficient information to enable the ALUC to determine that the residential densities allowed within the Detailed Plan area are in conformance with the figures specified in Tables 6-3 and 6-4 of this ALUP

   iv. Sufficient information to enable the ALUC to determine that the mixed-use intensities allowed at each parcel within the Detailed Plan area are in conformance with the Maximum Density of Residential Development figures specified in Tables 6-3 and 6-4 of this ALUP

   v. Specific indication of any parcels at which Special Function or High Intensity land uses will be permitted, together with an explicit provision that such uses are prohibited at all other sites within the Detailed Plan area.

d. The Detailed Area Plan shall contain provisions sufficient to ensure that all development within the Detailed Plan area will conform to the Noise, Airspace Protection, and Overflight Policies of this ALUP.

6.9. Safety Policies

Notwithstanding any other provision of this ALUP except for the specific provisions set forth in Section 10 (*Specific Land Use Provisions for the Margarita Area*), a proposed general plan, general plan amendment, specific plan, specific plan amendment, zoning ordinance, zoning ordinance amendment, building regulation modification, or individual development proposal will be determined to be inconsistent with the ALUP if the proposed project or local action:

Policy S-1 – Would permit or lack sufficient provisions to prohibit structures and other obstacles within the Runway Protection Zones for any runway at the Airport, as delineated in Appendix B.

Policy S-2 – Would permit or fail to adequately prohibit any residential, non-residential, or mixed-use development or redevelopment which would create, within the site to be developed or redeveloped, a density greater than specified in Table 6-3 or 6-4 (as applicable).

Policy S-3 – Would permit or fail to adequately prohibit Special Function Land Uses or special land use functions (impaired egress uses, unusually hazardous uses, or high intensity uses), other than as specified in Tables 6-3 or 6-4 (as applicable).

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Section 7

Specific Land Use Policies: Airspace Protection

7.1 Objective

The objective of the airspace protection policies of this ALUP is to minimize the risk of potential aircraft accidents in the vicinity of the Airport by avoiding the development of land uses and land use conditions which pose hazards to aircraft in flight.

7.2 Regulatory Guidance – Airspace Protection

"....no use of land or water anywhere within the boundaries encompassed by FAR Part 77 should be allowed if it could endanger or interfere with the landing, take off, or maneuvering of an aircraft at an airport (FAA–1987). Specific characteristics to be avoided include:

- *Creation of electrical interference with navigational signals or radio communication between the airport and aircraft ;*
- *Lighting which is difficult to distinguish from airport lighting;*
- *Glare in the eyes of pilots using the airport;*
- *Smoke or other impairments to visibility in the airport vicinity; and*
- *Uses which attract birds and create bird strike hazards."*

California Airport Land Use Planning Handbook, October, 2011, page 3-35

7.3 Definitions

7.3.1 Obstruction to Air Navigation - For purposes of this ALUP, the term obstruction to air navigation is defined as any existing or future object which is or is expected to be greater than either of the following:

a. A height that is 200 feet above ground level (AGL) or is above 409 feet MSL, whichever is greater.

b. The surface of a takeoff and landing area or any imaginary surface established under Section 77.25 or 77.29 of the Federal Aviation Regulations. However, no part of the takeoff or landing area itself will be considered an obstruction.

7.3.2 Hazard to Air Navigation - For purposes of this ALUP, the term hazard to air navigation is defined as any existing or future object which entails or is expected to entail characteristics which would potentially interfere with the takeoff, landing, or maneuvering of aircraft at the Airport, including:

a. creation of electrical interference with navigation signals or radio communication between the aircraft and airport;

b. lighting which is difficult to distinguish from airport lighting;

c. glare in the eyes of pilots using the airport;

d. uses which attract birds and create bird strike hazards;

e. uses which produce visually significant quantities of smoke; and

f. uses which entail a risk of physical injury to operators or passengers of aircraft (e.g., exterior laser light demonstrations or shows).

7.3.3 Wildlife Attractant - For purposes of this ALUP, the term wildlife attractant is defined as any existing or future activity or land use identified in Federal Aviation Administration Advisory Circular 150/5200-33B as potentially attracting or sustaining hazardous wildlife populations and thereby increasing the likelihood of wildlife strikes by aircraft departing or approaching to land at the San Luis Obispo County Regional Airport. As listed in the referenced Advisory Circular, these land uses include:

a. municipal solid waste landfills

b. drinking water intake and treatment facilities

c. stormwater and wastewater treatment facilities, including associated retention and settling ponds

d. ponds built for recreational use

e. ponds that result from mining activity

f. artificial marshes

g. wetlands

h. confined livestock production

i. aquaculture conducted outside of closed structures

j. rental of agricultural lands for wilfowl hunting activities

7.4 Policies

Notwithstanding any other provision of this ALUP, a proposed general plan, general plan amendment, specific plan, specific plan amendment, zoning ordinance, zoning ordinance amendment, building regulation modification, or individual development proposal will be determined to be inconsistent with the ALUP if the proposed local action:

Policy A-1 – Lacks sufficient provisions to ensure that no structure, landscaping, apparatus, or other feature, whether temporary or permanent in nature shall constitute an obstruction to air navigation, as defined in Section 7.2.1 of this Airport Land Use Plan.

Policy A-2 – Lacks sufficient provisions to ensure that no structure, landscaping, apparatus, or other feature, whether temporary or permanent in nature shall constitute a hazard to air navigation, as defined in Section 7.2.2 of this Airport Land Use Plan.

Policy A-3 – Lacks sufficient provisions to ensure that no structure, landscaping, apparatus,

or other feature, whether temporary or permanent in nature shall constitute a wildlife attractant, as defined in Section 7.2.3 of this Airport Land Use Plan.

Policy A-4 – Lacks clear and sufficient provisions to ensure that no creation of new wetlands or restoration of existing wetlands within the Airport Land Use Plan area will be brought about as a consequence of wetland mitigation required, offerred, or otherwise created in conjunction with any local action or with any individual development proposal or project.

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Section 8

Specific Land Use Policies: Overflight

8.1 Objective

The objective of the overflight policies of this ALUP is to ensure that potential and prospective airport area land users are provided with sufficient information on the presence and activity of the Airport and associated noise and safety impacts in order for them to make an informed decision as to whether or not they wish to live and/or work in the Airport vicinity.

8.2 Regulatory Guidance – Airspace Protection

""(a)... [A]ny person who intends to offer subdivided lands within this state for sale or lease shall file with the Department of Real Estate an application for a public report consisting of a notice of intention and a completed questionnaire on a form prepared by the department.

(b) The notice of intention shall contain the following information about the subdivided lands and the proposed offering:

...

(13)(A) The location of all existing airports, and of all proposed airports shown on the general plan of any city or county, located within two statute miles of the subdivision. If the property is located within an airport influence area, the following statement shall be included in the notice of intention:

NOTICE OF AIRPORT

This property is presently located in the vicinity of an airport, within what is known as an airport influence area. For that reason, the property may be subject to some of the annoyances or inconveniences associated with proximity to airport operations (for example: noise, vibration, or odors). Individual sensitivities to those annoyances can vary from person to person. You may wish to consider what airport annoyances, if any, are associated with the property before you complete your purchase and determine whether they are acceptable to you.

(B) For purposes of this section, an "airport influence area," also known as an "airport referral area," is the area in which current or future airport-related noise, overflight, safety, or airspace protection factors may significantly affect land uses or necessitate restrictions on those uses as determined by an airport land use commission."

California Business and Professions Code, Sections 11010(a) and (b)(13)

"....wherever ALUC policies indicate that residential land uses are normally incompatible— whether the standard is 65 dB CNEL or a lower level— approval for such development should reasonably be conditioned upon the developer's dedication of an avigation easement for aircraft noise to the airport."

California Airport Land Use Planning Handbook, October, 2011, page 4-44

"....a requirement for dedication of an avigation easement may be reasonable where any of

the following conditions exist:

- *Aircraft are expected to be relatively low to the ground (such as where they are below traffic pattern altitude); or*
- *Zoning does not adequately restrict the heights of objects in the airport's environs; or*
- *Aircraft noise exceeds the level established as being of local significance."*

California Airport Land Use Planning Handbook, October, 2011, page 4-44

8.3 Policies

Policy O-1 – Any proposed general plan, general plan amendment, specific plan, specific plan amendment, zoning ordinance, zoning ordinance amendment, building regulation modification, or individual development proposal will be determined to be inconsistent with the ALUP if the proposed local action lacks sufficient provisions to ensure that any person who rents, leases, or purchases residential property or properties within the airport area shall, prior to entering into any contractual obligation for such rental, lease, or purchase, receive appropriate notification of the potential for aircraft overflight as follows:

"**NOTICE OF AIRPORT IN VICINITY:** This property is presently located in the vicinity of an airport, within what is known as the airport influence area. For that reason, the property may be subject to some of the annoyances or inconveniences associated with proximity to airport operations (for example: noise, vibration, or odors). Individual sensitivities to those annoyances can vary from person to person. You may wish to consider what airport annoyances, if any, are associated with the property before you complete your purchase and determine whether they are acceptable to you."

A Local Option Real Estate Disclosure may be substituted for the above, providing that it contains, at a minimum, all of the information contained in the Notice of Airport in Vicinity.

Policy O-2 – Any proposed general plan, general plan amendment, specific plan, specific plan amendment, zoning ordinance, zoning ordinance amendment, building regulation modification, or individual development proposal will be determined to be inconsistent with the ALUP if the proposed local action lacks sufficient provisions to ensure an avigation easements will be recorded for each property developed within the area included in the proposed local action and that such easement will be recorded prior to the issuance of any building permit or conditional use permit.

Section 9 (SUBJECT TO CHANGE PENDING EVALUATION OF INFILL CRITERIA)

Infill Development

9.1 Designated Infill Area – An area within the Airport Land Use Planning Area where substantial development not in conformity with this Airport Land Use Plan existed at the time that the Airport Land Use Plan was adopted in its current form (June 19, 2002) and where additional infill land uses may be allowed to occur even if the proposed land uses are otherwise incompatible with respect to compatibility criteria for that location. A Designated Infill Area which would allow the development of additional residential or of mixed residential/commercial land uses, or which would allow the replacement of existing residential or mixed-use structures other than those destroyed by fire, natural disaster, or other events beyond the control of the owner, will be termed a Designated Residential Infill Area. A Designated Infill Area that would allow no new residential or mixed residential/commercial land uses will be termed a Designated Non-Residential Infill Area.

(a) A Designated Infill Area may be established only by amendment of the Airport Land Use Plan. The Airport Land Use commission may consider amendment of the ALUC to establish one or more Designated Infill Areas on its own initiative or in response to the request of a local agency. Any request on the part of a local agency for establishment of a Designated Infill Area must contain, at a minimum:

- a specific description of the Designated Infill Area, including a precise depiction of the proposed perimeter of the proposed area;
- $A_{(res)}$ – the total net land area (in acres) devoted to residential land uses within the proposed Designated Infill Area as of June 19, 2002;
- $DU_{(res)}$ – the total number of dwelling units located on properties devoted to residential land uses within the proposed Designated Infill Area as of June 19, 2002;
- $A_{(non\text{-}res)}$ – the total net land area devoted to non-residential land uses within the proposed Designated Infill Area as of June 19, 2002;
- $P_{(non\text{-}res)}$ – the total number of persons expected to be attracted by development which existed on properties devoted to non-residential land uses within the proposed Designated Infill Area as of June 19, 2002, calculated according to Table 6 of the Airport Land Use Plan;
- $A_{(mixed)}$ – the total net land area devoted to mixed residential and non-residential development within the proposed Designated Infill Area as of June 19, 2002;
- $DU_{(mixed)}$ – the total number of dwelling units located on properties devoted to mixed residential and non-residential land uses within the proposed Designated Infill Area as of June 19, 2002; and
- $P_{(mixed)}$ – the total number of persons expected to be attracted by development which existed on properties devoted to mixed residential and non-residential land uses within the proposed Designated Infill Area as of June 19, 2002,

calculated according to Table 6 of the Airport Land Use Plan.

(b) A proposed Designated Infill Area may be established only if land uses not in conformity with this Airport Land Use Plan were developed on a minimum of 75% of the parcels within the proposed infill area prior to June 19, 2002.

(c) A Designated Infill Area shall be as compact as possible. The area of the Designated Infill Area must be no larger than necessary to encompass incompatible land uses existing on or prior to June 19, 2002. The Designated Infill Area shall not serve to extend the perimeter or substantially increase the size of the land area occupied by uses inconsistent with noise, safety, overflight, or airspace protection provisions of the Airport Land Use Plan.

(d) A Designated Infill Area shall not include any contiguous area of undeveloped land, whether composed of one parcel or multiple parcels, that is larger than one acre, unless such area is surrounded on all sides (excluding roadways, railroad tracks, utility transmission lines, and other public rights-of-way) by uses that were established prior to June 19, 2002 and that are not in conformity with the Airport Land Use Plan.

(e) A Designated Infill Area shall not include any area of land occupied by uses consistent with the Airport Land Use Plan, whether composed of one parcel or multiple parcels, that is larger than one acre, unless such area is surrounded on all sides (excluding roadways, railroad tracks, utility transmission lines, and other public rights-of-way) by uses that were established prior to June 19, 2002 and that are not in conformity with the Airport Land Use Plan.

(f) A Designated Infill Area may not include any land located within the Runway Protection Zone or within Airport Safety Area S-1a, as established by the Airport Land Use Plan.

(g) A Designated Residential Infill Area may not include any land area located within the 60-dB CNEL airport noise contour, as established by the Airport Land Use Plan.

(h) The Average Net Residential Density ($RD_{(net)}$) of a Designated Infill Area is defined to be equal to the number of residential dwelling units, excluding second units, existing within the infill area as of June 19, 2002 ($DU_{(res)}$) divided by the total land area (in acres) of all lots devoted to residential land uses ($A_{(res)}$). The number of dwelling units is to be determined according to the definitions and methodologies set forth in the Airport Land Use Plan.

(i) The Average Gross Residential Density ($RD_{(gross)}$) of a Designated Infill Area is defined to be equal to 0.85 x $RD_{(net)}$.

(j) The Average Net Non-Residential Land Use Intensity ($NRI_{(net)}$) of a Designated Infill Area is defined to be equal to the total number of persons who could be attracted by non-residential land uses within the infill area as of June 19, 2002 ($P_{(non-res)}$) divided by the total land area (in acres) of all lots devoted to non-residential land uses

($A_{(non\text{-}res)}$). The numbers of persons attracted by various types of non-residential land use are to be determined according to the definitions and methodologies set forth in the Airport Land Use Plan.

(k) The Average Gross Non-Residential Land Use Intensity ($NRI_{(gross)}$) of a Designated Infill Area is defined to be equal to 0.85 x $NRI_{(net)}$.

(l) The Average Net Mixed Land Use Intensity ($MUI_{(net)}$) of a Designated Infill Area is defined to be equal to the total number of persons who could be attracted by the non-residential component of mixed land uses existing within the infill area as of June 19, 2002 ($P_{(mixed)}$), plus ten times the number of dwelling units existing within mixed-use developments as of June 19, 2002 (10 x $DU_{(mixed)}$), divided by the total land area (in acres) of all lots devoted to mixed residential and non-residential land uses ($A_{(mixed)}$). The numbers of persons attracted by various types of non-residential land use and the number of dwelling units are to be determined according to the definitions and methodologies set forth in the Airport Land Use Plan.

(m) The Average Gross Mixed Land Use Intensity ($MUI_{(gross)}$) of a Designated Infill Area is defined to be equal to 0.85 x $MUI_{(net)}$.

9.2. Exempt Infill Development – A proposal for development of land within the Airport Land Use Planning Area in a manner which is exempt from review by the Airport Land Use Commission. A proposed project is an Exempt Infill Development only if all of the following conditions are met:

(a) The entire area of the project site lies within a Designated Infill Area.

(a) The entire gross area of the project site is 20 acres or less.

(c) All residential land uses or mixed residential/commercial land uses are located within a Designated Residential Infill Area.

(d) The gross residential density of the proposed project does not exceed $RD_{(gross)}$ of the Designated Infill Area and the net residential density of any parcel within the proposed project does not exceed $RD_{(net)}$ of the Designated Infill Area.

(e) The gross non-residential intensity of use of the proposed project does not exceed $NRI_{(gross)}$ of the Designated Infill Area and the net non-residential intensity of use of any parcel within the proposed project does not exceed $NRI_{(net)}$ of the Designated Infill Area.

(f) The gross mixed land use intensity of the proposed project does not exceed $MUI_{(gross)}$ of the Designated Infill Area and the net mixed land use intensity of any parcel within the proposed project does not exceed $MUI_{(net)}$ of the Designated Infill Area.

(g) The proposed project would not result in the creation of any residential dwelling units within the 60-dB CNEL airport noise countour, as established by this Airport

Land Use Plan.

(h) No structure or land use within the proposed project area would constitute an obstruction or a hazard to aircraft operations, as defined by the Airport Land Use Plan.

(i) An avigation easement has been recorded or will be required for each parcel within the project area.

9.3. Small Scale Infill Project – A proposal for development of individual parcels of land, or small groups of such parcels, within the Airport Land Use Planning Area in a manner which is inconsistent with the Airport Land Use Plan compatibility criteria for the intended site location, but which is similar to surrounding land uses which were in existence prior to June 19, 2002. A proposed Small Scale Infill Project may be approved by a local agency only if all of the following conditions are met:

(a) The entire net acreage of the project site is 1 acre or less.

(b) The proposed project would not include or create more than four legal parcels.

(c) The project site is already served with water, sewer, electricity and other infrastructure.

(d) The project site fronts on a street that was named and paved prior to June 19, 2002.

(e) At least 65% of properties which are adjacent to the project site and which were developed prior to June 19, 2002 were occupied on that date by existing uses similar in character to and of equal or greater density/land use intensity, than those proposed. Properties to be considered adjacent to the proposed project site are those which are located on the same side of the street and which are, in part or in whole, within:

- a distance of 300 feet from any boundary of the proposed project site, as measured in both directions along boundary of the street right away, or
- a distance of 600 feet from any boundary of the proposed project site, as measured in one direction along boundary of the street right away.

(f) The residential density of each parcel within the proposed project will not exceed the greater of the following:

- the average residential density, as of June 19, 2002, of all developed residential land uses which are adjacent to the proposed project site, as defined in (e) above, or
- the net infill residential density permitted by Table 6-4 of the Airport Land Use Plan.

(g) The non-residential land use intensity of each parcel within the proposed project will not exceed the greater of the following:

- the average non-residential land use intensity, as of June 19, 2002, of all non-residential land uses which are adjacent to the proposed project site, as defined in (e) above, or
- the net infill non-residential intensity of use permitted by Table 6-4 of the Airport Land Use Plan.

(h) The mixed land use intensity of each parcel within the proposed project will not exceed the greater of the following:

- the average mixed land use intensity, as of June 19, 2002, of all mixed land uses which are adjacent to the proposed project site, as defined in (e) above, and
- the net mixed land intensity of use permitted by Table 6-4 of the Airport Land Use Plan.

(i) The proposed project would not result in the creation of any residential dwelling units within the 60-dB CNEL airport noise countour, as established by this Airport Land Use Plan.

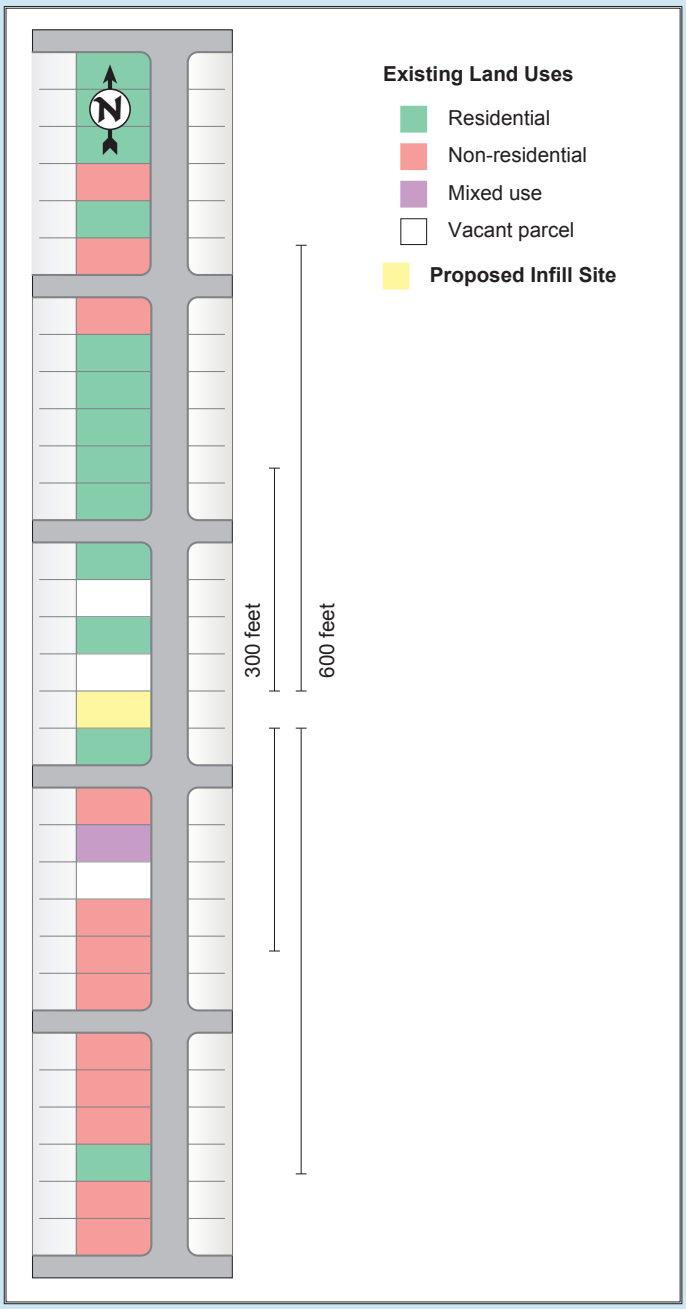
(j) No structure or land use within the proposed project area would constitute an obstruction or a hazard to aircraft operations, as defined by the Airport Land Use Plan.

(k) An avigation easement has been recorded or will be required for each parcel within the project area.

(l) The proposed project is consistent with the local agency's land use and zoning regulations governing the existing, already developed, surrounding area.

Example: Small Scale Infill Development

In the figure shown, a development is proposed for the parcel shown in yellow. The site is 5000 square feet and, for purposes of this discussion will be considered to be located in Airport Safety Zone S-1c.



Since the size of the proposed site is well below one acre, the project is eligible to be considered as a small scale infill development.

When existing land uses located within 300 feet on either side of the proposed development are considered, however, it is seen that there are 12 parcels that lie, in part or in whole, within this distance. Of these, 3 parcels are vacant. Of the nine developed parcels, three (33%) are non-residential, five (56%) are residential, and one (11%) is mixed-use. With this methodology, the project cannot meet the requirement that 65% of adjacent properties must be occupied by land uses similar to those proposed for the site.

In examining the eleven properties which lie within 600 feet of the proposed project site to the south, however, it is found that seven (70%) of the ten developed parcels are devoted to non-residential land uses. Under the Small Scale Infill provisions of the ALUP, a non-residential project could be approved for the site. The maximum allowable net non-residential land use intensity would be the average land use intensity of the seven adjacent non-residential parcels or 345 persons per acre (ALUP Table 9), whichever is greater.

Additionally, review of existing land uses within 600 feet to the north of the proposed

project site shows that seven (78%) of nine developed parcels contain residential land uses. Consequently, the Small Scale Infill provisions would also allow approval of a residential development at this site. The maximum allowable net residential density would be the average of the densities on the seven adjacent residential properties, but, in this example, would be no less than 8.7 dwelling units/acre (1 DU/5000 sq. ft.), even if all of the nearby properties are single family residences.

Approval of a development on this site would also be contingent on credible assurance that any proposed uses would not create an obstruction or a hazard to aerial navigation and upon recording of an avigation easement with the County Clerk of San Luis Obispo County.

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Section 10

Specific Land Use Provisions for the Margarita Area

10.1. Special Notes Regarding the Margarita Specific Plan Area

a. This Section of the Airport Land Use Plan refers to "Airport Planning Zone 3", "Airport Planning Zone 4", and "Airport Planning Zone 5". These Zones had wide applicability in previous versions of the ALUP, but have been superseded. At this time, the previously-designated Airport Land Use Zones 3, 4, and 6 are only applicable within the Margarita Specific Plan Area. To minimize the possibility of confusion, these zones have been renamed "Margarita-Airport Zone 3" (MAZ3), "Margarita-Airport Zone 4" (MAZ4), and"Margarita-Airport Zone 6" (MAZ6). The configuration of these Zones is, as applied to the Margarita Specific Plan Area, is shown in Figure 10-1.

b. The term "noise-sensitive uses", for purposes of Section 10 only shall be construed to mean only those uses which were designated as "noise-sensitive" by the June 19, 2002 revision of the ALUP. These are: residential development (except temporary buildings), schools, health care services (including hospitals), nursing and personal care facilities, churches, public assembly and entertainment, libraries, and museums.

c. The dimensions of the "Inner Turning Zone" and Outer Safety Zone" shall, for purposes of this section only, be as defined in the 2011 Airport Land Use Planning Handbook of the Division of Aeronautics of the California Department of Transportation, shall be applied to the previous runway length of 5300 feet, rather than the planned 6000 foot length, and are as illustrated in Figure 10-1.

10.2. Applicability of Specific Land Use Provisions for the Margarita Area

a. Section 10 is applicable only to the Margaria Area as shown in Figure 10-1. The provisions of Section 10 shall apply only to Airport Land Use Commission actions on new or amended general plans, specific plans, zoning ordinances, building codes, and individual projects applicable to land which lies entirely within the Margarita Area shall be subject to this section.

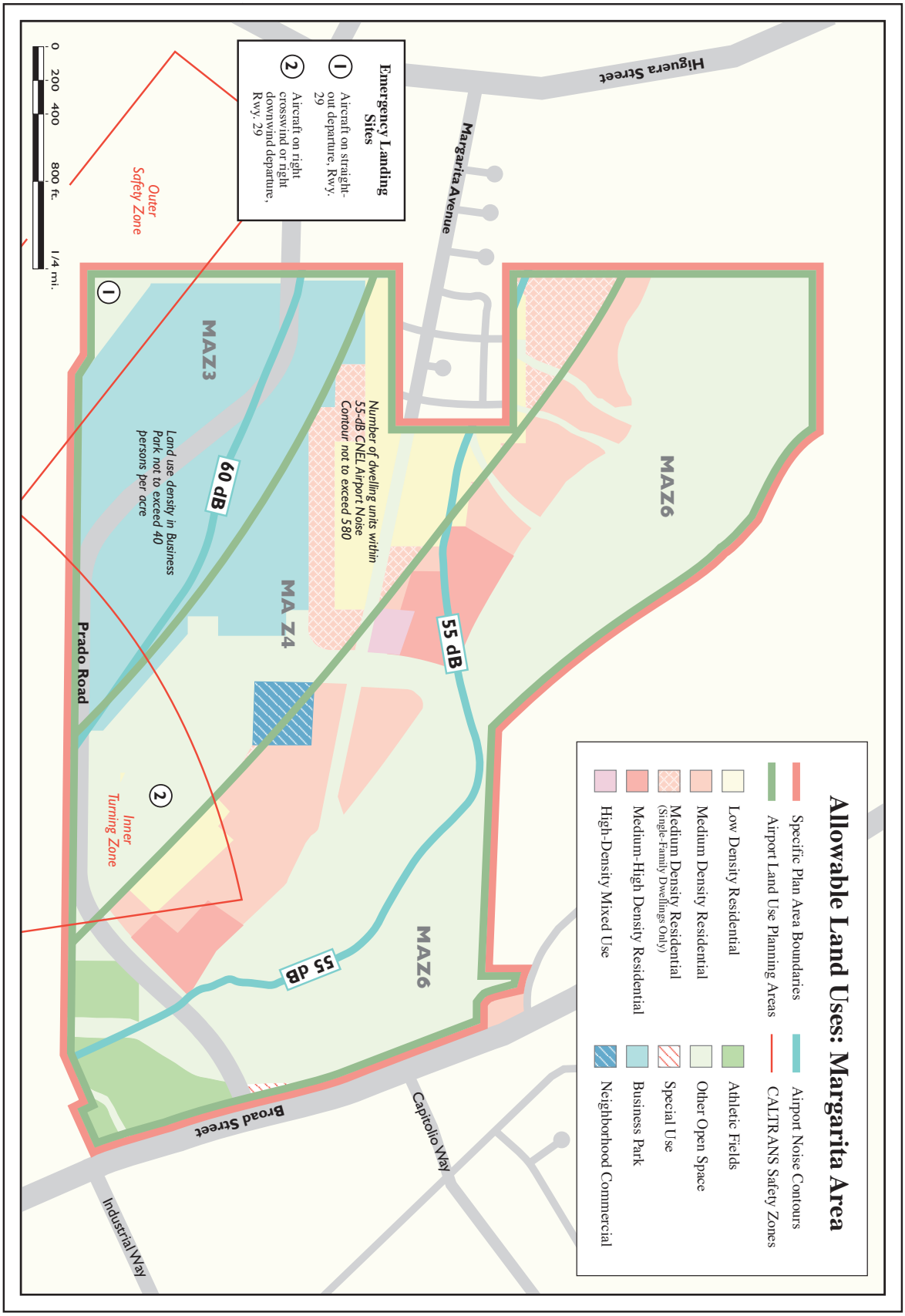
b. In the event that a new or amended local action (general plan, specific plan, zoning ordinances, or building code) applies both to land within and outside of the Margarita Area, such planning instrument will be found consistent with the Airport Land Use Plan only if:

   i. The proposed local action is in conformity with Sections 1-9 of this ALUP with respect to land that lies outside of the Margarita Specific Plan area, and

   ii. The proposed local action is in conformity with Sections 10 of this ALUP with respect to land that lies within the Margarita Specific Plan area.

c. In the event that the site of a proposed development project includes both land within and outside of the Margarita Area, the development proposal will be considered as two separate proposals with the dividing line between the two project sites lying along the border of the Margarita Area.

Figure 10-1: Allowable Land Uses – Margarita Area



d. Unless specifically modified by the provisions of Section 10.4, all of the Land Use Policies set forth with respect to Noise, Safety, Airspace Protection, and Overflight in Sections 4 through 8 of this Airport Land Use Plan shall fully apply to the Margarita Area.

e. Land uses that are in conformance with the Section 10.4, but are in noncompliance with any Land Use Policy not specifically superceded or invalidated by this Section are prohibited by the Airport Land Use Plan. A general plan, general plan amendment, specific plan, specific plan amendment, zoning ordinance, zoning ordinance amendment, or building ordinance that permits or fails to adequately prohibit such land uses shall be determined to be inconsistent with the ALUP.

f. Section 10 is intended for use as one component of the comprehensive strategy for land use planning created by the overall Airport Land Use Plan. The provisions of this Section are valid only within the context of the policies and figures that are provided in other Sections. If any portion of the Airport Land Use Plan is invalidated or modified, other than by action of the Airport Land Use Commission itself, and if such invalidation or modification substantially impacts the authority of the Airport Land Use Plan to regulate or influence land use planning decisions within the Airport Planning Area, this Section shall become null and void, and its contents shall not constitute a precedent nor prejudice any subsequent deliberations or decisions by the Airport Land Use Commission.

10.3. Margarita Area Planning Standards for Airport Compatibility

10.3.1. Noise Standards

a. The total number of dwelling units within the projected 55 dB CNEL contour shall not exceed 580 dwelling units.

b. All residential or other noise-sensitive land uses within the projected 55 dB CNEL contour shall be located within the areas specified in Figure 10-1.

c. Residential or other noise-sensitive land uses within the projected 55 dB CNEL contour shall be situated as far as is feasible from the projected 60 dB CNEL contour and as far as is feasible from the departure (northwesterly) end and from the extended centerline of Runway 29 at the Airport.

d. Higher density residential land uses in MAZ6 will be clustered and will be situated closer to the projected 55dB CNEL contour than to the projected 60 dB CNEL contour.

e. All residential or other noise-sensitive land uses within the projected 55 dB CNEL contour shall incorporate design and construction features that will reduce aviation-related interior continuous noise levels to 45 dB CNEL or less in all interior spaces intended for human habitation.

f. All residential or other noise-sensitive land uses within the projected 55 dB CNEL contour shall incorporate design and construction features that will reduce aviation-related interior single-event noise levels to 60 dB or less in all interior spaces intended for human habitation.

g. In common use areas, facilities will be strongly encouraged to provide residents with an opportunity to participate in outdoor-oriented activities (e.g., child play, barbecues, swimming, tennis) in environments where, by partial or full enclosure, baffling, or other design and construction features, aircraft noise is attenuated.

h. Design standards set forth in general and specific plans or other planning instruments shall strongly encourage individual residential and other noise-sensitive land uses to incorporate design and construction features that will provide residents with an opportunity to participate in outdoor-oriented activities in environments that afford a significant degree of aircraft noise attenuation. Examples of such environments include:

   i. Appropriately landscaped interior noise-sheltered garden courts or atria (in multi-family residential buildings)

   ii. Outdoor covered and noise-insulated patio areas or "garden rooms"

   iii. Fully or partially enclosed swimming pools and tennis courts

10.3.2. Safety Standards

a. Within MAZ3, all residential land uses shall be prohibited.

b. Within MAZ4:

   i. The total number of residences allowed shall not exceed a maximum of 260 dwelling units, and

   ii. Multi-family residential land uses shall be prohibited. Residential units may not be attached or share a common wall, although single-family residences with a zero lot-line setback on one side will be permissible, and

   iii. A minimum of 22% of the land area will be preserved as open space. For purposes of this Section, open space shall be defined as land which is substantially free of structures, vehicles, and trees, which is relatively smooth and level, and which is devoted to use characterized by low occupancy levels. Land uses which may be consistent with this definition of open space include undeveloped land – "green belt" reserve; parks; agriculture – grazing, vineyards or field crops (but not forestry or orchards); certain recreational uses (e.g., golf courses, shooting ranges); cemeteries; and streets, roads, highways, parking lots, and rights-of-way, provided that such hazards as utility poles and wires, and trees are appropriately prohibited.

c. Within the Outer Safety Zone (as defined by the State of California's Airport Land Use Planning Handbook, October, 2011), all buildings shall be prohibited.

d. Within the Inner Turning Zone (as defined by the State of California's Airport Land Use Planning Handbook, October, 2011):

   i. the total number of residences allowed shall not exceed a maximum of 40 dwelling units, and

   ii. residential land uses shall be situated as far as feasible from the departure

end and from the extended centerline of runway 29 at the Airport, and

iii. A minimum of 40% of the land area will be preserved as open space.

e. Within the portion of MAZ4 which also lies within the Inner Turning Zone (as defined by the State of California's Airport Land Use Planning Handbook, 2011):

i. Residential land uses shall be prohibited, and

ii. Non-residential structures shall be minimized.

f. Unobstructable emergency landing sites for aircraft shall be provided as follows:

i. An unobstructable emergency aircraft landing site which is at least 150 feet in width and 1,000 feet in length and which is located and oriented for use by aircraft executing a right crosswind or right downwind departure from runway 29 shall be provided, and

ii. An additional open space shall be preserved at the southwest corner of the Margarita Area (as shown in Figure 5) for incorporation into a future unobstructable emergency aircraft landing site for use by aircraft executing a straight out departure from Runway 29 or a straight in arrival to Runway 11.

g. Schools and other public-assembly buildings shall be prohibited in the Margarita Area.

h. All non-residential land uses within the Margarita Area shall be situated within the areas specified in Figure 10-1.

i. Nonresidential density of use within the area designated as Business Park by Figure 11 shall not exceed 40 persons per acre.

10.4 Specific Land Use Policies-Margarita Area

10.4.1 Noise Policies

Policy MN-1 – Within the Margarita Area:

a. Policy N-2 shall not apply, and

b. Not withstanding any other provision of this ALUP, a proposed general plan, general plan, general plan amendment, specific plan, specific plan amendment, zoning ordinance, zoning ordinance amendment, building regulation modification, or individual development proposal will be determined to be inconsistent with the ALUP if the proposed local action would permit or fail to sufficiently prohibit residential or other noise-sensitive development within the projected 55 dB CNEL contour, unless:

i. the local action would permit only those residential or other noise-sensitive developments which adhere to the requirements of the Margarita Area Planning Standards for Airport Compatibility, as set forth in Section 10.3, or

ii. the local action would permit only those residential or other noise-sensitive developments which meet the requirements for an Exempt Infill Development, as set forth in Section 9.3 of this ALUP, or for a Small Scale Infill Development, as set forth in Section 9.4

10.4.2 Safety Policies

Policy MS-1 – Within the Margarita Area:

a. Policy S-2 and S-3 shall not apply, and
b. Notwithstanding any other provision of this ALUP, any local action, including a proposed general plan, general plan amendment, specific plan, specific plan amendment, zoning ordinance, building regulation modification, or individual development proposal will be determined to be inconsistent with the ALUP if the proposed local action would permit or fail to adequately prohibit any development or land use which fails to conform adhere to the standards set forth in Section 10.3.

Section 11

Procedural Policies

11.1 Reservation of Right of Review

In accordance with Public Utilities Code Section 21676(b), prior to the amendment of a general plan or specific plan, or the adoption or approval of a zoning ordinance, zoning ordinance amendments or building regulation with the planning boundaries established by this ALUC, the referring agency shall first refer the proposed local action to the ALUC. The ALUC shall make a finding, on these and other projects referred, of whether or not the amendment, ordinance, regulation, or project is consistent with the ALUP. All determinations of consistency or inconsistency shall be made by the ALUC acting in its official capacity, and no such decisions may be delegated to the staff of the ALUC nor to any referring agency.

A finding by the ALUC that any project, general plan or general plan amendment, specific plan or specific plan amendment, zoning ordinance, or building regulation is consistent with the ALUP does not constitute a finding that a subsequent version of the project or action which has been modified from the version submitted to the ALUC is consistent nor does it constitute a finding that any subsequent project or action on the part of the referring agency is consistent.

11.2 Information Required for ALUC Review

Failure to provide the ALUC with required information for any proposed project or local action shall constitute sufficient grounds for a determination of inconsistency.

To ensure that appropriate information is submitted, the ALUC may, by a majority vote, require that each future referral for determination of consistency be accompanied by a completed ALUC Referral Form, together with all required attachments. The ALUC Referral Form shall be devised and provided by the ALUC, and shall be revised as necessary. The ALUC Referral Form is not an element of the ALUP, and revision of the Referral Form shall not constitute nor require an amendment to the ALUP.

11.3 Timing of ALUC Referrals

In order to avoid unnecessary delays in the overall processing of a plan or project, referral for review by the ALUC should, in general be made as soon as all of the requirements for review are met. This practice will allow the ALUC's review to be duly considered by the local jurisdiction prior to formalizing its action.

a. For new general plans, specific plans, or zoning ordinances and for major modifications to existing general plans, specific plans, or zoning ordinances, it is strongly suggested that a preliminary review by the ALUC be completed prior to it being released for public comment and a formal review be completed prior to initial reading of the proposed local action by the referring agency..
b. For minor modifications to existing general plans, specific plans, zoning ordinances, or

building regulations and for voluntary reviews of individual projects, depending on the normal scheduling of meetings, it may be appropriate that review by the ALUC be carried out concurrently with review by the local planning commission and other advisory bodies.

In all instances, review by the ALUC must be accomplished before final action by the city council or board of supervisors.

11.4 Timing of ALUC Review

The ALUC shall make a determination of consistency or inconsistency within sixty (60) days after the date on which all required information was received from the referring agency.

If the ALUC has not acted upon a referral within sixty (60) days after all information necessary for review of the proposed local action is received, and the proposed local action involves a general or specific plan, zoning ordinance, or building regulation, the proposed local action shall be deemed consistent with the ALUP.

If, at the time of initial receipt of a referral from a referring agency, the information required for ALUC review is incomplete, the ALUC or its staff shall notify the referring agency, indicating the specific items which are incomplete. If the required information is not received, the ALUC may make a finding that the referred local action is inconsistent with the ALUP based on failure of the referring agency to submit sufficient information for review.

11.5 Referring Agency Options

If the ALUC determines that a proposed local action is inconsistent with the ALUP, the referring agency shall be notified and the governing body of the referring agency may, after a public hearing, overrule the ALUC if both of the following conditions are met:

a. The governing body of the local agency shall, at least 45 days prior to the decision to overrule the commission, provide to the ALUC and the California Department of Transportation a copy of the proposed decision and findings, as required by State law, and shall include any comments from the ALUC and/or the Division of Aeronautics in the public record of any final decision to overrule the Commission.

b. The governing body of the referring agency votes to overrule the ALUC's determination by at least a two-thirds vote of a quorum of its members; and

c. The governing body of the referring agency makes specific findings that the proposed local action is consistent with the purposes of Article 3.5 of the California Public Utilities Code, as stated in Section 21670, as follows:

    i. to provide for the orderly development of the Airport as a public use airport and the area surrounding the Airport so as to promote the overall goals and objectives of the California airport noise standards pursuant to Public Utilities Code Section 21669 and to prevent the creation of new noise and safety problems; and

    ii. to protect public health, safety, and welfare by ensuring the orderly expansion of airports and the adoption of land use measures that minimize the public's exposure to excessive noise and safety hazards within areas around the Airport to the extent

that these areas are not already devoted to incompatible uses.

Such findings may not be adopted as a matter of opinion, but must be supported by substantial evidence.

Should the ALUC determine that a general or specific plan has not been made consistent with the ALUP and when a referring agency has failed to override the ALUC by the above procedure, the ALUC may require that the referring agency submit all subsequent actions, regulations, and permits to the ALUC for review.

11.6 Amendment of the ALUP

The ALUP shall be reviewed by the ALUC as often as is necessary to accomplish its purposes, and may be amended by the ALUC no more often than once in any calendar year.5

Within 60 days after the adoption of any amendment to the ALUP, the ALUC shall review the general and specific plans of all affected local agencies to determine whether they are consistent with the ALUP, as amended. If the plan or plans are found to be inconsistent, the referring agency shall be notified and that referring agency shall hold a hearing to reconsider its plan or plans.

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Section 12

Glossary

Agricultural processing: A variety of operations performed on crops after harvest to prepare them for market on-site or further processing and packaging at a distance from the agricultural area. Includes, but is not limited to alfalfa cubing, hay baling and cubing, corn shelling, drying of corn, rice, hay, fruits or vegetables, pre-cooling and packaging of fresh or farm-dried fruits and vegetables, grain cleaning and custom grinding, custom grist mills, custom milling of flour, feed, or grain, grading and packaging of fruits and vegetables, tree nut hulling and shelling, cotton ginning, wineries, alcohol fuel production, and receiving and processing of green material which is not produced on-site (commercial composting).

Air carrier: An operator that:

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 United States Postal Service.

Air carriers are certified in accordance with Federal Aviation Regulations.

Air charter: An air carrier certified in accordance with Federal Aviation Regulations and authorized to provide, on demand, public transportation of persons and property by aircraft. Air charters generally operate small aircraft “for hire” for specific trips.

Air taxi: See air charter.

Air traffic control: A term used to denote a number of different types of facilities which are operated by or under the auspices of the Federal Aviation Administration and which provide informational, navigational, and collision avoidance services to aircraft in flight. Air traffic control towers and air route traffic control centers are elements of the air traffic control system.

Air traffic control tower (ATCT) (“tower”): A facility located within the physical boundaries of certain airports and consisting of a tower which provides visual and/or radar tracking, ground-to-air radio communications, traffic management, and limited informational, navigational, and separation services to aircraft operating in the immediate vicinity of an airport.

Air route traffic control center (ARTCC): A facility which provides radar tracking and informational, navigational, and separation services to aircraft operating beyond the immediate vicinity of an airport.

Aircraft, parts, instruments – repair and service (as a land use): Any establishment which, as its primary activity, performs repair, maintenance, inspection, fabrication, or other services which are necessary or useful in maintaining the airworthiness, appearance, value, comfort,

or functionality of aircraft or any component thereof.

Airport operation: A take off or a landing.

Amusement arcade: An establishment offering, as a primary business activity, participation in electronic or mechanical games.

Amusement park: A permanent site where entertainment, food, rides, games, and the like are offered for viewing or sale.

Angle of descent: The angle, with respect to a horizontal plane, of the flight path of an aircraft descending from a higher altitude to a lower altitude (usually expressed in degrees or in feet per nautical mile). Also referred to as descent slope.

Animal raising: The keeping, feeding, or raising of animals as a commercial agricultural venture, avocation, hobby, or school project, either as a principal land use or subordinate to a residential use. Includes the keeping of common farm animals, small animal specialties (such as rabbit farms and other fur-bearing animals), bee farms, aviaries, worm farms, household pets, etc.

Approach angle: The angle, with respect to a horizontal plane, of the flight path of an aircraft descending to land at an airport (usually expressed in degrees or in feet per nautical mile). Also referred to as approach slope.

Approach lighting system (ALS): An airport lighting system which, by means of a standardized array of lights on the ground provides visual cues which enable pilots or aircraft approaching the runway in conditions of darkness or poor visibility, to align the flight path of the aircraft with the extended centerline of the runway.

Bank: Any land use whereby some or all of the financial services customarily provided by banking institutions are offered to the general public. Examples include traditional banks, savings and loan associations, and credit unions. The provision of banking services at a site which is predominantly devoted to a compatible use (e.g., in-store supermarket bank branches, automated teller machines), however, shall not be considered as banks in the context of this ALUP.

Bar, tavern: Any establishment engaged, as a primary business, in the sale of alcoholic beverages for on-site consumption. Entertainment, if provided, must be incidental, and no dance floor may be provided. Establishments which feature a dance floor and/or entertainment as a principal use are classified as “nightclubs or discotheques”.

Base leg: A segment of the standard airport traffic pattern which extends at right angles from the extended runway centerline at some distance from the approach end of the runway. The base leg extends from the downwind leg of the traffic pattern to the final approach course (extended runway centerline) and is flown in the direction toward the runway centerline. The altitude of aircraft flying the base leg is usually between 1000 and 400 feet above ground level.

Bed & Breakfast: A structure or facility which is intended or suitable for short-term occupancy by persons as a temporary dwelling and which, by its nature, appearance, or presentation would appear to offer occupants a peaceful, pastoral, or rural experience. Characteristicss which distinguish a bed and breakfast inn is distinguished from a hotel or motel typically include: openable windows, an absence of central climate control systems, and/or extensive outdoor landscaping or lawns, walking paths, or outdoor dining/conversation areas.

Broadcast studio: Any commercial or public communications use, including telegraph, telephone, radio and television broadcasting and receiving stations and studios and motion picture studios, with facilities entirely within buildings.

Campground: Any land use which permits individuals to sleep in the outdoors, in a tent, or in a recreational vehicle.

Caretaker residence: A permanent residence that is secondary or accessory to the primary use of the property. The purpose of a caretaker residence must be to provide housing to an individual who is employed on the site of the nonresidential use and whose presence is required for security purposes or to provide 24-hour care or monitoring of people, plants, animals, equipment, stored goods, or other conditions on the site.

Cemetery, mausoleum, or columbarium: Any establishment engaged in subdividing property and offering burial plots or air space for sale. Includes animal cemeteries, cemetery real estate operations, cemetery associations, and funeral parlors accessory to a cemetery, mausoleum, or columbarium. Funeral parlors and related facilities as a principal use are considered to be “personal services”.

Church: Any land use devoted exclusively or primarily to religious worship. Classrooms and/or meeting rooms may be included as part of a church if sufficient conditions are placed upon the development to ensure that such facilities will be utilized only for religious instruction or church-related meetings and that their use for such purposes will remain subsidiary to the primary activity of religious worship. In the absence of such conditions, classroom facilities which would be suitable for regular religious or nonreligious education of students will be considered a school.

Circle-to-Land Procedure: A series of standardized aerial procedures which enable aircraft which have completed an instrument approach intended to culminate in a landing on a specified runway to maneuver for landing on a different runway than specified in the basic instrument approach while maintaining visual contact with the airport.

Climb gradient: The angle, with respect to a horizontal plane, of the flight path of an aircraft ascending from a lower altitude to a higher altitude (usually expressed in feet per nautical mile).

Closed traffic: An airborne maneuver by which an aircraft takes off from and lands at an airport without leaving the immediate airport vicinity (usually performed as a flight training or practice maneuver) or the airport traffic pattern flown by such an aircraft.

Community noise equivalent level (CNEL): A measure, in decibels, of the cumulative noise exposure at a given site. The CNEL mathematically increases the significance of noise events occurring during evening and nighttime hours, in response to the widely-held assumptions that such events are more intrusive than similar events occurring during daytime hours.

Compatible: A designation employed within the Land Use Matrix to denote that a proposed land use is not prohibited or restricted by the Land Use Matrix within the specified zone.

Consistent: A determination made by the ALUC when a referral meets the conditions outlined in the ALUP.

Correctional Institution: A facility for confinement of offenders sentenced by a court.

Crop production: Growing of grains, field crops, vegetables, melons, fruits, tree nuts, flower fields, seed production, ornamental crops, tree and sod farms, together with associated crop preparation services and harvesting activities, including but not limited to mechanical soil preparation, irrigation system construction, spraying, crop processing, and sales in the field not involving a permanent structure.

Crosswind departure: A VFR departure procedure in which an aircraft exits the airport area by extension of the crosswind leg of the traffic pattern.

Crosswind leg: A segment of the standard airport traffic pattern which extends at right angles from the extended runway centerline at some distance from the departure end of the runway. The base leg extends from the upwind leg of the traffic pattern to the downwind leg and is flown in the direction away from runway centerline.

Course Deviation Indicator (CDI): An instrument commonly installed in aircraft and utilized for aerial navigation, which depicts the location, in the horizontal plane, of the aircraft relative the intended direction of flight.

Day-care facility for children: A facility, irrespective of size or number of clients, which provides nonmedical care and supervision to children under 18 years of age for periods of less than 24 hours per day.

Day-care facility, adult: A facility, irrespective of size or number of clients, which provides nonmedical care and supervision for periods of less than 24 hours per day to persons who are 18 years of age or older but who are in need of personal services, supervision, or assistance for sustaining the activities of daily living.

Decibel (dB): A unit for expressing the relative intensity of sounds on a scale of zero for the average least perceptible sound to about 130 for the average pain level.

Decision altitude (DA): The minimum altitude above mean sea level to which an aircraft operating according to a precision instrument approach may descend without visual contact with the airport or the airport environs.

Decision height (DH): The minimum vertical distance above the height of the intended landing

zone to which an aircraft operating according to a precision instrument approach may descend without visual contact with the airport or the airport environs.

Departure Procedure (DP): See instrument departure procedure.

Descent slope: The angle, with respect to a horizontal plane, of the flight path of an aircraft descending from a higher altitude to a lower altitude (usually expressed in degrees or in feet per nautical mile). Also referred to as angle of descent.

Distance Measuring Equipment (DME): An apparatus, consisting of a ground-based radio transmitter and a specialized airborne receiver, which provides information regarding the slant-range distance of an aircraft from the ground-based facility. Also, by extension, any airborne maneuver, course, or flight path which is determined through the application of DME information.

Dormitory: A building used or intended for use as group quarters for members of a student body, military unit, or religious order and located on the site of a college, university, boarding school, convent, monastery, military camp, or other similar institutional use.

Downwind departure: A VFR departure procedure in which an aircraft exits the airport area by extension of the downwind leg of the traffic pattern.

Downwind leg: A segment of the standard airport traffic pattern which is parallel to the runway of intended landing, is usually between 1/2 and 1 1/2 miles lateral to the runway, and is flown in a direction opposite to the direction of intended landing. The downwind leg is, in most instances, is the initial leg of the traffic pattern for landing aircraft. The altitude of general aviation aircraft flying the base leg is usually between 1000 and 800 feet above ground level.

Drive-in theatres: Facilities for presentation of motion pictures for viewing from vehicles. May include subordinate eating places or play areas for children.

Electrical generating plant: Any facility engaged in the production of electric energy for sale. The electricity may be generated from oil, gas, coal, nuclear materials, water, wind, solar energy, bio-gas, municipal or agricultural waste, or geothermal energy. Does not include the generation of electrical energy by means of wind, water, solar panels or temporary generator if the primary use for such energy is on-site consumption.

Employee sleeping room: Sleeping quarters which are located on the site of a nonresidential business and are provided, without charge, by an employer for temporary or transient use by employees in the course of or in conjunction with the performance of required duties.

Enplaned passengers: The total number of revenue-producing passengers boarding aircraft, including originating, stopover, and transfer passengers, in scheduled and nonscheduled services.

Fairgrounds: A site where temporary public or commercial gatherings are held under the sponsorship and control of private individuals or government entities and at which

gatherings entertainment, food, rides, games, crafts, and the like are offered for viewing or sale.

Farm equipment and supplies – sales: Land use primarily consisting of the sale, rental, or repair of agricultural machinery and equipment for use in the preparation and maintenance of the soil, the planting or harvesting of crops; also dairy and other livestock equipment. Includes agricultural machinery (except the sale of trailers, tractors, or other motorized self-propelled farm vehicles, which are included under "Auto, Mobilehome and Vehicle Dealers and Supplies"), dairy farm machinery and equipment, irrigation equipment, hay, grain, and feed sales, retail sales of prepackaged fertilizer and agricultural sprays. Sales may include the final assembly of farm machinery, implements, or equipment from component parts received from the manufacturer, but not the creation of such components from raw materials.

Farm support quarters: Residences, rooming or boarding houses, and mess halls for farm workers employed on and near land owned by the owner of the building site on which the quarters are located.

Fixed base operator (FBO): A provider of support services to users of an airport. Such services include fueling, hangaring, flight training, repair, maintenance, and other services.

Fraternity or sorority house: A residence for college or university students who are members of a social or educational association and where such organization holds meetings or gatherings.

General aviation: That portion of civil aviation which encompasses all facets of aviation except air carriers and air charters.

Glide slope: The vertical flight path flown by aircraft receiving and adhering to information from an apparatus which provides, by means of radio, light, or other signals, vertical guidance for approaching and landing at an airport.

Global positioning system (GPS): A navigational aid which determines the position, direction of flight, speed, and (to a limited extent) altitude of an aircraft by means of signals received from a constellation of earth-orbiting satellites.

Global positioning system (GPS) approach: A series of standardized, predetermined, and published aerial maneuvers which are based on navigational data received from earth-orbiting satellites and which enable aircraft to descend toward an airport with the intention of landing when meteorologic conditions are such that a safe approach cannot be made solely through the use of visual information. A typical GPS approach permits aircraft to descend to within 400-500 feet of the surface solely on the basis of satellite navigation aids.

Global positioning system (GPS) overlay: An FAA designation applied to certain instrument approach procedures originally designed to be executed by reference to ground-based navigational aids which authorizes pilots to perform the approach solely by reference to navigational information provided by earth-orbiting GPS satellites.

Grazing: The keeping of herbivorous animals at a density of less than two animals per acre.

Gross Area or Gross Acreage: For the purposes of this ALUP, the terms gross area and gross acreage will be considered interchangeable, and will be considered to indicate a measurement of the entire size of the site, parcel, intended use, or zone specified by a referral to the ALUC.

Gross Floor Area: For the purposes of this ALUP, the terms gross floor area is defined as the total number of square feet of floor area enclosed within the walls of a structure, including, for multi-story structures, the area on all floors. The gross floor area includes all common areas, such as hallways, entryways, atria, restrooms, and storage areas, as well as workspaces and dwelling units. Indoor areas designed exclusively for parking of vehicles owned by employees, residents, customers, or visitors are excluded, unless such vehicles are offerred for sale, lease, rental, or hire.

Hazardous, corrosive, or flammable chemicals: Refers to manufacturing land uses which entail the use of or result in the production of materials which are poisonous, infectious, caustic, corrosive, acidic, flammable, explosive, or radioactive to the extent that such materials could cause harm to persons who might be exposed to them.

Health services, ambulatory: Land use primarily for the furnishing of medical, mental health, surgical, and other personal health services on an outpatient basis. Includes offices of physicians, dentists, psychiatrists, osteopaths, opticians, chiropractors, and alternative or natural healers, as well as urgent care facilities and allied health services. Facilities offering inpatient care (hospitals, convalescent homes, skilled nursing facilities, etc.) are excluded, as are medical and dental laboratories.

High intensity land use: A land use which is characterized by a potential to attract dense concentrations of persons to a small or confined indoor or outdoor area, even for limited time periods, or which can attract above average concentrations of persons for longer periods of time, potentially aggravating the consequences of an aviation-related accident.

High occupancy residential use: Any dwelling, other than a residential care facility, in which the occupancy consists of six or more adults.

High voltage transmission lines: Any above ground facility for the long-distance transmission of electric power, including wires, towers, transformers, and insulators. Includes all structures and apparatus for transmission of power from a generating plant or distribution substation to distant communities or for transfer of power between communities. Wires and apparatus for distribution of power within a local community are excluded.

Homeless shelters: Any facility which regularly houses homeless people or persons needing protection from domestic violence on an overnight basis.

Home occupations: The gainful employment of the occupant of a dwelling, with such employment activity being subordinate to the residential use of the property, and there is no display, no stock in trade, and no commodity sold on the premises and no employees other than residents of the dwelling.

Homestays: A residential structure with a family or an individual in permanent residence where no more than two bedrooms (without cooking facilities) are rented for overnight transient lodging. Does not include provision of meals.

Hospital: A facility housing and offering a full range of acute and convalescent medical care to individuals who exhibit physical, emotional, or mental disability or illness.

Hotel/motel: Any structure or facility intended or suitable for short-term occupancy by persons as a temporary dwelling, with the exception of bed and breakfast facilities and homestays. Characteristicss which distinguish a hotel or motel from a bed and breakfast inn or homestay typically include: a central climate control system and absence of openable windows, and the absence of extensive outdoor landscaping or lawns, walking paths, or outdoor dining/conversation areas. Examples of this type of land use include hotels, motels, youth hostels, pensiones, and temporary shelters.

Inconsistent: A determination made by the ALUC when a proposed local action does not meet the conditions outlined in the ALUP.

Instrument approach: A series of standardized, predetermined, and published aerial maneuvers which are based on navigational data received from ground-based navigational aids or satellites and which enable aircraft to descend toward an airport with the intention of landing when meteorologic conditions are such that a safe approach cannot be made solely through the use of visual information.

Instrument departure procedure (DP): A series of standardized, predetermined, and published aerial maneuvers which are based on navigational data received from ground-based navigational aids or satellites and which enable aircraft to depart from an airport when meteorologic conditions are such that a safe departure cannot be made solely through the use of visual information. Formerly known as a standard instrument departure (SID).

Instrument flight rules (IFR): A set of FAA rules, regulations, and procedures which define flight operations under conditions which do not permit navigation by means of visual information alone. Also employed as an adjective to designate a flight plan which will enable an aircraft to operate under conditions which preclude navigation by means of visual information.

Instrument landing system (ILS): A precision instrument approach system which provides aircraft with both vertical (glideslope) and lateral guidance by means of radio signals transmitted from installations within the physical boundaries of the airport .

Instrument landing system (ILS) approach: A series of standardized, predetermined, and published aerial maneuvers which are based on vertical and lateral navigational data received from radio transmitters located within the physical boundaries of the airport and which enable aircraft to descend toward an airport with the intention of landing when meteorologic conditions are such that a safe approach cannot be made solely through the use of visual information. A typical ILS approach permits aircraft to descend to within 200 feet of the surface.

