RIO VISTA AIRPORT

AIRPORT LAND USE COMPATIBILITY PLAN

AUGUST 8, 2024

AIRPORT LAND USE COMPATIBILITY PLAN

FOR

Rio Vista Airport

PREPARED FOR

County of Solano
Department of Resource Management

2024 AMENDMENTS PREPARED BY

Coffman Associates, Inc.

August 8, 2024

TABLE OF CONTENTS

Airport Land Use Compatibility Plan for Rio Vista Airport

Page

1. Introduction 1
1.1 Overview of the Plan 1
1.2 Plan Preparation and Review 3
1.3 Other ALUCPs 3
1.4 How to Use the Rio Vista ALUCP 3

2. General Applicability 5
2.1 Purpose 5
2.2 Geographic Scope 5
2.3 Changes in Airport Land Use Planning Since 1988 7

3. Summary Guide to Land Use Compatibility 9
3.1 Understanding Land Use Compatibility 9

4. Detailed Guide to Land Use Compatibility 13
4.1 Safety Zones Established 13
4.2 Safety Zone 1 13
4.3 Safety Zone 2 19
4.4 Safety Zone 3 21
4.5 Safety Zone 4 23
4.6 Safety Zone 5 25
4.7 Safety Zone 6 26
4.8 Safety Zone 7 32

5. Development Standards and Policies 31
5.1 General Land Use Policies 31
5.2 Noise Compatibility Policies 32
5.3 Safety Compatibility Policies 35
5.4 Airspace Protection Policies 36
5.5 Overflight Notification Policies 38
5.6 Renewable Energy Policies 40
5.7 Height Policies 40
5.8 Wildlife Hazards 41

6. ALUC Review Procedures for the Rio Vista ALUCP 45
6.1 General Applicability 45
6.2 Review of Land Use Actions 49

Page

Appendices

A Rio Vista Draft ALUCP White Paper
B Sample Implementation Documents
C Noise Modeling Assumptions
D Methods for Determining Concentrations of People
E State Laws Related to Airport Land Use Planning
F Title 14, Code of Federal Regulations, Part 77
G Federal Aviation Administration Advisory Circular 150/5200-33C
H Wildlife Hazard Memo to Solano County
I Glossary of Terms
J Airport Layout Plan
K Displacement Analysis

List of Figures

Figure 1 Regional Location 2
Figure 2 Airport Influence Area 6
Figure 3 Rio Vista Municipal Airport and Travis Air Force Base Airport Influence Areas 8
Figure 4 Rio Vista Municipal Airport Safety Zones 14
Figure 5 2035 CNEL Contours 16
Figure 6 14 CFR Part 77 Imaginary Surfaces - Rio Vista Municipal Airport 17
Figure 7 Overflight Zone 39
Figure 8 Rio Vista Municipal Airport Wildlife Hazard Analysis Boundaries 43

List of Tables

Table 1 Land Use Compatibility Criteria 11
Table 2 Noise Compatibility Criteria 34
Table 3 Species Groups Known to be Attracted to Land Use Types in Solano County 44

RIO VISTA AIRPORT
Airport Land Use Compatibility Plan

1. Introduction

1.1 Overview of the Plan

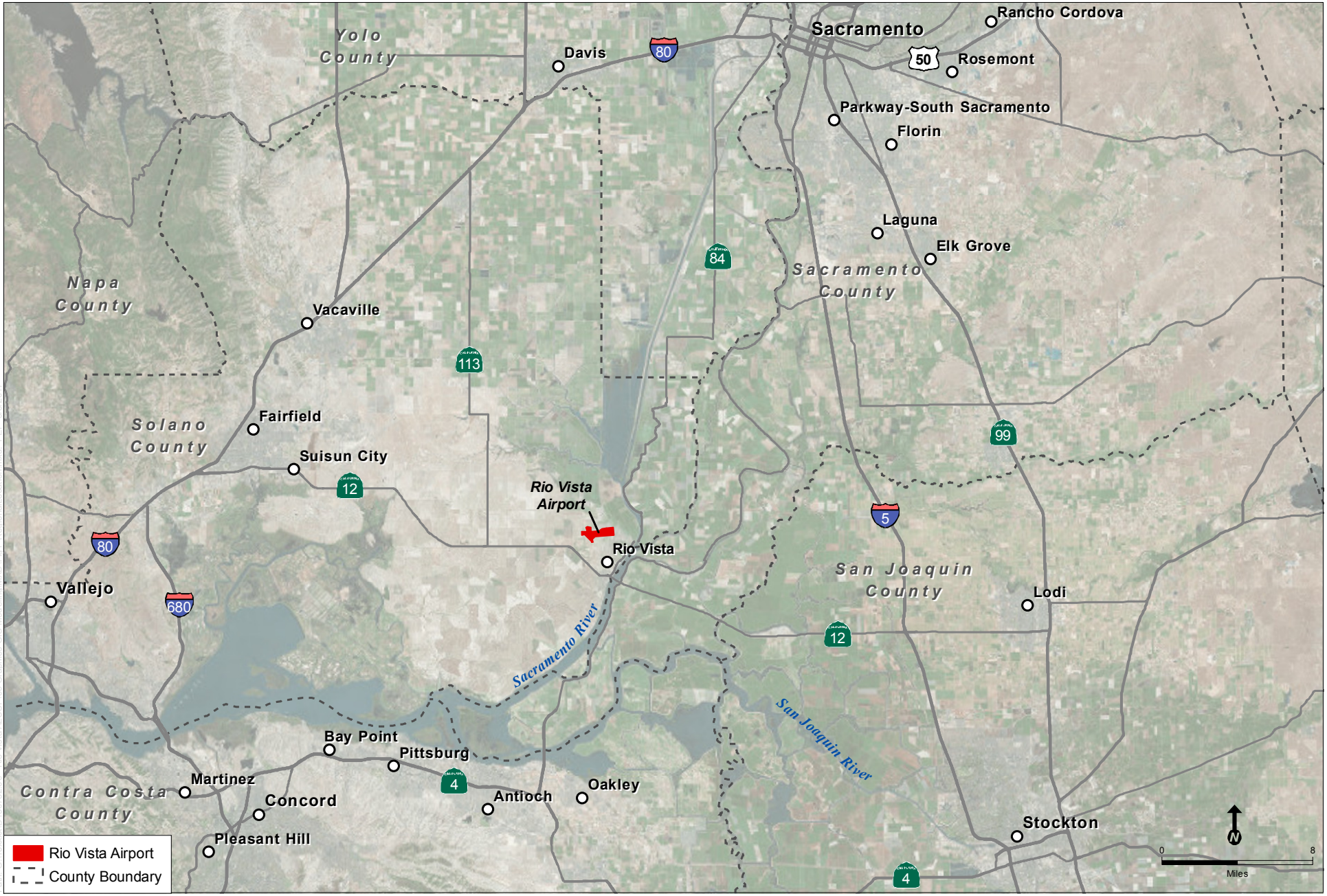
This *Rio Vista Airport Land Use Compatibility Plan* updates land use compatibility policies applicable to future development in the vicinity of Rio Vista Airport (Airport). The policies herein are designed to ensure that future land uses in the surrounding area will remain compatible with the realistically foreseeable, forecasted aircraft activity at the Airport. As adopted by the Solano County Airport Land Use Commission (ALUC or Commission), these policies provide the foundation through which the ALUC can execute its duties to review land use development in accordance with California's State Aeronautics Act (Pub. Util. Code, § 21670 et seq.).

The compatibility criteria defined by these policies are also intended to be reflected within general plans and other policy instruments adopted by Solano County and the City of Rio Vista. These jurisdictions are responsible for overseeing land use in the areas around Rio Vista Airport.

The Legislature also intended that "special districts, school districts, and community college districts are included among the local agencies that are subject to airport land use laws and other requirements of ... article" 3.5 of the State Aeronautics Act (Pub. Util. Code, § 21670(f)).

Figure 1 depicts the location of Rio Vista Airport and the surrounding area. Rio Vista Airport is located in the city of Rio Vista in the Sacramento-San Joaquin River Delta region, approximately 27 miles southwest of the city of Sacramento and 46 miles northeast of the city of San Francisco. The Airport is approximately two miles west of the Sacramento River and approximately 16 miles west of the Interstate 5 (I-5) highway.

This document contains policies directly associated with assessment of land use compatibility (Chapters 3, 4, and 5). The Rio Vista ALUCP incorporates and updates the review procedures from the Solano County Airport Land Use Compatibility Review Procedures and supersedes that document. Chapter 6 of the Rio Vista ALUCP establishes the review procedures to be followed by the Commission and affected local land use jurisdictions with respect to the Airport.



SOURCE: ESA, 2017; ESRI Mapping Services

Rio Vista Municipal Airport ALUCP.150732

Figure 1

Regional Location

ESA

1.2 Plan Preparation and Review

Once adopted by the Solano County ALUC, this document replaces the previous ALUCP titled *Airport/Land Use Compatibility Plan – Rio Vista Municipal Airport [and] New Rio Vista Airport*, adopted by the ALUC in May 1988. The previous Airport/Land Use Compatibility Plan accounts for two Rio Vista Airports: the original Rio Vista Airport, and the then "New" Rio Vista Airport which opened on May 2, 1994, replacing the original Airport. For additional details on the factors that necessitated this ALUCP update, see Appendix A.[1]

The Rio Vista ALUCP has taken these factors into account in the preparation of this document. Other sources have also had a role in the preparation of this document. In particular, Solano County and Rio Vista Airport personnel have played a critical role in providing data on existing aircraft operations at the Airport.

The 2024 amendments include adding Section 4.8 Safety Zone 7 in the Detailed Discussion which was missing in the 2018 update, clarification regarding coordination with the TAFB Bird Aircraft Strike Hazard (BASH) Team, deed notice requirements, update Figure 3 Rio Vista Airport Influence Area to show the TAFB and other minor amendments.

1.3 Other ALUCPs

This ALUCP addresses land use compatibility issues involving the Rio Vista Airport. The Solano County ALUC has also adopted separate ALUCPs for Nut Tree Airport and Travis Air Force Base (AFB), both important aviation facilities within the county. The Airport Influence Area (AIA) for Travis AFB encompasses the entirety of Solano County; therefore, the Rio Vista AIA is located within the AIA of Travis AFB. Specifically, the AIA for Rio Vista Airport is located entirely within Compatibility Zone D of the Travis AFB AIA. In cases where the AIAs of two airports overlap both compatibility plans apply. This document indicates where compatibility issues and standards presented in the Travis AFB Land Use Compatibility Plan (LUCP) may apply and where additional review of that document is needed (see Table 1 in Chapter 3, Chapter 4, and Section 5.6). Descriptions of provisions of the Travis AFB LUCP are described in this Rio Vista ALUCP for the convenience of the reader and are not separately adopted by this Rio Vista ALUCP.

1.4 How to Use the Rio Vista ALUCP

There are six chapters in this ALUCP update that guide the reader on the land use compatibility requirements for areas around the Airport, as well as the review procedures and implementation strategies to be implemented by the ALUC and local land use agencies. **Chapter 2**, **General Applicability**, provides a context for this update to the ALUCP, explaining recent changes in airport compatibility law in California and general background information about Solano County and the Airport. **Chapter 3**, **Summary Guide to Land Use Compatibility**, summarizes land use compatibility criteria and policies. **Chapter 4**, **Detailed Guide to Land Use Compatibility**, presents the land use compatibility policies for the six safety zones for Rio Vista Airport.

[1] Some technical information included in Appendix A may be outdated and has been updated in the ALUCP.

Chapter 5, **Development Standards**, provides detailed policies pertaining to general, noise, safety, airspace protection, and overflight standards, as well as policies involving renewable energy facilities, meteorological towers, objects greater than 100 feet in height, and wildlife hazards. **Chapter 6**, **ALUC Review Procedures for the Rio Vista ALUCP**, describes the procedures, roles, and responsibilities for the Solano County ALUC.

2. General Applicability

2.1 Purpose

This document sets forth the criteria, maps, and other policies to be used by the Solano County ALUC and affected local land use jurisdictions as follows:

Solano County Airport Land Use Commission — The ALUC shall apply these policies when reviewing certain proposals for general plans, specific plans, zoning ordinances, and certain land use development proposals in the vicinity of the Airport for compatibility with aircraft operations at the Airport. The authority for conducting such reviews is established by the California State Aeronautics Act (Pub. Util. Code, § 21670 et seq.).

Affected Land Use Jurisdictions — The County of Solano and City of Rio Vista, both located within the Rio Vista AIA, and the County of Sacramento and City of Isleton,[2] which are partially located within the AIA inside the Wildlife Hazard Analysis (WHA) five-mile boundary, as defined herein, shall utilize these policies as the basis for:

- Modifying their respective general plans, zoning ordinances, and other local land use policies to assure that future land use development will be compatible with aircraft operations.
- Making planning decisions regarding specific development proposals involving the lands impacted by aircraft activity.

2.2 Geographic Scope

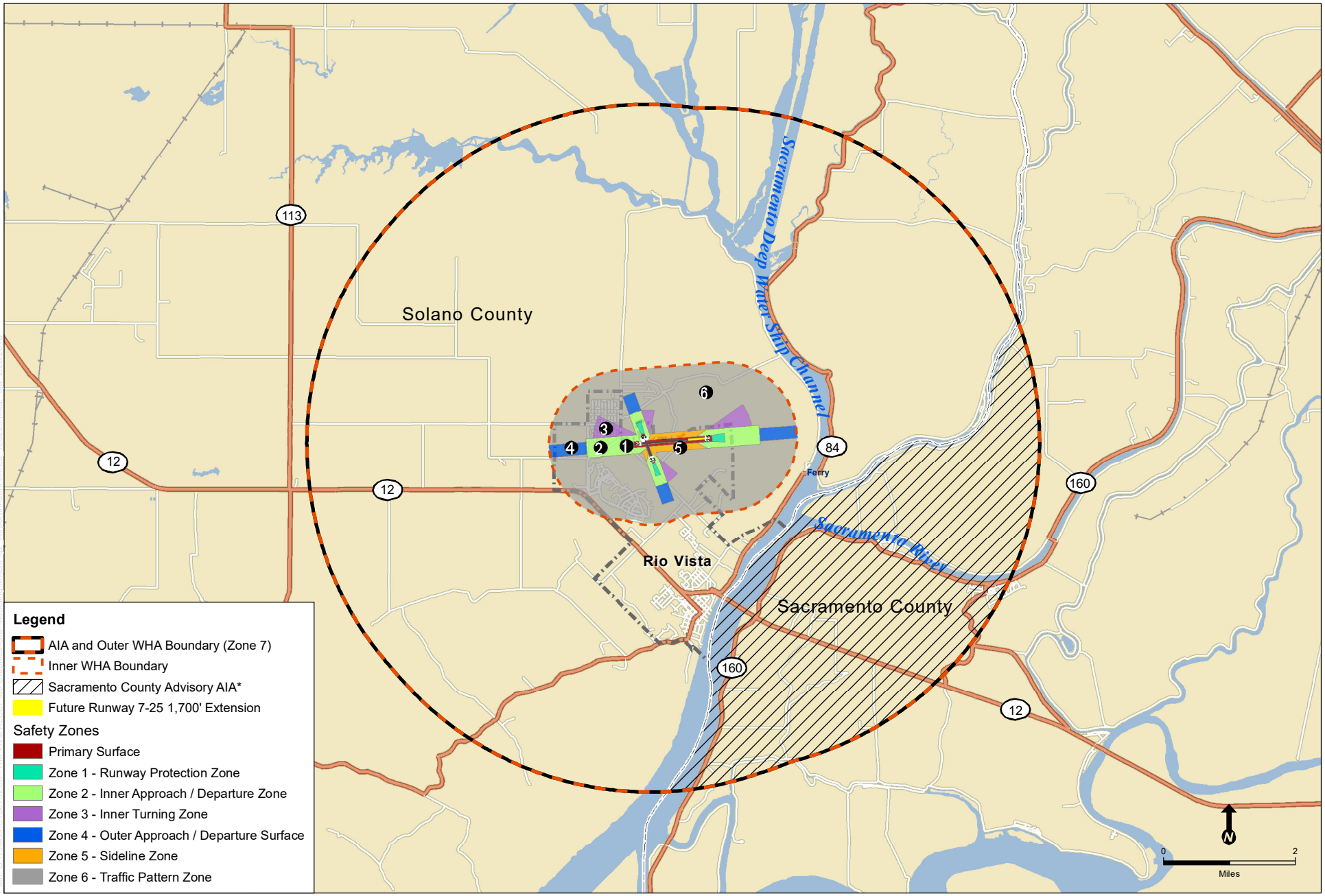
Nature of Compatibility Concerns — This Rio Vista ALUCP applies to:

- All lands on which the uses could be negatively affected by noise or safety impacts associated with present or future aircraft operations at Rio Vista Airport.
- All lands on which the uses could negatively impact flight operations and flight support activities at the Airport.
- Lands on which the uses could negatively affect the operation of aircraft at the Airport.

Boundaries of Airport Influence Area — The Rio Vista AIA is depicted on **Figure 2**.

- The AIA is comprised of portions of Solano County and the city of Rio Vista that surround the Airport, and encompasses Safety Zones 1 through 6, the Airport's 2035 noise contours, the Airport's Title 14 Code of Federal Regulations (CFR) Part 77 surfaces, the Airport's overflight notification area, and the Inner and Outer WHA areas. Figure 2 depicts the safety zones and the AIA for the Airport; additionally, a description of each of the safety zones is located in Section 4.1.
- Within the AIA, all proposed development that includes structures that are 200 feet above ground level (AGL) or greater in height shall be reviewed by the ALUC and shall be consistent with Table 1 – Land Use Compatibility Criteria in Chapter 3.

[2] Because Sacramento County is outside the jurisdiction of the Solano County ALUC, the plan is only advisory as applied to the portions of the County of Sacramento and City of Isleton located within the AIA.



SOURCE: California Airport Land Use Planning Handbook, October 2011; ESA, 2016; ESRI Mapping Services

*NOTE: Crosshatched areas are in Sacramento County, outside the jurisdiction of the Solano County Airport Land Use Commission. The Rio Vista ALUCP is advisory only in these areas

Rio Vista Municipal Airport ALUCP.150732

Figure 2

Rio Vista Municipal Airport Influence Area

ESA

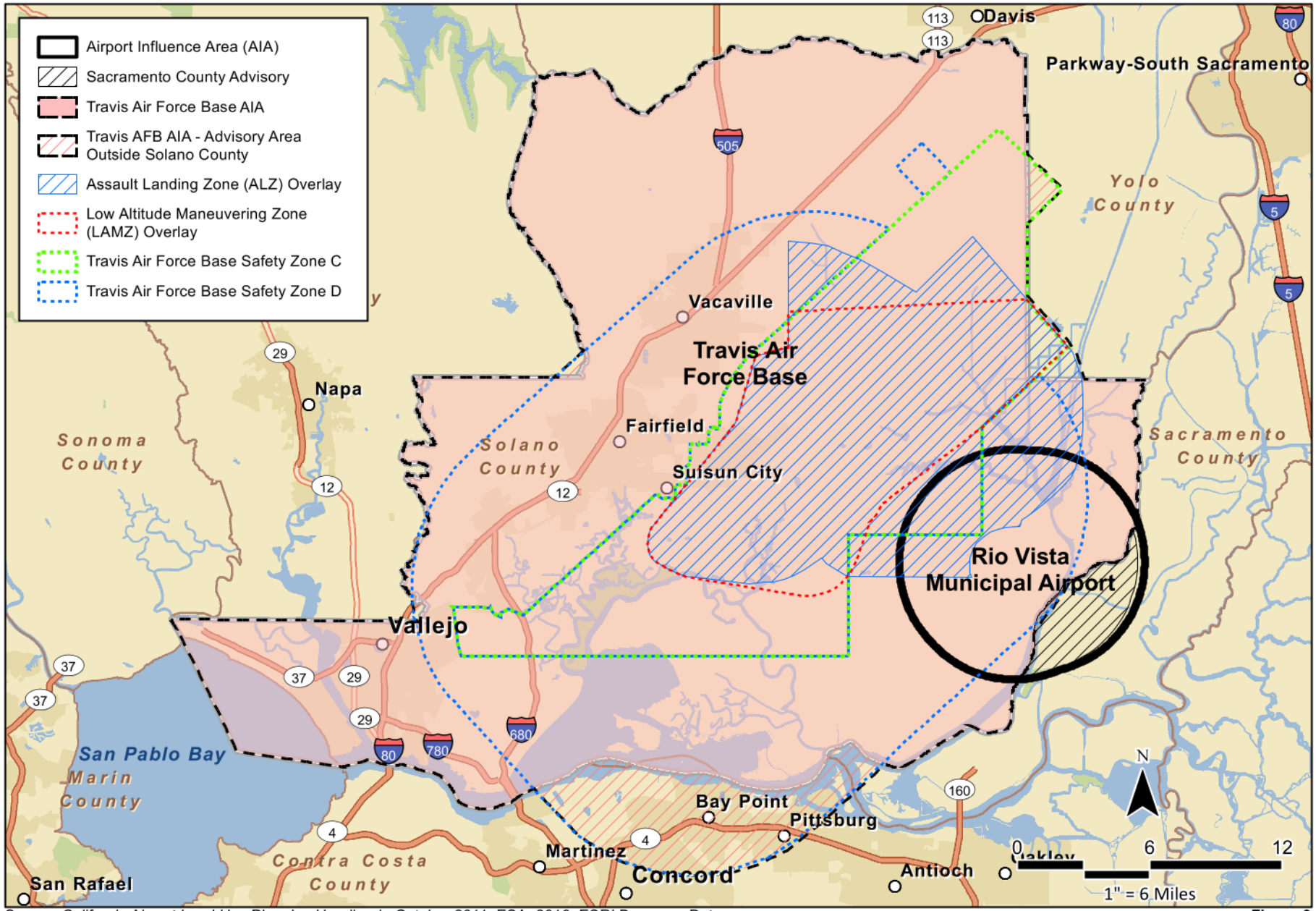
- The entire Rio Vista AIA is located within Travis Air Force Base LUCP and intersects Compatibility Zones C and D and the ALZ. Please see the Travis AFB LUCP for additional compatibility standards. The Compatibility Zones are depicted on **Figure 3**.
- Establishment of an AIA is discussed in section 21675 of the Public Utilities Code.

2.3 Changes in Airport Land Use Planning Since 1988

Since the adoption of the 1988 Rio Vista ALUCP, the standards and requirements for airport land use compatibility planning have been consolidated and become more streamlined. The California Airport Land Use Planning Handbook (Handbook) produced by the California Department of Transportation (Caltrans) Division of Aeronautics was first released in 1983 and was subsequently updated in 1993, 2002, and 2011. The 2011 Handbook was reduced from nine to six chapters. Chapter 4 in the 2011 Handbook consolidates information provided in Chapters 3, 7, and 9 in the 2002 edition. This consolidation better focuses discussion on how to develop and implement airport land use compatibility policies that better connect with the goals of the noise, overflight, safety, and airspace protection policies for each unique airport setting. While similar to the original 1983 edition, the 2011 Handbook has evolved into a more simplified and streamlined document.

This update to the Rio Vista ALUCP is primarily needed for the following two reasons:

- To update the current ALUCP, as appropriate, pursuant to the standards set forth in Caltrans' 2011 *California Airport Land Use Planning Handbook*.
- To improve the Rio Vista ALUCP by updating and incorporating the countywide policies contained in the *Solano County Airport Land Use Compatibility Review Procedures* and superseding that document.



Source: California Airport Land Use Planning Handbook, October 2011; ESA, 2016; ESRI Basemap Data
*Note: Crosshatched areas are in Contra Costa, Napa, Sacramento, and Yolo Counties, outside the jurisdiction of the Solano County Airport Land Use Commission. The Travis AFB and Rio Vista ALUCPs are advisory only in these areas.

Figure 3
Rio Vista Municipal Airport and Travis Air Force Base Airport Influence Areas

3. Summary Guide to Land Use Compatibility

3.1 Understanding Land Use Compatibility

This chapter provides a summary guide to land use compatibility at the Airport. **Table 1** provides compatibility criteria for seven compatibility areas, including the six safety zones for Rio Vista Airport and the areas between the Inner and Outer WHA boundaries. Maximum residential densities, non-residential intensities, prohibited land uses, and additional development conditions for each of the six safety zones at Rio Vista Airport are shown in Table 1. In addition, Table 1 provides criteria for discretionary projects located in areas between the Inner and Outer WHA boundaries. These requirements are discussed in further detail in Section 5.8.

As discussed earlier, the AIA for Rio Vista Airport is located within the AIA for Travis AFB. Accordingly, the policies included in the Travis AFB LUCP are applicable to areas around Rio Vista Airport. Where noted in this ALUCP, the reader should refer to the Travis AFB LUCP.

A more detailed discussion of the compatibility criteria applicable to the six safety zones is provided in Chapter 4, *Detailed Land Use Compatibility Criteria*.

