

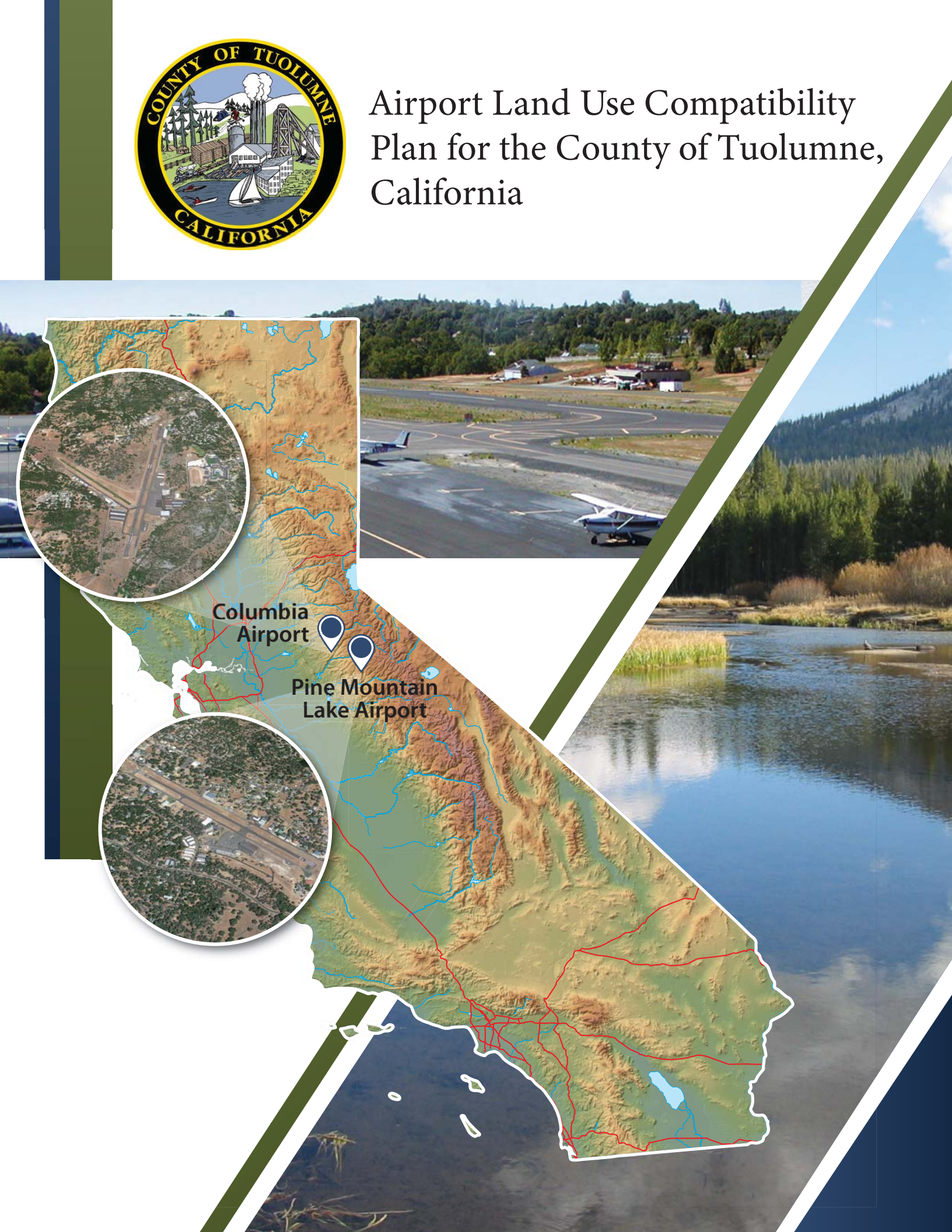


Airport Land Use Compatibility Plan for the County of Tuolumne, California



Columbia
Airport

Pine Mountain
Lake Airport





DRAFT FINAL

**AIRPORT LAND USE
COMPATIBILITY PLAN
UPDATE**

FOR

**Columbia Airport and
Pine Mountain Lake Airport**

PREPARED FOR

The County of Tuolumne, California

BY



December 2024



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CHAPTER ONE: Introduction





Chapter One

INTRODUCTION

1.1 FUNCTION AND APPLICABILITY OF THE PLAN

The basic function of this *Tuolumne County Airport Land Use Compatibility Plan* is to promote compatibility between the airports in Tuolumne County and the land uses which surround them. As adopted by the Tuolumne County Airport Land Use Commission under the authority of the *California State Aeronautics Act*, Cal, PUC §21001 et seq., the state-mandated plan serves as a tool for use by the Commission in fulfilling its duty to review airport and adjacent land development proposals. Additionally, the plan sets compatibility criteria applicable to local agencies in their preparation or amendment of land use plans and ordinances and to landowners in their design of new development.

The ALUC adopted its original compatibility plan — entitled *Airport Land Use Policy Plan for the Tuolumne County Airport Land Use Commission* — in November 1979 and updated the plan in 2003. The 2003 plan will be replaced with adoption of the new *Airport Land Use Compatibility Plan (ALUCP)* represented by this document.

This ALUCP has been prepared with reference to, and is consistent with, the guidance provided by the California Department of Transportation, Division of Aeronautics (Division) in the 2011 version of the *California Airport Land Use Planning Handbook* (Handbook) pursuant to California Public Utility Code (PUC) Sections 21674.5 and 21674.7.

The plan is primarily concerned with land uses within a roughly 2- to 3-mile vicinity of the two public-use airports in Tuolumne County: Columbia Airport and Pine Mountain Lake Airport. Certain elements of the plan, though, apply countywide to development actions which may have aviation-related compatibility implications. Details regarding the purpose and application of the Compatibility Plan are set forth in the two policy chapters which follow.

1.1.1 Geographic Scope

The geographic scope of the *Tuolumne County Airport Land Use Compatibility Plan* encompasses:

1.1.1.1 Airport Influence Area

- (a) The AIA is defined as “an area, as delineated herein, which is routinely affected by aircraft operations at an airport and within which certain land use actions are subject to ALUC review.” The AIA includes all lands on which the uses could be negatively affected by present or future aircraft operations at Columbia Airport or Pine Mountain Lake Airport, as well as lands on which the uses could negatively affect these airports.



(b) The specific limits of the influence area for each airport are depicted on **Exhibit 1A** and **Exhibit 1B**. The AIA is also reflected in the county’s zoning overlay district (:AIR or airport combining) as set forth in County of Tuolumne Municipal Code Chapter 18.24, also referred to as the Tuolumne County airport influence area ordinance.

1.1.1.2 Countywide Impacts on Flight Safety — Other lands, regardless of their location in the County, on which certain land use characteristics could adversely affect the safety of flight in the County. The specific uses of concern are identified in Policy 2.1.5.2.(c).

1.1.1.3 New Airports — The site and environs of any new airport which may be proposed anywhere in the County.

Heliports — The site and environs of any public-use or special-use heliport (as defined by the California Department of Transportation) which may exist or be proposed anywhere within Tuolumne County, including incorporated cities.

1.2 STATUTORY REQUIREMENTS

1.2.1 Powers and Duties

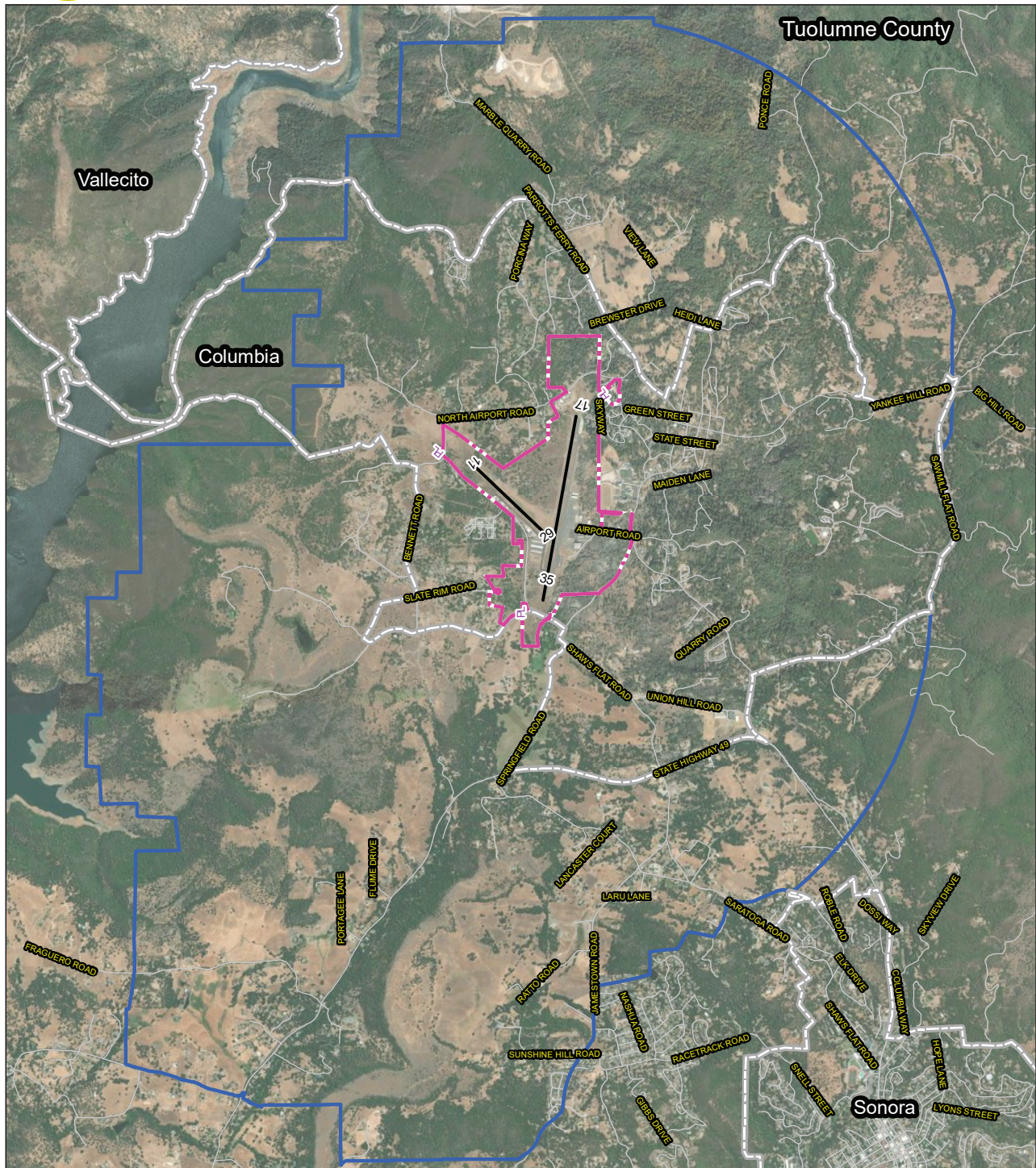
Requirements for creation of airport land use commissions (ALUCs) were first established under the California State Aeronautics Act (Public Utilities Code Sections 21670 et seq.) in 1970. Although the law has been amended numerous times since then, the fundamental purpose of ALUCs to promote land use compatibility around airports has remained unchanged. As expressed in the present statutes, this purpose is:

“...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.”






The statutes give ALUCs two principal powers by which to accomplish this objective. First, ALUCs must prepare and adopt an airport land use plan. Secondly, they must review the plans, regulations, and other actions of local agencies and airport operators for consistency with that plan.

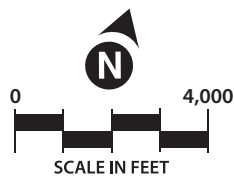
1.2.2 Limitations

Also explicit in the statutes are two limitations on the powers of ALUCs. Specifically, ALUCs have no authority over existing land uses or over the operation of airports. Neither of these terms is defined within the statutes, although the interpretation of their meaning is fairly standard throughout the state.

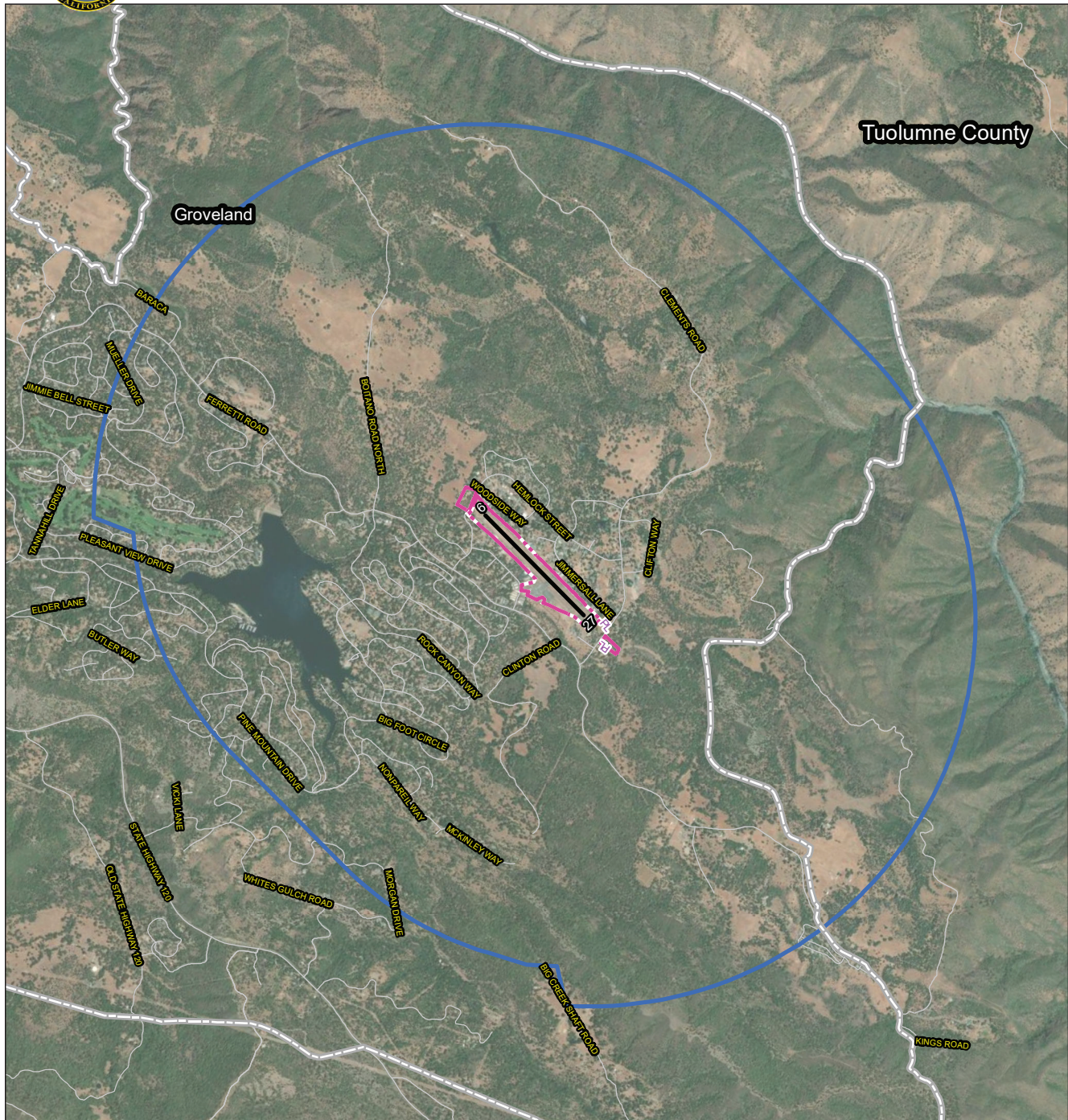







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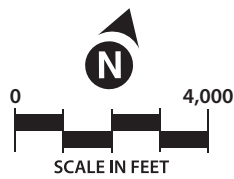
-  Airport Property Boundary
-  Runway Centerlines
-  Municipal Boundaries
-  Existing Airport Influence Area (AIA)
-  Streets



Sources: ESRI Basemap Imagery (2023), TIGER/Line, Tuolumne County Streets, Tuolumne County ALUCP Zones, Coffman Associates Analysis.



- LEGEND**
-  Airport Property Boundary
 -  Runway Centerlines
 -  Municipal Boundaries
 -  Existing Airport Influence Area (AIA)
 -  Streets



Sources: ESRI Basemap Imagery (2023), TIGER/Line, Tuolumne County Streets, Tuolumne County ALUCP Zones, Coffman Associates Analysis.



Existing Land Uses

The precise wording of the Aeronautics Act is that the authority of ALUCs extends only to land in the vicinity of airports which is “not already devoted to incompatible uses” (Section 21674 (a)). The working interpretation of this language is that ALUCs have no state-empowered authority over existing land uses. The question then becomes one of determining what conditions qualify a land use as existing.

For airport land use planning purposes, a land use can generally be considered existing once the local agency has completed all discretionary actions on the project and only ministerial approvals remain. A vacant property thus can be considered “devoted to” a particular use, even if the activity has not begun, once local government commitments along with substantial construction investments by the property owner make it infeasible for the property to be used for anything other than its proposed use. Local government commitment to a proposal can usually be considered firm once a vesting tentative map has been approved.

It is important to note here that the Tuolumne County Board of Supervisors has granted the Tuolumne County Airport Land Use Commission certain powers which are additional to the authority established by the Aeronautics Act. As discussed in the next section of this chapter, these powers concern the review of county ministerial actions on land use projects situated within the influence area of the County’s airports.

Existing land uses surrounding each airport are shown on **Exhibit 1C** for Columbia Airport and **Exhibit 1D** for Pine Mountain Lake Airport.

Operation of Airports

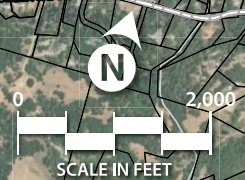
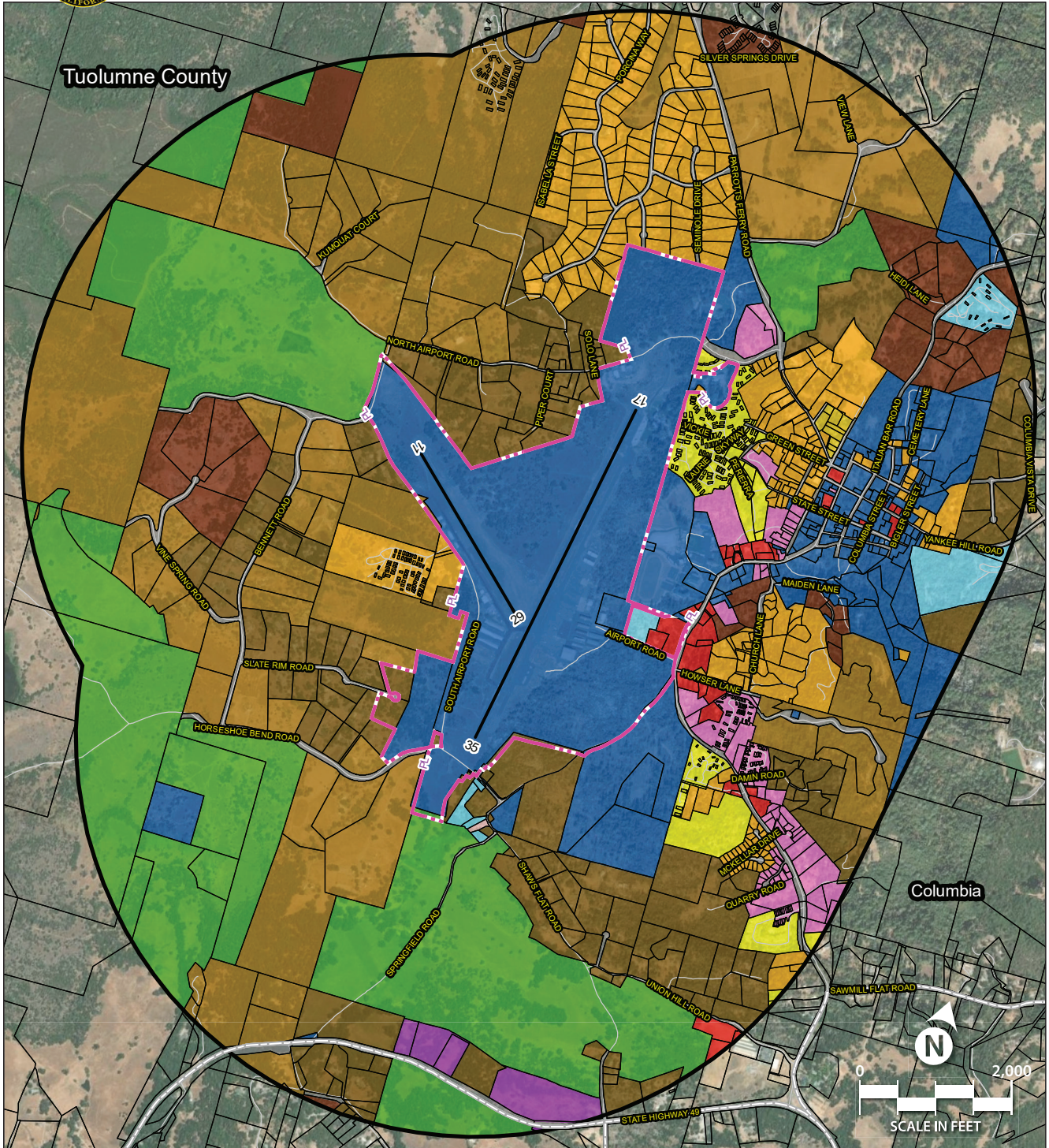
Any actions pertaining to how and where aircraft operate on the ground or in the air around an airport are clearly not within the jurisdiction of ALUCs to regulate. ALUC involvement with aircraft operations is limited to taking the operational characteristics into account in the development of land use compatibility plans. This limitation on the jurisdiction of ALUCs cannot, however, be taken to mean that they have no authority with respect to new development on airport property. Indeed, the law specifically requires ALUCs to review proposed airport master plans for consistency with the commission’s plans.

This ALUCP does not apply to any property owned by the United States government, State of California, or any Native American tribe. (Handbook 182/455)

1.3 RESPONSIBILITIES AND REQUIREMENTS

1.3.1 Tuolumne County Airport Land Use Commission

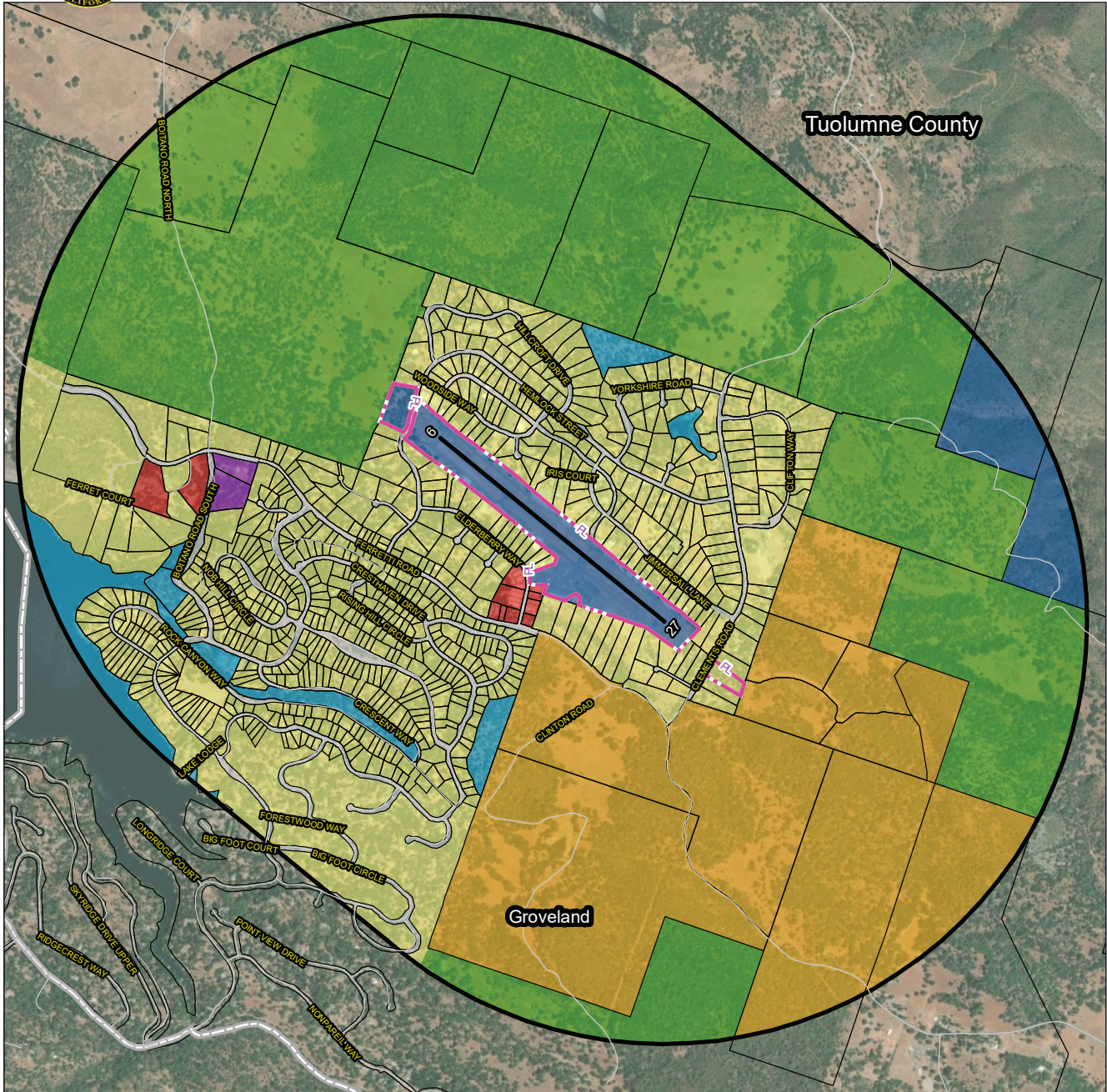
Pursuant to state law, the Tuolumne County Airport Land Use Commission was established by Tuolumne County Board of Supervisors action in May 1977. Membership on the Commission follows the standard format specified in the law:



LEGEND

- | | | | |
|---------------------------|--------------------|----------------------------|--------------------|
| Airport Property Boundary | Commercial | High Density Residential | Agriculture |
| Runway Centerlines | Special Commercial | Medium Density Residential | Parks & Open Space |
| Municipal Boundaries | Heavy Industrial | Low Density Residential | Right of Way |
| 1-Mile Runway Buffer | Light Industrial | Rural Residential | |
| Parcel Boundary | Public | Homestead Residential | |
| Streets | Mixed Use | Estate Residential | |

Sources: ESRI Basemap Imagery (2023), TIGER/Line, Tuolumne County Streets, Tuolumne County Land Use Parcels, Coffman Associates Analysis.