Instrument meteorologic conditions (IMC): Weather conditions specified in FAA regulations

under which aircraft are not authorized to takeoff, land, or maneuver under visual flight rules and may operate only by reference to electronic aids to navigation. The visibility and cloud clearance requirements for IMC are determined by the airspace designation in which and aircraft is operating, by the aircraft's altitude above both sea level and ground level, and by whether the aircraft is operating in daylight or at night.

Libraries and museums: Permanent public or quasi-public facilities (generally of a noncommercial nature) devoted to the storage and preservation of printed materials or physical artifacts and to providing public access to such items for scholarly research or personal intellectual enrichment. Includes libraries, museums, art exhibitions, planetariums, aquariums, botanical gardens, arboretums, and historical sites and exhibits.

Localizer (LOC): An apparatus which provides, by means of radio signals from a transmitter located within the physical boundaries of an airport and a specialized airborne receiver, lateral course guidance for aircraft descending to land.

Localizer approach: A series of standardized, predetermined, and published aerial maneuvers which are based on lateral guidance information received by means of a localizer transmitter located within the physical boundaries of an airport and which enable aircraft to descend toward an airport with the intention of landing when meteorologic conditions are such that a safe approach cannot be made solely through the use of visual information. Localizer approaches do not provide vertical guidance, but localizers are often coupled with glide slope transmitters. A typical localizer approach permits aircraft to descend to within 400-500 feet of the surface solely on the basis of radio navigation aids.

Localizer-type directional array (LDA): A type of apparatus which provides, by means of radio signals from a transmitter located within the physical boundaries of an airport and a specialized airborne receiver, lateral course guidance for aircraft descending to land. The primary distinction between an LOC and an LDA is that the final approach course provided by the LDA is not aligned with the runway centerline. Glide slope information is never provided in conjunction with an LDA.

Localizer-type directional array (LDA) approach: A series of standardized, predetermined, and published aerial maneuvers which are based on lateral guidance information received by means of an LDA transmitter located within the physical boundaries of an airport and which enable aircraft to descend toward an airport with the intention of landing when meteorologic conditions are such that a safe approach cannot be made solely through the use of visual information.

Manufacturing: The production, fabrication, or assembly of any product, including, but not limited to apparel products, chemical products, concrete, gypsum, or plaster products, electrical equipment, electronic or scientific instruments, food and kindred products, furniture, fixtures, glass products, lumber, wood products, machinery, metal products, motor vehicles, paper products, paving materials, plastic products, rubber products, and printed materials. Excluded are processes and facilities which produce or utilize hazardous, corrosive, or flammable chemicals; refining or bulk storage of petroleum products; and electrical generating plants.

Membership organizations facility: Permanent headquarters and meeting facilities for organizations operating on a membership basis for the promotion of the interests of members. Includes facilities for business associations, professional organizations, labor unions, grange and farm centers, civic/social/fraternal organizations, political organizations, and other membership organizations. Does not include country clubs in association with golf courses, which are included in “Outdoor Sports and Recreation”.

Minimum descent altitude (MDA): The minimum altitude above mean sea level to which an aircraft operating according to a non-precision instrument approach may descend without visual contact with the airport or the airport environs.

Minimum descent height (MDH): The minimum vertical distance above the height of the intended landing zone to which an aircraft operating according to a non-precision instrument approach may descend without visual contact with the airport or the airport environs.

Missed approach: An instrument approach which does not terminate in a landing. Usual reasons for a missed approach include failure to establish visual contact with the airport environs at the completion of an instrument approach, loss of course guidance, or instructions from air traffic control.

Missed approach course: A standardized, predetermined, and published flight path to be flown in the event of a missed approach.

Mobilehome park: Any area or tract of land where two or more mobilehome lots or spaces are leased or rented or held out for lease or rental to accommodate manufactured homes or mobilehomes for human habitation.

Mobilehome: A structure which is transportable in one or more sections and which is designed and equipped to contain not more than two dwelling units, to be used with or without a foundation system. Does not include recreational vehicles, commercial coaches, or factory-built housing.

Multifamily residential (land use): Any project, development, or other land use in which separate families and/or unrelated individuals occupy dwelling units which share a common wall or a common roof, or occupy a common legal parcel of real estate. Examples include duplexes, triplexes, quadriplexes, apartment buildings, condominiums, townhouses, and residential courts. In addition, institutional uses such as hospitals, nursing homes, board and care facilities, correctional institutions, and boarding schools, which entail the long-term occupancy of a single-structure by unrelated individuals will be considered to be multifamily residential in nature.

Nautical mile (nm): a measure of distance equal to 6076.115 feet (1852 meters).

Nightclub or discotheque: Any establishment engaged, as a primary activity, in providing entertainment (other than motion pictures, television, or sporting events) and/or dancing in conjunction with the sale of food and/or alcoholic or nonalcoholic beverages for on-site consumption.

Non-directional beacon (NDB): A radio beacon which transmits signals which do not contain encoded directional information, but which can be used for as a “homing” signal for aircraft tracking to or away from the transmitter.

Non-directional beacon (NDB) approach: A series of standardized, predetermined, and published aerial maneuvers which are based on lateral guidance information received by means of an NDB transmitter located either at or remote from an airport and which enable aircraft to descend with the intention of landing when meteorologic conditions are such that a safe approach cannot be made solely through the use of visual information.

Non-precision instrument approach procedure: An instrument approach procedure for which vertical guidance is not provided. Common types of non-precision instrument approach procedures include VOR, GPS, localizer, NDB, and LDA.

Nonresidential density: The maximum number of persons per acre of gross area that a nonresidential development is expected to attract during periods of use. If the area subject to a referred local action encompasses more than one Aviation Safety Area (as shown in Figure 3) nonresidential density must be calculated independently for each Safety Area. For purposes of this ALUP, nonresidential density will be determined according to the data provided in Appendix G.

Nursery specialties: Establishments primarily engaged in the production of ornamental plants and other nursery products, grown under cover or outdoors. Also includes establishments engaged in the sale of such products (e.g., wholesale and retail nurseries) and commercial scale greenhouses.

Nursing, residential, and personal care facilities: Residential and uses characterized by the provision of nursing or health-related care or assistance with tasks of daily living as a principal use. Includes skilled nursing facilities, extended care facilities, convalescent homes, rest homes, board and care facilities, assisted living facilities, children’s homes, orphanages, and residential rehabilitation centers. Does not include halfway houses and self-help group homes, which are classified as “multifamily residential” uses.

Office: A business establishment or agency which renders personal, clerical, professional, or financial services as a primary use. Also, any development, regardless of structure size, which includes significant floor space suitable for use by personnel performing or providing personal, clerical, professional, or financial duties or any portion of a structure or site occupied or intended for occupation by personnel performing such duties.

Operation: A takeoff or landing

Organization house: A residential lodging facility operated by a membership organization (other than a fraternity or sorority) for its constituents, and not open to the general public.

Outdoor sports and recreation: Facilities for various sporting and recreational activities. Includes golf courses (with associated country clubs and on-site sales of golfing equipment as a “pro-shop” and/or rental of golf carts and equipment), golf driving ranges, miniature golf courses, skateboard parks, go-cart and miniature auto race tracks, health and athletic

clubs with predominately outdoor facilities, tennis courts and tennis clubs, play lots, playgrounds, and athletic fields (nonprofessional). Also includes establishments which rent equipment for outdoor recreation, including ATVs and other unlicensed off-road vehicles, roller skates, surf and beach equipment. Does not include recreation and community centers, which are included in the "public assembly" land use category. Does not include swimming pools and water slides, which are included in the "swimming pools - public" land use category.

Petroleum extraction: Production of crude petroleum or natural gas or recovery of oil from oil sands or shales. On-site processing is permitted only to the extent necessary to permit extraction or to conform extracted crude oil to pipeline requirements.

Petroleum refining and bulk storage: The manufacture, production, or storage of products or substances from crude oil or any derivative of crude oil. Includes oil or gas processing facilities, liquefied natural gas facilities, manufacture of petroleum coke and briquettes, and tank farms.

Pipeline, above ground: Any facility engaged in the transportation of water, crude or refined oil, natural gas, liquefied natural gas, or other commodities by pipelines which lie above the surface of the earth. Also includes above-ground facilities (such as pump stations, bulk stations, surge tanks, and storage tanks) which are associated with buried pipelines.

Precision instrument approach procedure: An instrument approach procedure for which vertical guidance is provided. ILS is the only common type of precision instrument approach currently in use. In the near future, certain GPS approaches will be upgraded to provide vertical guidance information, as well.

Prohibited: A determination made by the ALUC when a proposed local action does not meet the criteria set forth in the Land Use Matrix.

Public assembly and entertainment: Facilities for public gatherings and meetings and for group entertainment. Includes public, semipublic, and private auditoriums, amphitheaters, exhibition and convention halls, civic theatres, meeting halls, facilities for live theatrical presentations, lectures, or concerts, motion picture theatres, recreation and community centers, and meeting halls for rent.

Public building: A structures which is utilized by government or social agencies for the provision of services to the public. Examples of such uses would include post offices, police or fire stations, and offices and agencies of local, state, or federal government.

Public safety facility: A fire station, other fire prevention and fire fighting facility, or police or sheriff substation or headquarters (including interim incarceration facilities).

Public utility facility: A fixed-base structure or facility which serves as a junction point for transferring utility services from one transmission system to another or to local distribution and service systems. Such uses include electrical substations and switching stations; telephone switching facilities; natural gas regulation and distribution stations; public water system wells, treatment plants, and storage; and community wastewater treatment plants,

settling ponds, and disposal fields.

Rate of climb: The vertical speed or rate of change in altitude of an aircraft ascending from a lower altitude to a higher altitude (usually expressed in feet per minute).

Rate of descent: The vertical speed or rate of change in altitude of an aircraft descending from a higher altitude to a lower altitude (usually expressed in feet per minute).

Recreational vehicle park: Any area or tract of land where two or more lots or spaces are leased, rented, or otherwise provided, or held out for lease or rental, to accommodated recreational vehicles which are occupied, intermittently or continuously, by humans. May include accessory food and beverage retail sales if such sales are clearly incidental and intended to serve RV park patrons only.

Residential density: The maximum number of dwelling units per acre of gross area of land area specified by or allowable under the provisions of a referral to the ALUC. If the area subject to a referred local action encompasses more than one Aviation Safety Area (as shown in Figure 3) residential density must be calculated independently for each Safety Area.

Restaurant: Any establishment which sells food (other than commercially packaged snack foods) for on-site consumption or which sells prepared foods intended for off-site consumption without further cooking or preparation. Included are conventional restaurants, food takeout establishments, “fast food” restaurants, delicatessens, sandwich shops, soda fountains, and ice cream parlors. Establishments which transport food to other locations for consumption and which are not frequented by members of the public (e.g., catering services, pizza delivery services with no public seating areas) are excluded.

Retail sales – fuels, lubricants, propane, etc.: The public sale of gasoline, aviation gasoline, jet fuel, oils or other lubricants, fuel oil, butane, propane, and/or liquefied natural gas, bottled or in bulk, as a principal use.

Rural recreation and picnicking: Facilities for non-intensive outdoor group activities which do not include sleeping or overnight occupancy. Included are outdoor archery, skeet, rifle, and pistol ranges; outdoor hiking trails and picnic areas; outdoor hot springs or hot tub facilities; and hunting and fishing areas. Not included are dude and guest ranches (classified as “Bed and Breakfast Facilities”), group or organized camps, recreational camps, and RV parks.

Rural residential (land use): As employed in the Land Use Matrix and other sections of the ALUP, the term “rural residential” indicates use of land for dwellings in such manner that no more than one primary dwelling unit is developed per five acres of property.

Schools – college and university: Accredited junior colleges, colleges, universities, and graduate schools which grant associates arts degrees, certificates, or undergraduate or graduate degrees and which require for admission a high school degree or equivalent general academic qualifications.

Schools – preschool to secondary: Facilities providing public, private, sectarian and military

educational programs serving students from infancy through grade 12. Boarding schools are included.

Schools – specialized training and education: Business, secretarial, and vocational schools which offer instruction leading to a degree or certificate in trade and commercial areas. Also included are non-degree programs such as music, drama, dance, and language schools; driver's education courses; seminaries and other establishments exclusively engaged in training for religious ministries, and establishments offering educational courses by mail. Facilities, institutions, and conference centers that offer non-degree programs in personal growth and development (e.g., physical fitness, environmental awareness, financial strategies, arts, communications, management, and interpersonal relationships) are not included, but are classified under "Public Assembly and Entertainment".

Single-family residential (land use): The use of land for dwellings in such manner only one residential building is permitted on each legal parcel and each building is occupied by no more than one family. Includes factory-built housing, but does not include duplexes, triplexes, quadriplexes, apartment buildings, condominiums, townhouses, residential courts, or secondary dwellings.

Secondary dwelling unit: A permanent dwelling unit which is established on the same legal parcel as an existing dwelling unit and is accessory to such primary dwelling.

Service station: An establishment primarily engaged in the sale of gasoline to motorists. Such business may also offer vehicle services incidental to fuel sales, such as mechanical repair, lubrication, oil change, and tune up, as well as towing services and trailer rentals. In addition, may include a small convenience store. In the event that such business includes a restaurant, coffee shop, delicatessen, fast food establishment or food takeout, it will be inconsistent with the ALUP in those areas where restaurants are inconsistent.

Specialized animal facilities: Intensive animal care or keeping establishments including hog ranches, dairies, dairy and beef cattle feedlots, livestock auctions, sales buildings and sales lot facilities, chicken, turkey, and other poultry ranches, riding academies, equestrian exhibit facilities, veterinary medical facilities and service, animal hospitals, kennels, and zoos.

Sports assembly: Establishments for competitive sports activities, either commercial, publicly-sponsored or school-related, which include facilities or amenities for spectators. Includes stadiums, colosseums, arenas, field houses, race tracks (vehicle or animal), and drag strips.

Standard instrument departure (SID): See instrument departure procedure.

Standard Terminal Arrival Route (STAR): A series of standardized, predetermined, and published routes, procedures and/or maneuvers which enable aircraft to transition safely from the en route environment to the terminal environment. A STAR does not culminate in a landing, but terminates at a point from which an instrument approach to landing may be initiated.

Straight-out departure: A VFR departure procedure in which an aircraft exits the airport area

along the extended centerline of the departure runway by extension of the upwind leg of the traffic pattern.

Swimming pool – public: An establishment, either commercial, publicly sponsored, or school related, which provide facilities (indoor or outdoor) for participation in water sports such as swimming, diving, and/or water polo. Includes swimming pools which are open to the public or to members of clubs, organizations or student bodies of schools, water slides, and aquatic parks. Does not include swimming pools which are adjacent to and restricted to use by occupants of private single family or multifamily residences or transient lodgings.

Tactical air navigation facility (TACAN): A ground-based radio navigational aid which transmits encoded signals that enable aircraft equipped with appropriate receivers to determine both bearing and distance with respect to the facility. The information with respect to bearing is generally available only to military aircraft, while information regarding distance is usable by both military and civil aircraft. TACAN facilities are frequently co-located with VORs.

Temporary construction trailer park: A site, whether improved or unimproved, provided by the developer of a construction project to afford short-term employees the opportunity to utilize mobilehomes or recreational vehicles for housing during project construction.

Temporary dwelling: A mobilehome or recreational vehicle which is occupied as a dwelling unit for a limited period of time following the issuance of a building permit for a permanent residence and during the construction of such permanent residence.

Temporary event: Use of a structure or land for an activity over a specified, limited period of time where the site is not to be permanently altered by grading or construction. Includes art shows, rodeos, religious revivals, tent camps, outdoor festivals and concerts.

Transit terminal: A passenger station for a vehicular and/or rail mass transit system. Includes busses, taxis, subways, and railway systems. A facility for the maintenance and service of vehicles operated in the transit system is excluded, unless such facility also functions as a passenger station.

Truck stop: An establishment primarily engaged in the sale of fuels to commercial trucks in transit. Such business may also offer vehicle services incidental to fuel sales, such as mechanical repair, lubrication, oil change, and tune up, as well as towing services and trailer rentals. In addition, may include such driver services as a small convenience store, a restaurant or coffee shop, showers, and lockers.

Upwind leg: A segment of the airport traffic pattern which is coincident with the centerline of the departure runway. The upwind leg is the initial leg of the traffic pattern for departing aircraft and extends from takeoff to the crosswind leg or departure from the airport area.

Vehicle and freight terminal: An establishment providing services incidental to transportation, including freight forwarding services, transportation arrangement services, packing, crating, inspection and weighing services, freight terminal facilities, trucking facilities, transfer and storage, and bulk mail handling. Includes rail, air, and motor freight transportation. Storage of toxic, corrosive, or radioactive material is excluded.

Very high frequency omnidirectional range (VOR): A ground-based radio navigational aid which transmits encoded signals that enable aircraft equipped with appropriate receivers to determine their bearing with respect to the facility.

Very high frequency omnidirectional range with distance-measuring equipment (VOR-DME): A ground-based radio navigational aid which combines a VOR transmitter with a DME facility and which transmits encoded signals that enable aircraft equipped with appropriate receivers to determine both relative bearing and distance with respect to the facility.

Very high frequency omnidirectional range with tactical air navigation (VORTAC): A ground-based radio navigational aid which combines a VOR transmitter with a TACAN facility and which transmits encoded signals that enable both military and civilian aircraft equipped with appropriate receivers to determine both bearing and distance with respect to the facility.

Visual approach: A procedure whereby an aircraft which is operating in VMC according to an IFR flight plan and under control of an air traffic control facility may proceed to the airport of destination and land using visual navigational cues.

Visual approach slope indicator (VASI): A navigational aid installed adjacent to an airport runway which provides, by means of colored light beams, vertical course guidance to aircraft approaching to land on that runway. The usual descent slope provided by VASI installations is 3°.

Visual flight rules (VFR): A set of FAA rules, regulations, and procedures which define flight operations under conditions which allow navigation by means of visual information, pilotage, and dead reckoning alone. Also employed as an adjective to designate a flight plan which will enable an aircraft to operate under conditions which permit navigation by means of visual information alone. For takeoff and landing, operation under visual flight rules requires 3 statute miles visibility and a cloud ceiling of at least 1000 feet. A special VFR clearance may be obtained from ATC if visibility is 1 statute mile or greater and the pilot can maneuver to remain clear of clouds in the vicinity.

Visual meteorologic conditions (VMC): Weather conditions specified in FAA regulations under which aircraft are authorized to takeoff, land, and maneuver under visual flight rules and by means of only visual navigational information. Electronic aids to navigation may be utilized by aircraft operating in VMC, but are not required. The visibility and cloud clearance requirements for VMC are determined by the airspace designation in which and aircraft is operating, by the aircraft's altitude above both sea level and ground level, and by whether the aircraft is operating in daylight or at night.

VOR approach: A series of standardized, predetermined, and published aerial maneuvers which are based on lateral guidance information received by means of a VOR transmitter and which enable aircraft to descend toward an airport with the intention of landing when meteorologic conditions are such that a safe approach cannot be made solely through the use of visual information. The VOR facility may be located within the physical boundaries of the destination airport or at some distance from the airport. VOR approaches do not provide vertical guidance. A typical VOR approach permits aircraft to descend to within

400-500 feet of the surface solely on the basis of radio navigation aids.

Warehousing: The storage of commercial goods of any nature for later distribution to wholesalers and retailers. Also includes warehouse, storage, or mini-storage facilities offered for rent or lease to the general public. Does not include facilities where the primary purpose of storage is for wholesaling and distribution, nor terminal facilities for handling freight.

Wholesaling and distribution: The sale of merchandise to retailers, to industrial, commercial, institutional, farm, or professional business users, or to other wholesalers.

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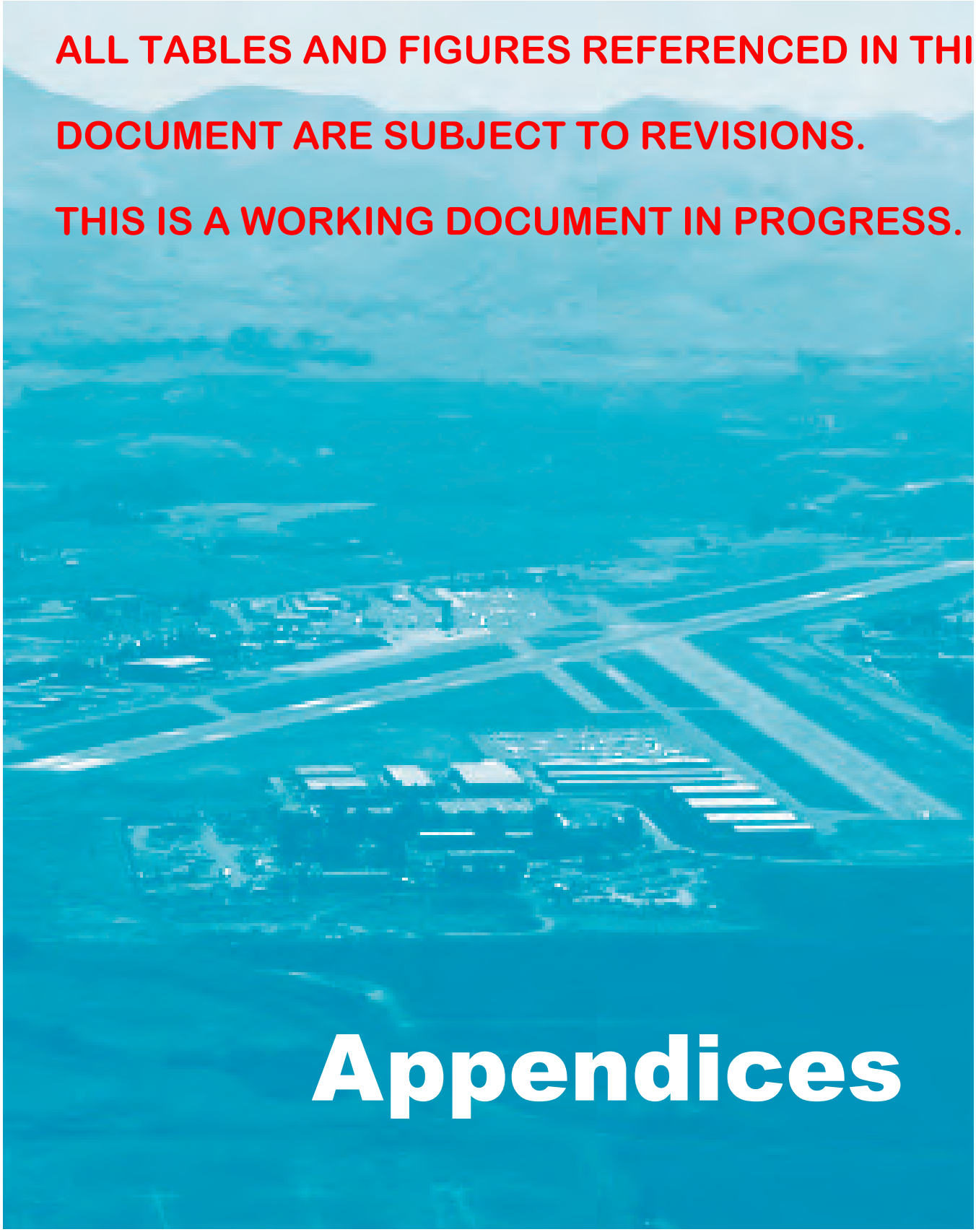
Section 13

Abbreviations

ACOS.....Airport Compatible Open Space Plan
AGL .....Above ground level
ALS.....Approach lighting system
ALUC.....Airport Land Use Commission
ALUP .....Airport Land Use Plan
ALUPH .....Airport Land Use Planning Handbook
ARTCC .....Air route traffic control center
ATCT .....Airport traffic control tower
CDI .....Course deviation indicator
CDZ .....Clustered Development Zone
CNEL.....Community noise equivalent level
dB .....Decibel
dBA.....A-weighted decibel
DA.....Decision altitude
DH .....Decision height
DME .....Distance measuring equipment
DP .....Instrument departure procedure
EPA.....U.S. Environmental Protection Agency
FAA.....Federal Aviation Administration
FAR .....Federal aviation regulation
FBO .....Fixed base operator
GPS.....Global positioning system
GS .....Glide slope
ICAO.....International Civil Aviation Organization
IFR.....Instrument flight rules
ILS .....Instrument landing system
IMC.....Instrument meteorologic conditions
LDA.....Localizer-type directional array
LOC .....Localizer
MDA.....Minimum descent altitude
MDH .....Minimum descent height
NDB.....Non-directional beacon
NRDC .....Natural Resources Defense Council
nm .....Nautical mile
PUC.....Public Utilities Code
SID .....Standard instrument departure
STAR .....Standard terminal arrival route
TACAN .....Tactical air navigation facility
VASI .....Visual approach slope indicator
VHF .....Very high frequency

VMC ..... Visual meteorologic conditions
VOR..... VHF omnidirectional range
VOR-DME ..... VHF omnidirectional range with distance measuring equipment
VORTAC..... VHF omnidirectional range with tactical air navigation equipment
WHO ..... World Health Organization



ALL TABLES AND FIGURES REFERENCED IN THIS DOCUMENT ARE SUBJECT TO REVISIONS.

THIS IS A WORKING DOCUMENT IN PROGRESS.

Appendices

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Appendix A

Dimensions of Airport Safety Areas

Updates to Aviation Safety Areas

The most recent update to the Airport Master Plan for the San Luis Obispo County Regional Airport (SBP) was adopted in November of 2004. Although the Airport Land Use Plan was amended in May of 2005, the configuration of the ALUP Safety Areas was not modified at that time. Consequently, a number of modifications have been made or are planned with regard to the length, width, and location of runways that are not reflected in the current size, shape, and locations of the ALUP Safety Areas. This amendment addresses all of the completed and planned runway modifications contained in the current Airport Master Plan. A list of these modifications is as follows:

Table A-1: Modifications in Runway Configuration Addressed by This Amendment

	Completed Modifications	Planned (Potential) Modifications
Runway 11	• Pavement length has been extended 800 feet to the northwest • Runway threshold has been displaced 800 feet from end of runway	• ILS glideslope to be relocated 600 feet to the northwest • Runway threshold to be relocated 800 feet to the northwest (to end of pavement)
Runway 29	• Pavement length has been extended 500 feet to the southeast • Runway threshold has been displaced 500 feet from end of runway	
Runway 7		• Runway length to be extended 500 feet to the east • Runway width to be narrowed from 100 feet to 60 feet
Runway 25	• Runway length has been reduced by 760 feet • Runway threshold has been moved 760 feet to the east (to current end of pavement)	• Runway width to be narrowed from 100 feet to 60 feet

Designation of Aviation Safety Areas

This appendix presents mathematical descriptions of the Aviation Safety Areas for the San Luis Obispo Regional Airport. Although a map of the safety areas is provided as Figure 5 of the Airport Land Use Plan, this is for illustrative purposes. The following mathematical descriptions are designated as the authoritative determinate of the size, shape, and location of the Aviation Safety Areas. In the event of any discrepancy between these descriptions and Figure 5, the mathematical descriptions shall take precedence. GIS generated images of the Aviation Safety

NOT AVAILABLE

Areas are ~~available~~ in the Planning Department of the County of San Luis Obispo and in the Community Development Department of the City of San Luis Obispo.

All of the descriptions which follow are specified with reference to the intersections one of the airport's four runway ends of one of the four runways with the runway centerline.

a.) For Runways 11 and 29, the operational runway ends are defined as the displaced thresholds.

b.) For Runways 7 and 25, the operational runway ends are defined as the pavement ends.

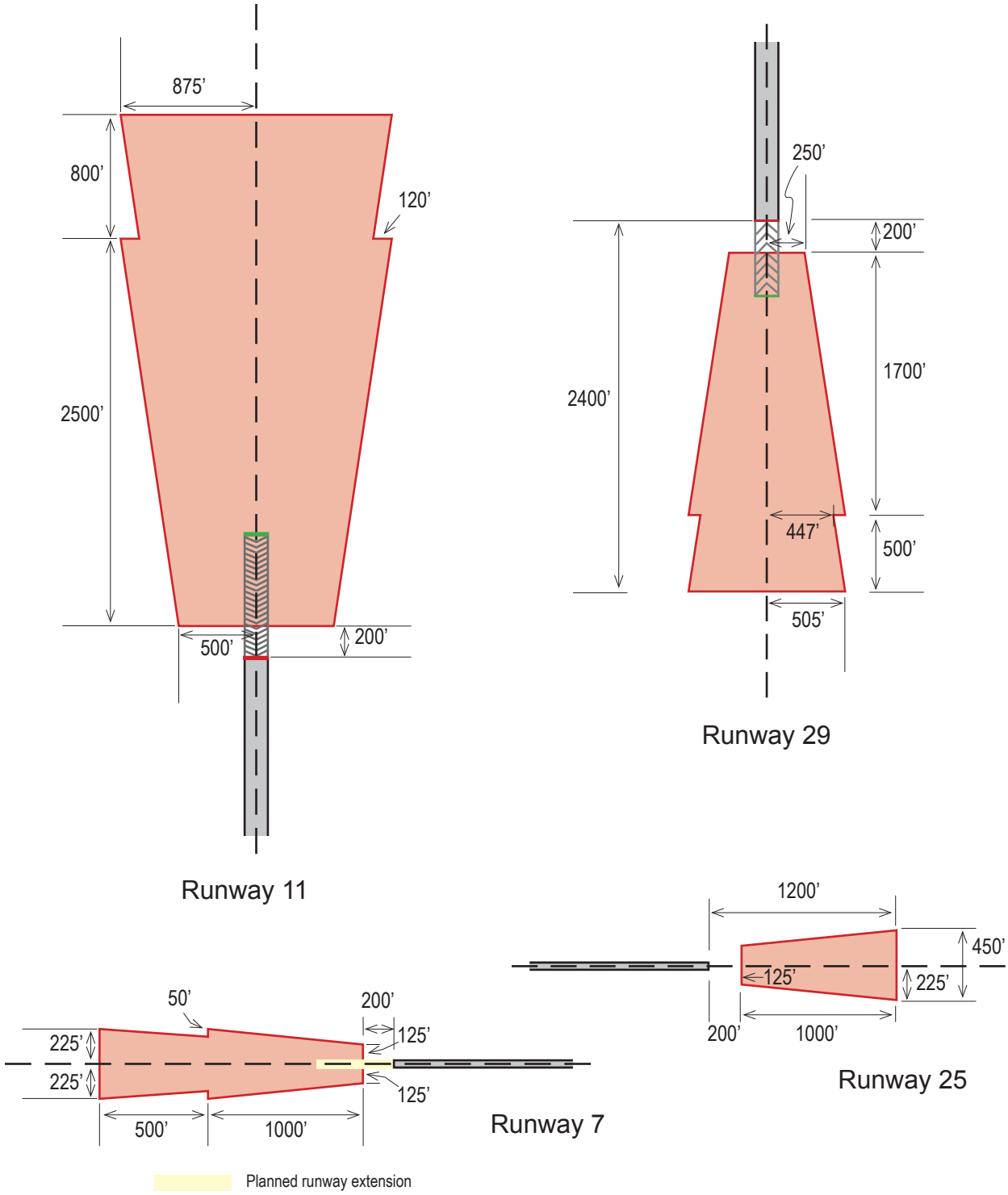
The location of these four reference points is as follows:

Table A-2: Runway Centerline, End of Runway Locations

Reference Point	Latitude	Longitude
Centerline, End of Runway 11	35° 14' 27.4400"	120° 38' 50.5000"
Centerline, End of Runway 29	35° 14' 00.3600"	120° 38' 02.9700"
Centerline, End of Runway 7	35° 14' 12.6762"	120° 39' 00.9473"
Centerline, End of Runway 25	35° 14' 12.7701"	120° 38' 30.8163"

This information is taken from the Airport Master Plan for the San Luis Obispo County Regional Airport, Final Draft, dated November, 2004.

Aviation Safety Areas – Runway Protection Zones

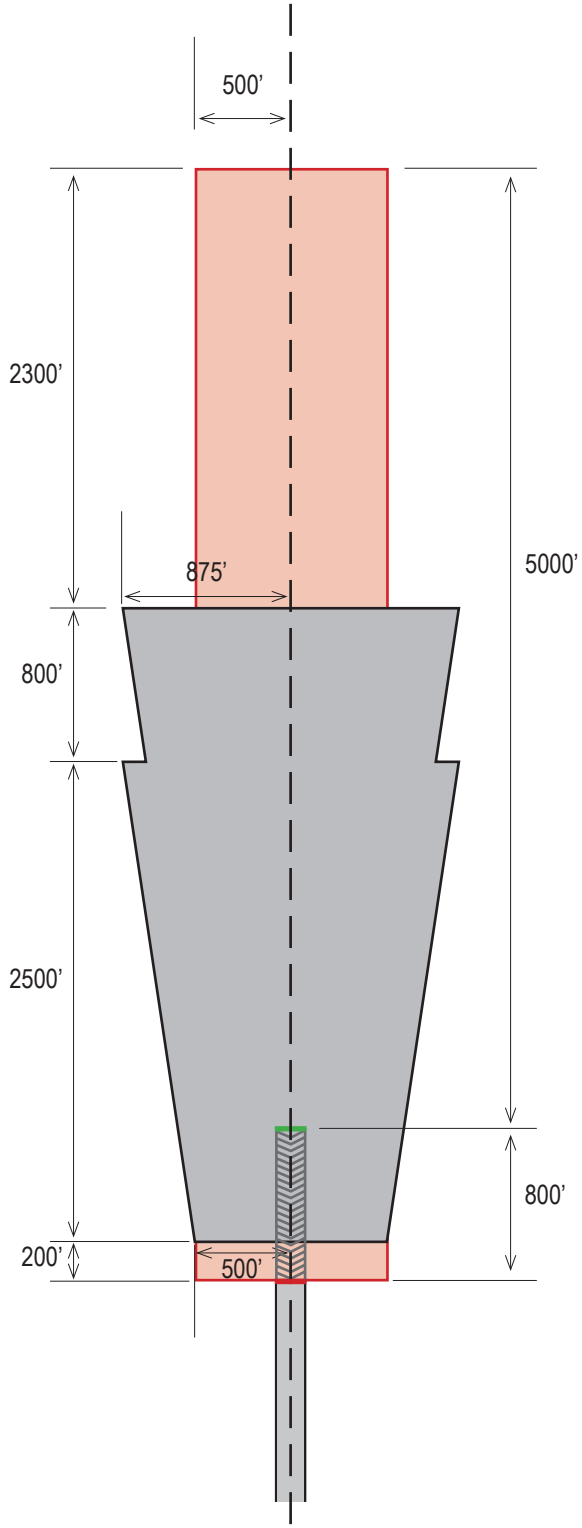


Current (displaced) runway threshold

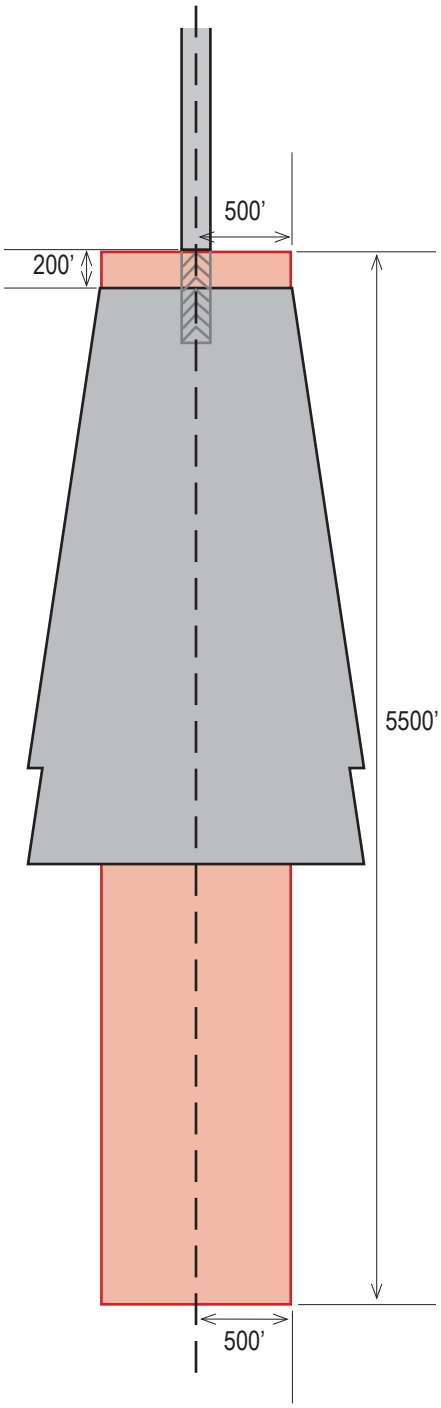
Ultimate runway threshold

Approximate Scale: 1 inch = 1000 feet

Aviation Safety Areas – Safety Area S1a



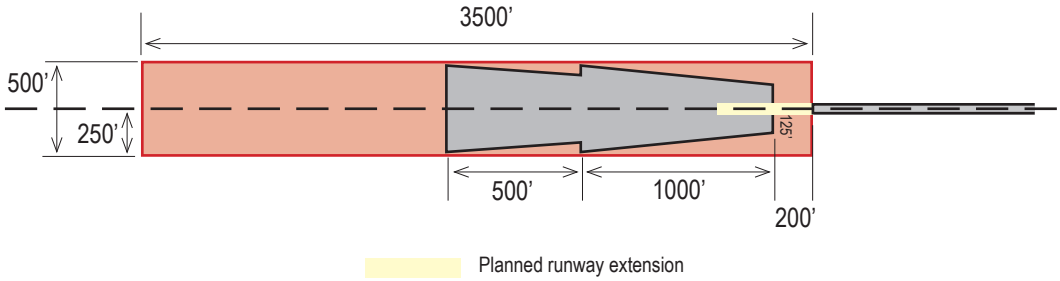
Runway 11



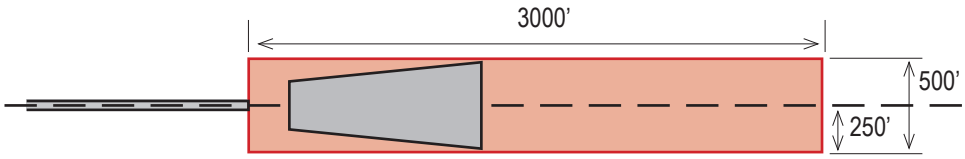
Runway 29

Approximate Scale: 1 inch = 1000 feet

Aviation Safety Areas – Safety Area S1a



Runway 7



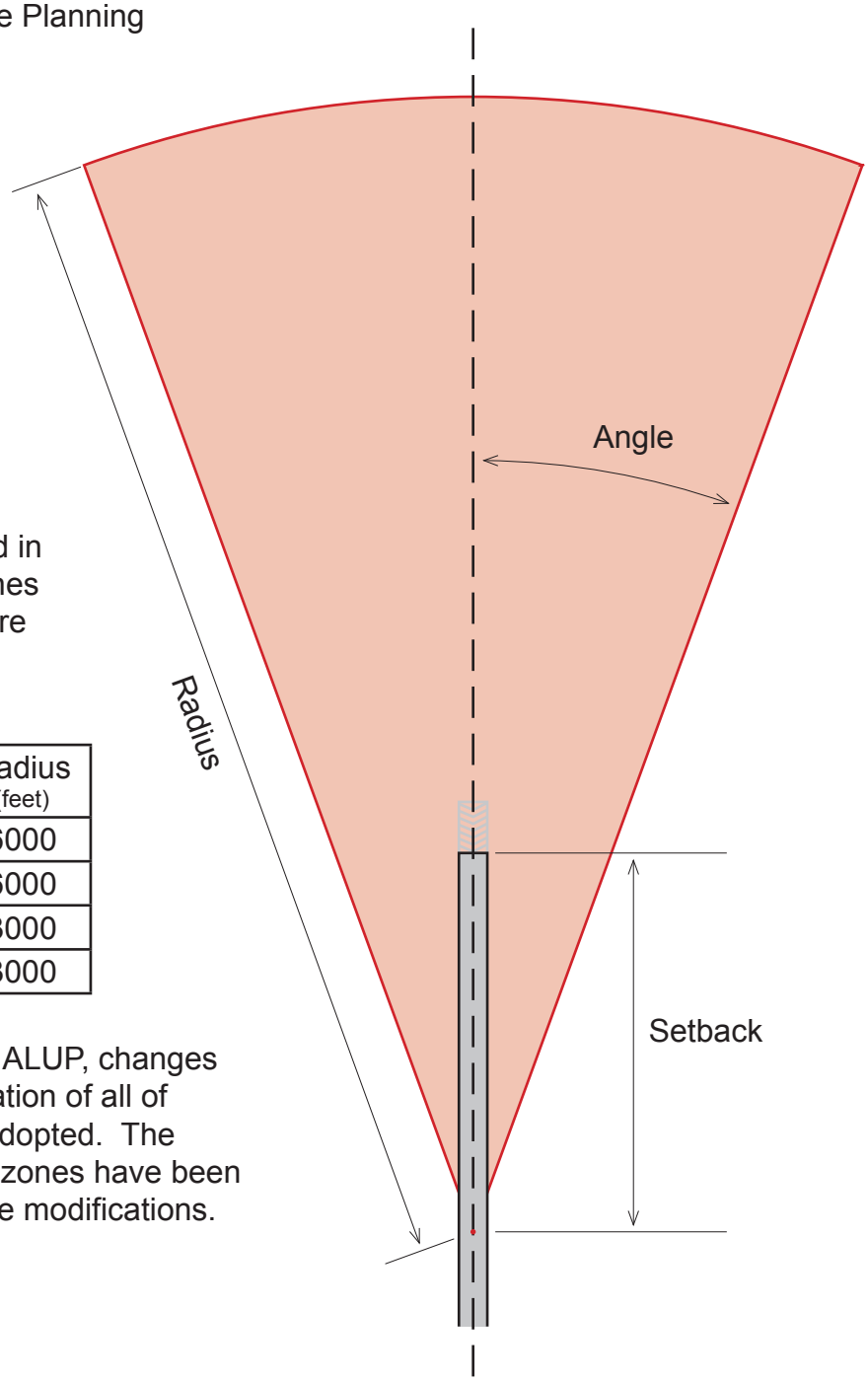
Runway 25

Approximate Scale: 1 inch = 1000 feet

Aviation Safety Areas – Safety Area S-1b

Airport Safety Area S-1b is made up of four separate components - the Inner Turning Zones, the Sideline Zones, the Approach Zones, and the Maneuvering Zone.

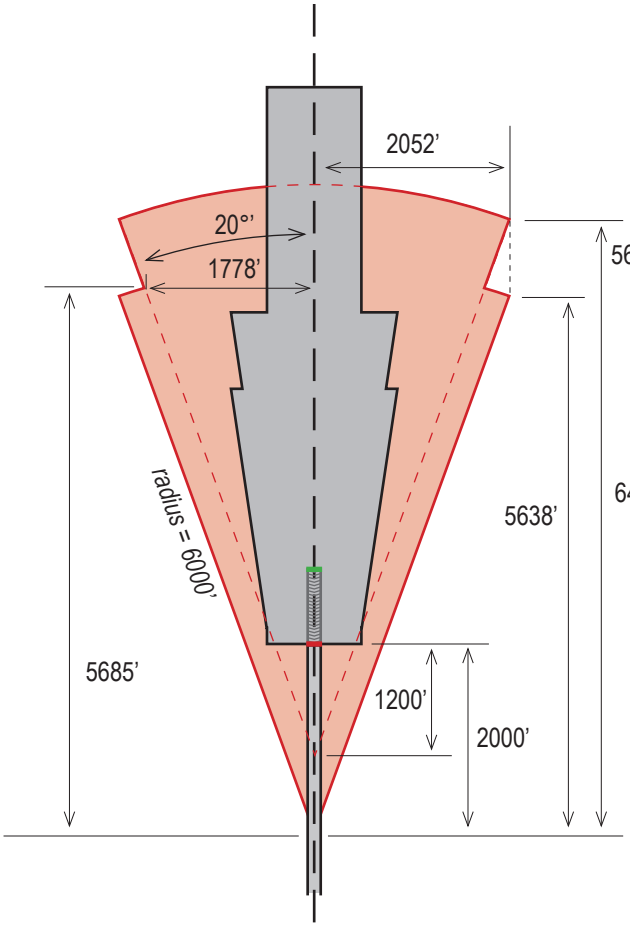
Inner Turning Zones - The shape and dimensions of the Inner Turning Zones is given on page 9-38 of the Airport Land Use Planning Handbook of the California Department of Transportation, page 9-38, Examples 2 and 3. The inner Turning Zone may be created by swinging an arc of a given radius (the Radius) from a point that is a specified distance from the end of each runway (the Offset). The width of the arc (to either side of the extended runway centerline) is specified by the Angle. The radii and angles used in constructing the inner turning zones in Figure 3 of the current ALUP are shown in the table below:



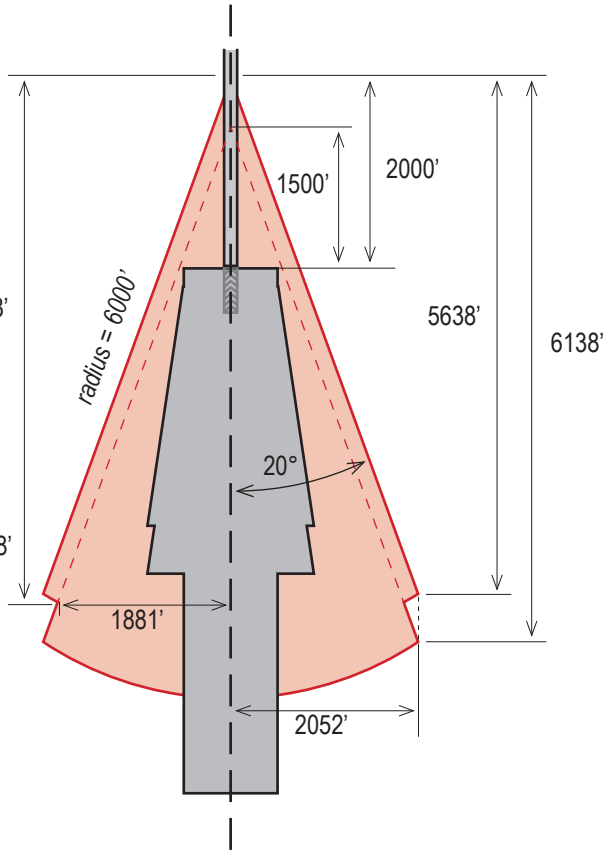
Runway	Setback (feet)	Angle (degrees)	Radius (feet)
11	2000	20	6000
29	2000	20	6000
7	1500	30	3000
25	800	30	3000

Since the adoption of the current ALUP, changes in the actual or planned configuration of all of the runways at SBP have been adopted. The configuration of the inner turning zones have been adjusted in accordance with these modifications.

Aviation Safety Areas – Safety Area S1b: Inner Turning Zones



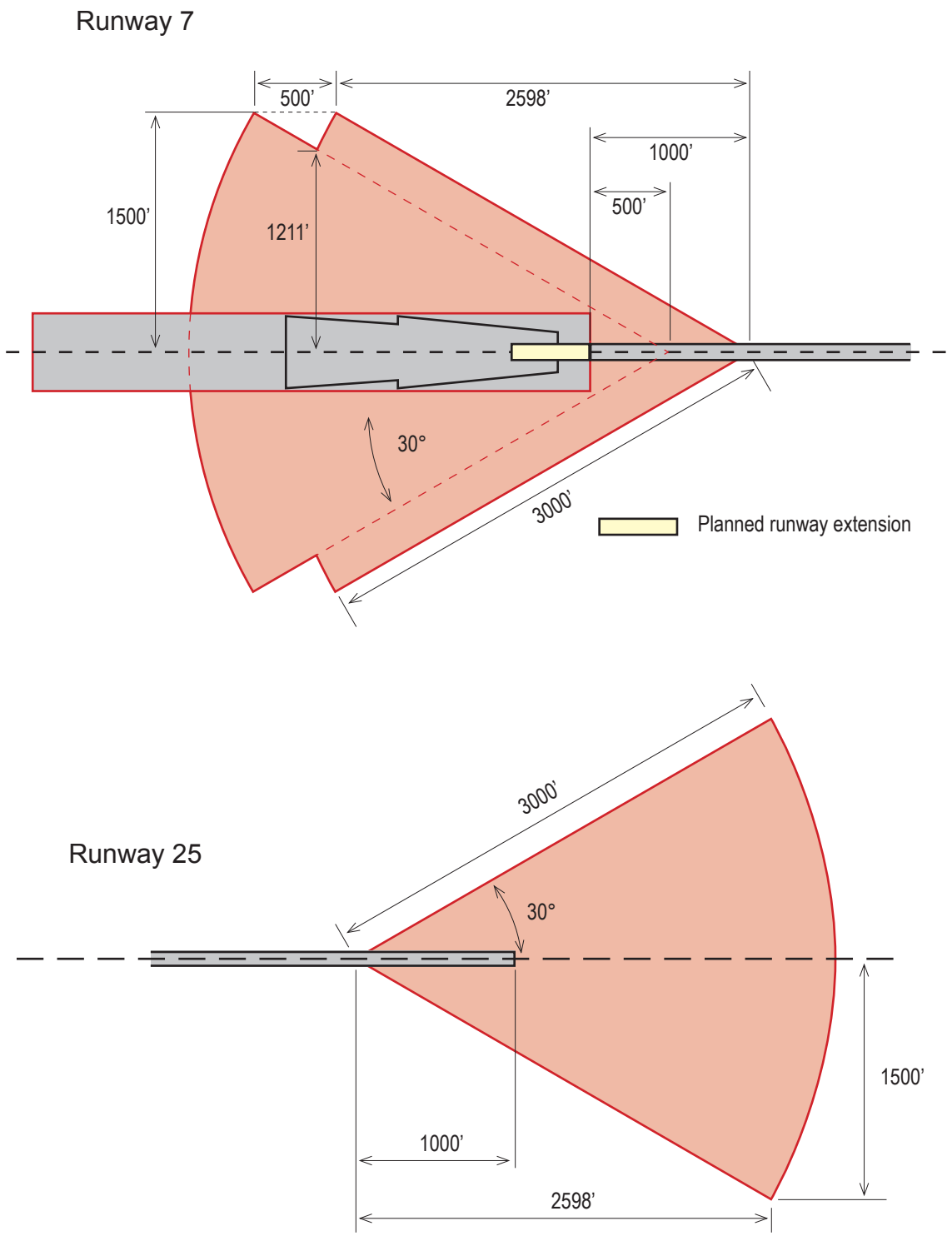
Runway 11



Runway 29

Approximate Scale: 1 inch = 2000 feet

Aviation Safety Areas – Safety Area S1b: Inner Turning Zones

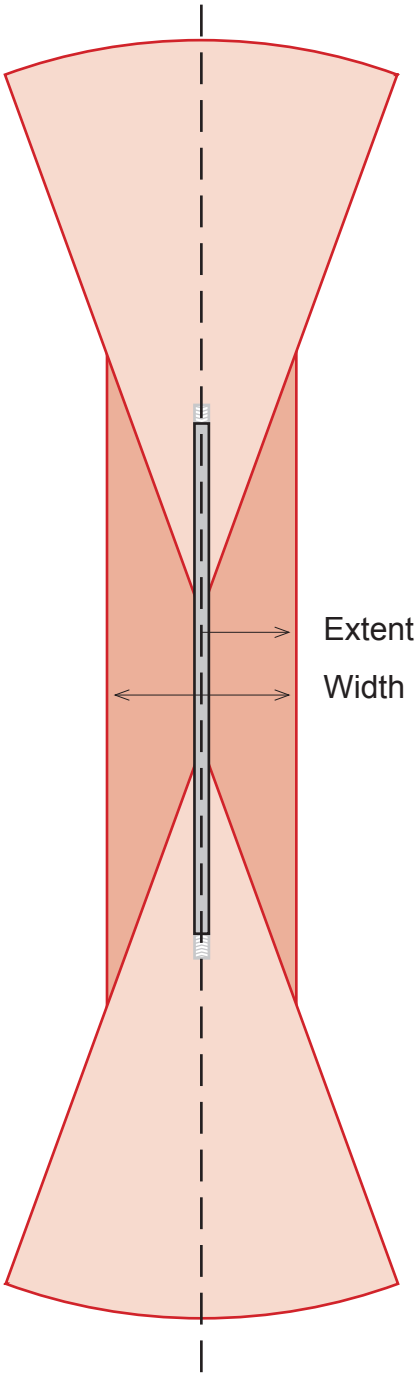


Approximate Scale: 1 inch = 1000 feet

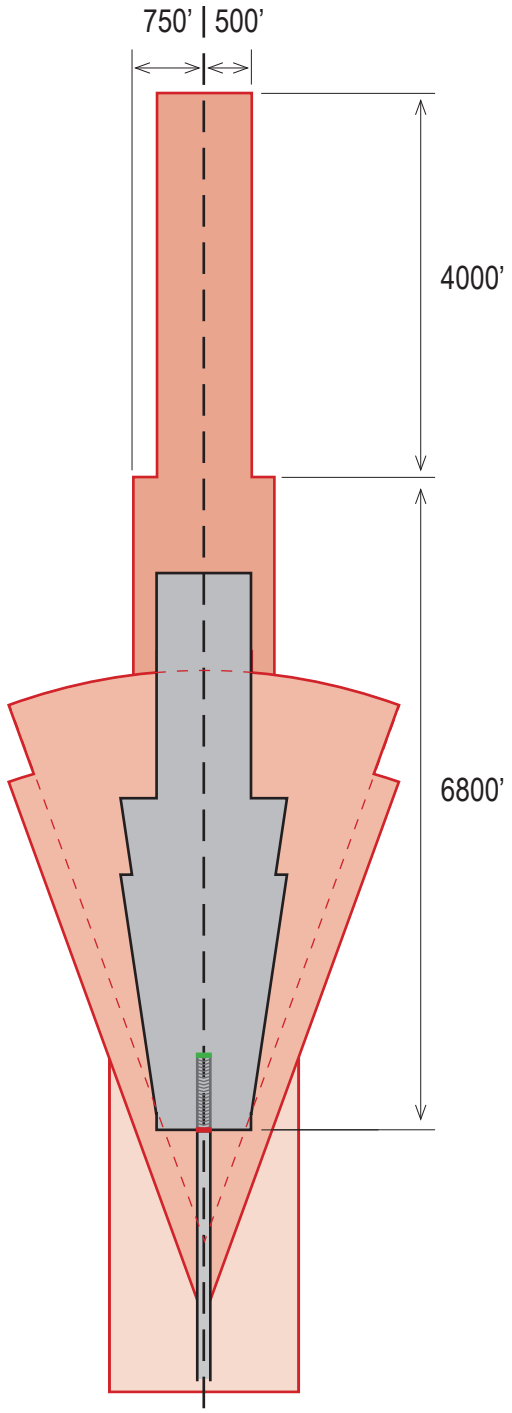
Aviation Safety Areas – Safety Area S1b: Sideline Zones

The shape and dimensions of the Sideline Zones is given on page 9-38 of the Airport Land Use Planning Handbook of the California Department of Transportation, page 9-38, Examples 2 and 3. Simply put, the Sideline Zones include all of the area within 1000 feet of the centerline of Runway 11-29 or within 750 feet of the centerline of Runway 7-25 that is not included in the runway environment, the RPZ or the Inner Turning Zone.