This page intentionally left blank

TABLE 1
LAND USE COMPATIBILITY CRITERIA

Compatibility Area	Locations	Maximum Densities/Intensities[1]			Additional Criteria	
		Residential Density Allowed	Other Uses (people/ac)[2]		Prohibited Uses[4]	Other Development Conditions[5]
			Maximum Nonresidential Intensity (people per acre)[3]	Maximum Single Acre Intensity – Clustered Development (people per acre)		
Safety Zone 1	Runway Protection Zone	0	0	0	• Assemblages of people • Objects penetrating the Title 14 Code of Federal Regulation (CFR) Part 77 imaginary surfaces • Structures and residential land uses • Hazards to flight[6]	• Avigation easement dedication. • Within the Inner WHA Boundary, reviewing agencies shall prepare a WHA for projects that have the potential to attract wildlife that could cause bird strikes. ALUC will use this information to coordinate with the Travis AFB Bird/Wildlife Aircraft Strike Hazard (BASH) Team. Based on the findings of the WHA and coordination with the Travis AFB BASH Team, all reasonably feasible mitigation measures must be incorporated into the planned land use (see Policy WH-1). • Refer to the Compatibility Zone D standards found in the Travis AFB LUCP. • Deed Notice Required
Safety Zone 2	Inner Approach/ Departure Zone	1 du per 10 ac	40	80	• Children's schools,[7] day care centers[8] • Theaters, meeting halls, and other assembly uses • Office buildings > three stories in height • Labor-intensive industrial uses • Stadiums, group recreational uses • Hospitals, nursing homes • Highly noise-sensitive uses (e.g. outdoor theaters) • Aboveground bulk storage of hazardous materials • Hazards to flight[6]	• Locate structures at a maximum distance from extended runway centerline. • Maximum interior noise level of CNEL 45 dB in buildings with noise-sensitive uses (see Policy NP-4). • ALUC review required for objects ≥ 35 feet AGL.[9] • Avigation easement dedication. • See Policy RE-1 pertaining to all proposed wind turbines. • All new or expanded commercial-scale solar facilities must conduct an SGHAT glint and glare study for ALUC review (see Policy RE-2). • Within the Inner WHA Boundary, reviewing agencies shall prepare a WHA for projects that have the potential to attract wildlife that could cause bird strikes ALUC will use this information to coordinate with the Travis AFB Bird/Wildlife Aircraft Strike Hazard (BASH) Team. Based on the findings of the WHA and coordination with the Travis AFB BASH Team, all reasonably feasible mitigation measures must be incorporated into the planned land use (see Policy WH-1). • Refer to the Compatibility Zone D standards found in the Travis AFB LUCP. • Deed Notice Required
Safety Zone 3	Inner Turning Zone	1 du per 2 ac	70	210	• Children's schools,[7] day care centers[8] • Stadiums, group recreational uses • Hospitals, nursing homes • Major shopping centers, theaters, meeting halls, and other assembly uses • Highly noise-sensitive uses (e.g. outdoor theaters) • Hazards to flight[6]	• Maximum interior noise level of CNEL 45 dB in buildings with noise-sensitive uses (see Policy NP-4). • ALUC review required for objects ≥ 50 feet AGL. • Avigation easement dedication. • See Policy RE-1 pertaining to all proposed wind turbines. • All new or expanded commercial-scale solar facilities must conduct an SGHAT glint and glare study for ALUC review (see Policy RE-2). • Within the Inner WHA Boundary, reviewing agencies shall prepare a WHA for projects that have the potential to attract wildlife that could cause bird strikes. ALUC will use this information to coordinate with the Travis AFB Bird/Wildlife Aircraft Strike Hazard (BASH) Team. Based on the findings of the WHA and coordination with the Travis AFB BASH Team, all reasonably feasible mitigation measures must be incorporated into the planned land use (see Policy WH-1). • Refer to the Compatibility Zone D standards found in the Travis AFB LUCP. • Deed Notice Required
Safety Zone 4	Outer Approach/De parture Surface	1 du per 2 ac	100	300	• Children's schools,[7] day care centers[8] • Stadiums, group recreational uses • Hospitals, nursing homes • Highly noise-sensitive uses (e.g. outdoor theaters) • Hazards to flight[6]	• Maximum interior noise level of CNEL 45 dB in buildings with noise-sensitive uses (see Policy NP-4) • ALUC review required for objects ≥ 100 feet AGL (see Policy H-2). • See Policy RE-1 pertaining to all proposed wind turbines. • All new or expanded commercial-scale solar facilities must conduct an SGHAT glint and glare study for ALUC review (see Policy RE-2). • All new or expanded meteorological towers > 100 feet AGL, whether temporary or permanent, require ALUC review (see Policy H-1). • Within the Inner WHA Boundary, reviewing agencies shall prepare a WHA for projects that have the potential to attract wildlife that could cause bird strikes. ALUC will use this information to coordinate with the Travis AFB Bird/Wildlife Aircraft Strike Hazard (BASH) Team. Based on the findings of the WHA and coordination with the Travis AFB BASH Team, all reasonably feasible mitigation measures must be incorporated into the planned land use (see Policy WH-1). • Refer to the Compatibility Zone D standards found in the Travis AFB LUCP. • Deed Notice Required

TABLE 1 (CONTINUED)
LAND USE COMPATIBILITY CRITERIA

Compatibility Area	Locations	Maximum Densities/Intensities[1]			Additional Criteria	
		Residential Density Allowed	Other Uses (people/ac)[2]			
			Maximum Nonresidential Intensity (people per acre)[3]	Maximum Single Acre Intensity – Clustered Development (people per acre)	Prohibited Uses[4]	Other Development Conditions[5]
Safety Zone 5	Sideline Zone	1 du per 1 ac	70	210	• Highly noise-sensitive uses (e.g. outdoor theaters) • Hazards to flight[6] • Children's schools, large daycare centers • Stadiums, group recreational uses • Hospitals, nursing homes	• Maximum interior noise level of CNEL 45 dB in buildings with noise-sensitive uses (see Policy NP-4) • ALUC review required for objects ≥ 200 feet AGL (see Policy H-2). • See Policy RE-1 pertaining to all proposed wind turbines. • All new or expanded commercial-scale solar facilities must conduct an SGHAT glint and glare study for ALUC review (see Policy RE-2). • All new or expanded meteorological towers ≥ 200 feet AGL, whether temporary or permanent, require ALUC review (see Policy H-1). • Within the Inner WHA Boundary, reviewing agencies shall prepare a WHA for projects that have the potential to attract wildlife that could cause bird strikes. ALUC will use this information to coordinate with the Travis AFB Bird/Wildlife Aircraft Strike Hazard (BASH) Team. Based on the findings of the WHA and coordination with the Travis AFB BASH Team, all reasonably feasible mitigation measures must be incorporated into the planned land use (see Policy WH-1). • Refer to the Compatibility Zone D standards found in the Travis AFB LUCP. • Deed Notice Required
Safety Zone 6	Traffic Pattern Zone	No Limit – consider noise and overflight standards	200[12]	800	• Hazards to flight[6,10]	• Maximum interior noise level of CNEL 45 dB in buildings with noise-sensitive uses (see Policy NP-4) • ALUC review required for objects ≥ 200 feet AGL (see Policy H-2). • See Policy RE-1 pertaining to all proposed wind turbines. • All new or expanded commercial-scale solar facilities must conduct an SGHAT glint and glare study for ALUC review (see Policy RE-2). • All new or expanded meteorological towers ≥ 200 feet AGL, whether temporary or permanent, require ALUC review (see Policy H-1). • Within the Inner WHA Boundary, reviewing agencies shall prepare a WHA for projects that have the potential to attract wildlife that could cause bird strikes. ALUC will use this information to coordinate with the Travis AFB Bird/Wildlife Aircraft Strike Hazard (BASH) Team. Based on the findings of the WHA and coordination with the Travis AFB BASH Team, all reasonably feasible mitigation measures must be incorporated into the planned land use (see Policy WH-1). • Refer to the Compatibility Zone D standards found in the Travis AFB LUCP. • Deed Notice Required
Safety Zone 7	Area Between Inner and Outer WHA Boundary	No Limit	-	-	• Wildlife hazard attractants[10] • Hazards to flight[6,10]	• For areas outside of the Inner WHA Boundary but within the Outer WHA Boundary, any new or expanded land use that has the potential to attract the movement of wildlife that could cause bird strikes are required to prepare a WHA (see Policy WH-2). ALUC will use this information to coordinate with the Travis AFB Bird/Wildlife Aircraft Strike Hazard (BASH) Team. Based on the findings of the WHA and coordination with the Travis AFB BASH Team, all reasonably feasible mitigation measures must be incorporated into the planned land use • All discretionary projects located within the Inner WHA Boundary and Outer WHA Boundary are required to consider the potential for the project to attract hazardous wildlife, wildlife movement, or bird strike hazards as part of environmental review process required by the California Environmental Quality Act (CEQA) (see Policy WH-3). • ALUC review required for objects ≥ 200 feet AGL (see Policy H-2). • See Policy RE-1 pertaining to all proposed wind turbines. • All new or expanded commercial-scale solar facilities must conduct an SGHAT glint and glare study for ALUC review (see Policy RE-2). • All new or expanded meteorological towers ≥ 200 feet AGL, whether temporary or permanent, require ALUC review (see Policy H-1). • Deed Notice Required • Refer to the Compatibility Zone C, D, and ALZ standards found in the Travis AFB LUCP.

NOTES:
1 Densities and Intensities are to be calculated in terms of gross acreage. Gross acreage includes the property at issue plus a share of adjacent roads and any adjacent, permanently dedicated, open lands.
2 Usage calculations shall include all people (e.g., employees, customers/visitors, etc.) who may be on the property at any single point in time, whether indoors or outside.
3 The total number of people permitted on a project site at any time, except for rare special events, must not exceed the indicated usage intensity times the gross acreage of the site. Rare special events are ones (such as an air show at an airport) for which a facility is not designed and normally not used and for which extra safety precautions are taken as appropriate.
4 The uses listed here are ones that are explicitly prohibited regardless of whether they meet the intensity criteria, unless such prohibition is precluded by applicable state statues. In addition to these explicitly prohibited uses, other uses will normally not be permitted in the respective safety zones because they do not meet the usage intensity criteria.
5 All height requirements shall be assessed in feet AGL.
6 Hazards to flight include physical (e.g., tall objects such as meteorological towers), visual, and electronic means, as well as wildlife hazard attractants that may interfere with the safety of aircraft operations as determined by the ALUC. Also, see the supporting airspace protection policies for details (Section 5.4).
7 For the purposes of these criteria, children's schools include all grades through grade 12.
8 Family day care homes (as defined by state law) are permitted in any location where residential development is permitted. Noncommercial day care centers ancillary to a place of business are permitted in Safety Zone 4 provided that the overall use of the property meets the indicated intensity criteria.
9 Objects up to 35 feet AGL in height are permitted; however, the Federal Aviation Administration may require marking and lighting of certain objects. See supporting compatibility policies on airspace protection (Section 3.4) for details.
10 Any new consistency determinations for general plan amendments or zoning changes in the Inner WHA Perimeter will be required to analyze the potential for wildlife attractants of this nature and must incorporate reasonably feasible mitigation measures.

4. Detailed Guide to Land Use Compatibility

4.1 Safety Zones Established

The following sections provide a summary of each safety zone for Rio Vista Airport. In total, the Airport features six safety zones, numbered 1 through 6. Compatibility criteria (e.g. density and intensity requirements) relevant to each safety zone are described in detail in each section. These details are also summarized in Table 1 in Chapter 3. Chapter 5 provides additional specific general, noise, safety, aircraft protection, and overflight policies and development standards that apply to each safety zone.

Within each section below, a series of criteria is provided that reflect the specific requirements and regulations for each safety zone. **General Standards** describe the specific requirements for densities and intensities for each zone. **Noise Criteria** provide the development limitations within each zone based on the noise contours from the Airport. **Safety Criteria** explain the particular land uses that are not permitted or may require ALUC review. **Airspace Protection Criteria** discuss specific requirements for development based on 14 CFR Part 77 imaginary surfaces at the Airport. Finally, **Avigation Easement Dedication** describes the avigation easement requirements for parcels located within Safety Zones 1, 2, 3.

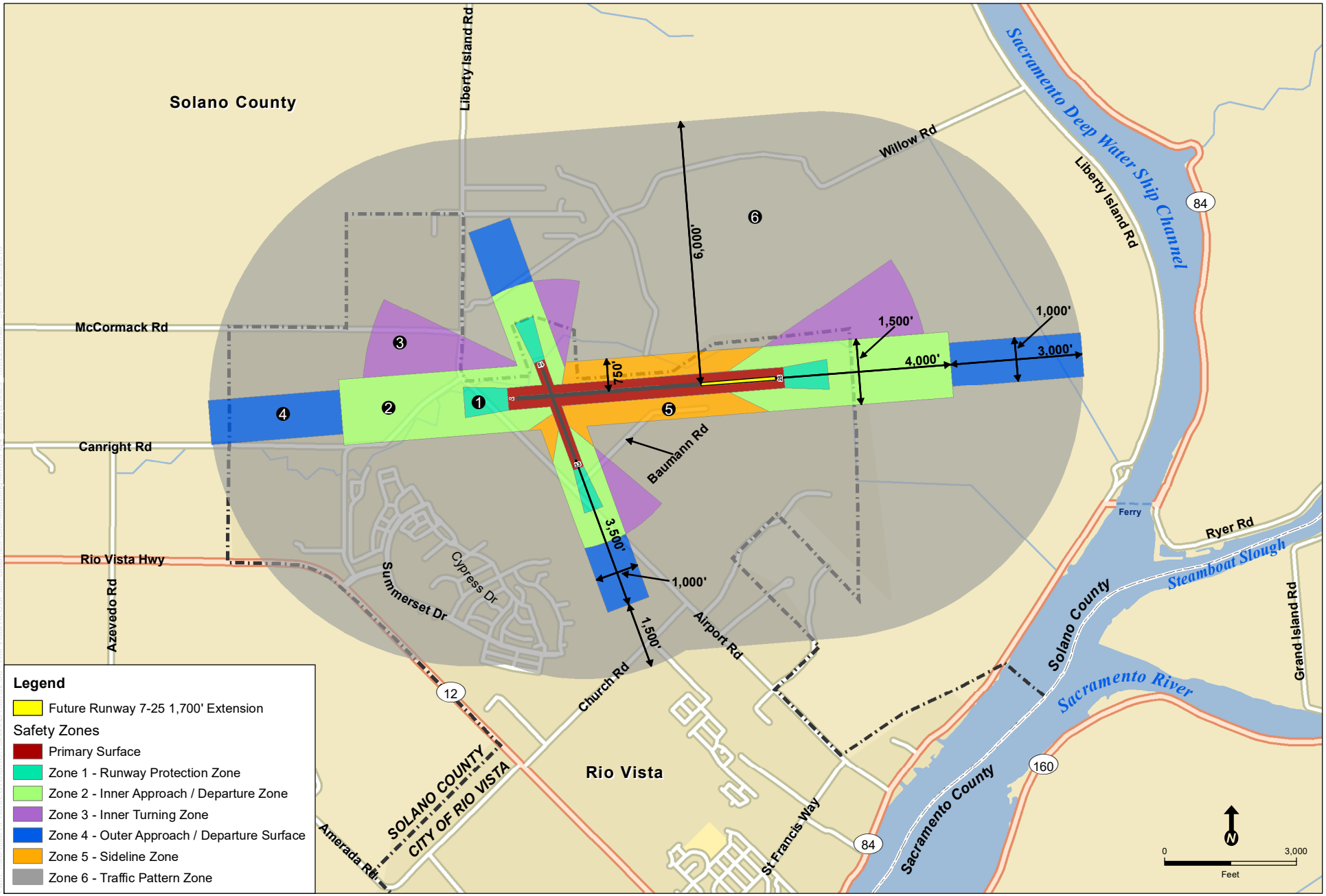
4.2 Safety Zone 1

Safety Zone 1 (see **Figure 4**) consists of the two Rio Vista runways, together with immediately adjoining areas within the runway protection zones (RPZs). The dimensions of the RPZs are set in accordance with FAA criteria.

Safety Zone	Locations	Maximum Densities/Intensities		
			Other Uses (people/ac)	
		Residential Density Allowed	Maximum Nonresidential Intensity (people per acre)	Maximum Single Acre Intensity – Clustered Development (people per acre)
1	Runway Protection Zone	0 du/ac	0	0

Additional Criteria

Prohibited Uses	Other Development Conditions
• Assemblages of people • Objects exceeding 14 CFR Part 77 height limits • Structures and residential land uses • Hazards to flight	• Avigation easement dedication • Within the Inner WHA Boundary, reviewing agencies shall prepare a WHA for projects that have the potential to attract wildlife that could cause bird strikes. ALUC will use this information to coordinate with the Travis AFB Bird/Wildlife Aircraft Strike Hazard (BASH) Team. Based on the findings of the WHA and coordination with the Travis AFB BASH Team, all reasonably feasible mitigation measures must be incorporated into the planned land use (see Policy WH-1). • Refer to the Compatibility Zone D standards found in the Travis AFB LUCP.



SOURCE: California Airport Land Use Planning Handbook, October 2011; ESA, 2016; ESRI Mapping Services

Rio Vista Municipal Airport ALUCP.150732

Figure 4

Rio Vista Municipal Airport Safety Zones

ESA

4.2.1. General Standards — The general standards applicable to the review of proposed land use actions in the vicinity of Rio Vista Airport are set forth in Table 1. No new residential development is permitted. In terms of non-residential use, no assemblages of people is allowed.

4.2.2. Noise Criteria — To the greatest extent feasible, it is the objective of the ALUC to minimize new residential development within areas significantly impacted by noise from aircraft operations. Residential and nonresidential development shall not be permitted in this zone. The 2035 noise contours are shown on **Figure 5**.

4.2.3. Safety Criteria — All assemblages of people, along with structures and residential land uses, shall be prohibited within Safety Zone 1. In addition, no storage of any fuel or other hazardous materials shall be permitted. For a discussion of other additional safety risks that require special review and assessment, which include but are not limited to wind turbine facilities and solar facilities (see Section 5.6), meteorological towers (see Section 5.7), and wildlife hazards (see Section 5.8).

Safety Zone 1 is located in Compatibility Zone D of the Travis AFB LUCP. Refer to the Compatibility Zone D standards found in the Travis AFB LUCP for additional safety standards (see Policy SP-4).

4.2.4. Airspace Protection Criteria —The 14 CFR Part 77 surfaces that form the basis for this review are depicted in **Figure 6**. No hazards to flight, including physical (e.g., tall objects), visual, and electronic forms of interference with the safety of aircraft operations, and land uses that may attract birds to increase in the area shall be permitted. As a condition for development approval, the owner of any property proposed for development within Safety Zone 1 shall be required to dedicate an avigation easement to the County of Solano or the City of Rio Vista. FAA notification is required for all new buildings. For a description of the 14 CFR Part 77 surfaces, see Policy AP-2.

4.2.5. Avigation Easement Dedication — As a condition for development approval, the owner of any property proposed for development within Safety Zone 1 shall be required to dedicate an avigation easement to the County of Solano or the City of Rio Vista. The avigation easement (see Appendix B of this document for an example) shall, to the maximum extent permitted by law:

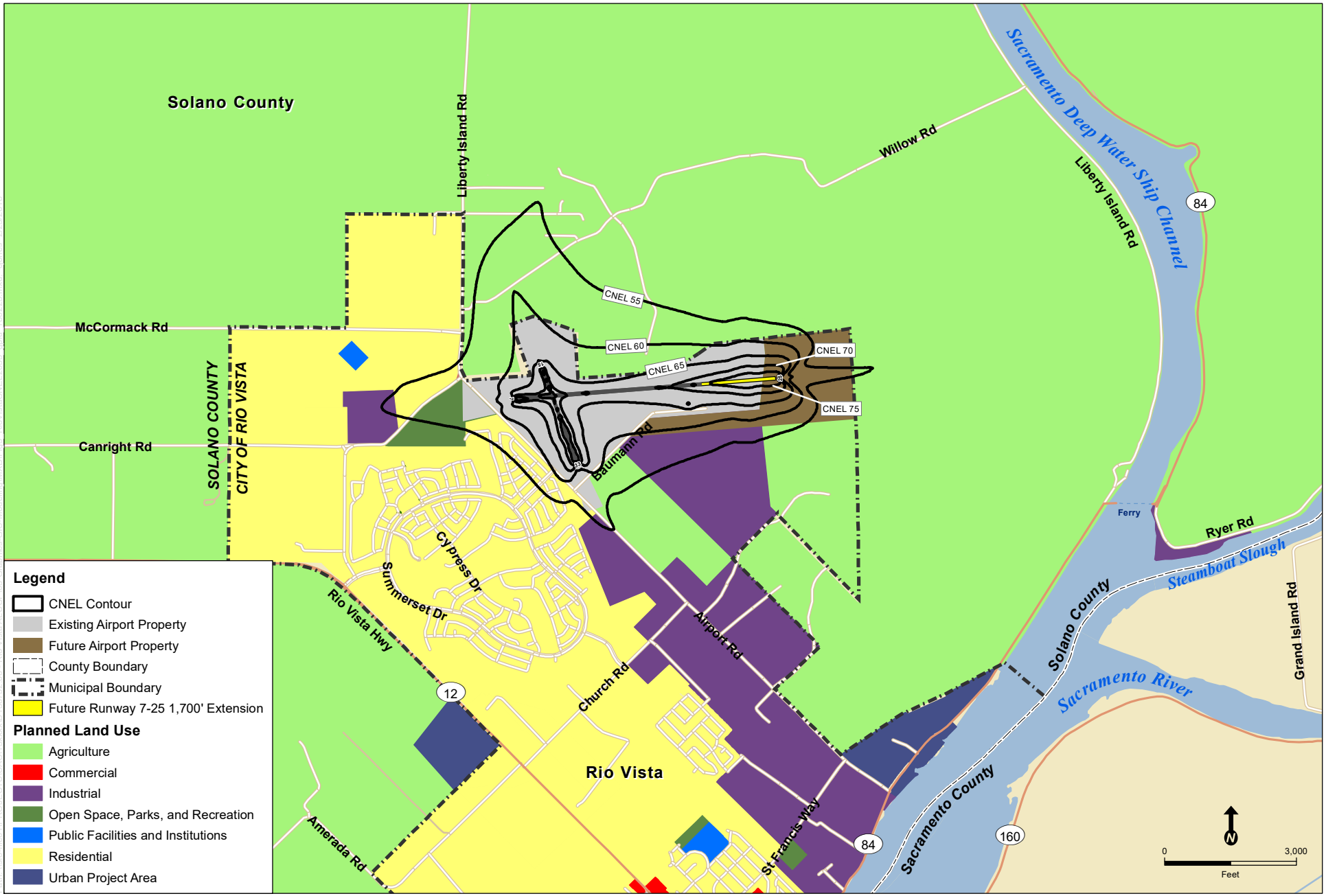
(a) Provide the right of flight in the airspace above the property;

(b) Allow the generation of noise and other impacts associated with aircraft overflight, including but not limited to noise, vibrations, turbulence, odors, vapors, fumes, fuel particle emissions, exhaust, smoke, and dust;

(c) Restrict the height of structures, trees, and other objects;

(d) Permit access to the property for the removal or aeronautical marking and lighting of objects exceeding the established height limit; and

(e) Prohibit from being created on the property electrical and electronic interference, glint, glare, and other conditions that would impair the vision of pilots, high-velocity exhaust plumes, and other interference with radio, radar, microwave, or means of aircraft communication, and uses or features that make it difficult for pilots to distinguish between airfield navigation lights and visual aids and other lights, and other potential hazards to flight.



NOTE: CNEL = Community Noise Equivalent Level.

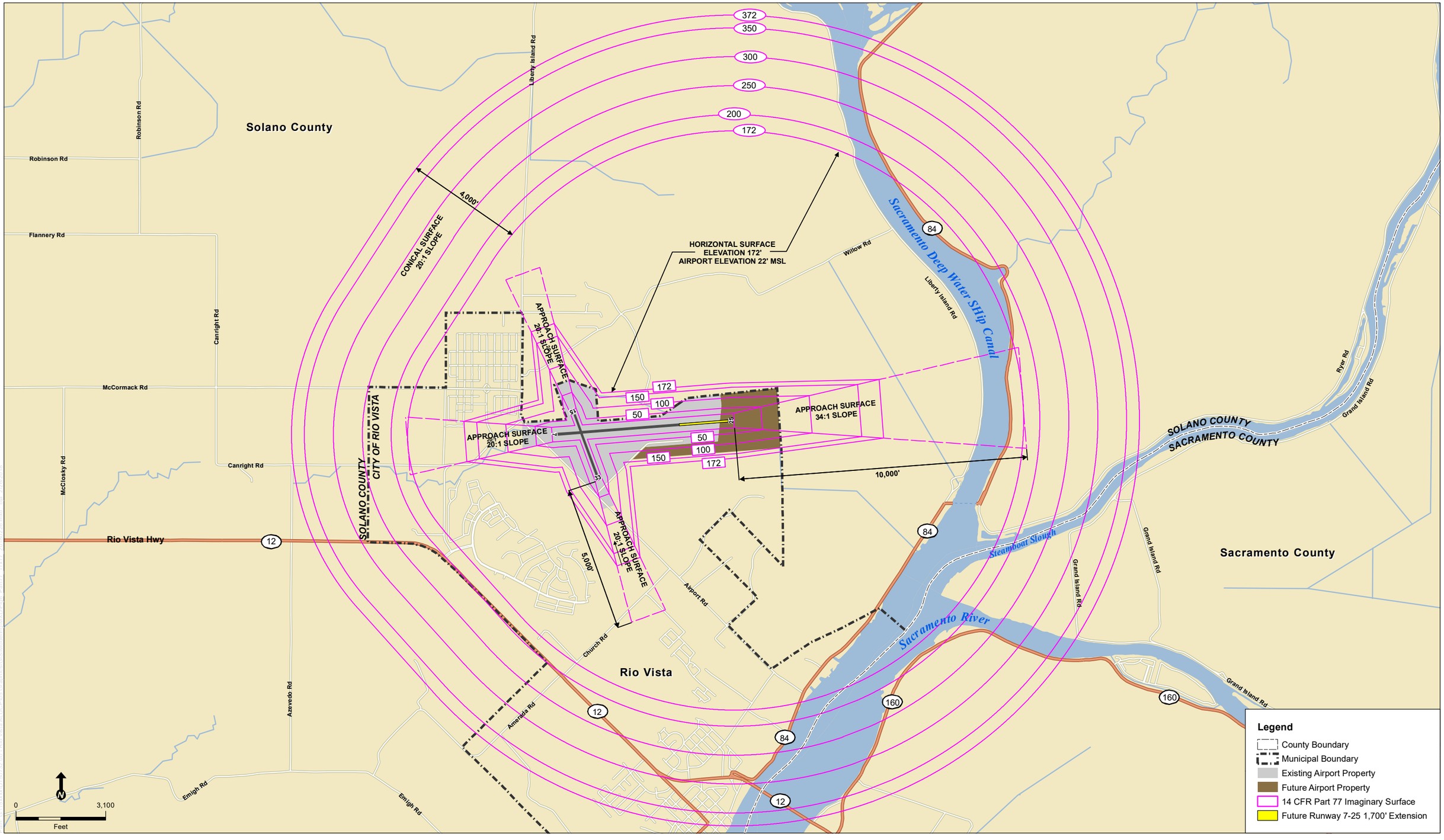
SOURCE: AEDT 2c SP3; ESA, 2016; Solano County GIS Department, 2016; ESRI Mapping Services

Rio Vista Municipal Airport ALUCP.150732

Figure 5

2035 CNEL Contours

ESA



SOURCE: Reinard W. Brandley, 2016; Adapted by ESA, 2016; ESRI Mapping Services
NOTE: All elevations depicted are mean sea level (MSL).

Rio Vista Municipal Airport ALUCP.150732

Figure 6

14 CFR Part 77 Imaginary Surfaces - Rio Vista Municipal Airport

ESA

This page intentionally left blank

4.3 Safety Zone 2

Safety Zone 2 (see Figure 4) comprises the inner approach and departure areas immediately beyond and surrounding Safety Zone 1. Typically, residential uses are restricted, apart from infill within already developed areas. Non-residential uses that include agriculture, non-group recreational uses (that result in minimal concentrations of people), storage of low-hazard materials, low-intensity light industrial land uses, and auto, aircraft, and marine repair services are all normally allowed within this zone.

		Maximum Densities/Intensities		
			Other Uses (people/ac)	
Safety Zone	**Locations**	**Residential Density Allowed**	**Maximum Nonresidential Intensity (people per acre)**	**Maximum Single Acre Intensity – Clustered Development (people per acre)**
2	Inner Approach/Departure Zone	1 du per 10 ac	40	80

Additional Criteria

Prohibited Uses	Other Development Conditions
• Children's schools, day care centers • Theaters, meeting halls, and other assembly uses • Office buildings > three stories in height • Labor-intensive industrial uses • Stadiums, group recreational uses • Hospitals, nursing homes • Highly noise-sensitive uses (e.g. outdoor theaters) • Aboveground bulk storage of hazardous materials • Hazards to flight	• Locate structures maximum distance from extended runway centerline. • Maximum interior noise level of CNEL 45 dB in buildings with noise-sensitive uses (see Policy NP-4). • ALUC review required for objects ≥ 35 feet AGL. • Avigation easement dedication. • See Policy RE-1 pertaining to all proposed wind turbines. • All new or expanded commercial-scale solar facilities must conduct an SGHAT glint and glare study for ALUC review (see Policy RE-2). • Within the Inner WHA Boundary, reviewing agencies shall prepare a WHA for projects that have the potential to attract wildlife that could cause bird strikes ALUC will use this information to coordinate with the Travis AFB Bird/Wildlife Aircraft Strike Hazard (BASH) Team. Based on the findings of the WHA and coordination with the Travis AFB BASH Team, all reasonably feasible mitigation measures must be incorporated into the planned land use (see Policy WH-1). • Refer to the Compatibility Zone D standards found in the Travis AFB LUCP. • Deed Notice Required

4.3.1. General Standards — The general standards applicable to the review of proposed land use actions in the vicinity of Rio Vista Airport are set forth in Table 1. Residential development at a density no greater than one dwelling unit per ten acres is permitted. Permitted non-residential uses allow for an intensity of 40 people per acre. Also, 80 people per acre shall be the maximum limit for a single acre on parcels where development is clustered.

4.3.2. Noise Criteria — To the greatest extent feasible, it is the objective of the ALUC to minimize new residential development within areas significantly impacted by noise from aircraft operations at Rio Vista Airport. Residential development shall only be permitted in this zone as infill to already existing development and a maximum, aircraft-related, interior noise level of CNEL 45 dB can be achieved. Nonresidential development shall be highly limited within the general standards. See Policy NP-4 for additional details on acceptable interior noise levels.

4.3.3. Safety Criteria — Land uses of particular safety concern are ones in which the occupants have reduced effective mobility or are unable to respond to emergency situations. Children's schools (all grades through grade 12), day care centers, theatres, meeting halls, other assembly uses, office buildings that are greater than three stories in height, labor-intensive industrial uses, stadiums, group recreational uses, hospitals (medical facilities that include provision for overnight stays by patients), nursing homes, highly noise-sensitive uses (e.g., outdoor theatres), and other uses in which the majority of occupants are children, elderly, and/or disabled shall be prohibited within Safety Zone 2. In addition, no storage of any fuel or other hazardous materials shall be permitted. For a discussion of other additional safety risks that require special review and assessment, which include but are not limited to wind turbine facilities and solar facilities (see Section 5.6), meteorological towers (see Section 5.7), and wildlife hazards (see Section 5.8).

Safety Zone 2 is located in Compatibility Zone D of the Travis AFB LUCP. Refer to the Compatibility Zone D standards found in the Travis AFB LUCP for additional safety standards.

4.3.4. Airspace Protection Criteria — Proposed buildings that are 35 feet or higher AGL require ALUC review. No hazards to flight, including physical (e.g., tall objects), visual, and electronic forms of interference with the safety of aircraft operations, and land uses that may attract birds to increase in the area shall be permitted. As a condition for development approval, the owner of any property proposed for development within Safety Zone 2 shall be required to dedicate an avigation easement to the County of Solano or the City of Rio Vista. FAA notification is required for all new buildings. For a description of the 14 CFR Part 77 surfaces, see Policy AP-2.