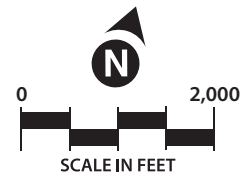


LEGEND

- Airport Property Boundary
- Runway Centerlines
- Municipal Boundaries
- 1-Mile Runway Buffer
- Parcel Boundary
- Streets

Existing Land Use

- Commercial
- Industrial
- Public Use
- Residential
- Rural Residential
- Agriculture
- Parks & Open Space
- Right of Way



Sources: ESRI Basemap Imagery (2023), TIGER/Line, Tuolumne County Streets, Tuolumne County Land Use Parcels, Coffman Associates Analysis.



- Two members appointed by the Board of Supervisors;
- Two members appointed by cities (as the only incorporated city in the County, the City of Sonora thus has two appointees);
- Two members appointed by airport managers (with the only two airports both County owned, the Airports Director appoints both); and
- A seventh member, representing the general public, who is appointed by the other six.

The Tuolumne County Community Development staff serve as the Commission Secretary, as outlined in local ordinance 18.24.055 - *Review by the airport land use commission secretary.*

Relationship of ALUC to Tuolumne County Government

The fundamental relationship between the Tuolumne County Airport Land Use Commission and Tuolumne County government is set by the State Aeronautics Act. Although the Commission functions under the general auspices of Tuolumne County government, its decision-making authority is independent of the County Board of Supervisors. The ALUC is not simply an advisory body for the Board of Supervisors in the manner that the Planning Commission is. Rather, it is more equivalent to the Tuolumne County Local Agency Formation Commission (LAFCO). Within the boundaries defined by state law, the decisions of the ALUC are final. The County has certain responsibilities regarding the implementation of this plan – or it can override ALUC actions as specified in the law – but the ALUC does not need Board of Supervisors approval in order to adopt the compatibility plan or carry out ALUC land use project review responsibilities.

1.3.2 Federal Government

The federal government, primarily through the Federal Aviation Administration (FAA), has the authority and responsibility to control aircraft operations associated with airport noise impacts through the following methods:

- **Implement and Enforce Aircraft Operational Procedures.** These include pilot responsibilities, flight restrictions and monitoring careless and reckless operation of aircraft. Where and how aircraft are operated while not on the ground at an airport is under the complete jurisdiction of the FAA.
- **Manage the Air Traffic Control System.** The FAA is responsible for the control of navigable airspace and reviews any proposed alterations in flight procedures for noise abatement based on safety of flight operations, safe and efficient use of navigable airspace, management and control of the national airspace and air traffic control systems, effects on security and national defense and compliance with applicable laws and regulations.
- **Certification of Aircraft.** The FAA requires the reduction of aircraft noise through certification, modification of engines, or aircraft replacement as defined in Code of Federal Regulations Title 14 (14 CFR) Part 36.



- **Pilot Licensing.** Individuals licensed as pilots are trained under strict guidelines concentrating on safe and courteous aircraft operating procedures, many of which are designed to lessen the effects of aircraft noise.
- **FAA Airport Compliance and Grant Assurances:** FAA Order 5190.6B, *FAA Airport Compliance Manual*, defines the airport sponsor's role with regard to land use planning and implementation actions "to reduce the effect of noise on residents of the surrounding area. Such actions include optimal site location, improvements in airport design, noise abatement ground procedures, land acquisition, and restrictions on airport use that do not unjustly discriminate against any user, impede the federal interest in safety and management of the air navigation system, or unreasonably interfere with interstate or foreign commerce." Additionally, upon receipt of FAA grant funding, the airport sponsor agrees to take appropriate action, including the adoption of zoning laws, to the extent reasonable to restrict the use of land next to or near the airport to uses that are compatible with normal airport operations in accordance with FAA Grant Assurance 21, Compatible Land Use.
- **Noise Compatibility Studies.** 14 CFR Part 150 establishes procedures and criteria for the evaluation of airport noise-related impacts. Although the FAA may provide guidance for airport land use compatibility, it has no jurisdiction over local planning decisions.
- **Airport Improvement Program (AIP) Noise Grants.** The FAA AIP funds eligible noise mitigation measures for residences within the 65 DNL and CNEL noise contours surrounding airports.

1.3.3 State of California

California state law regulates the following aspects of airport land use compatibility planning and implementation:

- **Aviation:** The *State Aeronautics Act* governs matters related to aviation in the state of California, and authorizes the California Department of Transportation, Division of Aeronautics (Division), to oversee such matters. In cooperation with, and in support of, the FAA, the Division serves as the advisor to Caltrans, ALUCs, and airport sponsors in safe aviation and land use planning.
- **Land Use:** The State of California grants the authority of land use regulation to local governments. This regulation is accomplished by use of general plans and zoning ordinances. The state has also established airport noise standards, noise insulation standards and requirements for the establishment of an ALUC. State staff may also coordinate with local agencies to encourage environmental mitigation measures intended to discourage the encroachment of incompatible land uses near airport facilities. As with the federal government, local planning decisions are at the discretion of the local jurisdiction and the state may not interfere with these decisions.
- **Real Estate Disclosure:** California State law also requires sellers of real property to disclose any facts materially affecting the value and desirability of the property. Such disclosure is required when the property is either within two miles of an airport or if it is within an Airport Influence Area (AIA). The law defines the AIA as the area where airport-related factors may significantly



affect land uses or necessitate restrictions on those uses as determined by an airport land use commission. As outlined in PUC 21675(c), the AIA is usually the planning area designated by an airport land use commission for each airport. The Airport Land Use Commission in Tuolumne County may require additional real estate disclosure by property owners who have submitted formal noise complaints to local airport operators.

- **Noise Insulation Standards:** The California Noise Insulation Standards are found in California Building Code Title 24, Chapter 12, Section 1207. These standards establish uniform minimum noise insulation performance standards to protect persons within new buildings from the effects of noise. These minimum noise insulation performance standards require that the Community Noise Equivalent Level (CNEL) shall not exceed 45 decibels (dB) in any habitable room, with all doors and windows closed.

1.3.4 City and County Governments

Cities and counties may be engaged in the national aviation system by owning and operating an airport. As airport proprietors, cities and counties have limited power to control what types of civil aircraft use the airport, or to impose curfews or other use restrictions if the airport has received federal funds. This power is limited by the rules of 14 CFR Part 161, which states that airport proprietors may not take actions that (1) impose an undue burden on interstate or foreign commerce, (2) unjustly discriminate between different categories of airport users, or (3) involve unilateral action in matters pre-empted by the federal government.

Within the limits of the law and financial feasibility, airport proprietors may mitigate noise or acquire land or partial interests in land, such as air rights, easements, and development rights, to assure the use of property for purposes which are compatible with airport operations.

Cities and counties bear responsibility for the orderly development of areas surrounding the airports within their respective jurisdiction. To achieve this goal, each jurisdiction is charged with making sure all applicable planning documents and building codes are consistent with the ALUCP or go through the overrule process as outlined in Government Code, Section 65302.3. Local jurisdictions that include territory within the AIA boundary are also obligated to bring local plans into consistency with the ALUCP and submit land use actions, such as general plan or specific plan amendments, revisions to ordinances or regulations, airport plans, and individual development projects to the ALUC for a determination of consistency under Public Utility Code (PUC) Section 21676.

1.4 PLAN IMPLEMENTATION

1.4.1 Tuolumne County General Plan Consistency

As noted above, state law requires each local agency having jurisdiction over land uses within an ALUC's planning area to modify its general plan and any affected specific plans to be consistent with the compatibility plan. The local agency must take this action within 180 days of when the ALUC adopts or



amends its plan. The only other course of action permitted for local agencies is to override the ALUC by a two-thirds vote after first holding a public hearing and making findings that the agency's plans are consistent with the intent of state law.

A general plan does not need to be identical with the ALUC plan in order to be consistent with it. To meet the consistency test, a general plan must do two things:

- It must specifically address compatibility planning issues, either directly or through reference to a zoning ordinance or other policy document; and
- It must avoid direct conflicts with compatibility planning criteria.

Community general plans often pay little attention to the noise and safety factors associated with airport land use compatibility. Also, some of the designated land uses of property near an airport frequently are contrary to good compatibility planning.

Unlike the typical circumstances, Tuolumne County took special effort to make its General Plan, adopted in December 1996, consistent with the ALUC's Airport Land Use Policy Plan. The General Plan has since been updated and adopted as of January 2019. General plan designations for land uses surrounding each airport are shown on **Exhibit 1E** for Columbia Airport and **Exhibit 1F** for Pine Mountain Lake Airport. Consistency between the 2018 General Plan and this ALUCP is addressed in the following goals and policies:

- Goal 1B: Minimize conflicts between incompatible land uses.

Policy 1.B.e: Designate land around the County's airports for uses that are consistent with the Tuolumne County Airport Land Use Compatibility Plan and airport master plans.

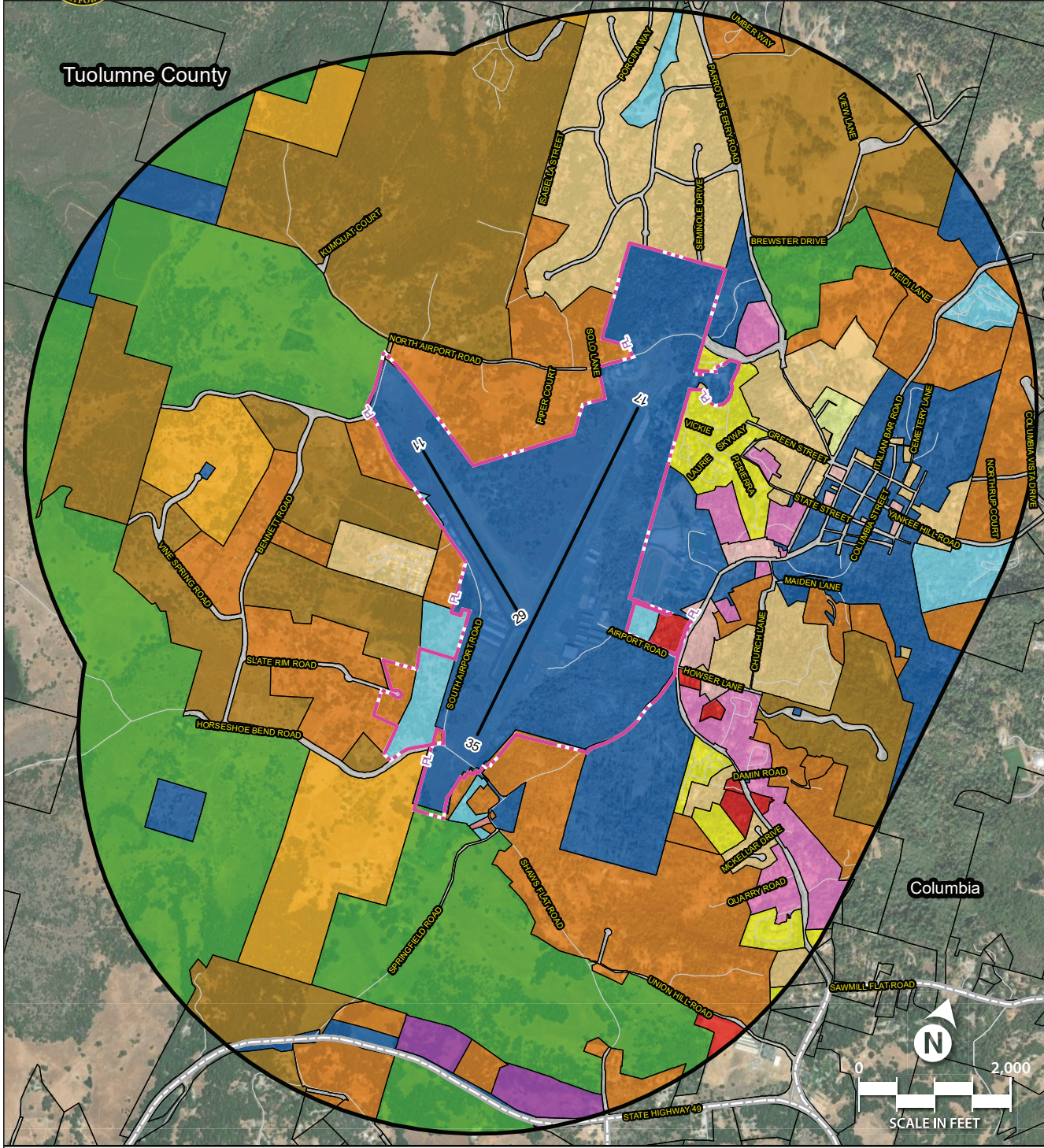
- Goal 4E: Maintain the viability and future accessibility of the airports and promote the planned development of aviation facilities to meet the general aviation and emergency transportation needs within Tuolumne County.

Policy 4.F.c: Seek funding to allow the Airport Land Use Commission to update the Airport Land Use Compatibility Plan periodically to ensure that land use decisions affecting property in the vicinity of the County airports are consistent with the continued safe operation of the airports.

Policy 4.F.e: Review General Plan Amendments, Zone Changes, and development applications within the referral area of a County airport for consistency with the Airport Land Use Compatibility Plan in order to continue safe operation of the airports.

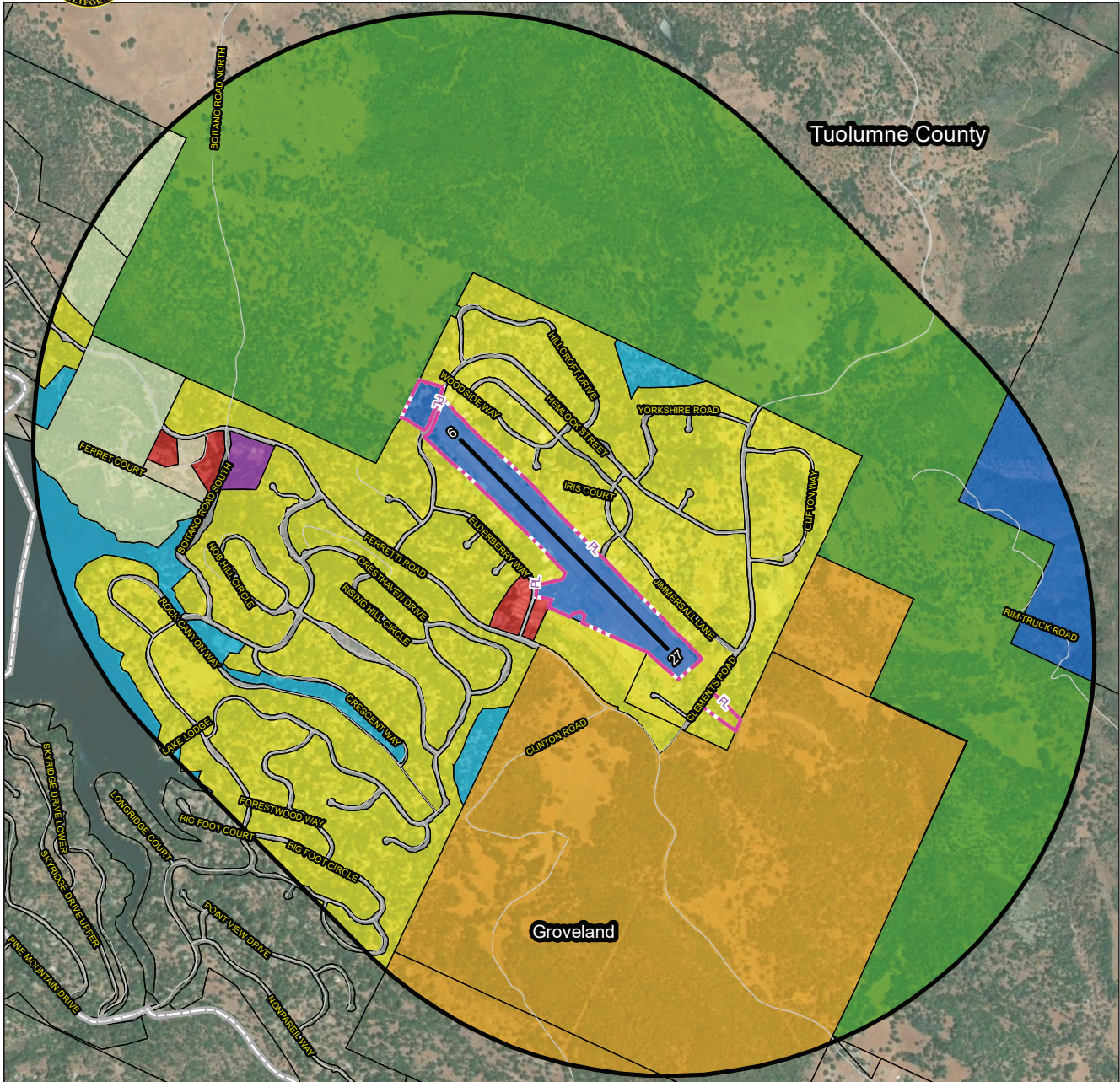
- Goal 5A: Protect the economic base of Tuolumne County and preserve the tranquility of residential areas by minimizing potential conflicts between transportation and stationary noise sources and noise sensitive land uses.

Policy 5.A.4: Require new development located within the Noise Impact Area diagrams identified by the Tuolumne County Airport Land Use Compatibility Plan to be located and designed so that it will not be affected by noise levels exceeding the standards within the Airport Land Use Compatibility Plan.



LEGEND		General Plan Parcels					
	Airport Property Boundary		Commercial		High Density Residential		Agricultural
	Runway Centerlines		Special Commercial		Medium Density Residential		Parks & Open Space
	Municipal Boundaries		Neighborhood Commercial		Low Density Residential		Right of Way
	1-Mile Runway Buffer		Heavy Industrial		Large Lot Residential		
	Parcel Boundary		Light Industrial		Homestead Residential		
	Streets		Public		Rural Residential		
			Mixed Use				

Sources: ESRI Basemap Imagery (2023), TIGER/Line, Tuolumne County Streets, Tuolumne County General Plan Parcels. Coffman Associates Analysis.

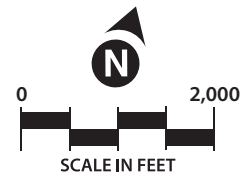


LEGEND

- Airport Property Boundary
- Runway Centerline
- 1-Mile Runway Buffer
- Municipal Boundaries
- Parcel Boundary
- Streets

General Plan Parcels

- Commercial
- Light Industrial
- Public
- High Density Residential
- Homestead Residential
- Estate Residential
- Rural Residential
- Agricultural
- Parks & Open Space
- Right of Way



Sources: ESRI Basemap Imagery (2023), TIGER/Line, Tuolumne County Streets, Tuolumne County General Plan Parcels. Coffman Associates Analysis.



The ALUC reviewed the draft General Plan and provided recommendations during their meeting on November 8, 2018, prior to its adoption by the Board of Supervisors. The ALUC found the plan text as well as the land use maps for the Columbia and Pine Mountain Lake/Groveland areas to be consistent with the Airport Land Use Policy Plan.

1.4.2 Tuolumne County Ordinances

Zoning Ordinance

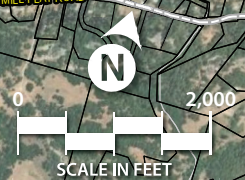
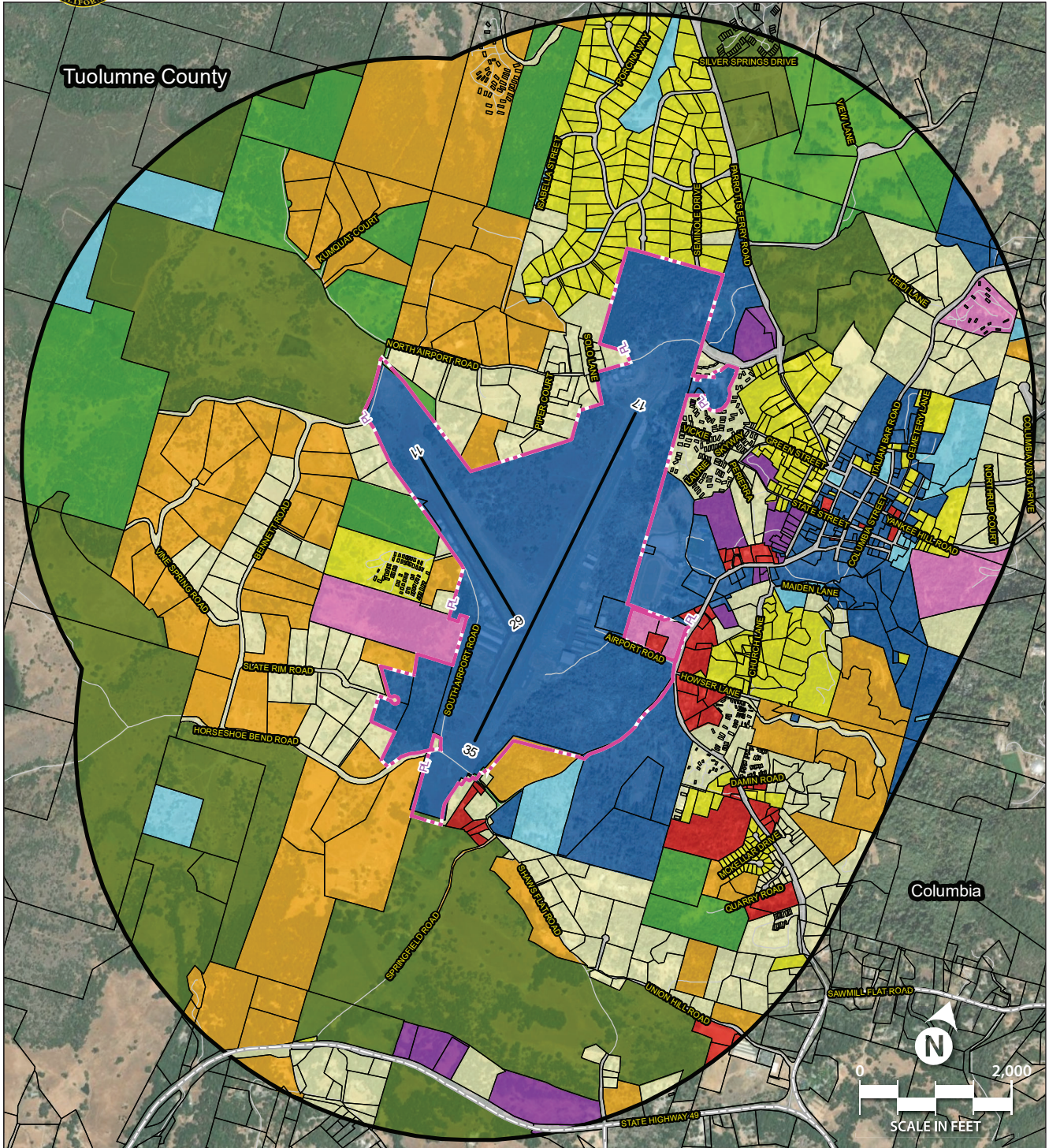
Zoning designations for land uses surrounding each airport are shown on **Exhibit 1G** for Columbia Airport and **Exhibit 1H** for Pine Mountain Lake Airport. State law requires a community's zoning ordinance to be consistent with its general plan, which in turn should mean that the zoning ordinance is consistent with the ALUC plan. Nevertheless, because a zoning ordinance normally contains more detailed land use development standards than are presented in a general plan, conflicts with an ALUC plan can sometimes occur.

In addition to the land use zoning ordinance, Tuolumne County has adopted an *Airport Zoning Ordinance* (Chapter 18.28 of the *Tuolumne County Ordinance Code*) applicable to areas around the Columbia and Pine Mountain Lake airports. This ordinance limits the height of structures and trees within each airport's airspace. Additionally, California Public Utilities Code § 21659, requires a permit from the Department of Transportation or a determination of no hazard to air navigation from the FAA for any persons allowing natural growth at a height that exceeds the FAA Part 77 surface of the airport. These ordinances will be reviewed and amended as necessary for consistency with the *Compatibility Plan* and to reflect the current configuration of the airport runways and instrument approach procedures.

Airport Combining Zone Concept

One mechanism sometimes used by local jurisdictions to implement various airport land use compatibility criteria and review procedures is to adopt an airport combining zone ordinance. A combining zone serves as an overlay of standard community-wide land use zones and modifies or limits the uses permitted by the underlying zone. Flood hazard combining zoning is a common example. An airport combining zone ordinance can serve as a convenient means of bringing various airport compatibility criteria into one place.

The Tuolumne County *Airport Referral Area Ordinance* together with the *Airport Zoning Ordinance* function in some ways as part of an airport combining zone ordinance. Components necessary to implement ALUC plan policies — such as structural sound attenuation requirements and provisions for a buyer awareness program, for example — have been added since the prior version of this ALUCP was adopted, and can be found in Chapter 17.29 - Airport Combining District, or (:AIR) District, Ordinance 17.49.090 (Noise) and Ordinance 17.49.100 (Deed Notice), respectively.