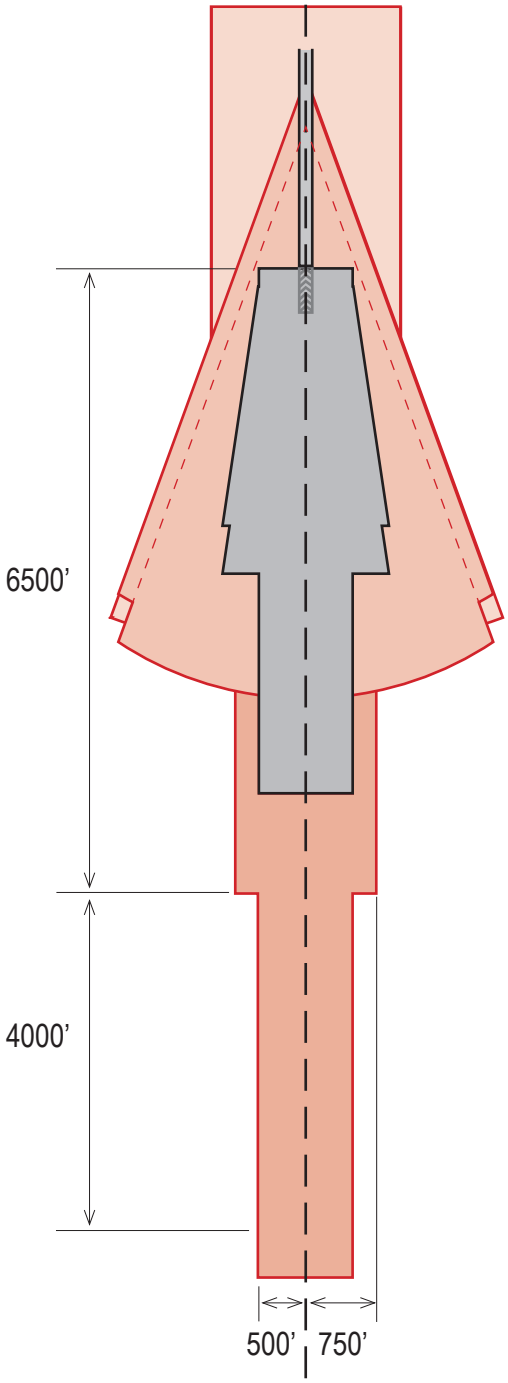
Runway	Extent (feet)	Width (feet)
11-29	1000	2000
7-25	750	1500



Aviation Safety Areas – Safety Area S1b: Approach Zones



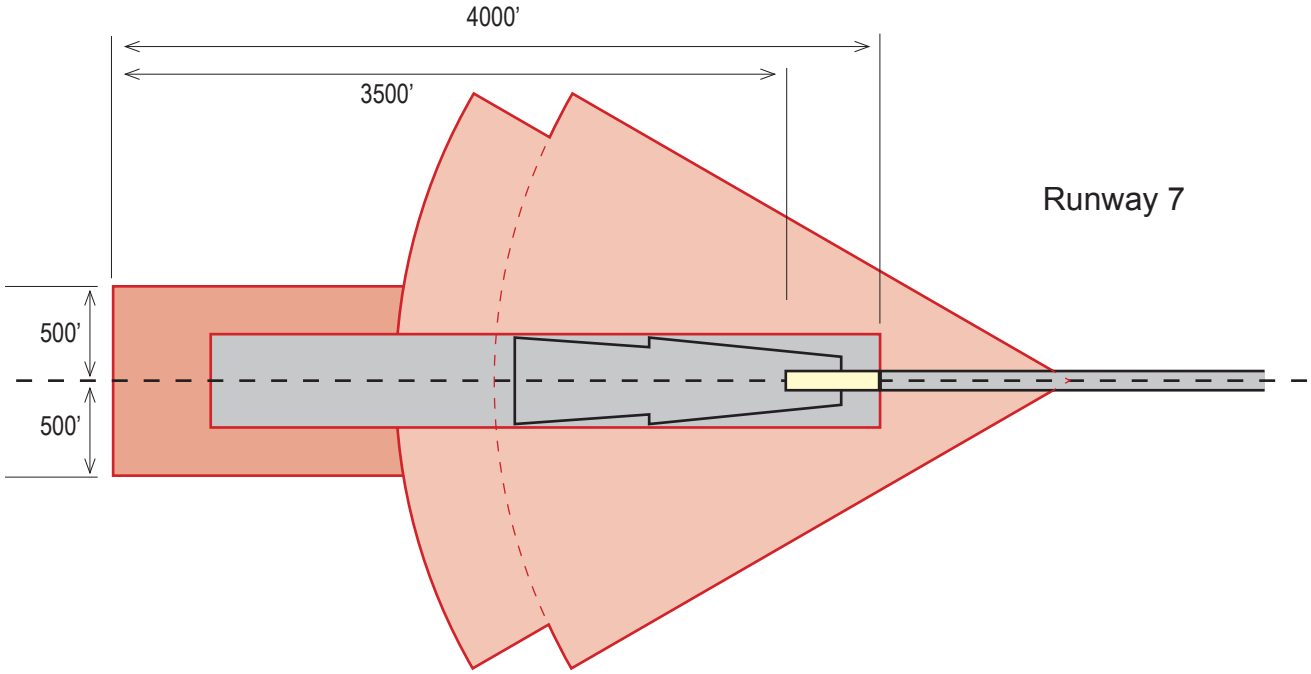
Runway 11

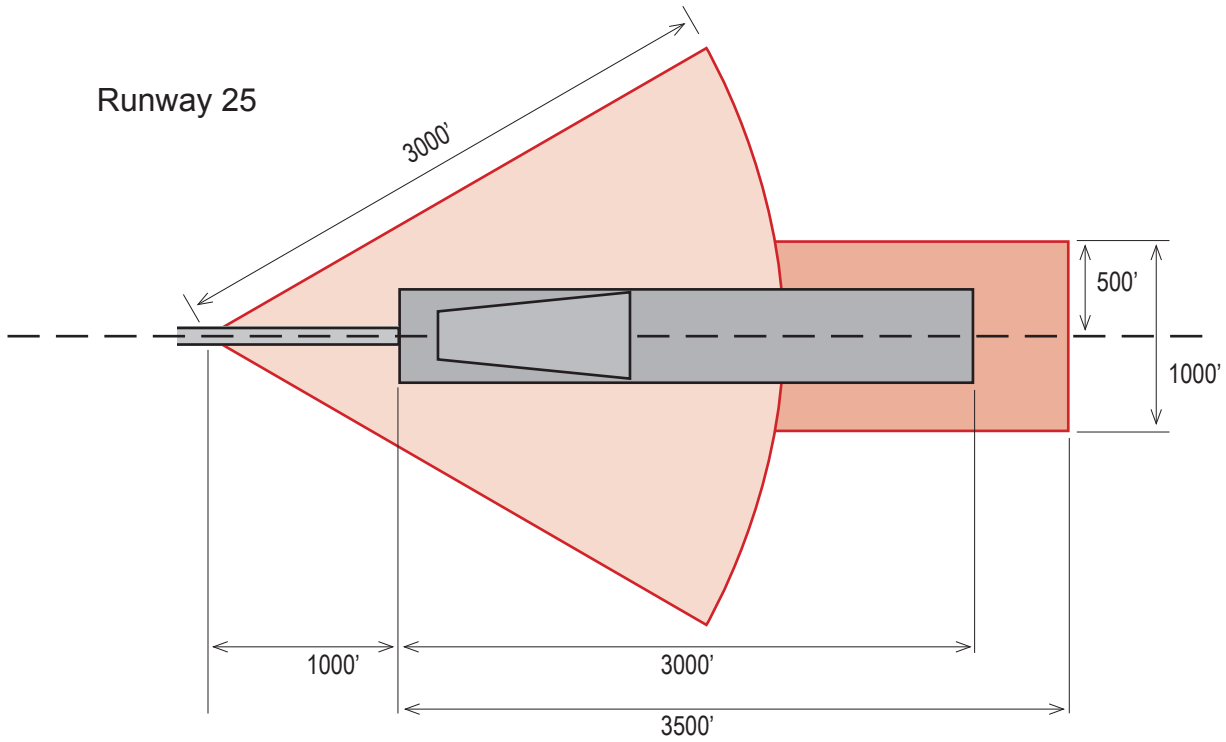


Runway 29

Approximate Scale: 1 inch = 2000 feet

Aviation Safety Areas – Safety Area S1b: Approach Zones





Approximate Scale: 1 inch = 1000 feet

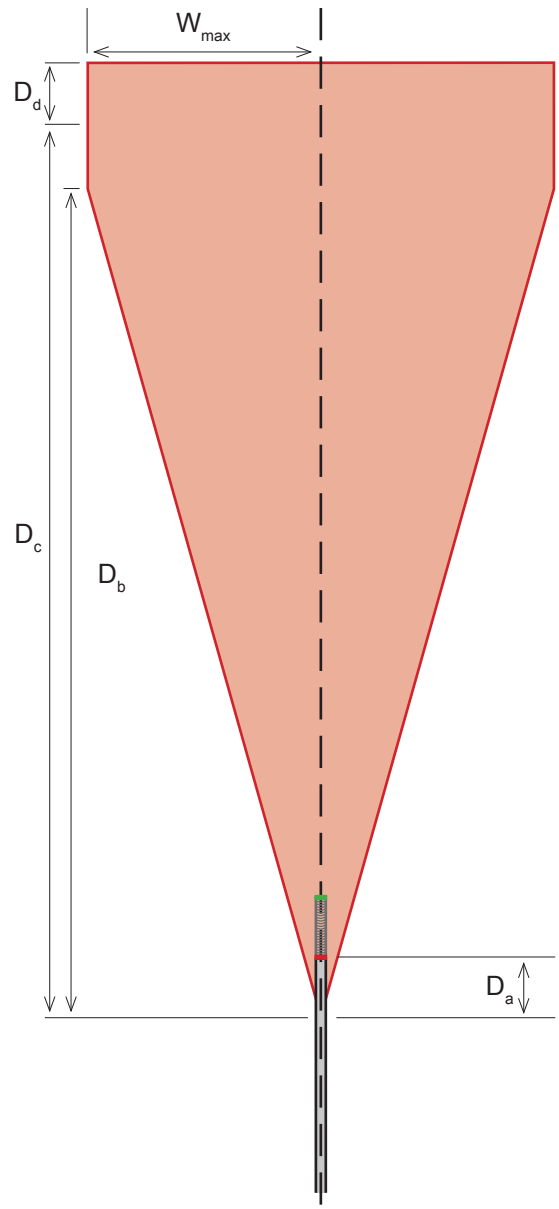
Aviation Safety Areas – Safety Area S1b: Maneuvering Zones

Generalized Configuration of Maneuvering Zones

Abbreviations

The table provided in this section provides specifications which can be used to construct the configuration of Maneuvering Zones for SBP. Abbreviations are as follow:

Constants	
A_{gs}	The vertical angle of descent of aircraft approaching to land on the runway
A_{ms}	The horizontal angle between the runway centerline and the lateral border of the Maneuvering Zone
D_a	Distance from the touchdown zone to the (existing operational) runway end
D_b	Distance from the touchdown zone to the point at which the Maneuvering Zone reaches its maximum width
D_c	Distance from the touchdown zone to the point at which the altitude of aircraft on approach is >500 feet
D_d	Additional length which must be added to the Maneuvering Zone to accommodate planned modifications of runway or glideslope
W_{max}	Maximum width of Maneuvering Zone
Calculated values	
h	Altitude of aircraft (above TDZE) at distance *d* from touchdown zone
W	Lateral extent of Maneuvering Zone (from extended runway centerline) at distance *d* from touchdown zone
2W	Width of Maneuvering Zone at distance *d* from touchdown zone



Aviation Safety Areas – Safety Area S1b: Maneuvering Zones

Table A-3: Generalized Configuration of Maneuvering Zones

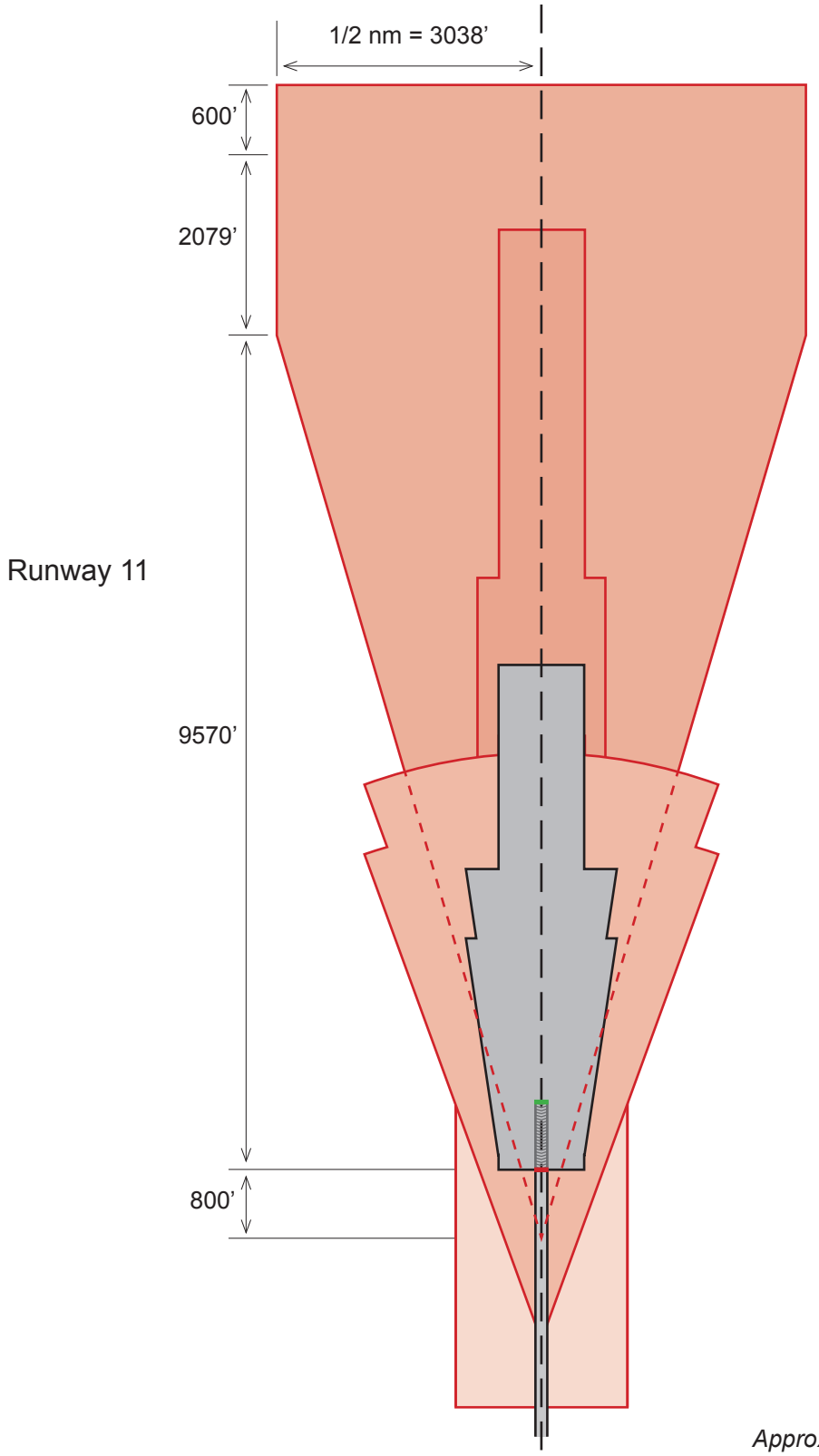
Specifications

The table below provides numerical specifications which can be used to construct the configuration of Maneuvering Zones for SBP. Distances have been rounded to the nearest tenths of a foot.

	Runway 11	Runway 29	Runway 7	Runway 25
Constants				
A_{gs}	3.0±0.7°	≥3.0°	3.0±0.7°	3.0±0.7°
A_{ms}	16.32879514°	21.52175368°	16.32879514°	16.32879514°
D_a	800 ft.	500 ft.	500 ft.	500 ft.
D_b	10370 ft.	7704 ft.	6076 ft.	6076 ft.
D_c	12449 ft.	9541 ft.	6576 ft.	6576 ft.
D_d	600 ft.	500 ft.	500 ft.[1]	0 ft.
W_{max}	3038 ft.	3038 ft.	1780.1 ft.	1780.1 ft.
Calculated values				
h	$0.040164149d^2$	$0.052407779d^2$	$0.040164149d^2$	$0.040164149d^2$
W	$0.292966d$	$0.394349d$	$0.292966d$	$0.292966d$
$2W$	$0.585932d$	$0.788698d$	$0.585932d$	$0.585932d$

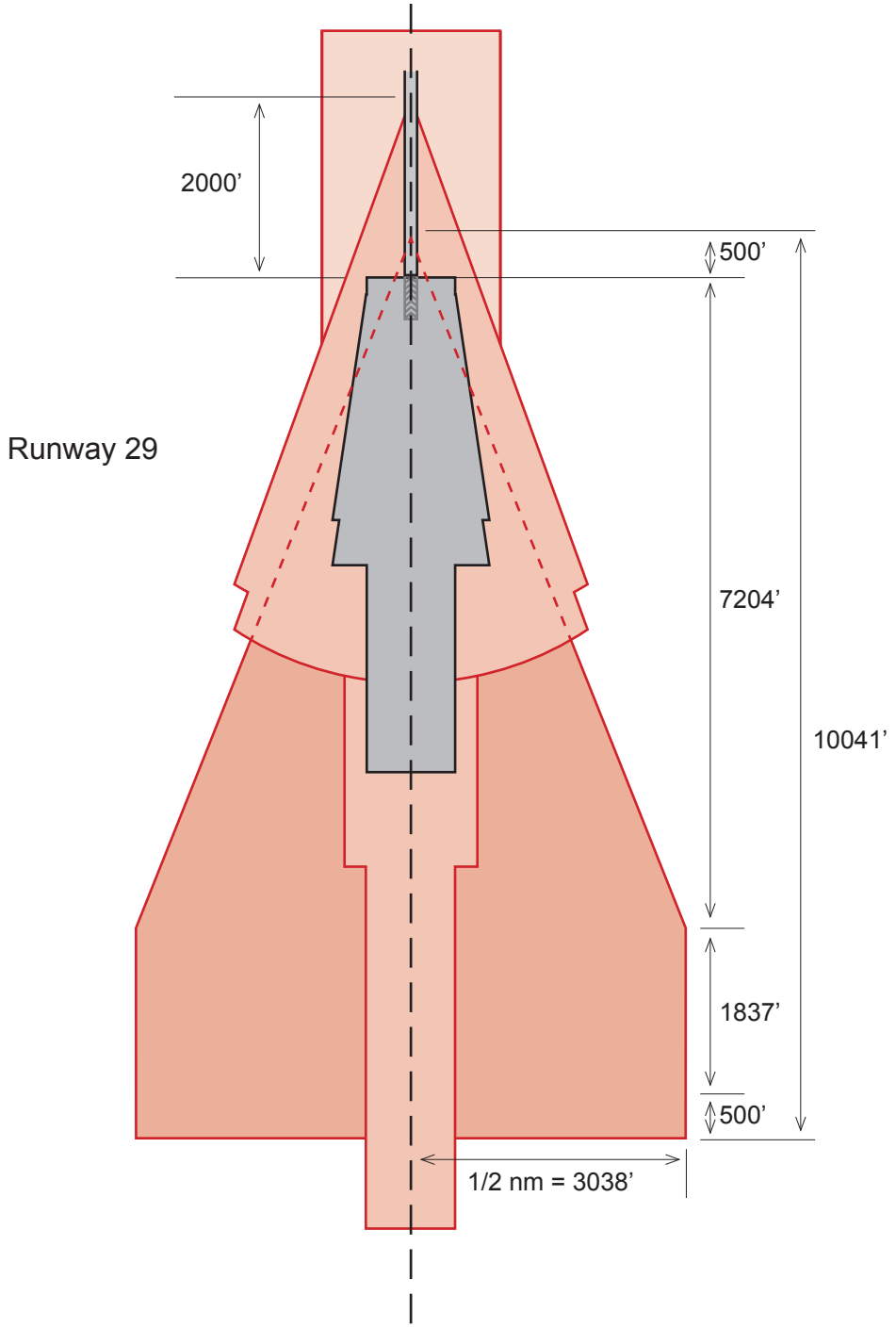
[1] The shape of the area to be added is not rectangular. See specific comments regarding Rwy 7
[2] d = Distance from touchdown zone (in feet) along extended runway centerline

Aviation Safety Zones – Safety Area S1b: Maneuvering Zones



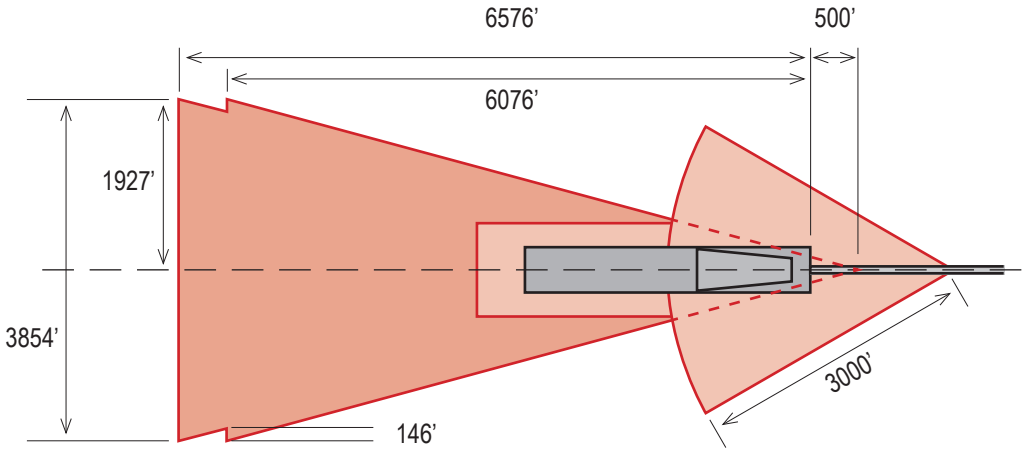
Approximate Scale: 1 inch = 2000 feet

Aviation Safety Zones – Safety Area S1b: Maneuvering Zones

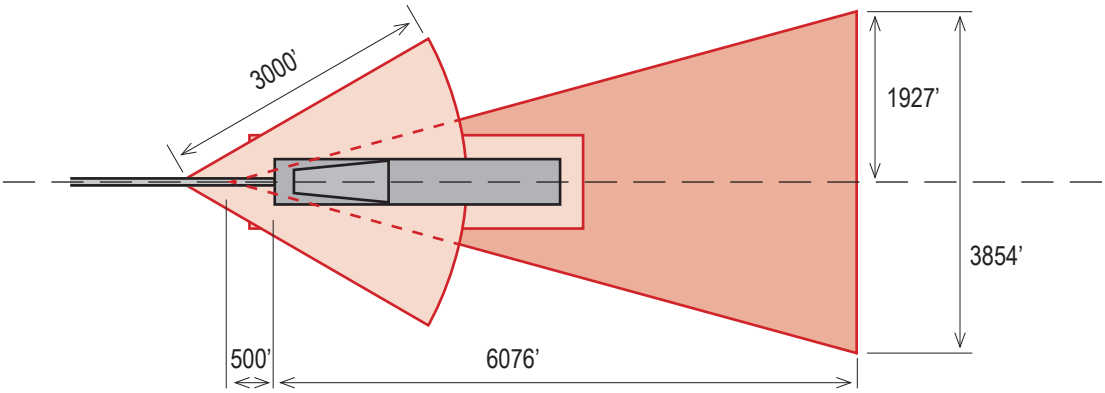


Approximate Scale: 1 inch = 2000 feet

Aviation Safety Zones – Safety Area S1b: Maneuvering Zones



Runway 7



Runway 25

Approximate Scale: 1 inch = 2000 feet

Aviation Safety Zones – Safety Area S1c

The outer boundary of Aviation Safety Area S-1c is defined by constructing a rectangle that connects the four corners of the Maneuvering Areas for Runways 11 and 29 that are most distant from the respective runway ends. This can also be defined as a rectangle which extends, in width, 1/2 nautical mile on either side of the extended centerline of Runway 11-29 and which extends, in length, 12249 feet to the northwest of the end of Runway 11 and 9541 feet to the southeast of the end of Runway 29. The land area within this rectangle that is not included in a Runway Protection Zone, Aviation Safety Area S-1a, or Aviation Safety Area S-1b comprises Aviation Safety Area S-1c.

Aviation Safety Zones – Safety Area S2

The outer boundary of Aviation Safety Area S-2 is constructed by drawing two arcs of 180 degrees, centered on the centerline of Runway 11-29 at the ultimate runway ends. The location of these two points is as follows:

Table A-4: Ultimate Runway Centerline, End of Runway Locations

Reference Point	Latitude	Longitude
Centerline, End of Runway 11	35° 14’ 32.651”	120° 38’ 59.662”
Centerline, End of Runway 29	35° 13’ 57.550”	120° 37’ 58.010”

The radius of each arc is 10,000 feet and the endpoints of each arc should lie on a line perpendicular to the runway centerline at the points specified in Table A-4.

The two arcs constructed as above are then joined by two lines parallel to the centerline of Runway 11-29 to form the outer boundary of Aviation Safety Area S-2. All land area within this figure that is not included in any other Aviation Safety Area comprises Aviation Safety Area S-2.

THE FOLLOWING APPENDIX B IS SUBJECT TO CHANGE PENDING THE NOISE CONTOUR STUDY AND FORECAST ANALYSIS.

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Appendix B

Basis of Airport Noise Policies

The Measurement of Environmental Noise

Decibel (dB) - A measure of the acoustic energy (also referred to as sound pressure) from a particular source or in a particular environment. The decibel scale is logarithmic, meaning that a a given dB level (x), the actual sound energy is proportional to 10^x. Consequently, an increase of 3 dB is equivalent to a doubling of the actual sound pressure and an increase of 10dB represents a doubling of the noise level.

A-weighted Decibel (dbA) - A measure of sound pressure obtained after acoustic filtering of environmental noise to significantly discount sounds with a frequency below 500 Hz or above 10,000 Hz. By placing greater weight on the mid-range frequencies which the human ear responds to most readily, A-weighted measurements correspond closely with the subjective experience of the loudness of environmental noise. As with the unfiltered decibel measurement, the A-weighted decibel scale is logarithimic. A-weighted decibel levels are almost always lower than the corresponding unfiltered decibel measurements.

Maximum Noise Level (Lmax) - The highest A-weighted decibel measurement occurring during a specified time period or associated with a particular event. Lmax indicates the intensity of a noise exposure, but gives no information regarding its duration.

Single Event Noise Exposure Level (SENEL) - A measure of cumulative sound exposure during a single acoustic event. The single event noise exposure level is determined by continuously measuring the A-weighted decibel level during a noise exposure and by recording the length of time that the A-weighted decibel level exceeds a given threshold. For aircraft noise, the threshold is determined by the aircraft type and distance from either the start of take0ff roll or the point of landing. The integral ("area under the curve") of the decibel level is then normalized to a one-second duration. In other words, mathematical calculations are performed which determine what the A-weighted decibel would have been reached if all of the acoustic energy (delivered during the entire period of above-threshold exposure) had been delivered in one second. Because of the normalization procedure, for most aircraft overflights, the SENEL is on the order of 7 to 12 dBA higher than the Lmax. SENEL measurements generally correlate well with the degree of annoyance generated by a noise event. The SENEL is also the mandated measure of noise for a single aircraft fly-over in California.

Sound Exposure Level (SEL) - The sound exposure level is similar to the SENEL in that it measures total sound pressure levels during a period in which a given A-weighted decibel level is exceeded, then normalizes this to an equivalent dB exposure of one-second duration. The SEL differs from the SENEL, however, in that the threshold is referenced to the background

noise level.

Equivalent Sound Level (Leq) - The equivalent sound level is a measure of cumulative sound exposure (A-weighted decibel level) over a specified period of time. The time interval may be an hour, an eight-hour school day, a 24-hour day, or any other period of interest. Loosely speaking, the Leq may be thought of as the "average" noise exposure during the period of measurement. More precisely, it is the integral of dBA over the specified period, keeping in mind that dBA is a logarithmic measurement. In aviation noise applications, Leq is often presented as consecutive one-hour intervals to show how noise levels rise and fall over a 24-hour period. Additionally, the American National Standards Institute and Acoustical Society of America (ANSI/ASA) recommendations specify the maximum allowable noise levels in classrooms in terms of an hourly Leq.

Community Noise Equivalent Level (CNEL) - The Community Noise Equivalent Level is the standard measure of 24-hour aviation noise exposure in California. The CNEL is essentially the Leq, or "average" noise level over a 24-hour period, with one major exception. In calculating CNEL, the intensity of noise events occurring during evening hours (7:00 PM - 9:59 PM) is multiplied by 3 and the intensity of events during nightime (10:00 PM - 6:59 AM) is multiplied by 10. This effectively adds 4.8 dBA to the A-weighted decibel measurement of each evening event and 10 dBA to each nighttime event. These adjustments are intended to compensate for the people's greater sensitivity to evening and nighttime noise and for the fact that ambient noise levels tend to be lower during these hours.

Day-Night Level Average Sound Level (DNL) - The Day-Night Level Average Sound Level is utilized by the Federal Aviation Administration and by most states other than California. DNL is identical to CNEL, except that only nighttime events are weighted – evening evants are not. Consequently, for airports with extensive operations during evening hours, DNL will be slightly lower than CNEL.

Regulatory Considerations

Section 21675(a) of the California Public Utilities Code requires that:

> *"Each (Airport Land Use) commission shall formulate an airport land use compatibility plan that will provide for the orderly growth of each public use airport and the area surrounding the airport within the jurisdiction of the comission, and will safeguard the general welfare of the inhabitants within the vicinity of the airport and the public in general. The commission's airport land use compatibility plan shall include and shall be based on a long-range master plan or an airport layout plan, as determined by the Division of Aeronautics of the Department of Transportation, that reflects the anticipated growth of the airport during at least the next twenty years."*

The 2005 Airport Master Plan for the San Luis Obispo County Regional Airport does not meet the requirements of Public Resources Code Section 21675(a.), because it includes projected

data for airport operations only through the year 2023. The California Airport Land Use Planning Handbook (Table 2A, page 2-7), however, authorizes the ALUC to extend the forecast included in the Airport Master Plan, as necessary to meet the requirements of the Public Utilities Code..

Time Frame for Airport Noise Compatibility Planning

Although PUC Section 21675 (a.) requires that the ALUC consider the anticipated growth of the airport over "at least the next twenty years", additional regulatory guidance is provided by PUC Section 21674.7 (a), which mandates that

> *"An airport land use commission that formulates, adopts, or amends an airport land use compatibility plan shall be guided by information prepared and updated pursuant to Section 21674.5 and referred to as the Airport Land Use Planning Handbook published by the Division of Aeronautics of the Department of Transportation."*

In regards to the time frame to be considered for airport noise compatibility planning, the current (October, 2011) edition of the Airport Land Use Planning Handbook strongly suggests that the 20-year horizon mandated by PUC Section 21675(a.) is insufficient.

> *"For compatibility planning, however, 20 years may be shortsighted. For most airports, a lifespan of more than 20 years can reasonably be presumed. Moreover, the need to avoid incompatible land use development will exist for as long as the airport exists. Once development occurs near an airport, it is virtually impossible – or, at the very least, costly and time-consuming – to modify the land uses to ones that are more compatible with airport activities"*
>
> *_California Airport Land Use Planning Handbook, page 3-5*

> *"The 'at least' phrase in the statute warrants emphasis. The 20-year time frame should be considered a minimum for compatibility plans. Noise impacts (as well as other compatibility concerns) should be viewed from the longest practical time perspective."*
>
> *_California Airport Land Use Planning Handbook, page 3-6*

> *"In conducting noise analyses for ALUCPs, the long-range time frame is almost always of the greatest significance."*
>
> *_California Airport Land Use Planning Handbook, page 3-6*

According the the United States Census Bureau, (2007-2011 American Community Survey), 26.2% of housing units in the city of San Luis Obispo were constructed in 1950 or before. It is reasonable to conclude, then, that any noise-sensitive development established in the present day will not have been substantially vacated in less than sixty-five years. Consequently a time frame of less than 50-to-75 years would, in consideration of the guidance of the California Airport Land Use Planning Handbook, appear to be inadequate for airport noise compatibilty planning purposes.

The Airport Noise Environment

Density of Development Within the Airport Land Use Planning Area

Annoyance and negative community response to aircraft noise is a highly subjective phenomenon. A noise event that would be almost unnoticeable in the bustling downtown core of a major city may be highly disturbing to residents of a low-density suburban residential neighborhood. One of the most important factors to be considered in establishing airport noise policies for the area adjacent to the San Luis Obispo County Regional Airport is, therefore, the nature of existing development within the Airport Land Use Planning Area.

The California Airport Land Use Planning Handbook characterizes density of existing development as "rural", "suburban", "urban", and "dense urban". These four categories are defined as follows:

Table B-1: California Airport Land Use Planning Handbook Land Use Density Categories

Category	Definition
Rural	Areas where the predominant land uses are natural or agricultural; buildings are widely scattered
Suburban	Areas characterized by low-rise (1 or 2 story) development and surface parking lots
Urban	Areas characterized by mid-rise (up to 5 stories) development; generally surface vehicle parking, but potentially some parking structures
Dense Urban	City core areas characterized by extensive mid- and high-rise buildings; often with 100 percent lot coverage and limited surface parking

While the concepts or rural, suburban, and urban may have different connotations in other settings, for purposes of airport land use planning, the above definitions must be considered authoritative.

A physical examination of existing development in proximity to the San Luis Obispo County Regional Airport reveals that there are no areas of either "urban" or "dense urban" land use within the Airport Land Use Planning Area. "Suburban" development is present in the northern portion of the airport influence area and extends along Broad Street to the office parks adjacent to the airport itself. The land area along South Higuera Street is also characterized by "suburban" development, as are the scattered residential developments of Country Club and Rolling Hills Estates. An illustration of existing land use densities in the airport planning area is given in Figure B-1.

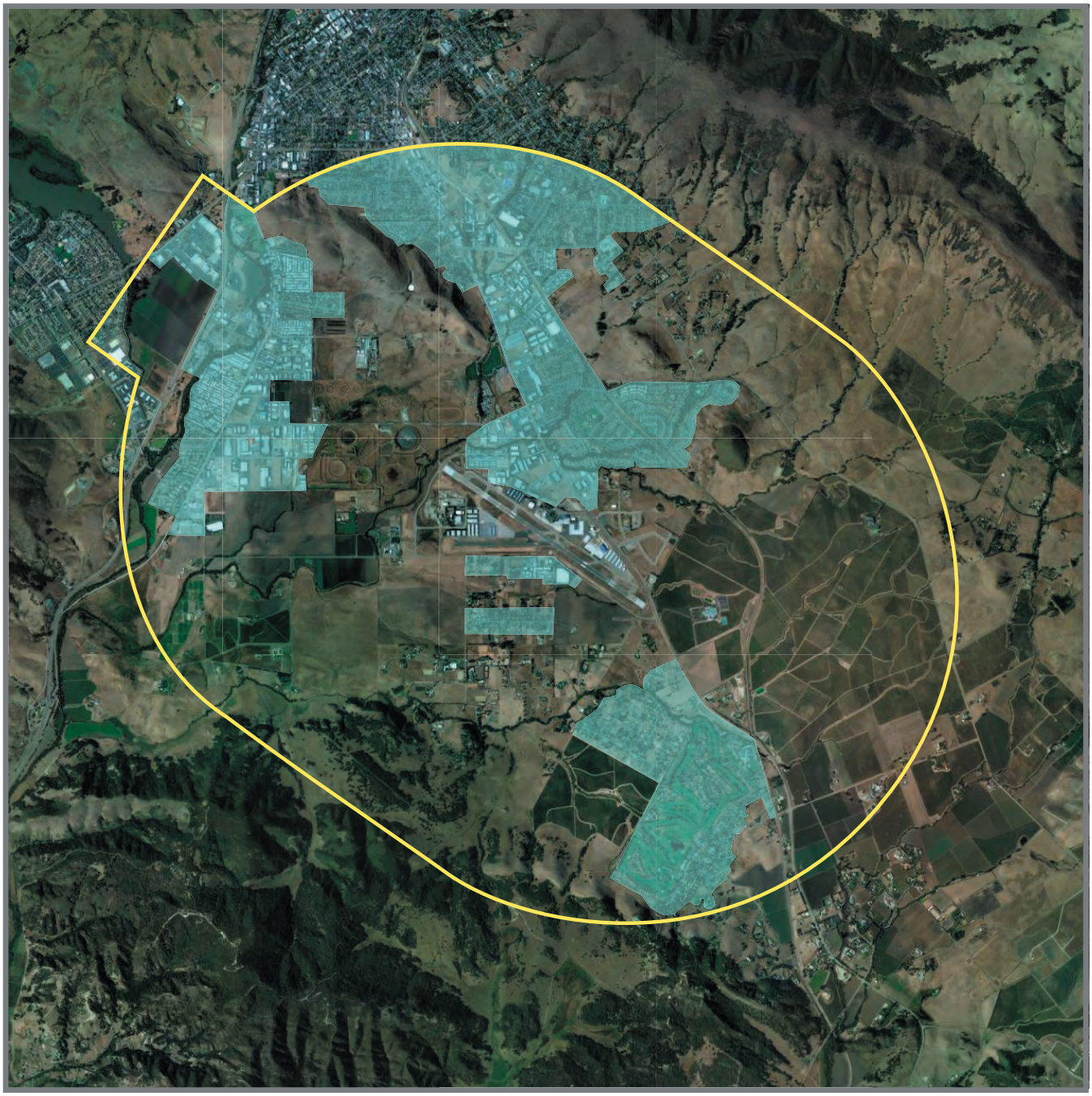


Figure B-1 – Land Use Densities in the Airport Planning Area
Shaded area represents suburban land uses; unshaded area denotes rural land uses

Ambient Noise Levels in Existing Residential Areas Within the Airport Land Use Planning Area

A second approach taken toward the characterization of the acoustic environment of airports is

measurement of actual background noise levels. Such measurements should not be confused with the averaged noise levels (CNELs) used to construct airport noise contours. As defined within the California Airport Land Use Handbook (page 4-4), community ambient noise levels represent "background noise level in the community, **absent distinct noise events**" (emphasis added). Measurements of ambient noise, therefore, exclude such noticeable acoustic events as aircraft overflights, construction, nearby passage of large trucks.

The California Airport Land Use Planning Handbook characterizes outdoor community noise levels as follows:

Table B-2: CALUPH Categorization of Community Noise Levels

Outdoor Noise Level[1] (dBA)	**Qualitative Description**
47.5 - 52.5	Quiet suburban/rural
52.5 - 57.5	Suburban
57.5 - 62.5	Urban
62.5 - 67.5	Noisy urban
67.5 - 72.5	Very noisy urban
75 - 80	City noise (downtown of major metropolis)

[1] Measured in the absence of intruding noise

The document Planning in the Noise Environment, published by the U. S. Department of defense provides a similar classification of ambient community noise level:

Table B-3: Department of Defense Categorization of Community Noise Levels

Outdoor Noise Level (dBA)	**Community Classification**
40 - 48	Rural
45 - 55	Quiet suburban
53 - 60	Quiet urban
57 - 67	Urban
65 - 75	Dense urban; heavy traffic
72 - 80	Downtown of major metropolis

A preliminary survey of ambient noise levels in the Airport Land Use Planning Area was performed in June of 2012. The results of this investigation are shown in Figure B-2. Characteristics of the noise measurements include:

- Measurements were made in established residential areas or in open areas potentially suitable for residential development
- Measurements were not obtained in commercial centers, industrial sites, or areas immediately adjacent to major thoroughfares, as these were not judged to representative of sites likely to be developed for residential uses in the future
- Measurements were not taken in the presence of obvious intrusive noise events
- Measurements were taken over a 5-to-10 minute period, or until it was clear that a defined range had been established

Figure B-2 – Background Noise Levels in Residential Neighborhoods in the Airport Area: Preliminary Survey

- Measurements were made on weekday mornings between 11 am and 1 pm
- All measurements were A-weighted

Surprisingly, ambient noise levels in widely separated neighborhoods within the Airport Land Use Planning Area were similar, ranging from a low of 41 - 45 dBA to a high of 50 - 53 dBA. As can readily be seen, the measured sound levels fell almost entirely within the "quiet suburban/rural" category, as defined by the California Airport Land Use Planning Handbook, and were within the Department of Defense "rural" and "quiet suburban" categories.

In August of 2013, a more exhaustive analysis of background noise levels was undertaken. Ambient noise was measured at 67 locations within and adjacent to the Airport Land Use Planning Area. The sites where measurements were taken are indicated in Figure B-3. The methodology was as described for the preliminary noise survey. The follow-up noise survey revealed several features of interest:

- To a large degree, the findings of the preliminary background noise study were confirmed. Sound levels in the Edna-Islay, Country Club/Rolling Hills, and Buckley Road areas and in the neighborhoods on the north side of South Hills were almost uniformly found to be within the Rural/Quiet Suburban and Suburban ranges, as defined by the Airport Land Use Planning Handbook, 2011 (i.e., less than 57.5 dBA).
- With regard to residential areas located along South Higuera Street, a marked difference was found between areas located east of Higuera Street and those located west of that thoroughfare. In neighborhoods east of Higuera, sound levels were typically in the Suburban range, with some sites dipping into the Rural/Quiet Suburban zone at times. Existing residential land uses lying between South Higuera Street and U. S. Highway 101, however, are more highly noise-impacted. Noise measurements taken around the periphery of these developments typically yielded values in the Suburban to Urban ranges, with some measurements at the Noisy Urban level. These higher noise levels were recorded around Los Verdes Park 1, Los Verdes Park 2, and Creekside Mobile Home Park. Measurements were not obtained at Silver City Mobile Home Park, but it can be anticipated that the noise environment at this location is similar.

  The primary differences between the areas east of South Higuera and those to the west appear to be that:

  - Residential developments on the east side of South Higuera Street are, in general, separated from Higuera by a strip of commercial land uses. while residential uses on the west abut directly on Higuera, and
  - Residential land uses on the west side of South Higuera Street are impacted by traffic noise from U. S. Highway 101, as well as from Higuera Street itself.

  It is important to note that, out of respect for the privacy of residents, noise measurements at Los Verdes Park 1, Los Verdes Park 2, and Creekside Mobile Home Park were taken only around the periphery of the properties. Due to the sound buffering provided by intervening structures, the interiors of these developments are likely to provide noise

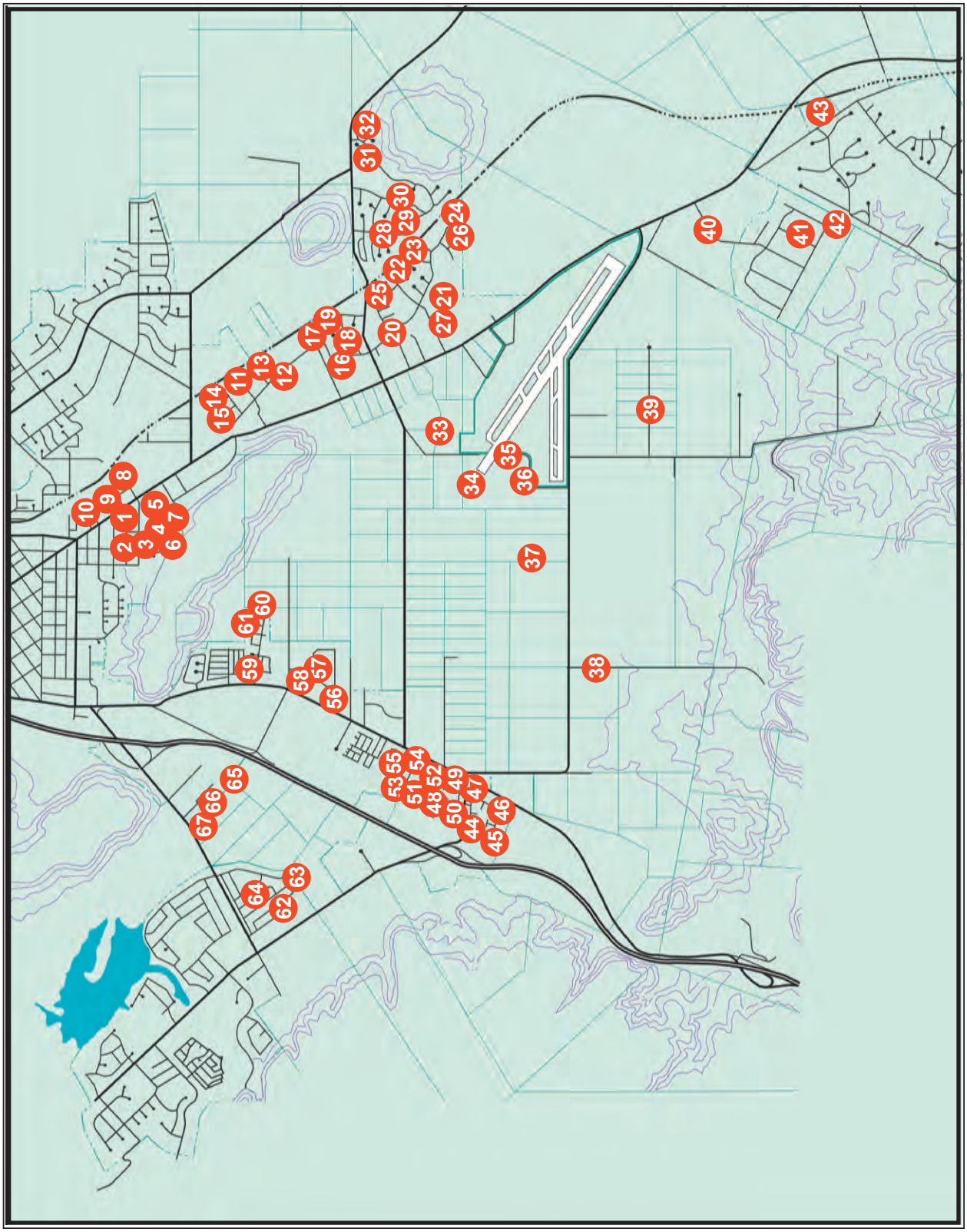


Figure B-3 – Measuring Sites for Background Noise Levels: Follow-Up Survey

environments which are much quieter than that which exists at the edges of these neighborhoods.

- Considerable variation in noise measurements at individual sites was also noted within the South Broad Street area, and a definable pattern was evident. Sound levels were in the Urban (or even, occasionally Noisy Urban) range at sites with a direct and unobstructed line of sight to South Broad Street. On the other hand, sites that are protected from traffic noise on South Broad Street by intervening structures generally experience sound levels within the Suburban range. Perhaps the best indicator of the noise environment that can be expected for future residential development in this area are the measurements taken at Broad Street Village. This is a recently-built, mixed use development with an extensive residential component and is, in all likelihood, representative of future development in this area. Ambient sound levels at Broad Street Village are 54 to 56 dBA, squarely in the middle of the Suburban noise range.

Overall, the conclusions to be drawn from the expanded community background noise analysis are that:

- Overall, the noise environment for existing and future residential neighborhoods surrounding the San Luis Obispo County General Airport is Rural/Quiet Suburban to Suburban
- Some residential neighborhoods situated between South Higuera Street and U. S. Highway 101 are currently experiencing undue noise impacts from traffic on these two routes, and serious consideration should be given to additional mitigation

Table B-4 – Ambient Noise Levels in Residential Areas in the Vicinity of the San Luis Obispo County Regional Airport: Follow-Up Survey

Map No.	Address
1	611 Mitchel Drive
2	406 Mitchel Drive
3	447 Lawrence Drive
4	675 Stoneridge Drive
5	519 Stoneridge Drive
6	500 Bluerock Drive
7	555 Bluerock Drive
8	821 Lawrence Drive
9	2630 Victoria Avenue
10	2490 Victoria Avenue
11	870 Capitolio Way
12	Broad Street Village
13	874 Ricardo Court
14	3419 Roberto Court
15	3433 Miguelito Court
16	3917 Poinsettia Street
17	958 Bougainvillea Street
18	816 Columbine Court
19	3924 Hollyhock Way
20	4133 Poinsettia Street
21	4307 Larkspur Street
22	4390 Sunflower Way
23	4495 Sunflower Way
24	4698 Poinsettia Street
25	4166 Morning Glory Way
26	4696 Snapdragon Way
27	910 Ambrosia Lane
28	1309 Sawleaf Court
29	1388 Purple Sage Lane
30	4591 Spanish Oaks Drive
31	4435 Spanish Oaks Drive
32	1570 Huckleberry Lane
33	636 Clarion Court
34	Hoover St. (end of rwy)

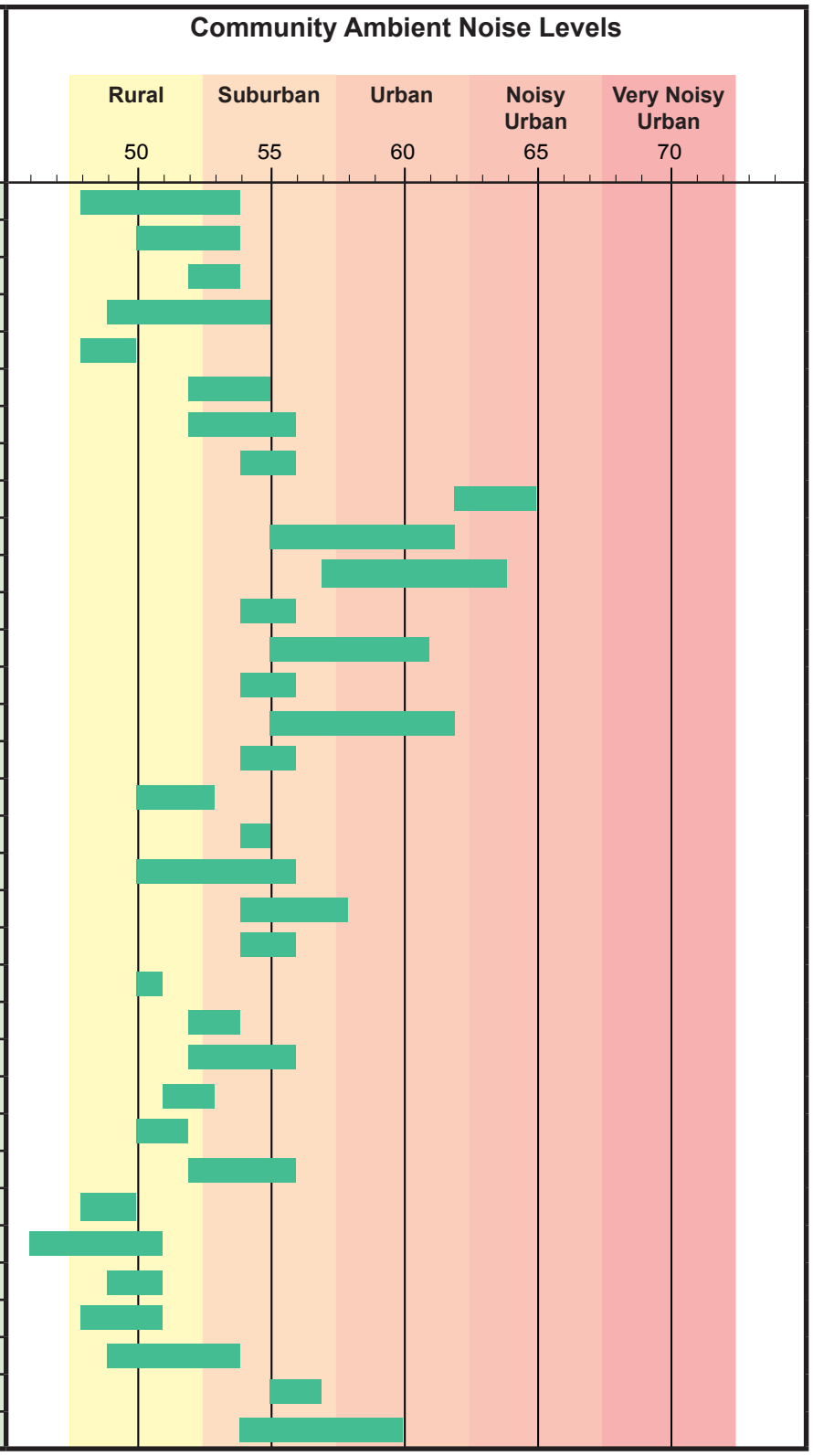
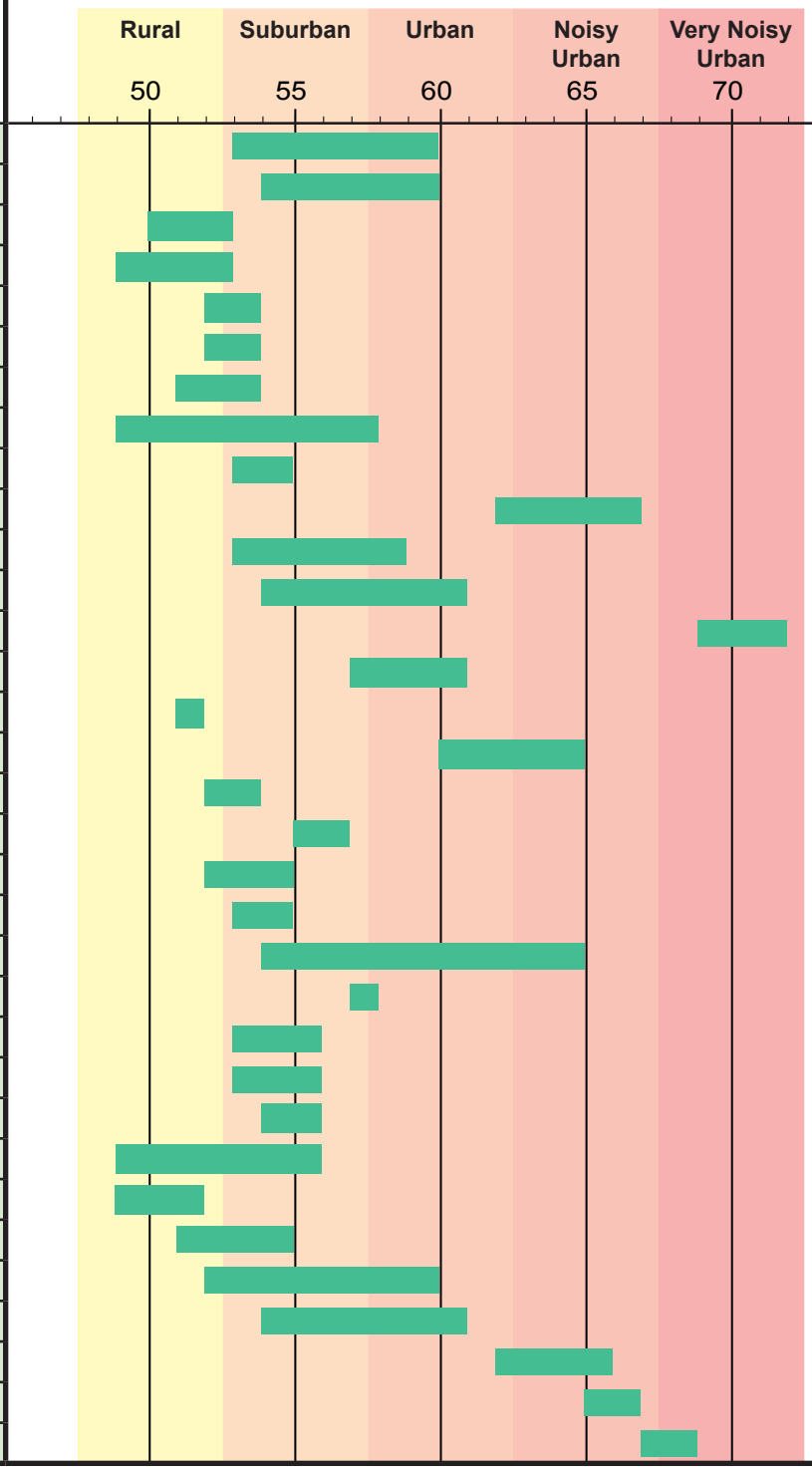


Table B-4 – Ambient Noise Levels in Residential Areas in the Vicinity of the San Luis Obispo County Regional Airport: Follow-Up Survey *(continued)*

Map No.	Address	Community Ambient Noise Levels
35	Old Santa Fe Road (end)	
36	4388 Old Santa Fe Road	
37	4341 Esperanza Lane	
38	4725 Jespersen Road	
39	665 Evans Road	
40	445 Crestmont Drive	
41	230 Ranchito Lane	
42	5140 Caballeros Avenue	
43	Los Ranchos School	
44	Los Verdes Park 2, NW	
45	Los Verdes Park 2, SW	
46	Los Verdes Park 2, SE	
47	Los Verdes Park 1, E	
48	Los Verdes Park 1, N	
49	Los Verdes Park 1, NE	
50	Los Verdes Park 1, SW	
51	82 Chuparossa Drive	
52	25 Chuparossa Drive	
53	3955 Carissa Court	
54	68 Mariposa Drive	
55	Creekside Mobile Home	
56	131 Granada Drive	
57	181 Bonetti Drive	
58	3474 Empresa Drive	
59	3120 Alicita Court	
60	3175 Calle Jazmin	
61	357 Calle Lupita	
62	1359 Garcia Drive	
63	1253 Cayucos Drive	
64	1806 Huasna Drive	
65	Dalidio Drive, SE	
66	Dalidio Drive, mid	
67	Dalidio Drive, NW	



Airport Noise Compatibility Criteria

Historical Context

Federal Aviation Regulations (FAR), Part 150 – Part 150 of the Federal Aviation Regulations, under authority of the Aviation Safety and Noise Abatement Act of 1979, established eligibility requirements for federal funding of aviation noise compatibility studies. Such studies are not, however, mandatory – the decision to conduct them is left to the discretion of individual airport proprietors. FAR Part 150 considers all land uses with noise levels less than 65 DNL to be compatible with aircraft operations. At higher noise exposures, selected land uses are also deemed acceptable, depending upon the nature of the use and the degree of structural noise attenuation provided. It is important to realize, however, that the 65 DNL criterion is advisory, not mandatory. Part 150 specifically states that the "compatible" and "incompatible" designations contained within the regulations:

> *"...do not constitute a Federal determination that any use of land covered by the [noise compatibility] program is acceptable or unacceptable under federal, state, or local law. The responsibility for determining the acceptable and permissible land uses and the relationship between specific properties and specific noise contours rests with the local authorities. FAA determinations under Part 150 are not intended to substitute federally determined land uses for those determined to be appropriate by local authorities in response to locally determined needs and values in achieving noise compatible land uses."*

California Airport Noise Regulations – Section 5000 et seq. of the California Code of Regulations (Title 21, Division 2.5, Chapter 6) – The California Airport Noise Regulations appear to define airport noise compatibility as follows:

> *"The level of noise acceptable to a reasonable person residing in the vicinity of an airport is established as a community noise equivalent level (CNEL) value of 65 dB for purposes of these regulations. This criterion level has been chosen for reasonable persons residing in urban residential areas where houses are of typical California construction and may have windows partially open. It has been selected with reference to speech, sleep and community reaction."*

It is important to understand, however, that he compatibility criterion (i.e., 65 dB CNEL) identified in the Airport Noise regulations only is mandated for a few airports (less than a dozen) that have been formally declared to have a "noise problem", the regulations do not establish a mandatory criterion for evaluating the compatibility of proposed land use development around other airports. Section 5002 of the regulations specifically states that:

> *"This subchapter shall be liberally construed and applied to promote its underlying purposes which are to protect the public from noise and to resolve incompatibilities between airports and their surrounding neighbors."*

The intent of the regulations is further amplified by Section 5004, which notes:

> *"It is not the intent of these regulations to preempt the field of aircraft noise limitation in the state. The noise limits specified herein are not intended to prevent any local government, to the extent not prohibited by federal law, or any airport proprietor from setting more stringent standards."*

Although these early attempts to foster airport noise compatibility incorporated the 65 dB DNL or CNEL airport noise contour, they did so in an advisory manner. An Airport Land Use Plan that incorporates more conservative noise compatibility standards is not in violation of any state or federal law or regulation.

Recommendations of the World Health Organization (WHO) – In March of 1999, a task force of the WHO met in London and reviewed extensively the available literature on the health effects of ambient noise exposure. The document, *Guidelines for Community Noise*, which resulted from this session, contains the following standards for maximum acceptable community noise levels.

Table B-5: Guidelines for Community Noise

Environment	Maximum Acceptable Interior Sound Level (dB LA_{eq}[1])	Equivalent Exterior Sound Level[2] (dB LA_{eq}[1])
Outdoor living areas	50 - 55	50 - 55
Indoor dwellings	35	47 - 50
Bedrooms	30	42 - 45
School classrooms	35	47 - 50
School playgrounds, outdoor	55	55
Hospitals, patient rooms	30	42 - 45
Hospitals, treatment/observation rooms	35	47 - 50
Industrial, commercial, and traffic areas	70	N/A[3]
Music through earphones	85	N/A[3]
Ceremonies and entertainment	100	N/A[3]

[1] dB LAeq is the "equivalent continuous noise level". The ear has different sensitivities to different frequencies, being least sensitive to extremely high and extremely low frequencies. Because of this varied sensitivity, the term "A weighting" is used: all the different frequencies, that make up the sound, are assessed to give a sound pressure level. The sound pressure level measured in dB is referred to as "A-weighted" and expressed as dB LAeq.

[2] Range indicates values obtained using average building attenuation figures given by the EPA for warm climates, windows open (12 dB) and for average across the nation (15 dB).

[3] Exterior sound level is not applicable, as the listed use is anticipated to be the primary source of noise exposure.

The WHO guidelines express noise levels as dB LA_{eq}, or "equivalent continuous noise level". This methodology is similar to CNEL, but does not weight nighttime events. Since aviation operations at the San Luis Obispo County Regional Airport are largely concentrated during the daylight hours, values for dB LAeq and CNEL would be expected to be very similar. For residential uses with sleeping quarters, the World Health Organization recommends that exterior noise levels not exceed 42 - 45 dB.

Recommendations of the Natural Resources Defense Council (NRDC) – In 1995, the NRDC undertook a study of noise and land use issues at 125 U.S. airports. The analysis and conclusions of that study were subsequently published in a document entitled *Flying Off Course: Environmental Impacts of America's Airports*. In this report, the NRDC advocates the use of the 55 dB CNEL contour for all "funding and planning decisions." The provisions of this amendment are consistent with that standard.

Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety, Environmental Protection Agency, March, 1974 – In an extensive analysis of the community impacts and health effects of aviation-related noise, the EPA concluded that "Outdoor yearly levels on the Ldn scale are sufficient to protect public health and welfare if they do not exceed 55 dB in sensitive areas (residences, schools, and hospitals). Inside buildings, yearly levels on the Ldn scale are sufficient to protect public health and welfare if they do not exceed 45 dB." The provisions of this amendment are consistent with that standard.