4.3.5. Avigation Easement Dedication — As a condition for development approval, the owner of any property proposed for development within Safety Zone 2 shall be required to dedicate an avigation easement to the County of Solano or the City of Rio Vista. The avigation easement (see Appendix B of this document for an example) shall, to the maximum extent permitted by law:

(a) Provide the right of flight in the airspace above the property;

(b) Allow the generation of noise and other impacts associated with aircraft overflight, including but not limited to noise, vibrations, turbulence, odors, vapors, fumes, fuel particle emissions, exhaust, smoke, and dust;

(c) Restrict the height of structures, trees, and other objects;

(d) Permit access to the property for the removal or aeronautical marking and lighting of objects exceeding the established height limit; and

(e) Prohibit from being created on the property electrical and electronic interference, glint, glare, and other conditions that would impair the vision of pilots, high-velocity exhaust plumes, and other interference with radio, radar, microwave, or means of aircraft communication, and uses or features that make it difficult for pilots to distinguish between airfield navigation lights and visual aids and other lights, and other potential hazards to flight from being created on the property.

4.3.6 Deed Notice Required — As a condition for approval of development within Safety Zone 2, a notice regarding aircraft operational impacts on the property shall be attached to the property deed. An example of a deed notice is contained in Appendix B of this document.

4.4 Safety Zone 3

Safety Zone 3 (see Figure 4) contains the areas where aircraft turn as they approach or depart the runway. Uses allowed in this safety zone include greenhouses, low-hazard materials storage, mini-storage, warehouses, light industrial uses, and vehicle repair services, as well as uses allowed in Safety Zone 2. Very low residential densities and low-intensity offices and commercial uses are permitted within this zone, while uses with higher concentrations of people and children are prohibited.

Safety Zone	Locations	Maximum Densities/Intensities		
			Other Uses (people/ac)	
		Residential Density Allowed	Maximum Nonresidential Intensity (people per acre)	Maximum Single Acre Intensity– Clustered Development (people per acre)
3	Extended Approach/ Departure Zone	1 du per 2 ac	70	210

Additional Criteria

Prohibited Uses	Other Development Conditions
• Children's schools, day care centers • Stadiums, group recreational uses • Hospitals, nursing homes • Major shopping centers, theaters, meeting halls, and other assembly uses • Highly noise-sensitive uses (e.g. outdoor theaters) • Hazards to flight	• Maximum interior noise level of CNEL 45 dB in buildings with noise-sensitive uses (see Policy NP-4). • Avigation easement dedication. • ALUC review required for objects ≥ 50 feet AGL. • See Policy RE-1 pertaining to all proposed wind turbines. • All new or expanded commercial-scale solar facilities must conduct an SGHAT glint and glare study for ALUC review (see Policy RE-2). • Within the Inner WHA Boundary, reviewing agencies shall prepare a WHA for projects that have the potential to attract wildlife that could cause bird strikes. ALUC will use this information to coordinate with the Travis AFB Bird/Wildlife Aircraft Strike Hazard (BASH) Team. Based on the findings of the WHA and coordination with the Travis AFB BASH Team, all reasonably feasible mitigation measures must be incorporated into the planned land use (see Policy WH-1). • Refer to the Compatibility Zone D standards found in the Travis AFB LUCP. • Deed Notice Required

4.4.1. General Standards — The general standards applicable to the review of proposed land use actions in the vicinity of Rio Vista Airport are set forth in Table 1. Within Safety Zone 3, Residential development at a density no greater than one dwelling unit per two acres is permitted. Permitted non-residential uses allow for an intensity of 70 people per acre. For parcels where development is clustered, an intensity of 210 people per acre shall be the limit. See Policy LU-2 for specific calculations and requirements for nonresidential development.

4.4.2. Noise Criteria — To the greatest extent feasible, it is the objective of the ALUC to minimize new residential development within areas impacted by noise from aircraft operations at Rio Vista Airport. Residential development shall only be permitted in this zone if a maximum, aircraft-related, interior noise level of CNEL 45 dB can be achieved. Nonresidential development shall be highly limited within the general standards. See Policy NP-4 for additional details on acceptable interior noise levels.

4.4.3. Safety Criteria — Land uses of particular safety concern are ones in which the occupants have reduced effective mobility or are unable to respond to emergency situations. Children's schools (all grades through grade 12), day care centers, stadiums, group recreational uses, hospitals (medical facilities that include provision for overnight stays by patients), nursing homes, highly noise-sensitive uses (e.g., outdoor theatres), major shopping centers, theaters, meeting halls, and other assembly uses and other uses in which the majority of occupants are children, elderly, and/or disabled shall be prohibited within Safety Zone 3.

Further discussion of other additional safety risks that require special review and assessment are provided in Chapter 5, including but not limited to wind turbine facilities and solar facilities (see Section 5.6), meteorological towers (see Section 5.7), and wildlife hazards (see Section 5.8).

Safety Zone 3 is located in Compatibility Zone D of the Travis AFB LUCP. Refer to the Compatibility Zone D standards found in the Travis AFB LUCP for additional safety standards.

4.4.4. Airspace Protection Criteria — Proposed buildings that are 50 feet AGL or higher require ALUC review. No hazards to flight, including physical (e.g., tall objects), visual, and electronic forms of interference with the safety of aircraft operations, and land uses that may attract birds to increase in the area shall be permitted. As a condition for development approval, the owner of any property proposed for development within Safety Zone 3 shall be required to dedicate an avigation easement to the County of Solano or the City of Rio Vista. For a description of the 14 CFR Part 77 surfaces, see Policy AP-2.

4.4.5. Avigation Easement Dedication — As a condition for development approval, the owner of any property proposed for development within Safety Zone 3 shall be required to dedicate an avigation easement to the County of Solano or the City of Rio Vista. The avigation easement (see Appendix B of this document for an example) shall, to the maximum extent permitted by law:

(a) Provide the right of flight in the airspace above the property;

(b) Allow the generation of noise and other impacts associated with aircraft overflight, including but not limited to noise, vibrations, turbulence, odors, vapors, fumes, fuel particle emissions, exhaust, smoke, and dust;

(c) Restrict the height of structures, trees, and other objects;

(d) Permit access to the property for the removal or aeronautical marking and lighting of objects exceeding the established height limit; and

(e) Prohibit from being created on the property electrical and electronic interference, glint, glare, and other conditions that would impair the vision of pilots, high-velocity exhaust plumes, and other interference with radio, radar, microwave, or means of aircraft communication, and uses or features that make it difficult for pilots to distinguish between airfield navigation lights and visual aids and other lights, and other potential hazards to flight from being created on the property.

4.4.6 Deed Notice Required — As a condition for approval of development within Safety Zone 3, a notice regarding aircraft operational impacts on the property shall be attached to the property deed. An example of a deed notice is contained in Appendix B of this document.

4.5 Safety Zone 4

Safety Zone 4 (see Figure 2) covers the outer approach and departure surfaces for the Airport and extends beyond Safety Zone 2. Normally, restaurants, retail, and industrial uses are allowed in this zone, as well as uses that are allowed in Safety Zone 3. Higher intensity retail uses and offices are to be avoided in this zone, while buildings and uses that result in larger assemblages of people and children are prohibited.

Safety Zone	Locations	Maximum Densities/Intensities		
			Other Uses (people/ac)	
		Residential Density Allowed	Maximum Nonresidential Intensity (people per acre)	Maximum Single Acre Intensity – Clustered Development (people per acre)
4	Outer Approach / Departure Surface	1 per 2 ac	100	300

Additional Criteria	
Prohibited Uses	**Other Development Conditions**
• Children's schools, day care centers • Stadiums, group recreational uses • Hospitals, nursing homes • Highly noise-sensitive uses (e.g. outdoor theaters) • Hazards to flight	• Maximum interior noise level of CNEL 45 dB in buildings with noise-sensitive uses (see Policy NP-4). • ALUC review required for objects ≥ 100 feet AGL. • See Policy RE-1 pertaining to all proposed wind turbines. • All new or expanded commercial-scale solar facilities must conduct an SGHAT glint and glare study for ALUC review (see Policy RE-2). • Within the Inner WHA Boundary, reviewing agencies shall prepare a WHA for projects that have the potential to attract wildlife that could cause bird strikes. ALUC will use this information to coordinate with the Travis AFB Bird/Wildlife Aircraft Strike Hazard (BASH) Team. Based on the findings of the WHA and coordination with the Travis AFB BASH Team, all reasonably feasible mitigation

Additional Criteria	
Prohibited Uses	**Other Development Conditions**
	measures must be incorporated into the planned land use (see Policy WH-1). • All new or expanded meteorological towers ≥ 100 feet AGL, whether temporary or permanent, require ALUC review. • Refer to the Compatibility Zone D standards found in the Travis AFB LUCP. • Deed Notice Required

4.5.1. General Standards — The general standards applicable to the review of proposed land use actions in the vicinity of Rio Vista Airport are set forth in Table 1. Within Safety Zone 4, residential development at a density no greater than one dwelling unit per two acres is permitted. Permitted non-residential uses allow for an intensity of 100 people per acre. For parcels where development is clustered, an intensity of 300 people per acre shall be the limit. See Policy LU-2 for specific calculations and requirements for nonresidential development.

4.5.2. Noise Criteria — To the greatest extent feasible, it is the objective of the ALUC to minimize new residential development within areas impacted by noise from aircraft operations at Rio Vista Airport. Residential development shall only be permitted in this zone if a maximum, aircraft-related, interior noise level of CNEL 45 dB can be achieved. Nonresidential development shall be highly limited within the general standards. See Policy NP-4 for additional details on acceptable interior noise levels. The noise impact area is defined as being all locations within the outer boundary of Safety Zone 4 as shown on Figure 2.

4.5.3. Safety Criteria — Land uses of particular safety concern are ones in which the occupants have reduced effective mobility or are unable to respond to emergency situations. Children's schools (all grades through grade 12), day care centers, stadiums, group recreational uses, hospitals (medical facilities that include provision for overnight stays by patients), nursing homes, highly noise-sensitive uses (e.g., outdoor theatres), and other uses in which the majority of occupants are children, elderly, and/or disabled shall be prohibited within Safety Zone 4. Noncommercial day care centers ancillary to a place of business are permitted in Safety Zone 4 provided that the overall use of the property meets the intensity criteria indicated in Table 1. Medical clinics are permitted in Safety Zone 4 provided that these facilities meet the maximum intensity standards listed in Table 1.

Further discussion of other additional safety risks that require special review and assessment are provided in Chapter 5, including but not limited to wind turbine facilities and solar facilities (see Section 5.6), meteorological towers (see Section 5.7), and wildlife hazards (see Section 5.8).

Safety Zone 4 is located in Compatibility Zone D of the Travis AFB LUCP. Refer to the Compatibility Zone D standards found in the Travis AFB LUCP for additional safety standards.

4.5.4. Airspace Protection Criteria — Proposed buildings that are 100 feet AGL or higher require ALUC review. No hazards to flight, including physical (e.g., tall objects), visual, operational, and electronic forms of interference with the safety of

aircraft operations, and land uses that increase the presence of hazardous wildlife within the WHA boundaries shall be permitted. For a description of the 14 CFR Part 77 surfaces, see Policy AP-2.

4.5.5 Deed Notice Required — As a condition for approval of development within Safety Zone 4, a notice regarding aircraft operational impacts on the property shall be attached to the property deed. An example of a deed notice is contained in Appendix B of this document.

4.6 Safety Zone 5

Safety Zone 5 (see Figure 2) is the sideline zone that runs outside and parallel to Runways 15-33 and 7-25. Normally, all uses permitted in Zone 4 and common aviation-related activities are allowed, provided they satisfy FAA height and airspace protection criteria. Uses limited in Safety Zone 3 are also limited in Zone 5. All residential uses are to be prohibited unless they are airport-related; and higher-intensity non-residential uses that result in higher assemblages of people, including children, are prohibited.

		Maximum Densities/Intensities		
			Other Uses (people/ac)	
Safety Zone	**Locations**	**Residential Density Allowed**	**Maximum Nonresidential Intensity (people per acre)**	**Maximum Single Acre Intensity – Clustered Development (people per acre)**
5	Sideline Zone	1 du per 1 ac	70	210

Additional Criteria	
Prohibited Uses	**Other Development Conditions**
• Highly noise-sensitive uses (e.g. outdoor theaters) • Hazards to flight • Children's schools, large daycare centers • Stadiums, group recreational uses • Hospitals, nursing homes	• ALUC review required for objects ≥ 200 feet AGL. • See Policy RE-1 pertaining to all proposed wind turbines. • All new or expanded commercial-scale solar facilities must conduct an SGHAT glint and glare study for ALUC review (see Policy RE-2). • Within the Inner WHA Boundary, reviewing agencies shall prepare a WHA for projects that have the potential to attract wildlife that could cause bird strikes. ALUC will use this information to coordinate with the Travis AFB Bird/Wildlife Aircraft Strike Hazard (BASH) Team. Based on the findings of the WHA and coordination with the Travis AFB BASH Team, all reasonably feasible mitigation measures must be incorporated into the planned land use (see Policy WH-1). • All new or expanded meteorological towers ≥ 200 feet AGL, whether temporary or permanent, require ALUC review. • Refer to the Compatibility Zone D standards found in the Travis AFB LUCP. • Deed Notice Required

4.6.1 General Standards — The general standards applicable to the review of proposed land use actions in the vicinity of Rio Vista Airport are set forth in Table 1.

Within Safety Zone 5, Residential development at a density no greater than one dwelling unit per acre is permitted. Permitted non-residential uses allow for an intensity of 70 people per acre. For parcels where development is clustered, an intensity of 210 people per acre shall be the limit. See Policy LU-2 for specific calculations and requirements for nonresidential development.

4.6.2. Noise Criteria — As a condition for approval of development within Safety Zone 5, a notice regarding aircraft operational impacts on the property shall be attached to the property deed. An example of a deed notice is contained in Appendix B of this document. Residential development shall only be permitted in this zone if a maximum, aircraft-related, interior noise level of CNEL 45 dB can be achieved. Nonresidential development shall be highly limited within the general standards. See Policy NP-4 for additional details on acceptable interior noise levels.

4.6.3. Safety Criteria — Apart from the prohibition of highly noise-sensitive uses (e.g., outdoor theaters), there are no particular safety requirements for Safety Zone 5.

Further discussion of other additional safety risks that require special review and assessment are provided in Chapter 5, including but not limited to wind turbine facilities and solar facilities (see Section 5.6), meteorological towers (see Section 5.7), and wildlife hazards (see Section 5.8).

Safety Zone 5 is located in Compatibility Zone D of the Travis AFB LUCP. Refer to the Compatibility Zone D standards found in the Travis AFB LUCP for additional safety standards.

4.6.4. Airspace Protection Criteria — Proposed buildings that are 200 feet AGL or higher require ALUC review. No hazards to flight, including physical (e.g., tall objects), visual, and electronic forms of interference with the safety of aircraft operations, and land uses that may attract birds to increase in the area shall be permitted. For a description of the 14 CFR Part 77 surfaces, see Policy AP-2.

4.6.5 Deed Notice Required — As a condition for approval of development within Safety Zone 5, a notice regarding aircraft operational impacts on the property shall be attached to the property deed. An example of a deed notice is contained in Appendix B of this document.

4.7 Safety Zone 6

Safety Zone 6 (see Figure 2) comprises the traffic pattern zone and Inner WHA Boundary for the Airport. This larger zone covers regular traffic patterns and entry routes to and exit routes from the Airport. The 55 dB CNEL contour is located within Safety Zone 6. While residential uses in this zone are only restricted in relation to noise and overflight impacts, no other prohibitions exist within this zone. However, outdoor stadiums and similar uses that would result in very high intensities of people should be avoided.

Safety Zone	Locations	Maximum Densities/Intensities		
		Residential Density Allowed	Other Uses (people/ac)	
			Maximum Nonresidential Intensity (people per acre)	Maximum Single Acre Intensity – Clustered Development (people per acre)
6	Traffic Pattern Zone	No limit	200	800

Additional Criteria	
Prohibited Uses	**Other Development Conditions**
• Hazards to flight	• ALUC review required for objects ≥ 200 feet AGL • See Policy RE-1 pertaining to all proposed wind turbines. • All new or expanded commercial-scale solar facilities must conduct an SGHAT glint and glare study for ALUC review (see Policy RE-2). • All new or expanded meteorological towers ≥ 200 feet AGL, whether temporary or permanent, require ALUC review. • Within the Inner WHA Boundary, reviewing agencies shall prepare a WHA for projects that have the potential to attract wildlife that could cause bird strikes. ALUC will use this information to coordinate with the Travis AFB Bird/Wildlife Aircraft Strike Hazard (BASH) Team. Based on the findings of the WHA and coordination with the Travis AFB BASH Team, all reasonably feasible mitigation measures must be incorporated into the planned land use. • Refer to the Compatibility Zone D standards found in the Travis AFB LUCP. • Deed Notice Required

4.7.1 General Standards — The general standards applicable to the review of proposed land use actions in the vicinity of Rio Vista Airport are set forth in Table 1. Within Safety Zone 6, there are no limits for residential density. Permitted non-residential uses allow for an intensity of 200 people per acre, but discourage large stadiums and similar uses. For parcels where development is clustered, an intensity of 800 people per acre shall be the limit. See Policy LU-2 for specific calculations and requirements for nonresidential development.

4.7.2. Noise Criteria — As a condition for approval of development within Safety Zone 6, a notice regarding aircraft operational impacts on the property shall be attached to the property deed. An example of a deed notice is contained in Appendix B of this document. See Policy NP-4 for additional details on acceptable interior noise levels.

4.7.3. Safety Criteria — There are no particular safety requirements for Safety Zone 6.

Further discussion of other additional safety risks that require special review and assessment are provided in Chapter 5, including but not limited to wind turbine facilities and solar facilities (see Section 5.6), meteorological towers (see Section 5.7), and wildlife hazards (see Section 5.8).

Safety Zone 6 is located in Compatibility Zone D of the Travis AFB LUCP. Refer to the Compatibility Zone D standards found in the Travis AFB LUCP for additional safety standards.

4.7.4. Airspace Protection Criteria — Proposed buildings that are 200 feet AGL or higher require ALUC review. No hazards to flight, including physical (e.g., tall objects), visual, and electronic forms of interference with the safety of aircraft operations, and land uses that may attract birds to increase in the area shall be permitted. For a description of the 14 CFR Part 77 surfaces, see Policy AP-2.

4.7.5 Deed Notice Required — As a condition for approval of development within Safety Zone 6, a notice regarding aircraft operational impacts on the property shall be attached to the property deed. An example of a deed notice is contained in Appendix B of this document.

4.8 Safety Zone 7

Safety Zone 7 (see Figure 2) comprises the area between the inner and outer WHA Boundary.

Safety Zone	Locations	Maximum Densities/Intensities		
			Other Uses (people/ac)	
		Residential Density Allowed	Maximum Nonresidential Intensity (people per acre)	Maximum Single Acre Intensity – Clustered Development (people per acre)
7	Area Between Inner and Outer WHA Boundary	No limit	No limit	No limit

Additional Criteria	
Prohibited Uses	**Other Development Conditions**
• Wildlife hazard attractants[10] • Hazards to flight	• For areas outside of the Inner WHA Boundary but within the Outer WHA Boundary, any new or expanded land use that has the potential to attract the movement of wildlife that could cause bird strikes are required to prepare a WHA (see Policy WH-2). • All discretionary projects located within the Inner WHA Boundary and Outer WHA Boundary are required to consider the potential for the project to attract hazardous wildlife, wildlife movement, or bird strike hazards as part of environmental review process required by the California Environmental Quality Act (CEQA) (see Policy WH-3). • ALUC review required for objects ≥ 200 feet AGL (see Policy H-2). • See Policy RE-1 pertaining to all proposed wind turbines. • All new or expanded commercial-scale solar facilities must conduct an SGHAT glint and glare study for ALUC review (see Policy RE-2). • All new or expanded meteorological towers ≥ 200 feet AGL, whether temporary or permanent, require ALUC review (see Policy H-1). • Deed Notice Required

4.8.1 General Standards — The general standards applicable to the review of proposed land use actions in the vicinity of Rio Vista Airport are set forth in Table 1. Within Safety Zone 7, there are no limits for residential density or non-residential intensity.

4.8.2. Noise Criteria — As a condition for approval of development within Safety Zone 6, a notice regarding aircraft operational impacts on the property shall be attached to the property deed. An example of a deed notice is contained in Appendix B of this document. See Policy NP-4 for additional details on acceptable interior noise levels.

4.8.3. Safety Criteria — There are no particular safety requirements for Safety Zone 7.

Further discussion of other additional safety risks that require special review and assessment are provided in Chapter 5, including but not limited to wind turbine facilities and solar facilities (see Section 5.6), meteorological towers (see Section 5.7), and wildlife hazards (see Section 5.8).

Refer to the Compatibility Zone C, D, and ALZ standards found in the Travis AFB LUCP for additional safety standards.

4.8.4. Airspace Protection Criteria — Proposed buildings that are 200 feet AGL or higher require ALUC review. No hazards to flight, including physical (e.g., tall objects), visual, and electronic forms of interference with the safety of aircraft operations, and land uses that may attract birds to increase in the area shall be permitted. For a description of the 14 CFR Part 77 surfaces, see Policy AP-2.

4.8.5 – Deed Notice Required — As a condition for approval of development within Safety Zone 5, a notice regarding aircraft operational impacts on the property shall be attached to the property deed. An example of a deed notice is contained in Appendix B of this document.

5. Development Standards and Policies

5.1 General Land Use Policies

Function of Supporting Criteria — The Land Use Compatibility Criteria table (see Table 1) represents a compilation of noise, safety, and airspace protection compatibility criteria. For the purposes of reviewing proposed amendments to county or city land use plans and zoning ordinances, as well as in the review of most individual development proposals, the criteria in the table are anticipated to suffice. However, certain complex land use actions may require more intensive review. The ALUC may refer to the supporting criteria, as listed in Sections 5.2 through 5.8, to clarify or supplement its review of such actions.

LU-1 Nonresidential Development

The compatibility of nonresidential development shall be assessed primarily with respect to its usage intensity (the number of people per acre) and the noise-sensitivity of the use. Additional criteria listed in Table 1 and Chapter 4 shall also apply.

1. The total number of people permitted on a project site at any time, except for rare special events, must not exceed the indicated usage intensity times the gross acreage of the site.

    a. Gross acreage includes the property at issue plus a share of adjacent roads and any adjacent, permanently dedicated, open lands.

    b. Usage intensity calculations shall include all people (e.g., employees, customers/visitors, etc.) who may be on the property at any single point in time, whether indoors or outside.

    c. Rare special events are ones (such as an air show at an airport) for which a facility is not designed and normally not used and for which extra safety precautions will be taken to protect the event attendees from an aircraft accident.

2. No single acre of a project site shall exceed the number of people per acre indicated in Chapter 4 and listed in Table 1.

3. The noise exposure limitations cited in Policy NP-3 and listed in **Table 2** shall be the basis for assessing the acceptability of proposed nonresidential land uses relative to noise impacts. Table 2 presents noise compatibility criteria for the Rio Vista ALUCP. The ability of buildings to satisfy the interior noise level criteria noted in Policy NP-4 shall also be considered.

4. All height requirements for this ALUCP shall be assessed in feet AGL.

LU-2 Prohibited Uses

Regardless of usage intensity, certain types of uses are deemed unacceptable within portions of the Rio Vista AIA. See Chapter 4 and **Table 1** for a listing of prohibited uses in the safety zones. In addition to these explicitly prohibited uses, other uses will normally not be permitted in the respective safety zones because they do not meet the usage intensity criteria.

LU-3 Other Development Conditions

All types of proposed development shall be required to meet the additional conditions listed in Table 1 and Chapter 4 for the respective safety zone where the development is to be located.

LU-4 Existing Development and Projects with a Development Agreement Prior to ALUCP Adoption

Projects with an existing Development Agreement in place prior to the adoption of this ALUCP would not be subject to the new regulations put forth in this ALUCP to the extent the projects constitute existing development beyond the ALUC's jurisdiction, as provided in the State Aeronautics Act.

Consistent with the purposes of the State Aeronautics Act and "the intent of the Legislature to discourage incompatible land uses near existing airports" (Pub. Util. Code, § 21674.7(b)), it is the intent of the Commission not to adopt a definition of existing development that would limit the Commission's jurisdiction in any manner beyond the limitations established by the State Aeronautics Act itself. For example, and without limitation, concerning any project or physical improvement, when a development agreement is entered into or construction is commenced without the use having been duly found consistent with the applicable airport land use compatibility criteria and requirements, or without the agreement or improvement having been duly adopted, permitted, and entitled in conformance with all applicable plans, regulations, conditions, and legal requirements, such use is not existing development. Similarly, where a development agreement has been duly adopted for a project, if that development agreement is of a general nature (e.g., certain initial or "master" development agreements) that agreement would not by itself be a basis for deeming the associated use existing development. This paragraph is declarative of existing Commission policy.

5.2 Noise Compatibility Policies

Figure 5 depicts the noise contours established for the purpose of evaluating the compatibility of land use development in the vicinity of Rio Vista Airport. The potential future noise levels depicted are based upon the forecast aircraft activity scenario described in Appendix C. **Table 2** identifies land uses that are compatible within the 55, 60, 65, and 70 dB CNEL contours.

The objective of the airport noise compatibility policies described in this section is to protect the public health, safety, and welfare by minimizing the exposure of residents and occupants of future noise-sensitive development to excessive noise associated with the Airport. In furtherance of this objective, the following noise compatibility policies (NP) shall apply to the ALUCP.

NP-1 Noise Impact Area

Assessment of whether proposed land use development near Rio Vista Airport is compatible with the noise impacts of aircraft activity at the Airport shall be made with respect to potential future noise levels as depicted on Figure 5. The threshold for evaluation is the 2035 CNEL 55 dB contour. This contour defines the noise impact area of the Airport and all land uses located outside this contour are consistent with the noise compatibility policies of this ALUCP.

NP-2 Noise Exposure in Residential Areas

To the greatest extent feasible, it is the objective of the ALUC to minimize new residential development within areas significantly impacted by noise from aircraft operations at Rio Vista Airport. For this purpose, the noise impact area is defined as being all locations within the CNEL 55 dB contour as shown on Figure 5.

New residential development is deemed normally unacceptable in areas exposed to noise levels between CNEL 55-64 dB. Residential land uses in these areas must be sound-insulated to achieve an indoor noise level of CNEL 45 dB or lower. Above CNEL 65 dB, new residential uses are prohibited.

NP-3 Noise Exposure for Nonresidential Land Uses

The acceptability of nonresidential development in noise-impacted areas is dependent upon the noise sensitivity of the specific use and the extent to which the usage can be shielded from aircraft noise. Examples of acceptable noise levels for nonresidential land uses are presented in **Table 2**. 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, particularly for those uses listed as "marginally acceptable."

NP-4 Interior Noise Levels

Within the identified noise contours, land uses for which interior activities may be easily disrupted by noise shall be required to comply with the following interior noise level criteria (Interior CNEL calculations should assume that windows are closed):

1. The maximum, aircraft-related, interior noise level that shall be considered acceptable for land uses near airports is 45 dB CNEL in:
    - Living and sleeping 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. When reviewed as part of a general plan, specific plan, or zoning ordinance amendment or as a major land use action, evidence that proposed structures will be designed to comply with the above criteria shall be submitted to the ALUC under the following circumstances:

    a. Any single- or multi-family residence situated within the 55 dB CNEL forecast contour shown in Figure 5. [Wood frame buildings typically have an NLR of approximately 20 dB with windows closed.]

    b. Any hotel or motel, hospital or nursing home, church, meeting hall, office building, mortuary, school, library, museum, or other noise-sensitive nonresidential use situated within the 65 dB CNEL forecast contour.

TABLE 2
NOISE COMPATIBILITY CRITERIA

Land Use Category	Location[1] CNEL (dB) 55-60	60-65	65-70	>70
Residential				
Single-family Residential	-	-	--	--
Multi-family Residential	-	-	--	--
Public				
schools, libraries, hospitals, nursing homes, museums	o	-	--	--
churches, auditoriums, concert halls, meeting halls	+	o	-	--
transportation, parking, cemeteries	++	++	+	o
Commercial and Industrial				
offices, retail trade, hotels and motels	+	o	o	-
service commercial, wholesale trade, warehousing, light industrial, mortuaries	++	+	o	o
general manufacturing, utilities, extractive industry	++	++	+	+
Agricultural and Recreational				
Cropland	++	++	++	+
livestock breeding	o	o	o	-
parks, playgrounds, zoos	++	+	o	-
golf courses, riding stables, water recreation	++	+	o	o
outdoor spectator sports	++	+	o	-
Amphitheaters	o	-	--	--

	Land Use Acceptability	Interpretation/Comments
++	Clearly Acceptable	The activities associated with the specified land use can be carried out with essentially no interference from the noise exposure.
+	Normally Acceptable	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	Marginally Acceptable	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 condition 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.
-	Normally Unacceptable	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 that have conventionally constructed structures and/or involve outdoor activities that would be disrupted by noise should generally be avoided.
--	Clearly Unacceptable	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.