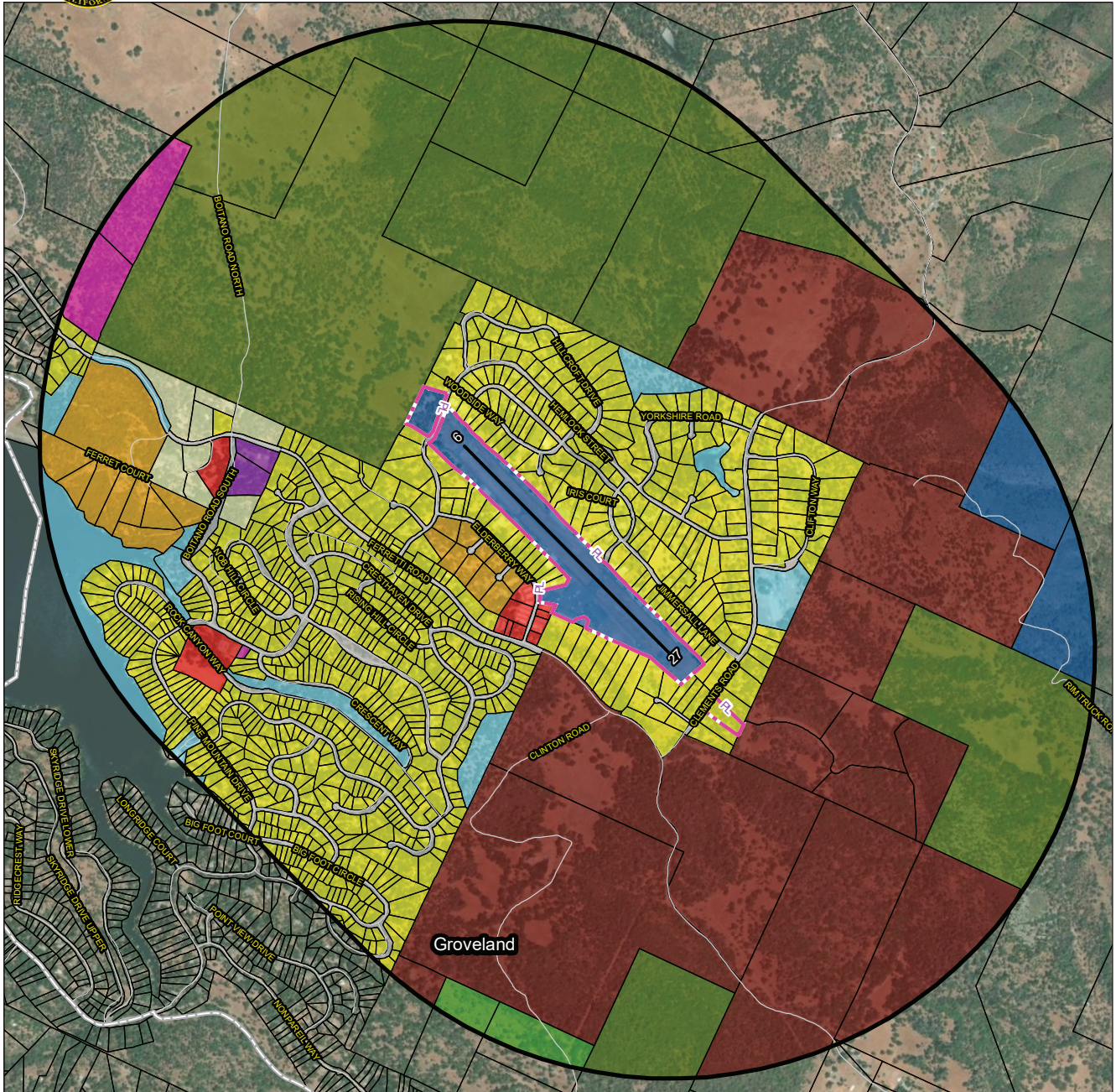
LEGEND

- Airport Property Boundary
- Runway Centerlines
- Municipal Boundaries
- 1-Mile Runway Buffer
- Parcel Boundary
- Streets

Zoning Parcels

- Commercial
- Industrial
- Public
- Mixed Use
- High Density Residential
- Medium Density Residential
- Low Density Residential
- Agriculture
- Exclusive Agriculture
- Parks & Open Space
- Right of Way

Sources: ESRI Basemap Imagery (2023),
 TIGER/Line, Tuolumne County Streets,
 Tuolumne County Zoning Parcels.
 Coffman Associates Analysis.



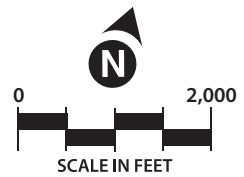
LEGEND

- Airport Property Boundary
- Runway Centerline
- 1-Mile Runway Buffer
- Municipal Boundaries
- Parcel Boundary
- Streets

Zoning Parcels

- Commercial
- Light Industrial
- Public
- Mixed Use
- High Density Residential
- Medium Density Residential
- Low Density Residential
- Rural Residential & Agriculture
- Agriculture

- Exclusive Agriculture
- Parks & Open Space
- Right of Way



Sources: ESRI Basemap Imagery (2023), TIGER/Line, Tuolumne County Streets, Tuolumne County Zoning Parcels, Coffman Associates Analysis.



1.4.3 Other Jurisdictions

There presently is no overlap between the airport referral area boundaries defined by the 1977 *Policy Plan*, as amended, and the boundaries of the City of Sonora, Tuolumne County's only incorporated city. The Sonora city sphere of influence extends into the airport referral area, but land use decisions in this area are made by the County. Consequently, the *Policy Plan* only affects County actions. As referenced in Section 1.3.1, two members of the ALUC are appointed by cities. As the only incorporated city in the County, the City of Sonora currently has two appointees on the ALUC.

These conditions remain the same with respect to the new *Compatibility Plan*. Nevertheless, the new plan accounts for the possibility that the City of Sonora could expand toward the Columbia Airport or perhaps that another city could be incorporated near one of the airports. In such circumstances, the requirement for that jurisdiction to make its general plan consistent with the *Compatibility Plan* would come into effect. Also, most of the *Compatibility Plan* policies set forth in Chapters 2 and 3 would become applicable to the affected city.

1.4.4 ALUCP Amendments

Major amendments to the compatibility plan (revising the policies in a manner that would change their applicability to a public agency, adding new policies, or revising maps) cannot be done more than once per calendar year.¹ Minor amendments (addressing grammatical, typographical, or minor technical errors that do not affect policies or the manner in which those policies are applied) can be done as often as needed.² An ALUCP amendment may address any issue deemed appropriate by the ALUC. State law also requires that the ALUC review updates to airport master plans, airport layout plans, and proposals for airport expansion.³ The ALUCP must be amended, as needed, to reflect updates and revisions to airport plans, such as the 2019 Airport Layout Plan Update and Master Plan for Columbia Airport.

1.5 PLAN CONTENTS

The most important components of this plan are found in Chapters 2 and 3. Chapter 2 presents airport compatibility and review policies applicable Countywide. Chapter 3 contains the compatibility map for each airport together with individual policies and some explanatory notes for that airport.

The remainder of the document constitutes supporting material. Chapters 4 and 5 contain background information regarding Columbia Airport and Pine Mountain Lake Airport, respectively. The appendices provide other information related to airport land use planning in general and the Airport Land Use Commission in particular.

¹ California Public Utilities Code §21675(a).

² California Department of Transportation, Division of Aeronautics, *California Airport Land Use Planning Handbook*, October 2011, § 2.4.2 ALUCP Amendments.

³ California Public Utilities Code §§21674(d), 21676(c).



CHAPTER TWO: Countywide Policies





Chapter Two

COUNTYWIDE POLICIES

2.1 GENERAL APPLICABILITY

2.1.1 Purpose

The purpose of this Tuolumne County Airport Land Use Compatibility Plan is to establish procedures and criteria by which, in accordance with the California State Aeronautics Act:

2.1.1.1 *Tuolumne County Airport Land Use Commission (ALUC)*

- (a) Can review proposed land use development in Tuolumne County for compatibility with airport activity.
- (b) Can review certain types of airport development proposals which are also subject to ALUC review and are addressed by the Plan.

2.1.1.2 *County of Tuolumne (and any other jurisdiction which may be affected)*

- (a) Can refer specified land use proposals (formal or informal) to the ALUC for review.
- (b) Can make its General Plan and zoning ordinance consistent with the Commission's Compatibility Plan.
- (c) Can make other planning decisions regarding the lands impacted by airport operations.

2.1.2 Definitions

The following definitions apply for the purposes of the policies set forth in this document (additional terms are defined in the *Glossary*):

2.1.2.1 *Aeronautics Act* — Except as indicated otherwise, the article of the California Public Utilities Code (Sections 21670 et seq.) pertaining to airport land use commissions.

2.1.2.2 *Airport* — The Columbia Airport, Pine Mountain Lake Airport, or any other new public-use airport which might be created within the boundaries of Tuolumne County.

2.1.2.3 *Airport Influence Area* — An area, as delineated herein, which is routinely affected by aircraft operations at an airport and within which certain land use actions are subject to ALUC review.

2.1.2.4 *Airport Land Use Commission (ALUC)* — The Tuolumne County Airport Land Use Commission.



- 2.1.2.5** *Avigation Easement* — An easement which conveys rights associated with aircraft overflight of a property, including creation of noise, limits on the height of structures and trees, etc. (see *Glossary*). There are currently three Avigation Easements recorded for Columbia Airport and two Avigation Easements recorded for Pine Mountain Lake Airport, according to the most recent Airport Layout Plan for each airport.
- 2.1.2.6** *Code of Federal Regulations (CFR) - 14 CFR Part 77* — The part of Federal Aviation Regulations which deal with objects affecting navigable airspace in the vicinity of airports. Objects which exceed the Part 77 height limits constitute airspace obstructions.
- 2.1.2.7** *Community Noise Equivalent Level (CNEL)* — The noise metric adopted by the State of California for evaluating airport noise impacts. The noise impacts are typically depicted by a set of contours, each of which represents points having the same CNEL value. California Building Code § 1206.4 stipulates that interior noise levels attributable to exterior sources shall not exceed 45 dB CNEL in any habitable room.
- 2.1.2.8** *Compatibility Plan* — This document, *Tuolumne County Airport Land Use Compatibility Plan*.
- 2.1.2.9** *Compatibility Zone* — Any of the zones set forth herein for the purposes of assessing land use compatibility within the airport influence area.
- 2.1.2.10** *Critical Height Zone* — Locations in the vicinity of an airport which: lie above the surfaces defined by 14 CFR Part 77; and are situated either on points of high terrain (ridge lines or hill tops) or within 50 feet below such points.
- 2.1.2.11** *Deed Notice* — A formal statement added to the legal description of a deed to a property and on any land division map. As proposed in this Plan, it is a notice that property is within an Airport Influence Area Boundary. The notice is recorded and intended as a disclosure of certain airport proximity conditions that may or may not exist on any specific property, at present or in the future. The notice also informs property owners that their property is subject to certain land use measures that may affect future development and the permissible height of vegetation on the property.
- 2.1.2.12** *Existing Land Use* — A land use which either physically exists or for which local government commitments to the proposal have been obtained; that is, no further discretionary approvals are necessary. Local government commitment to a proposal can usually be considered firm once one or more of the following have occurred:
 - (a) A tentative parcel or subdivision map has been approved and the original period (before any time extensions are submitted) within which the approval is valid has not expired;
 - (b) A vesting tentative parcel or subdivision map has been approved;
 - (c) A development agreement has been executed and remains in effect;
 - (d) A final land division map has been recorded;
 - (e) A use permit or other discretionary entitlement has been approved and not yet expired.



A discretionary land use that has been discontinued for more than 18 months is not considered an existing use. A discretionary land use may be re-established prior to 18 months (as determined by the local agency) following initial discontinuance without being subject to consistency review.

- 2.1.2.13** *Height Caution Zone* — Areas of land in the vicinity of an airport where the ground lies above a 14 CFR Part 77 surface or within 50 feet beneath such surface, but excluding locations within the *Critical Height Zone*.
- 2.1.2.14** *Heliport* — A helicopter landing facility for which a Heliport Permit is required from the California Department of Transportation. Public-use and special-use heliports (including those at hospitals) are included within this definition, but helipads located on an airport are excluded.
- 2.1.2.15** *Infill* — Development of vacant or underutilized land within areas which are already largely developed or are used more intensively. See Policy 2.2.4.3.(a) for criteria used to identify infill areas for the purposes of the *Compatibility Plan*.
- 2.1.2.16** *Local Jurisdiction* — The County of Tuolumne or any city or other government agency (except agencies of the state or federal government) having jurisdiction over land uses within their boundaries.
- 2.1.2.17** *Major Land Use Action* — Actions related to proposed land uses for which compatibility with airport activity is a particular concern. These types of actions are listed in Policy 2.1.4.2.
- 2.1.2.18** *Nonconforming Use* — A land use which does not comply with a current land use plan or zoning ordinance, but which was legally permitted at the time the plan or ordinance was adopted.
- 2.1.2.19** *Project; Land Use Action; Development Proposal* — Terms similar in meaning and all referring to the types of land use matters which are subject to review by the Airport Land Use Commission (either publicly or privately sponsored).

2.1.3 Types of Airport Impacts

- 2.1.3.1** *Principal Compatibility Concerns* — The Commission is concerned only with the potential impacts related to:
 - (a) Exposure to aircraft noise;
 - (b) Land use safety with respect both to people on the ground and the occupants of aircraft;
 - (c) Protection of airport airspace; and
 - (d) General concerns related to aircraft overflights.



2.1.3.2 *Other Airport Impacts* — Other impacts sometimes created by airports (e.g., air pollution, automobile traffic, etc.) are not addressed by these compatibility policies and are not subject to review by the Airport Land Use Commission.

2.1.4 Types of Actions Reviewed

2.1.4.1 *Actions Which Always Require ALUC Review* — As required by state law, the following types of actions shall be referred to the Airport Land Use Commission for determination of consistency with the Commission’s *Plan* prior to their approval by the local jurisdiction:

- (a) The adoption or approval of any amendment to a general or specific plan affecting the property within an airport influence area (State Aeronautics Act Section 21676 (b)).
- (b) The adoption or approval of a zoning ordinance or building regulation which (1) affects property within an airport influence area and (2) involves the types of airport impact concerns listed in Section 2.1.4 (State Aeronautics Act Section 21676 (b)).
- (c) Adoption or modification of the master plan for an existing public-use airport (State Aeronautics Act Section 21676 (c)).
- (d) Any proposal for expansion of an existing airport or heliport if such expansion will require an amended airport permit from the state of California (State Aeronautics Act Section 21664.5).
- (e) Any proposal for a new airport or heliport whether for public use or private use (State Aeronautics Act Section 21661.5) if the facility requires a state airport permit.

2.1.4.2 *Other Tuolumne County Actions Requiring ALUC Review* — The “Tuolumne County Airport Referral Area Ordinance” (Chapter 18.24 of the Tuolumne County Code) currently requires that all applications for any type of permit or other County action affecting land or improvements within an airport influence area be submitted to the ALUC for review prior to County approval. Only those actions which the ALUC elects not to review listed in Section 2.1.4.6 are exempt from this requirement. In addition to those actions (listed in Policy 2.1.4.1.) for which ALUC review is required, the ALUC policy shall be to review the following types of *major land use actions* within Tuolumne County jurisdiction:

- (a) Within all compatibility zones:
 - (1) Any project requiring a general plan, specific plan, or zoning ordinance amendment.
 - (2) Discretionary entitlements for proposed residential development, including land divisions, consisting of five or more dwelling units or parcels.
 - (3) Discretionary entitlements for any major development proposal, except those found exempt from the California Environmental Quality Act (CEQA) which are presumed not to have airport land use impacts.
 - (4) Major capital improvements (e.g., water, sewer, or roads) which would promote urban uses in undeveloped or agricultural areas.
 - (5) Proposed land acquisition by a government entity for any facility accommodating a congregation of people (for example, a school or hospital).



- (6) Proposals for new development (including buildings, antennas, other structures, and trees) situated within a *Critical Height Zone*.¹
 - (7) Proposals for new development (including buildings, antennas, other structures, and trees) more than 50 feet tall located within a *Height Caution Zone*.¹
 - (8) Proposals for new development (including buildings, antennas, other structures, and trees) within the *Caution Area*, which includes parcels with ground elevations between 100 feet below and 100 ft above runway end elevation.
 - (9) Any project having the potential to create electrical or visual hazards to aircraft in flight, including:
 - Electrical interference with radio communications or navigational signals;
 - Lighting which could be mistaken for airport lighting;
 - Glare in the eyes of pilots of aircraft using the airport; and
 - Impaired visibility near the airport.
 - (10) Projects having the potential to attract birds to the vicinity of an airport.
 - (11) Any projects initially reviewed by the ALUC secretary and judged to be inconsistent with compatibility policies set forth in the *Compatibility Plan*.
- (b) Within *Zone A* or *Zone B1*, in addition to the actions listed in Policy 2.1.4.2.(a):
- (1) Any other land development application off airport property, including projects for which a ministerial permit, such as a building permit, is the only approval action required.
- (c) Other:
- (1) Regardless of location within Tuolumne County, any discretionary entitlement proposal for construction or alteration of a structure (including antennas) taller than 75 feet above the ground level at the site. (Any structures taller than 200 feet also require notification to the Federal Aviation Administration in accordance with Section 77.13(a)(1) of the Federal Aviation Regulations.)
 - (2) Any other proposed land use action, as determined by the Tuolumne County Community Development Department, involving potential conflicts with airport activities.

2.1.4.3 *Tuolumne County Actions Requiring Review by the ALUC Secretary* — For all other Tuolumne County land use actions affecting an airport influence area, the ALUC policy shall be to refer review responsibility to the Commission Secretary. The Secretary can make a compatibility determination regarding these land use actions on behalf of the Commission or may refer the matter to the Commission for decision. Such actions include, but are not limited to, the following:

¹ California Public Utilities Code § 21659 does not allow persons to permit any growth to grow at a height which exceeds the obstruction standards set forth in Title 14 of the Code of Federal Regulations, Part 77, Subpart C, without a permit or FAA determination that the growth does not constitute a hazard to air navigation or would not create and unsafe condition for air navigation.



- (a) Building permit applications for projects on sites located within *Zone B2* as defined by the Columbia and Pine Mountain Lake Airport Compatibility Maps, except sites lying within a *Critical Height Zone* as defined in Policy 2.1.2.11.
- (b) All projects on sites located within *Zone C* or *Zone D*, except those projects listed in Policy 2.1.4.2.
- (c) Projects on sites within the Limited Review Area, which have ground elevations 100 feet or more below the runway end elevation.
- (d) Projects which exceed the height limits established under the County Airport Zoning Ordinance, when a variance to the height limits has been previously considered by the Airport Land Use Commission for the project site, and the height of the project is the same as the previously considered variance height.
- (e) Other land use actions referred from the Tuolumne County Community Development Department to the ALUC Secretary for land use compatibility review, but not included in the lists of required ALUC reviews (Policy 2.1.4.1.) or major actions (Policy 2.1.4.2.) — for example, a preapplication checklist. However, any proposals judged by the secretary to be inconsistent or of questionable consistency with ALUC compatibility policies shall be submitted to the Commission for review and final decision.
- (f) Applications for towers within the AIA outside of Zones A-D, which may require an ordinance code change.

2.1.4.4 *ALUC Review of Proposed City Expansion or Incorporation* — As of the adoption date of this *Airport Land Use Compatibility Plan*, the Columbia and Pine Mountain Lake airport influence areas defined herein do not encompass land within the incorporated boundaries or sphere of influence of any incorporated city. However, if a proposal to establish or expand the boundaries of a city or its sphere of influence should come before the Tuolumne County Local Agency Formation Commission (LAFCO) for consideration, the ALUC shall review and comment upon the proposal with regard to its potential effect on airports.

2.1.4.5 *ALUC Review of City Actions* — For any portion of a city which may extend inside the influence area of the Columbia or Pine Mountain Lake airports or a future airport, the ALUC shall have the following review authority:

- (a) The city shall submit to the Commission those actions, as listed in Policy 2.1.4.1., for which ALUC review is mandatory in accordance with state law.
- (b) Until such time as (1) the Commission finds that a city general plan or specific plan is consistent with the *Airport Land Use Compatibility Plan*, or (2) the city has overruled the Commission's determination of inconsistency, the city shall refer all actions, regulations, and permits involving the airport area of influence to the Commission for review (State Aeronautics Act Section 21676.5 (a)). For the purposes of this section, such actions shall be deemed to include all major land use actions listed in Policy 2.1.4.2.



- (c) After a city has revised its general plan or specific plan or has overruled the Commission, the Commission no longer has the authority to require that all actions, regulations, and permits be referred for review. However, the Commission and the local agency can agree that the Commission should continue to review individual projects in an advisory capacity. The types of land use actions which the Commission requests local agencies to continue to submit are those major actions listed in Policy 2.1.4.2.

2.1.4.6 *Actions Not Reviewed* — The following types of land use actions need not be referred to the Airport Land Use Commission or ALUC secretary:

- (a) Subsequent phases of projects which have previously been reviewed by the ALUC and for which all land use compatibility conditions have been met and no new issues have arisen (for example, a building permit on a project for which a land division has previously been reviewed and determined consistent).
- (b) Minor changes to a project provided that such changes do not require new County approval of revisions to discretionary entitlements, and do not modify the height of the structure.
- (c) City of Sonora land use actions not covered under Policies 2.1.4.1. or 2.1.4.2.

2.2 REVIEW OF LAND USE ACTIONS

2.2.1 General

2.2.1.1 *Timing of Project Submittal* — Proposed actions listed in Policy 2.4.1.1 must be submitted to the Commission for review prior to approval by the local government entity. All projects should be referred to the Commission at the earliest reasonable point in time so that the Commission’s review (or ALUC Secretary’s) can be duly considered by the local jurisdiction prior to formalizing its actions.

2.2.1.2 *Public Input* — Before acting on any plan, regulation, or other land use proposal under consideration, the Commission shall provide public notice and obtain public input where applicable (State Aeronautics Act Section 21675.2 (d))

2.2.2 Review Process for Community Land Use Plans and Ordinances

2.2.2.1 *Initial ALUC Review of General Plan Consistency* — In conjunction with adoption of this Airport Land Use Compatibility Plan, the Commission shall review the general plans and specific plans of affected local jurisdictions to determine their consistency with the Commission’s policies as outlined in Section 2.2.4 and Section 2.4.



- (a) Within 180 days of the Commission’s adoption or amendment of the Airport Land Use Compatibility Plan, each local agency must amend its general plan and any applicable specific plan to be consistent with the Commission’s Plan or, alternatively, adopt findings and override the Commission in accordance with Section 21676 of the Public Utilities Code (Government Code Section 65302.3).
- (b) To facilitate this process, the local agency should submit a draft of the proposed amendment to the Commission for comment prior to taking action on the proposal. ALUC staff will request a proposed draft general plan and specific plan amendments from all affected jurisdictions following adoption or amendment of the Airport Land Use Compatibility Plan.
- (c) In conjunction with its submittal of a general plan or specific plan amendment to the ALUC, a local agency may request that the Commission modify the areas defined as “infill” in accordance with Policy 2.2.4.3.(a). The Commission will include a determination on the infill as part of its action on the consistency of the general and specific plans.

2.2.2.2 *Subsequent Reviews of Community Land Use Plans and Ordinances* — As indicated in Policies 2.14.1.(a) and 2.1.4.1.(b), prior to taking action on an amendment of a general plan or specific plan or the addition or approval of a zoning ordinance or building regulation affecting an airport influence area as defined herein, local agencies must submit the proposed plan, ordinance, or regulation to the Commission for review.

2.2.2.3 *Commission Action Choices* — When reviewing a general plan, specific plan, zoning ordinance, or building regulation for consistency with the *Compatibility Plan*, the Airport Land Use Commission has three choices of action:

- (a) Find the plan, ordinance, or regulation consistent with the *Compatibility Plan*.
- (b) Find the plan, ordinance, or regulation consistent with the *Compatibility Plan*, subject to modifications which the Commission may specify.
- (c) Find the plan, ordinance, or regulation inconsistent with the *Compatibility Plan*. In making a finding of inconsistency, the Commission may note the conditions under which the plan, ordinance, or regulation would be consistent with the *Compatibility Plan*.

2.2.2.4 *Response Time* — The Airport Land Use Commission or ALUC Secretary must respond to a local agency’s request for a consistency determination on a general plan, specific plan, zoning ordinance, or building regulation within 60 days of referral (State Aeronautics Act Section 21676 (d)).

- (a) If the Commission fails to make the determination within that period, the proposed action shall be deemed consistent with the *Compatibility Plan*.
- (b) Regardless of Commission action or failure to act, the proposed action must comply with other applicable local, state, and federal regulations and laws.
- (c) The referring agency shall be notified of the Commission’s action in writing.



2.2.3 Review Process for Major Land Use Actions

2.2.3.1 *Project Submittal Information* — A proposed land use action, submitted to the Commission or ALUC Secretary for review shall include the following information:

- (a) The type of land use action being sought from the local jurisdiction (e.g., zoning change, building permit, etc.).
- (b) Property location data (assessor's parcel number, street address, subdivision lot number).
- (c) A legible, accurately scaled map showing the relationship of the project site to the airport boundary and runways.
- (d) A description of existing and proposed land uses.
- (e) For residential uses, an indication of the potential or proposed number of dwelling units per acre (including any secondary units on a parcel); or, for nonresidential uses, the number of people potentially occupying the total site or portions thereof at any one time
- (f) If applicable, a detailed site plan showing ground elevations, the location of structures, open spaces, and water bodies, and the heights of structures and trees.
- (g) Identification of any characteristics which could create electrical interference, confusing lights, glare, smoke, or other electrical or visual hazards to aircraft flight.
- (h) An environmental document, if one has been prepared and it addresses airport compatibility issues.
- (i) Other relevant information which the Commission or its staff determine to be necessary to enable a comprehensive review of the proposal.

2.2.3.2 *ALUC Secretary's Choices* — When reviewing land use actions in accordance with Policy 2.1.4.3., the ALUC Secretary has two choices of action:

- (a) Find that the proposed project does not contain characteristics likely to result in inconsistencies with the compatibility criteria set forth in this plan. The Secretary is authorized to make a consistency determination for such projects on behalf of the Commission.
- (b) Find that the proposed project may be inconsistent with the *Compatibility Plan*. The Secretary shall forward any such project to the Commission for a consistency determination.

2.2.3.3 *Commission Action Choices* — When reviewing a land use project proposal, the Airport Land Use Commission has three choices of action:

- (a) Find the project consistent with the *Compatibility Plan*.
- (b) Find the project consistent with the *Compatibility Plan*, subject to compliance with such conditions as the Commission may specify. Any such conditions should be limited in scope and described in a manner which allows compliance to be clearly assessed (e.g., the height of a structure).



- (c) Find the project inconsistent with the *Compatibility Plan*. In making a finding of inconsistency, the Commission may note the conditions under which the project would be consistent with the *Plan*.

2.2.3.4 *Consistency Review Timeframe*

ALUC staff must respond to a local agency's request for consistency determination within 30 calendar days after the application is deemed complete by ALUC staff.