Contemporary Authority

Fortunately, the 2011 California Airport Land Use Handbook gives substantial guidance on the selection of appropriate airport noise standards:

> Page 4-7 – *"For purposes of airport land use compatibility planning, Caltrans advises that 65 dB CNEL is not an appropriate criterion for new noise-sensitive development around most airports."*
>
> Page 4-3 – *"For quieter settings and many—if not most—airports in California, 65 dB CNEL is too high of a noise level to be appropriate as a standard for land use compatibility planning."*
>
> Page 4-3 – *"Federal policy articulated by the Federal Aviation Administration (FAA) has evolved to where the agency now will "respect and support" local establishment of a lower threshold of noise exposure acceptability."*
>
> Page 4-7 – *"The three CNEL values commonly used as the limit for acceptable residential noise exposure are: 65 dB, 60 dB, or 55 dB."*

This guidance clearly indicates that the California Division of Aeronautics no longer supports the 65-dB CNEL contour as a "one size fits all" criterion for compatibility of noise sensitive land uses, but rather requires the ALUC to consider the suitability of a more conservative standard.

The Concept of Normalization

A long-standing method of adjusting noise levels in a community is the concept of "normalization." Normalization has its origin in research done for the U.S. Air Force in the 1950s. The purpose of the research was to establish a method for adjusting aircraft noise levels used for determining and predicting expected community reactions. The adjustments take into account local conditions as described below. National recognition and support of normalization appears in the U.S. Environmental Protection Agency's (EPA) Community Noise (1971) and "Levels" (1974) documents. The California Department of Transportation (Caltrans) also uses the normalization process in its development of noise standards for California airports, and the California Governor's Office of Planning and Research continues to include the normalization procedure in its General Plan Guidelines (2003).

The normalization procedure was originally designed to adjust or "normalize" actual measured noise levels so that the effects of different noises on different communities could be compared more reliably and to compensate for the fact that the original standard of 65 dB CNEL was developed for airports in major metropolitan areas with extremely high ambient noise levels. Over the years, planners have also found normalization to be a valuable tool for establishing appropriate noise level limits for new noise-sensitive development in the vicinity of an airport. This latter application of normalization is particularly well-suited to airport land use planning.

The normalization procedure takes into account four categories of adjustment factors associated with the noise source and the characteristics of the affected community: seasonal characteristics of the noise; background noise level in the community, absent distinct noise events; previous exposure to, and attitudes toward, the noise; and whether the noise includes pure tones or impulse characteristics. The complete set of normalization factors and required adjustments is as listed in Table B-6.

The California Airport Land Use Planning Handbook strongly encourages Airport Land Use Commissions to utilize the normalization procedure when adopting noise compatibility standards for a particular airport:

> Page 4-6 – *"At the present time, normalization is the best method available for quantitatively adjusting noise levels to account for local conditions in an effort to establish appropriate noise limits for noise-sensitive land uses near airports."*
>
> Page 4-6 – *"ALUCs are encouraged to consider the normalization factors listed in Table 4A when setting noise level limits for new noise-sensitive development in the vicinity of an airport."*

Table B-6: Adjustment Factors for Obtaining Normalized CNEL

Type of Correction/Description	Add to Measured CNEL (dB)
Seasonal Correction	
Summer (or year-round operation)	0
Winter only (or windows always closed)	-5
Correction for Outdoor Noise Level Measured in the Absence of Intruding Noise	
Quiet suburban or rural community	+10
Normal suburban community	+5
Urban residential community	0
Noisy urban residential community	-5
Very noisy urban residential community	-10
Correction for Previous Exposure and Community Attitudes	
No prior experience with intruding noise	+5
Community has had some previous exposure to intruding noise but little effort is being made to control the noise.	0
Community has had considerable previous exposure to the intruding noise and the noise maker's relations with the community are good	-5
Community aware that operation causing noise is very necessary and it will not continue indefinitely.	-10
Pure Tone or Impulse	
No pure tone or impulsive character	0
Pure tone or impulsive character present	+5

Application of Normalization to CNEL Contours at the San Luis Obispo County Regional Airport

When the normalization process is applied to determine appropriate noise criteria for the San Luis Obispo Regional Airport, the result is as shown in Table B-7:

Table B-7: Normalized CNEL at the San Luis Obispo County Regional Airport

Type of Correction/Description	Add to Measured CNEL (dB)
Seasonal Correction	
Summer (or year-round operation)	0
Correction for Outdoor Noise Level Measured in the Absence of Intruding Noise	
Quiet suburban or rural community	+10
Correction for Previous Exposure and Community Attitudes	
Community has had some previous exposure to intruding noise but little effort is being made to control the noise.	0
Pure Tone or Impulse	
No pure tone or impulsive character	0
Total Correction	**+10**

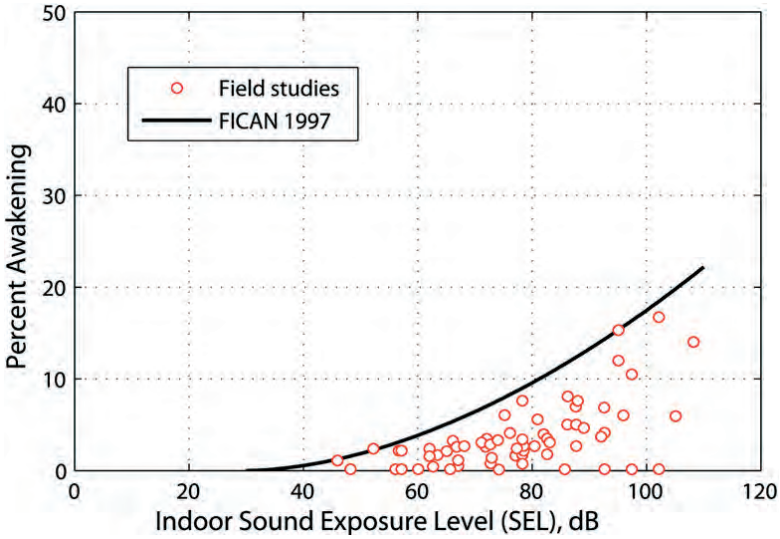
After normalization, the computed 55 dB CNEL contour for the San Luis Obispo County Regional Airport is seen to be equivalent to 65 dB for airport compatibility planning purposes and the 60 dB contour is equivalent to 70 dB. In addition to the above, aircraft overflights have been characterized by some noise experts (Niedzielski, Minnesota Pollution Control Agency) as "impulsive" in nature. Such consideration would require an additional normalization of 5 dB, bringing the recommended noise standard for extremely noise sensitive land uses to 50 dB CNEL for the San Luis Obispo area

At the 55 dB CNEL contour, the normalized CNEL would be in the range of 65 to 70 dB. In the document NTID 300.3 *Community Noise*, the U.S. Environmental Protection Agency (EPA) has correlated community reaction to noise with normalized CNEL values, as calculated from documented case histories. At a level of 65 to 70 dB normalized CNEL, widespread complaints and/or a single threat of legal action are to be expected. It is clear, therefore, that the 55 dB CNEL noise standard is the least restrictive standard for new residential development which will meet the goal "to protect the public from noise and to resolve incompatibilities between airports and their surrounding neighbors" as required by California Code of Regulations Title 21.

Single-Event Aircraft Noise Impacts

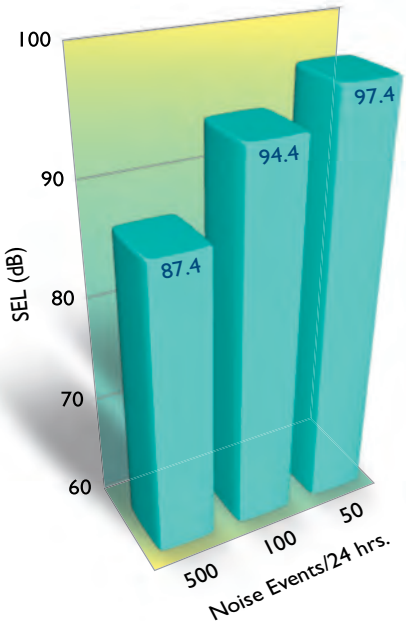
Although virtually all regulations concerning noise-based incompatibilities between airport operations and surrounding land uses are based on cumulative noise measures (CNEL or DNL), single-event noise incidents can also have adverse impacts. The need to consider th potential effects of single noise events has been highlighted by the California Court of Appeals decision, in *Keep Berkeley Jets Over the Bay vs. Board of Port Commissioners* (2001) 91 Cal. App. 4th 1344, which held that an analysis of such events was required in the environmental impact report of the airport master plan for the Oakland Airport.

Figure B-4 – Noise-Related Sleep Disturbance



A particular area of concern is sleep interference, as the intensity of single-event noise has been reported to be the metric most predictive of noise-related awakenings (Fidell, 1994). In 1997, the Federal Interagency Committee on Aviation Noise (FICAN) adopted an revised interim guideline for prediction of sleep disturbance (Figure Y3). This document suggests that significant impacts on sleep occur even with single-event noise levels in the 40 to 60 dBA range.

Figure B-5 – Relationship Between CNEL, SEL, and Frequency of Aircraft Noise Events



Other effects which have been linked to single-event aviation noise impacts include interference with spoken communications (including face-to-face conversation, as well as radio and television communication) and impacts on communication and learning in the classroom environment. Additionally, local experience indicates that noise complaints lodged by residents of the City of San Luis Obispo are almost always initiated in response to a single-event noise impact.

The topic of single-event noise impacts is especially relevant to the San Luis Obispo County Regional Airport because of the relationship between CNEL contours, number of airport operations, and single-event noise

intensity. At very busy airline hub airports, CNEL contours are determined by a large number of overflights. The single-event impact of each overflight, therefore, is less noticeable. Figure Y4 shows the intensity of individual noise events at the 65-dbA airport noise contour for sites that experience 500, 100, and 50 overflights per day. At sites that experience 50 overflights per day, the intensity of each noise event is 1000% greater than at sites which experience 500 overflights daily. Since it is unlikely that any location in the vicinity of the San Luis Obispo County Regional Airport that could potentially be developed with noise-sensitive uses will experience more than 50 overflights per 24 hours, it can be anticipated that single-event noise levels will be high in comparison to CNEL contours and will be especially important in determining the level of community reaction to airport operations.

The World Health Organization has adopted standards for interior single-event noise exposure as follow:

Table B-8 – Maximum Allowable Interior Single-Event Noise Levels: World Health Organization

Environment	Maximum Interior Single-Event Noise Level (dB Lmax)
Bedrooms, sleeping rooms	45
Hospitals, patient rooms (night)	40

Single Event Noise in the Vicinity of the San Luis Obispo County Regional Airport

During the community ambient noise surveys performed in June and August of 2013, a number of single-event aviation noise impacts were observed. These are detailed in Table B-11:

Table B-9 – Observed Noise Impacts of Aviation Activities in the Vicinity of the San Luis Obispo County Regional Airport

Location	Ambient Noise Level (dBA)	Description of Event	Lmax (dBA)	Estimated Interior Noise Level	
				Residence	School
Broad Street Village	**54-56**	Overflight by departing single-engine general aviation aircraft on right downwind. Estimated altitude: 1000 feet	**79**	66	50
4327 Larkspur Street	**51-55**	Aircraft departing in the distance	**70**	57	41
3924 Hollyhock Way	**50-56**	Overflight by helicopter. Estimated altitude: 1000 feet	**78**	65	49
3120 Alicita Court	**54-56**	Oblique overflight by single-engine general aviation aircraft.	**71**	58	42
230 Ranchito Lane	**51-54**	Overflight by departing single-engine general aviation aircraft on left downwind. Estimated altitude: 1000 feet	**83**	70	54
445 Crestmont Drive	**52-54**	Twin-engine general aviation aircraft landing on Rwy. 29	**78**	65	49
1570 Huckleberry Lane	**49-54**	Jet aircraft departing Rwy 29 in the distance	**65**	52	36
Hoover Street at end of Runway 29	**54-60**	Small single-engine general aviation aircraft departing Runway 29. Estimated altitude 300-400 feet.	**81**	68	52

Although this information is anectdotal in nature, it strongly suggests that:

- Direct overflight of residential neighborhoods in the vicinity of the San Luis Obispo County Regional Airport are associated with a 20 to 30 dBA increase in ambient noise levels (i.e., a 100 to 1000-fold increase in sound pressure).
- Even distant aviation operations are associated with a 10 to 20 dBA increase in ambient noise levels, a change which would be easily noticeable by residents.
- Direct overflight of noise-sensitive land uses produce single-event noise impacts which exceed the exterior maximum limits established by the County's Noise Ordinance and which are estimated to exceed the maximum permissible interior sound levels included in the County's Noise Ordinance, the Noise Element of the General Plan of the City of San

Luis Obispo, and the recommendations of the World Health Organization.

- Establishment of additional noise-sensitive land uses in areas adjacent to the San Luis Obispo County Regional Airport that are subject to overflight of aircraft at altitudes of 1000 feet or less above ground level are likely to be incompatible with airport operations as a result of single-event noise impacts unless a.) such uses entail little or no expectation that outdoor activities can be pursued in peace and quiet and b.) careful attention is paid to adequate acoustic insulation of interior spaces.

Local Ordinances Regulating Noise Exposure

The City of San Luis Obispo

Exterior Noise Limits

In Section 9.12.060 of its Municipal Code, the City of San Luis Obispo has set forth detailed limits on maximum allowable exterior noise exposure. The exposure limits for noise which, like the sound of an aircraft engine, contains a steady, audible tone are summarized in Table B-10:

Table B-10 – Maximum Allowable Exterior Noise Levels: Noise Which Contains a Steady, Audible Tone (Municipal Code, City of San Luis Obispo, Section 9.12.060)

Zoning Category	Time Interval	Noise Level (dBA) by Duration in Minutes per Hour				
		30 min/hr	15 min/hr	5 min/hr	1 min/hr	<1 min/hr
R-1 and R-2 C/OS Low Density Residential	10 pm – 7 am	45	50	55	60	65
	7 am - 10 pm	50	55	60	65	70
R-3 and R-4 High Density Residential	10 pm – 7 am	45	50	55	60	65
	7 am - 10 pm	50	55	60	65	70
O, PF Ltd. Commercial	10 pm – 7 am	50	55	60	65	70
	7 am - 10 pm	55	60	65	70	75
C-N, C-R, C-C, C-T Commercial	10 pm – 7 am	55	60	65	70	75
	7 am - 10 pm	60	65	70	75	80
C-S Light Industrial	Anytime	65	70	75	80	85
M Heavy Industrial	Anytime	70	75	80	85	90

Since it is reasonable to estimate that most overflight events will be more than one minute, but less than five minutes in duration, the column that specifies the maximum allowable noise exposure for 1 minute per hour (shaded in gray, above) is most useful for airport compatibility planning purposes. As discussed on page B-19 and B-20, adoption of 65 dBA CNEL as the criterion for allowing new noise-sensitive land uses would result in exposure of those land uses to overflight noise impacts of *at least* 87.4 dbA – more than 22 decibels above the maximum

exposure allowed by local ordinance. This would clearly be inconsistent with the Municipal Code of the City of San Luis Obispo. In addition, as shown in Table B-9, the measured single-event noise levels that result from aviation operations in the vicinity of the San Luis Obispo County Regional Airport regularly exceed the maximum exposure levels permitted by City ordinance.

These findings support the current recommendations of the California Airport Land Use Planning Handbook that "65 dB CNEL is not an appropriate criterion for new noise-sensitive development around most airports" and suggest that the normalized CNEL contour of 55 dB CNEL as the criteria for new noise-sensitive development is highly consistent with the desire of the residents of the City of San Luis Obispo to ensure a quiet environment for residential and other noise-sensitive land uses.

Interior Noise Limits

Section 9.12.070 of the City of San Luis Obispo Municipal Code regulates the maximum allowable interior noise levels for multifamily residential dwellings. The provisions of this Section, as they relate to noise impacts which, like aircraft engine noise, contain a steady, audible tone are summarized in Table B-11:

Table B-11 – Maximum Allowable Interior Noise Levels for Multifamily Residential Dwellings: Noise Which Contains a Steady, Audible Tone (Municipal Code, City of San Luis Obispo, Section 9.12.070)

Noise Zone	Type of Land Use	Time Interval	Noise Level (dBA) by Duration in Minutes per Hour		
			5 min/hr	1 min/hr	<1 min/hr
All Residential Zones	All Multifamily Residential	10 pm – 7 am	40	45	50
		7 am - 10 pm	45	50	55

Again, taking "1 minute per hour" as the standard most likely to be applicable to aircraft overflight events, it is clear that adoption of the 65 dB CNEL contour as the standard for excluding noise-sensitive development would be inconsistent with local standards for single-event noise exposure. Although, based on available data, it is not possible to conclude that a 55 dB CNEL standard will ensure full compliance with the City's noise ordinance, such a standard appears to represent a reasonable balance between the community's desire to preserve a quiet and peaceful environment, the Airport's current and projected level of operations, and the need to provide additional sites for housing within the City.

The County of San Luis Obispo

Exterior Noise Limits

The Noise Ordinance of the County of San Luis Obispo contains maximum permissible standards for both exterior and interior single-event noise exposure. These noise criteria are applicable throughout the County, in both incorporated and unincorporated areas. Although Section 23.060.040 (j) specifically exempts "aircraft in flight" from regulation, the County Noise Ordinance does provide an indication of maximum noise levels that are considered generally acceptable to the population. The maximum permissible exterior sound levels established by the County of San Luis Obispo are shown in Table B-12.

Table B-12 – Maximum Allowable Exterior Single-Event Levels for Simple Tone or Impulsive Noise Events– Noise Ordinance, County of San Luis Obispo

Land Use	Time of Day	Hourly Equivalent Sound Level (L_{eq}, dB)	Maximum Sound Level (L_{max}, dB)
Residential dwellings, hospitals, hotels, motels, bed and breakfast facilities; schools; churches; libraries and museums; public assembly and entertainment; offices	10 pm - 7am	40	60
	7am - 10 pm	45	65
Outdoor sports and recreation	10 pm - 7am	50	70
	7am - 10 pm	55	75

Table B-13 – Maximum Allowable Interior Single-Event Levels for Simple Tone or Impulsive Noise Events– Noise Ordinance, County of San Luis Obispo

Land Use	Time of Day	Hourly Equivalent Sound Level (L_{eq}, dB)	Maximum Sound Level (L_{max}, dB)
Residential dwellings, hospitals, hotels, motels, bed and breakfast facilities; schools; churches; libraries and museums; public assembly and entertainment; offices	10 pm - 7am	30	50
	7am - 10 pm	35	55

As previously noted, adoption of the 65 dB CNEL contour as the criterion for permitting noise-sensitive land uses in the airport area would result in single-event impacts (Lmax) of 87.4 to

97.4 dB – approximately 10,000 times greater, in terms of sound energy, than permitted by County ordinance.

Although it is not clear that adoption of the 55-dB CNEL contour will be sufficiently restrictive to bring about full compliance with the noise policies of the City and County of San Luis Obispo, this standard is consistent with the California Airport Land Use Planning Handbook and would represent a reasonable attempt on the part of the Airport Land Use Commission to meet the expectations of local residents.

Sensitivity of Various Land Uses to Aircraft Noise impacts

It is a well-established tenet of noise management that certain land uses are more sensitive to noise than are others. Virtually all policies and documents that regulate noise exposure levels, including the General Plan Noise Elements of the City and County of San Luis Obispo, establish standards that are specific to the type of land use.

In discussing noise policy, the California Airport Land Use Planning Handbook largely concentrates on conflicts with residential land uses. One of the major guidelines put forward by the State Handbook is that Airport Land Use Commissions should seek to prevent establishment of noise sensitive land uses in areas impacted by aircraft noise and should not accept acoustic insulation as an acceptable alternative. While the Airport Land Use Commission of San Luis Obispo County concurs with this approach with regard to residential development, it has concluded that for certain, less acutely noise sensitive uses, mitigation may be an appropriate approach.

To implement this concept and to provide local agencies and landowners a greater degree of flexibility in land use planning, the Airport Land Use Commission has separated the broad category of noise sensitive land uses into “extremely sensitive’ and “moderately sensitive”. The purpose of this division is to allow development of “moderately sensitive” land uses (with appropriate acoustic insulation measures) in noise impact areas where they would otherwise be prohibited.

In the case of aircraft noise exposure, the California Airport Land Use Handbook indicates that residential development is “one of the most noise sensitive land uses”. Factors listed as contributing to this extreme sensitivity include:

- Normal residential construction usually provides less sound attenuation than typical commercial construction and windows are more likely to be open;
- Outdoor activity is a significant aspect of residential land use; and
- People are particularly sensitive to noise at night when they are trying to sleep

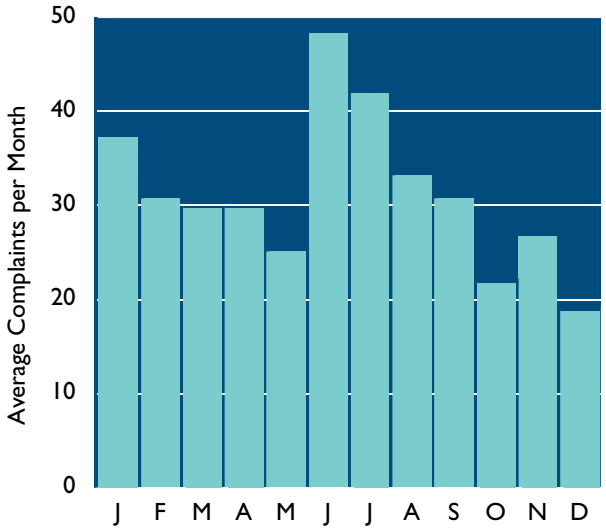
In the San Luis Obispo, these factors are especially important. Because of the mild climate in this area, many residences lack central climate control systems and windows remain open almost year around. The mild climate also results in many homes, especially older structures, having rather light thermal insulation and, therefore, even less sound attenuation than would be found in colder climates. Further, the favorable climate and the social convention in San Luis Obispo have fostered a decidedly outdoor lifestyle. Residents of this community have a strong expectation that they will be able to bicycle, golf, garden, and barbecue without being disturbed by aircraft noise. As a result, residential land uses are considered extremely noise sensitive.

A full discussion of extremely and moderately noise sensitive land uses is included in the Airport Land Use Plan.

Airport Noise Complaints

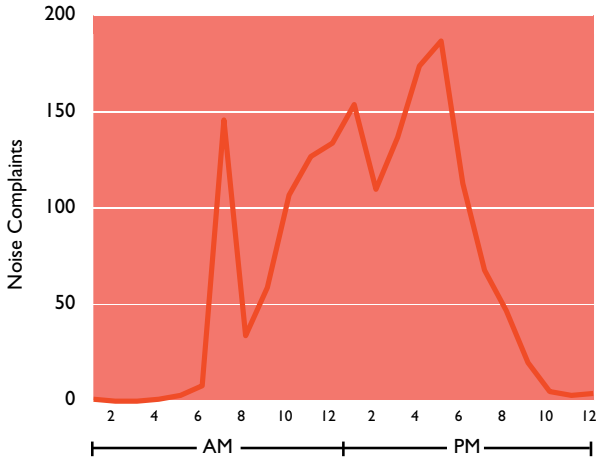
Airport administration for the San Luis Obispo County Regional Airport provides residents of the area with a telephone hotline for reporting aviation noise complaints (805-541-2722) and maintains a record of all such complaints. During the 53-month period extending from the beginning of January, 2009 through the end of May, 2013, 1651 calls were received over the hotline – an average of 373.8 complaints per year. When the seasonal distribution of noise complaints was examined, a moderate variation with time of year was noted. Noise calls were highest in the summer months, when a lack of inclement weather in the San Luis Obispo area favors flying and warm temperatures encourage outdoor activities and open windows. Complaints tended to be lowest during the fall and winter months, when rainy weather grounds pilots who are not instrument-rated and tends to keep residents indoors.

Figure B-5 – Noise Impacts by Month



Noise complaint data for the San Luis Obispo County Regional Airport is also strongly correlated to time of day. Noise complaints are almost non-existent during the hours between 10 pm and 6 am, reflecting the relatively low level of flight activity during that time period. A notable spike in complaints occurs between 6 and 7 am. This increase is largely related to early morning departure of commercial flights timed to make connections in Los Angeles and San Francisco. Following this transient spike, complaints drop markedly between 7 and 8 am, then begin to increase progressively during the daylight hours, reaching a peak between 4 and 5pm. This second rise is due primarily to a variety of general aviation activities, including departures of general aviation aircraft (primarily single-engine) and maneuvering of both fixed- and rotary-winged GA aircraft in the airport traffic pattern. It should be noted that the data presented in Figure Y-5 represent noise complaints from the entire airport influence area. In reality, the timing and nature of noise complaints varies markedly from one portion of the Airport Land Use Plan area to another. In addition, the community's reaction to aviation-related noise impacts has evolved significantly over the past four years. While Figure Y-5 provides a basic introduction to the timing of noise complaint data, this issue will be analyzed in greater detail in the sections to follow.

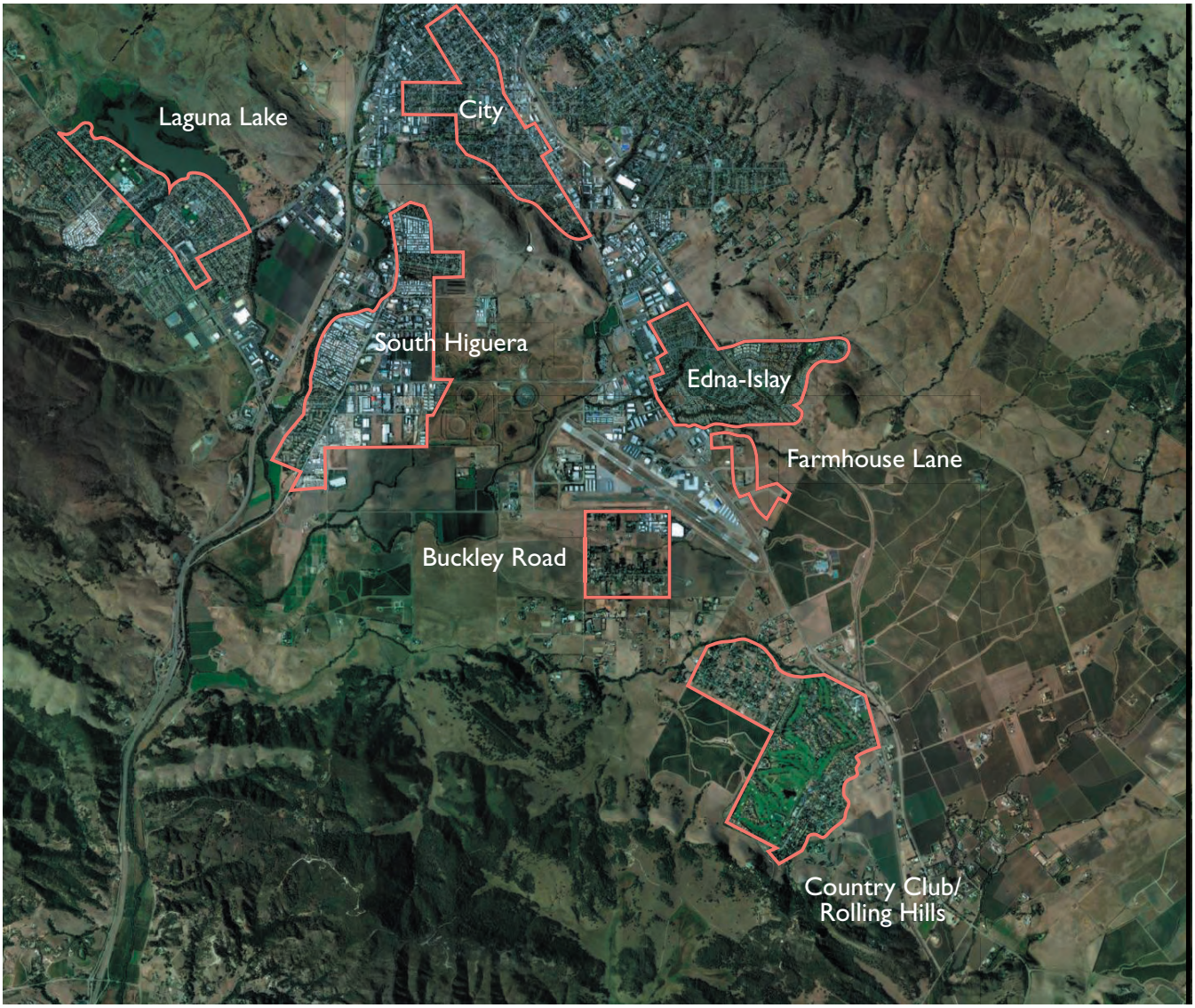
Figure B-6 – Noise Impacts by Time of Day



Localization of Noise Impacts

To facilitate analysis, noise complaints received on the airport's hotline are grouped by geographic area. The eight areas are Laguna Lake, City (of San Luis Obispo, South Higuera Street, Edna-Islay (also known as the "Flower Streets" area), Buckley Road, Farmhouse Lane, Country Club, and Rolling Hills Estate. Because of their proximity to one another and similar acoustic environment, the Country Club and Rolling Hills areas have, for purposes of this discussion, been grouped together. The locations of the various noise impact areas are shown in Figure Y-6, below.

Figure B-7 – Airport Noise Impact Areas



The following table shows information on noise complaints received from the various noise impact areas from January 1, 2009 through May 31, 2013. In addition, data from January through May of 2013 has been annualized to predict yearly totals. The percentages given in small type show the proportion of noise complaints generated for the year (or, in the case of the total, for the 53-month period) by each noise impact area.

Table B-14 – Noise Complaints at the San Luis Obispo County Regional Airport

Year	Noise Complaints							
	Edna-Islay	South Higuera	City	Country Club/ Rolling Hills	Buckley Road	Laguna Lake	Farmhouse Lane	Total
2009	220 (44.1%)	234 (46.9%)	13 (2.6%)	14 (2.8%)	16 (3.2%)	0 (0%)	1 (0.20%)	499
2010	103 (26.7%)	232 (60.1%)	12 (3.1%)	24 (6.2%)	8 (2.1%)	5 (1.3%)	2 (0.52%)	386
2011	161 (47.9%)	108 (32.1%)	29 (8.6%)	18 (5.4%)	18 (5.4%)	1 (0.30%)	1 (0.30%)	336
2012	110 (41.0%)	136 (50.7%)	1 (0.37%)	6 (2.2%)	12 (4.5%)	1 (0.37%)	2 (0.75%)	268
2013 YTD[1]	68 (42.0%)	86 (53.1%)	2 (1.2%)	2 (1.2%)	2 (1.2%)	2 (1.2%)	0 (0%)	162
2013 Annualized	165 (42.0%)	209 (53.1%)	5 (1.2%)	5 (1.2%)	5 (1.2%)	5 (1.2%)	0 (0%)	393
Total[2]	662 (40.1%)	796 (48.2%)	57 (3.5%)	64 (3.9%)	56 (3.4%)	9 (0.55%)	6 (0.36%)	1651

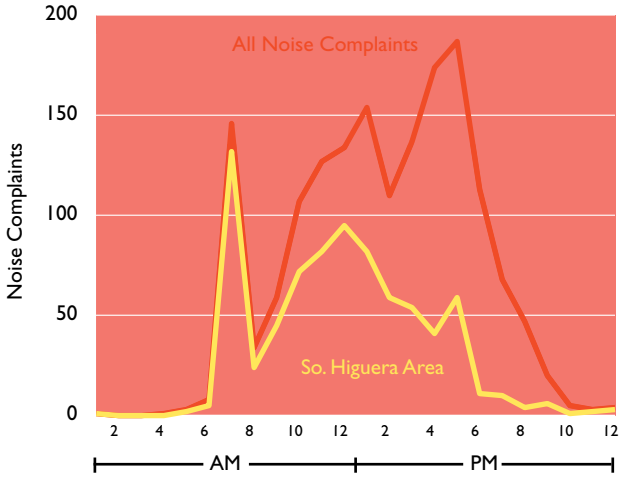
[1] Year-to-date data from January through May of 2013.
[2] Total includes 2009, 2010, 2011, 2012, and 2013 YTD. Does not include 2013 annualized data.

From Table B-13, it is clear that the South Higuera Street area is the most heavily impacted neighborhood with regard to airport noise. In four of the five years studied, South Higuera was responsible for more noise complaints than any other area and, over the entire reporting period, almost half of all noise complaints were received from this site. Also highly impacted was the Edna-Islay or “Flower Streets” neighborhood. Together, Edna-Islay and South Higuera routinely accounted for 80-90% of all airport noise complaints. The southern portion of the City of San Luis Obispo, the Country Club/Rolling Hills area, and Buckley Road were more modestly impacted, with 12 to 14 noise complaints per year from each area. Laguna Lake and Farmhouse Lane were each responsible for less than 2 noise complaints annually and together generated less than one percent of the total volume of complaints received.

The South Higuera Noise Impact Area

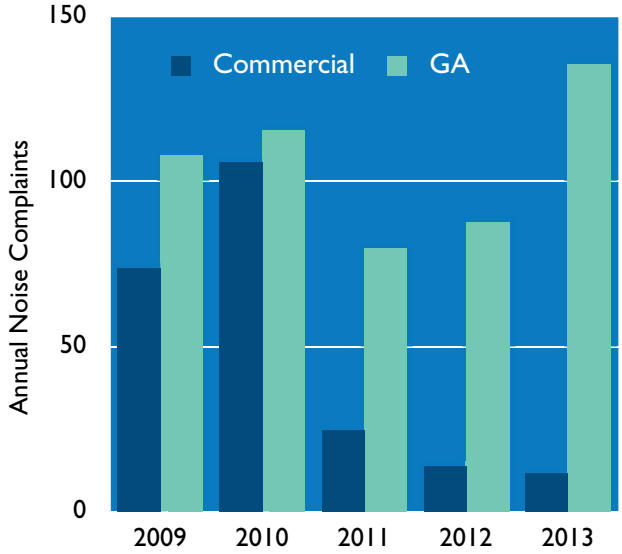
The South Higuera noise impact area extends on either side of South Higuera street from Fontana Avenue on the north to Los Palos Drive on the south. Most of the area east of Higuera Street is devoted to commercial and industrial use, although residential areas do exist north of Prado Road. To the west of Higuera Street, however, residential land uses occupy virtually all developed property south of Zaca Lane, with the exception of a narrow commercial strip immediately adjacent to Higuera Street itself.

Figure B-8 – Noise Impacts by Time of Day South Higuera Area



Residential development in this area is almost exclusively single-story with surface parking, and would be categorized as suburban, according to the criteria outlined in the California Airport Land Use Planning Handbook. The housing mix consists of approximately equal parts of single family residences and mobile homes/ manufactured housing. The latter represents a special challenge with regard to noise compatibility, as the degree of sound attenuation may be less than achieved with traditional building methods. The proportion of multifamily housing in the South Higuera area is relatively small and, typically, is also single-story.

Figure B-9 – Noise Impacts by Type South Higuera Area



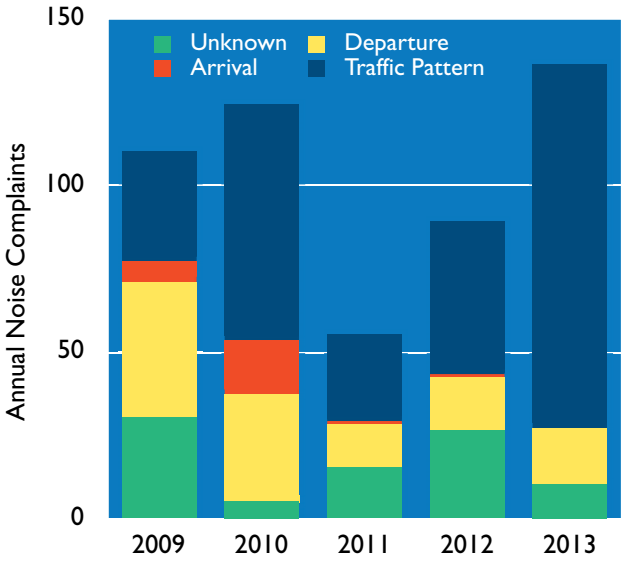
As shown in Table B-8, the number of noise complaints from the South Higuera area decreased steadily from a high of 234 in 2009 to 86 in 2012 – a 63% decline. During the first five months of 2013, however, reported noise impacts have increased steeply and the projected total will be close to the high levels seen in 2009 and 2010.

Examination of the timing of noise complaints between 2009 and 2013 reveals that, historically, nearly all of the early morning noise impacts for the entire airport area originated from South Higuera (Figure B-8). These were almost exclusively related to the departure of commercial multi-engine aircraft and jets. In contrast, the smaller spike in complaints during the midday hours is related to a mix of operations comprising both commercial and general aviation activities.

Recent improvements in aviation technologies have profoundly affected the nature of airport-related noise impacts in the South Higuera area. The introduction of regional jets and the phasing out of earlier, much noisier jets and turbo-prop powered aircraft have, in general, greatly reduced the single-event acoustic impact of commercial flights. As a result, the number of noise complaints generated in the South Higuera area by commercial operations has decreased dramatically from a high of 108 in 2010 to a projected total of 12 for 2013 (see Figure B-9 and Table B-13). As complaints regarding commercial departures have declined, however, the number of reported noise impacts due to general aviation activities has increased notably. Consequently, the anticipated positive effect of newer and quieter commercial aircraft on the overall compatibility of airport operations and residential land uses in the South Higuera has failed to materialize.

When the phase of flight is examined for general aviation activities which generate noise complaints within the South Higuera area (Figure B-10), it is apparent that there has been little, if any, change in the number of incidents generated by arrivals or departures. Rather, the observed increase in reported general aviation noise impacts is due entirely to complaints related to traffic pattern operations. This would suggest, rather remarkably, that, as the frequency of intense noise events (i.e., departure of older generation commercial jets and turbo-props) has diminished, the sensitivity of the community to lower-level noise impacts, such as general aviation traffic pattern activity, has increased. It is possible that residents of the South Higuera are especially annoyed by repetitive traffic pattern maneuvers flown by student pilots practicing “touch and go” landings, though there is no evidence available to support or refute this speculation.

Figure B-10 – Noise Impacts by Phase of Flight GA Operations, So. Higuera Area



In order to further examine this phenomenon, the number of noise complaints generated by general aviation, commercial, and military operations was computed for the entire airport area on an annual basis. For these calculations, figures for yearly operations in each category were obtained from the Federal Aviation Administration. Operations for 2009, 2010, and 2011 represent actual counts, while figures for 2012 and 2013 are forecasts. The number of noise

Table B-13 – Noise Complaints in the South Higuera Street Noise Impact Area

Type of Aircraft	Noise Complaints by Year				
Type of Operation	2009	2010	2011	2012	2013[1]
Single-Engine	94	107	50	78	136
General Aviation	94	107	48	76	136
Commercial	0	0	0	0	0
Military	0	0	0	0	0
Not Specified	0	0	2	2	0
Multi-Engine	27	67	10	8	2
General Aviation	4	2	2	2	0
Commercial	23	65	8	4	2
Military	0	0	0	2	0
Not Specified	0	0	0	0	0
Jet	58	46	30	17	17
General Aviation	5	5	2	5	0
Commercial	51	41	17	10	10
Military	0	0	6	0	0
Not Specified	2	0	5	2	7
Helicopter	5	3	4	6	2
General Aviation	5	2	3	5	0
Commercial	0	0	0	0	0
Military	0	0	0	0	0
Not Specified	0	0	1	1	2
Unknown/Other	50	8	14	27	39

[1] 2013 figures are annualized from data collected from January through May, 2013

complaints associated with each type of operation was obtained from airport administration records of telephone calls to the noise complaint hotline. Data from 2009 through 2012 are actual counts, while the figures for 2013 have been annualized from data collected from January 1 through May 31 of that year. The results of the calculations are presented in Table B-14:

Table B-14 – Noise Complaints per 1000 Operations, by Type of Operation

Year	General Aviation			Commercial			Military		
	Ops[1]	C[2]	IR[3]	Ops[1]	C[2]	IR[3]	Ops[1]	C[2]	IR[3]
2009	73,928	350	4.73	12,146	78	10.41	439	18	41.00
2010	71,726	240	3.35	12,776	111	8.69	755	22	29.14
2011	69,370	240	3.46	11,922	29	2.43	462	27	58.44
2012	67,237	268	3.99	11.965	15	1.25	596	10	16.78
2013[4]	66,372	295	4.44	12,124	24	1.98	596	17	28.52

[1] Annual operations (for each type or operation)
[2] Annual noise complaints associated with each type or operation
[3] "Impact Ratio": Noise complaints per 1000 operations
[4] Noise complaints annualized based on data collected from January through May, 2013

From this table, several observations can be made:

- The community clearly considers noise impacts associated with military flights to be the highly disturbing. This type of activity generated between 17 and 59 noise complaints for every 1000 operations. (Because of the relatively low number of military operations, there is considerable year-to-year variability in the Impact Ratio.)

- The number of noise complaints per 1000 commercial operations (predominantly departures) declined abruptly between 2010 and 2011 and has remained below 2.0 for the past two years. In 2009 and 2010, the Impact Ratio for commercial flights was more than double that for general aviation activities; it is now less than half the general aviation IR.

- The number of noise complaints per 1000 general aviation operations has risen from 3.46 in 2011 to 4.44 in 2013 – an increase of 28%. When analyzed by Fisher's exact test and Chi-square analysis, this change is found to be highly statistically significant ($p = 0.0043$).

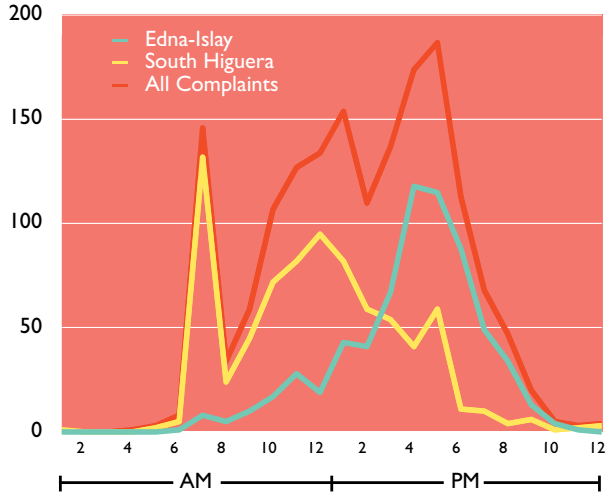
Increasing sensitivity to noise impacts associated with general aviation activity, therefore, appears to be a well-documented trend among residents not only of the South Higuera neighborhoods, but throughout the airport influence area. This phenomenon is of some concern, as general aviation continues to account for more than 80% of operations at the San Luis Obispo County Regional Airport. The sensibilities of the community in this regard represents an important factor that must be considered when formulating Airport Land Use Plan policies to avoid incompatibility between airport operations and surrounding land uses.

The Edna-Islay Noise Impact Area

A second major site of origin for airport-related noise complaints is the Edna-Islay area (sometimes referred to as the "flower streets", since many of the streets have been given botanical names). This area is located east of Broad Street (Highway 226), near its intersection with Tank Farm road. The area north of Tank Farm is bounded by the Marigold Shopping Center, Industrial Way, and the . The remainder of the area is bounded by Tank Farm Road, Huckleberry Lane, Spanish Oaks Drive, Snapdragon Way, Goldenrod Lane, and Broad Street.

The Edna-Islay is an upscale residential neighborhood with larger homes. Yards are not especially large, but amenities for outdoor living are common. All of the residences are one- or two-story and no parking structures are present. The area contains one moderate-size park (E. A. French Park), which provides facilities for tennis, basketball, and baseball. According to the definitions of various land use densities provided by the California Airport Land Use Planning Handbook, the Edna-Islay area would be classified as suburban. Measured ambient noise levels range from 46 to 52 dB, indicative of a "quiet suburban/rural" acoustic environment (again, as defined by the California Airport Land Use Planning Handbook).

Figure B-11 – Noise Impacts by Time of Day Edna-Islay Area



It should be noted that some of the residential development in this noise impact zone is built on the lower slopes of Islay Hill and, consequently, some homes may be as two hundred or more feet above airport elevation. As a result, aircraft approaching or departing the airport at traffic pattern altitude will be less than 800 feet above these homes and may be perceived by residents as "flying too low". Additionally, hillside homes will have a direct line of sight to the airport. Noise from on-airport operations, therefore, will not be attenuated by intervening structures, terrain, or vegetation.

As was the case with the South Higuera Street area, noise complaints from Edna-Islay showed a steady decline between 2009 and 2012, but have increased sharply during 2013. When the daily pattern of noise reports is examined (Figure B-11), however, the two locations are found to be very different. The early morning and midday spikes in noise complaints that were seen in the South Higuera area are completely absent from the Edna-Islay data. Instead, noise impact reports exhibit a single, broad peak between 3pm and 7pm. It seems likely that this time period corresponds with residents arriving home from work or school and engaging in yard work, recreation, barbecues, and other outdoor activities. During this time interval, ambient temperature would also be warm during much of the year, a factor which could encourage residents to open windows.

Table B- 15 – Noise Complaints in the South Higuera Street Noise Impact Area

Type of Aircraft	Noise Complaints by Year				
Type of Operation	2009	2010	2011	2012	2013[1]
Single-Engine	159	73	97	71	97
General Aviation	159	73	87	70	97
Commercial	0	0	0	0	0
Military	0	0	0	0	0
Not Specified	0	0	0	0	0
Multi-Engine	18	6	7	2	10
General Aviation	16	5	5	1	10
Commercial	1	1	0	0	0
Military	1	0	0	0	0
Not Specified	0	0	2	1	0
Jet	1	3	3	2	0
General Aviation	0	1	0	0	0
Commercial	1	0	1	0	0
Military	0	2	0	0	0
Not Specified	0	0	2	2	0
Helicopter	40	20	53	33	56
General Aviation	29	15	44	23	46
Commercial	0	0	0	1	0
Military	11	5	7	7	10
Not Specified	0	0	2	2	0
Unknown/Other	0	1	1	2	2

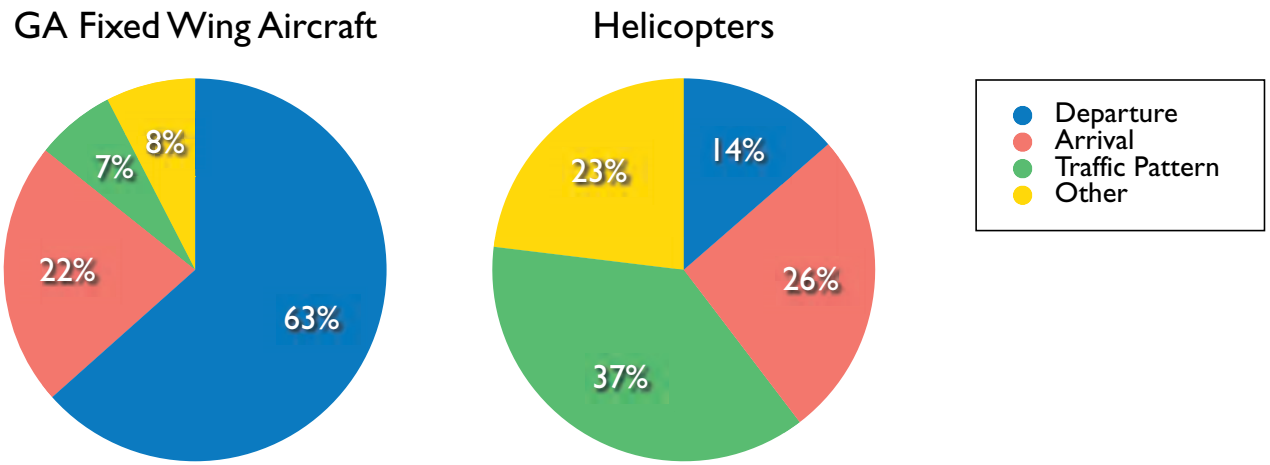
[1] 2013 figures are annualized from data collected from January through May, 2013

Additional unique features of the Edna-Islay noise impact area are apparent from the types of aircraft operations that lead to complaints being lodged (Table B-15). Unlike the South Higuera area, complaints associated with commercial multi-engine aircraft or jets have never been frequent in Edna-Islay. Instead, the vast majority of noise impacts are associated with activity involving general aviation fixed wing aircraft (both single-engine and, to a lesser degree, multi-engine) and helicopters.

Phase-of-flight data (Figure B-12) show that noise complaints associated with general aviation fixed-wing operations are related to approach or departure in 85% of instances. Disturbance of community residents in these cases may be related to the lack of attenuation of noise related to full power takeoffs (as mentioned above) or to the perception that pilots are flying too low over hillside homes.

In contrast, 59% of noise complaints related to helicopter flights occurred during traffic pattern or "other" activities. Although some of these noise impact reports involve operations by military helicopters (which are generally larger and noisier than civilian rotary-wing aircraft), it is also highly likely that many of the complaints arise from active helicopter flight training programs at the San Luis Obispo County Regional Airport. This specific, local, and on-going activity provides significant benefit to the airport and to the aviation community, and the need to reduce potential noise incompatibilities between helicopter pilot training and the surrounding community should be recognized as a legitimate concern of the Airport Land Use Commission.

Figure B-12 – Noise Impacts by Aircraft and Phase of Flight, Edna-Islay Area



Other Noise Impact Areas

Altogether the City (of San Luis Obispo), the Country Club/Rolling Hills area, the Buckley Land area, the Laguna Lake neighborhood, and the Farmhouse Lane area accounted for 11.6% of all reported airport noise impacts reported between January 1, 2009 and May 31, 2013. None of these sites, individually, was responsible for more than 4% of total noise events. Noise complaint logs do not provide a sufficient number of data points to allow meaningful analysis of year-to-year trends in these areas. Tables B-16 and B-17, therefore, display aggregated data for the entire 53-month review period. On the basis of this information, a number of observations can be made:

City (of San Luis Obispo) Noise Impact Area – The frequency of noise complaints in this area was slightly greater than one per month. General aviation operations generated 56% of complaints, with both single-engine fixed wing craft and helicopters contributing. Considering the low number of military flight operating at the San Luis Obispo County Regional Airport, this type of activity was responsible for a surprising percentage (21%) of noise complaints from the City area. It is notable, however, that military operations tended to generate multiple reports. In this case, 12 complaints were associated with

only seven operations during the 53-month period. Occasional (~12%) reports were associated with commercial multi-engine or jet operations. In cases in which the phase of flight was known, an overwhelming majority of noise reports were associated with aircraft departures. The reliability of this impression, however, is open to question, as phase of flight was not reported in the majority of instances.

Country Club/Rolling Hills Estates Impact Area – The rate of noise complaints from the Country Club/Rolling Hills Estate area, as in the City area, was approximately one per month. The dominant pattern of noise complaints in this area involved traffic pattern

Table B-16 – Noise Complaints – Other Noise Impact Areas January, 2009 through May, 2013

Type of Operation	Noise Complaints by Area				
Type of Aircraft	City	Country Club/ Rolling Hills	Buckley Road	Laguna Lake	Farm-house Lane
General Aviation	32	47	51	1	6
Single-Engine	17	41	21	1	4
Multi-Engine	1	4	0	0	0
Jet	2	2	4	0	0
Helicopter	12	0	26	0	2
Other/Unspecified Type	0	0	0	0	0
Commercial	7	1	0	4	0
Single-Engine	0	0	0	0	0
Multi-Engine	4	1	0	3	0
Jet	3	0	0	1	0
Helicopter	0	0	0	0	0
Other/Unspecified Type	0	0	0	0	0
Military	12	10	4	3	0
Single-Engine	0	1	0	0	0
Multi-Engine	6	1	2	1	0
Jet	6	6	2	0	0
Helicopter	2	2	0	2	0
Other/Unspecified Type	0	0	0	0	0
Unknown/Other Operation	3	5	1	0	0

Table B-17 – Noise Complaints by Phase of Flight – Other Noise Impact Areas January, 2009 through May, 2013

Phase of Flight	Noise Complaints by Area				
	City	Country Club/ Rolling Hills	Buckley Road	Laguna Lake	Farm-house Lane
Departure	16	2	11	3	4
Arrival	1	12	0	1	1
Traffic Pattern	1	34	10	0	1
Not Specified	39	13	35	5	0

maneuvers by single-engine general aviation aircraft. This is not unexpected, as the area is located below the downwind and crosswind legs of the left traffic approach to Runway 29. Some noise impacts were also associated with aircraft arrivals, particularly when multi-engine or jet aircraft were involved.

Buckley Road Noise Impact Area – As with the two previously-discussed area, the frequency of noise complaints in this the Buckley Road area was slightly greater than one per month. General aviation operations were responsible for more than 90% of reported noise events. A distinguishing feature of the Buckley Road area is that more than half of the GA-associated noise events related to helicopter, rather than fixed-wing, operations. In addition, the phase of flight for more than 80% of these operations was listed as “other”. It appears likely that off-airport impacts of helicopter training operations conducted on or over airport property constitute a significant component of the overall noise environment.

Laguna Lake Noise Impact Area – The Laguna Lake area, despite being a sizable, upscale residential community, is actually a source of only infrequent noise impacts. During the 53-month review period noise complaints averaged approximately two per year. Almost all complaints were related to operations by larger and noisier aircraft, such as commercial or military multi-engine airplanes, commercial jets, or military helicopters.

Farmhouse Lane Noise Impact Area – Despite its proximity to the airport, the Farmhouse Land area was the site of only six noise complaints during the entire review period. This is most likely due to the fact that the number of residences in this area is small, rather than to an especially favorable noise environment. All noise events were related either to the arrival of single-engine general aviation aircraft or to helicopter operations.

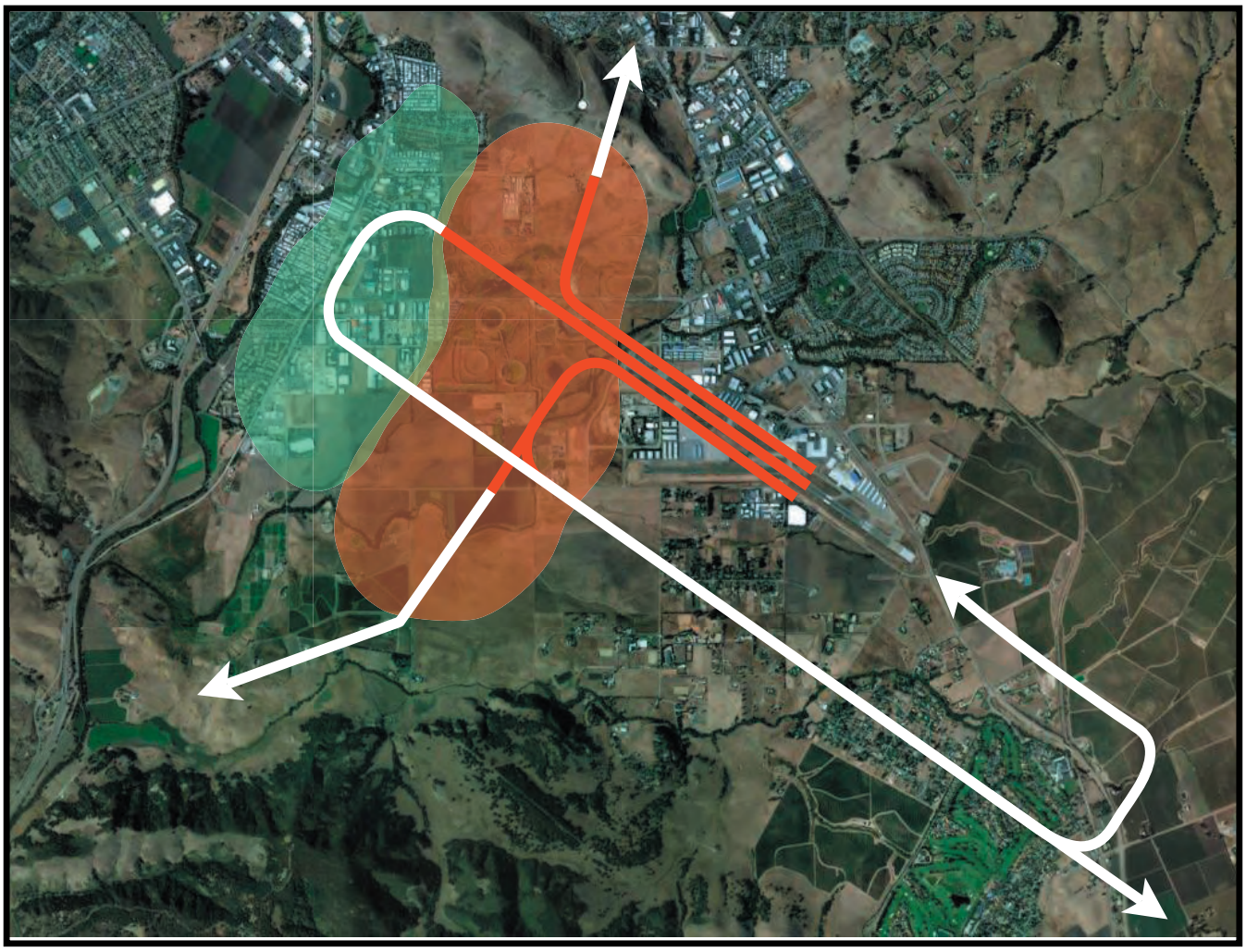
Additional Local Airport Noise Considerations

Quiet Flight Procedures

The San Luis obispo County Regional Airport, after extensive consultation with the surrounding neighborhoods and the local pilot community has established and published VFR flight maneuvers to reduce aircraft noise impacts on nearby residential areas (Quiet Flight procedures). These procedures, however, do not reduce airport noise impacts – they merely relocate noise from developed noise sensitive areas to areas of commercial/industrial uses or vacant land.

Noise abatement procedures for Runway 29 departures relocate noise impacts that would normally occur along South Higuera Street (shown in green in Figure B-13) to the vicinity of U. S. Highway 101 and to open space west and northwest of the airport (shown in red). The noise impact in this area is relatively intense, as overflight occurs while aircraft are climbing under maximum power below 1000 feet (shown in Figure B-13 as red segments of flight paths).

Figure B-13 – San Luis Obispo County Regional Airport Quiet Flight Procedures



Helicopter Flight Training

HELiPRO is an international flight training school based at SBP. Students travel to San Luis Obispo from Germany, Austria, and Switzerland to study. Since 2011, 44 pilots have earned helicopter certification through HELiPRO – certification of each pilot requires 70 to 200 hours of flight training. This represents approximately 3000 hours of helicopter operations annually, most in close proximity to the City of San Luis Obispo.

Helicopter training is associated with significant noise impacts due to flight operations at low altitude (there is no minimum altitude for helicopter flight), and stationary or repetitive training maneuvers. It is likely that, at the San Luis Obispo County Regional Airport, the majority of noise complaints involving general aviation helicopters are due to flight training activity.

As shown in Table B-18, an appreciable number of noise events related to general aviation helicopter operations occur in the Edna-Islay and Buckley Road areas, with a more modest impact in the South Higuera Street, City, and Farmhouse Lane areas.