NOTE:
[1] See Figure 5 for locations.

5.3 Safety Compatibility Policies

The safety zones for Rio Vista Airport are presented in Figure 4. The density and intensity limitations for the various safety zones are presented in Table 1. The objective of the land use safety compatibility criteria for Rio Vista Airport is to minimize the risks to people and property on the ground in the event of an off-airport aircraft accident or emergency landing. The most stringent land use controls shall be applied to the areas with greatest potential risk. In furtherance of this objective, the following safety compatibility policies (SP) shall apply to the ALUCP.

SP-1 Evaluating Safety Compatibility for New Development

The safety compatibility of proposed uses within the AIA for Rio Vista Airport shall be evaluated in accordance with the policies set forth in this section and the safety zones depicted on Figure 4, the compatibility criteria presented in Table 1, and the detailed compatibility criteria presented in Chapter 4 of this ALUCP.

SP-2 Land Uses of Particular Concern

Land uses of particular safety concern are ones in which the occupants have reduced effective mobility or are unable to respond to emergency situations. The safety zones depicted on Figure 4, the compatibility criteria presented in Table 1, and the detailed compatibility criteria presented in Chapter 4 of this ALUCP shall apply to land uses of particular concern in the AIA. Family day care homes shall be permitted in any location where residential development is permitted.

SP-3 Travis AFB LUCP Compatibility Zone D

All safety zones at Rio Vista Airport are located within Compatibility Zone D of the Travis AFB LUCP. See the Travis AFB LUCP for additional safety standards that also apply to land uses in the Rio Vista AIA.

SP-4 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. (Methods for determining the concentration of people for various land uses are provided in Appendix D of this document.) Intensity limits as presented in Table 1 and detailed in Chapter 4 of this ALUCP shall apply.

SP-5 Criteria for Clustering of Development

The ALUC generally supports clustering as a means for both enhancing safety compatibility in the vicinity of airports and accomplishing other development objectives. Clustering occurs when development on a site or within an overall safety zone is concentrated in only a portion of the area and the remaining area is held to a low-intensity usage such as agriculture, landscaping, or automobile parking. Refer to Section 6.2.4 for policies regarding infill development.

1. With respect to the vicinity of the Airport, clustering is applicable only to nonresidential development. As indicated in Table 1, usage intensity of new nonresidential development shall be limited for both indoor and outdoor occupancies. Please see Chapter 4 for detailed clustering requirements for each of the safety zones, which are incorporated into this Policy SP-3 by reference.

2. In addition to the detailed clustering requirements for each zone:

    a. For the purposes of this policy, the areas to be evaluated within the safety zones shall be rectangles, not irregular shapes.

    b. In no case shall a proposed development be designed to accommodate more than the total number of people per acre that would be safe, as indicated in Table 1. A project site may include multiple parcels.

5.4 Airspace Protection Policies

The 14 CFR Part 77 imaginary surfaces for Rio Vista Airport are presented in Figure 6. Tall structures, trees, and other objects, particularly when located near airports or on high terrain, may constitute hazards to aircraft in flight. Federal regulations establish the criteria for evaluating potential obstructions. These regulations also require that the FAA be notified of proposals for creation of certain such objects. The FAA conducts "aeronautical studies" of these objects and determines whether they would be hazards, but it does not have the authority to prevent their creation. The objective of the ALUC's airspace protection policies, together with regulations established by local land use jurisdictions and the state government, is to ensure that hazards to the navigable airspace do not occur. In furtherance of this objective, the following airspace protection policies (AP) shall apply to the ALUCP.

AP-1 Airport Land Use Commission Review of Height of Proposed Objects

Based upon FAA criteria, proposed objects that would exceed the heights indicated in Chapters 3 and 4 for the respective safety zones potentially represent airspace obstruction issues. Development proposals that include any such objects shall be reviewed by the ALUC. Objects of lesser height normally would not have a potential for being airspace obstructions and therefore do not require ALUC review with respect to airspace protection criteria (noise and safety concerns may still be present) except as otherwise stated in this ALUCP. Caution should be exercised, however, with regard to any object more than 50 feet AGL proposed to be located on a site that is substantially higher than the surrounding terrain. Please see Chapter 4 for detailed height review requirements for each of the safety zones.

AP-2 Height Restriction Criteria

The general criteria to be used in assessing whether objects may represent airspace obstructions are established by 14 CFR Part 77. In general, the height of objects in the vicinity of the Airport shall be limited so as not to exceed the imaginary airspace surfaces defined for the airport in accordance with 14 CFR Part 77 criteria.

1. A simplified diagram of the 14 CFR Part 77 Subpart C surfaces for Rio Vista Airport is depicted in Figure 6.

2. In certain circumstances, objects may need to be restricted to heights less than the limits indicated by Figure 6.

    a. In locations along portions of instrument approach procedure routes, restrictions of object heights to less than those indicated by 14 CFR Part 77 may be necessary so as not to impair the utilization of these procedures. The applicable criteria are set forth in FAA

Order 8260.3D, *United States Standard for Terminal Instrument Procedures* (TERPS). Review of objects relative to these criteria normally is conducted by the FAA as part of aeronautical studies. Independent ALUC review is not necessary; rather, the ALUC's function is to ensure compliance with the FAA recommendations.

b. In other parts of the airport vicinity — especially where common visual flight routes cross areas of moderately high terrain — tall objects could pose airspace hazards even if they do not exceed 14 CFR Part 77 limits. Based upon the airport land use commissioners' knowledge of such locations, the ALUC may find lower height limits to be appropriate or may require objects to be obstruction marked and lighted. Input from Rio Vista Airport personnel should be sought with regard to any such cases that may be brought to the ALUC's attention.

3. Objects may be permitted to exceed 14 CFR Part 77 criteria under the following conditions.

   a. In locations where the ground level exceeds or lies within 35 feet of a 14 CFR Part 77 horizontal or conical surface, objects up to 35 feet AGL in height are not prohibited by these policies if they are not a hazard to air navigation. Taller objects may also be acceptable if they would be situated within 100 feet of other objects or high terrain having equal or higher elevation.

   b. The ALUC may, but is not required to, grant exceptions to other proposed objects if the FAA has completed an aeronautical study of the proposal and concluded that the object would not be a hazard to air navigation. Other factors, including the commissioners' knowledge of local airspace and input from Rio Vista Airport personnel, shall also be taken into account in the ALUC's decision to grant such exceptions.

4. All height requirements shall be measured in AGL in all locations.

AP-3 Obstruction Marking and Lighting

In general, the need for marking and lighting of obstructions is determined by the FAA as part of aeronautical studies conducted in accordance with 14 CFR Part 77. Under most circumstances, when reviewing proposed structures that exceed the height criteria indicated in Policy AP-2, the ALUC expects to abide by the FAA's conclusions regarding marking and lighting requirements. However, situations may arise in which the ALUC, because of its particular knowledge of local airports and airspace, may reach a different determination than that of the FAA. In such instances, the ALUC may determine either that a proposed structure is unacceptable or that it is acceptable only if marked and lighted. Any marking and lighting that the ALUC may require shall be consistent with FAA standards as to color and other features.

AP-4 Federal Aviation Administration Notification

Proponents of a project that may exceed the elevation of a 14 CFR Part 77 surface must notify the FAA as required by 14 CFR Part 77, Subpart B, and by sections 21658 and 21659 of the State Aeronautics Act. Notification to the FAA under 14 CFR Part 77, Subpart B, is required even for certain proposed construction that does not exceed the height limits allowed by Subpart C of the regulations. Refer to Appendix E of this document for a copy of these sections of the state codes and to Appendix F for the specific FAA notification requirements. A copy of the form to be submitted to the FAA, FAA Form 7460*, Notice of Proposed Construction or Alteration*, is also included in Appendix F.

1. Local jurisdictions shall inform project proponents of the requirements for notifying the FAA.

2. The requirement for notifying the FAA shall not necessarily trigger an airport compatibility review of an individual project by the ALUC unless required in accordance with the Policies of this ALUCP including but not limited to Policy AP-1.

3. FAA review is required for any proposed structure more than 200 feet AGL of its site. All such proposals also shall be submitted to the ALUC for review regardless of where in the county the object would be located.

4. Any project submitted to the ALUC for consistency determination for reason of height issues shall include a copy of the 14 CFR Part 77 notification to the FAA and the results of the FAA's analysis. The FAA's determination may represent one aspect of a project's compatibility factors. Therefore, a no-hazard determination by FAA does not guarantee ALUC approval of a proposed project.

5.5 Overflight Notification Policies

The overflight zone for Rio Vista Airport is presented in **Figure 7**. The objective of the land use overflight compatibility criteria for Rio Vista Airport is to minimize annoyance related to aircraft overflight to people on the ground. In furtherance of this objective, the following overflight compatibility policies (OP) shall apply to the ALUCP.

OP-1 Airport Land Use Commission Review of Overflight

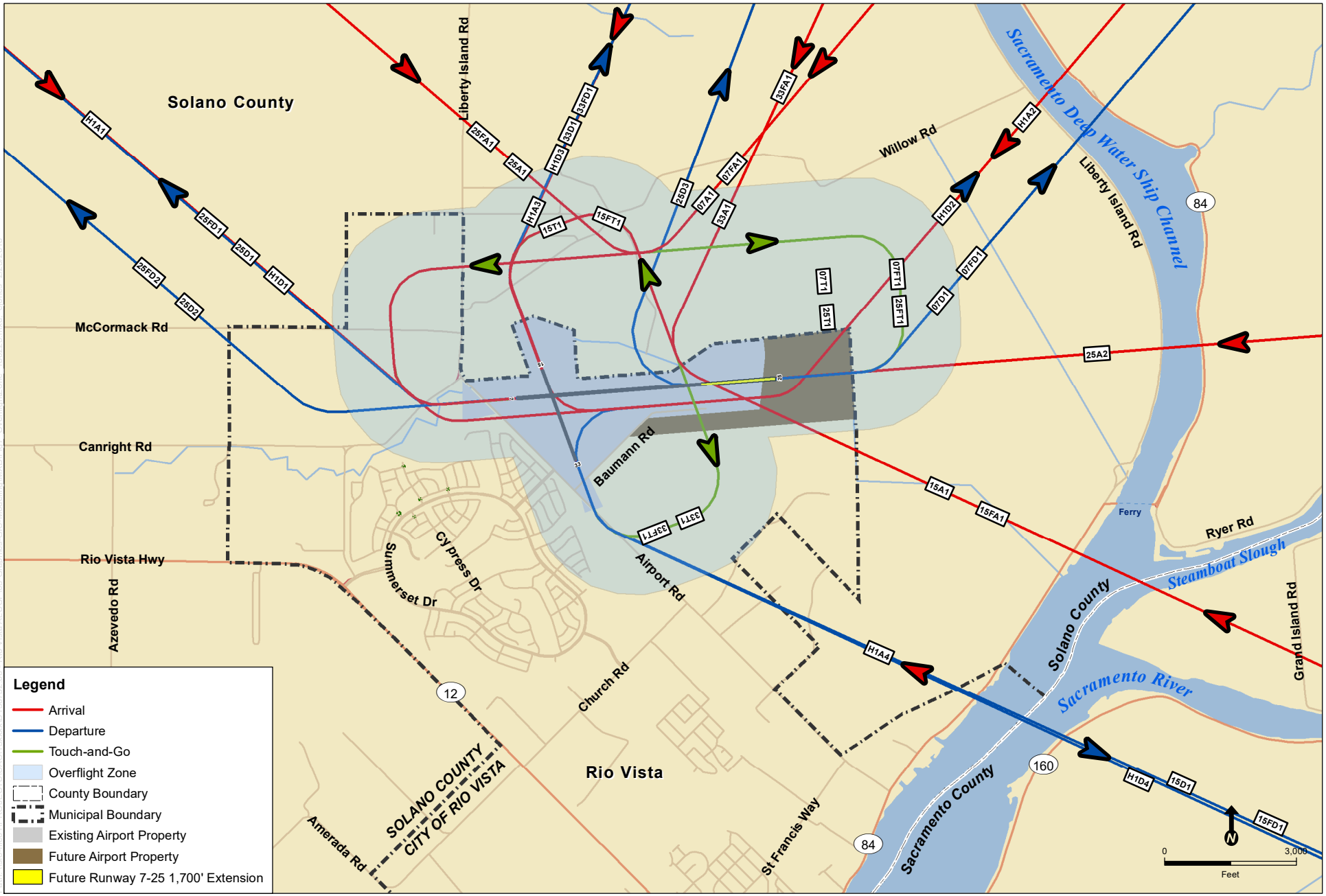
Based on aircraft noise exposure in the vicinity of Rio Vista Airport, existing and future populations living near or within specific overflight zones will need to be informed of the aircraft noise levels and potential nuisance of overflight. Acceptability of a particular noise level, with respect to a specific land use type, will be a function of the noise level and land use.

1. The overflight zone is based upon the aircraft activity scenario presented in the forecast noise contours (see Appendix C).

2. Concurrent with the noise standards, the ALUC should periodically review the forecast noise exposure level contours and update them if appropriate. Reviews should occur at least every five years and should take place sooner if the forecast number of the aircraft operations or the aircraft fleet mix change in a manner not reflected in this ALUCP.

OP-2 Disclosure

Realtors shall provide disclosure notices to all new home buyers for the properties located within the overflight zone.



SOURCE: ESA, 2017; ESRI Mapping Services

Rio Vista Municipal Airport ALUCP.150732

Figure 7

Overflight Zone

ESA

5.6 Renewable Energy Policies

With the increase in both energy demand and renewable energy technology, renewable energy facilities have developed across several areas of Solano County. The ALUC shall apply the following renewable energy (RE) policies to account for wind turbine and solar facilities.

RE-1 Wind Turbine Facilities

As pertains to wind turbine facilities, the Rio Vista ALUCP defers to the policies included in the Travis AFB LUCP. Please see Section 5.6.1 of the Travis AFB LUCP.

RE-2 Solar Facilities

Solar facilities can create reflective glint and glare hazards to aircraft pilots and air traffic controllers. The FAA advises the use of, and Rio Vista Airport employs, the Sandia National Laboratories-developed Solar Glare Hazard Analysis Tool (SGHAT) that allows a user to analyze proposed photovoltaics array systems and recommends mitigation methods if needed. This method provides high-accuracy predictions of potential impacts on airport sensitive receptors and allows for evaluation of design alternatives to avoid glare impacts.

1. No commercial-scale solar facility shall have a potential for glint or glare at Rio Vista Airport. No commercial-scale solar facility shall have a potential for glare or more than a low potential for after-image along the final approach path for any existing landing threshold or future landing threshold (including any planned interim phases of the landing thresholds) as shown on the Airport Layout Plan (see Appendix J) for Rio Vista Airport. All new or expansion of existing commercial-scale solar facilities shall be reviewed by the ALUC and shall be required to conduct a glint and glare study based on the Sandia National Laboratories-developed SGHAT model, in order to demonstrate no glint or glare risk. These ALUCP policies concerning solar facilities are minimum requirements. The FAA may issue further policies or guidance in the future which may also be applicable to solar facilities within the AIA or to environmental review of those facilities. (See FAA, Interim Policy, FAA Review of Solar Energy Systems Projects on Federally Obligated Airports, 78 Fed. Reg. 63277 (Oct. 23, 2013), stating that the FAA plans to publish an update to its *Technical Guidance for Evaluating Selected Solar Technologies on Airports*.)

5.7 Height Policies

The ALUC shall apply the following Height (H) policies to meteorological towers, other types of towers, and tall objects within the AIA.

H-1 Meteorological Towers

Meteorological towers can pose a safety hazard for low-flying aircraft, affecting pilots and aircraft operations.

1. All proposed new or expanded meteorological towers 100 feet AGL in height or greater in Safety Zone 4, or 200 feet AGL or greater in Safety Zones 5 and 6, whether temporary or permanent, shall require ALUC review.

2. All meteorological towers, whether temporary or permanent, regardless of height, shall be subject to the height requirements stated elsewhere in this ALUCP.

3. All meteorological towers, regardless of height and whether temporary or permanent, shall be marked and lighted for safety in adherence with the FAA's marking and lighting requirements contained in FAA Advisory Circular AC-70/7460-1K, *Obstruction Marking and Lighting*. The requirements of Public Utilities Code section 21417, requiring marking of meteorological towers of certain heights in certain locations, may supersede Policy H-1, to the extent section 21417 requires marking. If section 21417 ceases to be in effect, its requirements would not supersede this paragraph. The requirements of this Policy and section 21417 are a minimum, and it is encouraged that meteorological towers be marked and lighted to any greater extent as may be prudent as industry practice improves.

H-2 Objects Greater Than 100 feet AGL

In addition to meteorological towers, other types of towers and tall objects can pose a safety hazard for low-flying aircraft, affecting pilots and aircraft operations.

1. All proposed new or expanded objects 100 feet in height AGL or greater in Safety Zone 4, or 200 feet AGL or greater in Safety Zones 5 and 6 and Zone 7, whether temporary or permanent, shall require ALUC review and shall be subject to the height requirements stated elsewhere in this ALUCP. This includes wind turbine facilities (which are also subject to the policies of the Travis AFB LUCP). Proponents of proposed wind turbines in the Rio Vista AIA should first ascertain whether they meet the requirements of the Travis AFB LUCP and if so, further determine whether they meet the height restrictions included in this ALUCP and the requirements of 14 CFR Part 77.

2. All proposed new or expanded objects 100 feet in height AGL or greater in Safety Zone 4, or 200 feet AGL or greater in Safety Zones 5 and 6 and Zone 7, whether temporary or permanent, shall be marked and lighted for safety. Unless otherwise specified by the ALUC, each new or expanded structure under this Policy must, at a minimum, conform to the FAA's marking and lighting specifications set forth in the FAA's final determination of "no hazard" and the associated FAA study for that particular structure. For purposes of this Policy, any specifications, standards, and general requirements set forth by the FAA in the structure's determination of "no hazard" and the associated FAA study are mandatory, and project applicants shall be bound to implement those specifications through appropriate project approvals and entitlements. Additionally, each structure under this Policy must be marked and lighted in accordance with any marking and lighting requirements prescribed by the ALUC. The requirements of this paragraph 5.7.2(b) apply to meteorological towers and to other objects greater than 100 feet AGL in height.

3. To the extent that the FAA does not provide marking and lighting specifications for a proposed object taller than 100 feet AGL, due to the height or type of the object or for any other reason, the requirements and specifications for marking and lighting the particular proposed object for safety shall be determined after consideration of any FAA requirements for the same or similar type of object.

5.8 Wildlife Hazards

Figure 8 depicts two wildlife hazard zones, the Inner WHA Boundary and the Outer WHA Boundary, which contain specific development requirements. The Inner WHA Boundary is coterminous with the Traffic Pattern Boundary as represented by Safety Zone 6. The Outer WHA Boundary is located five miles from the farthest edge of the Airport's Air Operations Area (AOA), which the FAA recommends for any hazardous wildlife attractant if the attractant could cause hazardous wildlife movement into or across the approach or departure airspace. FAA Advisory Circular 150/5200-33C provides guidance for minimizing the risks that certain wildlife

species pose to aircraft. The Inner WHA Boundary is based on the fact that Rio Vista Airport serves piston-powered aircraft. Together, these perimeters encompass all safety zones and present additional conditions on certain types of land uses that are known to attract wildlife that are hazardous to aircraft operations. See FAA Circular 150/5200-33C in Appendix G for specific land use details and restrictions, including a description of conflicting land uses. The ALUC shall apply the following Wildlife Hazard (WH) policies within the AIA. The following policies do not apply to existing land uses.[3]

Land uses identified in **Table 3** are known to attract certain species groups in Solano County, as described in more detail in Appendix H.

WH-1 Known Wildlife Hazards in Solano County - Inner WHA Boundary:

Within the Inner WHA Boundary as shown on Figure 8, new or expanded land uses involving discretionary review that has the potential to attract wildlife and cause bird strikes are required to prepare a wildlife hazard analysis (WHA). Reviewing agencies shall prepare a WHA for projects that have the potential to attract wildlife that could cause bird strikes. Expansion of existing wildlife attractants includes newly created areas and increases in enhanced or restored areas. The WHA must demonstrate wildlife attractants that may pose hazards to aircraft in flight will be minimized.

WH-2 Known Wildlife Hazards in Solano County - Outer WHA Boundary:

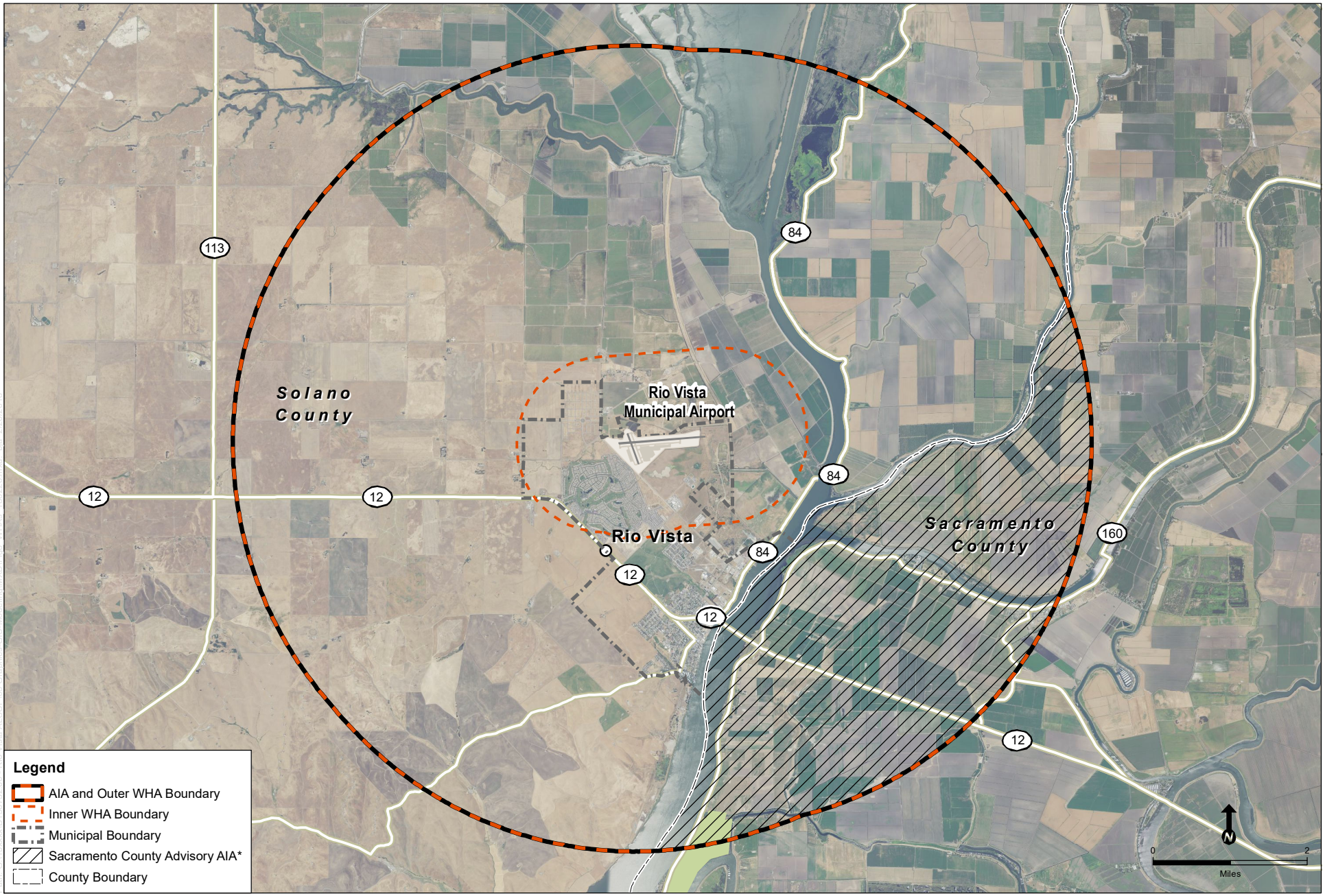
Outside the Inner WHA Boundary but within the Outer WHA Boundary, as shown on Figure 8, any new or expanded land use involving discretionary review that has the potential to attract the movement of wildlife and cause bird strikes are required to prepare a WHA. Expansion of existing wildlife attractants includes newly created areas and increases in enhanced or restored areas. All reasonably feasible mitigation measures must be incorporated into the planned land use. The WHA must demonstrate wildlife movement that may pose hazards to aircraft in flight will be minimized.

WH-3 Environmental Review Compliance:

1. All discretionary projects located within the Inner WHA Boundary or Outer WHA Boundary are required to consider the potential for the project to attract hazardous wildlife, wildlife movement, or bird strike hazards as part of the environmental review process required by the California Environmental Quality Act (CEQA).

2. Because biological and hazard impacts are required to be examined in the context of CEQA compliance, it is anticipated that most projects will develop the information necessary to prepare a WHA and demonstrate compliance with this Policy WH-3 as part of the CEQA process, and that separate documentation will not be needed. Proposed projects within the Inner WHA Boundary that have the potential to cause a significant adverse impact under Policy WH-1, with or without mitigation, shall be reviewed by the ALUC (including but not limited to projects requiring an environmental impact report, mitigated negative declaration, or equivalent document).

[3] Land uses in existence that do not meet the wildlife hazard policies of this ALUCP, upon adoption, are not required to eliminate existing wildlife hazards. Thus, existing activities and uses would be allowed to remain, and only new or expanded land uses are required to meet the aforementioned standards. It should be noted that these regulations are not intended to prohibit existing agricultural activities.



SOURCE: California Airport Land Use Planning Handbook, October 2011; ESA, 2016; ESRI Mapping Services

*NOTE: Crosshatched areas are in Sacramento County, outside the jurisdiction of the Solano County Airport Land Use Commission. The Rio Vista ALUCP is advisory only in these areas

ESA

Rio Vista Municipal Airport ALUCP.150732

Figure 8

Rio Vista Municipal Airport
Wildlife Hazard Analysis Boundaries

TABLE 3
SPECIES GROUPS KNOWN TO BE ATTRACTED TO LAND USE TYPES IN SOLANO COUNTY

Land Use Type/Habitat Feature	Species Group(s) Known to be Attracted to Land Use Type/Habitat Feature
Public Parks	Swallows, sparrows, blackbirds/starlings, crows/ravens, doves, pigeons, geese and ducks
Golf Courses	Geese and ducks, blackbirds/starlings, sparrows, swallows
Water Treatment Plants	Geese and ducks, cormorants/pelicans, herons, shorebirds
Landfills	Gulls, blackbirds/starlings, vultures
Agricultural Lands	Hawks, vultures, blackbirds/starlings, crows/ravens
Rivers and Creeks	Egrets, songbirds, geese and ducks, mammals such as raccoons and otters
Estuarine/Wetland Habitat	Shore birds, blackbirds, geese and ducks, egrets, cormorants, pelicans
Open Space	Hawks, swallows, sparrows, kestrels, coyote, owls, turkey/pheasants, osprey, eagles, vultures

NOTE:
Table 3 is not comprehensive; it provides general groups of wildlife that may use each land use type/habitat feature.

SOURCE: ESA, 2015.

6. ALUC Review Procedures for the Rio Vista ALUCP

6.1 General Applicability

6.1.1. Purpose and Precedence.

(a) Purpose — These Solano County Airport Land Use Commission Review Procedures serve two functions:

(1) To articulate the criteria, in accordance with the California State Aeronautics Act, which the County of Solano and affected cities in the county:

(i) Shall use as the basis for referring specified land use development proposals to the Solano County ALUC for review.

(ii) Shall apply when modifying their respective general plans and zoning ordinances to be consistent with the ALUC's ALUCP for Rio Vista Airport.

(iii) Shall consider when making other planning decisions regarding the proposed development of lands impacted by airport operations.

(2) To define the process by which the ALUC:

(i) Shall review proposed land use development in Solano County and affected cities within the county for compatibility with airport activity.

(ii) Shall review certain types of airport and military airfield development proposals which are also subject to ALUC review.

(b) Precedence — This Review Procedures chapter comprises one portion of the ALUCP for Rio Vista Airport in Solano County.

(1) The procedural policies set forth herein apply to Rio Vista Airport.

(2) The earlier chapters of this document establish the policies — in the form of criteria and maps — by which the compatibility of land use development around Rio Vista Airport is to be evaluated.

6.1.2. Geographic Scope — These Solano County Airport Land Use Compatibility Review Procedures apply to:

(a) Airport Influence Area

(1) All lands on which the uses could be negatively affected by present or future aircraft operations at Rio Vista Airport, as well as lands on which the uses could negatively affect Rio Vista Airport.