The 30-calendar day review period may be extended if the local agency or applicant agrees in writing or verbally consents at a county planning meeting.

2.2.3.5 *Response Time* — State law does not set a time limit for airport land use commissions to review land use actions other than amendment of a general plan or specific plan or the addition or approval of a zoning ordinance or building regulation. Nevertheless, the policy of the Tuolumne County Airport Land Use Commission is that:

- (a) The ALUC Secretary will determine if the referral application is complete and will notify the applicant of completeness in writing within 30 calendar days after receipt of an application. If the application for consistency determination is incomplete, ALUC staff will identify the information required to complete the application and will inform the local agency. If additional information is required, a new 15 calendar day review period begins after the additional information is received by ALUC staff. All information necessary for review of the project (as listed in Policy 2.2.3.1.) must accompany the referral. If ALUC staff do not make a written determination of completeness within 30 calendar days after receipt of an application for consistency determination, the application is considered complete.
- (b) The ALUC Secretary must respond to an applicant or local agency's request for consistency determination within 14 calendar days after the application is deemed complete.

Reviews by the ALUC Secretary shall be completed within 30 days of the date that the application is deemed complete. The 30 calendar day review period may be extended if the local agency or applicant agrees in writing or verbally consents at a county planning meeting.

- (c) Reviews of projects forwarded to the Commission for a consistency determination shall be completed within 60 days of the date of project referral by the ALUC Secretary to the Commission.
- (d) If the ALUC Secretary or the Commission fails to make a determination within the above time periods, the proposed action shall be deemed consistent with the *Compatibility Plan*.
- (e) Regardless of action or failure to act on the part of the ALUC Secretary or the Commission, the proposed action still must comply with other applicable local, state, and federal regulations and laws.
- (f) The project applicant or local jurisdiction shall be notified of the ALUC Secretary's or the Commission's action in writing.



- 2.2.3.6** *Subsequent Review* — Once a project has been found consistent with the *Compatibility Plan*, it need not be referred for review at subsequent stages of the planning process (e.g., for a zone change after a General Plan Amendment has been reviewed) unless:
- (a) Insufficient information was available at the time of the ALUC’s original review of the project to assess whether the proposal would be fully in compliance with compatibility criteria (e.g., the site layout and structure height might not be known at the time a general plan amendment or zone change is requested).
 - (b) The design of the project subsequently changes in a manner which could raise questions as to the validity of a previous finding of compatibility as determined by the Airport Land Use Commission Secretary.
 - (c) The local jurisdiction concludes that further review is warranted.

2.2.4 Review Criteria for Land Use Actions

2.2.4.1 *Primary Land Use Compatibility Criteria* — The primary criteria for assessing whether a potential land use development is to be judged compatible with a nearby airport are set forth in the Primary Compatibility Criteria matrix, **Table 2A**. These criteria are to be used in conjunction with the compatibility maps for Columbia Airport on **Exhibit 2A** and for Pine Mountain Lake Airport on **Exhibit 2B**, along with the policies for each airport as presented in Chapter 3.

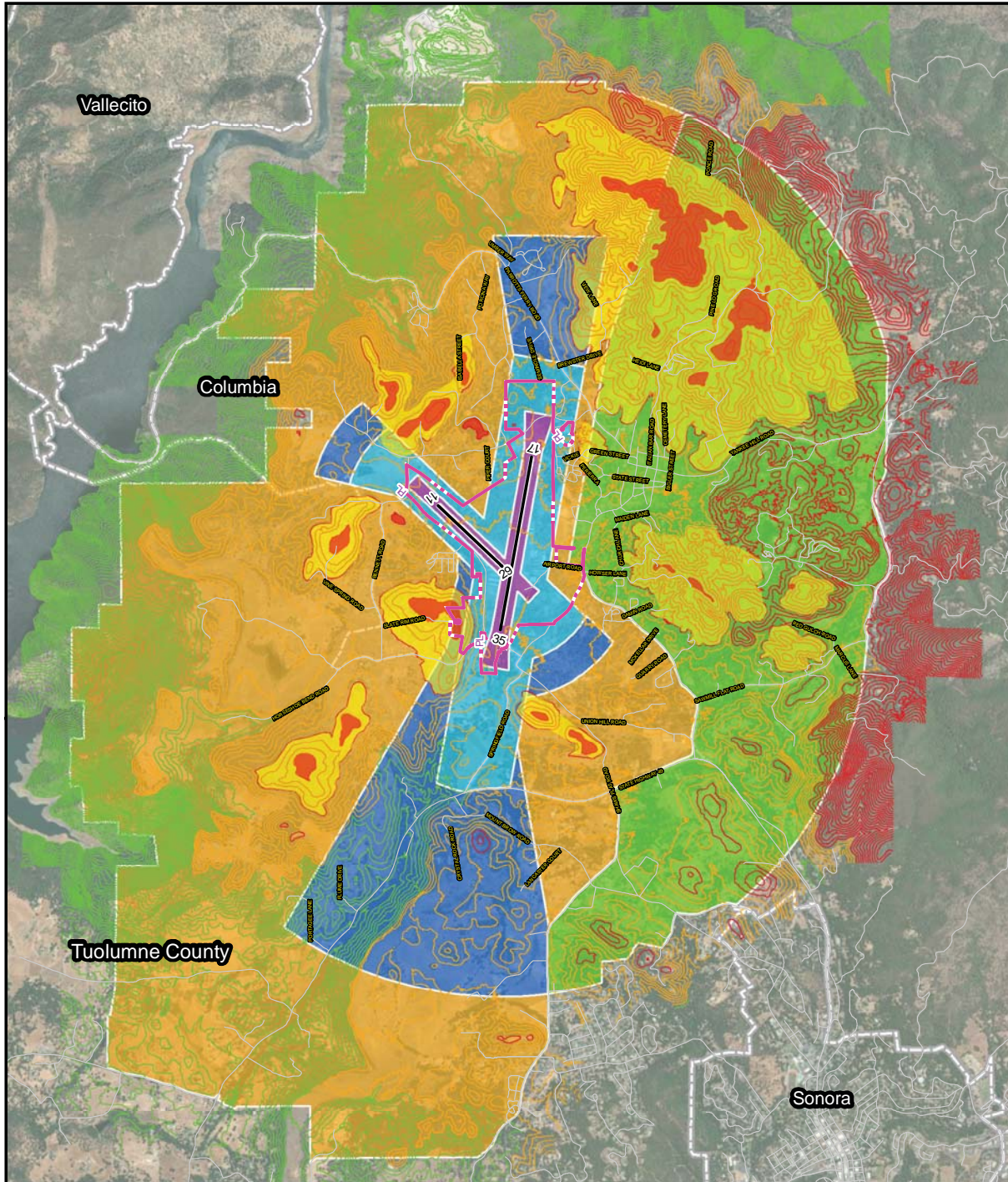
2.2.4.2 *Function of Supporting Criteria* — The Primary Compatibility Criteria matrix represents a compilation of compatibility criteria associated with each of the four types of airport impacts listed in Policy 2.1.4.1. For the purposes of reviewing proposed amendments to community land use plans and zoning ordinances, as well as in the review of most individual development proposals, the criteria in the matrix are anticipated to suffice. However, certain complex land use actions may require more intensive review. The Commission may refer to the supporting criteria, as listed in Section 4, to clarify or supplement its review of such actions.

2.2.4.3 *Special Conditions*

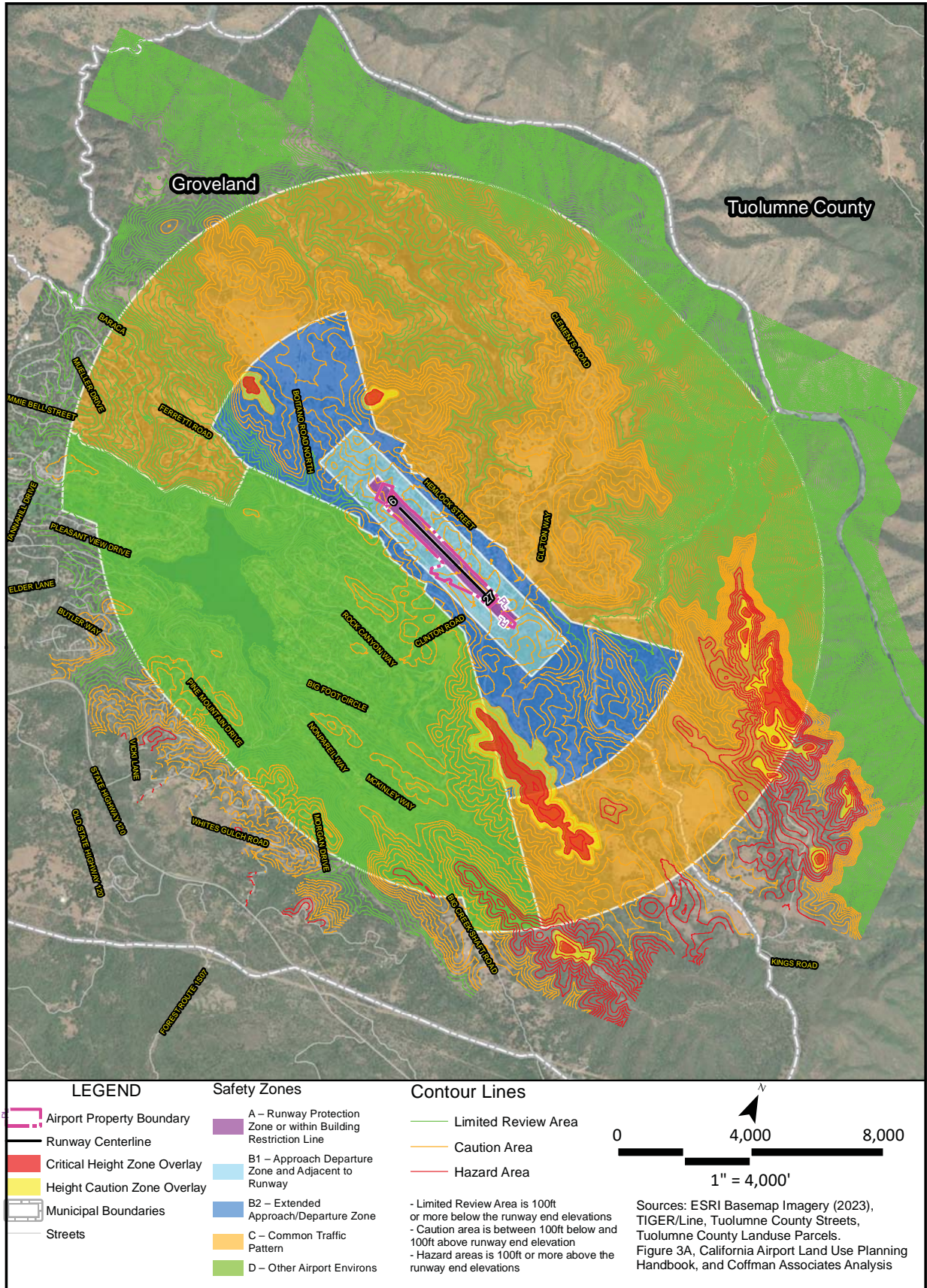
(a) *Infill* — Where incompatible development already exists, additional infill development of similar land uses may be allowed to occur even if such land uses are to be prohibited elsewhere in the zone. This exception applies only within *Zone C*.

(1) Parcels can be considered for *infill* development if they meet *all* of the following criteria:

- (a) The parcel size is no larger than 20 acres.
- (b) The site is at least 65% bounded (disregarding roads) by existing uses similar to, or more intensive than, those proposed.
- (c) The proposed project would not extend the perimeter of the area defined by the surrounding, already developed, incompatible uses. Regardless of the surrounding uses, the proposed use shall not have a development intensity more than 50% above the intensity permitted



<p>LEGEND</p> <ul style="list-style-type: none"> Airport Property Boundary Runway Centerlines Critical Height Zone Overlay Height Caution Zone Overlay Municipal Boundaries Streets 	<p>Existing Safety Zones</p> <ul style="list-style-type: none"> A – Runway Protection Zone or within Building Restriction Line B1 – Approach Departure Zone and Adjacent to Runway B2 – Extended Approach/Departure Zone C – Common Traffic Pattern D – Other Airport Environs 	<p>Contour Lines</p> <ul style="list-style-type: none"> Limited Review Area Caution Area Hazard Area <p>- Limited Review Area is 100ft or more below the runway end elevations. - Caution area is between 100ft below and 100ft above runway end elevation - Hazard areas is 100ft or more above the runway end elevations</p>	<p>Scale</p> <p>0 4,000 8,000</p> <p>1" = 4,000'</p> <p>Sources: ESRI Basemap Imagery (2023), TIGER/Line, Tuolumne County Streets, Tuolumne County Zoning Parcels. Figure 3A, California Airport Land Use Planning Handbook, and Coffman Associates Analysis.</p>
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in accordance with the Primary Compatibility Criteria (Table 2A). (For example, whereas a minimum lot size of 3.0 acres is normally required in Zone C, the infill policy would allow a 2.0-acre lot.)

- (d) The proposed project will not otherwise increase the intensity and/or incompatibility of use through use permits, density transfers, or other strategy.

(b) *Nonconforming Uses* — In locations not designated as infill areas, Airport Land Use Commission policy shall be that uses not in conformance with this Compatibility Plan may only be expanded as follows:

- (1) Nonconforming residential uses may be expanded provided that the expansion does not result in more dwelling units than currently exist on the parcel.
- (2) A nonconforming nonresidential development may be expanded by no more than 10% of the floor area of the existing structure or 1,000 square feet, whichever is greater.
- (3) Nonconforming uses may be rebuilt to a density (for residential uses, dwelling units per acre) not exceeding that of the original construction and to a size (for nonresidential uses, building floor area) not exceeding 110% of the original construction. In all cases, however, reconstructed nonconforming uses shall comply with the noise compatibility and airspace protection policies of this compatibility plan.

(c) *Reconstruction* — Airport Land Use Commission policy shall be that an existing incompatible development which has been fully or partially destroyed may be rebuilt under the following conditions:

- (1) Nonconforming residential uses may be rebuilt provided that the reconstruction does not result in more dwelling units than currently exist on the parcel.
- (2) A nonconforming nonresidential development may be rebuilt provided that it has been only partially destroyed and that the reconstruction does not increase the floor area of the previous structure by more than 10% or 1,000 square feet, whichever is greater. Partial destruction shall be considered to mean damage which can be repaired at a cost of no more than 75% of the assessor's full-cash value of the structure at the time of the damage.
- (3) Any nonresidential use which has been more than 75% destroyed must comply with all applicable standards herein when reconstructed.

(d) *Parcels Lying within Two or More Compatibility Zones* — For the purposes of evaluating consistency with the compatibility criteria set forth herein, Airport Land Use Commission policy shall be as follows:

- (1) Any parcel larger than one acre which is split by compatibility zone boundaries shall be considered as if it were multiple parcels divided at the compatibility zone boundary line. However, the intensity of development allowed within



the more restricted portion of the parcel can (and is encouraged to) be transferred to the less restricted portion even if the resulting development in the latter area then exceeds the criteria for that compatibility zone. Parcels less than one acre shall be evaluated for consistency based upon the compatibility zone that covers the majority of the parcel (>50%).

- (2) Transfer of development as described above is also allowed with respect to multiple parcels proposed to be developed as a single project.

(e) *Other Special Conditions* — The compatibility criteria set forth in this *Plan* are intended to be applicable to all locations within each airport's influence area. However, it is recognized that there may be specific situations where a normally incompatible use can be considered compatible because of terrain, specific location, or other extraordinary factors or circumstances related to the site. In these situations, Airport Land Use Commission policy shall be as follows:

- (1) After due consideration of all the factors involved in such situations, the Commission may find a normally incompatible use to be acceptable.
- (2) In reaching such a decision, the Commission shall make all of the following findings based upon substantial evidence in the record:
 - (a) Granting of the special conditions exception would not interfere with the orderly development of the Airport.
 - (b) Granting of the special conditions exception would not interfere with the orderly development of the area surrounding the Airport so as to promote the overall goals and objectives of the California airport noise standards as implemented through the noise policies of the Tuolumne County Airport Land Use Compatibility Plan.
 - (c) Granting of the special conditions exception would allow for the orderly development of the area surrounding the Airport so as to prevent the creation of new noise and safety problems.
 - (d) Granting of the special conditions exception would protect the public health, safety and welfare by providing for the orderly expansion of the Airport.
 - (e) Granting of the special conditions exception would protect the public health, safety and welfare by 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.
- (3) The granting of a special conditions exception shall be considered site specific and shall not be generalized to include other sites.
- (4) Special conditions which warrant general application in all or part of the influence area of one airport, but not at others, are set forth in Chapter 3 of this *Compatibility Plan*.



2.2.4.4 Findings as to Similar Uses – A case may arise in which a proposed development project involves a land use that is not explicitly provided for by the land use criteria addressed in Chapter Three of this document. In such a case, conventional rules of reason shall be applied in determining whether the subject land use is substantially similar to any land use specified in the plan criteria. In making these determinations, the reviewing officials shall consult the latest edition of the Handbook, prepared under the direction of the California Department of Transportation, and land use classification systems available through the American Planning Association and other authoritative sources. The ALUC shall make the final determination with respect to appropriate land use classification.

2.2.4.5 Change of Use in Existing Buildings - Consistency review is required when a new use is proposed within an existing building. A change of use is defined as a change in density for residential land uses or a change in intensity for non-residential land uses.

- (a) Nonresidential Projects: The maximum intensity of a proposed nonresidential project must not exceed the maximum allowable intensity, as shown in **Table 2A**.
- (b) Residential Projects: The total density of a conditionally compatible residential project must not exceed the maximum allowable density, as shown in **Table 2A**. Construction of a single-family residence, including an accessory dwelling unit, is allowed on a legal lot of record if permitted by the local agency.
- (c) Mixed-Use Projects: The maximum density and intensity for conditionally compatible projects are limited as described in **Policy 3.2.6**.

TABLE 2A | Safety Criteria Matrix | Tuolumne County Airport Land Use Compatibility Plan

Zone	Location	MAXIMUM DENSITIES		ADDITIONAL CRITERIA	
		Residential (du/ac) ¹	Other Uses (people/ac) ²	Prohibited Uses ⁴	Other Development Conditions
A	Runway Protection Zone or within Building Restriction Line	None	10	<ul style="list-style-type: none"> - All structures except ones required by aeronautical function - Assemblages of people - Objects exceeding 14 CFR Part 77 height limits - Aboveground bulk storage of hazardous materials - Hazards to flight⁴ 	<ul style="list-style-type: none"> - Deed notice recordation³

Continues on next page



TABLE 2A | Safety Criteria Matrix | Tuolumne County Airport Land Use Compatibility Plan (continued)

Zone	Location	MAXIMUM DENSITIES		ADDITIONAL CRITERIA	
		Residential (du/ac) ¹	Other Uses (people/ac) ²	Prohibited Uses ⁴	Other Development Conditions
B1	Approach Departure Zone and Adjacent to Runway	1 d.u. per 10 acres	25	<ul style="list-style-type: none"> - Children’s schools, day care centers, libraries, hospitals, nursing homes - Highly noise sensitive uses (e.g., outdoor theaters)⁶ 	<ul style="list-style-type: none"> - Locate structures away from extended runway centerline - Additional NLR required for some uses⁶ - Airspace review required for all objects (B1 zone) - Deed notice recordings³
B2	Extended Approach/Departure Zone	1 d.u. per 3 acres	50	<ul style="list-style-type: none"> - Aboveground bulk storage of hazardous materials⁵ - Hazards to flight⁴ 	<ul style="list-style-type: none"> - Deed notice recordings³
C	Common Traffic Pattern	1 d.u. per 3 acres	75	<ul style="list-style-type: none"> - Children’s schools, day care centers, libraries, hospitals, nursing homes - Hazards to flight⁴ 	<ul style="list-style-type: none"> - Deed notice recordings³
D	Other Airport Environs	No Limit	No Limit	<ul style="list-style-type: none"> - Hazards to flight⁴ 	<ul style="list-style-type: none"> - Deed notice recordings³
	Critical Height Zone Overlay	Same as Underlying Compatibility Zone		<ul style="list-style-type: none"> - Tall objects on high terrain⁸ 	<ul style="list-style-type: none"> - Deed notice recordings³
	Height Caution Zone Overlay	Same as Underlying Compatibility Zone		Same as Underlying Compatibility Zone	<ul style="list-style-type: none"> - Airspace review required for objects taller than 50 ft. AGL.⁹ - Deed notice recordings³

Table Notes:

1. Residential development should not contain more than the indicated number of primary dwelling units per gross acre. Clustering of units is encouraged – see Policy 2.4.2.6. for limitations. Accessory dwellings are allowed where permitted by the Tuolumne County Uniform Zoning Ordinance.
2. The land use should not attract more than the indicated number of people per acre at any time. The usage intensity may be averaged over the entire project site, subject to the limitations set forth in Policy 2.4.2.6. Usage calculations shall include all people who may be on the property (e.g., employees, customers/visitors, etc.) both indoors and outside. These criteria are intended as general planning guidelines to aid in determining the acceptability of proposed uses. Additional guidance is provided by Appendix C.
3. A deed notice shall be recorded for each parcel associated with any land use action or permit for which review by the Airport Land Use Commission or Commission Secretary is required. Such notice shall be issued by the County of Tuolumne for each parcel within an Airport Influence Area Boundary at the time of adoption of this Plan. Additionally, any land division of property for which a notice has been recorded must include a note on any parcel map or subdivision map of the existence of such deed notice. Combining district zoning shall be established for each such parcel.
4. Hazards to flight include physical (e.g., tall objects), visual, and electronic forms of interference with the safety of aircraft operations. See the supporting compatibility policies on airspace protection (Policies 2.4.3.2 and 2.5.3.5.) for details. Land use development, such as golf courses and certain types of crops, as outlined in FAA’s Advisory Circular 150/5200-33B, *Hazardous Wildlife Attractants on or Near Airports*, that may cause the attraction of birds to increase is also prohibited.
5. Storage of aviation fuel, other aviation-related flammable materials, and up to 2,000 gallons of nonaviation flammable materials are exempted from this criterion in Zones B1 and B2 (International Fire Code, Chapter 62, Section 6104.2).
6. NLR = Noise Level Reduction; the outside-to-inside sound level attenuation which the structure provides. See supporting compatibility policies on noise (Policy 2.4.1.5.) for details. Examples of highly noise-sensitive outdoor nonresidential uses that should be prohibited include amphitheatres and drive-in theaters. Caution should be exercised with respect to uses, such as poultry farms and nature preserves.
7. See supporting compatibility policies on airspace protection (Policy 2.4.3.2.) for details.
8. Height restrictions — potentially to ground level — required on all objects not shadowed by nearby objects of equal or greater elevation.
9. Objects up to 50 feet tall are acceptable. This height criterion is for general guidance. Shorter objects normally will not be airspace obstructions unless situated at a ground elevation well above that of the airport. Taller objects may be acceptable if determined not to be obstructions. However, the FAA may require Form 7460-1, marking, and lighting of certain objects. Developers proposing structures that could penetrate 14 CFR Part 77 surfaces must file Form 7460 with the FAA to determine if 7460 review is required, consult FAA’s Notice Criteria Tool: <https://oeaaa.faa.gov/oeaaa/external/gisTools/gisAction.jsp?action=showNoNoticeRequiredToolForm>



2.3 REVIEW OF AIRPORT MASTER PLANS AND DEVELOPMENT PLANS

2.3.1 Review Process

2.3.1.1 *Project Submittal Information* — An airport master plan or development plan submitted to the Commission for review shall contain sufficient information to enable the Commission to adequately assess the noise, safety, airspace protection, and overflight impacts of airport activity upon surrounding land uses. A master plan report should be submitted, if available. At a minimum, information to be submitted shall include:

- (a) A layout plan drawing of the proposed facility showing the location of: (1) property boundaries; (2) runways or helicopter takeoff and landing areas; and (3) runway protection zones or helicopter approach/departure zones.
- (b) Airspace surfaces in accordance with Federal Aviation Regulations, Part 77.
- (c) Activity forecasts, including the number of operations by each type of aircraft proposed to use the facility.
- (d) Proposed flight track locations and projected noise contours or other relevant noise impact data.
- (e) A map showing existing and planned land uses in the areas affected by aircraft activity associated with implementation of the proposed airport or heliport.
- (f) An environmental document, if one has been prepared and it addresses land use compatibility issues.
- (g) Identification and proposed mitigation of impacts on surrounding land uses.

2.3.1.2 *Commission Action Choices for Plans of Existing Airports* — When reviewing airport master plans for existing airports, the Commission has three action choices:

- (a) Find the airport master plan consistent with the *Airport Land Use Compatibility Plan*.
- (b) Find the airport master plan inconsistent with the Commission's *Plan*.
- (c) Modify the *Airport Land Use Compatibility Plan* (after duly noticed public hearing) to reflect the assumptions and proposals in the airport master plan.

2.3.1.3 *Commission Action Choices for Reviews of New Airports or Heliports* — When reviewing proposals for new airports or heliports, the Commission's choices of action are:

- (a) Determine the proposal as being consistent with the specific review policies listed in Section 3.3 below.
- (b) Adopt a *Compatibility Plan* for the proposed facility and determine the proposal as being consistent with the adopted *Compatibility Plan*. State law requires adoption of such a plan if the airport or heliport will be a public-use facility (State Aeronautics Act Section 21675(a)). The *Compatibility Plan* will be adopted within one year of approval by ALUC staff of receipt of a completed application for a new airport or heliport.
- (c) Determine the proposal as not being consistent with review policies on the basis that the noise, safety, airspace protection, and overflight impacts it would have on surrounding land uses are not adequately mitigated.



- 2.3.1.4** *Response Time* — The Airport Land Use Commission must respond to a local agency’s submittal of an airport master plan or development plan within 60 days from the date of referral (State Aeronautics Act Section 21676(d)).
- (a) If the Commission fails to make a determination within that period, the proposed action shall be deemed consistent with the *Compatibility Plan*.
 - (b) Regardless of Commission action or failure to act, the proposed action must comply with other applicable local, state, and federal regulations and laws.
 - (c) The referring agency shall be notified of the Commission’s action in writing.