Table B-18 – Noise Impacts Related to Helicopter Operations, 1/1/2009 - 5/31/2013

Airport Noise Impact Area	Type of Operation				
	General Aviation	Commercial	Military	Other/ Unspecified	Total
Edna Islay	130	1	34	4	169
Buckley Road	26	0	0	0	26
South Higuera Street	15	0	1	3	19
City	12	0	2	0	14
Country Club/Rolling Hills	0	0	2	1	3
Laguna Lake	0	0	2	0	2
Farmhouse Lane	2	0	0	0	2
Total	185	1	41	7	235

The primary training aircraft utilized by HELiPRO is the Robinson model R22 helicopter, which is powered by a Lycoming O-320-A2B or a Lycoming O-320-B2C reciprocating engine. According to the type-certificate for this aircraft, a level overflight at an altitude of 492 ± 30 feet (150 ± 9 meters) creates a ground-level nois impact of 81.3 dB EPNL[1]. Noise levels related to climbing or maneuvering may be significantly higher.

[1] EPNL = Effective Perceived Noise Level. This is a frequency-weighted measure of single-event noise similar to, but somewhat more sophisticated than A-weighting.

Airport Activity Forecast

Regulatory Considerations

Formulation of appropriate policies to prevent noise-related incompatibility between an airport and surrounding communities requires consideration of the expected future noise impacts that will be generated by airport operations. This, in turn, is dependent on the type and frequency of aviation operations expected to occur. Section 21675(a) of the California Public Utilities Code requires that the airport operations forecast utilized by an Airport Land Use commission be based upon the Airport Master Plan:

> *"Each (Airport Land Use) commission shall formulate an airport land use compatibility plan that will provide for the orderly growth of each public use airport and the area surrounding the airport within the jurisdiction of the comission, and will safeguard the general welfare of the inhabitants within the vicinity of the airport and the public in general. The commission's airport land use compatibility plan shall include and shall be based on a long-range master plan or an airport layout plan, as determined by the Division of Aeronautics of the Department of Transportation, that reflects the anticipated growth of the airport during at least the next twenty years."*

The 2005 Airport Master Plan for the San Luis Obispo County Regional Airport does not precisely meet the requirements of P.U.C. Section 21675(a.), because it includes projected data for airport operations only through the year 2023. In this circumstance, the California Airport Land Use Planning Handbook (Table 2A, page 2-7) authorizes an ALUC to extend the forecast included in the Airport Master Plan, as necessary to meet the requirements of the Public Utilities Code.

Time Frame for Airport Noise Compatibility Planning

Although PUC Section 21675 (a.) requires that the ALUC consider the anticipated growth of the airport over "at least the next twenty years", additional regulatory guidance is provided by PUC Section 21674.7 (a), which mandates that

> *"An airport land use commission that formulates, adopts, or amends an airport land use compatibility plan shall be guided by information prepared and updated pursuant to Section 21674.5 and referred to as the Airport Land Use Planning Handbook published by the Division of Aeronautics of the Department of Transportation."*

In regards to the time frame to be considered for airport noise compatibility planning, the current (October, 2011) edition of the Airport Land Use Planning Handbook strongly suggests that the 20-year horizon mandated by PUC Section 21675(a.) is insufficient.

> *"For compatibility planning, however, 20 years may be shortsighted. For most airports, a lifespan of more than 20 years can reasonably be presumed. Moreover, the need to avoid incompatible land use development will exist for as long as the airport exists. Once development occurs near an airport, it is virtually impossible – or, at the very least, costly*

and time-consuming – to modify the land uses to ones that are more compatible with airport activities"

_California Airport Land Use Planning Handbook, page 3-5

"The 'at least' phrase in the statute warrants emphasis. The 20-year time frame should be considered a minimum for compatibility plans. Noise impacts (as well as other compatibility concerns) should be viewed from the longest practical time perspective."

_California Airport Land Use Planning Handbook, page 3-6

"In conducting noise analyses for ALUCPs, the long-range time frame is almost always of the greatest significance."

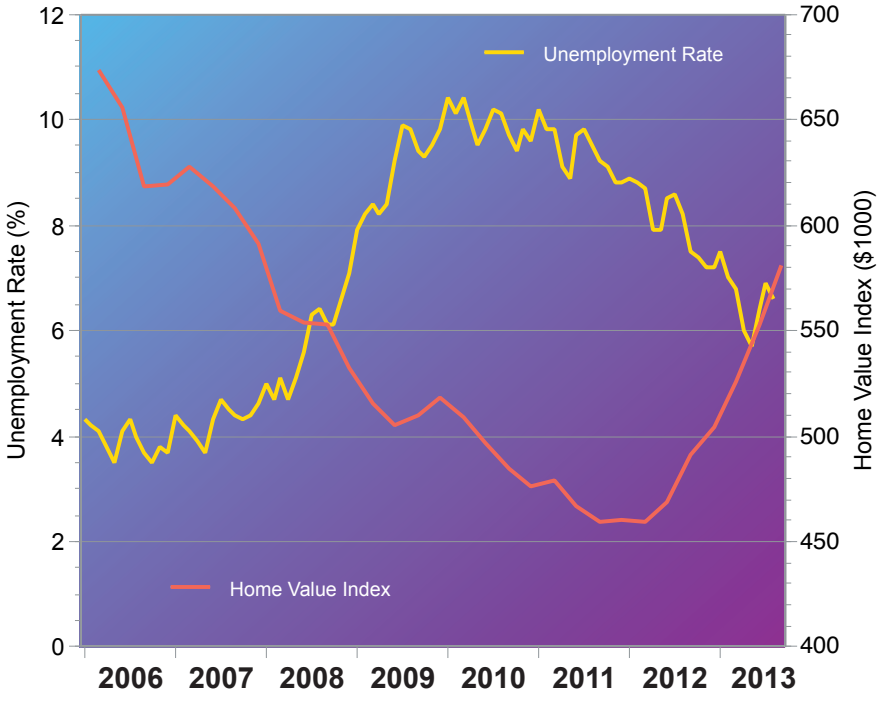
_California Airport Land Use Planning Handbook, page 3-6

According the the United States Census Bureau, (2007-2011 American Community Survey), 26.2% of housing units in the city of San Luis Obispo were constructed in 1950 or before. It is reasonable to conclude, then, that any noise-sensitive development established in the present day will not have been substantially vacated in less than sixty-five years. Consequently a time frame of twenty years would, in consideration of the guidance of the California Airport Land Use Planning Handbook, appear to be inadequate for airport noise compatibilty planning purposes.

Airport Operations and the Economic Environment

The 2005 Airport Master Plan for the San Luis Obispo County Regional Airport provides the Airport Land Use Commission with a valid and well-documented methodology for projecting future operations at the San Luis Obispo County Regional Airport. It must be noted, however, that the level of airport operations between 2006 and 2011 (the latest date for which actual operations data are available) do not conform well to predictions made by the Airport Master Plan.

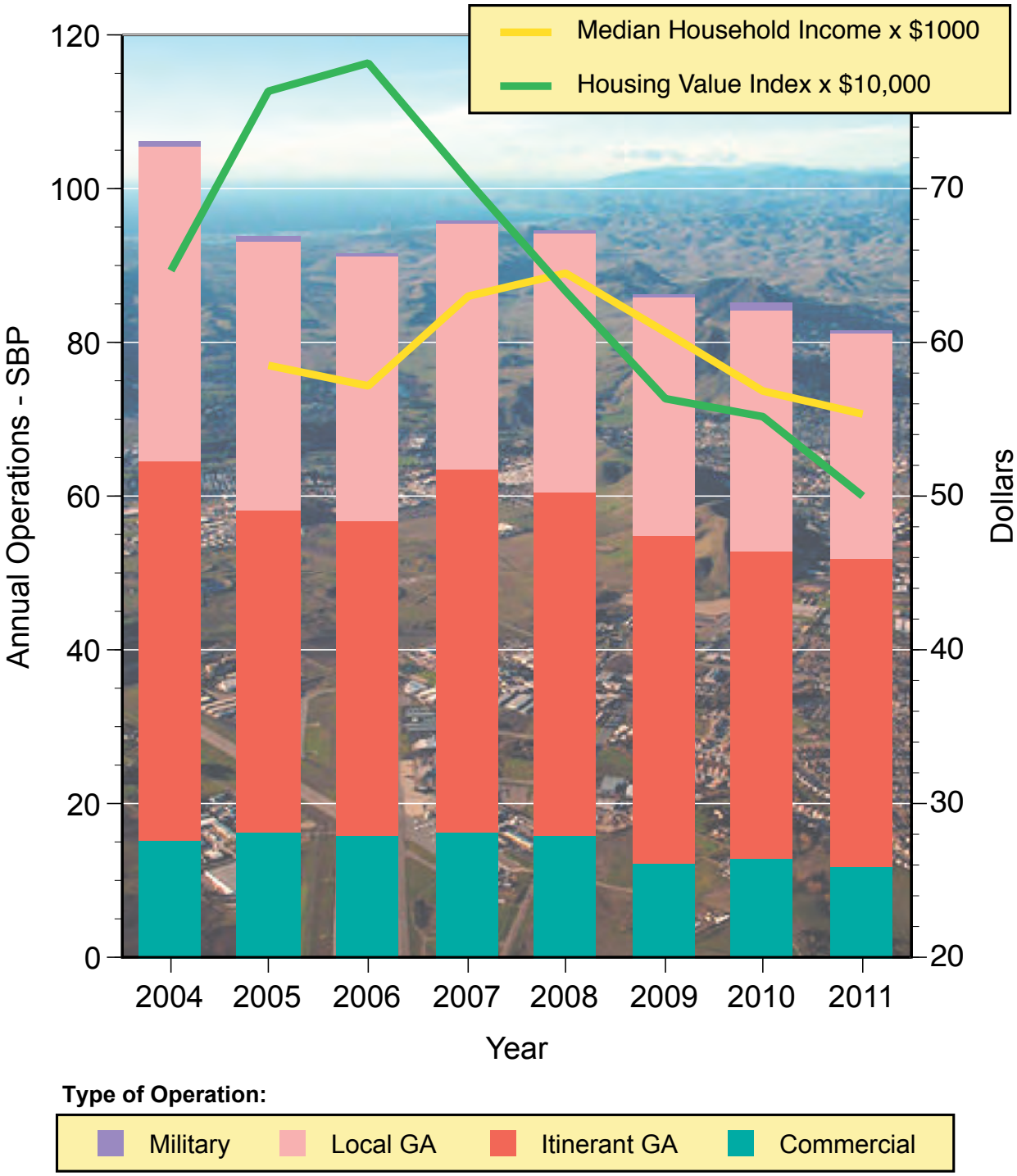
Figure B-14: Unemployment Rate and Home Value Index City of San Luis Obispo, 2006-2013



An obvious explanation for this inconsistency is the fact that the U. S. economy and the economy of the San Luis Obispo area have experienced a severe recession that was not anticipated by the Airport Master Plan. From December, 2007 and December, 2008, the Dow-Jones Industrial Average

declined from $13,264 to $8,776, a loss of approximately 34%. In the local real estate market, the home value index (Zillow) plumetted from $676,000 in February of 2006 to $457,000 in January, 2012, a decline of more than 32%. Unemployment in the city of San Luis Obispo rose from approximately 4% to more than 10%, while per capita income fell from $64,554 in 2008 to

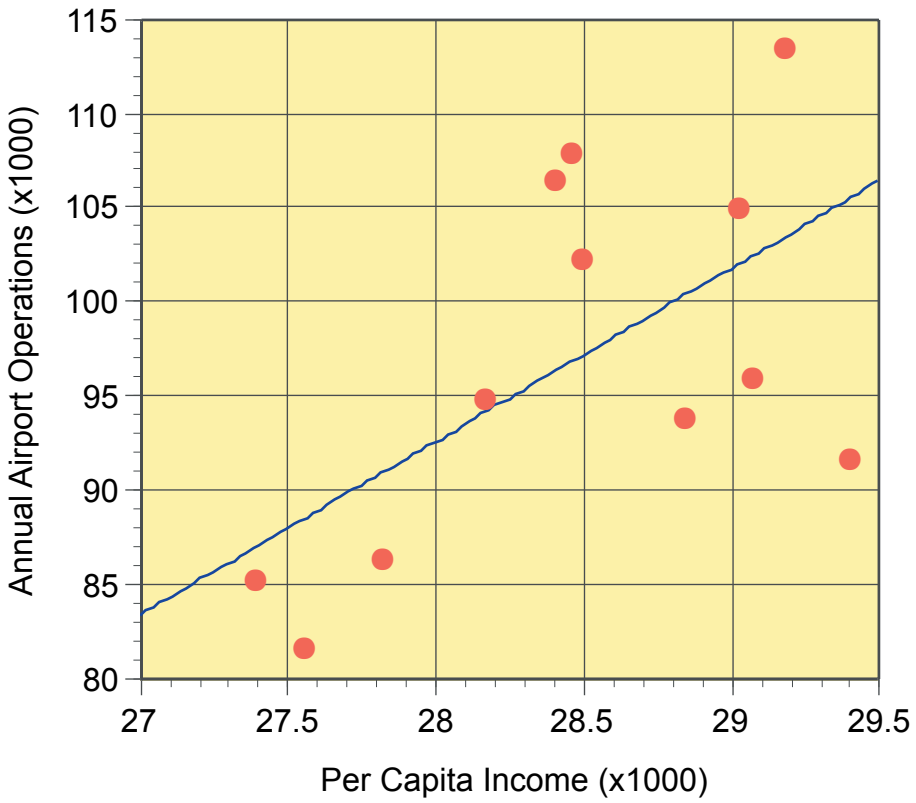
Figure B-15: Annual SBP Operations and Economic Indicators, 2004-2011



$55,327 in 2011. During 2012 and 2013, the local economy has shown significant signs of recovery, though home values and per capita income remain below their pre-recession peaks and unemployment is still higher than usual.

As can be seen in Figure B-15, the economic downturn has been accompanied by a notable decrease in operations at the San Luis Obispo County Regional Airport. This impact has been especially seen as a decline in the number of local and itinerant general aviation flights. Operating a private aircraft is a relatively expensive endeavor, and it is not surprising that difficult economic times might affect the public's ability to engage in this activity.

Figure B-16: Relationship Between San Luis Obispo Per Capita Income and SBP Operations, 2000 - 2011



Data from U. S. Census Bureau, American Community Survey (2000 - 2011) and FAA APO Terminal Area Forecast Report. Jan., 2013

To determine whether or not the observed decline in general aviation activity is, in fact, related to economic factors, the annual number of GA operations was plotted against per capita income for the city of San Luis Obispo over the years 2000 through 2011 (Figure 3). Linear regression analysis indicates that there is a statistically significant relationship between these two variables, with a correlation coefficient of 0.6026 and a p value of 0.0381. These data suggest that the level of flight activity has been strongly influenced by the recent recession and should be expected to return to forecast levels as the economy continues to improve.

ALUC Options for the Application of Airport Master Plan Activity Forecasts

ALUC Options for the Application of Airport Master Plan Activity Forecasts and Construction of CNEL Airport Noise Contours

After consultation with legal and administrative staff of the Division of Aeronautics of the California Department of Transportation, the Airport Land Use Commission determined that it is permissible

to modify the aviation operations forecasts of the 2004 Airport Master Plan in order to:

- Provide for the minimum twenty year or greater planning horizon required by the Public Utilities Code, and
- Align the Master Plan forecast more closely with observed patterns of aviation activity at the San Luis Obispo County Regional Airport.

In carrying out this process, the ALUC considered five options:

Option A: Unmodified Operations Forecast from the 2005 Airport Master Plan

The most direct option available would have been simply to utilized the aviation activity forecasts provided by the 2005 Airport Master Plan, extending the time frame as required by Table 2A of the California Airport Land Use Planning Handbook. Among the options available, this approach would be most directly based upon the Airport Master Plan and, therefore, most clearly consistent with California Public Utilities Code Section 21675(a).

The primary disadvantage of Option A was that it fails to recognize the demonstrated correlation between the economic climate in the city of San Luis Obispo and the level of airport operations and, therefore, fails to incorporate either the decline in airport operations associated with the current economic recession or the increase in airport operations which can reasonably be expected to accompany a recovery. There appeared to the ALUC to be no reason to doubt the validity of the Master Plan methodology with respect to long-term forecasts of aviation operations at the San Luis Obispo County Regional Airport, since, over longer time intervals, periods of economic growth and recession would be expected to offset one another. It was recognized, however, that until the local economy has fully recovered, Option A would have tended to forecast operation levels substantially higher than would actually be observed.

Option B: Aviation Activity Forecast for the San Luis Obispo County Regional Airport as Projected by the 2005 Airport Master Plan, Adjusting for 2011 Operations Data and an Estimated 30-Year Recovery Period in the Local Economy and Airport Operations

Another forecast option to deal with the impacts of economics on airport activity would have been to acknowledge that the Airport Master Plan methodology is valid over the long term, but that some period of recovery will be required for operations to rise from their current depressed levels and begin to track the extended forecast. An recovery period of thirty years was considered to be a conservative estimate, as economic recessions typically resolve in less than ten years and local economic indicators (e.g., home value index, per capita income, unemployment) are already moving in positive directions. On the other hand, a projected 30-year recovery period was thought to provide more than adequate time for improvement in the economic climate to translate into increased aviation activity.

To the extent that thirty years is most likely longer than the time period actually required for

recovery, Option B would have, in the near term, tended to underestimate the number of operations at the San Luis Obispo County Regional Airport. For the 50-to-75 year planning horizon, however, forecast airport operations under Option B would be identical to those provided by Option A.

Option C: Aviation Activity Forecast for the San Luis Obispo County Regional Airport as Projected by the 2005 Airport Master Plan, Time-Shifted to 2013

A third forecast option available to the ALUC was to acknowledge that the Airport Master Plan methodology is valid over the long term, but to assume that the predicted growth in aviation activity has been forestalled by the present economic recession. Operationally, this would mean applying the forecast provided by the Master Plan, but beginning the forecast period in 2013, rather than 2003.

While Option C did not directly reflect the demonstrated relationship between airport activity and the economic health of the community, it did represents a pragmatic effort to accomodate the fact that the 2003-2013 growth in aviation projected by the Master Plan has not been realized.

Unless the economic recovery is both rapid and robust, the adoption of Option C would result in projected levels of airport activity that are, in the very short term, likely to be higher than actually observed. More important, beyond the near term, Option C generates operations forecasts that are approximately 7% lower (for any given year) than the activity levels predicted by the Airport Master Plan.

Option D: Aviation Activity Forecast for the San Luis Obispo County Regional Airport as Projected by the 2005 Airport Master Plan, Time-Shifted to 2011 and Adjusted to Level of Operations Recorded for 2011

A final option was to accept the Airport Master Plan forecast methodology, but to shift the forecast year of origin to 2011 (the last year for which aviation activity figures are currently available) and the base number of operations to the number recorded in that year (81,754). Conceptually, this approach would have fully incorporated the adverse effect of the present recession on airport operations. Option D, however, included no provision for the “catch-up” growth in aviation that is reasonably expected to accompany economic recovery. As a result, the forecasts generated by Option D appeared likely to remain untenably low throughout the forecast period.

In addition, of the four options considered, Option D would require the most extensive modification of the methodology delineated in the 2005 Airport Master Plan and would, therefore, most likely to be found inconsistent with PUC Section 21675(a).

Although Option D was included in the discussion for the sake of completeness, it was not recommended for endorsement or adoption by the ALUC.

Option E: Aviation Activity Forecast for the San Luis Obispo County Regional Airport as Projected by the 2005 Airport Master Plan, Adjusting for 2011 Operations Data and Estimating That, as the Local Economy Recovers, Airport Operations Will Grow at a Rate of 3% Per Year, But Only to the Level of Operations Which Existed in 2006

A final option was suggested by Mr. Nick Johnson and the City of San Luis Obispo. Under this proposal, it would have been estimated that the number of operations at SBP would, during the expected economic recovery, grow at a rate of 3% per year to the level that was recorded in 2006, at the time of adoption of the current Airport Master Plan (109,264 operations per year). It was then projected that growth would slow to the rate predicted by the Airport Master Plan forecast. Like Option B, this model exhibited a degree of conceptual integrity in that it recognized both the downturn in airport operations that has occurred during the current economic difficulties and the potential for "catch-up" growth as the area's economic picture improves. Unlike Option B, however, Option E appeared to make the assumption that the anticipated recovery will be inadequate to return the future growth of airport operations to the trajectory predicted by the Airport Master Plan. In the absence of substantive argument to support the contention that the economic recession has fundamentally altered the long range forecast for operational levels at the San Luis Obispo County Regional Airport, Option E appeared to be less consistent with the adopted Airport Master Plan than Option A, B, or C.

After receiving public comment and discussing the matter at a duly noticed and regular Airport Land Use Commission meeting on November 30, 2013, the ALUC determined to:

- Adopt foregoing Option C as the basis for an aviation activity forecast for the Airport Land Use Plan, and
- Utilize a forty-year planning horizon as the basis for airport land use planning.

The forecast data present in Section 3.7 of the ALUP are reflective of these determinations.

The Airport Land Use Commission has consulted with the Division of Aeronautics of the California Department of Transportation and has determines that the forecast options considered and the option ultimately adopted are, in the opinion of the Division, consistent with all requirements of the State Aviation Act.

Airport Noise Compatibility Contours

The San Luis Obispo County Regional Airport CNEL noise contours adopted for the Airport Land Use Plan were developed by Brown, Buntin, and Associates. These contours have also been adopted by the City of San Luis Obispo and by the County of San Luis Obispo for the Noise Element of their respective General Plans.

Figure B-17 – Noise Contours for the San Luis Obispo County Regional Airport

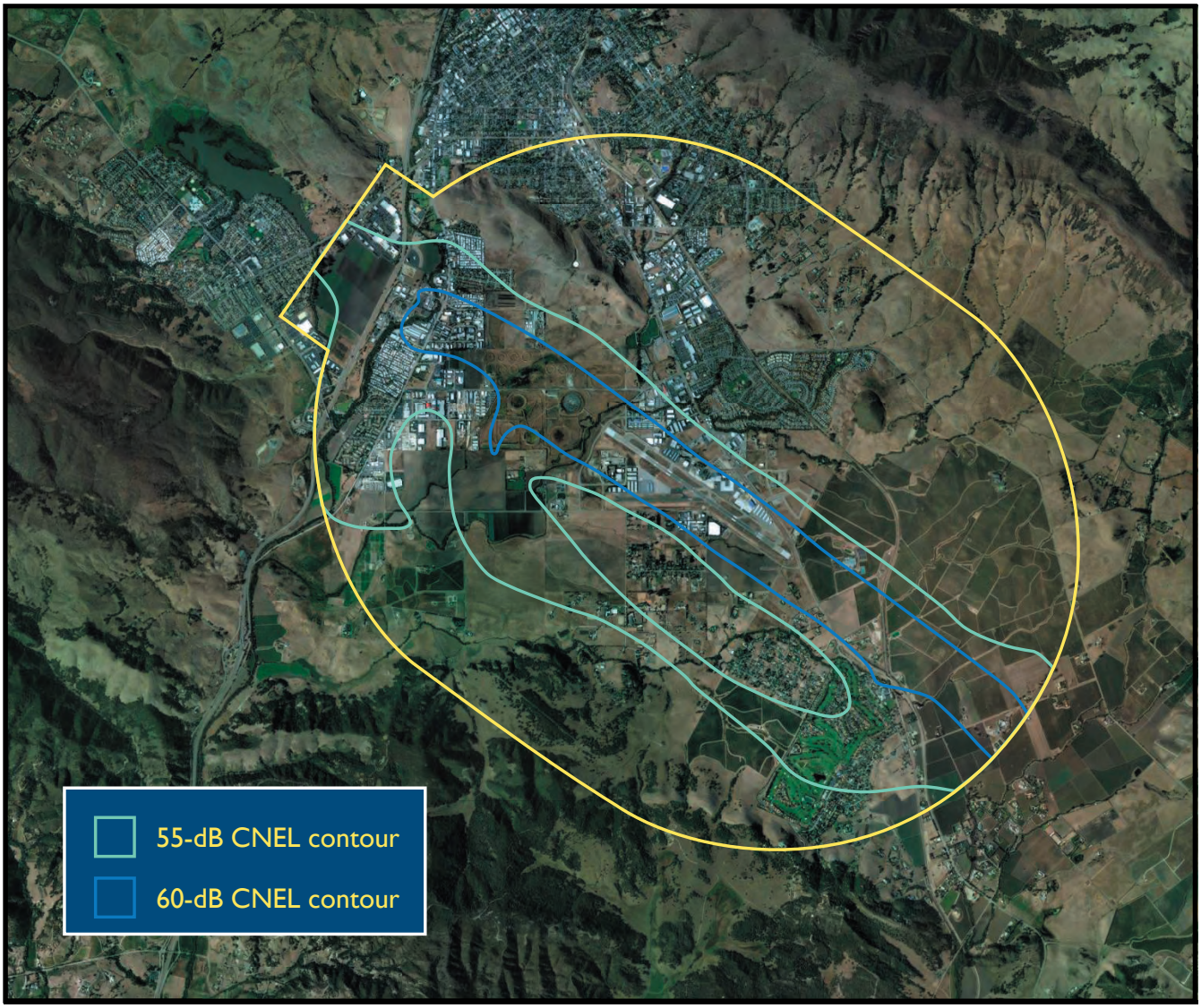
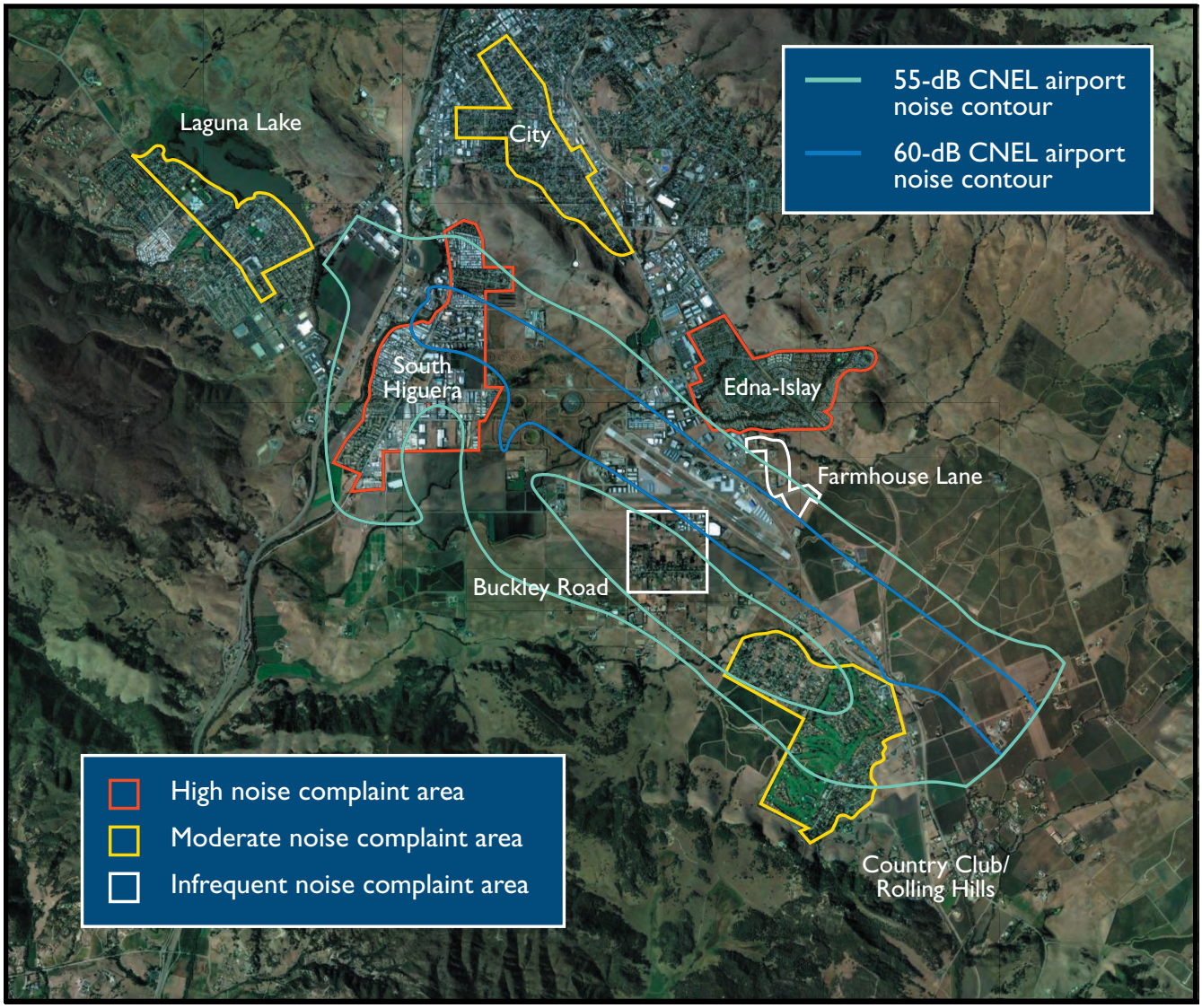


Figure B-18 illustrates the relationship of airport noise contours to the noise impact areas discussed previously. In this figure, “high” noise complaint areas are those that generate more than ten complaints per month, “moderate” noise complaint areas produce 1 to 9.9 complaints per month and “infrequent” noise complaint areas result in less than one complaint per month. In the ideal situation, all areas of significant demonstrated noise impact would be encompassed

within the CNEL contour that is selected as the criterion for prohibiting development of additional land with uses similar to those that have been shown to be incompatible. It is visually apparent that

- The 65-dB CNEL noise contour is inadequate as a standard for prohibition of extremely noise sensitive (e.g., residential) land uses. All identified high and moderate noise complaint areas lie outside of this contour, with the exception of a small portion of the South Higuera area (high level of noise complaints).
- The 55-dB CNEL noise contour is only marginally adequate as the criterion for prohibition of extremely noise sensitive land uses. While this contour encompasses most of the high-noise-complaint South Higuera area and of the moderate-noise-complaint Country Club/Rolling Hills area, important high noise (Edna-Islay) and moderate noise (Laguna Lake, City) areas are excluded.

Figure B-18 – Correlation of Noise Complaint Data with Airport Noise Contours



Summary

In this study document, the Airport Land Use Commission of San Luis Obispo County has examined the nature of existing development in the vicinity of the San Luis Obispo County Regional Airport, the regulatory framework that governs establishment of aviation noise compatibility standards, and the recommendations of the California Department of Transportation with regard to determining appropriate noise standards for specific airports. Particular attention has been devoted to examining the accumulated record of noise sensitivity and complaints compiled by the residents who actually live in neighborhoods adjacent to the airport, and to local procedures and operations which may result in atypical noise impacts.

In order to achieve the greatest possible degree of consistency between the Airport Land Use Plan and local planning documents, the Airport Land Use Commission has adopted the airport CNEL noise contours which have been previously validated by the City and County of San Luis Obispo and incorporated into the Noise Elements of their General Plans. Because of local factors relating to operations at the San Luis Obispo County Regional Airport, including established "Quiet Flight" procedures and helicopter pilot training activities, it is uncertain whether Airport Land Use Plan noise policies based upon CNEL contours will be maximally effective in reducing noise incompatibilities between airport operations and the surrounding community. The Airport Land Use Commission, however, recognizes that this approach is supported by a considerable body of empirical evidence and is endorsed by the Division of Aeronautics of the California Department of Transportation.

The Airport Land Use Commission has carefully examined the relationship between noise complaint data and airport CNEL contours. This study, in concert with the "normalization" of CNEL contours strongly recommended by the California Airport Land Use Planning Handbook, indicates conclusively that the 55-dB CNEL airport noise contour represents the least restrictive noise standard that could reasonably be adopted for prohibition of extremely noise-sensitive land uses in the vicinity of the San Luis Obispo County Regional Airport.

Appendix C

Delineation of Airport Safety Zones

Basis of Safety Zones

The Airport Safety Zones adopted by the Airport Land Use Plan for the San Luis Obispo County Regional Airport are based upon the generic safety zones, as described and illustrated on pages 3-16 through 3-20 of the California Airport Land Use Planning Handbook (October, 2011).

Adjustment of Generic Safety Zones for Local Factors

The Airport Land Use Commission, however, is mandated not to merely adopt the generic safety zones presented in the Airport Land Use Planning Handbook, but to examine and adjust these zones based upon specific meteorologic, geographic, and operational characteristics of the San Luis Obispo County Regional Airport[1,2]. Some of the specific factors which must be taken into account are provided in Table 3A of the Airport Land Use Planning Handbook (page 3-22). In the case of the San Luis Obispo County Airport, the following considerations are relevant:

- High terrain in the vicinity of the airport
- Circling instrument approaches
- Non-precision approaches not aligned with the runway
- Noise-sensitive land uses in the vicinity of the airport
- Runway use by special purpose aircraft
- Runways used predominantly in one direction
- Displaced landing thresholds

In addition to these factors specified in the Airport Land Use Planning Handbook, the Airport Land Use Commission has identified three considerations which are unique to the San Luis Obispo Regional Airport

- Actual and planned changes in runway lengths and locations and in instrument approach procedures identified in the Airport Master Plan for the San Luis Obispo County Regional Airport (January 25, 2005)
- High volume of flight training activity at the airport
- Modifications to usual flight patterns resulting from the presence of an elementary school adjacent to the approach to Runway 29

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[1] "While accident location data provides a solid foundation for delineation of safety zones, considerable judgment is required when creating zones for a particular airport." _ page 3-16, California Airport Land Use Planning Handbook

[2] "The generic safety areas presented in the preceding section are intended just as a starting place for the development of zones appropriate for a particular airport. .... In most instances, however, some degree of adjustment of the generic zones is necessary in recognition of the physical and operational characteristics of the airport." _ page 3-20, California Airport Land Use Planning Handbook

High Terrain in the Vicinity of the Airport

Operations at the San Luis Obispo County Regional Airport are impacted to a considerable degree by the presence of extensive areas of high terrain in the vicinity of the airport. The photographs shown in Figures C-1 and C-2 give some idea of challenging geography to the west and northwest of the airport. As can be seen in Figure 3, the airport is actually almost completely surrounded by elevated terrain. Access at or below airport elevation is restricted to a valley extending to the northwest (roughly paralleling U. S. Highway 1), a somewhat wider approach from the southeast (i.e., from the Santa Maria area), and two very narrow passes aligned with U. S. Highway 101 northward and southward. In addition, two areas of high terrain exist within the area normally utilized by aircraft in the airport traffic pattern.

The surrounding mountainous terrain creates a number of specific local alterations in air traffic operations and densities, which must be considered by the Airport Land Use Commission

Figure C-1 – High Terrain to the Northwest of San Luis Obispo County Regional Airport

Figure C-2 – High Terrain to the West of San Luis Obispo County Regional Airport

Figure C-3 – High Terrain (Shaded) Surrounding the San Luis Obispo County Regional Airport

in designing and adopting Airport Safety Zones. Among these are:

- Concentration of air traffic over areas of favorable terrain (Figure C-4, yellow arrows) – In order to minimize the risk of flight into terrain and maintain optimal proximity to potential off-airport landing areas, pilots operating under visual flight rules will tend to approach and depart the airport over areas of lower terrain. To some extent, this tendency is reinforced by the introduction of modern navigation instruments based on GPS technology. These instruments present pilots with a terrain alert if the ground level along the projected route of flight is within 500 feet of the aircraft's current altitude, reinforcing the natural tendency to avoid flight over mountainous terrain. The density of aircraft in these areas will, consequently, be much higher at any given level of airport activity, than would be the case in the absence of nearby high terrain. In addition, since approach and departure routes over favorable topology are, to a large degree, aligned with the extended centerlines of

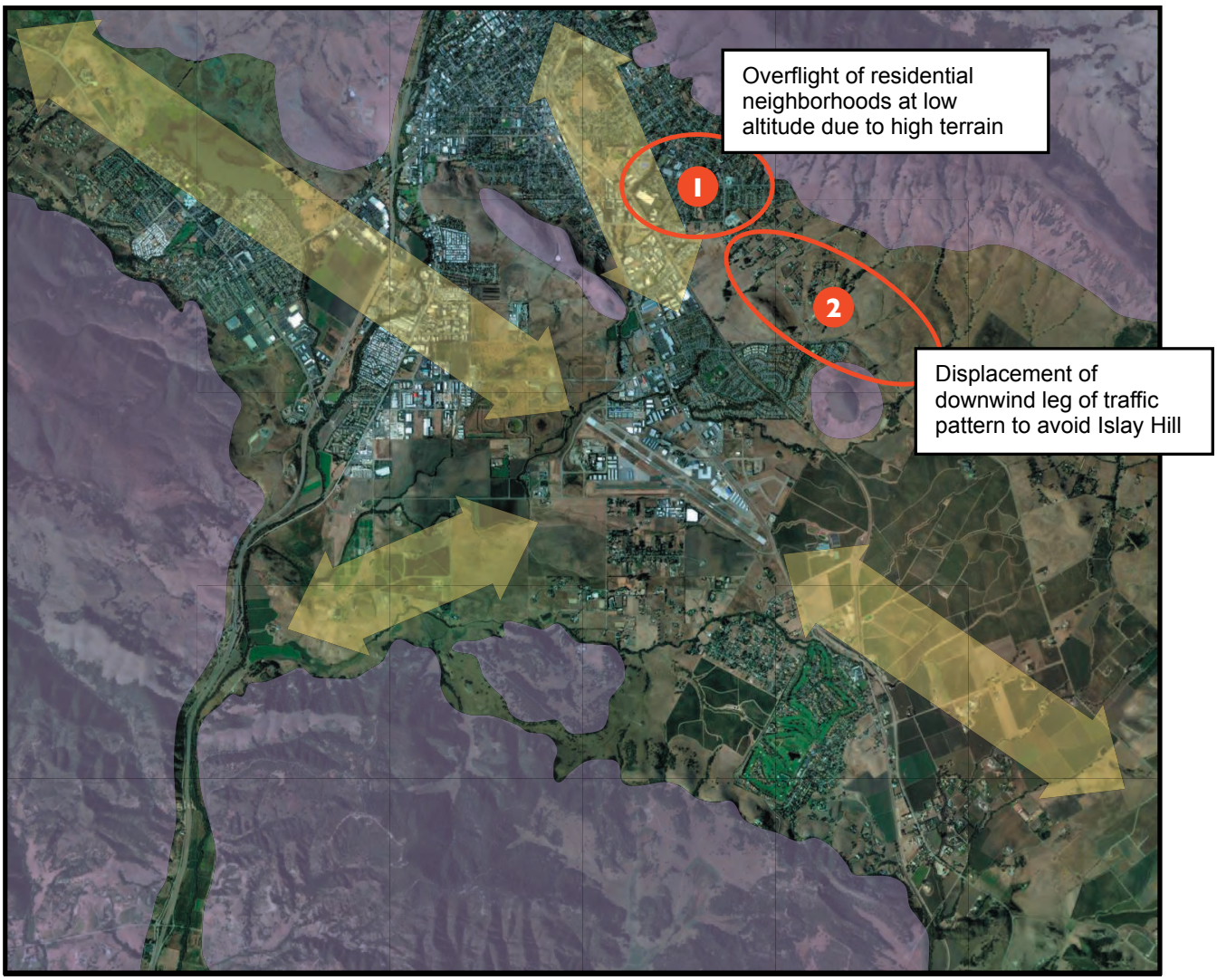


Figure C-4 – Impacts of High Terrain on Operations at the San Luis Obispo County Regional Airport

Runway 29 and 11, there exists a potential for conflict between VFR traffic and aircraft operating under instrument flight rules. Altogether, these impacts on flight operations result in an increased risk of mid-air collision or loss of control events associated with near mid-air collision over the limited level land areas in the airport vicinity.

- Operation of aircraft at relatively low altitude over residential neighborhoods (Figure C-4, area 1) – In the vicinity of Terrace Hill, residential development has occured on terrain with an elevation of 400 to 500 feet above mean sea level. Terrace Hill itself is designated by the Federal Aviation Agency as an obstruction to navigable airspace. Since aircraft approaching from the north (i.e., from Paso Robles via the Cuesta Grade), will be descending to pattern altitude over the Terrace Hill neighborhoods, the FAA-recommended vertical clearance of 1000 feet above developed residential areas may not be maintained. Failure to maintain this clearance is not a violation of FAA regulations, as it is a necessary

maneuver in order to descend and land at the airport. Nonetheless, this situation raises safety risks associated with potential man-made penetrations of FAA imaginary surfaces and most definitely indicates a need for appropriate real estate disclosure documents and avigaqtion easements in this area.

- Displacement of the downwind leg of the right traffic approach to Runway 29 – To avoid flight directly over Islay Hill and maintain visual contact with high terrain in this area, many pilots will elect the downwind leg of the traffic pattern to the north of this obstruction. This displaces hazards associated with the traffic pattern farther from the runway than would ordinarily be the case.
- Under normal operating procedures, aircraft approaching to land will descend to pattern altitude and slow to pattern airspeed before entering the traffic pattern. At the San Luis Obispo County Regional Airport, the requirement to clear high terrain will often result in aircraft entering the traffic pattern at higher-than-usual altitude or speed. The subsequent

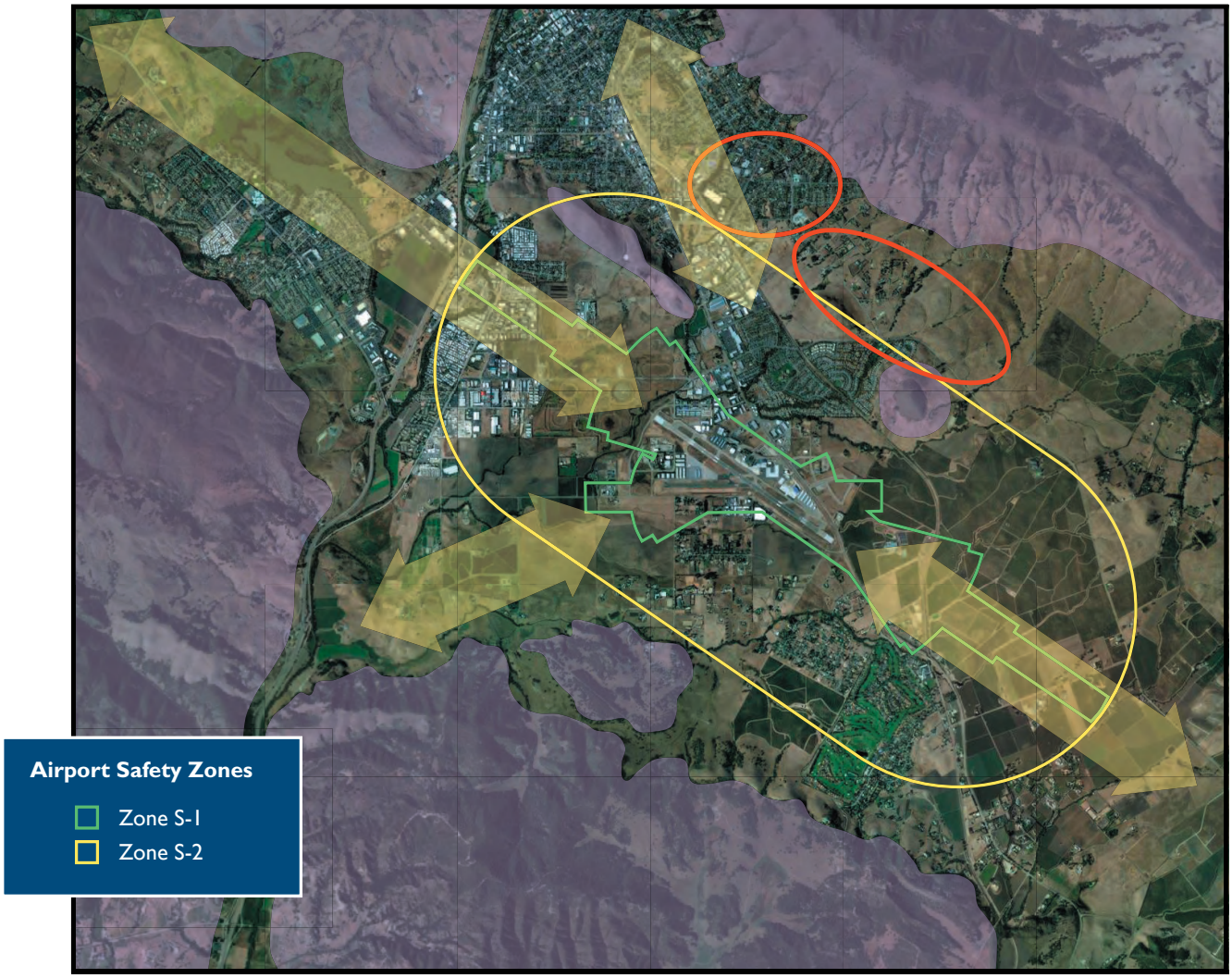


Figure C-5 – Relation of Local Factors Due to High Terrain to Generic Safety Zones

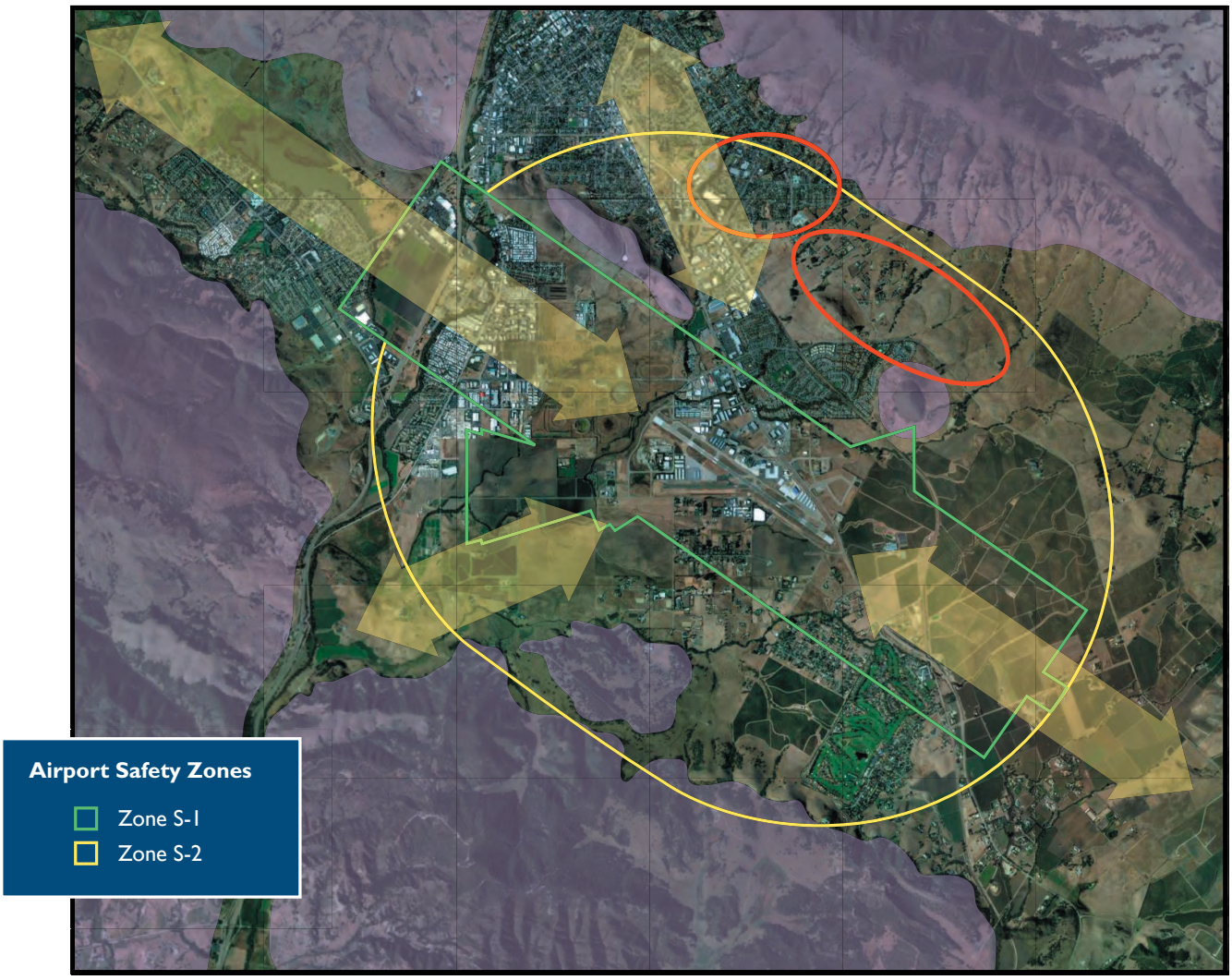


Figure C-6 – Relation of Local Factors Due to High Terrain to FAA Horizontal Surface

need to descend or slow the aircraft during traffic pattern maneuvers creates an unusually high work load for pilots and may result in an inadequately stabilized approach, with the potential for loss of control. This scenario is of particular concern with respect to inexperienced pilots or those who are unfamiliar with the airport.

When the generic airport safety zones are examined with respect to local factors created by high terrain in the vicinity of the San Luis Obispo County Regional Airport (see Figure C-5), it is apparent that hazards related to overflight of elevated residential neighborhoods and to displacement of the downwind leg of the right traffic pattern for Runway 29 are not addressed. (Note that Aviation Safety Zone S-2, as shown in Figure C-5, corresponds to the the area termed the "Traffic Pattern Zone" by the California Airport Land Use Planning Handbook.)

To rectify this deficiency, the Airport Land Use Commission has modified Airport Safety Zone S-2 to correspond the the FAA-defined horizontal surface. As illustrated in Figure C-6, this

adjustment will Include the hazard areas associated with high terrain in the Airport Planning Area and allow for appropriate real estate disclosures, avigation easements, and land use regulations in these areas.

Circling Approaches

A circling (or circle-to-land) approach is a type of instrument approach procedure. Like all instrument approaches, it is a maneuver that allows an aircraft to fly to and land at the airport when clouds or other meteorologic conditions prevent the pilot from seeing the ground. In flying an instrument approach, a pilot flies a defined and published course at specific altitudes or at a required rate of descent. Careful adherence to the requirements of an instrument procedure allows an aircraft to descend to a low altitude in close proximity to an airport runway. At this point, if the runway is in sight, the aircraft may continue descending to land. If the runway is not seen, the aircraft must climb to a safe altitude and depart the vicinity of the airport

To execute a circling approach, a pilot descends toward the airport on a standard instrument approach route and at the altitudes or descent rate required by that procedure. At or above a specified altitude, however, (the Circle-to-Land Minimum Descent Altitude), if visibility minimums are met and the airport environment is in sight, the pilot will deviate from the instrument approach and maneuver to land on a runway other than that usually accessed by the original instrument procedure (see Figure C-7). At the San Luis Obispo County Regional Airport, circling is permitted onlt to the south of Runway 11-29, due to the presence of Islay Hill and other high terrain north of the airport. Because of the possibilities of loss of visual references, spatial disorientation, and controlled flight into terrain, the circling approach is generally regarded as one of the more difficult and potentially dangerous of instrument approach procedures.

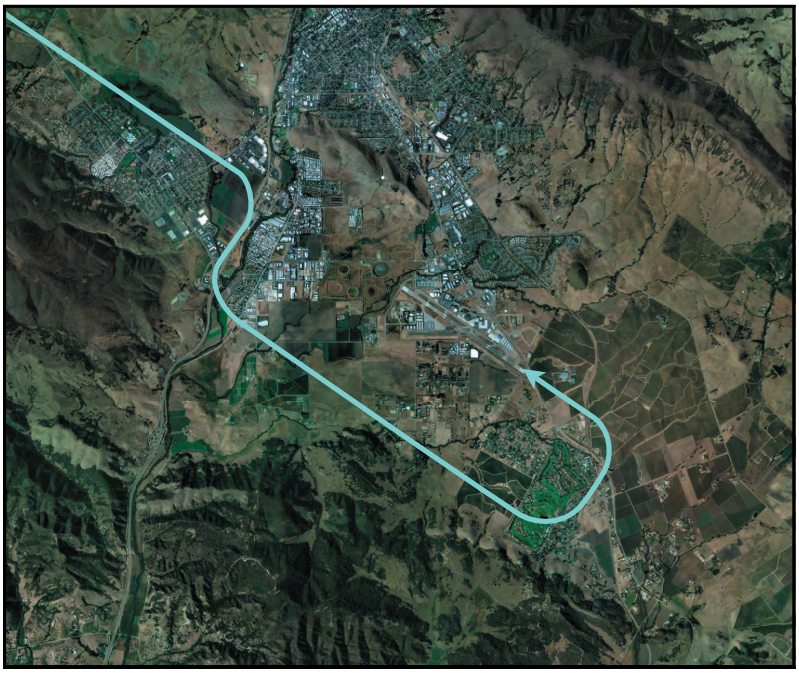


Figure C-7 – Schematic Representation of the Circling Approach

During the circling approach, adequate terrain clearance is assured only for aircraft operating at or above the Circle-to-Land Minimum Descent Altitude (MDA) and within an FAA-designated protected area. Both the MDA and the size of the protected area are determined by the Approach Category of the aIrcraft flying the approach (see Figure C-8). The Approach Category, in turn is determined by the approach speed of the aircraft. Most of the private aircraft landing at the San Luis Obispo County Regional Airport are Category A or B; regional jets are Category C. Aircraft are authorized to descend below the MDA only when the airport environment is in sight and the pilot can safely descend to land using normal maneuvers and normal rates of descent.

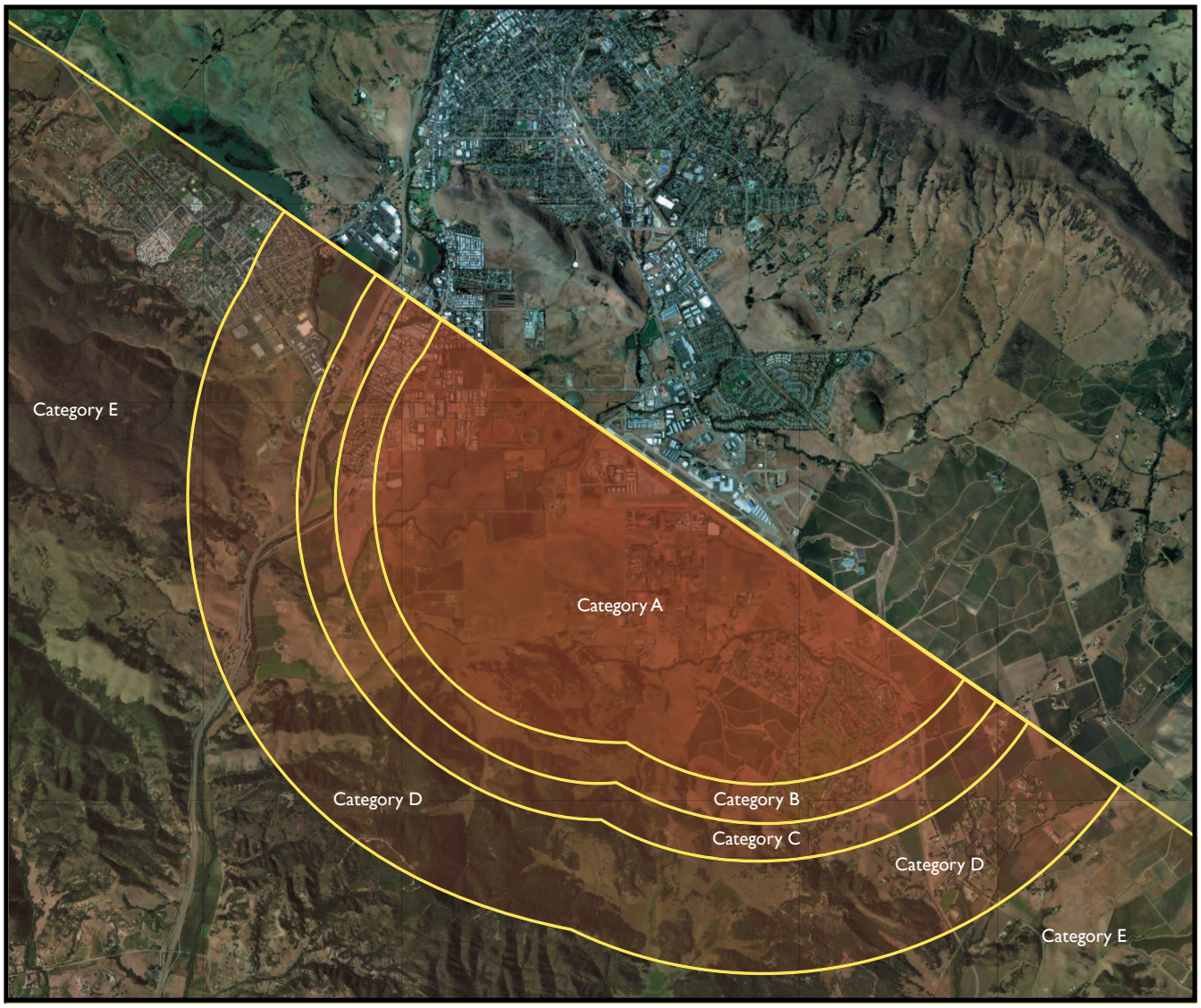


Figure C-8 – FAA–Designated Protected Areas For Circling Approach, ILS, Runway 29

In the case of the San Luis Obispo Regional Airport, the circle-to-land procedure is further complicated by elevated terrain located to the south and west of Runway 11-29. Although it is legal for pilots to maneuver over these mountainous areas during a circling approach, the likelihood that this would actually occur is minimal. In light of this discussion, it is apparent that the area of concern for airport land use planning purposes is the portion of the FAA-protected area for Category A, B, and C aircraft located between Runway 11-29 and the nearby high terrain. This area is illustrated in Figure C-9.