(2) The specific limits of the influence area for Rio Vista Airport are depicted on the maps contained within this ALUCP.

(3) ALUC jurisdiction extends no further than the Solano County line. The ALUC's role is only advisory to areas that fall within the AIA for Rio Vista Airport outside Solano County (See Policy 6.1.4(d)).

(b) *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 6.1.4 (c)(3).

6.1.3. Types of Airport and Military Airfield Impacts

(a) Principal Compatibility Concerns include:

(1) Exposure of land uses and people to aircraft noise;

(2) Land use safety — the risks, both to people on the ground and the occupants of aircraft, associated with aircraft accidents near airports and military airfields;

(3) Protection of airport and military airspace from hazards to flight;

(4) General concerns, especially annoyance, related to aircraft overflights; and

(5) Protecting the operations of military installations.

6.1.4. Types of Actions Reviewed

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

(1) The adoption or approval of any amendment to a general or specific plan affecting the property within an AIA (Pub. Util. Code, § 21676(b)).

(2) The adoption or approval of a zoning ordinance, building regulation, or other land use ordinances and regulations that affects property within the AIA.

(3) Adoption or modification of the master plan for an existing public-use airport or military airfield (Pub. Util. Code, § 21676(c)).

(4) Any proposal for expansion of an existing airport, heliport, or military airfield if such expansion will require an amended airport permit from the state of California (Pub. Util. Code, § 21664.5).

(5) Any proposal for a new airport, heliport, or military airfield, whether for public use or private use (Pub. Util. Code, § 21661.5), if the facility requires an Airport Permit or Heliport Permit issued by the California Department of Transportation.

(b) Other Land Use Actions Subject to Airport Land Use Commission Review — In addition to the above types of land use actions for which ALUC review is mandatory, other types of land use actions are subject to review under the following circumstances:

(1) Until such time as (1) the ALUC finds that a local agency's general plan or specific plan is consistent with an ALUCP as presently adopted or as amended in the future or (2) the local agency has overruled the ALUC's determination of inconsistency, state law requires the local agency to refer all actions, regulations, and permits involving land within the Rio Vista AIA to the ALUC for review (Pub. Util. Code, § 21676.5(a)).

(2) After a local agency has revised its general plan or specific plan for consistency with the ALUCP (see Policy 6.2.4 (b)) or has overruled the ALUC, the ALUC no longer has authority under state law to require that all actions, regulations, and permits be referred for review. However, the ALUC and the local agency can agree that the ALUC should continue to review individual projects in an advisory capacity.

(i) The ALUC requests local agencies to continue to submit major land use actions as listed in Policy 6.1.4 (c). ALUC review of these types of projects can serve to enhance their compatibility with airport activity.

(a) For the Rio Vista AIA, ALUC review is requested for actions that concern locations within Safety Zone 1, 2, 3, 4, 5, and 6, as well as objects 200 feet AGL or greater in height in the rest of the AIA. All proposed or new or expansion of existing commercial-scale solar facilities and all proposed projects within the Inner or Outer WHA Boundary that have the potential to cause a significant adverse impact under Policies WH-1 or WH-2, with or without mitigation, shall also be reviewed by the ALUC (including but not limited to projects requiring an environmental impact report, mitigated negative declaration, or equivalent document).

(ii) Review of these actions is requested only if a review of the major land use action has not previously been conducted as part of a general plan, specific plan, or zoning ordinance action or if sufficient project-level detail to enable a full assessment of compatibility was not available at the time of a previous review.

(iii) Because the ALUC is acting in an advisory capacity when reviewing projects under these circumstances, local jurisdictions are not required to adhere to the overruling process if they elect to approve a project without incorporating design changes or conditions suggested by the ALUC.

(3) Proposed redevelopment of a property for which the existing use is consistent with the local general plan and/or specific plan, but nonconforming with the compatibility criteria set forth in the applicable ALUCP, shall be subject to ALUC review. This policy is intended to address circumstances which arise when a general or specific plan land use designation does not conform to ALUC compatibility criteria, but is deemed consistent with the ALUCP because the designation reflects an existing land use. Proposed redevelopment of such lands voids the consistency status and is to be treated as new development subject to ALUC review even if the proposed use is consistent with the local general plan or specific plan. (Also see Policies 6.2.4 (b), 6.2.4 (c)(2), and 6.2.4 (c)(3))

(c) Major Land Use Actions — The scope or character of certain proposed major land use actions, as listed below, is such that their compatibility with airport activity is a potential concern. Even though these actions may be basically consistent with the local general plan or specific plan, sufficient detail may not be known to enable a full airfield compatibility evaluation at the time that the general plan or specific plan is reviewed. To enable better assessment of compliance with the compatibility criteria set forth in the ALUCPs, ALUC review of these actions may be warranted. The circumstances under which ALUC review of these actions is to be conducted are indicated in Policy 6.2.3 below.

(1) Actions affecting land uses within the AIA.

(i) Any proposed expansion of the sphere of influence of a city or special district.

(ii) Proposed pre-zoning associated with future annexation of land to a city.

(iii) Proposed land acquisition by a government entity for any facility accommodating a congregation of people (for example, a school or hospital).

(iv) Any off-airport, non-aviation use of land within a runway protection zone at Rio Vista Airport.

(v) Any object having a height which requires review by the FAA in accordance with 14 CFR Part 77.

(vi) Any project having the potential to attract hazardous wildlife to the vicinity of Rio Vista Airport.

(vii) Any project having the potential to create electrical, operational, or visual hazards to aircraft in flight, including:

(a) Electrical interference with radio communications or navigational signals;

(b) Lighting that could be mistaken for airport lighting;

(c) Glint or glare in the eyes of pilots of aircraft using the airport;

(d) High-velocity exhaust plumes;

(e) Impaired visibility near the airport, and

(f) Operational interference with Rio Vista Airport's radar facilities including but not limited to interference caused by wind turbines.

(viii) Any proposed commercial and non-commercial wind turbine projects greater than 100 feet in height AGL.

(ix) Any proposed new commercial-scale solar facilities.

(x) Any proposed new or expanded meteorological towers greater than 100 feet in height AGL in Safety Zone 4, or greater than 200 feet in height AGL in Safety Zones 5 and 6, whether temporary or permanent.

(xi) Any proposed projects within the Inner or Outer WHA Boundaries, concerning wildlife hazards, that have the potential to cause a significant adverse impact under Policies WH-1 or WH-2, with or without mitigation.

(xii) All proposed new or expanded objects greater than 100 feet in height AGL in Safety Zone 4, or greater than 200 feet in height AGL in Safety Zones 5 and 6, whether temporary or permanent.

(2) Proposed non-aviation development of military airfield property (excluding federally owned property) if such development has not previously been included in an airport master plan or community general plan reviewed by the ALUC. (See Appendix I, Glossary, for a definition of aviation-related use.)

(3) Regardless of location within the AIA, any proposal for construction or alteration of a structure (including but not limited to antennas) taller than 200 feet AGL at the site. (Such structures also require notification to the FAA in accordance with 14 CFR Part 77, Paragraph 77.13(a)(1).)

(4) Any other proposed land use action, as determined by the local planning agency, involving a question of compatibility with military airfield activities.

(d) Intercounty Coordination — Where the Rio Vista AIA crosses the Solano County line, affected jurisdictions outside of the county are asked to coordinate with the Solano County ALUC on airport land use compatibility issues.

(1) The ALUC requests the opportunity to comment upon any major land use actions, as defined above, proposed to be situated within the portions of Rio Vista AIA that extend into adjacent counties.

(2) Any county adjacent to Solano County or any city or other agency within such counties which may be considering proposed establishment or expansion of an airport within three miles, or a heliport within one mile, of the Solano County boundary should inform the Solano County ALUC of such proposal.

(3) Solano County ALUC review of such actions is advisory only. The ALUC has no jurisdiction over development outside Solano County boundaries.

6.2 Review of Land Use Actions

6.2.1. General

(a) *Timing of Project Submittal* — Proposed actions listed in Policy 6.1.4 should be referred to the ALUC at the earliest reasonable point in time so that the ALUC's review can be duly considered by the local jurisdiction prior to formalizing its

actions. The timing may vary depending upon the nature of the specific project. However, all projects must be submitted to the ALUC for review prior to final approval by the local government entity.

6.2.2. Review Process for Community Land Use Plans and Ordinances

(a) Initial Airport Land Use Commission Review of General Plan Consistency — In conjunction with adoption or amendment of the Rio Vista ALUCP, the ALUC shall review the general plans and specific plans of affected local jurisdictions to determine their consistency with the ALUC's policies.

(1) Within 180 days of the ALUC's adoption or amendment of an ALUCP, each local agency must amend its general plan and any applicable specific plan to be consistent with the ALUC's plan or, alternatively, adopt findings and overrule the ALUC in accordance with section 21676(b) of the Public Utilities Code (Govt. Code, § 65302.3).

(2) Prior to taking action on a proposed amendment, the local agency must submit a draft of the proposal to the ALUC for review and approval.

(3) In conjunction with its submittal of a general plan or specific plan amendment to the ALUC, a local agency may request that the ALUC modify the areas defined as "infill" in accordance with Policy 6.2.4 (c). The ALUC will include a determination on the infill as part of its action on the consistency of the general plan and specific plans.

(b) Subsequent Reviews of Land Use Development Proposals — As indicated in Policies 6.1.4 (a)(1) and 6.1.4 (a)(2), prior to taking action to adopt a new or amended (or amendment to) a general plan or specific plan or the addition or approval of a zoning ordinance or building regulation affecting an AIA as defined herein, local agencies must submit the proposed plan, ordinance, or regulation to the ALUC for review. Subsequent land use development that is consistent with applicable, previously reviewed, local plans, ordinances, and regulations is subject to ALUC review only under the conditions indicated in Policies 6.1.4 (b) and 6.2.3 (d).

(c) Project Submittal Information — Proposed community land use plans and ordinances submitted to the ALUC for review shall include:

(1) A properly completed ALUC Application Form, available from the County Department of Resource Management.

(d) Airport Land Use Commission Action Choices — When reviewing a general plan, specific plan, zoning ordinance, or building regulation for consistency with the Rio Vista ALUCP, the ALUC has three choices of action:

(1) Find the plan, ordinance, or regulation consistent with the Rio Vista ALUCP. To make such a finding with regard to a general plan, the conditions identified in Policy 6.2.4 (b) must be met.

(2) Find the plan, ordinance, or regulation consistent with the Rio Vista ALUCP, subject to conditions and/or modifications that the ALUC may require. Any such conditions should be limited in scope and described in a manner that allows compliance to be clearly assessed.

(3) Find the plan, ordinance, or regulation inconsistent with the Rio Vista ALUCP. In making a finding of inconsistency, the ALUC shall note the specific conflicts or shortcomings upon which its determination is based.

(e) Response Time

The ALUC 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 from the date of referral (Pub. Util. Code, § 21676(d)).

(1) If the ALUC fails to make a determination within that period, the proposed action shall be deemed consistent with the Rio Vista ALUCP.

(2) Regardless of ALUC action or failure to act, the proposed action must comply with other applicable local, state, and federal laws and regulations.

(3) The referring agency shall be notified of the ALUC's action in writing.

6.2.3. Review Process for Major Land Use Actions

(a) Project Submittal Information — A proposed major land use action submitted to the ALUC for review shall include:

(1) The following information:

(i) Property location data (assessor's parcel number, street address, subdivision lot number).

(ii) An accurately scaled map showing the relationship of the project site to the airport boundary and runways.

(iii) A description of existing and proposed land uses.

(iv) The type of land use action being sought from the local jurisdiction (e.g., zoning change).

(v) 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.

(vi) A detailed site plan showing ground elevations, the location of structures, open spaces, and water bodies, and the heights of structures and trees.

(vii) Identification of any characteristics that could create electrical interference, confusing lights, glare, smoke, high-velocity exhaust plumes, or other electrical or visual hazards to aircraft flight.

(viii) Any environmental document (initial study, draft environmental impact report, etc.) that may have been prepared for the project.

(ix) Any staff reports regarding the project that may have been presented to local agency decision makers.

(x) Other relevant information that the ALUC or its staff determine to be necessary to enable a comprehensive review of the proposal, either through publication of generally applicable application instructions or on a case-by-case basis considering the circumstances of a particular proposal. An ALUC Application Form is available from the County Department of Resource Management.

(2) Any applicable review fees as established by the Solano County ALUC.

(b) Airport Land Use Commission Action Choices — When reviewing a major land use project proposal, the ALUC has three choices of action:

(1) Find the project consistent with the Rio Vista ALUCP.

(2) Find the project consistent with the Rio Vista ALUCP, subject to compliance with such conditions as the ALUC may require. Any such conditions should be limited in scope and be described in a manner that allows compliance to be clearly assessed (e.g., the height of a structure).

(3) Find the project inconsistent with the Rio Vista ALUCP. In making a finding of inconsistency, the ALUC shall note the specific conflicts upon which its determination is based.

(c) 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 Solano County ALUC is that:

(1) When a major land use action is submitted for review on a mandatory basis as required by Policy 6.1.4 (b)(1):

(i) Reviews of projects forwarded to the ALUC for a consistency determination shall be completed within 60 days of the date of project referral.

(ii) The date of referral is deemed to be the date on which all applicable project submittal information as listed in Policy 6.2.3(a) is received by the ALUC Secretary.

(iii) If the ALUC fail to make a determination within the above time periods, the proposed action shall be deemed consistent with the Rio Vista ALUCP.

(2) When a major land use action is submitted on an optional basis in accordance with Policy 6.1.4(b)(2), review by the ALUC should be completed in a timely manner enabling the comments to be considered by decision-making bodies of the submitting agency.

(3) Regardless of action or failure to act on the part of the ALUC, the proposed action still must comply with other applicable local, state, and federal laws and regulations.

(4) The referring agency shall be notified of the ALUC's action in writing.

(d) Subsequent Review — Once a project has been found consistent with the relevant ALUCP or plans, it need not be referred for review at subsequent stages of the planning process (e.g., for a use permit after a zoning change has been reviewed) unless:

(1) 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 change or zoning amendment is requested).

(2) The design of the project subsequently changes in a manner that reopens previously considered compatibility issues and could raise questions as to the validity of the earlier finding of compatibility. Changes warranting a new review include, but are not limited to, the following:

(i) An increase in the number of dwelling units, intensity of use (more people on the site), or other usage characteristics to levels exceeding the criteria set forth in the Rio Vista ALUCP;

(ii) A proposed increase in the height of structures or other design features such that the height limits established by the Rio Vista ALUCP would be exceeded (or exceeded by a greater amount);

(iii) Major site design changes (such as incorporation of clustering or modifications to the configuration of open land areas proposed for the site) if site design was an issue in the initial project review; and/or

(iv) Any significant change to a proposed project for which a special exception was granted in accordance with Policy 6.2.4(c)(6).

(3) The local jurisdiction concludes that further review is warranted.

6.2.4. Review Criteria for Land Use Actions

(a) Compatibility Criteria — The compatibility criteria applicable to the review of proposed land use actions at Rio Vista Airport are set forth in this document. Additional factors pertaining to the review of general plans as described in Policy 6.2.4(b), as well as the special conditions cited in Policy 6.2.4(c), shall also be taken into account.

(b) General Plan Consistency with the Rio Vista Airport Land Use Compatibility Plan — In order for a general plan to be considered consistent with the Rio Vista ALUCP, both of the following must be accomplished:

(1) *Elimination of Direct Conflicts.* No direct conflicts can exist between the two plans.

(i) Direct conflicts primarily involve general plan land use designations that do not meet the density or intensity criteria specified in the Rio Vista ALUCP although conflicts with regard to other policies also may exist.

(ii) Note, however, that a general plan cannot be found inconsistent with the Rio Vista ALUCP because of land use designations that reflect actual existing land uses already currently devoted to incompatible uses even if those designations conflict with the ALUC's compatibility criteria. Because ALUCs have no authority over existing land uses to the extent already currently devoted to incompatible uses, general plan land use designations that merely reflect the existing uses for such parcels at the time this ALUCP is adopted are, in effect, excluded from requirements for general plan consistency with the ALUC plan. This exception is applicable only if the general plan includes policies setting limitations on expansion and reconstruction of nonconforming uses consistent with Policies 6.2.4(c)(2) and 6.2.4(c)(3).

(2) *Assurance of Compliance with Compatibility Criteria.* Provisions must be made for evaluation of proposed land use development situated within the AIA relative to the compatibility criteria set forth in the Rio Vista ALUCP.

(i) Even if the land use designations in a general plan have been deemed consistent with the Rio Vista ALUCP, evaluation of the proposed development relative to the land use designations alone is usually insufficient. General plans typically do not contain the detailed airport land use compatibility criteria necessary for a complete compatibility evaluation of proposed development.

(ii) Local jurisdictions must choose among the following options, or a combination thereof, for satisfying this evaluation requirement:

(a) Sufficient detail can be included in the general plan and/or referenced implementing ordinances and regulations to enable the local jurisdiction to assess whether a proposed development fully meets the compatibility criteria specified in the Rio Vista ALUCP (this requires both that the compatibility criteria be identified and that project review procedures be described);

(b) The Rio Vista ALUCP can be adopted by reference (additionally, the project review procedure must be described in a separate document presented to and approved by the ALUC); and/or

(c) The general plan can indicate that all major land use actions, as listed in Policy 6.1.4(c) or otherwise agreed to by the ALUC, shall be referred to the ALUC for review in accordance with the policies of Policy 6.2.3.

(iii) The status of ALUC review of major land use actions depends upon which of the options in Sub-Policy (ii) above the local agency selects for making its general plan consistent with the Rio Vista ALUCP. This status, in turn, affects whether a local agency would be required to utilize the overruling process in the event of a disagreement with the ALUC's action.

(a) If either of the first two options under Sub-policy (ii) above is selected, then referral of major land use actions to the ALUC is voluntary. In this case, the ALUC's review is advisory and the local agency would not need to utilize the overruling process if it elects to approve a project without incorporating the ALUC's comments.

(b) If the third option is chosen, submittal of major land use actions for ALUC review is mandatory and overruling procedures would apply.

(c) Special Conditions

(1) Infill — Where development not in conformance with the criteria set forth in Rio Vista ALUCP 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 Policy 6.2.4 (c)(1) does not apply to, and does not allow additional infill development for, wind turbines, meteorological towers, power or communications towers, antennas, or similar objects.

(i) A parcel can be considered for infill development if it meets all of the following criteria plus the applicable provisions of either Sub-policy (b) or (c) below:

(a) The parcel size is no larger than 10.0 acres.

(b) At least 65% of the site's perimeter is bounded by adjacent (including across roads) 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.

(d) Further increases in the residential density, nonresidential usage intensity, and/or other incompatible design or usage characteristics (e.g., through use permits, density transfers, addition of second units on the same parcel, height variances, or other strategy) are prohibited.

(e) The area to be developed cannot previously have been set aside as open land in accordance with policies contained in the Rio Vista ALUCP unless replacement open land is provided within the same safety zone.

(ii) For residential development, the development density (dwelling units per gross acre) shall not exceed the lesser of:

(a) The average density represented by all existing lots that lie fully or partially within a distance of 300 feet from the boundary of the parcel to be divided; or

(b) Double the density permitted in accordance with the criteria for that location as indicated in the Rio Vista ALUCP.

(iii) For nonresidential development, the usage intensity (the number of people per gross acre) of the proposed use shall not exceed the lesser of:

(a) The average intensity of all existing uses that lie fully or partially within a distance of 300 feet from the boundary of the proposed development; or

(b) Double the intensity permitted in accordance with the criteria for that location as indicated in the Rio Vista ALUCP.

(iv) Infill development on some parcels should not enable additional parcels to then meet the qualifications for infill. The ALUC's intent is that parcels eligible for infill be determined just once. Thus, in order for the ALUC to consider proposed development under these infill criteria, the entity having land use authority (Solano County or affected cities) must first identify the qualifying locations in its general plan or other adopted planning document approved by the ALUC. This action may take place in conjunction with the process of amending a general plan for consistency with the ALUC plan or may be submitted by the local agency for consideration by the ALUC at the time of adoption of the Rio Vista ALUCP. In either case, the burden for demonstrating that a proposed development qualifies as infill rests with the project proponent and/or affected land use jurisdiction.

(2) Nonconforming Uses — Uses not in conformance with the Rio Vista ALUCP may only be expanded as follows:

(i) A nonconforming residential use may be expanded in building size provided that the expansion does not result in more dwelling units than currently exist on the parcel (a bedroom could be added, for example, but a separate dwelling unit could not be built). No ALUC review of such improvements is required.

(ii) A nonconforming nonresidential development may be expanded provided that no such use shall be expanded in height, size, dimension, or area or increased in intensity (the number of people per acre) above the levels existing at the time of adoption of the Rio Vista ALUCP. No ALUC review of such changes is required.

(iii) ALUC review is required for any proposed expansion of a nonconforming use. Factors to be considered in such reviews include whether the development qualifies as infill (Policy 6.2.4 (c)(1)) or warrants approval because of other special conditions (Policy 6.2.4 (c)(6)).

(3) Reconstruction — An existing nonconforming development that has been fully or partially destroyed as the result of a calamity may be rebuilt only under the following conditions:

(i) Nonconforming residential uses may be rebuilt provided that the expansion does not result in more dwelling units than existed on the parcel at the time of the damage.

(ii) A nonconforming nonresidential development may be rebuilt, even if completely destroyed, provided that the reconstruction does not increase the height, size, dimension or area of the previous structure or result in an increased intensity of use (i.e., more people per acre).

(iii) Reconstruction under Paragraphs (i) or (ii) above must begin within 12 months and be completed within 24 months of the date that the damage occurred. Upon request, the ALUC may grant an extension to these time limits.

(iv) Nonconforming uses situated within a runway protection zone or clear zone should not be rebuilt regardless of whether they meet the above conditions.

(v) Nothing in the above policies is intended to preclude work required for normal maintenance and repair.

(4) Development by Right — Nothing in these policies prohibits construction or alteration of a single-family home on a legal lot of record if such use is permitted by local land use regulations. Construction of other types of uses also may proceed if local government approvals qualify the development as effectively existing (see Appendix I for definition).

(5) Parcels Lying within Two or More Safety Zones — For the purposes of evaluating consistency with the compatibility criteria set forth herein, any parcel that is split by safety zone boundaries shall be considered as multiple parcels divided at the safety zone boundary line. However, the density or intensity of development allowed within the more restricted portion of the parcel can (and is encouraged to) be applied to the less restricted portion. This application of the more restrictive criteria is permitted even if the resulting density or intensity in the less restricted area would then exceed the limits which would otherwise apply within that safety zone.

(6) Other Special Conditions — The compatibility criteria set forth in the Rio Vista ALUCP are intended to be applicable to all locations within the AIA. 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.

(i) After due consideration of all the factors involved in such situations, the ALUC may find a normally incompatible use to be acceptable.

(ii) In reaching such a decision, the ALUC shall make specific findings as to why the exception is being made and that the land use will neither create a safety hazard to people on the ground or aircraft in flight nor result in excessive noise exposure for the proposed use nor impact airport operations. Findings also shall be made as to the nature of the extraordinary circumstances that warrant the policy exception.

(iii) The burden for demonstrating that special conditions apply to a particular development proposal rests with the project proponent and/or the referring agency, not with the ALUC.

(iv) The granting of a special conditions exception shall be considered site specific and shall not be generalized to include other sites nor serve as a precedent for consideration of other sites.

APPENDIX A

Rio Vista Airport Draft ALUCP White Paper[1]

[1] Some technical information included in Appendix A may be outdated and has been updated in the ALUCP.

TABLE OF CONTENTS

Rio Vista Airport Draft ALUCP White Paper

Page

1. Introduction 1

2. Overview – Airport Land Use Commissions and ALUCPs 2
2.1 Airport Land Use Commissions 5
Powers and Duties 5
Limitations 5

3. Existing and Planned Facilities 5

4. Existing Operations 5

5. Noise Modeling for Rio Vista Airport 6

6. 1988 Rio Vista ALUCP and Airport Land Use Planning Today 6
6.1 1988 ALUCP Adoption 6
6.2 Changes in Airport Land Use Planning Since 1988 10

7. Sample 2011 Handbook Compatibility Criteria 15

8. Changes in Operations at Rio Vista Airport 16

9. Existing and Planned Land Uses and Zoning in the Vicinity of the Safety Zones 16
9.1 City of Rio Vista 19
Existing Land Uses 19
Planned Land Uses 19
Specific Plans 19
Zoning 19
9.2 Solano County 19
Existing Land Uses 20
Planned Land Uses 20
Specific Plans 20
Zoning 21

10. Potential Conflicts between the New LUCP and Planned Land Uses 23
10.1 Potential Noise Conflicts 23
Potential Conflicts from Planned Land Uses 23
10.2 Potential Airspace Protection, Safety, and Overflight Conflicts 23
Airspace Protection 24
Safety 24
Overflight 27
Potential Conflicts from Planned Land Uses 27

11. References 29

List of Figures

Figure 1 Regional Location 3
Figure 2 Safety Zones 4
Figure 3 2015 Noise Contours 8
Figure 4 2035 Noise Contours 9
Figure 5 1988 ALUCP Compatibility Zones 11
Figure 6 Wildlife Hazard Analysis Boundaries 14
Figure 7 2015 CNEL Contours and Existing Land Use 17
Figure 8 2035 CNEL Contours and General Plan Land Use 18
Figure 9 Travis Air Force Base and Rio Vista Airport Compatibility Zones 22
Figure 10 14 CFR Part 77 Imaginary Surfaces 25

List of Tables

Table 1 Annual Average Day Operations – Existing (2015) and Future (2035) Conditions 7
Table 2 Comparison of Compatibility Policies Between Rio Vista's 1988 Airport Land Use compatibility Plan and the 2011 California Airport Land Use Planning Handbook 13
Table 3 Compatibility Criteria within the 2011 California Airport Land Use Planning Handbook 15

DRAFT ALUCP WHITE PAPER

Rio Vista Airport

1. Introduction

The Solano County Airport Land Use Commission (ALUC) is preparing an update of the Rio Vista Airport (hereafter referred to as the Airport) Airport Land Use Compatibility Plan (ALUCP). This white paper discusses the major changes between the existing 1988 ALUCP for Rio Vista Airport and the contemporary airport planning policies and planning realities within portions of the City of Rio Vista and Solano County. In particular, the following issues will be addressed in this white paper:

- An overview of Article 3.5 of the Public Utilities Code (PUC) 21001 et seq. to set forth guidelines for airport land use planning in California;
- Existing and planned facilities at Rio Vista Airport;
- Existing operations at Rio Vista Airport;
- A summary of the 1988 Rio Vista ALUCP, along with a qualitative discussion of the changes that have occurred in airport land use planning in California since the adoption of the 1988 ALUCP;
- A qualitative discussion of the changes in operations that have taken place at the Airport since 1988;
- A table comparing policies from the 1988 ALUCP with applicable guidance from the 2011 California Airport Land Use Planning Handbook (2011 Handbook);
- A matrix containing sample compatibility criteria from the 2011 Handbook;
- A discussion of the changes in operations at Rio Vista Airport, along with 2035 aircraft operations data;
- A summary of the existing and planned land uses and zoning in the vicinity of the safety zones (portions of the City of Rio Vista and Solano County), with graphics to illustrate these features;
- A discussion of the potential conflicts between the updated ALUCP and the planned land uses and zoning in the vicinity of the safety zones (portions of the City of Rio Vista and Solano County); and

- Figures depicting the following:
  - The regional context for the Airport;
  - The proposed safety zones (portions of the City of Rio Vista and Solano County);
  - Noise contours, comparing 2015 contours with the 2035 forecast contours used in this Rio Vista Airport ALUCP;
  - The compatibility zones found in the 1988 Rio Vista Airport ALUCP;
  - The Wildlife Hazard Analysis (WHA) boundary;
  - Generalized existing land uses as they relate to the 2015 noise contours and the Airport vicinity;
  - Generalized planned land uses as they relate to the 2035 forecast contours and the Airport vicinity;
  - The compatibility zones at Travis Air Force Base as they relate to Rio Vista Airport; and
  - Title 14 Code of Federal Regulation (14 CFR) Part 77 surfaces.