2.3.2 Review Criteria for Master or Development Plans of Existing Airports

- 2.3.2.1** *Substance of Review* — When reviewing airport master plans or development plans for existing airports, the Commission shall determine whether activity forecasts or proposed facility development identified in the plan differ from the forecasts and development assumed for that airport in this *Airport Land Use Compatibility Plan*. Attention should specifically focus on:
- (a) Activity forecasts that are: (1) significantly higher than those in the *Airport Land Use Compatibility Plan*; or which (2) include a higher proportion of larger or noisier aircraft.
 - (b) Proposals to: (1) construct a new runway or helicopter takeoff and landing area; (2) change the length, width, or landing threshold location of an existing runway; or (3) establish an instrument approach procedure as requested by the FAA.
- 2.3.2.2** *Consistency Determination* — The Commission shall determine whether the proposed airport master plan or development plan is consistent with the *Airport Land Use Compatibility Plan*. The Commission shall base its determination of consistency on findings that the forecasts and development identified in the airport master plan would not result in greater noise, overflight, and safety impacts and/or height restrictions on surrounding land uses than are assumed in the *Airport Land Use Compatibility Plan*.

2.3.3 Review Criteria for Proposed New Airports or Heliports

- 2.3.3.1** *Substance of Review* — In reviewing proposals for new airports and heliports, the Commission shall focus on the noise, safety, airspace protection, and overflight impacts upon surrounding land uses.
- (a) Other types of environmental impacts (e.g., air quality, water quality, natural habitats, vehicle traffic, etc.) are not within the scope of Commission review.
 - (b) The Commission shall evaluate the adequacy of the proposed facility design (in terms of federal and state standards) only to the extent that the design affects surrounding land use.

While the ALUC has no legal authority to require alterations to the airfield design, the ALUC may assess the impacts of said airfield design on existing land uses (see 2.3.3.2(a) and (b)).



2.3.3.2 *Airport/Land Use Relationships* — The review shall examine the relationships between existing and planned land uses in the vicinity of the proposed airport or heliport and the impacts that the proposed facility would have upon these land uses. Questions to be considered should include:

- (a) Would the existing or planned land uses be considered incompatible with the airport or heliport if the latter were already in existence?
- (b) What measures are included in the airport or heliport proposal to mitigate the noise, safety, airspace protection, and overflight impacts on surrounding land uses? Such measures might include: (1) location of flight tracks so as to minimize the impacts; (2) other operational procedures to minimize impacts; (3) installation of noise barriers or structural noise insulation; (4) acquisition of property interests (fee title or easements) on the impacted land.

2.4 SUPPORTING COMPATIBILITY CRITERIA

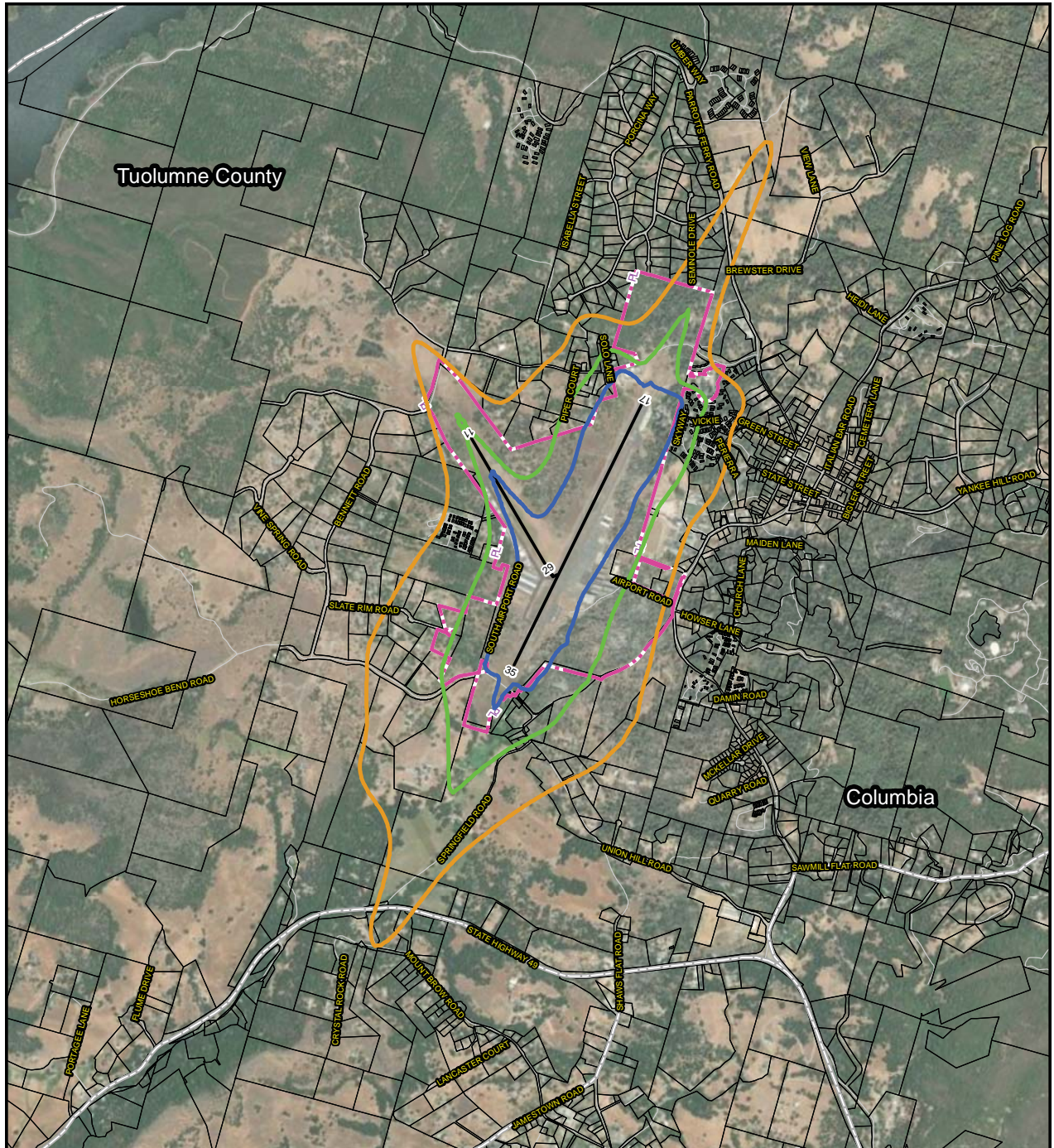
2.4.1 Noise

2.4.1.1 *Projected Noise Levels* — The evaluation of airport/land use noise compatibility shall consider the *future* Community Noise Equivalent Level (CNEL) contours of each airport. **Exhibit 2C** and **Exhibit 2D** show the 2043 noise contours for Columbia Airport and Pine Mountain Lake airport. These contours are calculated based upon aircraft activity forecasts which are set forth in an airport master plan or which are considered by ALUC staff to be plausible (refer to activity data and noise exposure maps in Chapters 4 and 5). ALUC staff should periodically review the projected noise level contours and update them if appropriate.

2.4.1.2 *Application of Noise Contours* — The locations of CNEL contours are among the factors used to define compatibility zone boundaries and criteria. It is intended that noise compatibility criteria be applied at the general plan, specific plan, or other broad-scale level. Because of the inherent variability of flight paths and other factors that influence noise emissions, the depicted contour boundaries are not absolute determinants of the compatibility or incompatibility of a given land use. Noise contours can only quantify noise impacts in a general manner; except on large parcels or blocks of land (sites large enough to have 3 dB or more of variation in CNELs), they should *not* be used as site design criteria. (Note, though, that the airport noise contours set forth in this *Plan* are to be used as the basis for determining compliance with interior noise level criteria as listed in Section 2.4.1.5.)

2.4.1.3 *Noise Exposure in Residential Areas* — The maximum CNEL considered normally acceptable for residential uses in the vicinity of the airports covered by this *Plan* is 55 dB.

2.4.1.4 *Noise Exposure for Other Land Uses* — Noise level compatibility standards for other types of land uses shall be applied in the same manner as the above residential noise level criteria. The extent of outdoor activity associated with a particular land use is an important factor to be considered in evaluating its compatibility with airport noise. Examples of acceptable noise levels for other land uses in an airport's vicinity are presented in **Table 2B**.



LEGEND		 1" = 2,500'
Airport Property Boundary Runway Centerlines Municipal Boundaries Parcel Boundary Streets	2043 CNEL Noise Contours 55 CNEL 60 CNEL 65 CNEL	

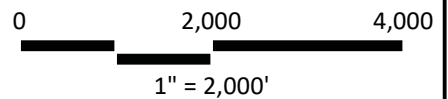
Sources: ESRI Basemap Imagery (2023), TIGER/Line, Noise Contours, Tuolumne County Streets, Tuolumne County Zoning Parcels, Coffman Associates Analysis.



LEGEND

2043 CNEL Noise Contours

- Airport Property Boundary
- Runway Centerline
- Municipal Boundaries
- Parcel Boundary
- Streets
- 55 CNEL
- 60 CNEL
- 65 CNEL



Sources: ESRI Basemap Imagery (2023), TIGER/Line, Tuolumne County Streets, Noise Contour Data, Tuolumne County Landuse Parcels. Coffman Associates Analysis.



TABLE 2B | Noise Compatibility Criteria - Tuolumne County Airport Land Use Compatibility Plan

Land Use Category	CNEL (dB)				
	50-55	55-60	60-65	65-70	70-75
Residential					
Single-family, nursing homes, mobile homes	+	O	-	--	--
Multi-family, apartments, condominiums	++	+	O	--	--
Public					
Schools, libraries, hospitals	+	O	-	--	--
Churches, auditoriums, concert halls	+	O	O	-	--
Transportation, parking, cemeteries	++	++	++	+	O
Commercial and Industrial					
Offices, retail trade	++	+	O	O	-
Service commercial, wholesale trade	++	++	+	O	O
Warehousing, light industrial, general manufacturing, utilities, extractive industry	++	++	++	+	+
Agricultural and Recreational					
Cropland	++	++	++	++	+
Livestock breeding	++	+	O	O	-
Parks, playgrounds, zoos, golf courses, riding stables, water recreation	++	+	+	O	-
Outdoor spectator sports	++	++	+	O	O
Amphitheaters	+	O	-	--	--
Land Use	Acceptability	Interpretation/Comments			
++	<i>Clearly Acceptable</i>	The activities associated with the specified land use can be carried out with essentially no interference from the noise exposure.			
+	<i>Normally Acceptable</i>	Noise is a factor to be considered in that slight interference with outdoor activities may occur. Conventional construction methods will eliminate most noise intrusions upon indoor activities.			
O	<i>Marginally Acceptable</i>	The indicated noise exposure will cause moderate interference with outdoor activities and with indoor activities when windows are open. The land use is acceptable on the conditions that outdoor activities are minimal and construction features which provide sufficient noise attenuation are used (e.g., installation of air conditioning so that windows can be kept closed). Under other circumstances, the land use should be discouraged.			
-	<i>Normally Unacceptable</i>	Noise will create substantial interference with both outdoor and indoor activities. Noise intrusion upon indoor activities can be mitigated by requiring special noise insulation construction. Land uses which have conventionally constructed structures and/or involve outdoor activities which would be disrupted by noise should generally be avoided.			
--	<i>Clearly Unacceptable</i>	Unacceptable noise intrusion upon land use activities will occur. Adequate structural noise insulation is not practical under most circumstances. The indicated land use should be avoided unless strong overriding factors prevail and it should be prohibited if outdoor activities are involved.			



2.4.1.5 *Interior Noise Levels* — Land uses for which interior activities may be easily disrupted by noise shall be required to comply with the following interior noise level criteria.

(a) The maximum, aircraft-related, interior noise levels which shall be considered acceptable for land uses near airports are:

(1) 45 dB CNEL in:

- Living areas of single- or multi-family residences;
- Hotels and motels;
- Hospitals and nursing homes;
- Churches, meeting halls, office buildings, and mortuaries; and
- Schools, libraries, and museums.

(2) 40 dB CNEL in sleeping areas of single- or multi-family residences.

2.4.1.6 *Construction of New or Expanded Airports or Heliports* — Any proposed construction of a new airport or heliport or expansion of facilities at an existing airport or heliport which would result in a significant increase in cumulative noise exposure (measured in terms of CNEL) shall include measures to reduce the exposure to a less-than-significant level. For the purposes of this *Plan*, a noise increase shall be considered significant if:

(a) In locations having an existing ambient noise level of less than 55 dB CNEL, the project would increase the noise level by 5.0 dB or more.

(b) In locations having an existing ambient noise level of between 55 and 60 dB CNEL, the project would increase the noise level by 3.0 dB or more.

(c) In locations having an existing ambient noise level of more than 60 dB CNEL, the project would increase the noise level by 1.5 dB or more.

2.4.2 Safety

2.4.2.1 *Objective* — The intent of land use safety compatibility criteria is to minimize the risks associated with an off-airport aircraft accident or emergency landing.

(a) Risks both to people and property in the vicinity of an airport and to people on board the aircraft shall be considered.

(b) More stringent land use controls shall be applied to the areas with greater potential risk.

2.4.2.2 *Risks to People on the Ground* — The principal means of reducing risks to people on the ground is to restrict land uses so as to limit the number of people who might gather in areas most susceptible to aircraft accidents.

(a) A method for determining the concentration of people for various land uses is provided in Appendix C.



2.4.2.3 *Land Uses of Particular Concern* — Land uses of particular concern are ones in which the occupants have reduced effective mobility or are unable to respond to emergency situations. Children’s schools and day care centers (with 7 or more children), hospitals, nursing homes, and other uses in which the majority of occupants are children, elderly, and/or handicapped shall be prohibited within *Compatibility Zones A, B1, B2, and C*.

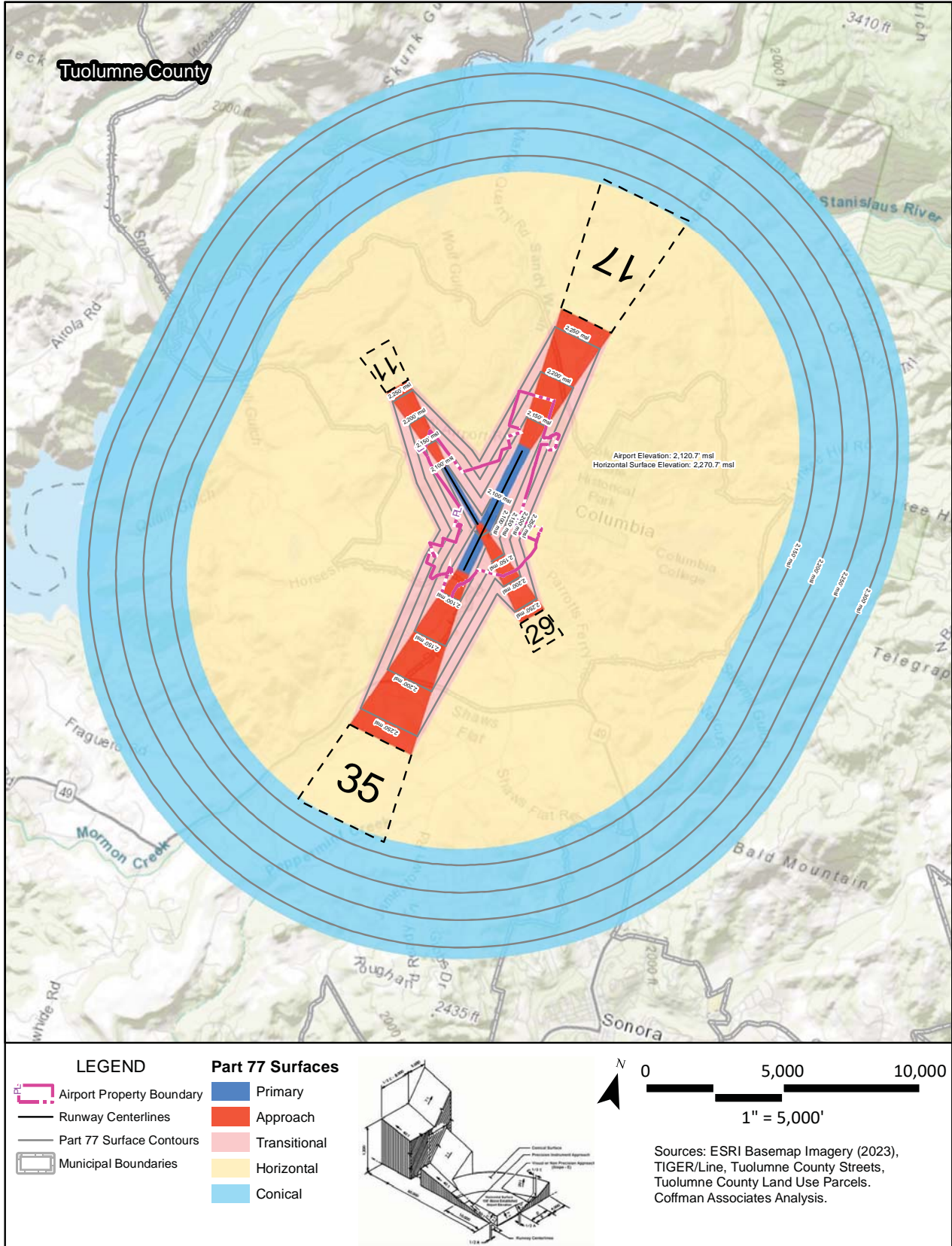
2.4.3 **Airspace Protection**

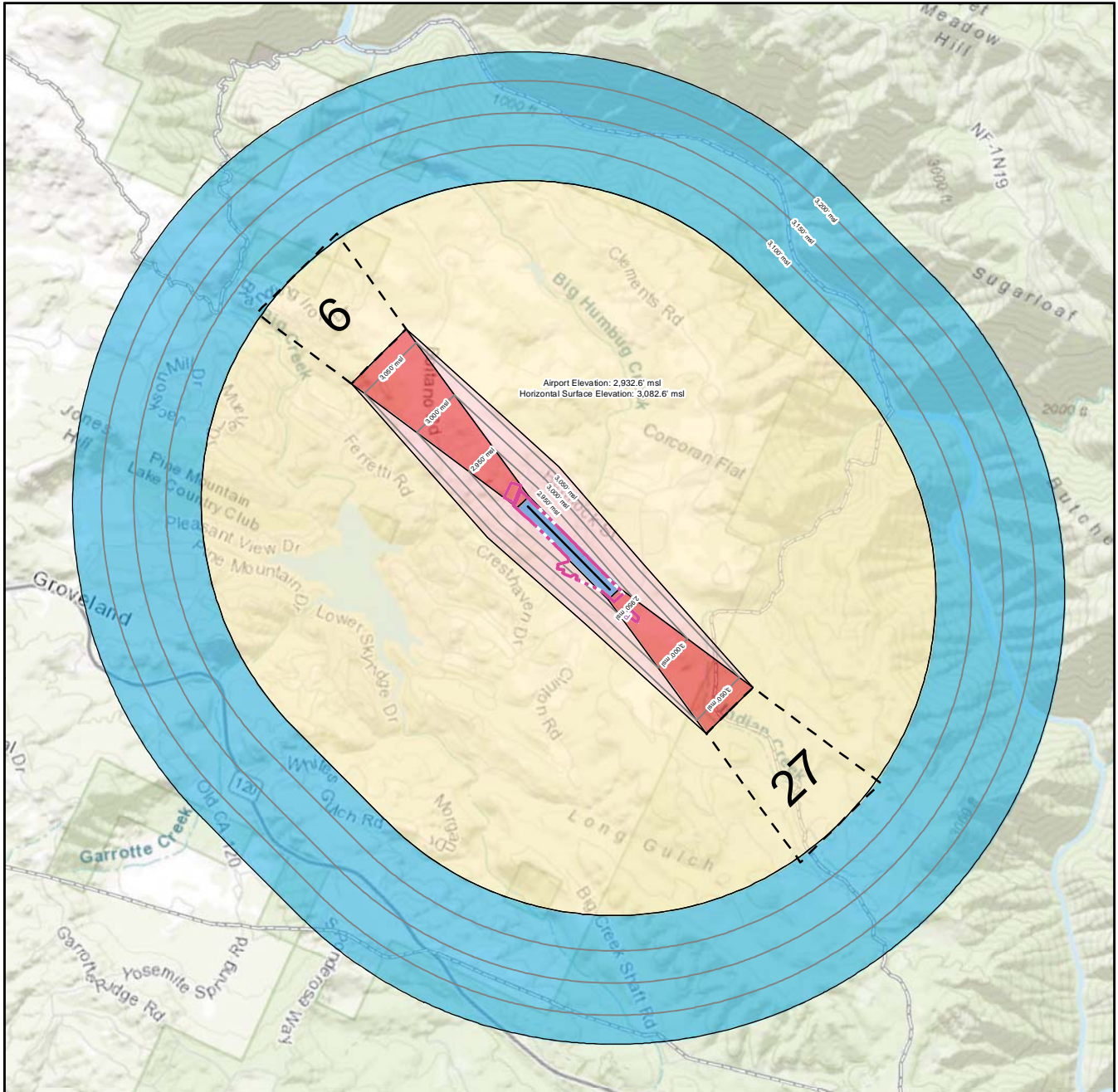
2.4.3.1 *Basis for Height Limits* — The criteria for limiting the height of structures, trees, and other objects in the vicinity of an airport shall be based upon Part 77, Subpart C, of the Code of Federal Regulations (CFR) and with the United States Standard for Terminal Instrument Procedures (TERPS). **Exhibit 2E** and **Exhibit 2F** show the Part 77 surfaces for Columbia Airport and Pine Mountain Lake Airport.

- (a) Certain modifications to the basic 14 CFR Part 77 standards are incorporated into the following policies in recognition of the terrain conditions near the airports in Tuolumne County.
- (b) Airspace plans depicting the critical areas for airspace protection around the Columbia Airport and Pine Mountain Lake Airport are provided in Chapters 4 and 5, respectively.

2.4.3.2 *Height Restrictions* — The height of objects which are subject to review by the Airport Land Use Commission within the influence area of each airport shall be reviewed, and restricted if necessary, according to the criteria indicated for each of the following height overlay zones. The locations of these zones are depicted on the respective *Compatibility Map* for each airport.

- (a) Critical Height Zone (see **Exhibit 2A** and **Exhibit 2B**):
 - (1) This zone encompasses the highest land areas near an airport. Specifically, these are locations which: lie above the surfaces defined by 14 CFR Part 77; and are situated either on points of high terrain (ridge lines or hill tops) or within 50 feet below such points. Additionally, all locations within *Compatibility Zones A* and *B1* are considered to be within the *Critical Height Zone*.
 - (2) Height restrictions — potentially to ground level — are required on all objects not shadowed by nearby objects of equal or greater elevation. For purposes of this section, objects do not include vegetation. Such restrictions shall be set in accordance with the airspace surfaces defined by Part 77 of the Code of Federal Regulations.
 - (3) All proposed projects within the Critical Height Zone are subject to ALUC review.
 - (4) Height Caution Zone (see **Exhibit 2A** and **Exhibit 2B**): This zone encompasses other areas of high terrain surrounding the *Critical Height Zone*. Specifically, these are locations where the ground lies above a 14 CFR Part 77 surface or within 50 feet beneath such surface, but excluding locations within the *Critical Height Zone*. All locations within *Compatibility Zone B2* also are considered to be within the *Height Caution Zone*.



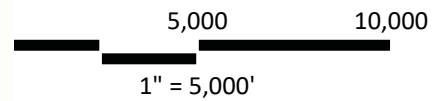
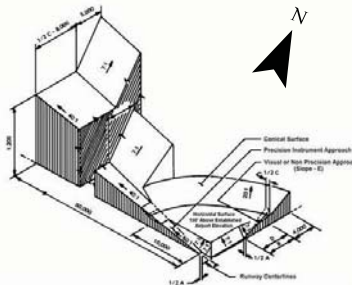


LEGEND

- Airport Property Boundary
- Runway Centerline
- Municipal Boundaries
- Part 77 Surface Contours

Part 77 Surfaces

- Primary
- Approach
- Transitional
- Horizontal
- Conical



Sources: ESRI Basemap Imagery (2023), TIGER/Line. Coffman Associates Analysis.



- (5) Objects up to 50 feet tall are acceptable and do not require ALUC review for the purposes of height factors. However, the FAA may require Form 7460-1, marking, and lighting of certain objects.
 - (6) Projects subject to review by the Airport Land Use Commission which propose objects taller than 50 feet shall be reviewed by the Airport Land Use Commission for protection of navigable airspace. Developers proposing structures that could penetrate 14 CFR Part 77 surfaces must consult the FAA's Notice Criteria Tool to determine if 7460 review is required and, if required, file Form 7460 with the FAA.
 - (7) Remainder of Airport Influence Area: Generally, there is no concern with regard to any object up to 75 feet tall unless it is located on high ground. A solitary object (e.g., an antenna) on high ground is a particular concern.
 - (8) The ALUC secretary shall review any development proposals requiring a variance from County zoning height standards.
- (b) During review of projects subject to its review, the Airport Land Use Commission may require conditions to protect navigable airspace, including the following:
- (1) Restrict the height of structures, trees and other objects;
 - (2) Require the removal or aeronautical marking of objects exceeding the established height limit; and
 - (3) Prohibit electrical interference, glare, confusing lights, smoke and/or other potential hazards to flight from being created on the property.
- (c) Existing trees which exceed the height limits described in Policy 2.4.3.2 or could grow to exceed the height limits, will be required to be removed, topped or fitted with aeronautical marking when the tree has been determined to be a hazard to flight by the Airport Land Use Commission or the FAA. Note that California Public Utilities Code § 21659 does not allow persons to permit any growth to grow at a height which exceeds the obstruction standards set forth in Title 14 of the Code of Federal Regulations, Part 77, Subpart C, without a permit or FAA determination that the growth does not constitute a hazard to air navigation or would not create and unsafe condition for air navigation.

2.4.4 Overflights

2.4.4.1 *Nature of Concern* — Overflight compatibility concerns encompass a combination of noise and safety issues. Although sensitivity to aircraft overflights varies from one person to another, overflight sensitivity is particularly important with regard to residential land uses.