The generic airport safety zones illustrated in the California Airport Land Use Planning Handbook provide for only partial coverage of the area involved in the circle-to-land procedure (Figure C-10). As a consequence, many aircraft flying this approach will be at or beyond the boundaries of the airport land use planning area. This would result in many properties being exposed to

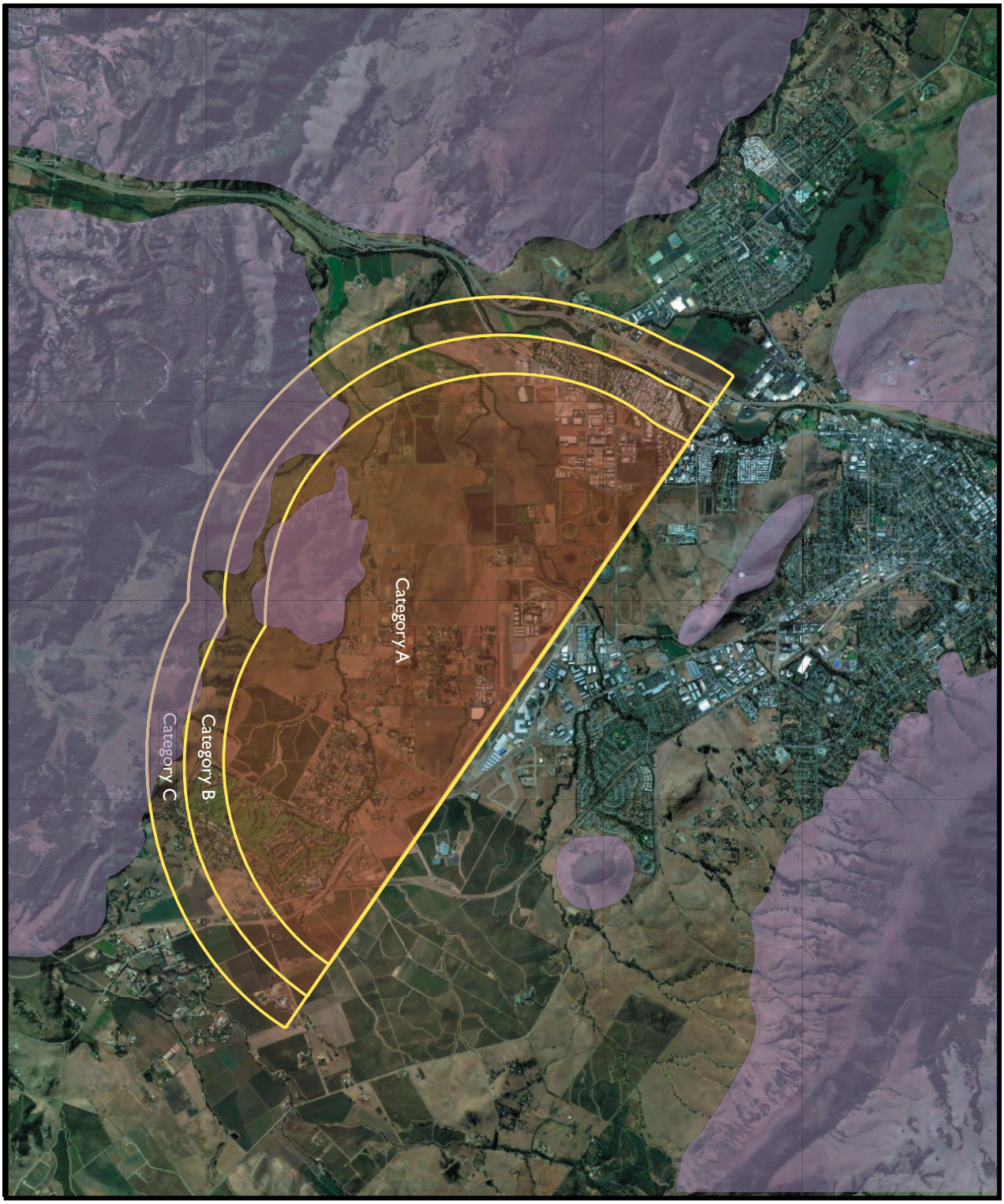


Figure C-9 – Interaction of Adjacent High Terrain with FAA–Designated Protected Areas For Circling Approach, ILS, Runway 29

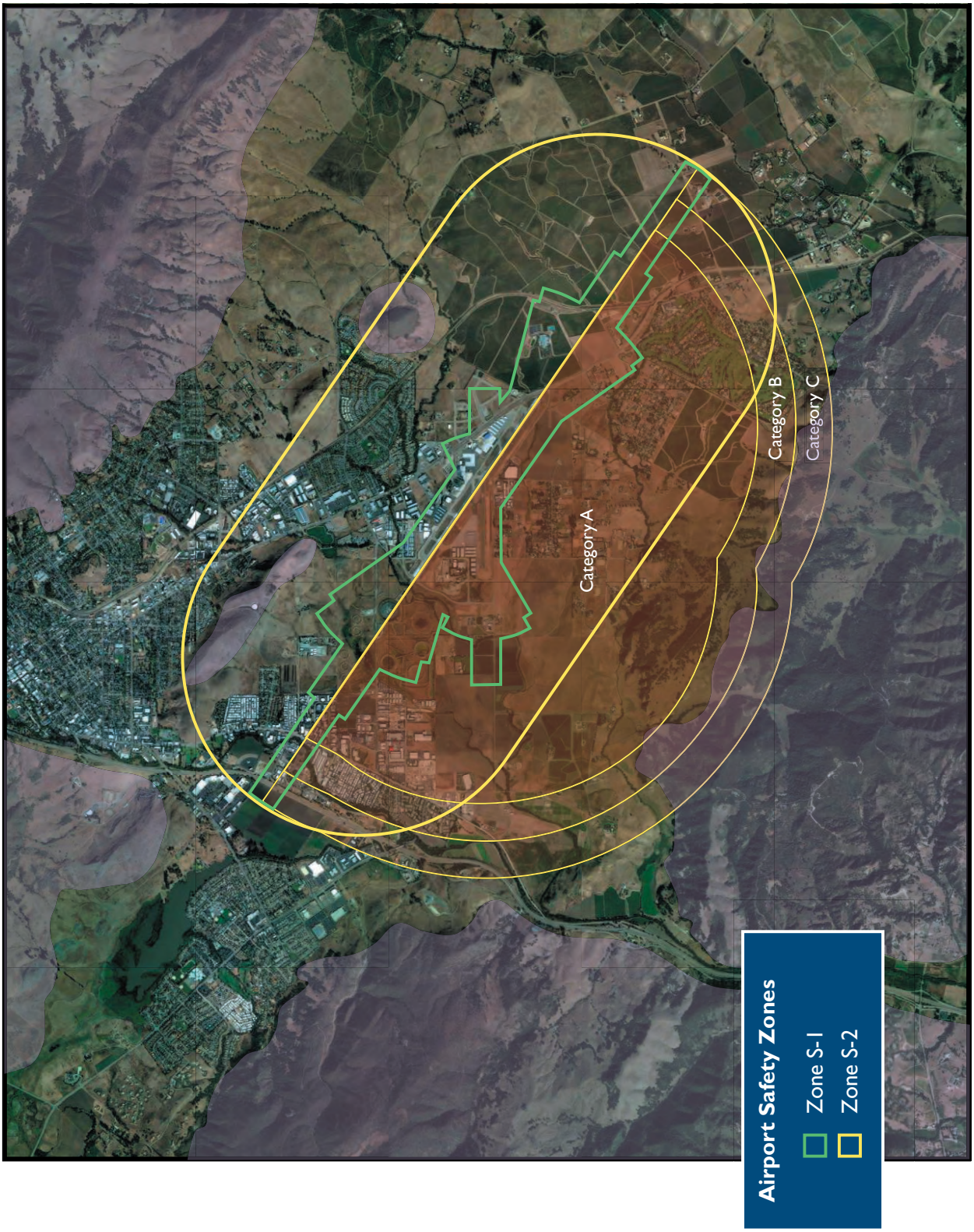


Figure C-10 – Relationship Between Generic Airport Safety Zones and FAA–Designated Protected Areas For Circling Approach, ILS, Runway 29

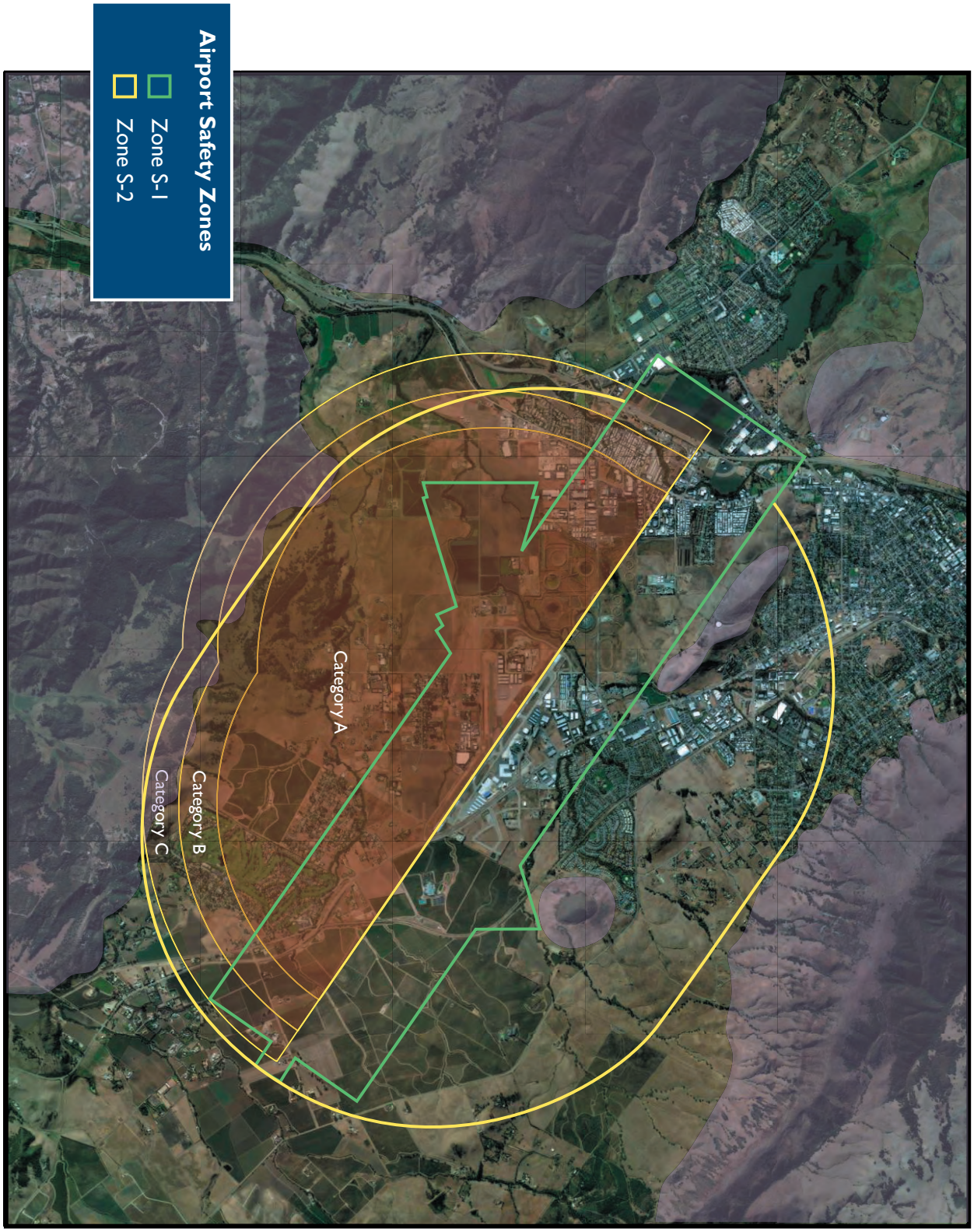


Figure 11 – Relationship Between Horizontal Surface and FAA–Designated Protected Areas For Circling Approach, ILS, Runway 29

specific aviation safety risks, with no mechanism to ensure appropriate real estate disclosure, avigation easements, or land use regulation.

In contrast, modifying the generic Safety Zone 2 (i.e., Traffic Pattern Zone) to conform to the FAA-designated horizontal surface results in much greater consistency between the circle-to-land protected area and the Airport Land Use Plan area (Figure 11). It should be noted that the existing land uses in this area are entirely consistent with Airport Safety Area S-2, as are all of the land use designations in the Land Use Elements of the General Plans of both the City and County of San Luis Obispo.

Non-Precision Instrument Procedures Not Aligned with Runways

Instrument procedures are detailed, published flight procedures which allow aircraft to land at or depart from an airport through clouds, fog, or other meteorologic phenomena that prevent the pilot from seeing the ground or the horizon. Currently, there are seven published instrument procedures for the San Luis Obispo County Regional Airport: three instrument approaches and four departures (Figure C-12). Of the instrument departures, three (ILS Rwy 11, RNAV (GPS) Rwy 11, and RNAV (GPS) Rwy 29) are aligned with Runway 11-29. The fourth departure (VOR-A) is not aligned with any runway. One of three instrument departures (CREPE) follows the extended centerline of Runway 29, while two departures (WYNRR and AVILA) diverge from the runway centerline.

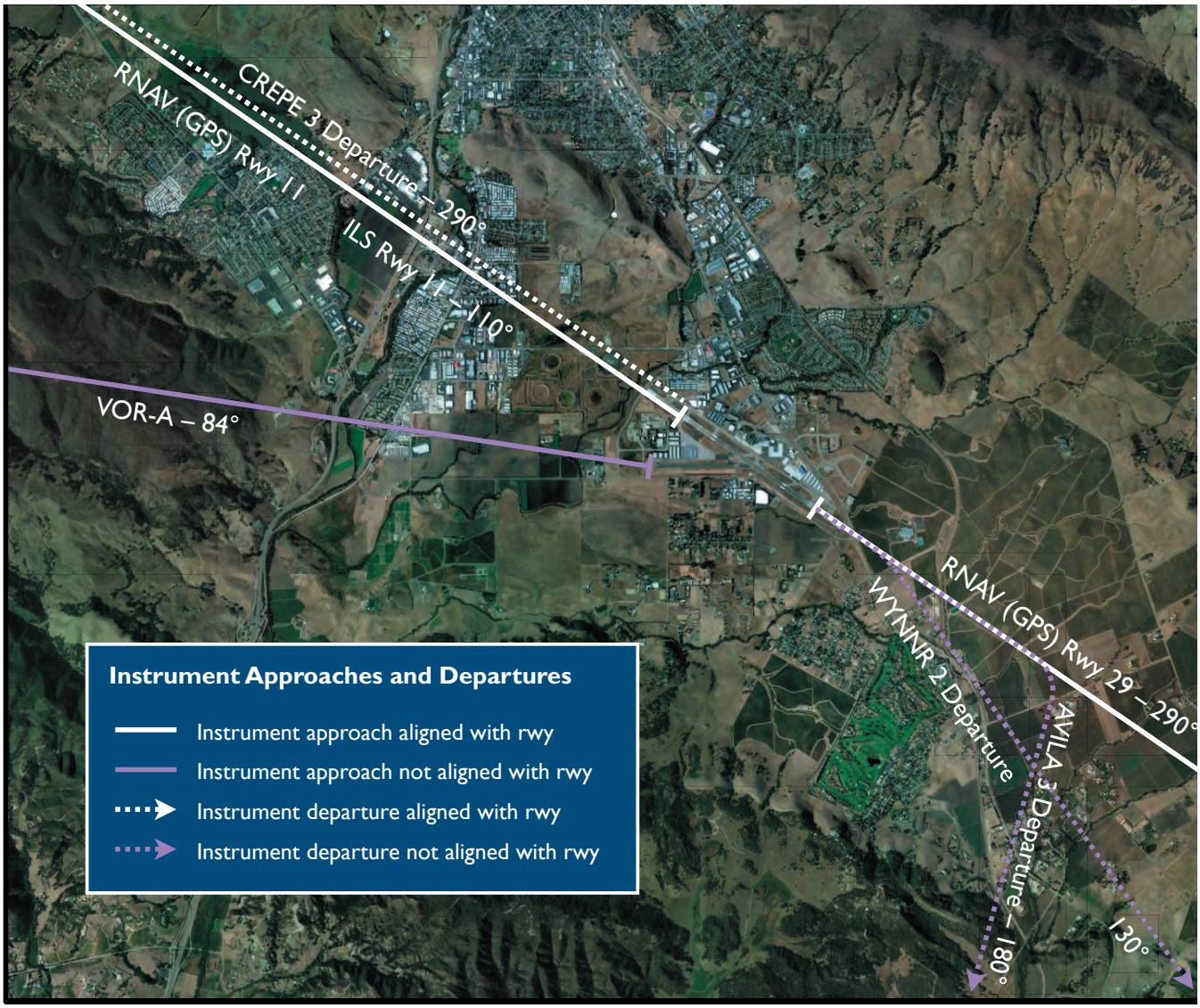


Figure C-12 – Published Instrument Procedures for the San Luis Obispo County Regional Airport

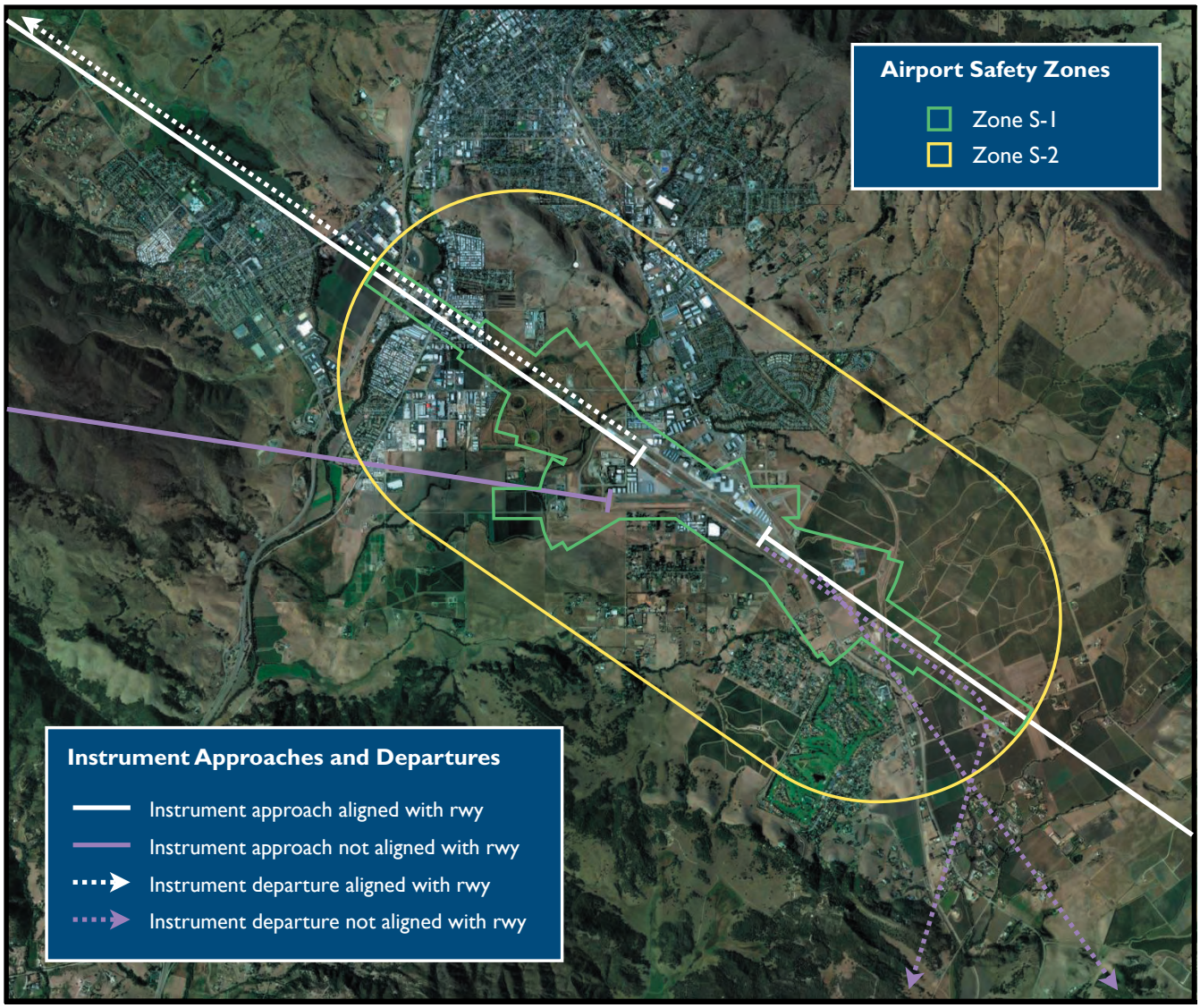


Figure C-13 – Relationship of Generic Safety Zones to Instrument Procedures for the San Luis Obispo County Regional Airport

The VOR-A approach is of particular importance for airport land use planning. This procedure can be flown using only a VOR radio receiver and a watch. No vertical guidance is provided and descent is determined by the time of flight after passing the Morro Bay VOR transmitter. Inaccuracy in timing or in maintaining a constant airspeed and correct altitude can result in inadvertent flight into terrain.

An examination of the generic airport safety zones presented by the California Airport Land Use Planning Handbook (Figure C-13) reveals that instrument approaches and departures that are aligned with Runway 11-29 are contained within the more restrictive S-1 zone over their entire courses through the airport land use planning area. (Aviation Area S-1, as depicted above, corresponds to the Runway Protection Zones, the Inner Approach and Departure Zones, the Inner Turning Zones, the Outer Approach and Departure Zones, and the Sideline

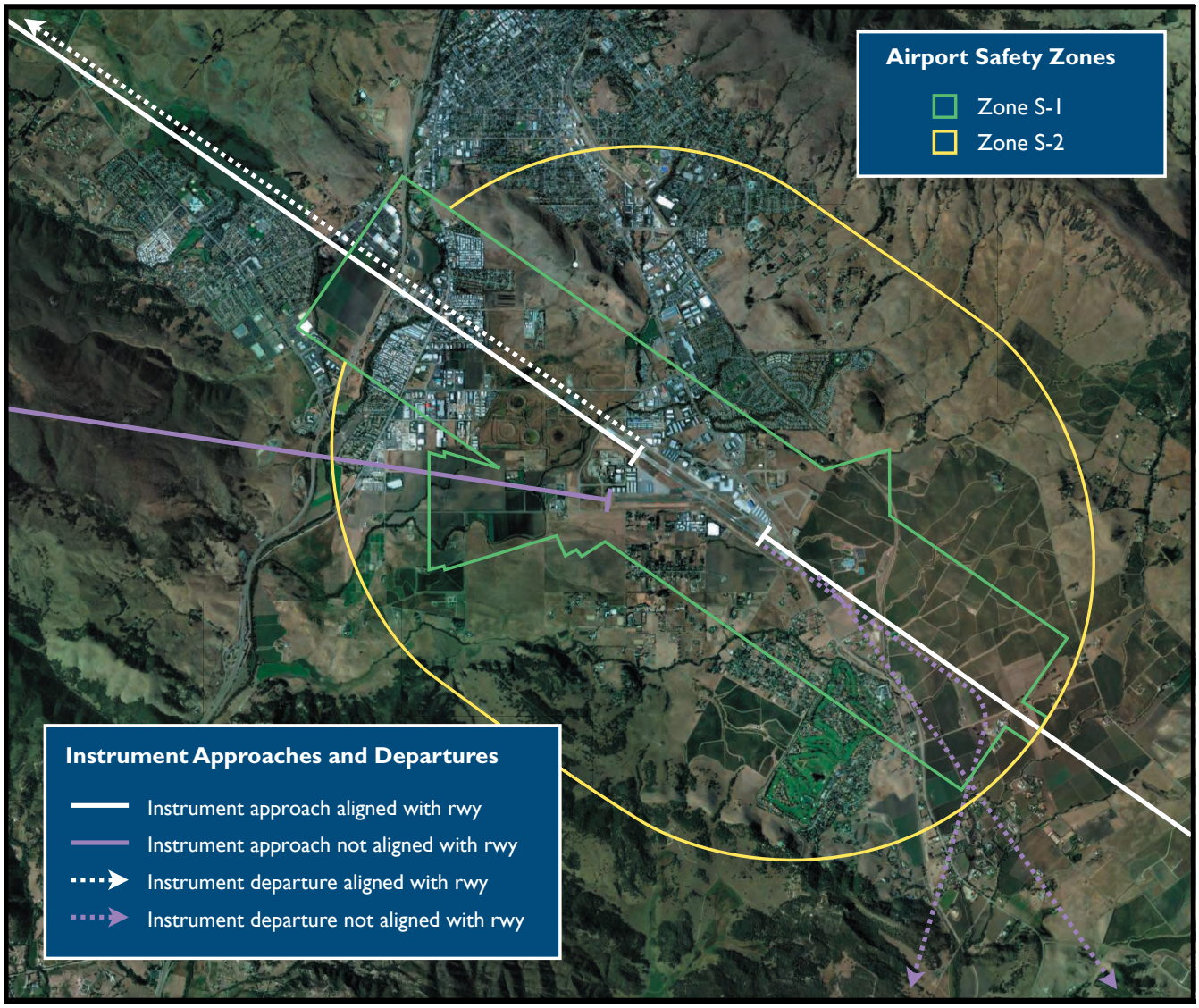


Figure C-14 – Relationship of Current Airport Land Use Plan Safety Zones to Instrument Procedures for the San Luis Obispo County Regional Airport

Zones.) Because these zones are, in fact, "generic", however, they do not adequately contain instrument procedures that are not aligned with runways (VOR-A approach, WYNNR and AVILA departures). The responsibility and authority to modify these generic zones to accomodate instrument procedures at the San Luis Obispo County Regional Airport falls with the Airport Land Use Commission.

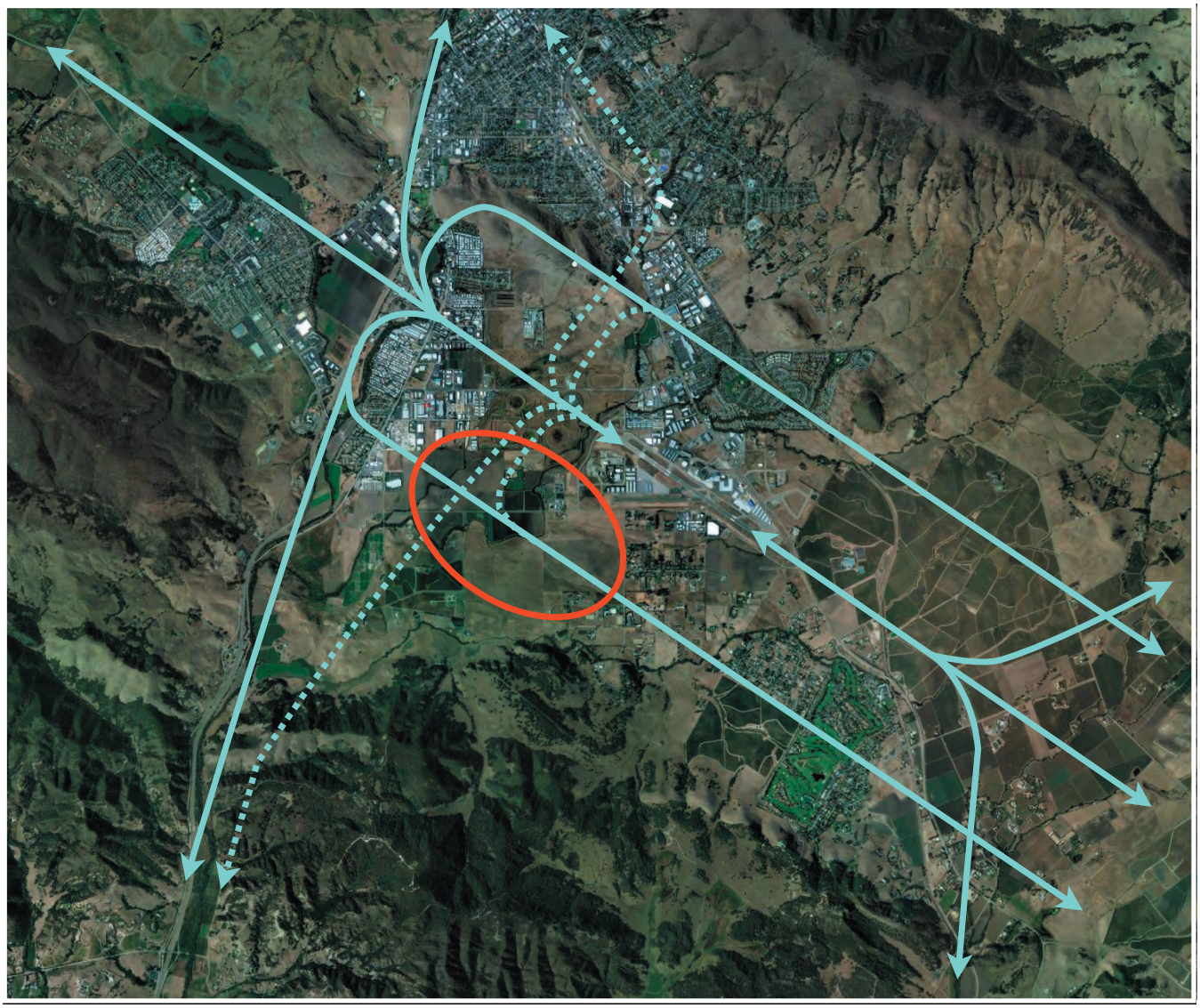
This issue was addressed by the Commission in defining Aviation Safety Zone S-1 of the current Airport Land Use Plan. As shown in Figure C-14, Safety Zone S-1 is far more appropriate to procedures not aligned with runways at the San Luis Obispo County Regional Airport than the State Handbook's generic safety zones. This remains true, despite the fact that the RNAV (GPS) Rwy 11 approach has been revised since the current Airport Land Use Plan was constructed.

Noise-Sensitive Land Uses in Proximity to the Airport

Noise-sensitive land uses adjacent to the airport environment are usually thought of as representative conflicts with airport operations related to acoustic impacts and annoyance of nearby residents. To the extent that avoiding overflight of noise-sensitive land uses requires restriction or modification of normal flight procedures, aviation safety risks may be displaced from their usual location. Accounting for this effect may require re-examination and customization of the generic airport safety zones.

At the San Luis Obispo County Regional Airport, efforts to mitigate airport noise impacts have culminated in the construction and publication of a set of VFR Quiet Flight Procedures. These maneuvers were developed through an extended and collaborative effort betwen airport

Figure C-15 – VFR Quite Flight Procedures at the San Luis Obispo County Regional Airport

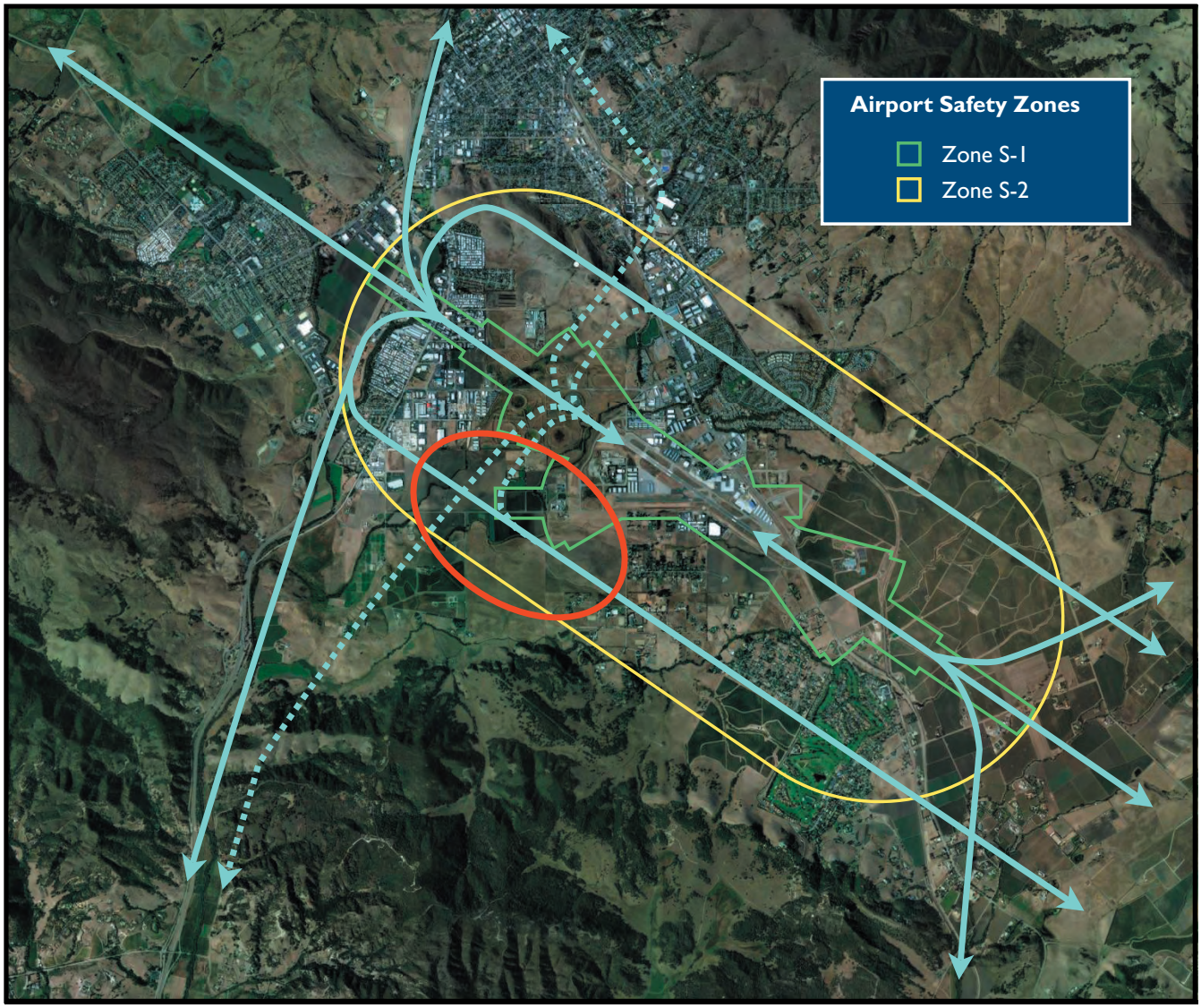


administration, the local pilot community, and residents of communities within the airport planning area.

While the Quiet Flight Procedures contain a number of recommended techniques and routings, the most important for airport safety concerns involve VFR departure from Runway 29 (Figure C-15). The usual noise abatement procedure for this departure is to climb on runway heading until reaching U. S. Highway 101, then turn to the desired course. A secondary procedure is to turn to the north or south at low altitude, shortly after departing the runway and before reaching the developed area extending eastward fro Higuera Street. The secondary departure is utilized primarily by smaller aircraft and by student pilots “in the pattern”.

These procedures create two significant issues with respect to aviation safety areas at the San

Figure C-16 – Generic Airport Safety Zones and Quiet Flight Procedures at the San Luis Obispo County Regional Airport



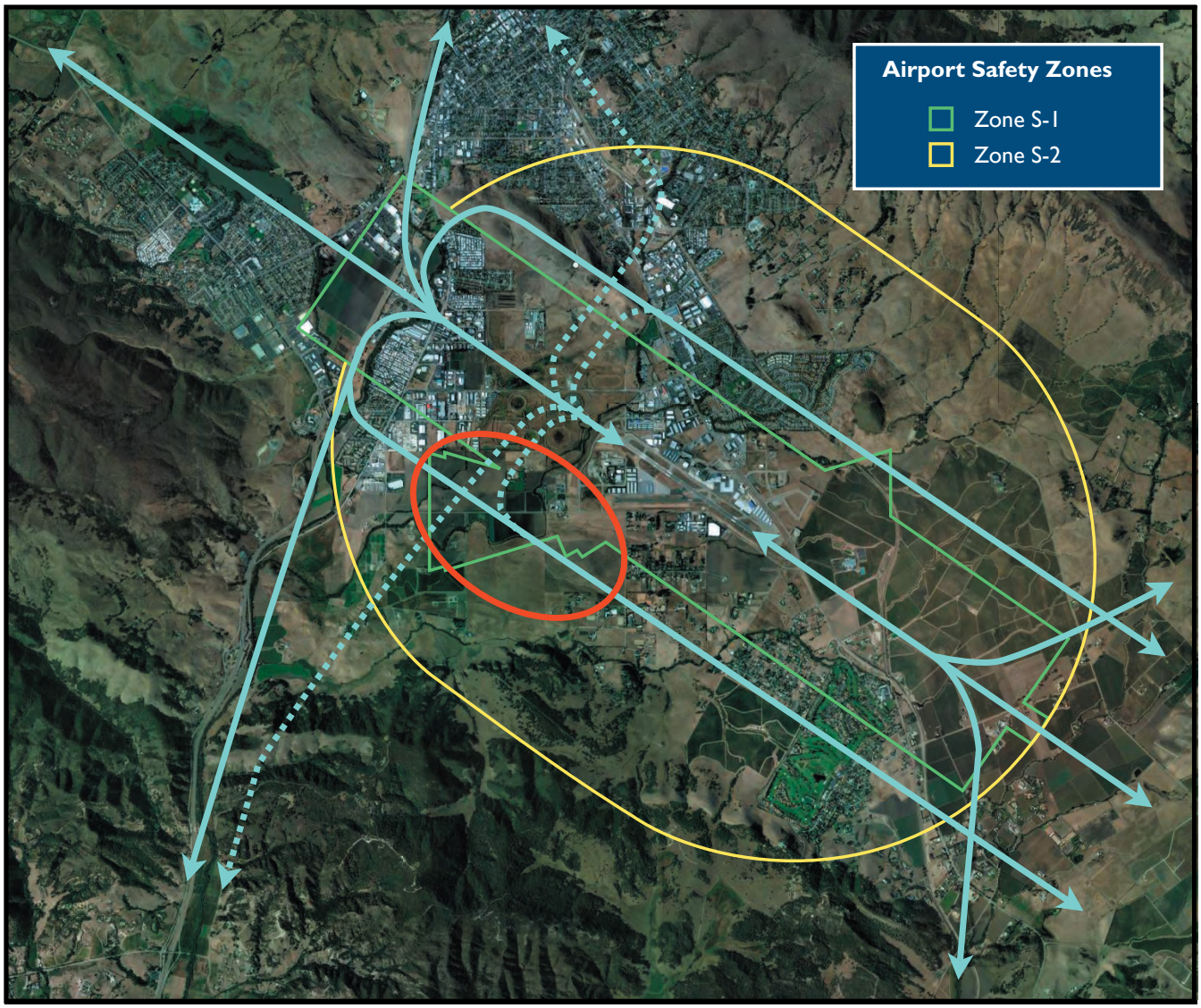


Figure C-17 – Current Airport Safety Zones and Quiet Flight Procedures at the San Luis Obispo County Regional Airport

Luis Obispo County Regional Airport:

- A portion of the procedure turns that would ordinarily be executed in the Inner Turning Zone are displaced to the northeast. In addition, since aircraft climbing from Runway 29 will not have visual reference to the ground for navigation, their outbound courses can be expected to diverge from the runway centerline. Procedure turns, therefore, will occur over a wider area than would be the case if they were performed at the usual location.
- The convergence of aircraft flying left downwind arrivals or departures with airplanes climbing into the left downwind from the secondary Quiet Flight departure and those descending from the visual 45° pattern entry and the VOR-A instrument approach

creates a risk of mid-air collision (red oval, Figure C-15).

The generic airport safety zones provide an adequate area of Safety Zone S-1 (the Inner Turning Zone) for turns associated with the secondary Quite Flight departures from Runway 29. Safety Area S-1, however, is much too narrow to afford adequate safety for procedure turns at U. S, 101, especially in light of the expected spread in course as aircraft fly further and further from the runway (Figure C-16). Additionally, much of the zone where an increased risk of mid-air collision is evident lies outside of Safety Zone S-1.

In the current Airport Land Use Plan, Area S-1 has been modified to provide adequate safety for procedure turns along Highway 101, and also offers superior coverage with respect to potential midair collisions on the left downwind leg of the traffic pattern.

Runway Use by Special Purpose Aircraft

The presence at the San Luis Obispo County Regional Airport of an active, international training program for helicopter pilots results in an unusually high number of helicopter operations at the airport. While this has significant impact on the issue of airport noise (see Appendix B) the Airport Land Use Commission has not identified any specific local safety concerns generated by this factor.

Runways Used Predominantly in One Direction

Prevailing northwest winds favor the use of Runway 29 for take-offs and landings approximately 85% of the time. As a result, the accident probability scatter may be somewhat shorter and wider to the northeast of the airport than to the southwest. This difference, however, has not been quantitatively evaluated and no modifications to Airport Safety Zones have been made in response to this observation.

The number of operations on Runway 11 are not sufficiently infrequent to qualify as a low-activity runway.

Actual and Planned Changes in Runway Lengths and Locations and in Instrument Approach Procedures Identified in the Airport Master Plan for the San Luis Obispo County Regional Airport (January 25, 2005)

All Airport Safety Zones have been modified to reflect changes planned or adopted as options in the current Airport Master Plan. In general, the modifications required have been relatively minor.

High Volume of Flight Training Activity at the San Luis Obispo County Regional Airport

Currently there are eight advertized individuals and organizations offering flight training at the San Luis Obispo County Regional Airport, in addition to a number of private instructors. One indicator of the volume of flight training at SBP is the fact that 35.2% of operations are local, compared with a national average of 25.5%

Safety impacts of the high level of flight training operations include:

- Traffic pattern congestion
  - Due to repeated touch and go procedures by student pilots

- Increased risk of mid-air collision
  - Imprecise flight paths
  - Lack of experience/skill in maintaining visual scan for conflicting traffic
  - Broadens areas of risk to persons on the ground
- Potential for cross-controlled turns
  - Increased risk of stall/spin events
- Potential for operational error

The potential hazards of flight training activities accentuates the importance of taking a conservative approach to land use planning in the vicinity of the San Luis Obispo County Regional Airport. No specific modifications to the generic safety zones have been made, however, to accomodate flight training.

Elementary School Adjacent to the Approach to Runway 29

One of the strongest recommendations to pilots operating at the San Luis Obispo County Regional Airport is to avoid Los Ranchos Elementary School, which is located to the southwest of the approach end of Runway 29 (Figure C-18). The community is very sensitive to both noise and potential safety hazards related to school overflight. A number of outreach and study sessions have been held by airport staff, local pilots, and parents to devise methods to mitigate these impacts. Los Ranchos School is prominently marked with letters that are readable from the air and avoidance of overflight is featured in the Quite Flight brochure.

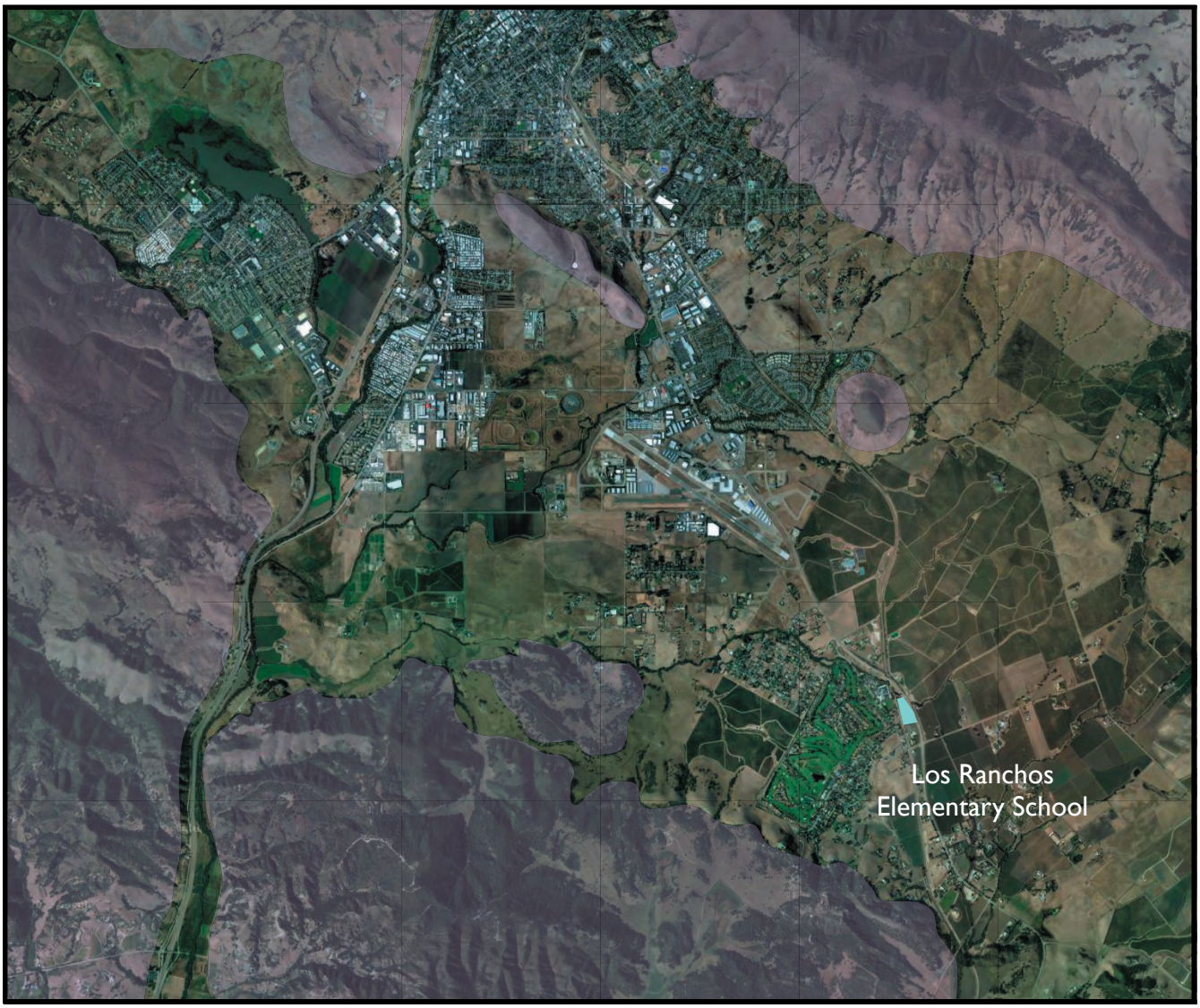


Figure C-18 – Los Ranchos School Location

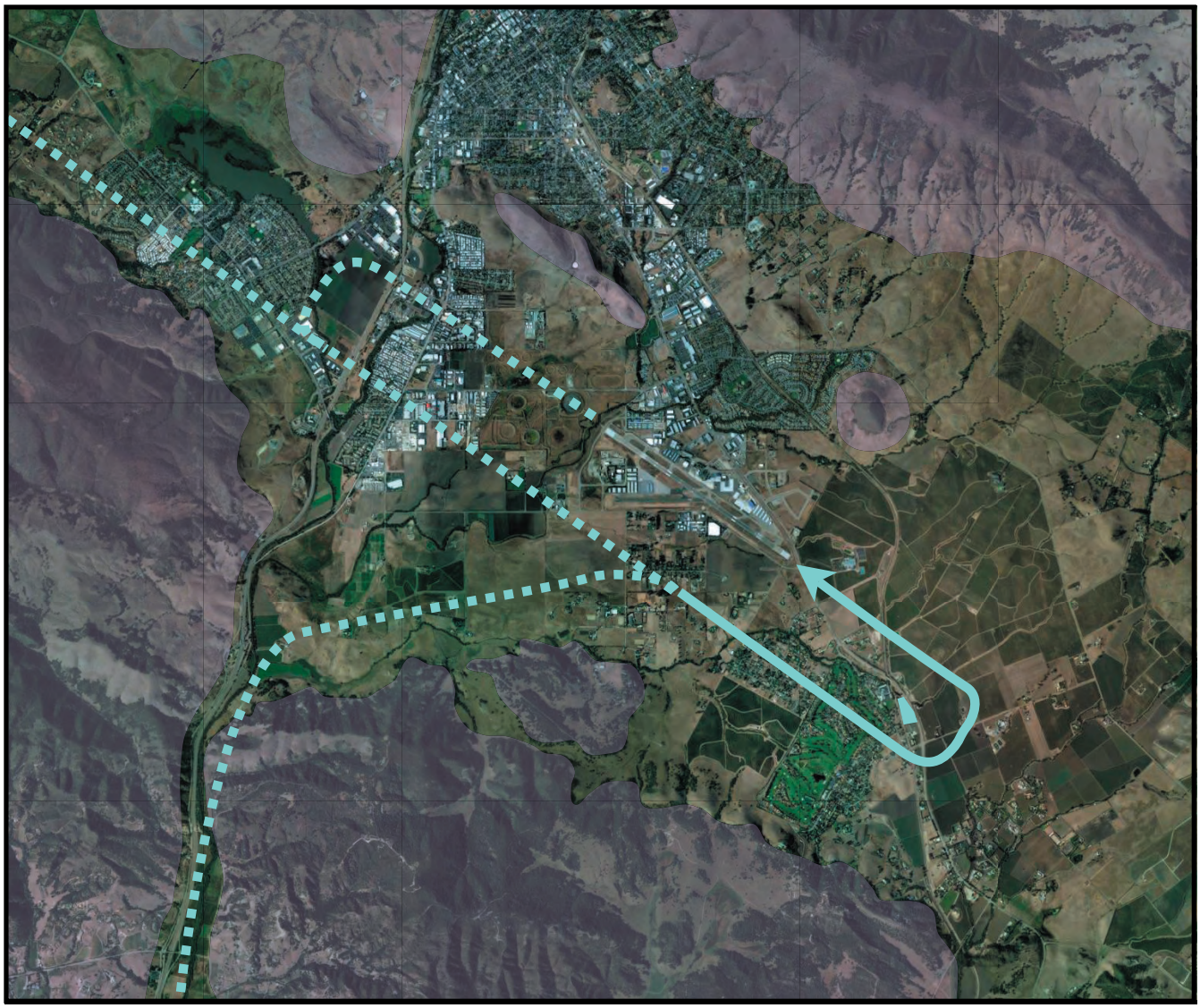


Figure C-19 – Approach Procedure to Avoid Overflight of Los Ranchos School

Avoidance of school overflight may be accomplished by turning to the crosswind leg of the traffic pattern before reaching its location. This maneuver, however, requires a relatively steep descent to the runway, with little time or distance to establish a stabilized approach. This type of approach is uncomfortable for passengers and demanding for pilots. In addition the actual school site is hidden from the pilot's view during the downwind-to-crosswind turn, so avoidance cannot be visually confirmed.

The preferred technique, therefore, is to extend the downwind leg of the traffic pattern beyond Los Ranchos School before turning to crosswind (Figure C-19). This modification to standard flight procedures results in displacement of the downwind-to-crosswind and crosswind-to-final approach turns to a greater distabce from the runway threshold than is usual. Thus, procedures which would normally occur within the inner turning zone are no longer contained within that

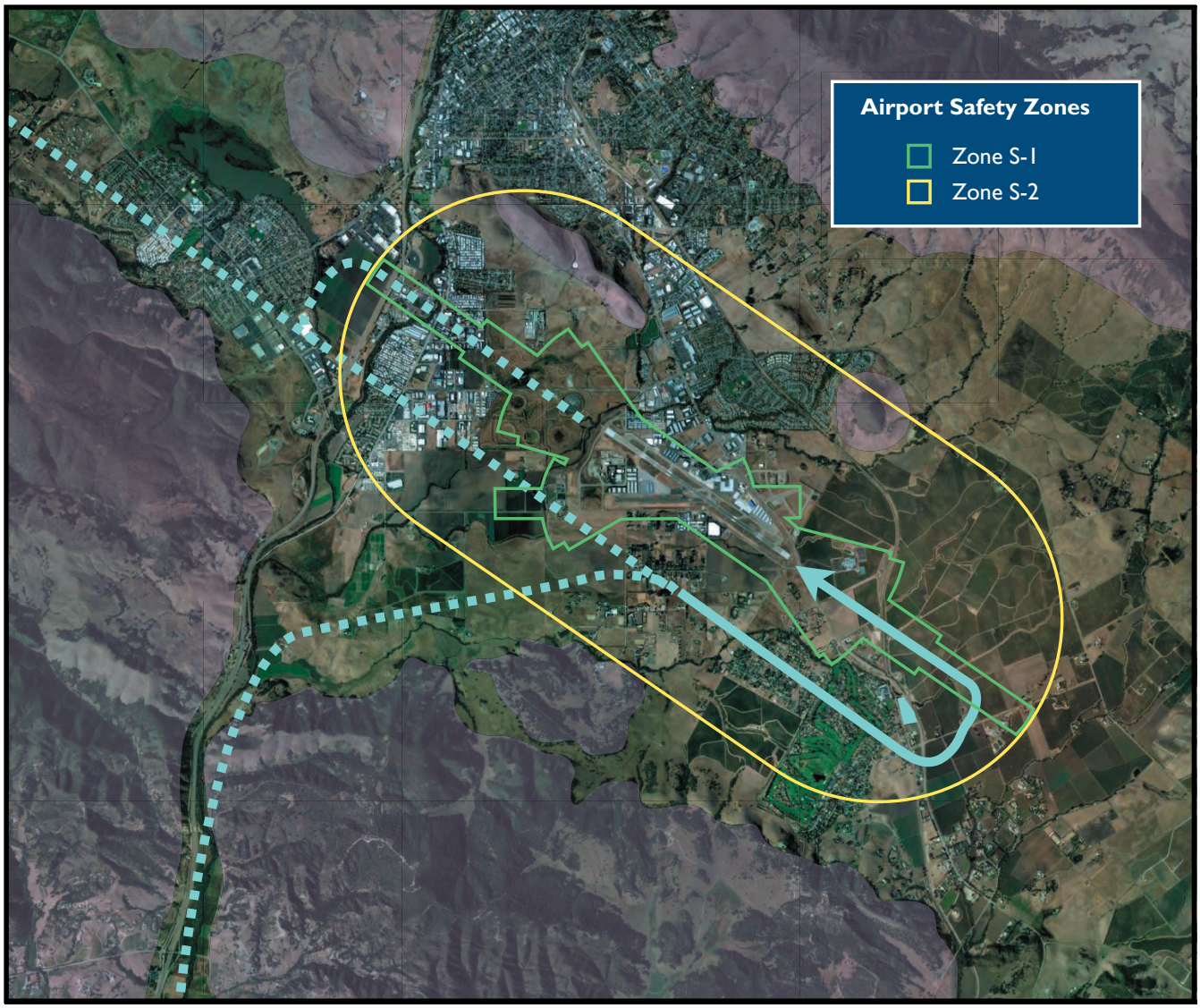


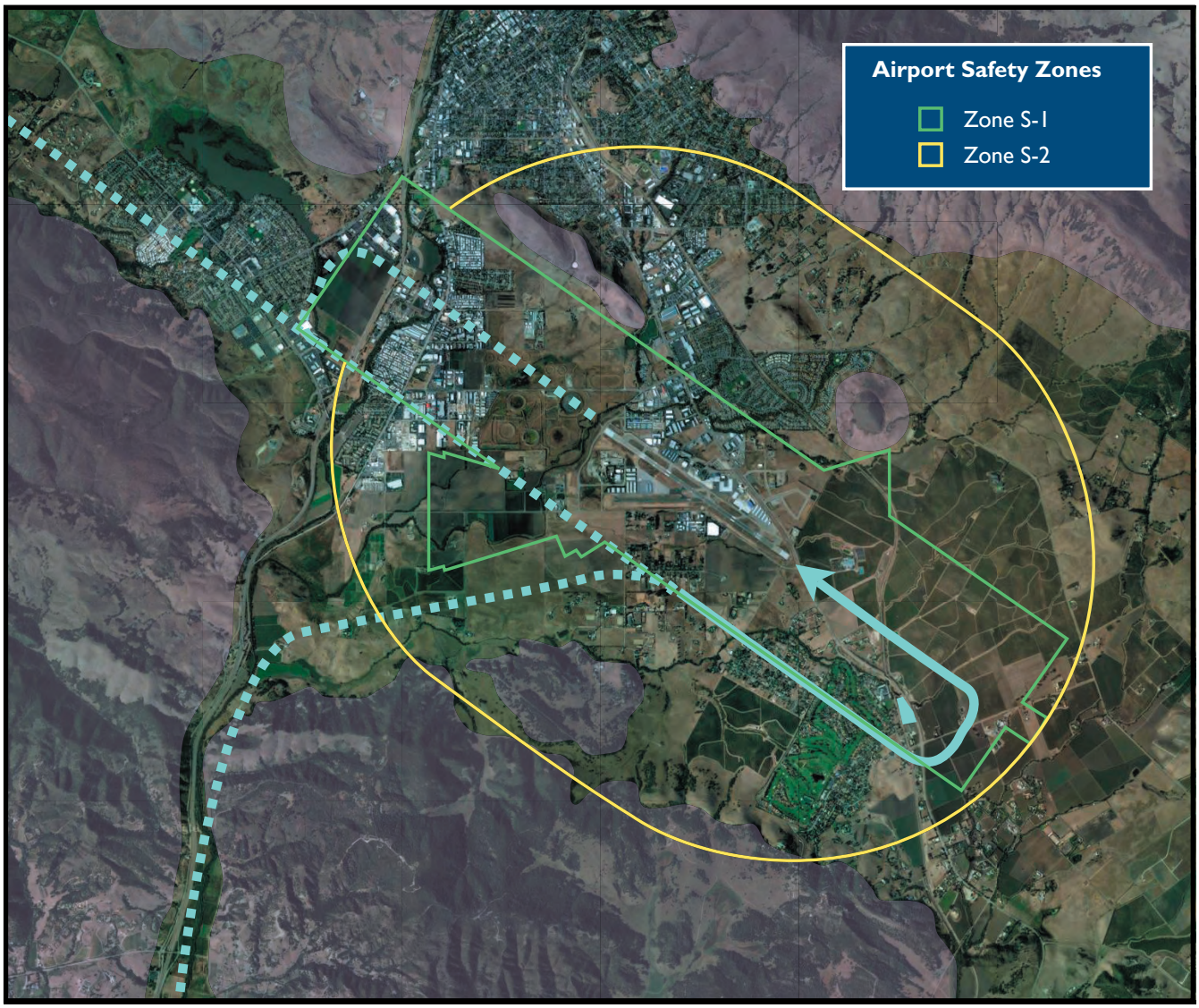
Figure C-20 – Relationship of Generic Safety Zones to Approach Procedure to Avoid Overflight of Los Ranchos

area.

As can be seen in Figure C-20, an uncritical application of the generic airport safety zones places procedure turns well beyond the inner turning zone (Zone 1) and well into Zone 2. This location is adjacent to the outer approach/departure zone. The California Airport Land Use Planning Handbook assumes that this location will be characterized primarily by traffic flying primarily along the runway centerline. The presence of an elementary school in this vicinity is clearly not anticipated.

In contrast, the existing San Luis Obispo Airport Land Use Plan modifies the generic airport safety zones to provide appropriate location of the procedure turns for approaching Runway 29 within Zone 1 (Figure C-21).

Figure C-21 – Relationship of Current ALUP Safety Zones to Approach Procedure to Avoid Overflight of Los Ranchos School



Consistency of Safety Zones with Requirements of the California State Airport Land Use Planning Handbook

The California Airport Land Use Planning Handbook indicates that Airport Land Use Commissions should utilize the generic safety zones as a starting point to develop safety zones for any specific airport, but also requires the Commission to modify these generic zones in response to local factors and airport operations. The preceding discussion illustrates the degree to which the Airport Land Use Commission of San Luis Obispo County has complied with these guidelines.

In addition, the Airport Land Use Planning Handbook also lists four additional characteristics that should be met by Airport Safety Zones:

1.) The zones should have easily definable geometric shapes

The Airport Safety Zones of the Airport Land Use Plan for the San Luis Obispo County Regional Airport are defined by GIS co-ordinates, which are readily definable and extremely precise.

2.) The number of zones should be limited to a realistic number (five or six should be adequate in most cases)

The Airport Land Use Plan for the San Luis Obispo County Regional Airport defines five Airport Safety Zones (Runway Protection Zone, Zone S-1a, Zone S-1b, Zone S-1c, and Zone S-2).

3.) The set of zones should have a distinct progression in the degree of risk represented (that is, the distribution of accidents within each zone should be relatively uniform, but less concentrated than in the zones closer to the runway ends)

The California Airport Land Use Planning Handbook provides no methodology for quantitating the degree of risk in various Airport Safety Zones. Visual comparison of the Safety Zones defined by the Airport Land Use Plan for the San Luis Obispo County Regional Airport with the probability scattergram for aircraft accidents (Figures C-22 and C-23) clearly illustrates the required progression of risk. That is, the probability of an aircraft accident (per unit of land area) is greatest in the Runway Protection Zone, second highest th Zone S-1a, third highest in Zone S-1b, fourth highest in Zone S-1c, and lowest in Zone S-2

4.) Each zone should be as compact as possible.