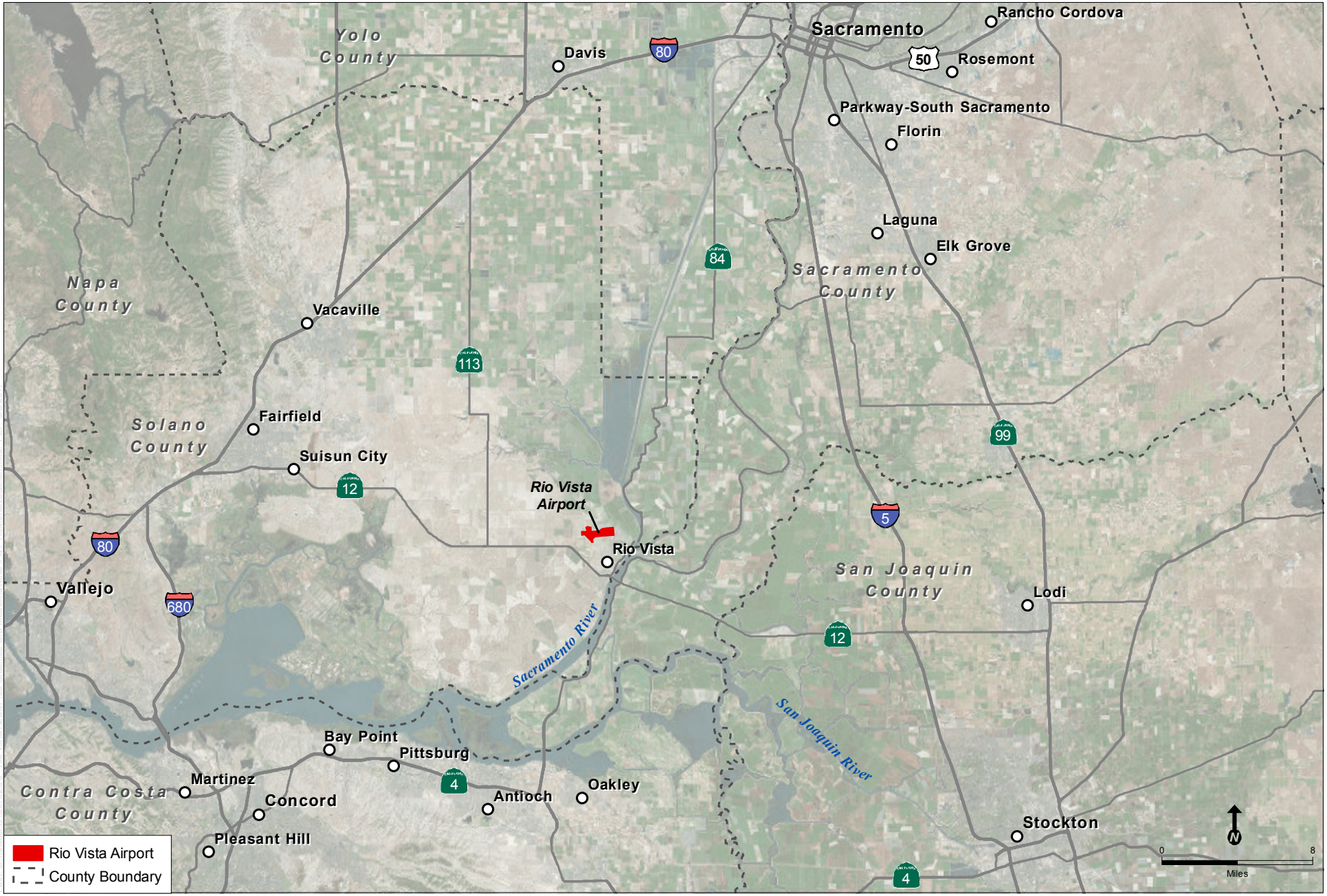
For this white paper, the compatibility zones from the 1988 Rio Vista ALUCP were modified to reflect both the current and projected aircraft operations at the Airport, with modifications also made to reflect newer development that has occurred within Rio Vista since the development of the last ALUCP. These modifications include both the safety zones covering new portions of Solano County and the addition of the WHA Boundary, based on the guidance in the 2011 Handbook.

Figure 1 depicts the general location of Rio Vista Airport within Solano County. **Figure 2** depicts the Rio Vista Airport Safety Zones.

2. Overview – Airport Land Use Commissions and ALUCPs

The State Aeronautics Act (Public Utilities Code, Section 21001 *et seq.*) requires the preparation of an ALUCP for nearly all public-use airports and military airfields in the state (Section 21675). The intent of an ALUCP is to encourage compatibility between airports and the various land uses that surround them. In accordance with State law, Solano County (the County) has established an airport land use commission (ALUC) to prepare land use compatibility plans for the two public-use airports and one military airport[1] in the County, which includes Rio Vista Airport. The ALUC also reviews general plans and general plan amendments, proposed changes to zoning codes and ordinances, land use actions and development projects, and airport development plans for consistency with the compatibility policies contained in the current ALUCP for each airport.

[1] Travis Air Force Base, Nut Tree Airport, and Rio Vista Airport.



SOURCE: ESA, 2017; ESRI Mapping Services

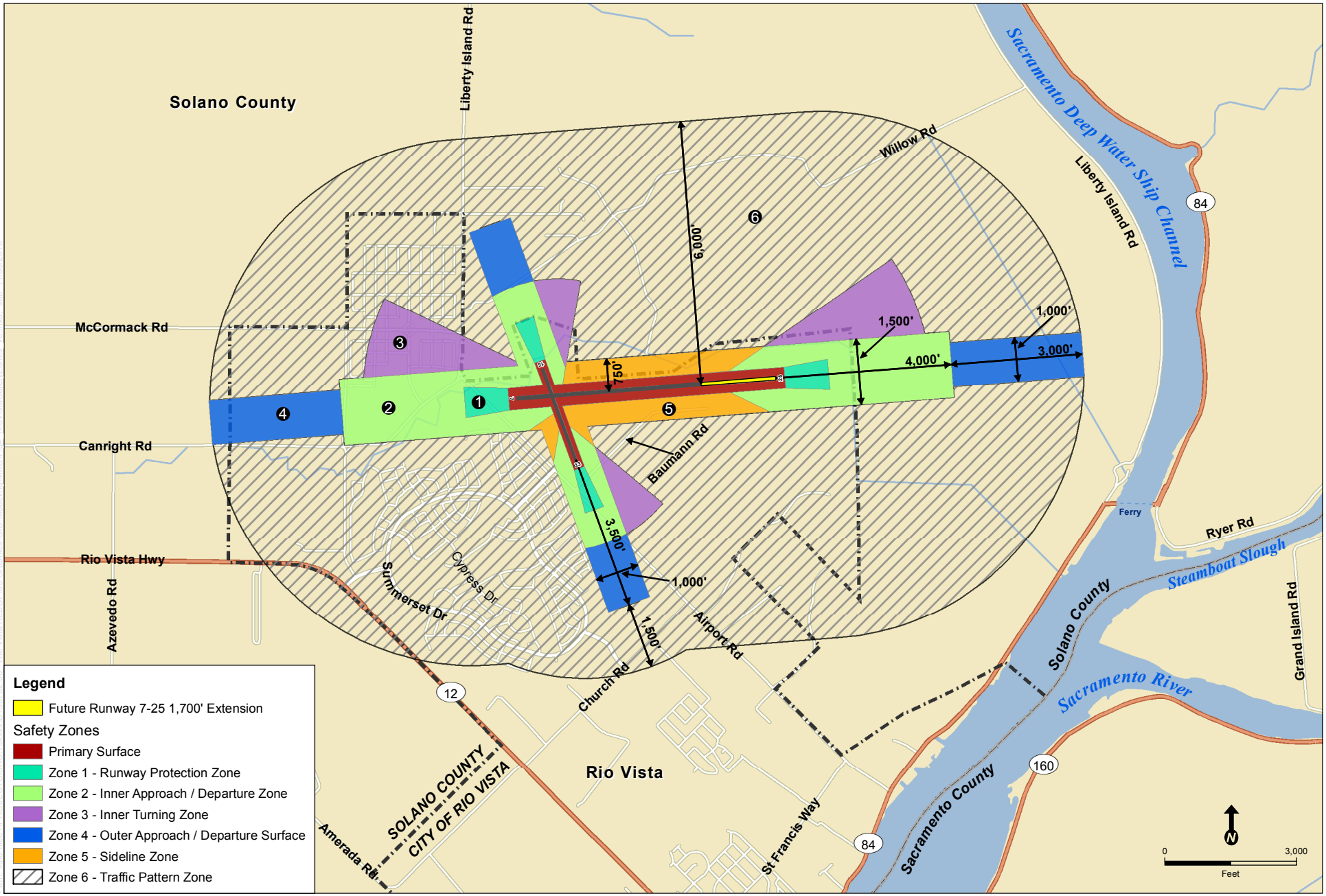
Rio Vista Municipal Airport ALUCP.150732

Figure 1

Regional Location

ESA

DRAFT FOR DELIBERATIVE PURPOSES ONLY



SOURCE: California Airport Land Use Planning Handbook, October 2011; ESA, 2016; ESRI Mapping Services

Rio Vista Municipal Airport ALUCP.150732

Figure 2

Safety Zones

ESA

DRAFT FOR DELIBERATIVE PURPOSES ONLY

2.1 Airport Land Use Commissions

Powers and Duties

ALUCs are established pursuant to State law to protect the public health, safety, and welfare by promoting the orderly expansion of airports and adoption of land use measures by local public agencies to minimize exposure to excessive aircraft noise levels and safety hazards near airports. In accordance with Section 21674(b) of the California Public Utilities Code, an ALUC has the authority "to coordinate planning at the state, regional and local levels so as to provide for the orderly development of air transportation, while at the same time protecting the public health, safety, and welfare;" to prepare and adopt airport land use plans; and to review and make recommendations concerning specified plans, regulations and other actions of local agencies and airport operators. In addition, ALUCs review plans for proposed and new airports or heliports.

Limitations

State law does not authorize ALUCs to zone property or apply other land use controls normally exercised by local public agencies. The jurisdiction of an ALUC is restricted to new land uses; thus, existing land uses that are in conflict with or affected by existing or anticipated airport operations are not subject to the policies established by the ALUC. However, existing incompatible uses are the concern of the Airport and of the city or county having jurisdiction over the affected area, and policies should be developed to address existing non-conforming land uses.

State law does not provide ALUCs with jurisdiction over airport operations, but ALUCPs must include assumptions about future operations for all airports that are covered by the ALUCP. Once adopted, an ALUCP provides ALUCs with the framework for reviewing significant proposals for further airport development.

ALUC jurisdiction and the scope of an ALUCP are confined to land use-related impacts on areas surrounding airports. This excludes the ALUC from considering any "secondary" impacts of the Airport, such as traffic or air quality impacts caused by airport operations.

3. Existing and Planned Facilities

Rio Vista Airport generally features helicopters and single-engine propeller, multi-engine propeller, and a few jet aircraft operations. For these operations, the Airport features two runways. Runway 7/25 generally runs east-west and is 4,199 feet long and 75 feet wide. Runway 15/33 generally runs north-south and is nearly half the length of Runway 7/25, at 2,199 feet long and 60 feet wide. The airfield elevation for Rio Vista Airport is 22.6 feet above mean sea level (MSL), and the Airport comprises approximately 273 acres.

4. Existing Operations

Annual operations at Rio Vista have decreased by approximately 22 percent, from 45,000 to 35,000 operations, since the adoption of the 1988 Rio Vista ALUCP. The 1988 Rio Vista ALUCP reported approximately 45,000 total annual operations, involving a breakdown of 74.9 percent

single-engine aircraft,15 percent agricultural aircraft, ten percent twin-engine aircraft, and 0.1 percent business jets for all fleet activity, with an average day total of 123 flights. The Airport currently averages 96 operations per day. The forecast condition in the 1988 Rio Vista ALUCP predicted a much greater and more diverse volume of traffic.120,000 total annual operations involving more specific concentration on single-engine aircraft traffic were forecasted, with a breakdown of 83.2 percent of single-engine aircraft, 5.6 percent agricultural aircraft, 11.1 percent twin-engine aircraft, and 0.1 percent business jets for all fleet activity.

5. Noise Modeling for Rio Vista Airport

For aircraft noise exposure calculations, aircraft operations associated with the annual-average day (AAD) are used in the Federal Aviation Administration (FAA) approved Aviation Environmental Design Tool (AEDT). **Table 1** provides 2015 and forecasted 2035 AAD operations by aircraft type, operation type (i.e., arrival, departure, touch-and-go), and time of day. Touch-and-go operations in the AEDT consist of an arrival and a departure. The number of touch-and-go operations at the Airport in 2015 was assumed to be 90% of local operations, which was then divided in half.

It should also be noted that FAA's Terminal Area Forecast (TAF) for the Airport indicates that the number of aircraft operations at the Airport in 2035 will be unchanged from the number of aircraft operations that occurred in 2015. For the purposes of developing aircraft noise contours for 2035, the Noise Modeling Assumptions Appendix, Appendix A, assumes that time of day, runway use, and flight track use in 2035 will also be unchanged from 2015. The primary difference between the existing conditions (2015) and future conditions (2035) scenarios involves the length of Runway 07-25. According to the Rio Vista Municipal Airport Layout Plan, May 2016, Runway 07-25 will be extended by approximately 1,700 feet to the east in the future.

The resulting 2015 and 2035 Community Noise Equivalent Level (CNEL) contours are presented in **Figures 3 and 4,** respectively.

6. 1988 Rio Vista ALUCP and Airport Land Use Planning Today

The following section describes the changes that have taken place in airport land use planning since the adoption of the 1988 Rio Vista ALUCP. As 29 years have passed since the last ALUCP was adopted, a number of efforts to streamline and more efficiently regulate airport land use in the state of California have taken place.

6.1 1988 ALUCP Adoption

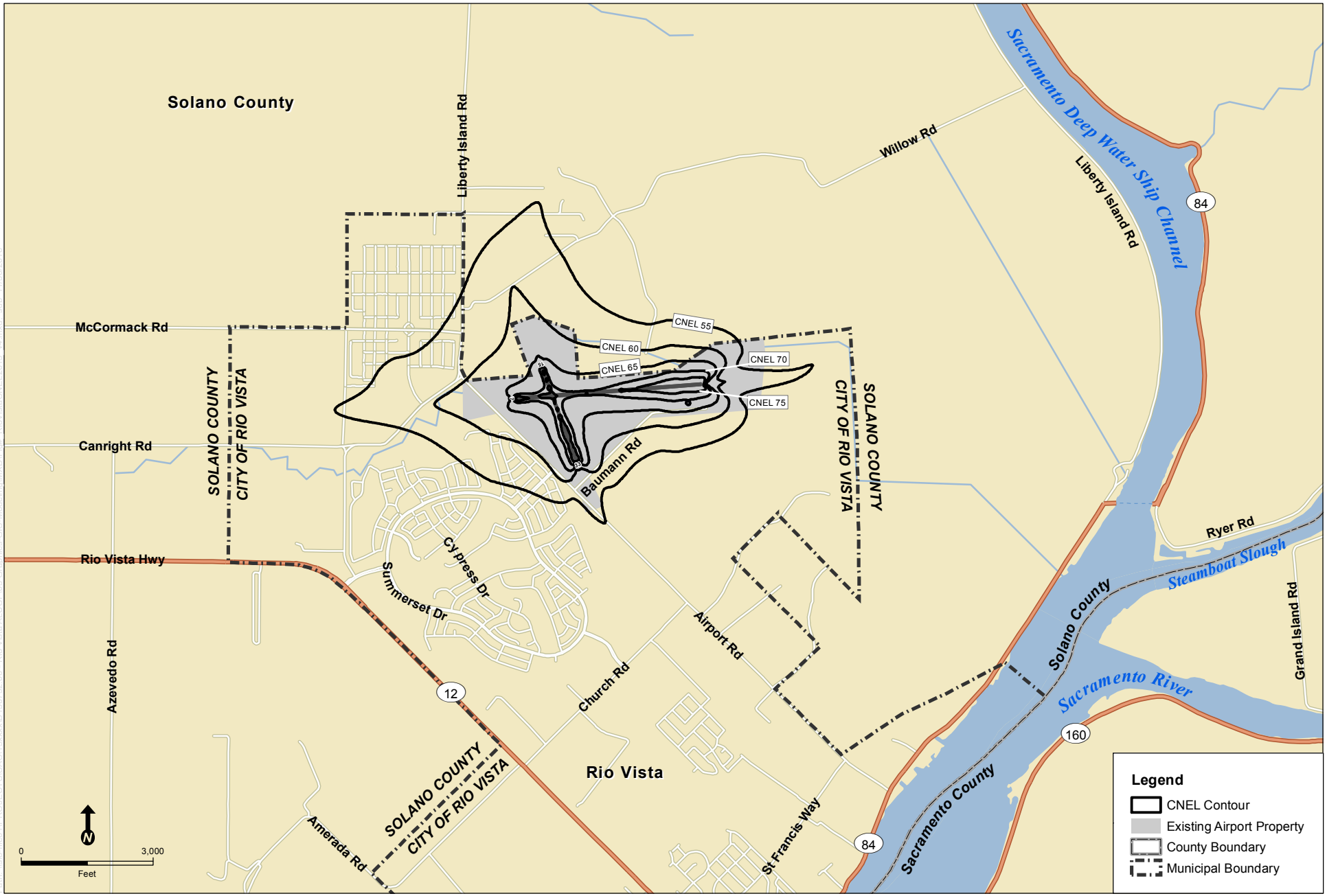
In May 1988, the Solano County ALUC adopted its most recent ALUCP (1988 Rio Vista ALUCP) for Rio Vista Airport. The 1988 Rio Vista ALUCP contained a number of key policy and planning changes that continued the regulation of land use within the vicinity of Rio Vista Airport. The 1988 Rio Vista ALUCP established the geographic scope and boundaries for land use compatibility actions, including the compatibility zones. The 1988 Rio Vista ALUCP

TABLE 1
ANNUAL AVERAGE DAY OPERATIONS – EXISTING (2015) AND FUTURE (2035) CONDITIONS

		Arrivals			Departures			Touch-and-Go Operations		
Aircraft Type	**INM Type**	**Day**	**Evening**	**Night**	**Day**	**Evening**	**Night**	**Day**	**Evening**	**Night**
Helicopter	B206L	1.18	0.12	0.02	1.18	0.12	0.02	0.00	0.00	0.00
Single-engine propeller	GASEPV	7.99	0.80	0.13	7.99	0.80	0.13	20.49	1.08	0.00
Single-engine propeller	GASEPF	4.44	0.45	0.07	4.44	0.45	0.07	0.00	0.00	0.00
Single-engine propeller	CNA172	1.77	0.18	0.03	1.77	0.18	0.03	0.00	0.00	0.00
Single-engine propeller	CNA206	1.77	0.18	0.03	1.77	0.18	0.03	0.00	0.00	0.00
Single-engine propeller	PA28	1.77	0.18	0.03	1.77	0.18	0.03	0.00	0.00	0.00
Multi-engine propeller	BEC58P	2.49	0.25	0.04	2.49	0.25	0.04	0.00	0.00	0.00
Multi-engine propeller	PA30	1.07	0.11	0.02	1.07	0.11	0.02	0.00	0.00	0.00
Jet	LEAR35	0.07	0.01	0.00	0.07	0.01	0.00	0.00	0.00	0.00
Jet	CNA500	0.05	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00
	Total	**22.60**	**2.28**	**0.37**	**22.60**	**2.28**	**0.37**	**20.49**	**1.08**	**0.00**

NOTE:
In the AEDT, a touch-and-go operation consists of an arrival and a departure. Touch and go operations were divided by two to calculate the number of touch-and-go operations at Rio Vista Airport.

SOURCES: ESA, 2016, based on aircraft operation information included in the 1988 ALUCP. FAA TAF, 2016.



NOTE: CNEL = Community Noise Equivalent Level.

SOURCE: AEDT 2c SP3; ESA, 2016; ESRI Mapping Services

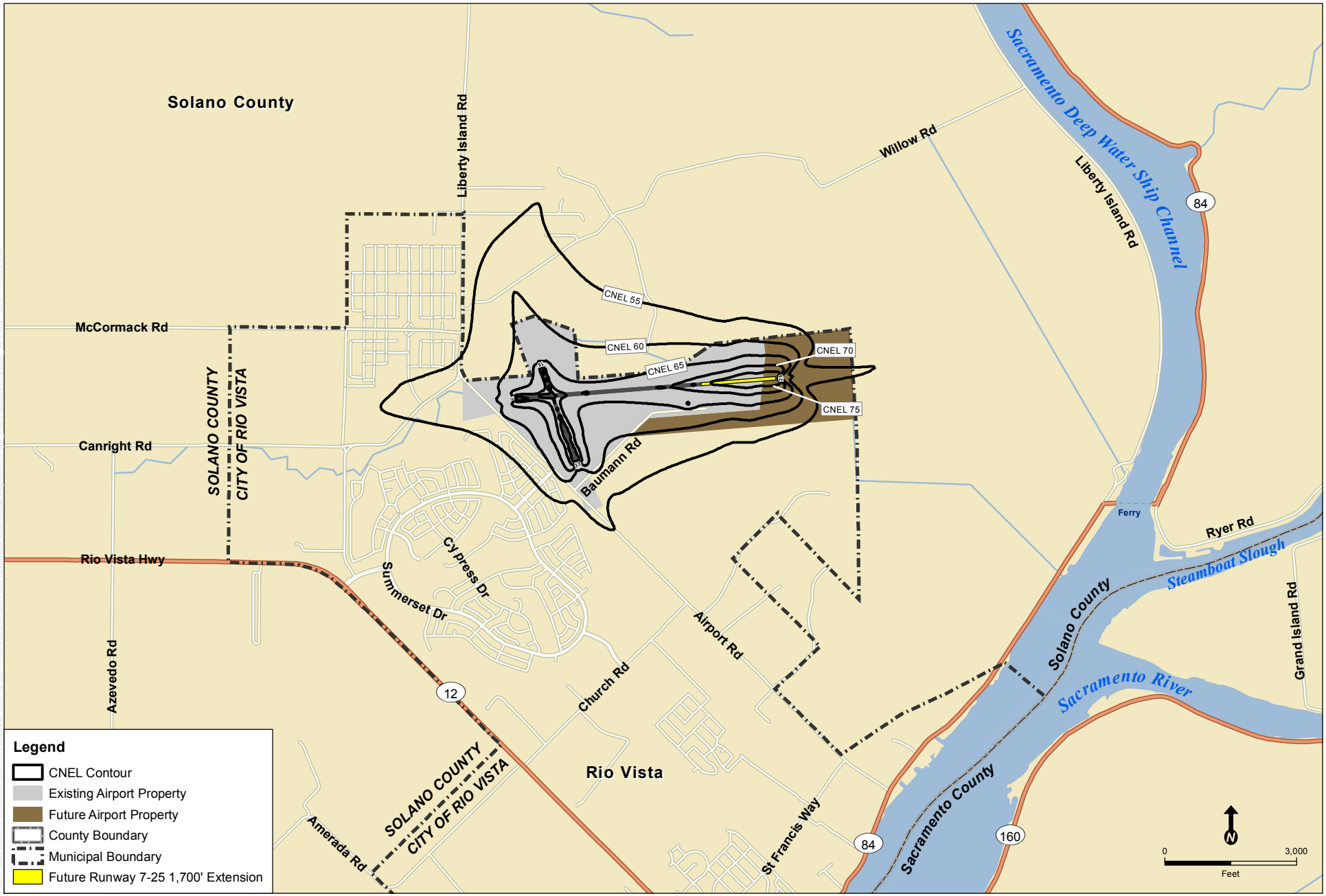
Rio Vista Municipal Airport ALUCP.150732

Figure 3

2015 Noise Contours

ESA

DRAFT FOR DELIBERATIVE PURPOSES ONLY



NOTE: CNEL = Community Noise Equivalent Level.

SOURCE: AEDT 2c SP3; ESA, 2016; ESRI Mapping Services

Rio Vista Municipal Airport ALUCP.150732

Figure 4

2035 Noise Contours

ESA

DRAFT FOR DELIBERATIVE PURPOSES ONLY

contains Compatibility Zones A, B, C, D, E, and F; these zones were also defined and delineated in the ALUCP as the geographic area of concern. Overall, the compatibility zones included a large portion of the City of Rio Vista, along with some unincorporated areas within Solano County. **Figure 5** provides the compatibility zones presented in the 1988 ALUCP.

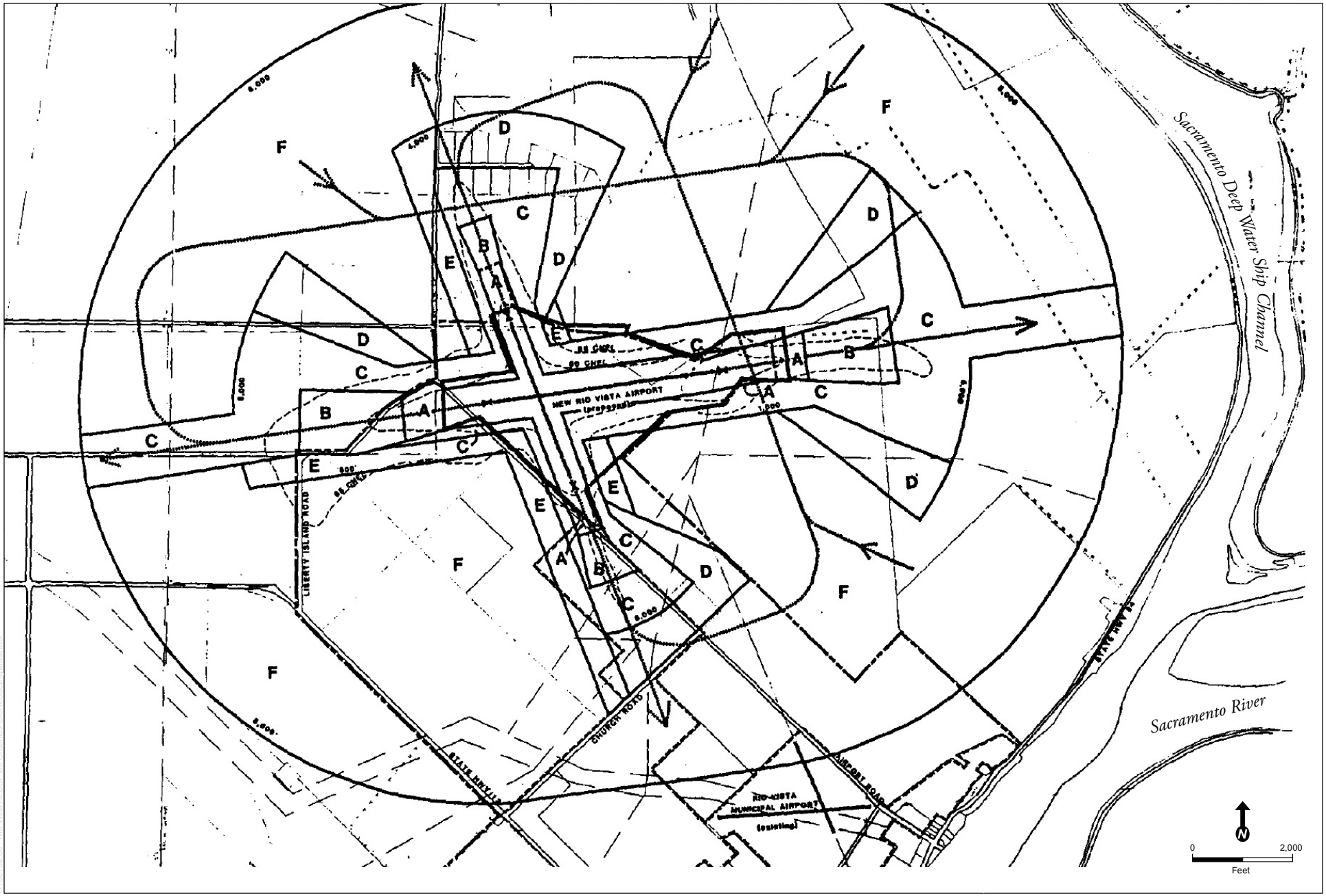
The 1988 Rio Vista ALUCP also includes a basic compatibility table to apply to the review of proposed land use actions in the vicinity of the Airport and also within the specific compatibility zones. This table represents a combination of noise, safety, airspace protection and overflight compatibility criteria for Rio Vista Airport, which was largely intended to suffice for any review of proposed land use amendments from the County and City jurisdictions. Through these criteria and subsequent policies, the Rio Vista ALUCP defines the allowance for residential and non-residential uses, along with prohibited uses, for the various compatibility zones.

The aircraft noise exposure levels, as with the other supporting criteria of the ALUCP Compatibility Policies, were based on future projections of activity at Rio Vista Airport. The ALUCP presents predicted aircraft noise exposure levels, based on projected flight operations data, and determines appropriate noise exposure levels for residential and non-residential uses, and also establishes appropriate interior noise levels.