- (a) For the purposes of the *Compatibility Plan*, the frequency of overflights, the typical overflight altitude, the noise levels of individual aircraft operations, the characteristics of the noise (helicopter noise being particularly intrusive), and the perceived necessity of the noise (noise from fire attack aircraft being considered more acceptable than



noise from other loud aircraft) are the principal determinants of where overflights are considered to be a potential concern.

(b) The area of overflight concerns is the same as the airport influence area for each airport.

2.4.4.2 *Buyer Awareness Measures* — Because all of the airport influence area is subject to aircraft overflights, it is important that prospective purchasers of property within this area, particularly residential properties, are informed about the property’s proximity to a nearby airport.

(a) California state statutes (Business and Professional Code Section 11010 and Civil Code Sections 1102.6, 1103.4, and 1353) require, as part of residential real estate transactions, that information be disclosed regarding whether the property is situated within an airport influence area.

(b) With certain exceptions, these state requirements apply both to the sale or lease of newly subdivided lands and to the sale of existing residential property.

(c) The statutes define an *airport influence area (AIA)* as “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.” The AIA for each airport is depicted on the exhibits listed below:

(d) Where disclosure is required, the following statement shall be provided:

NOTICE OF AIRPORT IN VICINITY: 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.

(e) For the purposes of this compatibility plan, the above real estate disclosure provisions of state law shall continue in effect as Airport Land Use Commission policy with respect to new development, even if the law is rescinded. Furthermore, each land use jurisdiction affected by this compatibility plan should adopt a policy designating the airport influence area as the area wherein disclosure of airport influences is required in conjunction with the transfer of residential real estate. Such policy should require signs providing the above notice be prominently posted in the real estate sales office and/or other key locations at any new project within the AIA. Such local jurisdiction policies should also be applied to lease or rental agreements for existing residential property. Mandatory deed notice recordation, required for all parcels within the AIA in accordance with the criteria shown on **Table 2A**, also serves as a real estate disclosure notification tool.



- 2.4.4.3** *Land Use Conversion* — The compatibility of uses in the airport influence areas shall be preserved to the maximum feasible extent. Particular emphasis should be placed on preservation of existing agricultural and open space uses.
- (a) The conversion of land from existing or planned agricultural, industrial, or commercial use to residential uses within *Compatibility Zones A, B1, and B2* is strongly discouraged.
 - (b) In *Compatibility Zone C*, general plan amendments (as well as other discretionary actions such as rezoning, subdivision approvals, use permits, etc.) which would convert land to residential use or increase the density of residential uses should be subject to careful consideration of overflight impacts.



CHAPTER THREE: Individual Airport Policies and Compatibility Maps





Chapter Three

INDIVIDUAL AIRPORT POLICIES AND COMPATIBILITY MAPS

3.1 GENERAL BASIS FOR COMPATIBILITY ZONE BOUNDARIES

The general concepts used to develop the compatibility zone boundaries for Columbia and Pine Mountain Lake airports are outlined below. These basic, aviation-oriented, boundaries were then modified to take into account the distinct geographic features and existing land uses around each airport. The compatibility zone boundaries represent a composite of noise, safety, airspace protection, and overflight concerns. As overlays of the compatibility zones, the height zones further address airspace protection requirements. The height overlay zone policies apply in addition to the policies of the underlying compatibility zone.

3.1.1 Compatibility Zone A

Zone A includes airport runways and immediately adjacent areas wherein uses are restricted to aeronautical functions in accordance with Federal Aviation Administration standards. The lateral limits of Zone A are defined by the airfield building restriction lines as depicted on the Airport Layout Plan for each airport. The length of Zone A is set to encompass the runway protection zone located at each end of the runway. Runway protection zone dimensions are defined by Federal Aviation Administration airport design standards and consider the runway approach type and the type of aircraft the runway is intended to accommodate. In addition to being an area of high risk, Zone A also is subject to high noise levels. Most of Zone A at both Columbia and Pine Mountain Lake airports lies within the respective 65-dB CNEL contours.

3.1.2 Compatibility Zone B1

Zone B1 generally surrounds Zone A, including areas both immediately beyond the runway protection zones and adjacent to the runways. These are locations where noise levels and risks are both high. Zone B1 encompasses areas impacted by noise levels of 60 dB CNEL or greater. Areas overflowed by aircraft at altitudes of less than 200 to 300 feet are included as well. Additionally, restrictions on heights of objects are essential for airspace protection purposes.



3.1.3 Compatibility Zone B2

Zone B2 is the extended approach/departure zone for each airport and may also include some land adjacent to the runways. This zone is affected by moderate degrees of both noise and risk. The 55-dB CNEL contour falls within this zone. Aircraft overfly much of this area at altitudes of less than approximately 600 feet on either visual or straight-in instrument approaches. According to the data presented in the Caltrans *Handbook*, 40% to 50% of off-runway, airport-related aircraft accidents occur within Zones B1 and Zones B2 for airports comparable to Columbia and Pine Mountain Lake airports.

3.1.4 Compatibility Zone C

The outer boundary of Zone C is defined as the area commonly overflown by aircraft at an altitude of 1,000 feet or less above ground level. Included are locations beneath the traffic pattern and pattern entry points. Annoyance associated with aircraft overflights is the major concern within Zone C. Although the traffic pattern zone lies mostly outside the 55-dB CNEL contour, land uses are nevertheless subjected to frequent aircraft noise events.

3.1.5 Compatibility Zone D

Zone D includes other areas within the airport vicinity which are overflown less frequently or at a higher altitude by aircraft arriving and departing the airport.

3.1.6 Critical Height Zone Overlay

The Critical Height Zone is designed to assure that objects on high terrain or near the runway ends of each airport do not pose hazards to flight. The zone includes ridge lines, other high points, and terrain within 50 feet in elevation of these locations. The 50-foot height is intended to represent the tallest likely height of an antenna on top on a building or the typical height of a tall tree. Management of existing and new vegetation by property owners in the zone is critical to protecting the safety of aircraft operations in the area. Lands within Compatibility Zones A and B1 also are considered to be within the Critical Height Zone because protection of the airspace above these areas is critical to the safety of aircraft approaching and departing a runway.

3.1.7 Height Caution Zone Overlay

The Height Caution Zone surrounds the areas of high terrain included in the Critical Height Zone. The concept used in defining this zone is that objects less than 50 feet in height will be shadowed by objects on nearby higher terrain and thus will not constitute hazards to flight even if they are above an airspace surface defined by Federal Aviation Regulations (FAR) Part 77. Said objects do not include trees or other



vegetation that can be easily removed from the site subsequent to development. The Height Caution Zone also encompasses the lands within Compatibility Zone B2. Again, 50-foot objects are acceptable in Zone B2 in that they will not penetrate the FAR Part 77 approach or transitional surfaces (unless they are in the Critical Height Zone). In each of these areas, any proposed objects taller than 50 feet must be reviewed on a case-by-case basis to assure that they will not be hazards to flight.

3.2 COLUMBIA AIRPORT

3.2.1 Compatibility Map Delineation

3.2.1.1 *Compatibility Map* — The Compatibility Map for Columbia Airport is presented in **Exhibit 1A** and is to be used in conjunction with the criteria set forth in **Table 2A**.

3.2.1.2 *Boundary Determinants*

- (a) Zone B2 extends farther to the south than it does beyond the other runway ends because nearly all approaches and departures by fire attack aircraft and the preponderance of nighttime operations by all aircraft types are concentrated over this area. Also, the airport's only instrument approach procedure is from the south. For all runway ends, Zone B2 is weighted toward the side of the runway on which the traffic pattern is located.
- (b) Zone C, as well as the overall airport influence area boundary, has been extended west to encompass the relatively wide traffic pattern flown at the airport. The western boundary follows the New Melones Reservoir property line. Southwest of the airport, the Zone C boundary encompasses both the traffic pattern for Runway 11-29 and the flight tracks of occasional aircraft which turn slightly eastward when departing Runway 17.
- (c) Zone D on the east side of the airport is included in order to establish buyer awareness measures and to encompass the rising terrain to the northeast. On the southeast, the outer boundary is drawn contiguous with the Sonora city limits.

3.2.2 Additional Compatibility Policies

3.2.2.1 Notwithstanding the countywide policy regarding infill development (Policy 2.2.4.3.(a)), lands along the southwest side of Parrotts Ferry Road between Springfield Road and Highway 49 and lying within 750 feet of the road right-of-way may be developed to a maximum residential density of 15 dwelling units per acre. The limits of this area are marked with an asterisk (*) on the Columbia Airport Compatibility Map (**Exhibit 2A**). For nonresidential development, no special exceptions are provided by this policy --- the criteria of Policy 2.2.4.3(a) shall apply.



3.3 PINE MOUNTAIN LAKE AIRPORT

3.3.1 Compatibility Map Delineation

3.3.1.1 *Compatibility Map* — The Compatibility Map for Pine Mountain Lake Airport is presented in **Exhibit 2B** and is to be used in conjunction with the criteria set forth in **Table 2A**.

3.3.1.2 *Boundary Determinants*

- (a) The different character of the aircraft mix at Pine Mountain Lake Airport compared to Columbia Airport allows Zone B1 to be slightly narrower adjacent to the runway. However, Zone B2 extends along the runway length in order to encompass more of the 55-dB CNEL contour.
- (b) Zone B2 is angled southward on the runway's east end to take into account the Runway 27 GPS approach which is offset 20 degrees from the extended runway centerline. The north-side traffic pattern is reflected in the northward angle of Zone B2 at both runway ends.
- (c) The limits of Zone C are intended to encompass the common traffic pattern.
- (d) The limits of Zone D are intended to encompass the Horizontal and Conical Surfaces of Part 77 of the Federal Aviation Regulations.

3.3.2 Additional Compatibility Policies

None.



APPENDIX A: History of the ALUCP





Appendix A

HISTORY OF THE TUOLUMNE COUNTY ALUCP

The following excerpt from the existing airport land use compatibility plan (ALUCP) discusses the history of the current plan:

Although the 1977 Policy Plan has served the ALUC and Tuolumne County well, it is now more than 20 years old and much of its content is outdated. Many changes have been made to the state laws governing ALUCs since the original plan was adopted. Most of these changes involve procedures by which ALUCs operate and are rather narrow in scope. Perhaps most significant among the amendments is the requirement for local general and specific plans to be made consistent with the Commission's plan. It was in conjunction with this 1982 amendment that the authority of ALUCs to review individual development proposals was modified as discussed above. Another statute change made at that time was to reduce the vote requirement for a local agency to override an ALUC decision from four fifths to two thirds.

More important with respect to preparation of ALUC plans was completion of the Caltrans 1993 Airport Land Use Planning Handbook, which was superseded in January 2002 by the California Airport Land Use Planning Handbook. State law now requires ALUCs to be 'guided by' information in the Handbook when formulating or amending compatibility plans. Also, another statute enacted in 1994 creates a tie between the Handbook and California Environmental Quality Act (CEQA) documents. Lead agencies are now required to use the Handbook as 'a technical resource' when assessing airport-related noise and safety impacts of projects located in the vicinity of airports.

The major issues associated with this draft Airport Land Use Compatibility Plan have been discussed at several meetings of the Tuolumne County Airport Land Use Commission. Additionally, public input was solicited at two workshops held early in the plan preparation process. The draft plan was widely circulated to affected agencies and the general public and was the subject of a public hearing by the Commission.

On June 24, 1999, the Tuolumne County Airport Land Use Commission approved the Tuolumne County Airport Land Use Compatibility Plan. On July 21, 1999, the Airport Land Use Commission rescinded its approval of the Airport Land Use Compatibility Plan on the advice of County Counsel.

On January 31, 2001, the Airport Land Use Commission conceptually approved the Revised Draft Tuolumne County Airport Land Use Compatibility Plan. The Revised Draft Plan consisted of the Draft Airport Land Use Compatibility Plan as modified by the following four addendums adopted by the Commission:



- Revised Addendum, dated June 11, 1999, which added Policy 4.2.6, regarding clustering on development sites and identified an infill area along the southwest side of Parrotts Ferry Road between Springfield Road and State Route 49.
- Addendum #2, dated July 10, 2000, which replaced the use of the Airport Aviation and Airspace Utilization Easement with a deed notice and airport combining zoning district.
- Addendum #3, dated August 15, 2000, which revised Policy 2.4.3 to address specific residential parcels located within Compatibility Zone A at the eastern end of Runway 9-27 at the Pine Mountain Lake Airport.
- Addendum #4, dated September 27, 2000, which expanded the airport influence area boundary and Compatibility Zone D boundary associated with the Pine Mountain Lake Airport to include the horizontal and conical surfaces of Part 77 of the Federal Aviation Regulations.

In the Fall of 2002, following review of the Revised Draft Plan by County Counsel, the Commission again conceptually approved the Plan with the following revisions:

- Clarified the authority of the Airport Land Use Commission under existing state law and the authority granted to the Commission by Tuolumne County for review of land development applications.
- Eliminated the requirement for dedication of an Aviation Easement for land development projects proposed in Compatibility Zones A and B1 and the critical Height Zone.
- Revised the Deed Notice required to be attached to the deed of each parcel located within an airport influence area boundary upon adoption of the plan.

Prior to acting on the Revised Draft Airport Land Use Compatibility Plan, the Tuolumne County Airport Land Use Commission will conduct a public hearing to receive comments from all interested parties.”



APPENDIX B: Columbia Airport Supporting Information





Appendix B

COLUMBIA AIRPORT SUPPORTING INFORMATION

Appendix B provides an overview of Columbia Airport’s setting, current airport facilities, and plans for the airport’s development. This appendix also includes supporting information for the airport’s compatibility zones and noise contours presented in the airport land use compatibility plan (ALUCP) update for Tuolumne County, California.

SETTING

Columbia Airport (O22) is a public-use airport located in the foothills of the Sierra Nevada mountains on the western border of Tuolumne County. The airport is approximately four miles northeast of the City of Sonora – which is the county seat and the only incorporated city in Tuolumne County – and one mile to the southwest of the Columbia, CA, census-designated place. Columbia Airport sits on approximately 356 acres of land at an elevation of 2,121 feet above mean sea level. The 2023 - 2027 *National Plan of Integrated Airports* (NPIAS) classifies the airport as a local general aviation facility, and the 2020 *California Aviation System Plan* (CASP) places the airport in the Regional – Recreation functional class. Tuolumne County owns and operates Columbia Airport.

AIRPORT INFORMATION

AIRPORT FACILITIES

Columbia Airport has two runways, asphalt Runway 17-35 and turf Runway 11-29, as well as three helipads. **Table B1** provides additional details about the airport’s facilities.

Runway 17-35 is 4,673 feet long and 75 feet wide. It is constructed of asphalt and is in good condition. The runway load-bearing strength for single-wheel landing gear aircraft is up to 30,000 pounds. There are non-precision runway pavement markings that are in good condition and medium intensity runway lights with non-lighted touchdown points and runway end identifier lights (REILs). The traffic pattern for Runway 35 is a standard left-hand pattern, whereas Runway 17 has a non-standard right-hand traffic pattern. Both runway ends have a two-box visual approach slope indicator (VASI-2) on the left, with a 4.55-degree glide angle for Runway 17 and a 4.00-degree glide angle for Runway 35. Runway 35 also has an RNAV (GPS) approach procedure.

Runway 11-29 is the crosswind turf runway at Columbia Airport. It is 2,607 feet long and 50 feet wide. It is in good condition with markings for numbers only on Runway 29. There are no runway edge lights or approach lighting; however, there are unlighted touchdown points. The runway is designated for daytime use only. Runway 29 has a standard left-hand traffic pattern and Runway 11 has a non-standard right-hand traffic pattern. There are no REILs and no visual or instrument approach aids.



In addition to the Columbia Air Attack Base helipad, there are two unmarked helipads and one marked helipad located on the apron near the end of Runway 35. There are no visual or instrument approach aids associated with the helipads.

In addition to the runways and helipad, the airport parking aprons provide 113 marked tiedown spaces for aircraft parking, 33 separate hangar facilities, and vehicle parking on the east side of the airport. There is an administration building with associated parking. The airport is bounded by a secure eight-foot-high perimeter fence. There is one FBO on site which owns and maintains the airport’s fuel-farm and self-service fueling facility. The airport is home to a fly-in campground that is open to the public.

TABLE B1 | Columbia Airport Facilities

	Runway 17-35	Runway 11-29
RUNWAYS		
Length (feet)	4,673	2,607
Width (feet)	75	50
Threshold Displacement (feet)	598 (Rwy 17) / 384 (Rwy 35)	N/A
Runway Pavement Surface Material	Asphalt	Turf
Runway Pavement Condition	Good	Good
Runway Pavement Load-Bearing Strength (lbs.)		
Single Wheel	30,000	N/A
Dual Wheel	N/A	N/A
Double Tandem	N/A	N/A
Double Dual Tandem	N/A	N/A
Runway Pavement Markings		
Type	Non-Precision	Numbers Only (Rwy 29)
Condition	Good	Fair
Runway Lighting		
Runway Edge Lighting	MIRL	None
Taxiway Lighting	MITL nearest runway	No
Touchdown Point	Yes (no lights)	Yes (no lights)
Traffic Pattern	Right Left	Right Left
Runway End Identifier Lights (REILs)	Yes	No
VISUAL APPROACH AIDS		
Type	VASI-2	N/A
Glide Path	4.55 degrees / 4.00 degrees	N/A
INSTRUMENT APPROACH AIDS		
Instrument Landing System (ILS)	No	No
Global Positioning System (GPS)	RNAV (GPS) Approach – Runway 35	No
VOR/DME	No	No
Weather and Communication	AWOS, CTAF, PCL	
Visual Aids	Rotating beacon (2), lighted wind cone, tetrahedron, segmented circle	
N/A = not applicable AWOS = automated weather observing system CTAF = common traffic advisory frequency PCL = pilot-controlled lighting MIRL = medium intensity runway lights MITL = medium intensity taxiway lights VASI-2 = two-box visual approach slope indicator VOR/DME = very high frequency omnidirectional range distance measuring equipment		

Sources: Airport Facility Directory (May 2023); FAA Form 5010-1, Airport Master Record



FUTURE AIRPORT PLANS

Future plans for Columbia Airport are considered in this ALUCP Update, as discussed in the *Columbia Airport Master Plan* and depicted on the airport's current Airport Layout Plan (ALP).

The *Columbia Airport Master Plan* (October 2019) ultimate development concept is considered in the exhibits and maps produced in this ALUCP update. The master plan recommended concept includes a 140-foot runway extension to Runway 17-35 to better accommodate CalFire's aerial firefighting operations, as well as operations by additional turboprop and business jet aircraft. The displaced landing threshold would be maintained in its current location, resulting in no change to the runway protection zone (RPZ) for Runway 35; however, the departure RPZ would shift 140 feet further south and would be mostly contained within an existing aviation easement. Additional airfield geometry changes are also recommended in order to meet safety/separation standards, including relocating the Runway 29 threshold 202 feet to the northwest and decreasing the ultimate length of turf Runway 11-29 to 2,405 feet. It is noted that the relocation of Taxiway A has the potential to significantly impact CalFire's Columbia Air Attack Base landside facility. Apron expansions are recommended to increase aircraft and helicopter parking apron space, resulting in the proposed relocation of a helipad on the north side of the main aircraft parking apron, as well as construction of an additional helipad on the west side of the airport adjacent to turf Runway 11-29.

COMPATIBILITY ZONES

The Airport Influence Area (AIA) for Columbia Airport is shown on **Exhibit 1A**. The AIA is the same AIA addressed by the existing ALUCP. The compatibility zones addressed by this plan – shown on **Exhibit 2A** – were also retained from the existing ALUCP zones.

NOISE

The standard methodology for analyzing noise conditions at airports involves the use of a computer simulation model. The Airport Environmental Design Tool (AEDT) Version 3e is accepted by the State of California and required by the FAA for developing noise exposure contours. The AEDT is the model used to develop the noise exposure contours for this ALUCP. The following sections describe the noise modeling inputs for the Columbia Airport noise exposure contours, shown on **Exhibit 2C**.

AIRCRAFT OPERATIONS AND FLEET MIX

As outlined in Public Utilities Code (PUC) Section 21675(a), the noise contours included in an ALUCP must reflect the anticipated growth of the airport during at least the next 20 years. **Table A1** summarizes the 2037 operations for Columbia Airport using the FAA's Terminal Area Forecast (TAF) for fiscal years 2016-2045 and includes the aircraft types used in the noise model. Airfield observations and based aircraft



lists were used to determine the types of aircraft that frequently use the airport. To accurately represent the noise conditions at the airport, the AEDT provides aircraft noise data for many of the aircraft operating in the national fleet.

The selection of individual aircraft types is important to the modeling process because different aircraft types generate different noise levels. The aircraft fleet mix for Columbia Airport was derived from the 2019 *Columbia Airport Master Plan* and interviews with the airport manager. **Table B2** summarizes the generalized fleet mix data input into the noise analysis.

A variety of general aviation single-engine fixed-propeller aircraft are modeled with the general aviation single-engine piston, variable (GASEPV) and general aviation single-engine piston, fixed (GASEPF) aircraft in the AEDT. The GASEPV represents many single-engine general aviation aircraft, including the Mooney M-20, Cessna 172 and 180, and Piper Cherokee Arrow. The general aviation single-engine fixed-pitch propeller model, the GASEPF, also represents several single-engine general aviation aircraft. These include the Cessna 150, Piper Archer, and the Piper Tomahawk.

TABLE B2 | Columbia Airport – Aircraft Fleet Mix and Operations

Operations	AEDT Designator	2023 ¹	2043 ²
Itinerant			
Single-Engine, Fixed	GASEPF	10,010	14,494
Single-Engine, Variable	GASEPV	10,009	14,494
Multi-Engine Piston	BEC58P	1,000	1,132
Turboprop	DHC6	2,048	3,511
Small Turbojet	CNA55B	50	283
Medium Turbojet	CL600, CNA750	40	283
Helicopter	SA350D, S65, B212	1,200	3,738
Subtotal		24,357	37,935
Local			
Single-Engine, Fixed	GASEPF	9,650	15,004
Single-Engine, Variable	GASEPV	9,650	15,004
Multi-Engine Piston	BEC58P	1,000	1,132
Turboprop	DHC6	500	906
Helicopter	B212	500	566
Subtotal		21,300	32,612
Grand Total		45,657	70,547

¹FAA 5010 Airport Master Record, operations for 12 months ending June 25, 2019
²Total operations forecast reflects a compound annual growth rate (CAGR) of 1.57%, as discussed in Chapter Two – Forecasts of the 2019 *Columbia Airport Master Plan*

Sources: *Coffman Associates analysis; Columbia Airport Master Plan (2019)*

Time-of-Day

The time of day during which aircraft operations occur is important as input to the AEDT due to the 10-decibel nighttime (10:00 p.m. to 7:00 a.m.) and 4.8-decibel evening (7:00 p.m. to 10:00 p.m.) weighting of flights.



Since Columbia Airport is not equipped with an airport traffic control tower (ATCT), time-of-day information was estimated based upon airport staff interviews and time-of-day activity levels at similar airports. Currently, most operations occur during the daytime hours, with an estimated one percent occurring during evening hours and approximately one percent occurring during nighttime hours.

Runway Use

Runway usage data is also an essential component for developing noise exposure contours. Based on a review of regional airport activity and wind conditions, as discussed in the 2019 *Columbia Airport Master Plan*, the following assumptions were made for runway use:

- Runway 17 – 80 percent of itinerant and general aviation operations
- Runway 35 – 20 percent of itinerant operations, 15 percent of general aviation operations
- Runway 11 – 5 percent of general aviation operations only
- Runway 29 – 5 percent of general aviation operations only

Flight Tracks

A review of local flight procedures was used to develop consolidated flight tracks for use in the AEDT. The traffic pattern for Runway 17 and Runway 11 is right-hand, and the traffic pattern for Runway 35 and Runway 29 is left-hand. Accordingly, it is assumed that touch-and-go traffic occurs to the west of the airport for Runway 12-30 and to the southwest of the airport for Runway 1-19.

Flight Profiles

The standard arrival profile used in the AEDT program is a three-degree approach. No indication was given by airport staff that there was any variation on this standard procedure for civilian aircraft; therefore, the standard approach was included in the model as representative of local operating conditions.



APPENDIX C: Pine Mountain Lake Airport Supporting Information





Appendix C

PINE MOUNTAIN LAKE AIRPORT SUPPORTING INFORMATION

Appendix C provides an overview of Pine Mountain Lake Airport’s setting, current airport facilities, and plans for the airport’s development. This appendix also includes supporting information for the airport’s compatibility zones and noise contours presented in the airport land use compatibility plan (ALUCP) update for Tuolumne County, California.

SETTING

Pine Mountain Lake Airport (E45) is a public-use airport located approximately three miles northeast of Groveland in the Pine Mountain Lake community of southwestern Tuolumne County, with proximity to Yosemite National Park. The airport sits on approximately 56 acres of land at an elevation of 2,933 feet above mean sea level. The 2023 - 2027 *National Plan of Integrated Airports* (NPIAS) lists the airport as an unclassified general aviation airport, and the 2020 *California Aviation System Plan* (CASP) places the airport in the Community – Recreation functional class. Pine Mountain Lake Airport was established as a private airport in 1970, was deeded to the county in 1973, and has since been publicly owned and operated by Tuolumne County.

AIRPORT INFORMATION

AIRPORT FACILITIES

Pine Mountain Lake Airport has one asphalt runway: Runway 9-27. **Table C1** provides additional details about the airport’s facilities.

Runway 9-27 is 3,624 feet long and 50 feet wide. It is constructed of asphalt and is in good condition. The runway load-bearing strength for single-wheel landing gear aircraft is up to 12,000 pounds. There are non-precision runway pavement markings that are in good condition and medium intensity runway lights with non-lighted touchdown points. The traffic pattern for Runway 9 is a standard left-hand pattern, whereas Runway 27 has a non-standard right-hand traffic pattern. Both runway ends have a two-box visual approach slope indicator (VASI) on the left with a 4.50-degree glide angle for Runway 9 and a 4.00-degree glide angle for Runway 27. Both runway ends have GPS instrument approach procedures.

There is one FBO on site, which owns and maintains the airport’s fuel farm and self-service fueling facility. The airport is home to the Pine Mountain Lake Aviation Association.