The current revision of the Airport Land Use Plan for the San Luis Obispo County Regional Airport reduces the size of the Airport Safety zones by more than 2000 acres (Figure C-24).

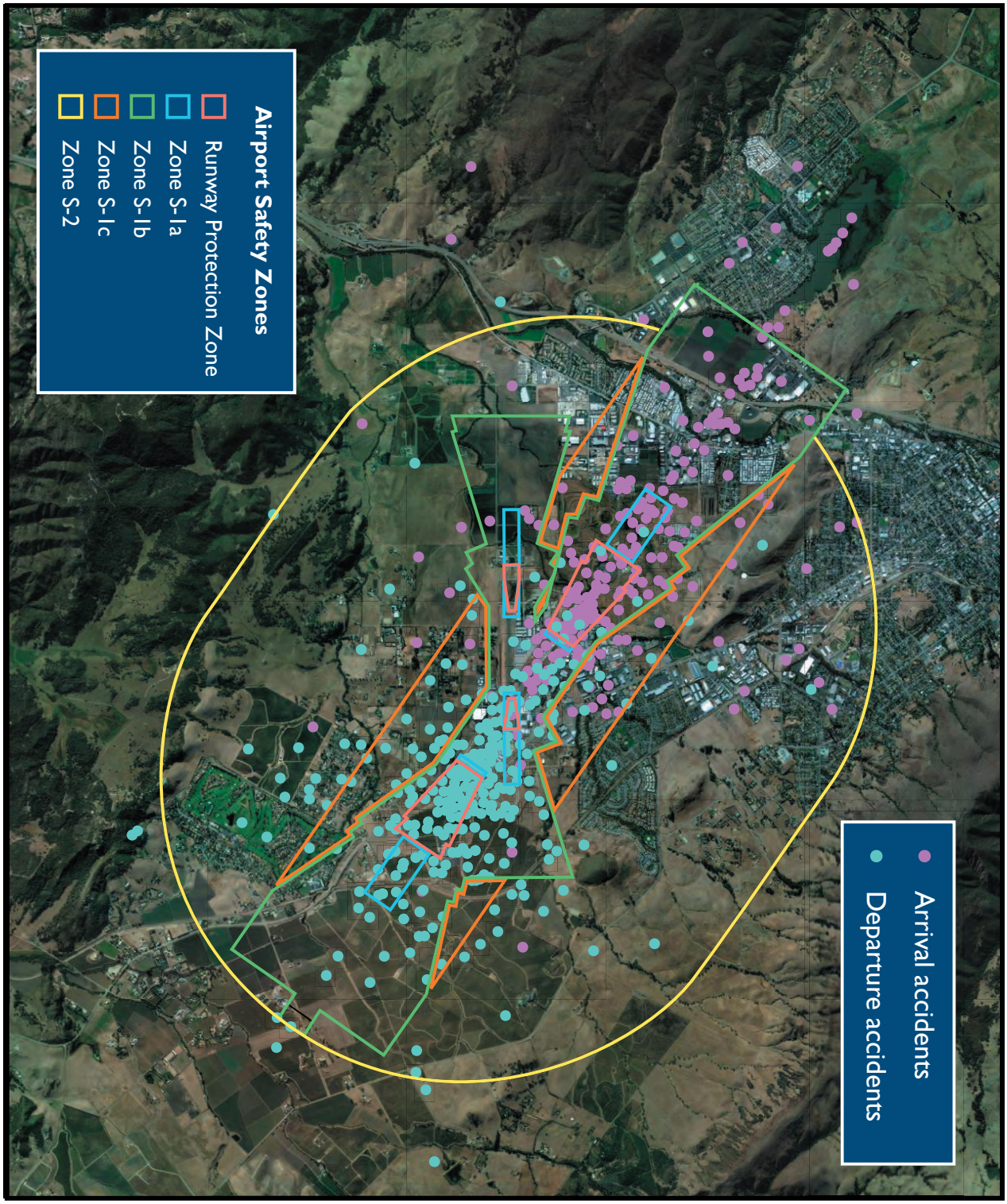


Figure C-22 – Aircraft accident Probability Scattergram, Runway 29

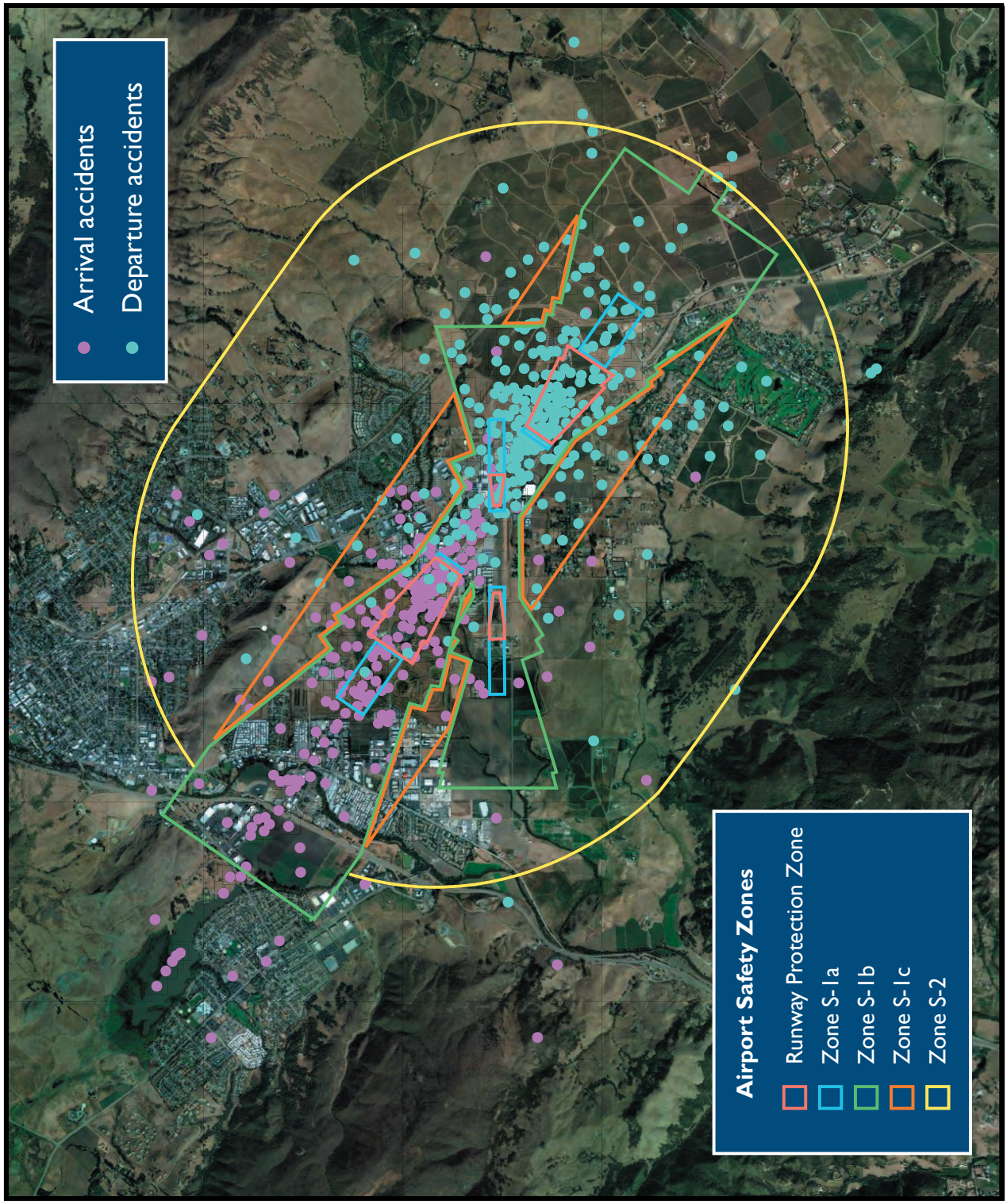


Figure C-22 – Aircraft accident Probability Scattergram, Runway 11

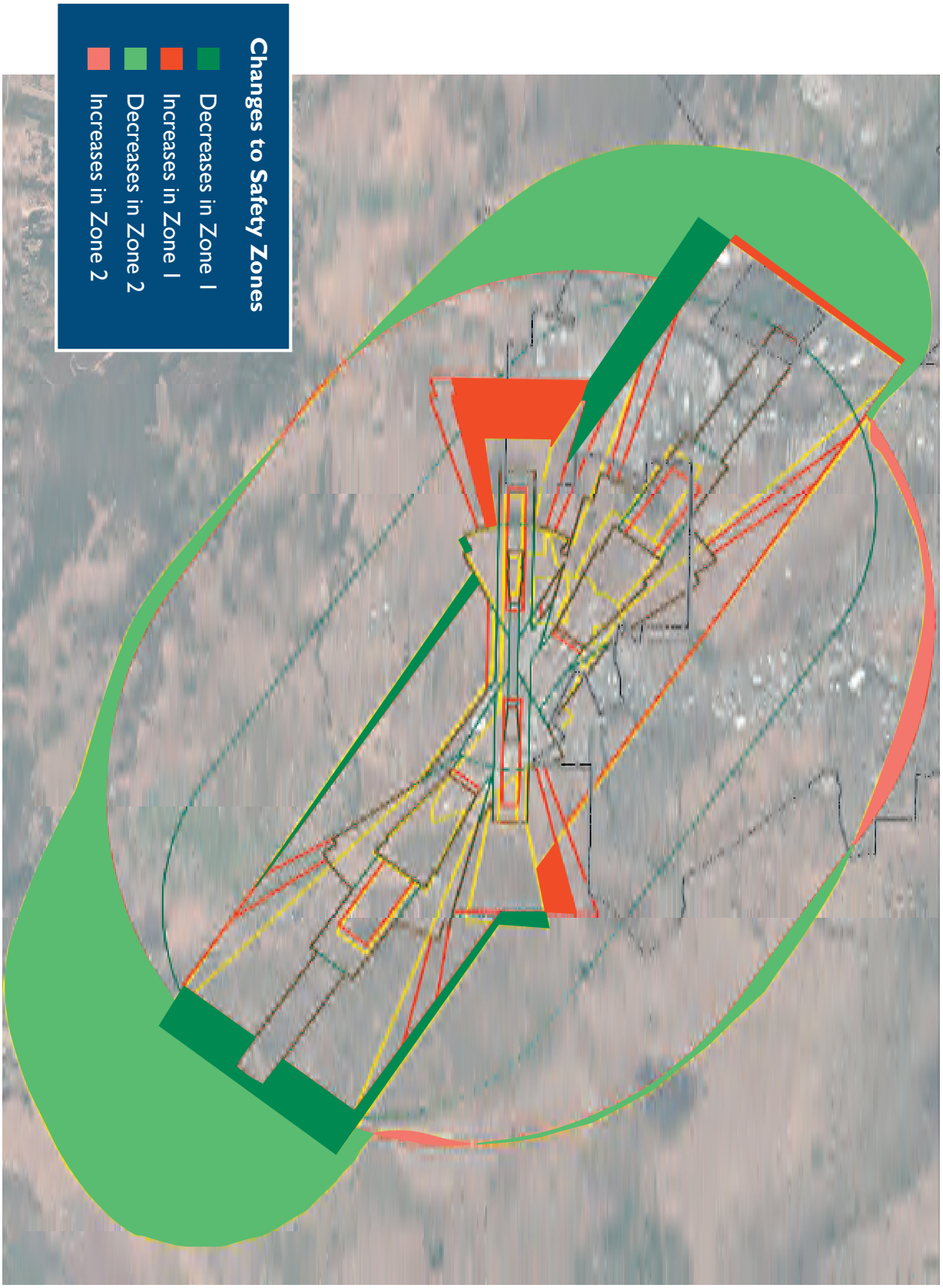


Figure C-24 – Comparison of Sizes of Current Airport Land Use Plan Safety Zones with Previous Configurations

Appendix D

Analysis of Density/Intensity of Use Standards

Comparison of Residential Density and Non-Residential Intensity of Use Standards with California Airport Land Use Planning Handbook Recommendations and Previous Airport Land Use Plan

Runway Protection Zone

The ALUP Runway Protection Zone (RPZ) corresponds to Zone 1 - Runway Protection Zone, as defined by the California Airport Land Use Planning Handbook (CALUPH) and the Federal Aviation Administration (FAA).

Table D-1: Allowable Land Use Densities/Intensities – Runway Protection Zone
Comparison of CALUPH, 2005 ALUP, and Current ALUP

Source Document	Residential Density (Dwelling Units/Acre)	Non-Residential Intensity of Use (Persons/Acre)	Single-Acre Intensity of Use (Persons/Acre)
CALUPH Zone 1			
Rural Environment	0	0	0
Suburban Environment	0	0	0
2005 Airport Land Use Plan	0	5	n/a
Current Airport Land Use Plan	0	0	0

Safety Zone S-1a

ALUP Safety Zone S-1a corresponds to CALUPH Zone 2 - Inner Approach/Departure Zone.

Table D-2: Allowable Land Use Densities/Intensities – Airport Safety Zone S-1a
Comparison of CALUPH, 2005 ALUP, and Current ALUP

Source Document	Residential Density (Dwelling Units/Acre)	Non-Residential Intensity of Use (Persons/Acre)	Single-Acre Intensity of Use (Persons/Acre)
CALUPH Zone 1			
Rural Environment	0.05 - 0.1[a]	10 - 40	50 - 80
Suburban Environment	0.05 - 0.1	40 - 60	80 - 120
2005 Airport Land Use Plan			
Without ACOS	0.2	30	n/a
With ACOS	0.2	40	n/a
Current Airport Land Use Plan			
Without ACOS	0.2	30	50
With ACOS	0.2	40	80

[a] Residential density is limited to the density allowed by current zoning or one residence per 10 to 20 acres, whichever is less.
[b] Intensity is limited to the average intensity of use of surrounding land uses or the figure listed in the Table, whichever is less.
[c] Intensity is limited to twice the average intensity of use of surrounding land uses or the figure listed in the Table, whichever is less.

Safety Zone S-1b

ALUP Safety Zone S-1b includes CALUPH Zone 3 - Inner Turning Zone, Zone 4 - Outer Approach/Departure Zone, and Zone 5 - Sideline Zone.

Table D-3: Allowable Land Use Densities/Intensities – Airport Safety Zone S-1b
Comparison of CALUPH, 2005 ALUP, and Current ALUP

Source Document	Residential Density (DU/Acre)	Single-Acre Residential Density (DU/Acre)	Non-Residential Intensity of Use (Persons/Acre)	Single-Acre Intensity of Use (Persons/Acre)
CALUPH Zone 3				
Rural Environment	0.2 - 0.5[a]	–	50 - 70	150 - 210
Suburban Environment	0.2 - 0.5	–	70 - 100	210 - 300
CALUPH Zone 4				
Rural Environment	0.2 - 0.5[a]	–	70 - 100	210 - 300
Suburban Environment	0.2 - 0.5	–	100 - 150	300 - 450
CALUPH Zone 5				
Rural Environment	0.5 - 1[b]	–	50 - 70	150 - 210
Suburban Environment	0.5 - 1	–	70 - 100	210 - 300
2005 Airport Land Use Plan				
Without ACOS	0.2	n/a	40	n/a
With ACOS	0.2	n/a	50	n/a
As Infill Project (with ACOS)	n/a	n/a	n/a	n/a
Current Airport Land Use Plan				
Without ACOS	0.2	0.2	50	150
With ACOS	0.2	0.2	70 - 100	210
As Infill Project (with ACOS)	0.5[c]	1.5[d]	150[c]	450[d]

[a] Residential density is limited to the density allowed by current zoning or one residence per 2 to 5 acres, whichever is less.
[b] Residential density is limited to the density allowed by current zoning or one residence per 1 to 2 acres, whichever is less.
[c] Intensity/density is limited to that of surrounding land uses or the figure listed in the Table, whichever is less.
[d] Intensity/density is limited to twice that of surrounding land uses or the figure listed in the Table, whichever is less.

Safety Zone S-1c

ALUP Safety Zone S-1c represents an area of intermediate risk between CALUPH Zones 3, 4, and 5 and CALUPH Zone 6 - Traffic Pattern Zone.

Table D-4: Allowable Land Use Densities/Intensities – Airport Safety Zone S-1c
Comparison of CALUPH, 2005 ALUP, and Current ALUP

Source Document	Residential Density (DU/Acre)	Single-Acre Residential Density (DU/Acre)	Non-Residential Intensity of Use (Persons/Acre)	Single-Acre Intensity of Use (Persons/Acre)
CALUPH Zone 3				
Rural Environment	0.2 - 0.5[a]	–	50 - 70	150 - 210
Suburban Environment	0.2 - 0.5	–	70 - 100	210 - 300
CALUPH Zone 4				
Rural Environment	0.2 - 0.5[a]	–	70 - 100	210 - 300
Suburban Environment	0.2 - 0.5	–	100 - 150	300 - 450
CALUPH Zone 5				
Rural Environment	0.5 - 1[b]	–	50 - 70	150 - 210
Suburban Environment	0.5 - 1	–	70 - 100	210 - 300
CALUPH Zone 6				
Rural Environment	No limit[c]	–	150 - 200	600 - 800
Suburban Environment	No limit[c]	–	200 - 300	800 - 1200
2005 Airport Land Use Plan				
Without ACOS	0.2	n/a	50	n/a
With ACOS	0.2	n/a	60 -120	n/a
As Infill Project (with ACOS)	n/a	n/a	n/a	n/a
Current Airport Land Use Plan				
Without ACOS	0.2	0.2	100	300
With ACOS	0.2	0.2	150 - 250	450 - 750
As Infill Project (with ACOS)	No limit[d]	No limit[e]	300[c]	1200[d]

[a] Residential density is limited to the density allowed by current zoning or one residence per 2 to 5 acres, whichever is less.
[b] Residential density is limited to the density allowed by current zoning or one residence per 1 to 2 acres, whichever is less.
[c] Noise and overflight should be considered.
[d] Intensity/density is limited to that of surrounding land uses or the figure listed in the Table, whichever is less.
[e] Intensity/density is limited to twice that of surrounding land uses or the figure listed in the Table, whichever is less.

Safety Zone S-2

ALUP Safety Zone S-1c includes a portion of CALUPH Zone 6 - Traffic Pattern Zone.

Table D-5: Allowable Land Use Densities/Intensities – Airport Safety Zone S-2
Comparison of CALUPH, 2005 ALUP, and Current ALUP

Source Document	Residential Density (DU/Acre)	Single-Acre Residential Density (DU/Acre)	Non-Residential Intensity of Use (Persons/Acre)	Single-Acre Intensity of Use (Persons/Acre)
CALUPH Zone 6				
Rural Environment	No limit[a]	–	150 - 200	600 - 800
Suburban Environment	No limit[a]	–	200 - 300	800 - 1200
2005 Airport Land Use Plan				
Without ACOS	6	n/a	150	n/a
With ACOS	12 - 18	n/a	150-180	n/a
Current Airport Land Use Plan				
Without ACOS	12	24	150	600
With ACOS	No limit	No limit	No limit	No limit

[a] Noise and overflight should be considered.

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Appendix E

California Public Utilities Code Sections 21670-21679.5

21670. (a) The Legislature hereby finds and declares that:

(1) It is in the public interest to provide for the orderly development of each public use airport in this state and the area surrounding these airports so as to promote the overall goals and objectives of the California airport noise standards adopted pursuant to Section 21669 and to prevent the creation of new noise and safety problems.

(2) It is the purpose of this article to protect public health, safety, and welfare by ensuring the orderly expansion of airports and the adoption of land use measures that minimize the public's exposure to excessive noise and safety hazards within areas around public airports to the extent that these areas are not already devoted to incompatible uses.

(b) In order to achieve the purposes of this article, every county in which there is located an airport which is served by a scheduled airline shall establish an airport land use commission. Every county, in which there is located an airport which is not served by a scheduled airline, but is operated for the benefit of the general public, shall establish an airport land use commission, except that the board of supervisors of the county may, after consultation with the appropriate airport operators and affected local entities and after a public hearing, adopt a resolution finding that there are no noise, public safety, or land use issues affecting any airport in the county which require the creation of a commission and declaring the county exempt from that requirement. The board shall, in this event, transmit a copy of the resolution to the Director of Transportation. For purposes of this section, "commission" means an airport land use commission. Each commission shall consist of seven members to be selected as follows:

(1) Two representing the cities in the county, appointed by a city selection committee comprised of the mayors of all the cities within that county, except that if there are any cities contiguous or adjacent to the qualifying airport, at least one representative shall be appointed therefrom. If there are no cities within a county, the number of representatives provided for by paragraphs (2) and (3) shall each be increased by one.

(2) Two representing the county, appointed by the board of supervisors.

(3) Two having expertise in aviation, appointed by a selection committee comprised of the managers of all of the public airports within that county.

(4) One representing the general public, appointed by the other six members of the commission.

(c) Public officers, whether elected or appointed, may be appointed and serve as members

of the commission during their terms of public office.

(d) Each member shall promptly appoint a single proxy to represent him or her in commission affairs and to vote on all matters when the member is not in attendance. The proxy shall be designated in a signed written instrument which shall be kept on file at the commission offices, and the proxy shall serve at the pleasure of the appointing member. A vacancy in the office of proxy shall be filled promptly by appointment of a new proxy.

(e) A person having an "expertise in aviation" means a person who, by way of education, training, business, experience, vocation, or avocation has acquired and possesses particular knowledge of, and familiarity with, the function, operation, and role of airports, or is an elected official of a local agency which owns or operates an airport.

(f) It is the intent of the Legislature to clarify that, for the purposes of this article, that special districts, school districts, and community college districts are included among the local agencies that are subject to airport land use laws and other requirements of this article.

21670.1. (a) Notwithstanding any other provision of this article, if the board of supervisors and the city selection committee of mayors in the county each makes a determination by a majority vote that proper land use planning can be accomplished through the actions of an appropriately designated body, then the body so designated shall assume the planning responsibilities of an airport land use commission as provided for in this article, and a commission need not be formed in that county.

(b) A body designated pursuant to subdivision (a) that does not include among its membership at least two members having expertise in aviation, as defined in subdivision (e) of Section 21670, shall, when acting in the capacity of an airport land use commission, be augmented so that body, as augmented, will have at least two members having that expertise. The commission shall be constituted pursuant to this section on and after March 1, 1988.

(c) (1) Notwithstanding subdivisions (a) and (b), and subdivision (b) of Section 21670, if the board of supervisors of a county and each affected city in that county each makes a determination that proper land use planning pursuant to this article can be accomplished pursuant to this subdivision, then a commission need not be formed in that county.

(2) If the board of supervisors of a county and each affected city makes a determination that proper land use planning may be accomplished and a commission is not formed pursuant to paragraph (1), that county and the appropriate affected cities having jurisdiction over an airport, subject to the review and approval by the Division of Aeronautics of the department, shall do all of the following:

(A) Adopt processes for the preparation, adoption, and amendment of the airport land use compatibility plan for each airport that is served by a scheduled airline or operated for the benefit of the general public.

(B) Adopt processes for the notification of the general public, landowners, interested groups, and other public agencies regarding the preparation, adoption, and amendment of the airport land use compatibility plans.

(C) Adopt processes for the mediation of disputes arising from the preparation, adoption, and amendment of the airport land use compatibility plans.

(D) Adopt processes for the amendment of general and specific plans to be consistent with the airport land use compatibility plans.

(E) Designate the agency that shall be responsible for the preparation, adoption, and amendment of each airport land use compatibility plan.

(3) The Division of Aeronautics of the department shall review the processes adopted pursuant to paragraph (2), and shall approve the processes if the division determines that the processes are consistent with the procedure required by this article and will do all of the following:

(A) Result in the preparation, adoption, and implementation of plans within a reasonable amount of time.

(B) Rely on the height, use, noise, safety, and density criteria that are compatible with airport operations, as established by this article, and referred to as the Airport Land Use Planning Handbook, published by the division, and any applicable federal aviation regulations, including, but not limited to, Part 77 (commencing with Section 77.1) of Title 14 of the Code of Federal Regulations.

(C) Provide adequate opportunities for notice to, review of, and comment by the general public, landowners, interested groups, and other public agencies.

(4) If the county does not comply with the requirements of paragraph (2) within 120 days, then the airport land use compatibility plan and amendments shall not be considered adopted pursuant to this article and a commission shall be established within 90 days of the determination of noncompliance by the division and an airport land use compatibility plan shall be adopted pursuant to this article within 90 days of the establishment of the commission.

(d) A commission need not be formed in a county that has contracted for the preparation of airport land use compatibility plans with the Division of Aeronautics under the California Aid to Airports Program (Chapter 4 (commencing with Section 4050) of Title 21 of the California Code of Regulations), Project Ker-VAR 90-1, and that submits all of the following information to the Division of Aeronautics for review and comment that the county and the cities affected by the airports within the county, as defined by the airport land use compatibility plans:

(1) Agree to adopt and implement the airport land use compatibility plans that have been developed under contract.

(2) Incorporated the height, use, noise, safety, and density criteria that are compatible with airport operations as established by this article, and referred to as the Airport Land

Use Planning Handbook, published by the division, and any applicable federal aviation regulations, including, but not limited to, Part 77 (commencing with Section 77.1) of Title 14 of the Code of Federal Regulations, as part of the general and specific plans for the county and for each affected city.

(3) If the county does not comply with this subdivision on or before May 1, 1995, then a commission shall be established in accordance with this article.

(e) (1) A commission need not be formed in a county if all of the following conditions are met:

(A) The county has only one public use airport that is owned by a city.

(B) (i) The county and the affected city adopt the elements in paragraph (2) of subdivision (d), as part of their general and specific plans for the county and the affected city.

(ii) The general and specific plans shall be submitted, upon adoption, to the Division of Aeronautics. If the county and the affected city do not submit the elements specified in paragraph (2) of subdivision (d), on or before May 1, 1996, then a commission shall be established in accordance with this article.

21670.2. (a) Sections 21670 and 21670.1 do not apply to the County of Los Angeles. In that county, the county regional planning commission has the responsibility for coordinating the airport planning of public agencies within the county. In instances where impasses result relative to this planning, an appeal may be made to the county regional planning commission by any public agency involved. The action taken by the county regional planning commission on an appeal may be overruled by a four-fifths vote of the governing body of a public agency whose planning led to the appeal.

(b) By January 1, 1992, the county regional planning commission shall adopt the airport land use compatibility plans required pursuant to Section 21675.

(c) Sections 21675.1, 21675.2, and 21679.5 do not apply to the County of Los Angeles until January 1, 1992. If the airport land use compatibility plans required pursuant to Section 21675 are not adopted by the county regional planning commission by January 1, 1992, Sections 21675.1 and 21675.2 shall apply to the County of Los Angeles until the airport land use compatibility plans are adopted.

21670.3. (a) Sections 21670 and 21670.1 do not apply to the County of San Diego. In that county, the San Diego County Regional Airport Authority, as established pursuant to Section 170002, shall be responsible for the preparation, adoption, and amendment of an airport land use compatibility plan for each airport in San Diego County.

(b) The San Diego County Regional Airport Authority shall engage in a public collaborative

planning process when preparing and updating an airport land use compatibility plan.

21670.4. (a) As used in this section, "intercounty airport" means any airport bisected by a county line through its runways, runway protection zones, inner safety zones, inner turning zones, outer safety zones, or sideline safety zones, as defined by the department's Airport Land Use Planning Handbook and referenced in the airport land use compatibility plan formulated under Section 21675.

(b) It is the purpose of this section to provide the opportunity to establish a separate airport land use commission so that an intercounty airport may be served by a single airport land use planning agency, rather than having to look separately to the airport land use commissions of the affected counties.

(c) In addition to the airport land use commissions created under Section 21670 or the alternatives established under Section 21670.1, for their respective counties, the boards of supervisors and city selection committees for the affected counties, by independent majority vote of each county's two delegations, for any intercounty airport, may do either of the following:

(1) Establish a single separate airport land use commission for that airport. That commission shall consist of seven members to be selected as follows:

(A) One representing the cities in each of the counties, appointed by that county's city selection committee.

(B) One representing each of the counties, appointed by the board of supervisors of each county.

(C) One from each county having expertise in aviation, appointed by a selection committee comprised of the managers of all the public airports within that county.

(D) One representing the general public, appointed by the other six members of the commission.

(2) In accordance with subdivision (a) or (b) of Section 21670.1, designate an existing appropriate entity as that airport's land use commission.

21670.6. Any action brought in the superior court relating to this article may be subject to a mediation proceeding conducted pursuant to Chapter 9.3 (commencing with Section 66030) of Division 1 of Title 7 of the Government Code.

21671. In any county where there is an airport operated for the general public which is owned by a city or district in another county or by another county, one of the representatives provided by paragraph (1) of subdivision (b) of Section 21670 shall be appointed by the

city selection committee of mayors of the cities of the county in which the owner of that airport is located, and one of the representatives provided by paragraph (2) of subdivision (b) of Section 21670 shall be appointed by the board of supervisors of the county in which the owner of that airport is located.

21671.5. (a) Except for the terms of office of the members of the first commission, the term of office of each member shall be four years and until the appointment and qualification of his or her successor. The members of the first commission shall classify themselves by lot so that the term of office of one member is one year, of two members is two years, of two members is three years, and of two members is four years. The body that originally appointed a member whose term has expired shall appoint his or her successor for a full term of four years. Any member may be removed at any time and without cause by the body appointing that member. The expiration date of the term of office of each member shall be the first Monday in May in the year in which that member's term is to expire. Any vacancy in the membership of the commission shall be filled for the unexpired term by appointment by the body which originally appointed the member whose office has become vacant. The chairperson of the commission shall be selected by the members thereof.

(b) Compensation, if any, shall be determined by the board of supervisors.

(c) Staff assistance, including the mailing of notices and the keeping of minutes and necessary quarters, equipment, and supplies shall be provided by the county. The usual and necessary operating expenses of the commission shall be a county charge.

(d) Notwithstanding any other provisions of this article, the commission shall not employ any personnel either as employees or independent contractors without the prior approval of the board of supervisors.

(e) The commission shall meet at the call of the commission chairperson or at the request of the majority of the commission members. A majority of the commission members shall constitute a quorum for the transaction of business. No action shall be taken by the commission except by the recorded vote of a majority of the full membership.

(f) The commission may establish a schedule of fees necessary to comply with this article. Those fees shall be charged to the proponents of actions, regulations, or permits, shall not exceed the estimated reasonable cost of providing the service, and shall be imposed pursuant to Section 66016 of the Government Code. Except as provided in subdivision (g), after June 30, 1991, a commission that has not adopted the airport land use compatibility plan required by Section 21675 shall not charge fees pursuant to this subdivision until the commission adopts the plan.

(g) In any county that has undertaken by contract or otherwise completed airport land use compatibility plans for at least one-half of all public use airports in the county, the commission may continue to charge fees necessary to comply with this article until June 30, 1992, and, if the airport land use compatibility plans are complete by that date, may

continue charging fees after June 30, 1992. If the airport land use compatibility plans are not complete by June 30, 1992, the commission shall not charge fees pursuant to subdivision (f) until the commission adopts the land use plans.

21672. Each commission shall adopt rules and regulations with respect to the temporary disqualification of its members from participating in the review or adoption of a proposal because of conflict of interest and with respect to appointment of substitute members in such cases.

21673. In any county not having a commission or a body designated to carry out the responsibilities of a commission, any owner of a public airport may initiate proceedings for the creation of a commission by presenting a request to the board of supervisors that a commission be created and showing the need therefor to the satisfaction of the board of supervisors.

21674. The commission has the following powers and duties, subject to the limitations upon its jurisdiction set forth in Section 21676:

(a) To assist local agencies in ensuring compatible land uses in the vicinity of all new airports and in the vicinity of existing airports to the extent that the land in the vicinity of those airports is not already devoted to incompatible uses.

(b) To coordinate planning at the state, regional, and local levels so as to provide for the orderly development of air transportation, while at the same time protecting the public health, safety, and welfare.

(c) To prepare and adopt an airport land use compatibility plan pursuant to Section 21675.

(d) To review the plans, regulations, and other actions of local agencies and airport operators pursuant to Section 21676.

(e) The powers of the commission shall in no way be construed to give the commission jurisdiction over the operation of any airport.

(f) In order to carry out its responsibilities, the commission may adopt rules and regulations consistent with this article.

21674.5. (a) The Department of Transportation shall develop and implement a program or programs to assist in the training and development of the staff of airport land use commissions, after consulting with airport land use commissions, cities, counties, and other appropriate public entities.

(b) The training and development program or programs are intended to assist the staff of airport land use commissions in addressing high priority needs, and may include, but need not be limited to, the following:

(1) The establishment of a process for the development and adoption of airport land use compatibility plans.

(2) The development of criteria for determining the airport influence area.

(3) The identification of essential elements that should be included in the airport land use compatibility plans.

(4) Appropriate criteria and procedures for reviewing proposed developments and determining whether proposed developments are compatible with the airport use.

(5) Any other organizational, operational, procedural, or technical responsibilities and functions that the department determines to be appropriate to provide to commission staff and for which it determines there is a need for staff training or development.

(c) The department may provide training and development programs for airport land use commission staff pursuant to this section by any means it deems appropriate. Those programs may be presented in any of the following ways:

(1) By offering formal courses or training programs.

(2) By sponsoring or assisting in the organization and sponsorship

of conferences, seminars, or other similar events.

(3) By producing and making available written information.

(4) Any other feasible method of providing information and assisting in the training and development of airport land use commission staff.

21674.7. (a) An airport land use commission that formulates, adopts, or amends an airport land use compatibility plan shall be guided by information prepared and updated pursuant to Section 21674.5 and referred to as the Airport Land Use Planning Handbook published by the Division of Aeronautics of the Department of Transportation.

(b) It is the intent of the Legislature to discourage incompatible land uses near existing airports. Therefore, prior to granting permits for the renovation or remodeling of an existing building, structure, or facility, and before the construction of a new building, it is the intent of the Legislature that local agencies shall be guided by the height, use, noise, safety, and density criteria that are compatible with airport operations, as established by this article, and referred to as the Airport Land Use Planning Handbook, published by the division, and any applicable federal aviation regulations, including, but not limited to, Part 77 (commencing with Section 77.1) of Title 14 of the Code of Federal Regulations, to the extent that the

criteria has been incorporated into the plan prepared by a commission pursuant to Section 21675. This subdivision does not limit the jurisdiction of a commission as established by this article. This subdivision does not limit the authority of local agencies to overrule commission actions or recommendations pursuant to Sections 21676, 21676.5, or 21677.

21675. (a) Each commission shall formulate an airport land use compatibility plan that will provide for the orderly growth of each public airport and the area surrounding the airport within the jurisdiction of the commission, and will safeguard the general welfare of the inhabitants within the vicinity of the airport and the public in general. The commission's airport land use compatibility plan shall include and shall be based on a long-range master plan or an airport layout plan, as determined by the Division of Aeronautics of the Department of Transportation, that reflects the anticipated growth of the airport during at least the next 20 years. In formulating an airport land use compatibility plan, the commission may develop height restrictions on buildings, specify use of land, and determine building standards, including soundproofing adjacent to airports, within the airport influence area. The airport land use compatibility plan shall be reviewed as often as necessary in order to accomplish its purposes, but shall not be amended more than once in any calendar year.

(b) The commission shall include, within its airport land use compatibility plan formulated pursuant to subdivision (a), the area within the jurisdiction of the commission surrounding any military airport for all of the purposes specified in subdivision (a). The airport land use compatibility plan shall be consistent with the safety and noise standards in the Air Installation Compatible Use Zone prepared for that military airport. This subdivision does not give the commission any jurisdiction or authority over the territoryor operations of any military airport.

(c) The airport influence area shall be established by the commission after hearing and consultation with the involved agencies.

(d) The commission shall submit to the Division of Aeronautics of the department one copy of the airport land use compatibility plan and each amendment to the plan.

(e) If an airport land use compatibility plan does not include the matters required to be included pursuant to this article, the Division of Aeronautics of the department shall notify the commission responsible for the plan.

21675.1. (a) By June 30, 1991, each commission shall adopt the airport land use compatibility plan required pursuant to Section 21675, except that any county that has undertaken by contract or otherwise completed airport land use compatibility plans for at least one-half of all public use airports in the county, shall adopt that airport land use compatibility plan on or before June 30, 1992.

(b) Until a commission adopts an airport land use compatibility plan, a city or county shall first submit all actions, regulations, and permits within the vicinity of a public airport to the commission for review and approval. Before the commission approves or disapproves any actions, regulations, or permits, the commission shall give public notice in the same manner as the city or county is required to give for those actions, regulations, or permits. As used in this section, "vicinity" means land that will be included or reasonably could be included within the airport land use compatibility plan. If the commission has not designated an airport influence area for the airport land use compatibility plan, then "vicinity" means land within two miles of the boundary of a public airport.

(c) The commission may approve an action, regulation, or permit if it finds, based on substantial evidence in the record, all of the following:

(1) The commission is making substantial progress toward the completion of the airport land use compatibility plan.

(2) There is a reasonable probability that the action, regulation, or permit will be consistent with the airport land use compatibility plan being prepared by the commission.

(3) There is little or no probability of substantial detriment to or interference with the future adopted airport land use compatibility plan if the action, regulation, or permit is ultimately inconsistent with the airport land use compatibility plan.

(d) If the commission disapproves an action, regulation, or permit, the commission shall notify the city or county. The city or county may overrule the commission, by a two-thirds vote of its governing body, if it makes specific findings that the proposed action, regulation, or permit is consistent with the purposes of this article, as stated in Section 21670.

(e) If a city or county overrules the commission pursuant to subdivision (d), that action shall not relieve the city or county from further compliance with this article after the commission adopts the airport land use compatibility plan.

(f) If a city or county overrules the commission pursuant to subdivision (d) with respect to a publicly owned airport that the city or county does not operate, the operator of the airport is not liable for damages to property or personal injury resulting from the city's or county's decision to proceed with the action, regulation, or permit.

(g) A commission may adopt rules and regulations that exempt any ministerial permit for single-family dwellings from the requirements of subdivision (b) if it makes the findings required pursuant to subdivision (c) for the proposed rules and regulations, except that the rules and regulations may not exempt either of the following:

(1) More than two single-family dwellings by the same applicant within a subdivision prior to June 30, 1991.

(2) Single-family dwellings in a subdivision where 25 percent or more of the parcels are undeveloped.

21675.2. (a) If a commission fails to act to approve or disapprove any actions, regulations, or permits within 60 days of receiving the request pursuant to Section 21675.1, the applicant or his or her representative may file an action pursuant to Section 1094.5 of the Code of Civil Procedure to compel the commission to act, and the court shall give the proceedings preference over all other actions or proceedings, except previously filed pending matters of the same character.

(b) The action, regulation, or permit shall be deemed approved only if the public notice required by this subdivision has occurred. If the applicant has provided seven days advance notice to the commission of the intent to provide public notice pursuant to this subdivision, then, not earlier than the date of the expiration of the time limit established by Section 21675.1, an applicant may provide the required public notice. If the applicant chooses to provide public notice, that notice shall include a description of the proposed action, regulation, or permit substantially similar to the descriptions which are commonly used in public notices by the commission, the location of any proposed development, the application number, the name and address of the commission, and a statement that the action, regulation, or permit shall be deemed approved if the commission has not acted within 60 days. If the applicant has provided the public notice specified in this subdivision, the time limit for action by the commission shall be extended to 60 days after the public notice is provided. If the applicant provides notice pursuant to this section, the commission shall refund to the applicant any fees which were collected for providing notice and which were not used for that purpose.

(c) Failure of an applicant to submit complete or adequate information pursuant to Sections 65943 to 65946, inclusive, of the Government Code, may constitute grounds for disapproval of actions, regulations, or permits.

(d) Nothing in this section diminishes the commission's legal responsibility to provide, where applicable, public notice and hearing before acting on an action, regulation, or permit.

21676. (a) Each local agency whose general plan includes areas covered by an airport land use compatibility plan shall, by July 1, 1983, submit a copy of its plan or specific plans to the airport land use commission. The commission shall determine by August 31, 1983, whether the plan or plans are consistent or inconsistent with the airport land use compatibility plan. If the plan or plans are inconsistent with the airport land use compatibility plan, the local agency shall be notified and that local agency shall have another hearing to reconsider its airport land use compatibility plans. The local agency may propose to overrule the commission after the hearing by a two-thirds vote of its governing body if it makes specific findings that the proposed action is consistent with the purposes of this article stated in Section 21670. At least 45 days prior to the decision to overrule the commission, the local agency governing body shall provide the commission and the division a copy of the proposed decision and findings. The commission and the division may provide comments to the local agency governing body within 30 days of receiving the proposed decision and findings. If the commission or the division's comments are not available within this time limit, the

local agency governing body may act without them. The comments by the division or the commission are advisory to the local agency governing body. The local agency governing body shall include comments from the commission and the division in the final record of any final decision to overrule the commission, which may only be adopted by a two-thirds vote of the governing body.

(b) Prior to the amendment of a general plan or specific plan, or the adoption or approval of a zoning ordinance or building regulation within the planning boundary established by the airport land use commission pursuant to Section 21675, the local agency shall first refer the proposed action to the commission. If the commission determines that the proposed action is inconsistent with the commission's plan, the referring agency shall be notified. The local agency may, after a public hearing, propose to overrule the commission by a two-thirds vote of its governing body if it makes specific findings that the proposed action is consistent with the purposes of this article stated in Section 21670. At least 45 days prior to the decision to overrule the commission, the local agency governing body shall provide the commission and the division a copy of the proposed decision and findings. The commission and the division may provide comments to the local agency governing body within 30 days of receiving the proposed decision and findings. If the commission or the division's comments are not available within this time limit, the local agency governing body may act without them. The comments by the division or the commission are advisory to the local agency governing body. The local agency governing body shall include comments from the commission and the division in the public record of any final decision to overrule the commission, which may only be adopted by a two-thirds vote of the governing body.

(c) Each public agency owning any airport within the boundaries of an airport land use compatibility plan shall, prior to modification of its airport master plan, refer any proposed change to the airport land use commission. If the commission determines that the proposed action is inconsistent with the commission's plan, the referring agency shall be notified. The public agency may, after a public hearing, propose to overrule the commission by a two-thirds vote of its governing body if it makes specific findings that the proposed action is consistent with the purposes of this article stated in Section 21670. At least 45 days prior to the decision to overrule the commission, the public agency governing body shall provide the commission and the division a copy of the proposed decision and findings. The commission and the division may provide comments to the public agency governing body within 30 days of receiving the proposed decision and findings. If the commission or the division's comments are not available within this time limit, the public agency governing body may act without them. The comments by the division or the commission are advisory to the public agency governing body. The public agency governing body shall include comments from the commission and the division in the final decision to overrule the commission, which may only be adopted by a two-thirds vote of the governing body.

(d) Each commission determination pursuant to subdivision (b) or (c) shall be made within 60 days from the date of referral of the proposed action. If a commission fails to make the determination within that period, the proposed action shall be deemed consistent with the airport land use compatibility plan.

21676.5. (a) If the commission finds that a local agency has not revised its general plan or specific plan or overruled the commission by a two-thirds vote of its governing body after making specific findings that the proposed action is consistent with the purposes of this article as stated in Section 21670, the commission may require that the local agency submit all subsequent actions, regulations, and permits to the commission for review until its general plan or specific plan is revised or the specific findings are made. If, in the determination of the commission, an action, regulation, or permit of the local agency is inconsistent with the airport land use compatibility plan, the local agency shall be notified and that local agency shall hold a hearing to reconsider its plan. The local agency may propose to overrule the commission after the hearing by a two-thirds vote of its governing body if it makes specific findings that the proposed action is consistent with the purposes of this article as stated in Section 21670. At least 45 days prior to the decision to overrule the commission, the local agency governing body shall provide the commission and the division a copy of the proposed decision and findings. The commission and the division may provide comments to the local agency governing body within 30 days of receiving the proposed decision and findings. If the commission or the division's comments are not available within this time limit, the local agency governing body may act without them. The comments by the division or the commission are advisory to the local agency governing body. The local agency governing body shall include comments from the commission and the division in the final decision to overrule the commission, which may only be adopted by a two-thirds vote of the governing body.

(b) Whenever the local agency has revised its general plan or specific plan or has overruled the commission pursuant to subdivision (a), the proposed action of the local agency shall not be subject to further commission review, unless the commission and the local agency agree that individual projects shall be reviewed by the commission.

21677. Notwithstanding the two-thirds vote required by Section 21676, any public agency in the County of Marin may overrule the Marin County Airport Land Use Commission by a majority vote of its governing body. At least 45 days prior to the decision to overrule the commission, the public agency governing body shall provide the commission and the division a copy of the proposed decision and findings. The commission and the division may provide comments to the public agency governing body within 30 days of receiving the proposed decision and findings. If the commission or the division's comments are not available within this time limit, the public agency governing body may act without them. The comments by the division or the commission are advisory to the public agency governing body. The public agency governing body shall include comments from the commission and the division in the public record of the final decision to overrule the commission, which may be adopted by a majority vote of the governing body.

21678. With respect to a publicly owned airport that a public agency does not operate, if the public agency pursuant to Section 21676, 21676.5, or 21677 overrules a commission's action or recommendation, the operator of the airport shall be immune from liability for damages to property or personal injury caused by or resulting directly or indirectly from the public agency's decision to overrule the commission's action or recommendation.

21679. (a) In any county in which there is no airport land use commission or other body designated to assume the responsibilities of an airport land use commission, or in which the commission or other designated body has not adopted an airport land use compatibility plan, an interested party may initiate proceedings in a court of competent jurisdiction to postpone the effective date of a zoning change, a zoning variance, the issuance of a permit, or the adoption of a regulation by a local agency, that directly affects the use of land within one mile of the boundary of a public airport within the county.

(b) The court may issue an injunction that postpones the effective date of the zoning change, zoning variance, permit, or regulation until the governing body of the local agency that took the action does one of the following:

(1) In the case of an action that is a legislative act, adopts a resolution declaring that the proposed action is consistent with the purposes of this article stated in Section 21670.

(2) In the case of an action that is not a legislative act, adopts a resolution making findings based on substantial evidence in the record that the proposed action is consistent with the purposes of this article stated in Section 21670.

(3) Rescinds the action.

(4) Amends its action to make it consistent with the purposes of this article stated in Section 21670, and complies with either paragraph (1) or (2), whichever is applicable.

(c) The court shall not issue an injunction pursuant to subdivision (b) if the local agency that took the action demonstrates that the general plan and any applicable specific plan of the agency accomplishes the purposes of an airport land use compatibility plan as provided in Section 21675.

(d) An action brought pursuant to subdivision (a) shall be commenced within 30 days of the decision or within the appropriate time periods set by Section 21167 of the Public Resources Code, whichever is longer.

(e) If the governing body of the local agency adopts a resolution pursuant to subdivision (b) with respect to a publicly owned airport that the local agency does not operate, the operator of the airport shall be immune from liability for damages to property or personal injury from the local agency's decision to proceed with the zoning change, zoning variance, permit, or regulation.

(f) As used in this section, “interested party” means any owner of land within two miles of the boundary of the airport or any organization with a demonstrated interest in airport safety and efficiency.

21679.5. (a) Until June 30, 1991, no action pursuant to Section 21679 to postpone the effective date of a zoning change, a zoning variance, the issuance of a permit, or the adoption of a regulation by a local agency, directly affecting the use of land within one mile of the boundary of a public airport, shall be commenced in any county in which the commission or other designated body has not adopted an airport land use compatibility plan, but is making substantial progress toward the completion of the airport land use compatibility plan.

(b) If a commission has been prevented from adopting the airport land use compatibility plan by June 30, 1991, or if the adopted airport land use compatibility plan could not become effective, because of a lawsuit involving the adoption of the airport land use compatibility plan, the June 30, 1991, date in subdivision (a) shall be extended by the period of time during which the lawsuit was pending in a court of competent jurisdiction.

(c) Any action pursuant to Section 21679 commenced prior to January 1, 1990, in a county in which the commission or other designated body has not adopted an airport land use compatibility plan, but is making substantial progress toward the completion of the airport land use compatibility plan, which has not proceeded to final judgment, shall be held in abeyance until June 30, 1991. If the commission or other designated body adopts an airport land use compatibility plan on or before June 30, 1991, the action shall be dismissed. If the commission or other designated body does not adopt an airport land use compatibility plan on or before June 30, 1991, the plaintiff or plaintiffs may proceed with the action.

(d) An action to postpone the effective date of a zoning change, a zoning variance, the issuance of a permit, or the adoption of a regulation by a local agency, directly affecting the use of land within one mile of the boundary of a public airport for which an airport land use compatibility plan has not been adopted by June 30, 1991, shall be commenced within 30 days of June 30, 1991, or within 30 days of the decision by the local agency, or within the appropriate time periods set by Section 21167 of the Public Resources Code, whichever date is later.

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Appendix F

Federal Aviation Regulations, Part 77

Subpart C – Standards for Determining Obstructions to Air Navigation or Navigational Aids or Facilities

77.13 Applicability.

This subpart describes the standards used for determining obstructions to air navigation, navigational aids, or navigational facilities. These standards apply to the following:

(a) Any object of natural growth, terrain, or permanent or temporary construction or alteration, including equipment or materials used and any permanent or temporary apparatus.

(b) The alteration of any permanent or temporary existing structure by a change in its height, including appurtenances, or lateral dimensions, including equipment or material used therein.

77.15 Scope.

(a) This subpart describes standards used to determine obstructions to air navigation that may affect the safe and efficient use of navigable airspace and the operation of planned or existing air navigation and communication facilities. Such facilities include air navigation aids, communication equipment, airports, Federal airways, instrument approach or departure procedures, and approved off-airway routes.

(b) Objects that are considered obstructions under the standards described in this subpart are presumed hazards to air navigation unless further aeronautical study concludes that the object is not a hazard. Once further aeronautical study has been initiated, the FAA will use the standards in this subpart, along with FAA policy and guidance material, to determine if the object is a hazard to air navigation.

(c) The FAA will apply these standards with reference to an existing airport facility, and airport proposals received by the FAA, or the appropriate military service, before it issues a final determination.

(d) For airports having defined runways with specially prepared hard surfaces, the primary surface for each runway extends 200 feet beyond each end of the runway. For airports having defined strips or pathways used regularly for aircraft takeoffs and landings, and designated runways, without specially prepared hard surfaces, each end of the primary surface for each such runway shall coincide with the corresponding end of the runway. At airports, excluding seaplane bases, having a defined landing and takeoff area with no defined pathways for aircraft takeoffs and landings, a determination must be made as to which portions of the landing and takeoff area are regularly used as landing and takeoff pathways. Those determined pathways must be considered runways, and an appropriate primary surface as defined in § 77.19 will be considered as longitudinally centered on each such runway. Each end of that primary surface must coincide with the corresponding end of that runway.

(e) The standards in this subpart apply to construction or alteration proposals on an airport (including heliports and seaplane bases with marked lanes) if that airport is one of the following before the issuance of the final determination:

(1) Available for public use and is listed in the Airport/Facility Directory, Supplement Alaska, or Supplement Pacific of the U.S. Government Flight Information Publications; or

(2) A planned or proposed airport or an airport under construction of which the FAA has received actual notice, except DOD airports, where there is a clear indication the airport will be available for public use; or,

(3) An airport operated by a Federal agency or the DOD; or,

(4) An airport that has at least one FAA-approved instrument approach.

77.17 Obstruction standards.

(a) An existing object, including a mobile object, is, and a future object would be an obstruction to air navigation if it is of greater height than any of the following heights or surfaces:

(1) A height of 499 feet AGL at the site of the object.

(2) A height that is 200 feet AGL, or above the established airport elevation, whichever is higher, within 3 nautical miles of the established reference point of an airport, excluding heliports, with its longest runway more than 3,200 feet in actual length, and that height increases in the proportion of 100 feet for each additional nautical mile from the airport up to a maximum of 499 feet.

(3) A height within a terminal obstacle clearance area, including an initial approach segment, a departure area, and a circling approach area, which would result in the vertical distance between any point on the object and an established minimum instrument flight altitude within that area or segment to be less than the required obstacle clearance.

(4) A height within an en route obstacle clearance area, including turn and termination areas, of a Federal Airway or approved off-airway route, that would increase the minimum obstacle clearance altitude.

(5) The surface of a takeoff and landing area of an airport or any imaginary surface established under § 77.19, 77.21, or 77.23. However, no part of the takeoff or landing area itself will be considered an obstruction.

(b) Except for traverse ways on or near an airport with an operative ground traffic control service furnished by an airport traffic control tower or by the airport management and coordinated with the air traffic control service, the standards of paragraph (a) of this section apply to traverse ways used or to be used for the passage of mobile objects only after the heights of these traverse ways are increased by:

(1) 17 feet for an Interstate Highway that is part of the National System of Military and Interstate Highways where overcrossings are designed for a minimum of 17 feet vertical distance.

(2)15 feet for any other public roadway.

(3) 10 feet or the height of the highest mobile object that would normally traverse the road, whichever is greater, for a private road.

(4) 23 feet for a railroad.

(5) For a waterway or any other traverse way not previously mentioned, an amount equal to the height of the highest mobile object that would normally traverse it.

77.19 Civil airport imaginary surfaces.

The following civil airport imaginary surfaces are established with relation to the airport and to each runway. The size of each such imaginary surface is based on the category of each runway according to the type of approach available or planned for that runway. The slope and dimensions of the approach surface applied to each end of a runway are determined by the most precise approach procedure existing or planned for that runway end.

(a) Horizontal surface. A horizontal plane 150 feet above the established airport elevation, the perimeter of which is constructed by SW.inging arcs of a specified radii from the center of each end of the primary surface of each runway of each airport and connecting the adjacent arcs by lines tangent to those arcs. The radius of each arc is:

(1) 5,000 feet for all runways designated as utility or visual;

(2) 10,000 feet for all other runways. The radius of the arc specified for each end of a runway will have the same arithmetical value. That value will be the highest determined for either end of the runway. When a 5,000-foot arc is encompassed by tangents connecting two adjacent 10,000-foot arcs, the 5,000-foot arc shall be disregarded on the construction of the perimeter of the horizontal surface.

(b) Conical surface. A surface extending outward and upward from the periphery of the horizontal surface at a slope of 20 to 1 for a horizontal distance of 4,000 feet.

(c) Primary surface. A surface longitudinally centered on a runway. When the runway has a specially prepared hard surface, the primary surface extends 200 feet beyond each end of that runway; but when the runway has no specially prepared hard surface, the primary surface ends at each end of that runway. The elevation of any point on the primary surface is the same as the elevation of the nearest point on the runway centerline. The width of the primary surface is:

(1) 250 feet for utility runways having only visual approaches.

(2) 500 feet for utility runways having non-precision instrument approaches.

(3) For other than utility runways, the width is:

(i) 500 feet for visual runways having only visual approaches.

(ii) 500 feet for non-precision instrument runways having visibility minimums greater than three-fourths statute mile.

(iii) 1,000 feet for a non-precision instrument runway having a non-precision instrument approach with visibility minimums as low as three-fourths of a

statute mile, and for precision instrument runways.

(iv) The width of the primary surface of a runway will be that width prescribed in this section for the most precise approach existing or planned for either end of that runway.

(d) Approach surface. A surface longitudinally centered on the extended runway centerline and extending outward and upward from each end of the primary surface. An approach surface is applied to each end of each runway based upon the type of approach available or planned for that runway end.

(1) The inner edge of the approach surface is the same width as the primary surface and it expands uniformly to a width of:

(i) 1,250 feet for that end of a utility runway with only visual approaches;

(ii) 1,500 feet for that end of a runway other than a utility runway with only visual approaches;

(iii) 2,000 feet for that end of a utility runway with a non-precision instrument approach;

(iv) 3,500 feet for that end of a non-precision instrument runway other than utility, having visibility minimums greater that three-fourths of a statute mile;

(v) 4,000 feet for that end of a non-precision instrument runway, other than utility, having a non-precision instrument approach with visibility minimums as low as three-fourths statute mile; and

(vi) 16,000 feet for precision instrument runways.

(2) The approach surface extends for a horizontal distance of:

(i) 5,000 feet at a slope of 20 to 1 for all utility and visual runways;

(ii) 10,000 feet at a slope of 34 to 1 for all non-precision instrument runways other than utility; and

(iii) 10,000 feet at a slope of 50 to 1 with an additional 40,000 feet at a slope of 40 to 1 for all precision instrument runways.

(3) The outer width of an approach surface to an end of a runway will be that width prescribed in this subsection for the most precise approach existing or planned for that runway end.

(e) Transitional surface. These surfaces extend outward and upward at right angles to the runway centerline and the runway centerline extended at a slope of 7 to 1 from the sides of the primary surface and from the sides of the approach surfaces. Transitional surfaces for those portions of the precision approach surface which project through and beyond the limits of the conical surface, extend a distance of 5,000 feet measured horizontally from the edge of the approach surface and at right angles to the runway centerline.

Appendix G

Federal Aviation Administration Advisory Circular

HAZARDOUS WILDLIFE ATTRACTANTS ON OR NEAR AIRPORTS

Date: 8/28/2007

Initiated by: AAS-300

AC No: 150/5200-33B

Change:

1. PURPOSE. This Advisory Circular (AC) provides guidance on certain land uses that have the potential to attract hazardous wildlife on or near public-use airports. It also discusses airport development projects (including airport construction, expansion, and renovation) affecting aircraft movement near hazardous wildlife attractants. Appendix 1 provides definitions of terms used in this AC.

2. APPLICABILITY. The Federal Aviation Administration (FAA) recommends that public-use airport operators implement the standards and practices contained in this AC. The holders of Airport Operating Certificates issued under Title 14, Code of Federal Regulations (CFR), Part 139, Certification of Airports, Subpart D (Part 139), may use the standards, practices, and recommendations contained in this AC to comply with the wildlife hazard management requirements of Part 139. Airports that have received Federal grant-in-aid assistance must use these standards. The FAA also recommends the guidance in this AC for land-use planners, operators of non-certificated airports, and developers of projects, facilities, and activities on or near airports.

3. CANCELLATION. This AC cancels AC 150/5200-33A, Hazardous Wildlife Attractants on or near Airports, dated July 27, 2004.

4. PRINCIPAL CHANGES. This AC contains the following major changes, which are marked with vertical bars in the margin:

a. Technical changes to paragraph references.

b. Wording on storm water detention ponds.

c. Deleted paragraph 4-3.b, Additional Coordination.

5. BACKGROUND. Information about the risks posed to aircraft by certain wildlife species has increased a great deal in recent years. Improved reporting, studies, documentation, and statistics clearly show that aircraft collisions with birds and other wildlife are a serious economic and public safety problem. While many species of wildlife can pose a threat to aircraft safety, they are not equally hazardous. Table 1 ranks the wildlife groups commonly involved in damaging strikes in the United States according to their relative hazard to aircraft. The ranking is based on the 47,212 records in the FAA National Wildlife Strike Database for the years 1990 through 2003. These hazard rankings, in conjunction with site-specific Wildlife Hazards Assessments (WHA), will help airport operators determine the relative abundance and use patterns of wildlife species and help

focus hazardous wildlife management efforts on those species most likely to cause problems at an airport.