For safety, land uses are largely examined based on the level of risk to people on the ground, in addition to the presence of any fuel or other hazardous materials within the given compatibility zones. Specific levels of clustering of people based on non-residential uses were established for the compatibility zones. For airspace protection, the ALUCP created height restrictions that were based on the 14 CFR Part 77 guidelines, titled *Objects Affecting Navigable Airspace*. For existing and nonconforming obstructions, the Federal Aviation Administration (FAA) is required to review and assess appropriate lighting and marking conditions and strategies. For matters pertaining to overflight, the ALUCP recognized that although a buyer notification program could not be fully enforced, Solano ALUC could sponsor efforts by real estate agencies to inform potential homebuyers of overflight issues in affected areas.

6.2 Changes in Airport Land Use Planning Since 1988

Since the adoption of the 1988 Rio Vista ALUCP, the standards and requirements for airport land use planning have become more streamlined and consolidated while aiming to maintain the optimum level of detail and emphasis on ensuring land use compatibility. A series of versions of the Handbook have been made over the past four decades – in 1983, 1993, 2002, and 2011. For instance, the 2011 Handbook reduced the number of chapters to six from the nine that were in its 1983 edition and penultimate 2002 edition. Chapter 4 of the 2011 Handbook consolidates information in Chapters 3, 7, and 9 of the 2002 edition to better focus a discussion on how best to develop and implement airport land use compatibility policies to better connect with the goals pertaining to noise, overflight, safety, and airspace protection policies for each unique airport setting. Overall, much of the 2011 Handbook shares some similarities with the 1983 edition, but with the increase in versions and revisions over the years the Handbook has evolved into a more simplified and streamlined document.



SOURCE: Solano County Airport Land Use Commission, April 1988

Rio Vista Municipal Airport ALUCP . 150732

Figure 5

1988 ALUCP Compatibility Zones

ESA

DRAFT FOR DELIBERATIVE PURPOSES ONLY

The updated Rio Vista ALUCP is primarily needed for the following three reasons:

- To address compatibility issues associated with the proliferation of renewable energy projects in Solano County.
- To merge the Rio Vista ALUCP with the countywide policies contained in the *Solano County Airport Land Use Compatibility Review Procedures* document.
- To update the current LUCP, as appropriate, pursuant to the standards set forth in Caltrans' 2011 *California Airport Land Use Planning Handbook*.

Portions of the 1988 Rio Vista Airport ALUCP are out-of-date and/or are inconsistent with guidance presented in the 2011 Handbook. **Table 2** provides comparisons between the policies in the 1988 ALUCP and the 2011 Handbook. In some cases, the 2011 Handbook provides more lenient guidance on certain criteria. The ALUC may choose to keep its stricter policies, for the 2011 Handbook does not describe any maximum requirements for guidance, but only minimum requirements.

In addition, the 2011 Handbook recommends establishing separations between public airports (or military airfields) and wildlife attractants, which are delineated by FAA Advisory Circular 150/5200-33B, titled "Hazardous Wildlife Attractants On or Near Airports," (August 2007). In this circular, the FAA provides guidance for airport operators and parties assuming guidance of airports and airfields to minimize the risks that certain wildlife species pose to aircraft, which primarily focuses on creating a Wildlife Hazard Analysis (WHA) Boundary, to prevent aircraft collisions with birds and other wildlife. A WHA Boundary was not included in the 1988 Rio Vista ALUCP.

Figure 6 provides a WHA Boundary for Rio Vista Airport. Based on the fact that Rio Vista Airport serves piston-powered aircraft, the FAA's Perimeter A (instead of the larger Perimeter B for airports serving turbine-powered aircraft) has been delineated, and this perimeter requires that hazardous wildlife attractants must be 5,000 feet from the nearest air operations area (AOA). In general, waste disposal operations, water management facilities, wetlands, dredge spoil containment areas, agricultural activities, golf courses, and major landscaping operations are discouraged within Perimeter A.

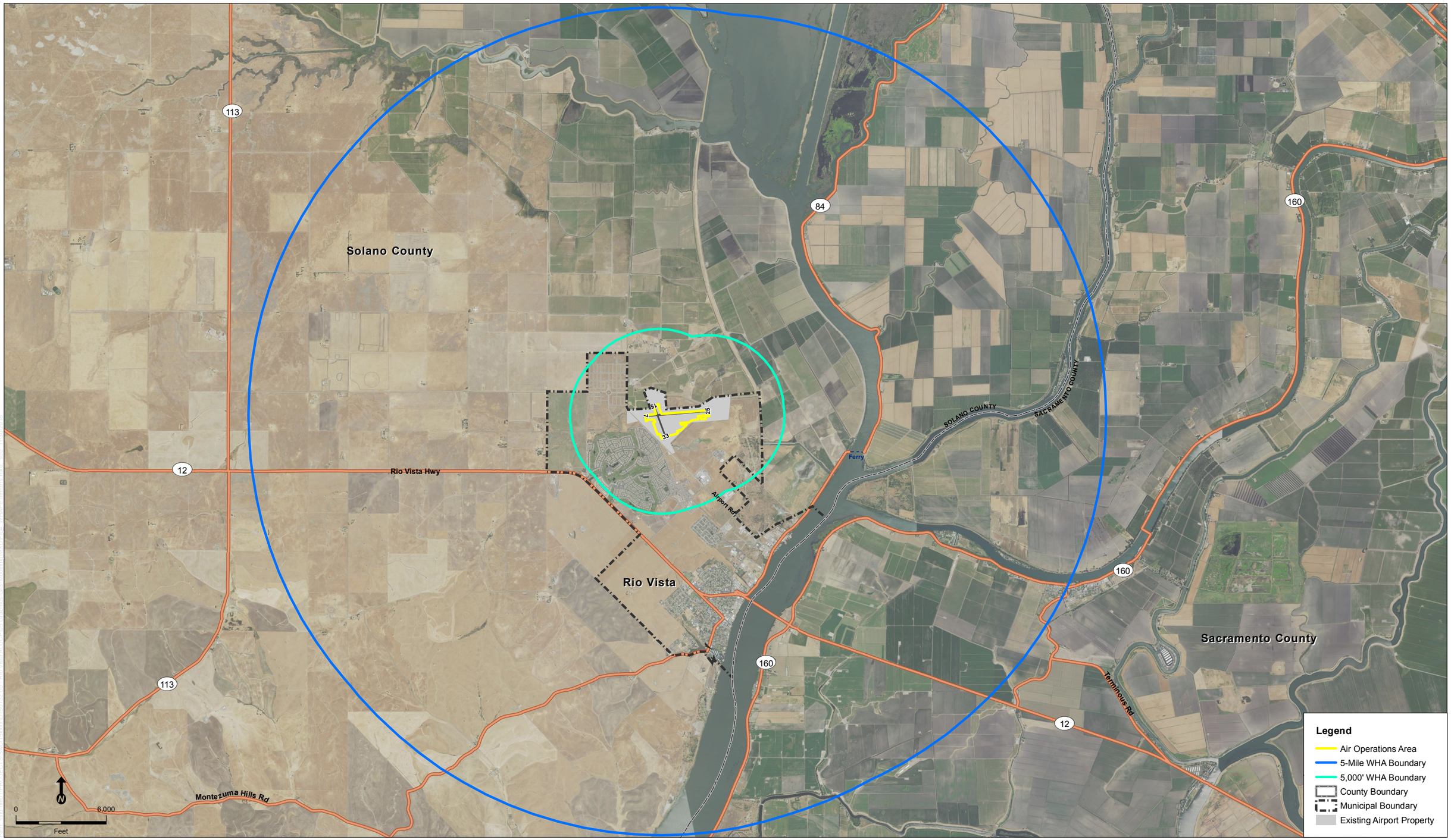
Perimeter C is an additional boundary, providing a five-mile range to protect the approach, departure, and circling airspace functions at the Airport. The FAA considers Perimeter C an additional sensitive aircraft operating area, and, as such, development plans, proposed land-use changes, or new wetland mitigation plans changes must be evaluated by an FAA-qualified wildlife hazard biologist in accordance with FAA Advisory Circular 150/5200-33B to ensure they do not present potential wildlife hazards to aircraft operations at Rio Vista Airport.

As stated in the Advisory Circular, most airports have large tracts of open, undeveloped land that provide added margins of safety and noise mitigation. If these areas encourage wildlife to enter an airport's approach or departure airspace or air operations area, risks of aircraft collisions with wildlife could increase. Constructed or natural areas—such as poorly drained locations, detention/ retention ponds, roosting habitats on buildings, landscaping, odor causing rotting organic matter (putrescible waste) disposal operations, wastewater treatment plants, agricultural or aquaculture activities, surface mining, or wetlands—can provide wildlife with ideal locations for feeding,

TABLE 2
COMPARISON OF COMPATIBILITY POLICIES BETWEEN RIO VISTA'S 1988 AIRPORT LAND USE COMPATIBILITY PLAN AND THE 2011 CALIFORNIA AIRPORT LAND USE PLANNING HANDBOOK

Compatibility Factor	1988 Rio Vista ALUCP	2011 Handbook
Noise	Residential or other noise sensitive uses are compatible in areas where noise is less than CNEL 60 dB, and the ALUCP also indicates that compatible noise levels for other types of land uses shall be consistent with the above residential area noise level criteria.	This policy is generally as restrictive as the 2011 Handbook, which suggests 60 dB is appropriate for new residential development around airports in urban/suburban surroundings. However, additional refinement of non-residential land use compatibility, based on noise, is also provided.
Safety	The 1988 ALUCP does not offer standards on the 2011 Handbook 1-6 zone scale, but rather categorizes zones as A, B, C, D, E, and F. The zones provided in the 1988 ALUCP do not correspond to the zones provided in the 2011 Handbook, and further, flight patterns have changed at the Airport to account for new development, additionally redefining zone dimensions. The 1988 ALUCP establishes the following density and intensity standards for nonresidential and residential uses (measured in terms of people per acre): Zone A: • Max. Residential Densities: 0 • Max. people in structures: 10 • Max. people in and out of structures: 15 Zone B: • Max. Residential Densities: 0.3 • Max. people in structures: 20 • Max. people in and out of structures: 40 Zone C: • Max. Residential Densities: 1 • Max. people in structures: 50 • Max. people in and out of structures: 75 Zone D: • Max. Residential Densities: 4 • Max. people in structures: 100 • Max. people in and out of structures: 150 Zone E: • Max. Residential Densities: 6 • Max. people in structures: n/a • Max. people in and out of structures: n/a Zone F: • Max. Residential Densities: n/a • Max. people in structures: n/a • Max. people in and out of structures: n/a	The 1988 ALUCP provides stricter protection measures. The 2011 Handbook recommends a range of intensity and density standards for nonresidential and residential uses. For an airport in an suburban environment, the 2011 Handbook recommends the following (measured in terms of people per acre): Zone 1: • Max. Residential Densities: 0 • Max. Nonresidential Intensities: 0 • Max. Single Acre: 0 Zone 2: • Max. Residential Densities: 0 • Max. Nonresidential Intensities:40-60 • Max. Single Acre: 80-120 Zone 3: • Max. Residential Densities: Infill • Max. Nonresidential Intensities: 70-100 • Max. Single Acre: 210-300 Zone 4: • Max. Residential Densities: Infill • Max. Nonresidential Intensities: 100-150 • Max. Single Acre: 300-450 Zone 5: • Max. Residential Densities: Infill • Max. Nonresidential Intensities: 70-100 • Max. Single Acre: 210-300 Zone 6: • Max. Residential Densities: No limit • Max. Nonresidential Intensities: 200-300 • Max. Single Acre: 800-1,200
Airspace Protection	The 1988 Rio Vista ALUCP follows the 14 CFR Part 77 guidelines for height restrictions and also establishes the following criteria for the ALUC review of the height of proposed objects, within the compatibility zones, as follows: Zones A through C: All structures, trees and other objects shall be required to meet airport height limits unless it can be conclusively shown that the property cannot be reasonably utilized without violating the standards and that a lesser degree of violation cannot be reasonably achieved.	The 2011 Handbook follows the guidelines established by 14 CFR Part 77. In addition, the Handbook recommends consideration for other airspace hazards, such as wildlife, which are not discussed in the 1988 Rio Vista ALUCP, and recommends separations between an airport and wildlife attractants as delineated in FAA Advisory Circular 150/5200-33B "Hazardous Wildlife Attractants On or Near Airports".
Overflight	The 1988 Rio Vista ALUCP does contain avigation easement requirements for the stated purpose of informing land owners in the vicinity of the Airport that they will be exposed to aircraft-related noise. In addition, the Rio Vista ALUCP also encourages local governments to establish a "buyer notification statement" as a requirement for the transfer of title of any property located within the Airport's geographic area of concern.	The 2011 Handbook recommends overflight compatibility measures that do not grant rights to the airport proprietor, such as an easement. The 2011 Handbook recommends notification methods; specifically recorded deed notices and buyer awareness measures. The latter is required per the Business and Professions Code Sections 11010(a) and (b)(13).

SOURCES: Solano County, 1988. Rio Vista Airport: Airport Land Use Compatibility Plan. May; Caltrans, *California Airport Land Use Planning Handbook*, 2011.



SOURCE: ESA, 2016; ESRI Mapping Services

Rio Vista Municipal Airport ALUCP.150732

Figure 6

Wildlife Hazard Analysis Boundaries

ESA

DRAFT FOR DELIBERATIVE PURPOSES ONLY

loafing, reproduction, and escape. Even small facilities, such as fast food restaurants, taxicab staging areas, rental car facilities, aircraft viewing areas, and public parks, can produce substantial attractions for hazardous wildlife. With the WHA Boundary in place, there could be potential impacts to agricultural mitigation or wetland mitigation banking that would require additional review from the ALUC. In order to minimize wildlife risks to aircraft and human safety, the ALUC could consider including this strategy from the 2011 Handbook in the development of the Rio Vista ALUCP.

7. Sample 2011 Handbook Compatibility Criteria

Table 3 describes the compatibility criteria that are presented in the 2011 Handbook.

TABLE 3
COMPATIBILITY CRITERIA WITHIN THE 2011 CALIFORNIA AIRPORT LAND USE PLANNING HANDBOOK

Compatibility Factor	2011 Handbook Criteria
Noise	The FAR Part 150 Airport Noise Compatibility Planning criteria establish voluntary program requirements for airports to utilize. The AICUZ program prepares military air base requirements for noise compatibility criteria that suggest acoustical treatments above 65 dB Day-Night Average Sound Level (DNL). Based on the 65 community noise equivalent level (CNEL), four land uses have been defined as incompatible: • Residences of all types; • Public and private schools; • Hospitals and convalescent homes; and • Churches, synagogues, and other places of worship. The standards within the California Building Code (California Code of Regulations, Title 24) state that no habitable room shall have interior noise levels attributable to exterior noise sources exceeding 45 dB.
Overflight	The 2011 Handbook recommends utilizing noise contours, flight tracks, and even noise complaint patterns to delineate appropriate overflight boundaries. Flight track data are seen to be the most accurate means of determining overflight zones because these data depict both the location and altitude of aircraft operations. If not available, as is common in some smaller airports, the standard operating procedures of the particular airport can provide the best understanding of overflight boundaries.
Safety	The 2011 Handbook recommends a range of intensity and density standards for nonresidential and residential uses. For an airport in an urban environment, the 2011 Handbook recommends the following six zones generically: • Zone 1: Runway protection zone and within runway object free area adjacent to the runway; • Zone 2: Inner approach/departure zone; • Zone 3: Inner turning zone; • Zone 4: Outer approach/departure zone; • Zone 5: Sideline zone; and • Zone 6: Traffic pattern zone (not applicable to large air carrier airports).
Airspace Protection	The FAA has established the14 CFR Part 77 Airspace Surfaces to determine and protect navigable airspace from obstructions and other hazards in the vicinity to airports. Subpart C, Obstruction Standards, of 14 CFR Part 77 presents the standards used to determine obstructions to air navigation.

SOURCE: Caltrans, California Airport Land Use Planning Handbook, 2011.

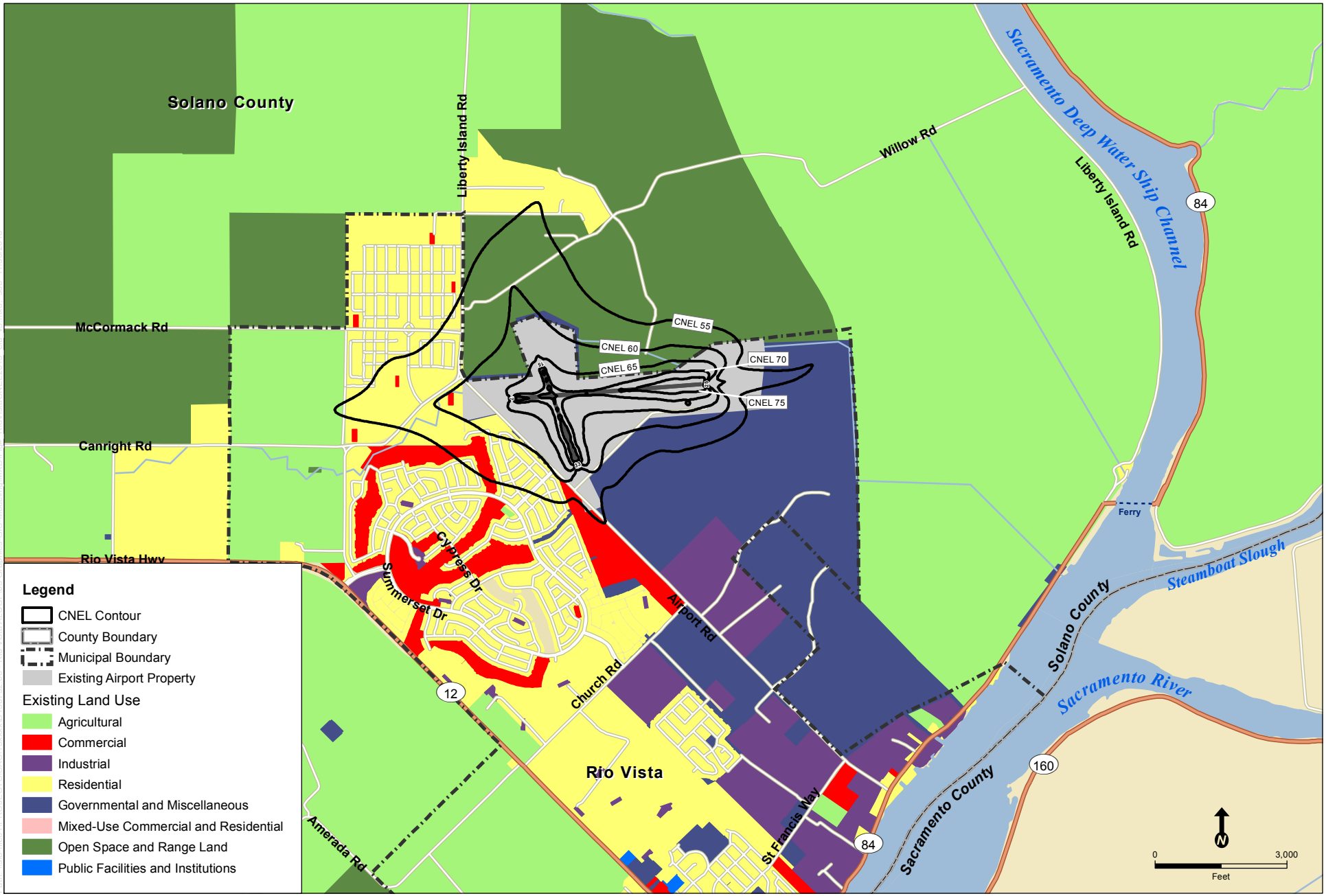
8. Changes in Operations at Rio Vista Airport

There is limited information regarding the historic levels of aircraft operations at Rio Vista Airport. When comparing the 1988 ALUCP and FAA Terminal Area Forecast (TAF) data, the 1988 ALUCP provides an annual aircraft operations count of approximately 45,000 while the TAF data provides 17,150 operations annually for the years 1990 to 1993, 0 operations in1994 or 1995, and 35,000 operations every year from 1996 to 2015. At the time of the 1988 ALUCP, Rio Vista Airport was operating at its original location, which was closer to the center of Rio Vista and about 1.35 miles to the southeast of the current ("new") Airport, southwest of the corner of Airport Road and Saint Francis Way. In 1993, the new (and current) Airport location opened, with the original Airport closing in 1995 after nearly 40 years in operation. While the 1988 ALUCP predicted approximately 120,000 annual aircraft operations upon buildout of facilities and runways at the new Airport location, the TAF data indicates a far more conservative estimate of 35,000 operations in 2035, remaining unchanged from the 2015 data.

9. Existing and Planned Land Uses and Zoning in the Vicinity of the Safety Zones

The purpose of this section is to characterize the environment and land uses surrounding Rio Vista Airport. The Airport is located primarily within the City of Rio Vista, but its operations affect several areas within unincorporated Solano County. Further, lands to the north of the Airport are located in unincorporated Solano County, as the Airport serves as a northern border for portions of Rio Vista. **Figure 7** demonstrates 2015 aircraft operations alongside existing land use in the Airport and its vicinity. **Figure 8** provides 2035 forecast aircraft operations alongside planned land use in the Airport and its vicinity. The following discussion describes the existing and planned land uses and zoning in the jurisdictions within and surrounding Rio Vista Airport.

As seen in Figure 1, Rio Vista Airport is located in the greater Sacramento-San Joaquin River Delta region, approximately 27 miles southwest of the City of Sacramento and 46 miles northeast of the City of San Francisco. The Airport is approximately two miles to the west of the Sacramento River, and is also located approximately 16 miles west of Interstate 5. The Airport is primarily accessed via Airport Road. Airport Road runs east-west along the southern boundary of the Airport and intersects Baumann Road, which provides direct access to the administration building, hangars, and other facilities on the southern side of the Airport. The northern and eastern sides of the Airport are surrounded by waterways, and road access is provided by a private perimeter road.



SOURCE: AEDT 2c SP3; ESA, 2016; Solano County GIS Department, 2016; ESRI Mapping Services

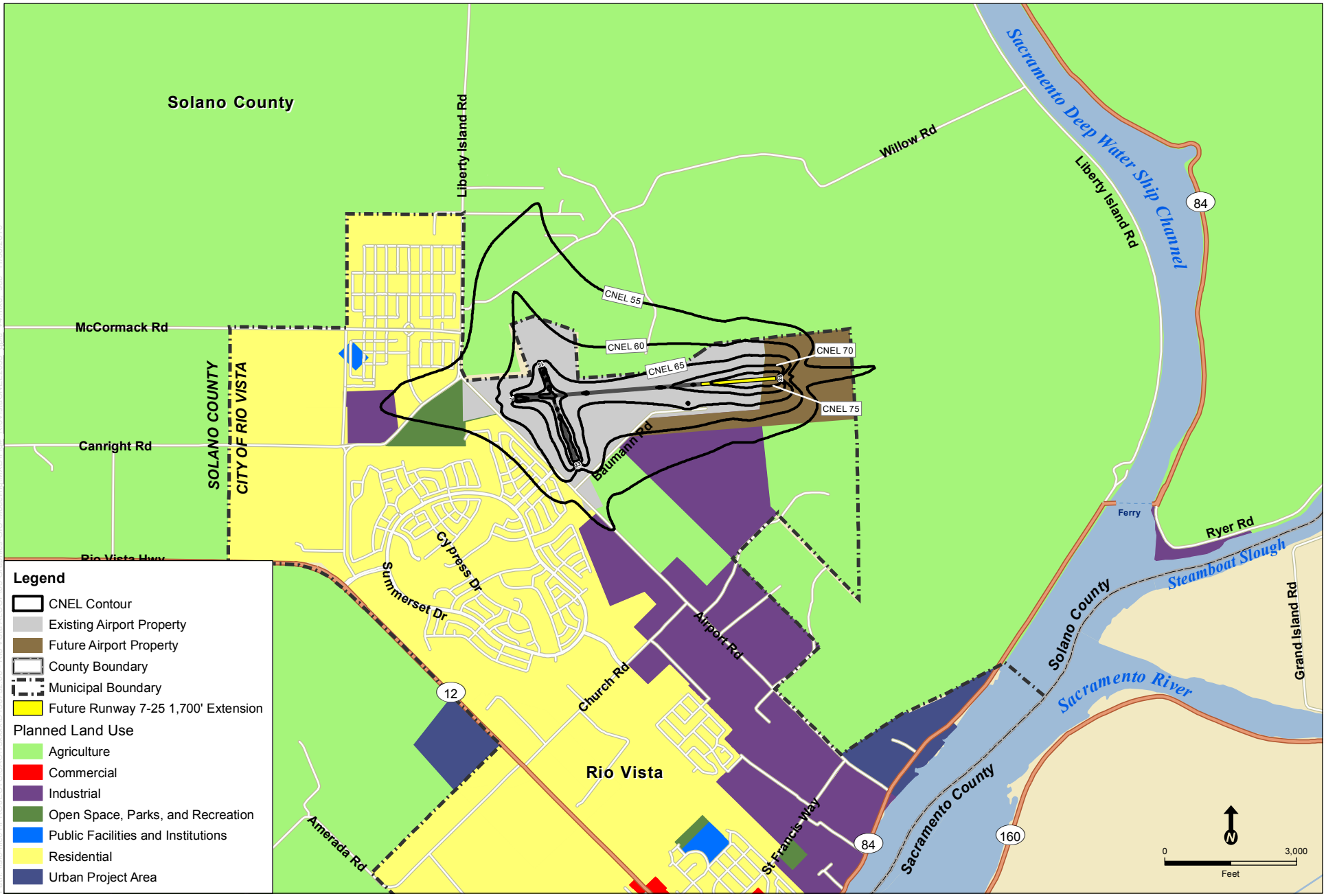
Rio Vista Municipal Airport ALUCP.150732

Figure 7

2015 CNEL Contours and Existing Land Use

ESA

DRAFT FOR DELIBERATIVE PURPOSES ONLY



NOTE: CNEL = Community Noise Equivalent Level.

SOURCE: AEDT 2c SP3; ESA, 2016; Solano County GIS Department, 2016; ESRI Mapping Services

Rio Vista Municipal Airport ALUCP.150732

Figure 8

2035 CNEL Contours and General Plan Land Use

ESA

DRAFT FOR DELIBERATIVE PURPOSES ONLY

9.1 City of Rio Vista

The City of Rio Vista is approximately 6.7 square miles and contains Rio Vista Airport.

Existing Land Uses

Existing land uses within the City of Rio Vista located closest to the Airport include primarily residential uses to the west, open space to the north, and industrial uses to the east and south. A small area of commercial land use lies to the south of Runway 33 along its extended centerline. Additionally, Rio Vista Airport is located along the northern boundary of the Rio Vista city limits. The southwestern and central areas of the City are largely undeveloped as well, though the southeastern and eastern portions of the City, facing the Sacramento River largely contain residential and commercial uses.

Planned Land Uses

Planned land use designations for the City of Rio Vista are established in the City's General Plan. Portions of the City to the west and northwest are predominantly designated as residential and agricultural, along with Rio Vista Airport. Agricultural uses are also in the southwest of the City. The northeastern portion of the City features mostly industrial uses, while the southeastern Downtown area contains a mixture of neighborhood residential, historic residential, highway commercial, and downtown waterfront uses.

Specific Plans

The Waterfront Specific Plan comprises approximately 15 acres and is bounded by Main Street on the South, SR 12 on the north, and the Sacramento River on the east. The project area envisions more walkable streets that better integrate with the City's Waterfront and provide ample public open space, culminating in two neighborhood concepts. While both involve public and civic spaces that are readily accessible for pedestrians, Concept A seeks more of a focus on residential uses whereas Concept B aims to create a more mixed-use neighborhood replete with a strong retail and commercial focus. The Waterfront Specific Plan area is located just over two miles from the Airport and will not be affected by Airport operations.

Zoning

Zoning designations for the City of Rio Vista are established in Title 17 of the City's Municipal Code. Portions of the City to the west and southwest are predominantly designated as single-family residential, whereas portions to the east and northeast are designated as almost exclusively industrial.

9.2 Solano County

Solano County covers an area of approximately 829 square miles and is located between Sacramento County to the east, Yolo County to the north, Contra Costa County to the south, and the Counties of Napa and Sonoma and San Pablo Bay to the west.

Existing Land Uses

The environs surrounding Rio Vista Airport consist of incorporated areas only to the west; the Airport is located within the Rio Vista city limit but unincorporated parts of Solano County surround the Airport along its northern and western boundaries, and these areas are largely agricultural uses in the safety zones.