TABLE C1 | Pine Mountain Lake Airport Facilities

Runway 9-27	
RUNWAYS	
Length (feet)	3.624
Width (feet)	50
Threshold Displacement (feet)	No
Runway Pavement Surface Material	Asphalt
Runway Pavement Condition	Good
Safety Areas	West end – 200' gravel East end – 100' gravel
Runway Pavement Load-Bearing Strength (lbs.)	
Single Wheel	12,000
Dual Wheel	N/A
Double Tandem	N/A
Double Dual Tandem	N/A
Runway Pavement Markings	
Type	Non-precision
Condition	Good
Runway Lighting	
Runway Edge Lighting	MIRL
Taxiway Lighting	Runway exit lights
Touchdown Point	Yes (no lights)
Traffic Pattern	Right Left
Runway End Identifier Lights (REILs)	Yes
VISUAL APPROACH AIDS	
Type	VASI-2 / PAPI
Glide Path	4.50 degrees / 4.00 degrees
INSTRUMENT APPROACH AIDS	
Instrument Landing System (ILS)	No
Global Positioning System (GPS)	RNAV (GPS) Approach Runway 09
VOR/DME	No
Weather and Communication	AWOS, CTAF
Visual Aids	Lighted wind cone, beacon
N/A = not applicable AWOS = automated weather observing system CTAF = common traffic advisory frequency PCL = pilot-controlled lighting MIRL = medium intensity runway lights MITL = medium intensity taxiway lights PAPI = precision approach path indicator VASI-2 = two-box visual approach slope indicator VOR/DME = very high frequency omnidirectional range distance measuring equipment	

Sources: Airport Facility Directory (May 2023); FAA Form 5010-1, Airport Master Record

FUTURE AIRPORT PLANS

Future plans for the airport are based on the airport’s current airport layout plan (ALP). No changes to the runway are anticipated.



COMPATIBILITY ZONES

The Airport Influence Area (AIA) for Pine Mountain Lake Airport is shown on **Exhibit 1B**. The AIA is the same AIA addressed by the existing airport land use compatibility plan (ALUCP). The compatibility zones addressed by this plan – shown on **Exhibit 2B** – were also retained from the existing ALUCP zones.

NOISE

The standard methodology for analyzing noise conditions at airports involves the use of a computer simulation model. The Airport Environmental Design Tool (AEDT) Version 3e is accepted by the State of California and required by the FAA for developing noise exposure contours. This is the model used to develop the noise exposure contours for this airport land use compatibility plan (ALUCP). The following sections describe the noise modeling inputs for the Pine Mountain Lake Airport noise exposure contours which are shown on **Exhibit 2D**.

AIRCRAFT OPERATIONS AND FLEET MIX

As outlined in Public Utilities Code (PUC) Section 21675(a), the noise contours included in an ALUCP must reflect the anticipated growth of the airport during at least the next 20 years. **Table C2** summarizes the 2037 operations for Pine Mountain Lake Airport using the FAA's *Terminal Area Forecast* for fiscal years 2016-2045, and also includes the aircraft types used in the noise model. Airfield observations and based aircraft lists were used to determine the types of aircraft that frequently use the airport. To accurately represent the noise conditions at the airport, the AEDT provides aircraft noise data for many of the aircraft operating in the national fleet.

The selection of individual aircraft types is important to the modeling process because different aircraft types generate different noise levels. The aircraft fleet mix for Pine Mountain Lake Airport was derived from the 2006 *Pine Mountain Lake Airport Master Plan*, the 2023 *Pine Mountain Lake Airport Aviation Demand Forecast Study*, and interviews with the airport manager. **Table C2** summarizes the generalized fleet mix data input into the noise analysis.

A variety of general aviation single-engine fixed-propeller aircraft are modeled with the GASEPV and GASEPF aircraft in the AEDT. The GASEPV represents many single-engine general aviation aircraft, including the Mooney M-20, Cessna 172 and 180, and Piper Cherokee Arrow. The general aviation single-engine fixed-pitch propeller model (the GASEPF) also represents several single-engine general aviation aircraft. These include the Cessna 150, Piper Archer, and the Piper Tomahawk.



TABLE C2 | Pine Mountain Lake Airport – Aircraft Fleet Mix and Operations

Operations	AEDT Designator	2023 ¹	2043 ²
Itinerant			
Single-Engine, Fixed	GASEPF	3,498	4,683
Single-Engine, Variable	GASEPV	3,498	4,683
Multi-Engine Piston	BEC58P	804	1,077
Turboprop	CNA208	150	201
Small Turbojet	CNA510	150	201
Helicopter	B206L	150	201
Subtotal		8,250	11,046
Local			
Single-Engine, Fixed	GASEPF	3,027	4,053
Single-Engine, Variable	GASEPV	3,027	4,053
Multi-Engine Piston	BEC58P	696	932
Subtotal		6,750	9,038
Grand Total		15,000	20,084

¹FAA 5010 Airport Master Record, operations for 12 months ending June 25, 2022

²Total Operations Forecast reflects a compound annual growth rate (CAGR) of 1.47%, as discussed in the *Pine Mountain Lake Airport Aviation Demand Forecast Study (2023)*

Sources: Coffman Associates Analysis; *Pine Mountain Lake Airport Aviation Demand Forecast Study (2023)*; *Pine Mountain Lake Airport Master Plan (2006)*

Time-of-Day

The time of day during which aircraft operations occur is important as input to the AEDT due to the 10-decibel nighttime (10:00 p.m. to 7:00 a.m.) and 4.8-decibel evening (7:00 p.m. to 10:00 p.m.) weighting of flights.

Since the airport is not equipped with an airport traffic control tower (ATCT), time-of-day information was estimated based on airport staff interviews and time-of-day activity levels at similar airports. Currently, most operations occur during the daytime hours, with an estimated eight percent occurring during evening hours and approximately two percent occurring during nighttime hours.

Runway Use

Runway usage data is also an essential component for developing noise exposure contours. Based on a review of regional airport activity and wind conditions, as discussed in the 2006 *Pine Mountain Lake Airport Master Plan*, the following assumptions were made for runway use:

- Runway 27 – 70 percent
- Runway 9 – 30 percent



Flight Tracks

A review of local flight procedures was used to develop consolidated flight tracks for use in the AEDT. The traffic pattern for Runway 9 is right-hand and the traffic pattern for Runway 27 is left-hand. Accordingly, it is assumed that touch-and-go traffic occurs to the south of the airport.

Flight Profiles

The standard arrival profile used in the AEDT program is a three-degree approach. No indication was given by airport staff that there was any variation on this standard procedure for civilian aircraft; therefore, the standard approach was included in the model as representative of local operating conditions.



APPENDIX D: Implementation Materials





Appendix D

IMPLEMENTATION TOOLS AND DOCUMENTS

This appendix provides information helpful to the implementation of the Airport Land Use Compatibility Plans (ALUCP). This information is current as of the publication date of the ALUCPs. Users are advised to check for updated documentation for these tools.

- Local Agency ALUCP Implementation Guide
- Review Procedures
- FAA Form 7460-1 Guide
- Guidance for Calculating Land Use Intensity

LOCAL AGENCY ALUCP IMPLEMENTATION GUIDE

This guide is provided to help affected local agencies when modifying their general plans and other local regulations to be consistent with the ALUCPs and to facilitate Airport Land Use Commission (ALUC) review of those local agency plans and regulations. Recommended steps for local agency consistency review and determination are outlined in **Exhibit D1**.

General Plan — A general plan, and any specific, community, or other land use plan may be more restrictive than the ALUCPs. However, these plans may not be more permissive than the ALUCPs. General plan amendments will be required if there are any conflicts with the ALUCPs (unless those conflicts represent existing conditions).

Land Use Element — General plan land use designations may not exceed ALUCP safety compatibility standards or allow land uses which are incompatible to be located within safety zones. Designations reflecting existing conditions already in excess of ALUCP safety standards do not render a general plan inconsistent with the ALUCPs. However, new development of vacant property, redevelopment, or a change of use within an existing structure must comply with ALUCP safety standards.

Noise Element — Maximum noise exposure limits for planned/proposed land uses established in a general plan may not be more permissive than the limits established by the ALUCPs. However, a general plan may establish more restrictive limits with respect to aviation-related noise than for noise from other sources, in consideration that aviation-related noise is often judged to be more objectionable than other types of noise.

Zoning Ordinance — If a local agency chooses to implement the ALUCPs through its zoning ordinance, modification of a general plan to achieve consistency with the ALUCPs is typically not necessary. Modifications should eliminate any language conflicting with the ALUCPs and make reference to the zoning ordinance.



ALUC REVIEW BEFORE LOCAL AGENCY IMPLEMENTATION

PROJECT SPONSOR

Submits land use plans, regulations and projects to local agency for approval¹



LOCAL AGENCY

Submits land use plans, regulations and projects to the ALUC for consistency determination



ALUC

Reviews land use plans, regulations and projects and makes consistency determination (with conditions, if required)



IF CONSISTENT

LOCAL AGENCY

Land use projects: local agency informs project sponsor of determination of consistency and issues permit(s) for consistent or conditionally consistent projects

OR

Land use plans and regulations: local agency adopts/approves the land use plans or regulations

IF NOT CONSISTENT

LOCAL AGENCY

Land use projects: local agency informs project sponsor of determination of inconsistency and denies the land use projects. The local agency has three options.

OR

Land use plans and regulations: local agency informs project sponsor of determination of inconsistency and denies land use plans or regulations. The local agency has three options.



Local agency amends the project/plan/ regulation and resubmits to ALUC for consistency determination

OR

Local agency overrules the ALUC

OR

Project/plan/ regulation denied



PROJECT SPONSOR

Proceeds with the implementation of the land use plans and regulations, or the development of the land use projects

Note: 1. This includes land use plan amendments proposed by a project sponsor and rezones.

Source/Prepared by: Coffman Associates, Inc.



Intensity Limitations on Nonresidential Uses — While zoning ordinances are typically not based on people per acre intensities for nonresidential land uses, such policies can be established by other performance-oriented criteria that correspond to the ALUCPs. These include limits on building area, floor area ratios, parking spaces, or other design parameters equivalent to the usage intensity criteria.

Prevention of Incompatible Uses — Provision must be made to prohibit land uses that are not consistent within the safety zones or noise contours and are not existing at the time of ALUCP adoption.

Height Limitations and Other Hazards to Flight — To protect airspace, limitations must be set on the height of new structures and other objects equivalent to the maximum heights established by 14 CFR Part 77 and codified by the ALUCPs. Restrictions must also be established on other land use characteristics that can cause hazards to flight, such as visual or electronic interference with navigation and uses that attract wildlife.

Sound Performance Requirements — The ALUCPs requires reduced sound performance levels of structures for certain noise-sensitive uses within high noise-impact areas in order to reduce aircraft-related noise to an acceptable level. Local regulations must include equivalent criteria.

Avigation Easements — As a condition of approval for new development within certain noise contours or involving airspace penetrations, the ALUCPs require dedication of an avigation easement to the airport operator. Local regulations must address these requirements for new development.

Expansion and Reconstruction — Local agency regulations regarding the expansion and reconstruction of uses must be equivalent to or more restrictive than those in the ALUCPs. Local agency regulations must ensure that existing uses which are incompatible with noise or safety policies of the ALUCPs are subject to the limitations imposed by the ALUCPs.

REVIEW PROCEDURES

In addition to incorporation of ALUC compatibility criteria, local agency implementing documents must specify the manner in which land use plans, regulations, and projects will be reviewed for consistency with the compatibility standards. Recommended steps for ALUC review after local agency implementation are shown on **Exhibit D2**.

Actions Always Requiring ALUC Review — All local agency legislative actions require ALUC review regardless of whether or not the agency has an ALUCP implementation plan that has been approved by the ALUC and adopted by the local agency's governing body, or if the local agency has overruled the ALUCPs. These legislative actions include the adoption of or amendments to a general plan or any specific, community, or other land use plans. Also included are amendments to a zoning ordinance (such as rezones) or building code which would impact matters regulated by the ALUCPs.



ALUC REVIEW AFTER LOCAL AGENCY IMPLEMENTATION

PROJECT SPONSOR

Submits land use plans, regulations and projects to local agency for approval and permitting¹



LOCAL AGENCY

Submits only land use plans and regulation updates/changes within AIA (not projects) to the ALUC for consistency determination



ALUC

Reviews land use plans and regulation updates/changes and makes consistency determination (with conditions, if required)



IF CONSISTENT

LOCAL AGENCY

Informs project sponsor of determination of consistency and adopts/approves land use plans and regulations (with ALUC conditions, if required)



IF NOT CONSISTENT

LOCAL AGENCY

Informs project sponsor of determination of inconsistency and denies land use plans and regulations. The local agency has three options.



Local agency amends the plan/regulation and resubmits to ALUC for consistency determination

OR

Local agency overrules the ALUC

OR

Local agency denies the project



PROJECT SPONSOR

Proceeds with the implementation of the land use plans and regulations

Note: 1. This includes land use plan amendments proposed by a project sponsor and rezones.
Source/Prepared by: Coffman Associates, Inc.



Process for Compatibility Reviews by Local Agencies — Local agencies must establish project processing procedures that will be used to ensure that ALUCP compatibility policies and standards are addressed during project reviews, whether discretionary or ministerial. This can be accomplished by a standard review procedure checklist that includes reference to ALUCP compatibility standards and use of a GIS-based program to identify all parcels within the airport influence area.

Variations and Deviations — Local agency procedures for granting variances and deviations to a zoning ordinance must include provisions to ensure that they do not result in a conflict with ALUCP compatibility standards. Any variance or deviation that involves issues of noise, safety, or airspace protection compatibility, as addressed in the ALUCPs, should be referred to the ALUC for review.

Condition Satisfaction and Enforcement — Policies must be established to ensure compliance with ALUCP compatibility standards during both the permitting process and the lifetime of the development. Enforcement procedures are especially necessary with regard to adhering to limitations on safety zone densities and intensities.

A flow chart depicting the consistency determination review process is included as **Exhibit D3**.

PROJECT FAA FORM 7460-1 GUIDE

The FAA Form 7460-1 may be filed electronically at: <https://oeaaa.faa.gov/oeaaa/external/portal.jsp>. When FAA review is required, a copy of the FAA notice of determination letter must be included with any ALUC application for determination of consistency.

GUIDANCE FOR CALCULATING LAND USE INTENSITY

The following contains guidance on how to calculate the intensity of land uses (the number of people per acre) based on Methods for Determining Concentrations of People, Appendix G of the California Airport Land Use Planning Handbook from 2011 (hereafter referred to as Handbook).¹

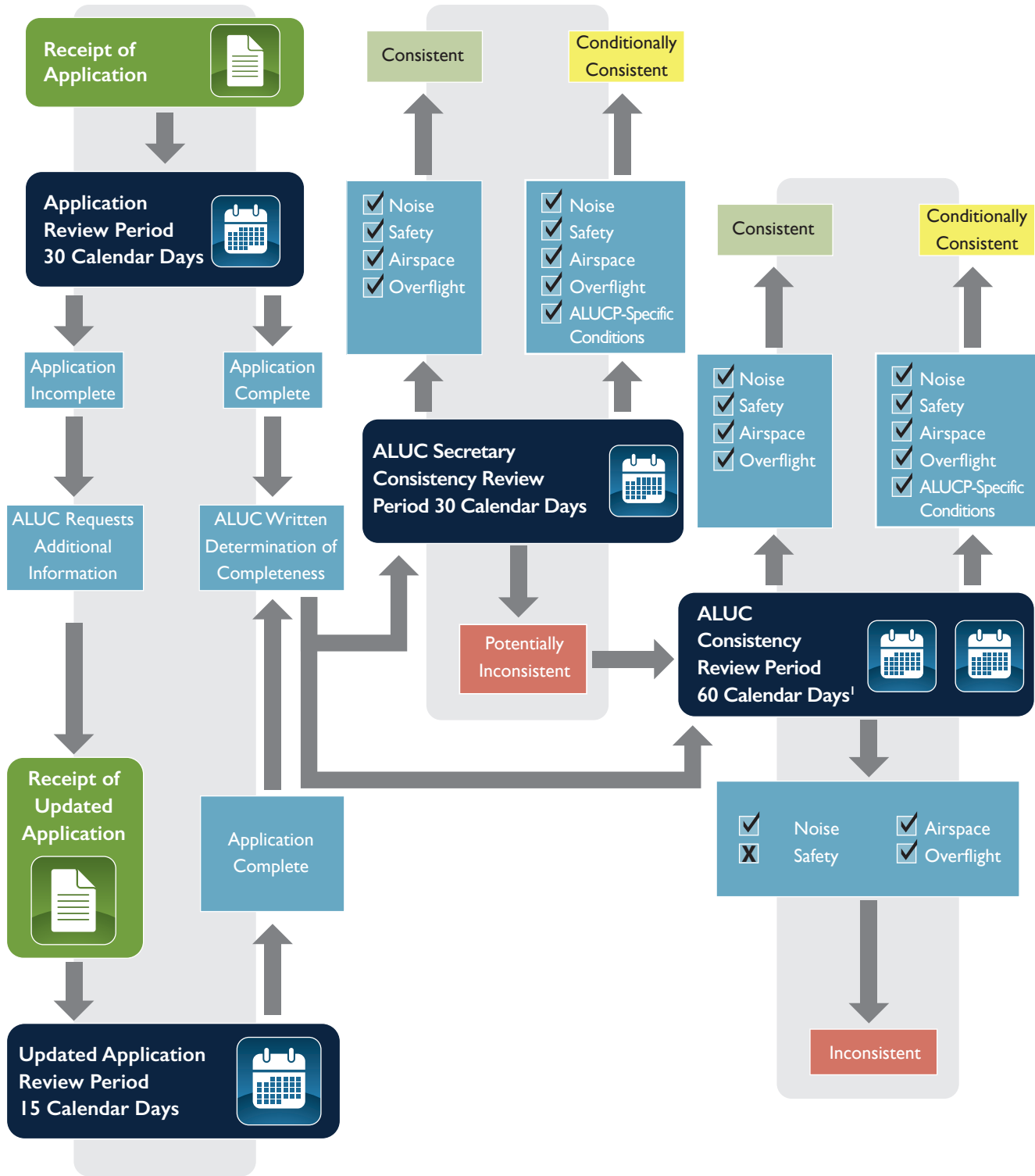
As stated on page G-1 in Appendix G of the Handbook, “the most difficult part about making a people-per-acre determination is estimating the number of people likely to use a particular facility. There are several methods which can be utilized, depending upon the nature of the proposed use:

- **Parking Ordinance:** The number of people present in a given area can be calculated based upon the number of parking spaces provided. Traffic studies can be used to develop an assumption regarding the number of people per vehicle. The number of people-per-acre can then be calculated by dividing the number of people on-site by the size of the parcel in acres. This approach is appropriate where the use is expected to be dependent upon access by vehicles. Depending upon the specific assumptions utilized, this methodology typically results in a number in the low end of the likely intensity for a given land use.

¹ <https://dot.ca.gov/-/media/dot-media/programs/aeronautics/documents/californiaairportlanduseplanninghandbook-a11y.pdf>



CONSISTENCY DETERMINATION REVIEW PROCESS



Note: 1. California Public Utilities Code §21676(d).
Source/Prepared by: Coffman Associates, Inc.



- Maximum Occupancy:** The International Building Code (IBC) can be used as a standard for determining the maximum occupancy of certain uses. The chart provided as **Table D1** indicates the required number of square feet per occupant. The number of people on the site can be calculated by dividing the total floor area of a proposed use by the minimum square feet per occupant requirement listed in the table. The maximum occupancy can then be divided by the size of the parcel in acres to determine the number of people-per-acre. Surveys of actual occupancy levels conducted by various agencies have indicated that many retail and office uses are generally occupied at no more than 50 percent of their maximum occupancy levels, even at the busiest times of day. Therefore, the number of people calculated for office and retail uses should usually be adjusted (50%) to reflect the actual occupancy levels before making the final people-per-acre determination. Even with this adjustment, the IBC-based methodology typically produces intensities at the high end of the likely range.”²
- Survey of Similar Uses:** Certain uses may require an estimate based on a survey of similar uses. This approach is more difficult, but is appropriate for uses that cannot be reasonably estimated based on parking or square footage because of the nature of the use.

TABLE D1 | Maximum Floor Area Allowances per Occupant

Function of Space	Floor Area in Square Feet per Occupant
Accessory storage areas, mechanical equipment room	300 gross
Agricultural building	300 gross
Aircraft hangars	500 gross
Airport terminal	
Baggage claim	20 gross
Baggage handling	300 gross
Waiting areas	15 gross
Assembly	
Gaming floors (keno, slots, etc.)	11 gross
Exhibit gallery and museum	30 net
Assembly with fixed seats	See Section 1004.6
Assembly without fixed seats	
Concentrated (chairs only – not fixed)	7 net
Standing space	5 net
Unconcentrated (tables and chairs)	15 net
Bowling centers (allow five persons for each lane, including 15 feet of runway, and for additional areas)	7 net
Business areas	150 gross
Courtrooms – other than fixed seating areas	40 net
Daycare	35 net
Dormitories	50 gross
Educational	
Classroom area	20 net
Shops and other vocational room areas	50 net
Exercise rooms	50 gross
H-5 fabrication and manufacturing areas	200 gross

Continues on next page

² Page G-1, Appendix G of the California Airport Land Use Planning Handbook (2011)



TABLE D1 | Maximum Floor Area Allowances per Occupant (continued)

Function of Space	Floor Area in Square Feet per Occupant
Industrial areas	100 gross
Institutional areas	
Inpatient treatment areas	240 gross
Outpatient areas	100 gross
Sleeping areas	120 gross
Kitchens, commercial	200 gross
Library	
Reading rooms	50 net
Stack area	100 gross
Locker rooms	50 gross
Mercantile	60 gross
Storage, stock, shipping areas	300 gross
Parking garages	200 gross
Residential	200 gross
Skating rinks, swimming pools	
Rink and pool	50 gross
Decks	15 gross
Stages and platforms	15 net
Warehouses	500 gross
1 square foot = 0.0929 m ²	

Source: International Building Code (2018) (Note: A more current version of the IBC table may be used when available.)

IBC SECTION 1004.6 FIXED SEATING

Below is the relevant IBC section for calculating occupant load of assembly with fixed seats uses, as referenced in **Table D1**.

“For areas having *fixed seats* and *aisles*, the *occupant load* shall be determined by the number of *fixed seats* installed therein. The *occupant load* for areas in which *fixed seating* is not installed, such as waiting spaces, shall be determined in accordance with Section 1004.5 and added to the number of *fixed seats*.

The *occupant load* of *wheelchair spaces* and the associated companion seat shall be based on one occupant for each *wheelchair space* and one occupant for the associated companion seat provided in accordance with Section 1109.2.3.

For areas having *fixed seating* without dividing arms, the *occupant load* shall be not less than the number of seats based on one person for each 18 inches (457 mm) of seating length.

The *occupant load* of seating booths shall be based on one person for each 24 inches (610 mm) of booth seat length measured at the backrest of the seating booth.”³

³ Section 1004, Occupant Load, Subsection 1004.6, Fixed seating of the International Building Code (2018)



EXAMPLE CALCULATIONS

The following examples are adapted from the Handbook and reflect current Unincorporated Tuolumne County parking space requirements for illustrative purposes. Implementation of intensity guidance will require calculation by local agency planning staff and use of the most up-to-date development standards.

EXAMPLE 1

Proposed Development: Single-floor, 24,000-square-foot furniture store

A. Calculation Based on Parking Space Requirements

Assume local code requires one parking space per 250 square feet (sf) of use area for a furniture store. Next, assume 1.5 people per automobile for this type of use.

The usage intensity would be:

- 1) Minimum of 8 parking spaces + 24,000-sf building / 250 sf (1.0 parking space per 250 sf) = 96 additional parking spaces = 104 total required parking spaces
- 2) 104 parking spaces x 1.5 people per space = 156 people maximum on site
- 3) 24,000-sf building footprint / 43,560 sf per acre = 0.52-acre building footprint
- 4) Assuming a relatively balanced occupancy throughout the building and minimal outdoor uses, the usage intensity for a single acre is estimated to be:
 - a) Building footprint < 1.0 acre; therefore, maximum people in one acre = building occupancy = 156 people expected per single acre

B. Calculation Based on International Building Code

For the purposes of the IBC-based methodology, the furniture store is assumed to consist of 50 percent retail sales floor (at 60 sf per occupant) and 50 percent warehouse (at 500 sf per occupant); therefore, usage intensities would be estimated as follows:

- 1) 12,000-sf retail floor area / 60 sf per occupant = 200-person maximum occupancy in retail area
- 2) 12,000-sf warehouse floor area / 500 sf per occupant = 24-person maximum occupancy in warehouse area
- 3) Maximum occupancy under IBC assumptions = 200 + 20 = 224 people maximum
- 4) Assuming typical peak occupancy is 50 percent of IBC numbers = 112 people
- 5) 112 people / 1 acre gross site size = 112 people expected per single acre

The two methods produce similar results.



EXAMPLE 2

Proposed Development: Single-floor industrial building containing a 95,000-sf warehouse area and 5,000-sf office

A. Calculation Based on Parking Space Requirements

Assume local code requires one parking space per 1,000 sf of use area for industrial businesses and one parking space per 250-sf office. Next, assume one person per automobile for this type of use.

The usage intensity would be:

- 1) 100,000-sf warehouse / 1,000 sf (1.0 parking space per 1,000 sf) = 100 required parking spaces
- 2) 5,000-sf office / 250 sf (1.0 parking space per 250 sf) = 20 required parking spaces
- 3) Maximum required parking spaces under local code = 100 warehouse + 20 office = 120 total parking spaces
- 4) 120 parking spaces x 1 person per space = 120 people maximum on site
- 5) 105,000-sf building footprint / 43,560 sf per acre = 2.41-acre building footprint
- 6) 120 people on site / 2.41-acre footprint = 48 people expected per single acre

B. Calculation Based on International Building Code

For the purposes of the IBC-based methodology, intensities would be estimated as follows:

- 1) 100,000-sf industrial area / 100sf per occupant = 1,000 people maximum occupancy in warehouse area
- 2) 5,000-sf business area / 150 sf per occupant = 33 people maximum occupancy in office area
- 3) Maximum occupancy under IBC assumptions = 1,000 + 33 = 1,033 people maximum
- 4) Assuming typical peak occupancy is 50 percent of IBC numbers = 517 people
- 5) 517 people / 2.41 acres gross site size = 214 people expected per single acre

In this instance, the two methods produce very different results. The occupancy estimate of 100 square feet per person is likely low for an industrial facility, even after the 50% adjustment. The 48 people-per-acre estimate using the parking requirement methodology is probably more realistic. The Airport Land Use Commission and local jurisdiction should decide which methodology or combination of methods to use in reviewing development proposals.