Most public-use airports have large tracts of open, undeveloped land that provide added margins of safety and noise mitigation. These areas can also present potential hazards to aviation if they encourage wildlife to enter an airport's approach or departure airspace or air operations area (AOA). Constructed or natural areas—such as poorly drained locations, detention/retention ponds, roosting habitats on buildings, landscaping, odor-causing rotting organic matter (putrescible waste) disposal operations, wastewater treatment plants, agricultural or aquaculture activities, surface mining, or wetlands—can provide wildlife with ideal locations for feeding, loafing, reproduction, and escape. Even small facilities, such as fast food restaurants, taxicab staging areas, rental car facilities, aircraft viewing areas, and public parks, can produce substantial attractions for hazardous wildlife.

During the past century, wildlife-aircraft strikes have resulted in the loss of hundreds of lives worldwide, as well as billions of dollars in aircraft damage. Hazardous wildlife attractants on and near airports can jeopardize future airport expansion, making proper community land-use planning essential. This AC provides airport operators and those parties with whom they cooperate with the guidance they need to assess and address potentially hazardous wildlife attractants when locating new facilities and implementing certain land-use practices on or near public-use airports.

6. MEMORANDUM OF AGREEMENT BETWEEN FEDERAL RESOURCE AGENCIES. The FAA, the U.S. Air Force, the U.S. Army Corps of Engineers, the U.S. Environmental Protection Agency, the U.S. Fish and Wildlife Service, and the U.S. Department of Agriculture - Wildlife Services signed a Memorandum of Agreement (MOA) in July 2003 to acknowledge their respective missions in protecting aviation from wildlife hazards. Through the MOA, the agencies established procedures necessary to coordinate their missions to address more effectively existing and future environmental conditions contributing to collisions between wildlife and aircraft (wildlife strikes) throughout the United States. These efforts are intended to minimize wildlife risks to aviation and human safety while protecting the Nation's valuable environmental resources.

DAVID L. BENNETT

Director, Office of Airport Safety and Standards

Table 1: Ranking of 25 species groups as to relative hazard to aircraft (1=most hazardous) based on three criteria (damage, major damage, and effect-on-flight), a composite ranking based on all three rankings, and a relative hazard score. Data were derived from the FAA National Wildlife Strike Database, January 1990–April 2003.[1]

Species Group	Rating by Criteria			Composite Ranking[2]	Relative Hazard Score[3]
	Damage[4]	Major Damage[5]	Effect of Flight[6]		
Deer	1	1	1	1	100
Vultures	2	2	2	2	64
Geese	3	3	6	3	55
Cormorants/Pelicans	4	5	3	4	54
Cranes	7	6	4	5	47
Eagles	6	9	7	6	41
Ducks	5	8	10	7	39
Osprey	8	4	8	8	39
Turkey/Pheasants	9	7	11	9	33
Herons	11	14	9	10	27
Hawks (buteos)	10	12	12	11	25
Gulls	12	11	13	12	24
Rock Pigeon	13	10	14	13	23
Owls	14	13	20	14	23
H. larks/s. bunting	18	15	15	15	17
Crows/ravens	15	16	16	16	16
Coyote	16	19	5	17	14
Mourning dove	17	17	17	18	14
Shorebirds	19	21	18	19	10
Blackbirds/starling	20	22	19	20	10
American kestrel	21	18	21	21	9
Meadowlarks	22	20	22	22	7
Swallows	24	23	24	23	7
Sparrows	25	24	23	24	4
Nighthawks	23	25	25	25	1

[1] Excerpted from the Special Report for the FAA, "Ranking the Hazard Level of Wildlife Species to Civil Aviation in the USA: Update #1, July 2, 2003". Refer to this report for additional explanations of criteria and method of ranking.
[2] Relative rank of each species group was compared with every other group for the three variables, placing the species group with the greatest hazard rank for > 2 of the 3 variables above the next highest ranked group, then proceeding down the list.
[3] Percentage values, from Tables 3 and 4 in Footnote 1 of the Special Report, for the three criteria were summed and scaled down from 100, with 100 as the score for the species group with the maximum summed values and the greatest potential hazard to aircraft.
[4] Aircraft incurred at least some damage (destroyed, substantial, minor, or unknown) from strike.
[5] Aircraft incurred damage or structural failure, which adversely affected the structure strength, performance, or flight characteristics, and which would normally require major repair or replacement of the affected component, or the damage sustained makes it inadvisable to restore aircraft to airworthy condition.
[6] Aborted takeoff, engine shutdown, precautionary landing, or other.

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SECTION 1: GENERAL SEPARATION CRITERIA FOR HAZARDOUS WILDLIFE ATTRACTANTS ON OR NEAR AIRPORTS.

1-1. INTRODUCTION. When considering proposed land uses, airport operators, local planners, and developers must take into account whether the proposed land uses, including new development projects, will increase wildlife hazards. Land-use practices that attract or sustain hazardous wildlife populations on or near airports can significantly increase the potential for wildlife strikes.

The FAA recommends the minimum separation criteria outlined below for land-use practices that attract hazardous wildlife to the vicinity of airports. Please note that FAA criteria include land uses that cause movement of hazardous wildlife onto, into, or across the airport's approach or departure airspace or air operations area (AOA). (See the discussion of the synergistic effects of surrounding land uses in Section 2-8 of this AC.)

The basis for the separation criteria contained in this section can be found in existing FAA regulations. The separation distances are based on (1) flight patterns of piston-powered aircraft and turbine-powered aircraft, (2) the altitude at which most strikes happen (78 percent occur under 1,000 feet and 90 percent occur under 3,000 feet above ground level), and (3) National Transportation Safety Board (NTSB) recommendations.

1-2. AIRPORTS SERVING PISTON-POWERED AIRCRAFT. Airports that do not sell Jet-A fuel normally serve piston-powered aircraft. Notwithstanding more stringent requirements for specific land uses, the FAA recommends a separation distance of 5,000 feet at these airports for any of the hazardous wildlife attractants mentioned in Section 2 or for new airport development projects meant to accommodate aircraft movement. This distance is to be maintained between an airport's AOA and the hazardous wildlife attractant. Figure 1 depicts this separation distance measured from the nearest aircraft operations areas.

1-3. AIRPORTS SERVING TURBINE-POWERED AIRCRAFT. Airports selling Jet-A fuel normally serve turbine-powered aircraft. Notwithstanding more stringent requirements for specific land uses, the FAA recommends a separation distance of 10,000 feet at these airports for any of the hazardous wildlife attractants mentioned in Section 2 or for new airport development projects meant to accommodate aircraft movement. This distance is to be maintained between an airport's AOA and the hazardous wildlife attractant. Figure 1 depicts this separation distance from the nearest aircraft movement areas.

1-4. PROTECTION OF APPROACH, DEPARTURE, AND CIRCLING AIRSPACE. For all airports, the FAA recommends a distance of 5 statute miles between the farthest edge of the airport's AOA and the hazardous wildlife attractant if the attractant could cause hazardous wildlife movement into or across the approach or departure airspace.

PERIMETER A: For airports serving piston-powered aircraft, hazardous wildlife attractants must be 5,000 feet from the nearest air operations area.

PERIMETER B: For airports serving turbine-powered aircraft, hazardous wildlife attractants must be 10,000 feet from the nearest air operations area.

PERIMETER C: 5-mile range to protect approach, departure and circling airspace.

SECTION 2: LAND-USE PRACTICES ON OR NEAR AIRPORTS THAT POTENTIALLY ATTRACT HAZARDOUS WILDLIFE.

2-1. GENERAL. The wildlife species and the size of the populations attracted to the airport environment vary considerably, depending on several factors, including land-use practices on or near the airport. This section discusses land-use practices having the potential to attract hazardous wildlife and threaten aviation safety. In addition to the specific considerations outlined below, airport operators should refer to Wildlife Hazard Management at Airports, prepared by FAA and U.S. Department of Agriculture (USDA) staff. (This manual is available in English, Spanish, and French. It can be viewed and downloaded free of charge from the FAA's wildlife hazard mitigation web site: http://wildlife-mitigation.tc.FAA.gov.). And, Prevention and Control of Wildlife Damage, compiled by the University of Nebraska Cooperative Extension Division. (This manual is available online in a periodically updated version at: ianrwww.unl.edu/wildlife/solutions/handbook/.)

2-2. WASTE DISPOSAL OPERATIONS. Municipal solid waste landfills (MSWLF) are known to attract large numbers of hazardous wildlife, particularly birds. Because of this, these operations, when located within the separations identified in the siting criteria in Sections 1-2 through 1-4, are considered incompatible with safe airport operations.

a. Siting for new municipal solid waste landfills subject to AIR 21. Section 503 of the Wendell H. Ford Aviation Investment and Reform Act for the 21st Century (Public Law 106-181) (AIR 21) prohibits the construction or establishment of a new MSWLF within 6 statute miles of certain public-use airports. Before these prohibitions apply, both the airport and the landfill must meet the very specific conditions described below. These restrictions do not apply to airports or landfills located within the state of Alaska.

   The airport must (1) have received a Federal grant(s) under 49 U.S.C. § 47101, et. seq.; (2) be under control of a public agency; (3) serve some scheduled air carrier operations conducted in aircraft with less than 60 seats; and (4) have total annual enplanements consisting of at least 51 percent of scheduled air carrier enplanements conducted in aircraft with less than 60 passenger seats.

   The proposed MSWLF must (1) be within 6 miles of the airport, as measured from airport property line to MSWLF property line, and (2) have started construction or establishment on or after April 5, 2001. Public Law 106-181 only limits the construction or establishment of some new MSWLF. It does not limit the expansion, either vertical or horizontal, of existing landfills.

   NOTE: Consult the most recent version of AC 150/5200-34, Construction or Establishment of Landfills Near Public Airports, for a more detailed discussion of these restrictions.

b. Siting for new MSWLF not subject to AIR 21. If an airport and MSWLF do not meet the restrictions of Public Law 106-181, the FAA recommends against locating MSWLF within the separation distances identified in Sections 1-2 through 1-4. The separation distances should be measured from the closest point of the airport's AOA to the closest planned MSWLF cell.

c. Considerations for existing waste disposal facilities within the limits of separation criteria.

The FAA recommends against airport development projects that would increase the number of aircraft operations or accommodate larger or faster aircraft near MSWLF operations located within the separations identified in Sections 1-2 through 1-4. In addition, in accordance with 40 CFR 258.10, owners or operators of existing MSWLF units that are located within the separations listed in Sections 1-2 through 1-4 must demonstrate that the unit is designed and operated so it does not pose a bird hazard to aircraft. (See Section 4-2(b) of this AC for a discussion of this demonstration requirement.)

d Enclosed trash transfer stations. Enclosed waste-handling facilities that receive garbage behind closed doors; process it via compaction, incineration, or similar manner; and remove all residue by enclosed vehicles generally are compatible with safe airport operations, provided they are not located on airport property or within the Runway Protection Zone (RPZ). These facilities should not handle or store putrescible waste outside or in a partially enclosed structure accessible to hazardous wildlife. Trash transfer facilities that are open on one or more sides; that store uncovered quantities of municipal solid waste outside, even if only for a short time; that use semi-trailers that leak or have trash clinging to the outside; or that do not control odors by ventilation and filtration systems (odor masking is not acceptable) do not meet the FAA's definition of fully enclosed trash transfer stations. The FAA considers these facilities incompatible with safe airport operations if they are located closer than the separation distances specified in Sections 1-2 through 1-4.

e. Composting operations on or near airport property. Composting operations that accept only yard waste (e.g., leaves, lawn clippings, or branches) generally do not attract hazardous wildlife. Sewage sludge, woodchips, and similar material are not municipal solid wastes and may be used as compost bulking agents. The compost, however, must never include food or other municipal solid waste. Composting operations should not be located on airport property. Off-airport property composting operations should be located no closer than the greater of the following distances: 1,200 feet from any AOA or the distance called for by airport design requirements (see AC 150/5300-13, Airport Design). This spacing should prevent material, personnel, or equipment from penetrating any Object Free Area (OFA), Obstacle Free Zone (OFZ), Threshold Siting Surface (TSS), or Clearway. Airport operators should monitor composting operations located in proximity to the airport to ensure that steam or thermal rise does not adversely affect air traffic. On-airport disposal of compost by-products should not be conducted for the reasons stated in 2-3f.

f. Underwater waste discharges. The FAA recommends against the underwater discharge of any food waste (e.g., fish processing offal) within the separations identified in Sections 1-2 through 1-4 because it could attract scavenging hazardous wildlife.

g. Recycling centers. Recycling centers that accept previously sorted non-food items, such as glass, newspaper, cardboard, or aluminum, are, in most cases, not attractive to hazardous wildlife and are acceptable.

h. Construction and demolition (C&D) debris facilities. C&D landfills do not generally attract hazardous wildlife and are acceptable if maintained in an orderly manner, admit

no putrescible waste, and are not co-located with other waste disposal operations. However, C&D landfills have similar visual and operational characteristics to putrescible waste disposal sites. When co-located with putrescible waste disposal operations, C&D landfills are more likely to attract hazardous wildlife because of the similarities between these disposal facilities. Therefore, a C&D landfill co-located with another waste disposal operation should be located outside of the separations identified in Sections 1-2 through 1-4.

i. Fly ash disposal. The incinerated residue from resource recovery power/heat-generating facilities that are fired by municipal solid waste, coal, or wood is generally not a wildlife attractant because it no longer contains putrescible matter. Landfills accepting only fly ash are generally not considered to be wildlife attractants and are acceptable as long as they are maintained in an orderly manner, admit no putrescible waste of any kind, and are not co-located with other disposal operations that attract hazardous wildlife.

   Since varying degrees of waste consumption are associated with general incineration (not resource recovery power/heat-generating facilities), the FAA considers the ash from general incinerators a regular waste disposal by-product and, therefore, a hazardous wildlife attractant if disposed of within the separation criteria outlined in Sections 1-2 through 1-4.

2-3. WATER MANAGEMENT FACILITIES. Drinking water intake and treatment facilities, storm water and wastewater treatment facilities, associated retention and settling ponds, ponds built for recreational use, and ponds that result from mining activities often attract large numbers of potentially hazardous wildlife. To prevent wildlife hazards, land-use developers and airport operators may need to develop management plans, in compliance with local and state regulations, to support the operation of storm water management facilities on or near all public-use airports to ensure a safe airport environment.

a. Existing storm water management facilities. On-airport storm water management facilities allow the quick removal of surface water, including discharges related to aircraft deicing, from impervious surfaces, such as pavement and terminal/hangar building roofs. Existing on-airport detention ponds collect storm water, protect water quality, and control runoff. Because they slowly release water after storms, they create standing bodies of water that can attract hazardous wildlife. Where the airport has developed a Wildlife Hazard Management Plan (WHMP) in accordance with Part 139, the FAA requires immediate correction of any wildlife hazards arising from existing storm water facilities located on or near airports, using appropriate wildlife hazard mitigation techniques. Airport operators should develop measures to minimize hazardous wildlife attraction in consultation with a wildlife damage management biologist.

   Where possible, airport operators should modify storm water detention ponds to allow a maximum 48-hour detention period for the design storm. The FAA recommends that airport operators avoid or remove retention ponds and detention ponds featuring dead storage to eliminate standing water. Detention basins should remain totally dry between rainfalls. Where constant flow of water is anticipated through the basin, or where any portion of the basin bottom may remain wet, the detention facility should

include a concrete or paved pad and/or ditch/swale in the bottom to prevent vegetation that may provide nesting habitat.

When it is not possible to drain a large detention pond completely, airport operators may use physical barriers, such as bird balls, wires grids, pillows, or netting, to deter birds and other hazardous wildlife. When physical barriers are used, airport operators must evaluate their use and ensure they will not adversely affect water rescue. Before installing any physical barriers over detention ponds on Part 139 airports, airport operators must get approval from the appropriate FAA Regional Airports Division Office.

The FAA recommends that airport operators encourage off-airport storm water treatment facility operators to incorporate appropriate wildlife hazard mitigation techniques into storm water treatment facility operating practices when their facility is located within the separation criteria specified in Sections 1-2 through 1-4.

b. New storm water management facilities. The FAA strongly recommends that off-airport storm water management systems located within the separations identified in Sections 1-2 through 1-4 be designed and operated so as not to create above-ground standing water. Stormwater detention ponds should be designed, engineered, constructed, and maintained for a maximum 48–hour detention period after the design storm and remain completely dry between storms. To facilitate the control of hazardous wildlife, the FAA recommends the use of steep-sided, rip-rap lined, narrow, linearly shaped water detention basins. When it is not possible to place these ponds away from an airport's AOA, airport operators should use physical barriers, such as bird balls, wires grids, pillows, or netting, to prevent access of hazardous wildlife to open water and minimize aircraft-wildlife interactions. When physical barriers are used, airport operators must evaluate their use and ensure they will not adversely affect water rescue. Before installing any physical barriers over detention ponds on Part 139 airports, airport operators must get approval from the appropriate FAA Regional Airports Division Office. All vegetation in or around detention basins that provide food or cover for hazardous wildlife should be eliminated. If soil conditions and other requirements allow, the FAA encourages the use of underground storm water infiltration systems, such as French drains or buried rock fields, because they are less attractive to wildlife.

c. Existing wastewater treatment facilities. The FAA strongly recommends that airport operators immediately correct any wildlife hazards arising from existing wastewater treatment facilities located on or near the airport. Where required, a WHMP developed in accordance with Part 139 will outline appropriate wildlife hazard mitigation techniques. Accordingly, airport operators should encourage wastewater treatment facility operators to incorporate measures, developed in consultation with a wildlife damage management biologist, to minimize hazardous wildlife attractants. Airport operators should also encourage those wastewater treatment facility operators to incorporate these mitigation techniques into their standard operating practices. In addition, airport operators should consider the existence of wastewater treatment facilities when evaluating proposed sites for new airport development projects and avoid such sites when practicable.

d. New wastewater treatment facilities. The FAA strongly recommends against the construction of new wastewater treatment facilities or associated settling ponds within

the separations identified in Sections 1-2 through 1-4. Appendix 1 defines wastewater treatment facility as "any devices and/or systems used to store, treat, recycle, or reclaim municipal sewage or liquid industrial wastes." The definition includes any pretreatment involving the reduction of the amount of pollutants or the elimination of pollutants prior to introducing such pollutants into a publicly owned treatment works (wastewater treatment facility). During the site-location analysis for wastewater treatment facilities, developers should consider the potential to attract hazardous wildlife if an airport is in the vicinity of the proposed site, and airport operators should voice their opposition to such facilities if they are in proximity to the airport.

e. Artificial marshes. In warmer climates, wastewater treatment facilities sometimes employ artificial marshes and use submergent and emergent aquatic vegetation as natural filters. These artificial marshes may be used by some species of flocking birds, such as blackbirds and waterfowl, for breeding or roosting activities. The FAA strongly recommends against establishing artificial marshes within the separations identified in Sections 1-2 through 1-4.

f. Wastewater discharge and sludge disposal. The FAA recommends against the discharge of wastewater or sludge on airport property because it may improve soil moisture and quality on unpaved areas and lead to improved turf growth that can be an attractive food source for many species of animals. Also, the turf requires more frequent mowing, which in turn may mutilate or flush insects or small animals and produce straw, both of which can attract hazardous wildlife. In addition, the improved turf may attract grazing wildlife, such as deer and geese. Problems may also occur when discharges saturate unpaved airport areas. The resultant soft, muddy conditions can severely restrict or prevent emergency vehicles from reaching accident sites in a timely manner.

2-4. WETLANDS. Wetlands provide a variety of functions and can be regulated by local, state, and Federal laws. Normally, wetlands are attractive to many types of wildlife, including many which rank high on the list of hazardous wildlife species (Table 1).

NOTE: If questions exist as to whether an area qualifies as a wetland, contact the local division of the U.S. Army Corps of Engineers, the Natural Resources Conservation Service, or a wetland consultant qualified to delineate wetlands.

a. Existing wetlands on or near airport property. If wetlands are located on or near airport property, airport operators should be alert to any wildlife use or habitat changes in these areas that could affect safe aircraft operations. At public-use airports, the FAA recommends immediately correcting, in cooperation with local, state, and Federal regulatory agencies, any wildlife hazards arising from existing wetlands located on or near airports. Where required, a WHMP will outline appropriate wildlife hazard mitigation techniques. Accordingly, airport operators should develop measures to minimize hazardous wildlife attraction in consultation with a wildlife damage management biologist.

b. New airport development. Whenever possible, the FAA recommends locating new airports using the separations from wetlands identified in Sections 1-2 through 1-4. Where alternative sites are not practicable, or when airport operators are expanding

an existing airport into or near wetlands, a wildlife damage management biologist, in consultation with the U.S. Fish and Wildlife Service, the U.S. Army Corps of Engineers, and the state wildlife management agency should evaluate the wildlife hazards and prepare a WHMP that indicates methods of minimizing the hazards.

c. Mitigation for wetland impacts from airport projects. Wetland mitigation may be necessary when unavoidable wetland disturbances result from new airport development projects or projects required to correct wildlife hazards from wetlands. Wetland mitigation must be designed so it does not create a wildlife hazard. The FAA recommends that wetland mitigation projects that may attract hazardous wildlife be sited outside of the separations identified in Sections 1-2 through 1-4.

(1) Onsite mitigation of wetland functions. The FAA may consider exceptions to locating mitigation activities outside the separations identified in Sections 1-2 through 1-4 if the affected wetlands provide unique ecological functions, such as critical habitat for threatened or endangered species or ground water recharge, which cannot be replicated when moved to a different location. Using existing airport property is sometimes the only feasible way to achieve the mitigation ratios mandated in regulatory orders and/or settlement agreements with the resource agencies. Conservation easements are an additional means of providing mitigation for project impacts. Typically the airport operator continues to own the property, and an easement is created stipulating that the property will be maintained as habitat for state or Federally listed species.

Mitigation must not inhibit the airport operator's ability to effectively control hazardous wildlife on or near the mitigation site or effectively maintain other aspects of safe airport operations. Enhancing such mitigation areas to attract hazardous wildlife must be avoided. The FAA will review any onsite mitigation proposals to determine compatibility with safe airport operations. A wildlife damage management biologist should evaluate any wetland mitigation projects that are needed to protect unique wetland functions and that must be located in the separation criteria in Sections 1-2 through 1-4 before the mitigation is implemented. A WHMP should be developed to reduce the wildlife hazards.

(2) Offsite mitigation of wetland functions. The FAA recommends that wetland mitigation projects that may attract hazardous wildlife be sited outside of the separations identified in Sections 1-2 through 1-4 unless they provide unique functions that must remain onsite (see 2-4c(1)). Agencies that regulate impacts to or around wetlands recognize that it may be necessary to split wetland functions in mitigation schemes. Therefore, regulatory agencies may, under certain circumstances, allow portions of mitigation to take place in different locations.

(3) Mitigation banking. Wetland mitigation banking is the creation or restoration of wetlands in order to provide mitigation credits that can be used to offset permitted wetland losses. Mitigation banking benefits wetland resources by providing advance replacement for permitted wetland losses; consolidating small projects into larger, better-designed and managed units; and encouraging integration of wetland mitigation projects with watershed planning. This last benefit is most helpful for

airport projects, as wetland impacts mitigated outside of the separations identified in Sections 1-2 through 1-4 can still be located within the same watershed. Wetland mitigation banks meeting the separation criteria offer an ecologically sound approach to mitigation in these situations. Airport operators should work with local watershed management agencies or organizations to develop mitigation banking for wetland impacts on airport property.

2-5. DREDGE SPOIL CONTAINMENT AREAS. The FAA recommends against locating dredge spoil containment areas (also known as Confined Disposal Facilities) within the separations identified in Sections 1-2 through 1-4 if the containment area or the spoils contain material that would attract hazardous wildlife.

2-6. AGRICULTURAL ACTIVITIES. Because most, if not all, agricultural crops can attract hazardous wildlife during some phase of production, the FAA recommends against the used of airport property for agricultural production, including hay crops, within the separations identified in Sections 1-2 through 1-4. . If the airport has no financial alternative to agricultural crops to produce income necessary to maintain the viability of the airport, then the airport shall follow the crop distance guidelines listed in the table titled "Minimum Distances between Certain Airport Features and Any On-Airport Agricultural Crops" found in AC 150/5300-13, Airport Design, Appendix 17. The cost of wildlife control and potential accidents should be weighed against the income produced by the on-airport crops when deciding whether to allow crops on the airport.

a. Livestock production. Confined livestock operations (i.e., feedlots, dairy operations, hog or chicken production facilities, or egg laying operations) often attract flocking birds, such as starlings, that pose a hazard to aviation. Therefore, The FAA recommends against such facilities within the separations identified in Sections 1-2 through 1-4. Any livestock operation within these separations should have a program developed to reduce the attractiveness of the site to species that are hazardous to aviation safety. Free-ranging livestock must not be grazed on airport property because the animals may wander onto the AOA. Furthermore, livestock feed, water, and manure may attract birds.

b. Aquaculture. Aquaculture activities (i.e. catfish or trout production) conducted outside of fully enclosed buildings are inherently attractive to a wide variety of birds. Existing aquaculture facilities/activities within the separations listed in Sections 1-2 through 1-4 must have a program developed to reduce the attractiveness of the sites to species that are hazardous to aviation safety. Airport operators should also oppose the establishment of new aquaculture facilities/activities within the separations listed in Sections 1-2 through 1-4.

c. Alternative uses of agricultural land. Some airports are surrounded by vast areas of farmed land within the distances specified in Sections 1-2 through 1-4. Seasonal uses of agricultural land for activities such as hunting can create a hazardous wildlife situation. In some areas, farmers will rent their land for hunting purposes. Rice farmers, for example, flood their land during waterfowl hunting season and obtain additional revenue by renting out duck blinds. The duck hunters then use decoys and call in hundreds, if not

thousands, of birds, creating a tremendous threat to aircraft safety. A wildlife damage management biologist should review, in coordination with local farmers and producers, these types of seasonal land uses and incorporate them into the WHMP.

2-7. GOLF COURSES, LANDSCAPING AND OTHER LAND-USE CONSIDERATIONS.

a. Golf courses. The large grassy areas and open water found on most golf courses are attractive to hazardous wildlife, particularly Canada geese and some species of gulls. These species can pose a threat to aviation safety. The FAA recommends against construction of new golf courses within the separations identified in Sections 1-2 through 1-4. Existing golf courses located within these separations must develop a program to reduce the attractiveness of the sites to species that are hazardous to aviation safety. Airport operators should ensure these golf courses are monitored on a continuing basis for the presence of hazardous wildlife. If hazardous wildlife is detected, corrective actions should be immediately implemented.

b. Landscaping and landscape maintenance. Depending on its geographic location, landscaping can attract hazardous wildlife. The FAA recommends that airport operators approach landscaping with caution and confine it to airport areas not associated with aircraft movements. A wildlife damage management biologist should review all landscaping plans. Airport operators should also monitor all landscaped areas on a continuing basis for the presence of hazardous wildlife. If hazardous wildlife is detected, corrective actions should be immediately implemented.

   Turf grass areas can be highly attractive to a variety of hazardous wildlife species. Research conducted by the USDA Wildlife Services' National Wildlife Research Center has shown that no one grass management regime will deter all species of hazardous wildlife in all situations. In cooperation with wildlife damage management biologist, airport operators should develop airport turf grass management plans on a prescription basis, depending on the airport's geographic locations and the type of hazardous wildlife likely to frequent the airport

   Airport operators should ensure that plant varieties attractive to hazardous wildlife are not used on the airport. Disturbed areas or areas in need of re-vegetating should not be planted with seed mixtures containing millet or any other large-seed producing grass. For airport property already planted with seed mixtures containing millet, rye grass, or other large-seed producing grasses, the FAA recommends disking, plowing, or another suitable agricultural practice to prevent plant maturation and seed head production. Plantings should follow the specific recommendations for grass management and seed and plant selection made by the State University Cooperative Extension Service, the local office of Wildlife Services, or a qualified wildlife damage management biologist. Airport operators should also consider developing and implementing a preferred/prohibited plant species list, reviewed by a wildlife damage management biologist, which has been designed for the geographic location to reduce the attractiveness to hazardous wildlife for landscaping airport property.

c. Airports surrounded by wildlife habitat. The FAA recommends that operators of airports surrounded by woodlands, water, or wetlands refer to Section 2.4 of this AC. Operators

of such airports should provide for a Wildlife Hazard Assessment (WHA) conducted by a wildlife damage management biologist. This WHA is the first step in preparing a WHMP, where required.

d. Other hazardous wildlife attractants. Other specific land uses or activities (e.g., sport or commercial fishing, shellfish harvesting, etc.), perhaps unique to certain regions of the country, have the potential to attract hazardous wildlife. Regardless of the source of the attraction, when hazardous wildlife is noted on a public-use airport, airport operators must take prompt remedial action(s) to protect aviation safety.

2-8. SYNERGISTIC EFFECTS OF SURROUNDING LAND USES. There may be circumstances where two (or more) different land uses that would not, by themselves, be considered hazardous wildlife attractants or that are located outside of the separations identified in Sections 1-2 through 1-4 that are in such an alignment with the airport as to create a wildlife corridor directly through the airport and/or surrounding airspace. An example of this situation may involve a lake located outside of the separation criteria on the east side of an airport and a large hayfield on the west side of an airport, land uses that together could create a flyway for Canada geese directly across the airspace of the airport. There are numerous examples of such situations; therefore, airport operators and the wildlife damage management biologist must consider the entire surrounding landscape and community when developing the WHMP.

SECTION 3: PROCEDURES FOR WILDLIFE HAZARD MANAGEMENT BY OPERATORS OF PUBLIC-USE AIRPORTS.

3.1. INTRODUCTION. In recognition of the increased risk of serious aircraft damage or the loss of human life that can result from a wildlife strike, the FAA may require the development of a Wildlife Hazard Management Plan (WHMP) when specific triggering events occur on or near the airport. Part 139.337 discusses the specific events that trigger a Wildlife Hazard Assessment (WHA) and the specific issues that a WHMP must address for FAA approval and inclusion in an Airport Certification Manual.

3.2. COORDINATION WITH USDA WILDLIFE SERVICES OR OTHER QUALIFIED WILDLIFE DAMAGE MANAGEMENT BIOLOGISTS. The FAA will use the Wildlife Hazard Assessment (WHA) conducted in accordance with Part 139 to determine if the airport needs a WHMP. Therefore, persons having the education, training, and expertise necessary to assess wildlife hazards must conduct the WHA. The airport operator may look to Wildlife Services or to qualified private consultants to conduct the WHA. When the services of a wildlife damage management biologist are required, the FAA recommends that land-use developers or airport operators contact a consultant specializing in wildlife damage management or the appropriate state director of Wildlife Services.

NOTE: Telephone numbers for the respective USDA Wildlife Services state offices can be obtained by contacting USDA Wildlife Services Operational Support Staff, 4700 River Road, Unit 87, Riverdale, MD, 20737-1234, Telephone (301) 734-7921, Fax (301) 734-5157 (http://www.aphis.usda.gov/ws/).

3-3. WILDLIFE HAZARD MANAGEMENT AT AIRPORTS: A MANUAL FOR AIRPORT PERSONNEL. This manual, prepared by FAA and USDA Wildlife Services staff, contains a

compilation of information to assist airport personnel in the development, implementation, and evaluation of WHMPs at airports. The manual includes specific information on the nature of wildlife strikes, legal authority, regulations, wildlife management techniques, WHAs, WHMPs, and sources of help and information. The manual is available in three languages: English, Spanish, and French. It can be viewed and downloaded free of charge from the FAA's wildlife hazard mitigation web site: http://wildlife-mitigation.tc.FAA.gov/. This manual only provides a starting point for addressing wildlife hazard issues at airports. Hazardous wildlife management is a complex discipline and conditions vary widely across the United States. Therefore, qualified wildlife damage management biologists must direct the development of a WHMP and the implementation of management actions by airport personnel.

There are many other resources complementary to this manual for use in developing and implementing WHMPs. Several are listed in the manual's bibliography.

3-4. WILDLIFE HAZARD ASSESSMENTS, TITLE 14, CODE OF FEDERAL REGULATIONS, PART 139. Part 139.337(b) requires airport operators to conduct a Wildlife Hazard Assessment (WHA) when certain events occur on or near the airport.

Part 139.337 (c) provides specific guidance as to what facts must be addressed in a WHA.

3-5. WILDLIFE HAZARD MANAGEMENT PLAN (WHMP). The FAA will consider the results of the WHA, along with the aeronautical activity at the airport and the views of the airport operator and airport users, in determining whether a formal WHMP is needed, in accordance with Part 139.337. If the FAA determines that a WHMP is needed, the airport operator must formulate and implement a WHMP, using the WHA as the basis for the plan.

The goal of an airport's Wildlife Hazard Management Plan is to minimize the risk to aviation safety, airport structures or equipment, or human health posed by populations of hazardous wildlife on and around the airport.

The WHMP must identify hazardous wildlife attractants on or near the airport and the appropriate wildlife damage management techniques to minimize the wildlife hazard. It must also prioritize the management measures.

3-6. LOCAL COORDINATION. The establishment of a Wildlife Hazards Working Group (WHWG) will facilitate the communication, cooperation, and coordination of the airport and its surrounding community necessary to ensure the effectiveness of the WHMP. The cooperation of the airport community is also necessary when new projects are considered. Whether on or off the airport, the input from all involved parties must be considered when a potentially hazardous wildlife attractant is being proposed. Airport operators should also incorporate public education activities with the local coordination efforts because some activities in the vicinity of your airport, while harmless under normal leisure conditions, can attract wildlife and present a danger to aircraft. For example, if public trails are planned near wetlands or in parks adjoining airport property, the public should know that feeding birds and other wildlife in the area may pose a risk to aircraft.

Airport operators should work with local and regional planning and zoning boards so as to be aware of proposed land-use changes, or modification of existing land uses, that could create hazardous wildlife attractants within the separations identified in Sections 1-2 through 1-4. Pay particular attention to proposed land uses involving creation or expansion of waste water

treatment facilities, development of wetland mitigation sites, or development or expansion of dredge spoil containment areas. At the very least, airport operators must ensure they are on the notification list of the local planning board or equivalent review entity for all communities located within 5 miles of the airport, so they will receive notification of any proposed project and have the opportunity to review it for attractiveness to hazardous wildlife.

3-7 COORDINATION/NOTIFICATION OF AIRMEN OF WILDLIFE HAZARDS. If an existing land-use practice creates a wildlife hazard and the land-use practice or wildlife hazard cannot be immediately eliminated, airport operators must issue a Notice to Airmen (NOTAM) and encourage the land–owner or manager to take steps to control the wildlife hazard and minimize further attraction.

Appendix H

Land Uses Within a Runway Protection Zone

Federal Aviation Administration
Memorandum

Date: Sept. 27 1012

To: Regional Airports Division Managers
610 Branch Managers
620 Branch Managers
ADO Managers

From: Benito De Leon, Director
Office of Airport Planning and Programming (APP-I)

Michael J. O'DonnelI, Director
Office of Airport Safety Safety and Standards (AAS-I)

Subject: Interim Guidance on Land Uses Within a Runway Protection Zone

Background

The FAA Office of Airports (ARP) has identified the need to clarify OUf policy on land uses within the Runway Protection Zone (RPZ). This memorandum presents interim policy guidance on compatible land uses within Runway Protection Zones (RPZ) to address recurrent questions about what constitutes a compatible land use and how to evaluate proposed land uses that would reside in an RPZ. While Advisory Circular 150/5300-Change 17(Airport Design) notes that "it is desirable to clear all objects from the RPZ," it also acknowledges that "some uses are pennitted" with conditions and other "land uses are prohibited."

RPZ land use compatibility also is often complicated by ownership considerations. Airport owner control over the RPZ land is emphasized to achieve the desired protection ofpeople and property on the ground. Although the FAA recognizes that in certain situations the airport sponsor may not fully control land within the RPZ, the FAA expects airport sponsors to take all possible measures to protect against and remove or mitigate incompatible land uses.

ARP is developing a new guidance document for the Regional Office (RO) and Airport District Office (ADO) staff that clarifies our policy regarding land uses in the RPZ. This new guidance document will outline a comprehensive review process for existing and proposed land uses within an RPZ and is slated for publication in 2013. We also intend to incorporate RPZ land use considerations into the ongoing update to the Land Use Compatibility Advisory Circular (AC) which is slated for publication in 2014.

This memorandum outlines interim guidance for ARP RO and ADO staff10 follow until the comprehensive RPZ land use guidance is published.

Interim Guidance

New or Modified Land Uses in the RPZ

Regional and ADO staff must consult with the National Airport Planning and Environmental Division, APP-400 (who wi ll coordinate with the Airport Engineering Division, AAS-I OO), when any of the land uses described in Table I would enter the limits of the RPZ as the result of:

I. An airfield project (e.g., runway extension, runway shift)
2. A change in the critical design aircraft that increases the RPZ dimensions
3. A new or revised instrument approach procedure that increases the RPZ dimensions
4. A local development proposal in the RPZ (either new or reconfigured)

Table 1: Land Uses Requiring Coordination with APP-400
• Buildings and structures (Examples include, but are not limited to: residences, schools, churches, hospitals or other medical care facilities, commercial/industrial buildings, etc.) • Recreational land use (Examples incl ude, but are not limited to: golf courses, sports fields, amusement parks, other places of public assembly, etc.) -Transportation facilities. Examples include, but are not limited to: – Rail facilities -light or heavy, passenger or freight – Public roads/highways – Vehicular parking facilities • Fuel storage facilities (above and below ground) • Hazardous material storage (above and below ground) • Wastewater treatment facilities • Above-ground utility infrastructure (i.e. electrical substations), including any type of solar panel installations.

Land uses that may create a safety hazard to air transportation resulting from wildlife hazard attractants such as retention ponds or municipal landfills are not subject to RPZ standards since these types of land uses do not create a hazard to people and property on the ground. Rather, these land uses are controlled by other FAA policies and standards. In accordance with the relevant Advisory C irculars, the Region! ADO must coordinate land use proposals that create wildlife hazards with AAS-300, regardless of whether the proposed land use occurs within the limits ofan RPZ.

Alternatives Analysis

Prior to contacting APP-400, the RO and ADO staff must work with the airport sponsor to identify and document the full range of alternatives that could:

I. A void introducing the land use issue within the RPZ
2. Minimize the impact of the land use in the RPZ (i.e., routing a new roadway through the controlled activity area, move farther away from the runway end, etc.)
3. Mitigate risk to people and property on the ground (i.e., tunneling, depressing andlor protecting a roadway through the RPZ, implement operational measures to mitigate any risks, etc.)

Documentation of the alternatives should include:

- A description of each alternative including a narrative discussion and exhibits or figures depicting the alternative
- Full cost estimates associated with each alternative regardless of potential funding sources.
- A practicability assessment based on the feasibility ofthe alternative in terms ofcost, constructabiLity and other factors.
- Identification of the preferred alternative that would meet the project purpose and need while minimizing risk associated with the location within the RPZ.
- Identification of all Federal, State and local transportation agencies involved or interested in the issue.
- Analysis ofthe specific portion(s) and percentages of the RPZ affected, drawing a clear distinction between the Central Portion ofthe RPZ versus the Controlled Activity Area, and clearly delineating the distance from the runway end and runway landing threshold.
- Analysis of (and issues affecting) sponsor control of the land within the RPZ.
- Any other relevant factors for HQ consideration.

APP-400 will consult with AAS-J 00 when reviewing the project documents provided by the RO/ADO. APP-400 and AAS-IOO will work with the Region/ADO to make ajoint detennination regarding Airport Layout Plan (ALP) approval after considering the proposed land use, location within the RPZ and documentation ofthe alternatives analysis.

In addition, APP-400 and AAS-IOO will work with the Region/ADO to craft language for inclusion in the airspace detennination letter regarding any violations to ensure that all stakeholders (including tenants, operators, and insurers) are fully apprised of the issues and potential risks and liabilities associated with pennitting such facilities within the RPZ.

Existing Land Uses in the RPZ

This interim policy only addresses the introduction of new or modified land uses to an RPZ and proposed changes to the RPZ size or location. Therefore, at this time, the RO and ADO staff shall continue to work with sponsors to remove or mitigate the risk of any existing incompatible land uses in the RPZ as practical.

For additional information or questions regarding this interim guidance, please contact either Ralph Thompson, APP-400, at ralph.thompson@faa.gov or (202) 267-8772 or Danielle Rinsler, APP-401, at danielle.rinsler@faa.govor(202)267-8784.

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Appendix I

California State Education Code

Section 17215

(a) In order to promote the safety of pupils, comprehensive community planning, and greater educational usefulness of schoolsites, before acquiring title to or leasing property for a new schoolsite, the governing board of each school district, including any district governed by a city board of education, or a charter school, shall give the State Department of Education written notice of the proposed acquisition or lease and shall submit any information required by the State Department of Education if the site is within two miles, measured by air line, of that point on an airport runway or a potential runway included in an airport master plan that is nearest to the site.

(b) Upon receipt of the notice required pursuant to subdivision (a), the State Department of Education shall notify the Department of Transportation in writing of the proposed acquisition or lease. If the Department of Transportation is no longer in operation, the State Department of Education shall, in lieu of notifying the Department of Transportation, notify the United States Department of Transportation or any other appropriate agency, in writing, of the proposed acquisition or lease for the purpose of obtaining from the department or other agency any information or assistance that it may desire to give.

(c) The Department of Transportation shall investigate the site and, within 30 working days after receipt of the notice, shall submit to the State Department of Education a written report of its findings including recommendations concerning acquisition or lease of the site. As part of the investigation, the Department of Transportation shall give notice thereof to the owner and operator of the airport who shall be granted the opportunity to comment upon the site. The Department of Transportation shall adopt regulations setting forth the criteria by which a site will be evaluated pursuant to this section.

(d) The State Department of Education shall, within 10 days of receiving the Department of Transportation's report, forward the report to the governing board of the school district or charter school. The governing board or charter school may not acquire title to or lease the property until the report of the Department of Transportation has been received. If the report does not favor the acquisition or lease of the property for a schoolsite or an addition to a present schoolsite, the governing board or charter school may not acquire title to or lease the property. If the report does favor the acquisition or lease of the property for a schoolsite or an addition to a present schoolsite, the governing board or charter school shall hold a public hearing on the matter prior to acquiring or leasing the site.

(e) If the Department of Transportation's recommendation does not favor acquisition or lease of the proposed site, state funds or local funds may not be apportioned or expended for the acquisition or lease of that site, construction of any school building on that site, or for the expansion of any existing site to include that site.

(f) This section does not apply to sites acquired prior to January 1, 1966, nor to any additions or extensions to those sites.

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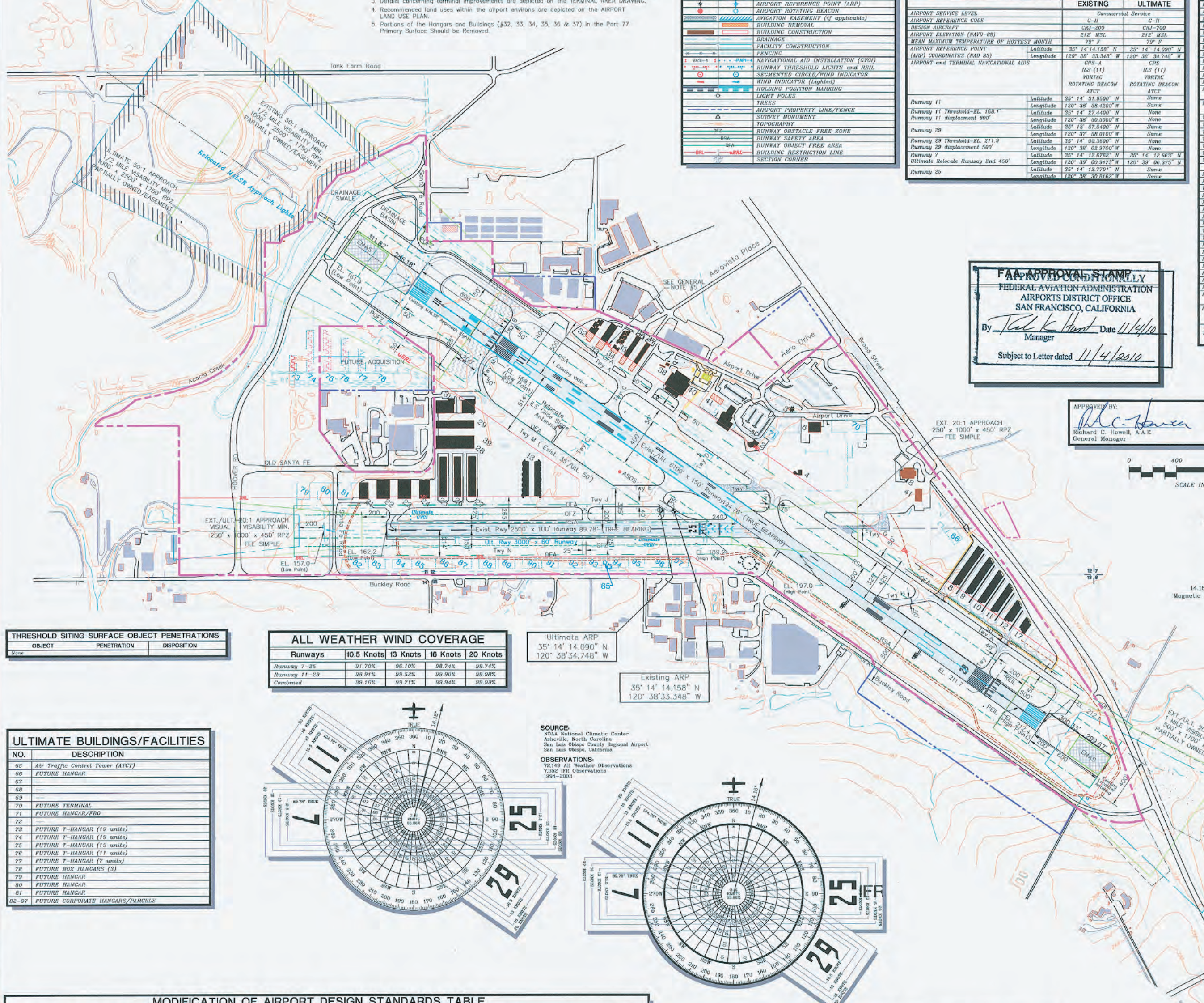
The current Airport Layout Plan for the San Luis Obispo County Regional Airport was adopted by the San Luis Obispo County Board of Supervisors on January 25, 2005, and was approved by the San Francisco, California, Airport District Office of the Federal Aviation Administration on November 4, 2010.

The Airport Layout Plan on the following page has been reduced in size from the original. ~~A full-size pdf version may be viewed at:~~ **DOCUMENTS ARE IN PROGRESS.**

~~https://secure.techxpress.net/sloairport.com/images/uploads/pages/File/master%20plan%20update/SBP%20Approved%20ALP%202010-11-04%20Signed.pdf~~

~~or at the Planning and Building Department of the County of San Luis Obispo.~~

Coffman Associates-LDJ sbp_ALD_sht-1.dwg 11/13/2009



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

GENERAL NOTES:

1. http://www.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.
5. Portions of the Hangars and Buildings (#32, 33, 34, 35, 36 & 37) in the Part 77 Primary Surface Should be Removed.

LEGEND

EXISTING	ULTIMATE	DESCRIPTION
		ABANDONED PAVEMENT (To Be Removed)
		AIRPORT PROPERTY LINE
		AIRPORT REFERENCE POINT (ARP)
		AIRPORT ROTATING BEACON
		AVIGATION EASEMENT (if applicable)
		BUILDING REMOVAL
		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
		TOPOGRAPHY
OFZ		RUNWAY OBSTACLE FREE ZONE
RSA		RUNWAY SAFETY AREA
OFA		RUNWAY OBJECT FREE AREA
BRL	BRL	BUILDING RESTRICTION LINE
		SECTION CORNER

AIRPORT DATA

SAN LUIS OBISPO COUNTY REGIONAL AIRPORT (SBP)

CITY: San Luis Obispo	COUNTY: San Luis Obispo	CIVIL TOWNSHIP: Corral De Piedra	
RANGE: 12,13 East	TOWNSHIP: T31 South		

		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' MSL	212' MSL
MEAN MAXIMUM TEMPERATURE OF HOTTEST MONTH		79° F	79° F
AIRPORT REFERENCE POINT (ARP) COORDINATES (NAD 83)	Latitude	35° 14' 14.158" N	35° 14' 14.090" N
	Longitude	120° 38' 33.348" W	120° 38' 34.748" W
AIRPORT and TERMINAL NAVIGATIONAL AIDS		GPS-A, ILS (11), VORTAC, ROTATING BEACON, ATCT	GPS, ILS (11), VORTAC, ROTATING BEACON, ATCT
Runway 11	Latitude	35° 14' 31.9600" N	Same
	Longitude	120° 38' 58.4200" W	Same
Runway 11 Threshold-EL. 168.1'	Latitude	35° 14' 27.4400" N	None
Runway 11 displacement 800'	Longitude	120° 38' 50.5000" W	None
Runway 29	Latitude	35° 13' 57.5400" N	Same
	Longitude	120° 37' 58.0100" W	Same
Runway 29 Threshold-EL. 211.9	Latitude	35° 14' 00.3600" N	None
Runway 29 displacement 500'	Longitude	120° 38' 02.9700" W	None
Runway 7	Latitude	35° 14' 12.6762" N	35° 14' 12.663" N
Ultimate Relocate Runway End 450'	Longitude	120° 39' 00.9473" W	120° 39' 06.375" W
Runway 25	Latitude	35° 14' 12.7701" N	Same
	Longitude	120° 38' 30.8163" W	Same

RUNWAY DATA

	Runway 11-29 EXISTING		Runway 11-29 ULTIMATE		Runway 7-25 EXISTING		Runway 7-25 ULTIMATE	
AIRCRAFT APPROACH CATEGORY-DESIGN GROUP	C-II		C-II		B-I		Same	
DESIGN AIRCRAFT	Regional Jet CRJ-200		Regional Jet CRJ-700		Cessna 421		Same	
APPROACH SPEED (Knots) OF DESIGN A/C	91 Knots - 120.7 Knots		91 Knots - 120.7 Knots		91 Knots - 120.7 Knots		Same	
MAX. CERTIFIED TAKEOFF WEIGHT OF DESIGN A/C	44,700		44,700		12,500		Same	
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)	6100' x 150'		Same		2500' x 100'		3000' x 60'	
RUNWAY TRUE BEARING (NGS SURVEY 02/04/03)	124.76° / 304.76°		Same		89.78 ° / 269.79 °		Same	
MAXIMUM RUNWAY ELEVATION/LOW POINT OF RUNWAY	212.4 MSL / 161.9 MLS		Same		189.2 MSL / 162.2 MSL		189.2 MSL / 157.0 MSL	
RUNWAY LIGHTING	HIRL		Same		NONE		Same	
RUNWAY EFFECTIVE GRADIENT/MAXIMUM GRADIENT	0.89% / 1.04%		Same		1.1% / 1.1%		Same	
RUNWAY PAVEMENT MATERIAL / SURFACE TREATMENT	Asphalt / Grooved		Same		Asphalt		Same	
RUNWAY PAVEMENT STRENGTH (in thousand lbs.)[1]	75(S)/100(D)		Same		12.5(S)/20(D)		Same	
LINE OF SIGHT REQUIREMENT MET	Yes		Yes		Yes		Same	
FAR PART-77 APPROACH SURFACES	1,000' x 50,000' x 16,000' 1000' x 5000' x 1500'		1,000' x 50,000' x 16,000' 1000' x 5000' x 1500'		250' x 5000' x 1250' 250' x 5000' x 1250'		250' x 5000' x 1250' 250' x 5000' x 1250'	
RUNWAY PROTECTION ZONES	1,000' x 2500' x 1750' 500' x 1700' x 1010'		1,000' x 2500' x 1750' 500' x 1700' x 1010'		250' x 1000' x 450' 250' x 1000' x 450'		250' x 1000' x 450' 250' x 1000' x 450'	
TAXIWAY WIDTH	50'		Same		25'		Same	
TAXIWAY LIGHTING	MITL		Same		NONE		Same	
TAXIWAY MARKING	Centerline/Signage		Same		Centerline/Signage		Same	
TAXIWAY SURFACE MATERIAL	Asphalt		Same		Asphalt		Same	
TAXIWAY SAFETY AREA WIDTH	79'		Same		49'		Same	
TAXIWAY OBJECT FREE AREA WIDTH	131'		Same		89'		Same	
TAXIWAY HOLDING POSITION MARKING/HOLDSIGN	200'		Same		125'		Same	
	RUNWAY 11	RUNWAY 29	RUNWAY 11	RUNWAY 29	RUNWAY 7	RUNWAY 25	RUNWAY 7	RUNWAY 25
F.A.R. PART-77 CATEGORY	P	NP	P	NP	Visual	Visual	Same	Same
F.A.R. PART-77 APPROACH SLOPE	50:1/ 40:1	34:1	50:1/ 40:1	34:1	20:1	20:1	Same	Same
WINGSPAN OF DESIGN AIRCRAFT	69.7'		76.3'		41.7'	41.7'	Same	Same
RUNWAY INSTRUMENTATION	Precision	Visual	Same	Same	Visual	Visual	Same	Same
RUNWAY MARKING	Precision	NonPrecision	Same	Same	Basic	Basic	Same	Same
RUNWAY APPROACH VISIBILITY MINIMUMS (Lowest)	1/2 mile	1 mile	Same	Same	Visual	Visual	Same	Same
RUNWAY APPROACH LIGHTING	MALSR	None	Same	Same	None	None	Same	Same
PRECISION OBJECT FREE AREA (800' x 200')	POFA	N/A	Same	Same	N/A	N/A	Same	Same
THRESHOLD SITING REQUIREMENTS (Appendix 2)	Par-5g	Par-5e	Same	Same	Par-5b	Par-5b	Same	Same
THRESHOLD SITING SURFACE OBJECT PENETRATIONS	None	None	Same	Same	None	None	Same	Same
RUNWAY THRESHOLD DISPLACEMENT	800'	500'	Same	Same	None	None	Same	Same
RUNWAY DISPLACED THRESHOLD ELEVATION	168.1 MSL	211.7 MSL	Same	Same	N/A	N/A	Same	Same
RUNWAY END ELEVATION	161.9 MSL	212.1 MSL	Same	Same	162.2 MSL	197.0 MSL	157.0 MSL	Same
RUNWAY TOUCHDOWN ZONE ELEVATION	197.6 MSL	211.7 MSL	Same	Same	194.7 MSL	197.0 MSL	189.0 MSL	Same
RUNWAY SAFETY AREA (RSA Beyond Stop End) 2	600' x 400'	600' x 400'	Same	Same	240' x 120'	240' x 120'	Same	Same
RUNWAY OBJECT FREE AREA (OFA Beyond Stop End)	600' x 800'	600' x 800'	Same	Same	240' x 400'	240' x 400'	Same	Same
RUNWAY OBSTACLE FREE ZONE (Beyond Stop End)	200' x 400'	200' x 400'	Same	Same	200' x 250'	200' x 250'	Same	Same
ELECTRONIC NAVIGATIONAL AIDS	ILS (11)/GPS NDB, VORTAC	RNAV(GPS)	ILS (11)/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 (DT), and/or Double Dual Tandem (DDT) wheel loading capacities.
[2] Runway Safety Area located to 600' beyond runway ends, Rwy 11 - 390.33' paved overrun with 299.67' EMAS and Rwy 29 - 288.18' paved overrun with 311.82' EMAS.

FAA APPROVAL STAMP CONDITIONALLY
FEDERAL AVIATION ADMINISTRATION
AIRPORTS DISTRICT OFFICE
SAN FRANCISCO, CALIFORNIA
By [signature] Date 11/4/10
Manager
Subject to Letter dated 11/4/2010

APPROVED BY: [signature] DATE: 10/5/10
Richard C. Howell, A.A.E.
General Manager

THRESHOLD SITING SURFACE OBJECT PENETRATIONS

OBJECT	PENETRATION	DISPOSITION
None		

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	98.91%	99.52%	99.90%	99.98%
Combined	99.16%	99.71%	99.94%	99.99%

IFR WIND COVERAGE

Runways	10.5 Knots	13 Knots	16 Knots	20 Knots
Runway 7-25	97.69%	98.85%	99.56%	99.92%
Runway 11-29	99.19%	99.63%	99.89%	99.95%
Combined	99.36%	99.75%	99.90%	99.95%

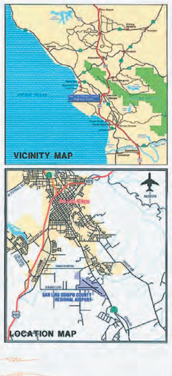
ULTIMATE BUILDINGS/FACILITIES

NO.	DESCRIPTION
65	Air Traffic Control Tower (ATCT)
66	FUTURE HANGAR
67	—
68	—
69	—
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

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	290.6'(1)/325'	Requested Modification of Airport Design Standards (12/10/2004)	11/02/2005
Runway (11-29) Object Free Area Length	1000' For Design Group C-II Precision	600'	Requested Modification of Airport Design Standards (12/10/2004)	11/02/2005
Runway (11-29) Object Free Area width	800' For Design Group C-II Precision	741'	Requested Modification of Airport Design Standards (12/10/2004)	11/02/2005
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)	11/02/2005

(1) At Existing Terminal Only.



BUILDINGS/FACILITIES

NO.	DESCRIPTION	ELEVATION
1	ADMINISTRATION/TERMINAL BUILDING	217.7 MSL
2	RESTAURANT	213.8 MSL
3	ELECTRICAL VAULT	N/A
4	AIRPORT TRAFFIC CONTROL TOWER (ATCT)	258.8 MSL
5	~~FBO and SHOP~~ (REMOVED)	206.1 MSL
6	HANGAR and SHOP	216.3 MSL
7	~~HANGAR and SHOP~~	208.1 MSL
8	T-HANGAR (13 units)	N/A MSL
9	T-HANGAR (13 units)	N/A MSL
10	T-HANGAR (11 units)	N/A MSL
11	T-HANGAR (9 units)	N/A MSL
12	T-HANGAR (7 units)	N/A MSL
13	PORT-A-PORT HANGARS (21 Units)	214.8 MSL
14	T-HANGAR (5 units)	212.1 MSL
15	~~T-HANGAR (5 units)~~ (REMOVED)	216.3 MSL
16	~~T-HANGAR (5 units)~~ (REMOVED)	211.4 MSL
17	T-HANGAR (4 units)	N/A MSL
18	AIRCRAFT RESCUE and FIREFIGHTING (ARFF)	217.7 MSL
19	~~ANIMAL SHELTER~~ (REMOVED)	214.5 MSL
20	FUEL FARM	N/A 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	PAINT BOOTH/STORAGE	N/A
39	FUEL STORAGE FACILITY	N/A
40	HANGAR/SHOP/OFFICE	218.6 MSL
41	MAINTENANCE BUILDING	214.1 MSL

REVISIONS

No.	REVISIONS	DATE	BY	APP'D.
2	ALP REVALIDATION	12/4/09	—	—
1	MASTER PLAN UPDATE/ALP UPDATE	11/2/05	JMH	11/2/05

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 LAYOUT PLAN

San Luis Obispo, California

PLANNED BY: Stephen C. Wagner
DETAILED BY: Larry Burrell Johnson/Maggie Brown
APPROVED BY: James M. Harris, P.E.
February 23, 2010 SHEET 1 OF 13

Coffman Associates
Airport Consultants
www.coffmanassociates.com