APPENDIX E: Supporting Materials





Appendix E

SUPPORTING MATERIALS

This appendix includes the following supporting information related to airport land use compatibility planning:

- Title 14 Code of Federal Regulations Part 77 – *Safe, Efficient Use, and Preservation of the Navigable Airspace*
- Safety Supporting Information from the *California Airport Land Use Compatibility Planning Handbook*

This content is from the eCFR and is authoritative but unofficial.

Title 14 – Aeronautics and Space

Chapter I – Federal Aviation Administration, Department of Transportation

Subchapter E – Airspace

Part 77 Safe, Efficient Use, and Preservation of the Navigable Airspace

Subpart A General

§ 77.1 Purpose.

§ 77.3 Definitions.

Subpart B Notice Requirements

§ 77.5 Applicability.

§ 77.7 Form and time of notice.

§ 77.9 Construction or alteration requiring notice.

§ 77.11 Supplemental notice requirements.

Subpart C Standards for Determining Obstructions to Air Navigation or Navigational Aids or Facilities

§ 77.13 Applicability.

§ 77.15 Scope.

§ 77.17 Obstruction standards.

§ 77.19 Civil airport imaginary surfaces.

§ 77.21 Department of Defense (DOD) airport imaginary surfaces.

§ 77.23 Heliport imaginary surfaces.

Subpart D Aeronautical Studies and Determinations

§ 77.25 Applicability.

§ 77.27 Initiation of studies.

§ 77.29 Evaluating aeronautical effect.

§ 77.31 Determinations.

§ 77.33 Effective period of determinations.

§ 77.35 Extensions, terminations, revisions and corrections.

Subpart E Petitions for Discretionary Review

§ 77.37 General.

§ 77.39 Contents of a petition.

§ 77.41 Discretionary review results.

PART 77—SAFE, EFFICIENT USE, AND PRESERVATION OF THE NAVIGABLE AIRSPACE

Authority: 49 U.S.C. 106 (g), 40103, 40113-40114, 44502, 44701, 44718, 46101-46102, 46104.

Source: Docket No. FAA-2006-25002, 75 FR 42303, July 21, 2010, unless otherwise noted.

Subpart A—General

§ 77.1 Purpose.

This part establishes:

- (a) The requirements to provide notice to the FAA of certain proposed construction, or the alteration of existing structures;
- (b) The standards used to determine obstructions to air navigation, and navigational and communication facilities;
- (c) The process for aeronautical studies of obstructions to air navigation or navigational facilities to determine the effect on the safe and efficient use of navigable airspace, air navigation facilities or equipment; and
- (d) The process to petition the FAA for discretionary review of determinations, revisions, and extensions of determinations.

§ 77.3 Definitions.

For the purpose of this part:

Non-precision instrument runway means a runway having an existing instrument approach procedure utilizing air navigation facilities with only horizontal guidance, or area type navigation equipment, for which a straight-in non-precision instrument approach procedure has been approved, or planned, and for which no precision approach facilities are planned, or indicated on an FAA planning document or military service military airport planning document.

Planned or proposed airport is an airport that is the subject of at least one of the following documents received by the FAA:

- (1) Airport proposals submitted under 14 CFR part 157.
- (2) Airport Improvement Program requests for aid.
- (3) Notices of existing airports where prior notice of the airport construction or alteration was not provided as required by 14 CFR part 157.
- (4) Airport layout plans.
- (5) DOD proposals for airports used only by the U.S. Armed Forces.
- (6) DOD proposals on joint-use (civil-military) airports.
- (7) Completed airport site selection feasibility study.

Precision instrument runway means a runway having an existing instrument approach procedure utilizing an Instrument Landing System (ILS), or a Precision Approach Radar (PAR). It also means a runway for which a precision approach system is planned and is so indicated by an FAA-approved airport layout plan; a military service approved military airport layout plan; any other FAA planning document, or military service military airport planning document.

Public use airport is an airport available for use by the general public without a requirement for prior approval of the airport owner or operator.

Seaplane base is considered to be an airport only if its sea lanes are outlined by visual markers.

Utility runway means a runway that is constructed for and intended to be used by propeller driven aircraft of 12,500 pounds maximum gross weight and less.

Visual runway means a runway intended solely for the operation of aircraft using visual approach procedures, with no straight-in instrument approach procedure and no instrument designation indicated on an FAA-approved airport layout plan, a military service approved military airport layout plan, or by any planning document submitted to the FAA by competent authority.

Subpart B—Notice Requirements

§ 77.5 Applicability.

- (a) If you propose any construction or alteration described in § 77.9, you must provide adequate notice to the FAA of that construction or alteration.
- (b) If requested by the FAA, you must also file supplemental notice before the start date and upon completion of certain construction or alterations that are described in § 77.9.
- (c) Notice received by the FAA under this subpart is used to:
 - (1) Evaluate the effect of the proposed construction or alteration on safety in air commerce and the efficient use and preservation of the navigable airspace and of airport traffic capacity at public use airports;
 - (2) Determine whether the effect of proposed construction or alteration is a hazard to air navigation;
 - (3) Determine appropriate marking and lighting recommendations, using FAA Advisory Circular 70/7460-1, Obstruction Marking and Lighting;
 - (4) Determine other appropriate measures to be applied for continued safety of air navigation; and
 - (5) Notify the aviation community of the construction or alteration of objects that affect the navigable airspace, including the revision of charts, when necessary.

§ 77.7 Form and time of notice.

- (a) If you are required to file notice under § 77.9, you must submit to the FAA a completed FAA Form 7460-1, Notice of Proposed Construction or Alteration. FAA Form 7460-1 is available at FAA regional offices and on the Internet.
- (b) You must submit this form at least 45 days before the start date of the proposed construction or alteration or the date an application for a construction permit is filed, whichever is earliest.

- (c) If you propose construction or alteration that is also subject to the licensing requirements of the Federal Communications Commission (FCC), you must submit notice to the FAA on or before the date that the application is filed with the FCC.
- (d) If you propose construction or alteration to an existing structure that exceeds 2,000 ft. in height above ground level (AGL), the FAA presumes it to be a hazard to air navigation that results in an inefficient use of airspace. You must include details explaining both why the proposal would not constitute a hazard to air navigation and why it would not cause an inefficient use of airspace.
- (e) The 45-day advance notice requirement is waived if immediate construction or alteration is required because of an emergency involving essential public services, public health, or public safety. You may provide notice to the FAA by any available, expeditious means. You must file a completed FAA Form 7460-1 within 5 days of the initial notice to the FAA. Outside normal business hours, the nearest flight service station will accept emergency notices.

§ 77.9 Construction or alteration requiring notice.

If requested by the FAA, or if you propose any of the following types of construction or alteration, you must file notice with the FAA of:

- (a) Any construction or alteration that is more than 200 ft. AGL at its site.
- (b) Any construction or alteration that exceeds an imaginary surface extending outward and upward at any of the following slopes:
 - (1) 100 to 1 for a horizontal distance of 20,000 ft. from the nearest point of the nearest runway of each airport described in paragraph (d) of this section with its longest runway more than 3,200 ft. in actual length, excluding heliports.
 - (2) 50 to 1 for a horizontal distance of 10,000 ft. from the nearest point of the nearest runway of each airport described in paragraph (d) of this section with its longest runway no more than 3,200 ft. in actual length, excluding heliports.
 - (3) 25 to 1 for a horizontal distance of 5,000 ft. from the nearest point of the nearest landing and takeoff area of each heliport described in paragraph (d) of this section.
- (c) Any highway, railroad, or other traverse way for mobile objects, of a height which, if adjusted upward 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, 15 feet for any other public roadway, 10 feet or the height of the highest mobile object that would normally traverse the road, whichever is greater, for a private road, 23 feet for a railroad, and 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, would exceed a standard of paragraph (a) or (b) of this section.
- (d) Any construction or alteration on any of the following airports and heliports:
 - (1) A public use airport listed in the Airport/Facility Directory, Alaska Supplement, or Pacific Chart Supplement of the U.S. Government Flight Information Publications;
 - (2) A military airport under construction, or an airport under construction that will be available for public use;
 - (3) An airport operated by a Federal agency or the DOD.

- (4) An airport or heliport with at least one FAA-approved instrument approach procedure.
- (e) You do not need to file notice for construction or alteration of:
 - (1) Any object that will be shielded by existing structures of a permanent and substantial nature or by natural terrain or topographic features of equal or greater height, and will be located in the congested area of a city, town, or settlement where the shielded structure will not adversely affect safety in air navigation;
 - (2) Any air navigation facility, airport visual approach or landing aid, aircraft arresting device, or meteorological device meeting FAA-approved siting criteria or an appropriate military service siting criteria on military airports, the location and height of which are fixed by its functional purpose;
 - (3) Any construction or alteration for which notice is required by any other FAA regulation.
 - (4) Any antenna structure of 20 feet or less in height, except one that would increase the height of another antenna structure.

§ 77.11 Supplemental notice requirements.

- (a) You must file supplemental notice with the FAA when:
 - (1) The construction or alteration is more than 200 feet in height AGL at its site; or
 - (2) Requested by the FAA.
- (b) You must file supplemental notice on a prescribed FAA form to be received within the time limits specified in the FAA determination. If no time limit has been specified, you must submit supplemental notice of construction to the FAA within 5 days after the structure reaches its greatest height.
- (c) If you abandon a construction or alteration proposal that requires supplemental notice, you must submit notice to the FAA within 5 days after the project is abandoned.
- (d) If the construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

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 swinging 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 than 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.

§ 77.21 Department of Defense (DOD) airport imaginary surfaces.

- (a) **Related to airport reference points.** These surfaces apply to all military airports. For the purposes of this section, a military airport is any airport operated by the DOD.
 - (1) **Inner horizontal surface.** A plane that is oval in shape at a height of 150 feet above the established airfield elevation. The plane is constructed by scribing an arc with a radius of 7,500 feet about the centerline at the end of each runway and interconnecting these arcs with tangents.
 - (2) **Conical surface.** A surface extending from the periphery of the inner horizontal surface outward and upward at a slope of 20 to 1 for a horizontal distance of 7,000 feet to a height of 500 feet above the established airfield elevation.
 - (3) **Outer horizontal surface.** A plane, located 500 feet above the established airfield elevation, extending outward from the outer periphery of the conical surface for a horizontal distance of 30,000 feet.
- (b) **Related to runways.** These surfaces apply to all military airports.
 - (1) **Primary surface.** A surface located on the ground or water longitudinally centered on each runway with the same length as the runway. The width of the primary surface for runways is 2,000 feet. However, at established bases where substantial construction has taken place in accordance with a previous lateral clearance criteria, the 2,000-foot width may be reduced to the former criteria.
 - (2) **Clear zone surface.** A surface located on the ground or water at each end of the primary surface, with a length of 1,000 feet and the same width as the primary surface.
 - (3) **Approach clearance surface.** An inclined plane, symmetrical about the runway centerline extended, beginning 200 feet beyond each end of the primary surface at the centerline elevation of the runway end and extending for 50,000 feet. The slope of the approach clearance surface is 50 to 1 along the runway centerline extended until it reaches an elevation of 500 feet above the established airport elevation. It then continues horizontally at this elevation to a point 50,000 feet from the point of beginning. The width of this surface at the runway end is the same as the primary surface, it flares uniformly, and the width at 50,000 is 16,000 feet.
 - (4) **Transitional surfaces.** These surfaces connect the primary surfaces, the first 200 feet of the clear zone surfaces, and the approach clearance surfaces to the inner horizontal surface, conical surface, outer horizontal surface or other transitional surfaces. The slope of the transitional surface is 7 to 1 outward and upward at right angles to the runway centerline.

§ 77.23 Heliport imaginary surfaces.

- (a) **Primary surface.** The area of the primary surface coincides in size and shape with the designated take-off and landing area. This surface is a horizontal plane at the elevation of the established heliport elevation.

- (b) **Approach surface.** The approach surface begins at each end of the heliport primary surface with the same width as the primary surface, and extends outward and upward for a horizontal distance of 4,000 feet where its width is 500 feet. The slope of the approach surface is 8 to 1 for civil heliports and 10 to 1 for military heliports.
- (c) **Transitional surfaces.** These surfaces extend outward and upward from the lateral boundaries of the primary surface and from the approach surfaces at a slope of 2 to 1 for a distance of 250 feet measured horizontally from the centerline of the primary and approach surfaces.

Subpart D—Aeronautical Studies and Determinations

§ 77.25 Applicability.

- (a) This subpart applies to any aeronautical study of a proposed construction or alteration for which notice to the FAA is required under § 77.9.
- (b) The purpose of an aeronautical study is to determine whether the aeronautical effects of the specific proposal and, where appropriate, the cumulative impact resulting from the proposed construction or alteration when combined with the effects of other existing or proposed structures, would constitute a hazard to air navigation.
- (c) The obstruction standards in subpart C of this part are supplemented by other manuals and directives used in determining the effect on the navigable airspace of a proposed construction or alteration. When the FAA needs additional information, it may circulate a study to interested parties for comment.

§ 77.27 Initiation of studies.

The FAA will conduct an aeronautical study when:

- (a) Requested by the sponsor of any proposed construction or alteration for which a notice is submitted; or
- (b) The FAA determines a study is necessary.

§ 77.29 Evaluating aeronautical effect.

- (a) The FAA conducts an aeronautical study to determine the impact of a proposed structure, an existing structure that has not yet been studied by the FAA, or an alteration of an existing structure on aeronautical operations, procedures, and the safety of flight. These studies include evaluating:
 - (1) The impact on arrival, departure, and en route procedures for aircraft operating under visual flight rules;
 - (2) The impact on arrival, departure, and en route procedures for aircraft operating under instrument flight rules;
 - (3) The impact on existing and planned public use airports;
 - (4) Airport traffic capacity of existing public use airports and public use airport development plans received before the issuance of the final determination;
 - (5) Minimum obstacle clearance altitudes, minimum instrument flight rules altitudes, approved or planned instrument approach procedures, and departure procedures;
 - (6) The potential effect on ATC radar, direction finders, ATC tower line-of-sight visibility, and physical or electromagnetic effects on air navigation, communication facilities, and other surveillance systems;

- (7) The aeronautical effects resulting from the cumulative impact of a proposed construction or alteration of a structure when combined with the effects of other existing or proposed structures.
- (b) If you withdraw the proposed construction or alteration or revise it so that it is no longer identified as an obstruction, or if no further aeronautical study is necessary, the FAA may terminate the study.

§ 77.31 Determinations.

- (a) The FAA will issue a determination stating whether the proposed construction or alteration would be a hazard to air navigation, and will advise all known interested persons.
- (b) The FAA will make determinations based on the aeronautical study findings and will identify the following:
 - (1) The effects on VFR/IFR aeronautical departure/arrival operations, air traffic procedures, minimum flight altitudes, and existing, planned, or proposed airports listed in § 77.15(e) of which the FAA has received actual notice prior to issuance of a final determination.
 - (2) The extent of the physical and/or electromagnetic effect on the operation of existing or proposed air navigation facilities, communication aids, or surveillance systems.
- (c) The FAA will issue a Determination of Hazard to Air Navigation when the aeronautical study concludes that the proposed construction or alteration will exceed an obstruction standard and would have a substantial aeronautical impact.
- (d) A Determination of No Hazard to Air Navigation will be issued when the aeronautical study concludes that the proposed construction or alteration will exceed an obstruction standard but would not have a substantial aeronautical impact to air navigation. A Determination of No Hazard to Air Navigation may include the following:
 - (1) Conditional provisions of a determination.
 - (2) Limitations necessary to minimize potential problems, such as the use of temporary construction equipment.
 - (3) Supplemental notice requirements, when required.
 - (4) Marking and lighting recommendations, as appropriate.
- (e) The FAA will issue a Determination of No Hazard to Air Navigation when a proposed structure does not exceed any of the obstruction standards and would not be a hazard to air navigation.

§ 77.33 Effective period of determinations.

- (a) The effective date of a determination not subject to discretionary review under 77.37(b) is the date of issuance. The effective date of all other determinations for a proposed or existing structure is 40 days from the date of issuance, provided a valid petition for review has not been received by the FAA. If a valid petition for review is filed, the determination will not become final, pending disposition of the petition.
- (b) Unless extended, revised, or terminated, each Determination of No Hazard to Air Navigation issued under this subpart expires 18 months after the effective date of the determination, or on the date the proposed construction or alteration is abandoned, whichever is earlier.
- (c) A Determination of Hazard to Air Navigation has no expiration date.

[Doc. No. FAA-2006-25002, 75 FR 42303, July 21, 2010, as amended by Amdt. 77-13-A, 76 FR 2802, Jan. 18, 2011]

§ 77.35 Extensions, terminations, revisions and corrections.

- (a) You may petition the FAA official that issued the Determination of No Hazard to Air Navigation to revise or reconsider the determination based on new facts or to extend the effective period of the determination, provided that:
 - (1) Actual structural work of the proposed construction or alteration, such as the laying of a foundation, but not including excavation, has not been started; and
 - (2) The petition is submitted at least 15 days before the expiration date of the Determination of No Hazard to Air Navigation.
- (b) A Determination of No Hazard to Air Navigation issued for those construction or alteration proposals not requiring an FCC construction permit may be extended by the FAA one time for a period not to exceed 18 months.
- (c) A Determination of No Hazard to Air Navigation issued for a proposal requiring an FCC construction permit may be granted extensions for up to 18 months, provided that:
 - (1) You submit evidence that an application for a construction permit/license was filed with the FCC for the associated site within 6 months of issuance of the determination; and
 - (2) You submit evidence that additional time is warranted because of FCC requirements; and
 - (3) Where the FCC issues a construction permit, a final Determination of No Hazard to Air Navigation is effective until the date prescribed by the FCC for completion of the construction. If an extension of the original FCC completion date is needed, an extension of the FAA determination must be requested from the Obstruction Evaluation Service (OES).
 - (4) If the Commission refuses to issue a construction permit, the final determination expires on the date of its refusal.

Subpart E—Petitions for Discretionary Review

§ 77.37 General.

- (a) If you are the sponsor, provided a substantive aeronautical comment on a proposal in an aeronautical study, or have a substantive aeronautical comment on the proposal but were not given an opportunity to state it, you may petition the FAA for a discretionary review of a determination, revision, or extension of a determination issued by the FAA.
- (b) You may not file a petition for discretionary review for a Determination of No Hazard that is issued for a temporary structure, marking and lighting recommendation, or when a proposed structure or alteration does not exceed obstruction standards contained in subpart C of this part.

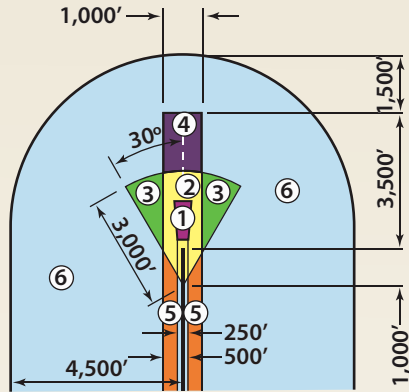
§ 77.39 Contents of a petition.

- (a) You must file a petition for discretionary review in writing and it must be received by the FAA within 30 days after the issuance of a determination under § 77.31, or a revision or extension of the determination under § 77.35.

- (b) The petition must contain a full statement of the aeronautical basis on which the petition is made, and must include new information or facts not previously considered or presented during the aeronautical study, including valid aeronautical reasons why the determination, revisions, or extension made by the FAA should be reviewed.
- (c) In the event that the last day of the 30-day filing period falls on a weekend or a day the Federal government is closed, the last day of the filing period is the next day that the government is open.
- (d) The FAA will inform the petitioner or sponsor (if other than the petitioner) and the FCC (whenever an FCC-related proposal is involved) of the filing of the petition and that the determination is not final pending disposition of the petition.

§ 77.41 Discretionary review results.

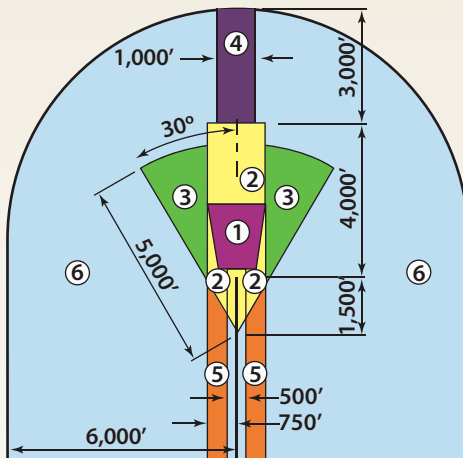
- (a) If discretionary review is granted, the FAA will inform the petitioner and the sponsor (if other than the petitioner) of the issues to be studied and reviewed. The review may include a request for comments and a review of all records from the initial aeronautical study.
- (b) If discretionary review is denied, the FAA will notify the petitioner and the sponsor (if other than the petitioner), and the FCC, whenever a FCC-related proposal is involved, of the basis for the denial along with a statement that the determination is final.
- (c) After concluding the discretionary review process, the FAA will revise, affirm, or reverse the determination.



SHORT GENERAL AVIATION RUNWAY

Assumptions:

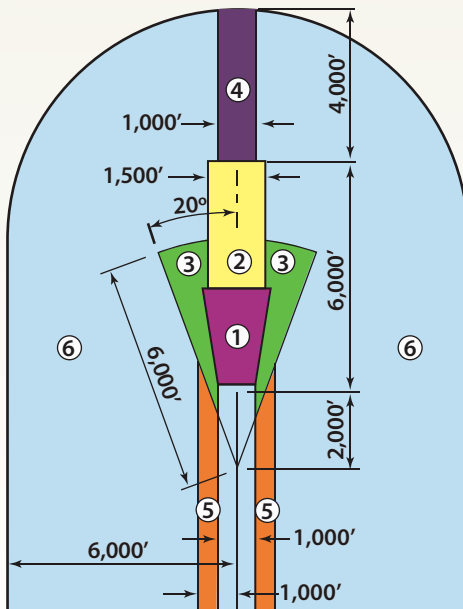
- Length less than 4,000 feet
- Approach visibility minimums \geq 1 mile or visual approach only
- Zone 1 = 250' x 450' x 1,000'



MEDIUM GENERAL AVIATION RUNWAY

Assumptions:

- Length 4,000 to 5,999 feet
- Approach visibility minimums \geq 3/4 mile and < 1 mile
- Zone 1 = 1,000' x 1,510' x 1,700'



LONG GENERAL AVIATION RUNWAY

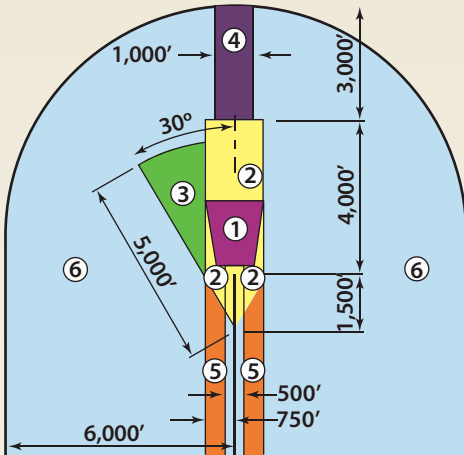
Assumptions:

- Length 6,000 or more
- Approach visibility minimums < 3/4 mile
- Zone 1 = 1,000' x 1,750' x 2,500'

LEGEND

- | | | |
|--|--|---|
| 1 Runway Protection Zone | 3 Inner Turning Zone | 5 Sideline Zone |
| 2 Inner Approach/Departure Zone | 4 Outer Approach/Departure Zone | 6 Traffic Pattern Zone |

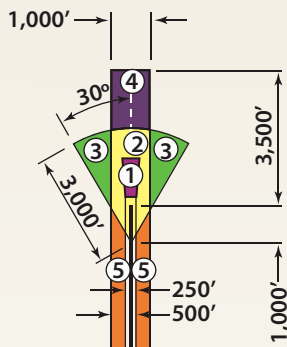
Source: California Airport Land Use Planning Handbook, 2011.



GENERAL AVIATION RUNWAY WITH SINGLE-SIDED TRAFFIC PATTERN

Assumptions:

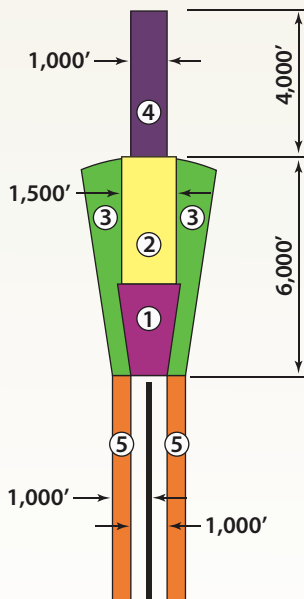
- Length 4,000 to 5,999 feet
 - Approach visibility minimums $\geq \frac{3}{4}$ mile and < 1 mile
 - Zone 1 = 1,000' x 1,510' x 1,700
- See Note.



LOW ACTIVITY GENERAL AVIATION RUNWAY

Assumptions:

- Less than 2,000 takeoffs and landings per year at individual runway end.
 - Length less than 4,000 feet
 - Approach visibility minimums ≥ 1 mile or visual approach only
- See Note.



LARGE AIR CARRIER RUNWAY

Assumptions:

- Minimal light-aircraft general aviation activity
 - Predominately straight-in and straight-out flight routes
 - Approach visibility minimums $< \frac{3}{4}$ mile
- See Note.

Note:
RPZ (Zone 1) size in each example is as indicated by FAA criteria for the approach type assumed. Adjustment may be necessary if the Approach type differs.

These examples are intended to provide general guidance for establishment of airport safety compatibility zones. They do not represent California Department of Transportation standards of policy.

LEGEND

- | | | |
|---|---|--|
| 1 Runway Protection Zone | 3 Inner Turning Zone | 5 Sideline Zone |
| 2 Inner Approach/Departure Zone | 4 Outer Approach/Departure Zone | 6 Traffic Pattern Zone |

Source: California Airport Land Use Planning Handbook, 2011.



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