Planned Land Uses

General Plan land use designations throughout nearly portions of unincorporated Solano County located closest to the Airport generally reflect the development pattern of existing land uses, which involve agricultural uses. To the south, leading to Grizzly Bay, Suisun Bay, and Honker Bay is a large amount of land designated as marsh, which primarily relates to the existing conditions at Suisun Marsh. Land to the north is primarily designated as industrial with minimal residential uses (in Fairfield); however, north of the Fairfield city limit, there is also an agricultural buffer between Fairfield and Vacaville, the Vacaville-Fairfield-Solano Greenbelt. To the west, the jurisdictions of Fairfield and Suisun City feature mainly residential uses.

Specific Plans

The Middle Green Valley Specific Plan Area (Plan Area) is located approximately 24 miles to the west of the Airport on Green Valley Road, in unincorporated Green Valley, near the western boundary of Solano County; north of I-80, Jameson Canyon, and the Hidden Meadows subdivision (City of Fairfield); south of existing unincorporated subdivisions and the Green Valley Country Club in upper Green Valley; west of Suisun Valley and the Rockville Hills; and northwest of the Eastridge subdivision (City of Fairfield).

The Middle Green Valley Special Study Area (SSA) is approximately 1,905 acres of land in the western portions of Solano County. The major roads serving the Plan Area are Green Valley Road and Rockville Road (to the north). A number of smaller country roads and unpaved two lane roads exist within the Plan Area as well. The most prominent are Terminal Reservoir Road along the southern boundary and Mason Road which runs east-west in the more central area of the site.

The site will contain a mixture of open space, agricultural, and rural residential zoning. The residential standards are as follows:

- Rural Farm – (RF): This designation allows for single family residences on 1 to 5 acre parcels. Reference: Section 28-23 Rural Residential (RR-5, RR-2.5) and Residential Estate (RE-1) Districts.

- Rural Meadow - (RM): This designation allows for single family residential development at densities of 1-4 dwelling units per acre. These residential areas are organized around meadow features in the foothill areas to respond to topography and oak woodlands.

- Rural Neighborhood– (RN): This designation allows for primarily residential development at densities of 1-4 dwelling units per acre. Reference: Section 28-24 Suburban Residential Districts (R-E-1, R-E-1/2, R-E-1/4) Districts

- Rural Mixed–Use Center – (RC): This designation allows for residential development at densities of 4-8 dwelling units per acre with opportunities for neighborhood commercial/ office in lower or partial floors. This designation allows for a flexible residential/mixed use setting to provide small business and retail opportunities that support and service the community and neighboring regions.

Zoning

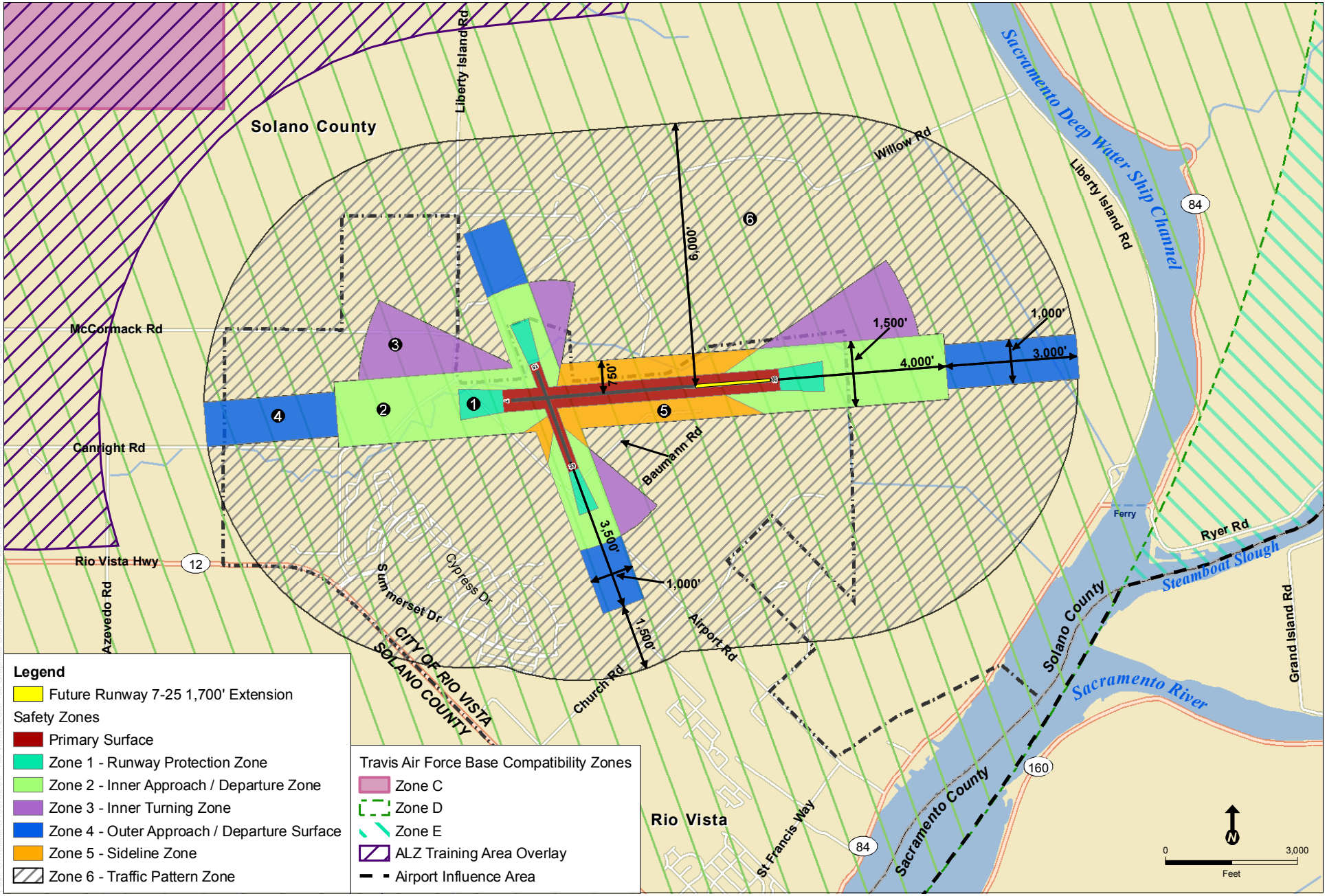
Zoning designations in unincorporated Solano County are found in Chapter 28 of the County's Zoning regulations. For the most part, the eastern half of the County is almost entirely zoned as agriculture, with the northwestern corner of the County along the Vaca Mountains, and a large southern portion of the County designated as an open space zone (facing Grizzly Bay). Otherwise, there are some single-family residential zones that surround a northern portion of Vacaville and also a northwestern portion of Fairfield.

In particular, Solano County has adopted the Travis Reserve Area (TRA) overlay designation to protect the land within the overlay for continued agriculture, grazing and associated habitat uses until a military or airport use is proposed. No residential uses are permitted in this overlay zone. This designation enables the future expansion of Travis Air Force Base (AFB) and additional support facilities for the Air Force Base. If the status of the Air Force Base changes, the construction of non-military airport and support uses may also be permitted (Solano County, 2008). However, this designation does not affect Rio Vista Airport.

Lastly, Rio Vista Airport and its immediate surroundings are located within Compatibility Zone D of Travis Air Force Base's Land Use Compatibility Plan (LUCP), which requires the following:

- ALUC review for all new objects greater than 200 feet above ground level (AGL) in height;
- ALUC review that entails a Solar Glare Hazard Analysis Tool (SGHAT) glint and glare study for all new or expanded commercial-scale solar facilities;
- ALUC review involving appropriate line-of-sight standards for all proposed wind turbine facilities.
- Apart from the above restrictions, there are no density or intensity limits, although large stadiums and similar uses should be avoided.

Figure 9 depicts the Travis AFB compatibility zones within the Rio Vista area, based on the Travis AFB LUCP. It is understood that Rio Vista Airport features additional restrictions for development because of its location within the Travis Air Force Base compatibility zones. While tall noncompliant structures would not be permitted within the existing and proposed (if adopted) Rio Vista Airport compatibility zones, all future development projects in the area would be required to adhere to both the less restrictive Travis AFB compatibility zones within Rio Vista and the Rio Vista Airport safety zones, of which a range of restrictions exist. Review would occur through the same agency, the Solano County ALUC. As a result, while there is some interaction between the Airport and the Travis Air Force Base LUCP compatibility zones, there are no conflicts with the requirements already established in the Rio Vista ALUCP.



SOURCE: California Airport Land Use Planning Handbook, October 2011; Mead & Hunt, 2015; Travis AFB, 2014; ESA, 2017; ESRI Mapping Services

Rio Vista Municipal Airport ALUCP.150732

Figure 9

Travis Air Force Base and Rio Vista Airport Compatibility Zones

ESA

DRAFT FOR DELIBERATIVE PURPOSES ONLY

10. Potential Conflicts between the New LUCP and Planned Land Uses

The following section analyzes the potential noise, airspace protection, safety, and overflight conflicts that may emerge between the new ALUCP and planned land uses and zoning found in the vicinity of the Airport. As of this white paper's writing, the zoning for Rio Vista and Solano County should be consistent with the planned land uses. To begin each section, an overview of these four criteria, as explained in the 2011 Handbook provides clarification for the technical analysis that follows. Additionally, Subsection 9.1 only involves a discussion of potential noise conflicts, while Subsection 9.2 consolidates the analysis of potential airspace protection, safety, and overflight conflicts together.

10.1 Potential Noise Conflicts

According to the 2011 Handbook, the main strategy for achieving noise compatibility in the vicinity of an airport involves preventing or minimizing the development of land uses that are particularly sensitive to noise. Typically, land use strategies include ones that either involve fewer people or generate significant noise levels on site. Regarding residential noise in particular, the 2011 Handbook indicates three CNEL values to commonly use as the limit for acceptable residential noise exposure are: 65 dB, 60 dB, or 55 dB. Additionally, interior noise has emerged as another broadly suitable land use compatibility measure when dealing with highly noise-impacted locations. As mentioned earlier, Figure 4 presents the noise contours based on the 2035 forecast aircraft operations at the Airport, Figure 7 depicts 2015 existing aircraft CNEL contours over the existing land use and Figure 8 depicts the 2035 forecast aircraft CNEL contours over planned land use. These are the maps for which this section bases its analysis.

As part of this ALUCP, 2035 operations and fleet mix for Rio Vista Airport were used to develop future CNEL contours. As described in Section 5, Noise Modeling for Rio Vista Airport, this process involved estimating the future aircraft operations, fleet mix, runway use, and flight tracks use at the Airport to determine the aircraft noise exposures levels for the 20-year forecast period.

Potential Conflicts from Planned Land Uses

There are no conflicts with the planned land uses within the City of Rio Vista or Solano County as neither jurisdiction contains any residential land uses located within any contours greater than 60 CNEL. Planned uses within the 60 CNEL contour include agriculture and industrial land uses. These portions of land that fall within the 60 CNEL contour would have to adhere to nonresidential noise standards per the 2011 Handbook.

10.2 Potential Airspace Protection, Safety, and Overflight Conflicts

As mentioned earlier, although the Airport is located within Compatibility Zone D of the Travis AFB, no activities, development, or changes to the Rio Vista ALUCP are affected or precluded.

Airspace Protection

The 2011 Handbook presents two relatively simple compatibility strategies to assist airports and airfields in dealing with the protection of airspace, based on the following two sets of hazards:

- Airspace Obstructions: Buildings, antennas, other types of structures, and trees should be limited in height so as not to pose a potential hazard to flight.

- Wildlife and other Hazards to Flight: Land uses that may create other types of hazards to flight near an airport should be avoided or modified so as not to include the offending characteristic.

Airspace protection focuses primarily on clearing the obstructions to the airspace required for flight to, from, and around an airport, preventing bird strikes and collisions with other wildlife hazards, and removing any other types of interference with safe flight, navigation, or communication. **Figure 10** provides a map containing the 14 CFR Part 77 surfaces for the Airport including the extension of Runway 7/25.

Safety

For issues of safety and overflight, the following Compatibility Zones—1, 2, 3, 4, 5, and 6—feature specific delineations and have varying regulations on the development of land surrounding the Airport, including but not limited to restrictions on densities and intensities. Figure 2 presents the safety zones (Zones 1, 2, 3, 4, 5, and 6) for Rio Vista Airport including the extension of Runway 7/25. Due to existing development located to the west and southwest of the Airport, flight tracks associated with Runway 15/33 remain to the east of Runway 15/33. This is reflected in the development of the safety zones for Rio Vista Airport.

Zone 1, the Runway Protection Zone, is located just beyond the runways in each direction, within the runway primary surface and clear zones. The dimensions of this zone are specifically defined in accordance with 14 CFR Part 77 criteria.

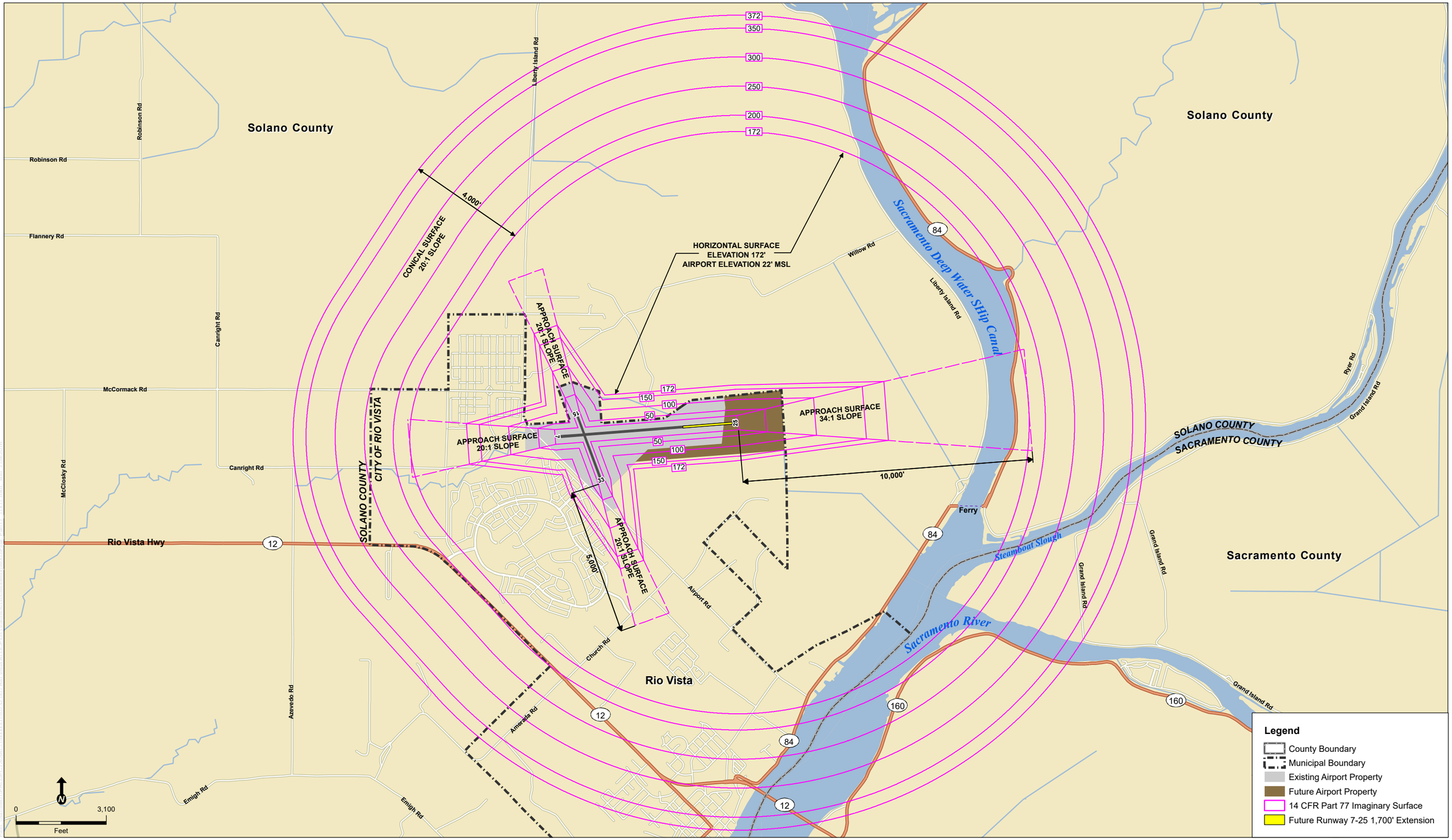
Zone 2 consists of the Inner Approach and Departure Zone and is intended for areas involving aircraft flying at an altitude between 200 and 400 feet above the runways. This area is delineated as being 1,500 feet wide (using the center of the runway) and extending 4,000 feet past the runways.

Zone 3 is the Inner Turning Zone and extends 30 degrees to the sides of the runways, running 5,000 feet from the center of the runways.

Zone 4 is the Outer Approach / Departure Surface for the Airport, is 1,000 feet wide, and extends an additional 3,000 feet from Zone 2.

Zone 5 is the Sideline Zone and extends 750 feet on each side of the runways.

Lastly, Zone 6 includes all remaining locations beneath any of the Rio Vista Airport airspace protection surfaces delineated in accordance with the 14 CFR Part 77 guidelines as well as areas that are or will be subject to frequent aircraft overflight.



SOURCE: USDOT. FAA. 14 CFR Part 77, Safe, Efficient Use and Preservation of the Navigable Airspace, July 21, 2010; Reinard W. Brandley, 2016; Adapted by ESA, 2016; ESRI Mapping Services
NOTE: All elevations depicted are mean sea level (MSL).

Rio Vista Municipal Airport ALUCP.150732
Figure 10
14 CFR Part 77 Imaginary Surfaces

ESA

DRAFT FOR DELIBERATIVE PURPOSES ONLY

This page intentionally left blank

For issues of safety compatibility, the 2011 Handbook recognizes the impracticability of prohibiting development within the vicinity of an airport or airfield. As a result, the 2011 Handbook expresses the need for a careful delineation of safety zones to ensure suitable compatibility criteria are established for ALUCPs. Risk acceptability is critical to this process, mainly requiring an understanding of spatial distribution, potential consequences, and frequency to create an appropriate conceptual basis for safety zone demarcation. The 2011 Handbook elaborates these criteria further as follows:

- The spatial distribution component is accounted for by the shape and size of safety compatibility zones.

- Potential consequences are addressed through the compatibility criteria— the limitations on usage intensity and other land use characteristics that affect the potential severity of an accident.

- The frequency component can be accounted for through adjustment of zone sizes or the criteria applicable within each zone. Frequency is primarily a factor at airports (or on runways) with very low activity. For most airports, the potential consequences component dominates the overall risk.

The major goal of an ALUCP is to minimize the exposure of persons to these risks, and as such, the 2011 Handbook prepares the appropriate residential densities and nonresidential intensities that are appropriate within the specific safety zones.

Overflight

For issues of overflight in the 2011 Handbook, compatibility policies focus on informing prospective property owners of the presence of an airport and making them aware of the potential for noise impacts associated with overflying aircraft. The ALUCP can serve as a tool to inform the people near airports of any overflights that occur in their vicinity to avoid or minimize the potential annoyance associated with overflight conditions. The 2011 Handbook recommends buyer awareness measures as a key strategy in informing the public and enabling potential consumers of property near the airport or airfield of these potential nuisances. The 1988 ALUCP already provides this regulation.

Potential Conflicts from Planned Land Uses

Regarding safety zones within the planned land uses in the vicinity of the Airport, there may be some conflicts with low density residential uses planned for areas to the west and south of the Airport that are located within Zones 2 and 3. While neither safety zone outright prohibits new residential development, Zone 2 requires planning to avoid all residential development and Zone 3 seeks residential development to be limited to only very low densities.

Airspace protection does not pose any conflicts for planned land uses in Rio Vista or Solano County.

Regarding overflight, large swathes of Rio Vista and Solano County are located within Zone 6, and as such, the height of all structures would have to remain within the 200-foot limit.

Additionally, these jurisdictions and their landowners would need to be appropriately informed of the presence of their community in an overflight zone for Rio Vista Airport. Solano County ALUC may consider different methods of outreach and strategies such as buyer awareness measures to ensure that existing and potential landowners are aware of overflight in their community.

11. References

Caltrans – California Department of Transportation, Division of Aeronautics. 2011. California Airport Land Use Planning Handbook. October 2011.

City of Rio Vista, 2017. City of Rio Vista Municipal Code, Title 17. Available: http://qcode.us/codes/riovista/. Accessed February 23, 2017.

City of Rio Vista, 2007. Rio Vista Municipal Airport: Master Plan Update. June.

Environmental Science Associates, 2017. Existing and Future Conditions Data. February.

Solano County, 1988. Rio Vista Airport: Airport Land Use Compatibility Plan. May.

Solano County, 2017a. Solano County Zoning Regulations, Chapter 28. Accessed: http://www.co.solano.ca.us/depts/rm/planning/zoning_regulations. Accessed February 23, 2017.

Solano County, 2017b. "Solano County Airport Land Use Commission," Solano County website. Available: http://www.co.solano.ca.us/depts/rm/boardscommissions/solano_county_airport_land_use_commission/default.asp. Accessed February 23, 2017.

This page intentionally left blank

APPENDIX B

Sample Implementation Documents

APPENDIX B

Sample Implementation Documents

The responsibility for implementation of the compatibility criteria set forth in the compatibility plan for Rio Vista Airport rests largely with the affected local jurisdictions. Modification of general plans and applicable specific plans for consistency with applicable compatibility plans is the major step in this process. However, not all of the detailed policies necessary for achieving full general plan consistency are necessarily included in general plans and specific plans — many can be established through other documents. This appendix contains examples of three types of implementation documents.

- Airport Combining Zone Ordinance — One local option for compatibility criteria implementation is adoption of an airport combining zone ordinance. An airport combining zone ordinance is a way of collecting various airport-related development conditions into one local policy document. Adoption of a combining zone is not required, but is suggested as an option. Appendix B1 describes some of the potential components of an airport combining zone ordinance.

- Avigation Easement — Avigation easements transfer certain property rights from the owner of the underlying property to the owner of an airport or, in the case of military airports, to a local government agency on behalf of the federal government. ALUCs may require avigation easement dedication as a condition for approval of development on property subject to high noise levels or a need to restrict heights of structures and trees to less than might ordinarily occur on the property. Also, airports may require avigation easements in conjunction with programs for noise insulation of existing structures in the airport vicinity. A sample of a standard avigation easement is included in Appendix B2.

- Recorded Deed Notice — Deed notices are a form of buyer awareness measure whose objective is to ensure that prospective buyers of airport area property, particularly residential property, are informed about the airport's impact on the property. Unlike easements, deed notices do not convey property rights from the property owner to the airport and do not restrict the height of objects. They only document the existence of certain conditions which affect the property — such as the proximity of the airport and common occurrence of aircraft overflights at or below the airport traffic pattern altitude. Recording of deed notices is a requirement for project approval within portions of the areas of influence of the airports in Solano County where avigation easements are not essential. Appendix B3 contains a sample of a deed notice.

Appendix B1
Possible Airport Combining Zone Components

An airport compatibility combining zoning ordinance might include some or all of the following components:

- Airspace Protection — A combining district can establish restrictions on the height of buildings, antennas, trees, and other objects as necessary to protect the airspace needed for operation of the airport. These restrictions should be based upon the current version of Federal Aviation Regulations (FAR) Part 77, Objects Affecting Navigable Airspace, Subpart C. Additions or adjustment to take into account instrument approach (TERPS) surfaces should be made as necessary. Provisions prohibiting smoke, glare, hazardous wildlife attractions, and other hazards to flight should also be included.

- FAA Notification Requirements — Combining districts also can be used to ensure that project developers are informed about the need for compliance with the notification requirements of FAR Part 77. Subpart B of the regulations requires that the proponent of any project which exceeds a specified set of height criteria submit a Notice of Proposed Construction or Alteration (Form 7460-1) to the Federal Aviation Administration prior to commencement of construction. The height criteria associated with this notification requirement are lower than those spelled out in Part 77, Subpart C, which define airspace obstructions. The purpose of the notification is to determine if the proposed construction would constitute a potential hazard or obstruction to flight. Notification is not required for proposed structures that would be shielded by existing structures or by natural terrain of equal or greater height, where it is obvious that the proposal would not adversely affect air safety.

- State Regulation of Obstructions — State law prohibits anyone from constructing or altering a structure or permitting an object of natural growth to exceed the heights established by FAR Part 77, Subpart C, unless the FAA has determined the object would or does not constitute a hazard to air navigation (Public Utilities Code, Section 21659). Additionally, a permit from the Department of Transportation is required for any structure taller than 500 feet above the ground unless the height is reviewed and approved by the Federal Communications Commission or the FAA (Section 21656).

- Designation of High Noise-Impact Areas — California state statutes require that multi-family residential structures in high-noise exposure areas be constructed so as to limit the interior noise to a Community Noise Equivalent Level of no more than 45 dB. A combining district could be used to indicate the locations where special construction techniques may be necessary in order to ensure compliance with this requirement. The combining district also could extend this criterion to single-family dwellings.

- Maximum Densities/Intensities — Airport noise and safety compatibility criteria are frequently expressed in terms of dwelling units per acre for residential uses and people per acre for other land uses. These standards can either be directly included in a combining zone or used to modify the underlying land use designations. For residential land uses, the correlation between the compatibility criteria and land use designations is direct. For other land uses, the method of

calculating the intensity limitations needs to be defined. Alternatively, a matrix can be established indicating whether each specific type of land use is compatible with each compatibility zone. To be useful, the land use categories need to be more detailed than typically provided by general plan or zoning ordinance land use designations.

- Open Areas for Emergency Landing of Aircraft — In most circumstances in which an accident involving a small aircraft occurs near an airport, the aircraft is under control as it descends. When forced to make an off-airport emergency landing, pilots will usually attempt to do so in the most open area readily available. To enhance safety both for people on the ground and the occupants of aircraft, airport compatibility plans often contain criteria requiring a certain amount of open land near airports. These criteria are most effectively carried out by planning at the general or specific plan level, but may also need to be included in a combining district so that they will be applied to development of large parcels. Adequate open areas can often be provided by clustering of development on adjacent land.

- Areas of Special Compatibility Concern — A significant drawback of standard general plan and zoning ordinance land use designations is that they can be changed. Uses that are currently compatible are not assured of staying that way in the future. Designation of areas of special compatibility concern would serve as a reminder that airport impacts should be carefully considered in any decision to change the existing land use designation.

- Real Estate Disclosure Policies — The geographic extent and specific language of recommended real estate disclosure statements can be described in an airport combining zone ordinance.

Appendix B2
Typical Avigation Easement

This indenture made this_____ day of_____, 20__, between _____ hereinafter referred to as Grantor, and the [Insert County or City name], a political subdivision in the State of California, hereinafter referred to as Grantee.

The Grantor, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, does hereby grant to the Grantee, its successors and assigns, a perpetual and assignable easement over the following described parcel of land in which the Grantor holds a fee simple estate. [For military airports: Grantee shall hold said easement on behalf of the United States Government.] The property which is subject to this easement is depicted as _____ on "Exhibit A" attached and is more particularly described as follows:

[Insert legal description of real property]

The easement applies to the Airspace above an imaginary plane over the real property. The plane is described as follows:

The imaginary plane above the hereinbefore described real property, as such plane is defined by Part 77 of the Federal Aviation Regulations, and consists of a plane [describe approach, transition, or horizontal surface]; the elevation of said plane being based upon the_____Airport official runway end elevation of_____feet Above Mean Sea Level (AMSL), as determined by [Insert name and Date of Survey or Airport Layout Plan that determines the elevation] the approximate dimensions of which said plane are described and shown on Exhibit A attached hereto and incorporated herein by reference.

The aforesaid easement and right-of-way includes, but is not limited to:

(1) For the use and benefit of the public, the easement and continuing right to fly, or cause or permit the flight by any and all persons, or any aircraft, of any and all kinds now or hereafter known, in, through, across, or about any portion of the Airspace hereinabove described; and

(2) The easement and right to cause or create, or permit or allow to be caused or created within all space above the existing surface of the hereinabove described real property and any and all Airspace laterally adjacent to said real property, such noise, vibration, turbulence, currents, odors, vapors, fumes, fuel particle emissions, exhaust, smoke, dust, and other effects of air, illumination, and fuel consumption as may be inherent in, or may arise or occur from or during the operation of aircraft of any and all kinds, now or hereafter known or used, for navigation of or flight in air; and

(3) A continuing right to clear and keep clear from the Airspace any portions of buildings, structures, or improvements of any kinds, and of trees or other objects, including the right to remove or demolish those portions of such buildings, structures, improvements, trees, or other things which extend into or above said Airspace, and the right to cut to the ground level and remove, any trees which extend into or above the Airspace; andThe right to mark and light, or cause or require to be marked or lighted, as obstructions to air navigation, any and all buildings, structures, or other improvements, and trees or other objects, which extend into or above the Airspace; and

(4) The right of ingress to, passage within, and egress from the hereinabove described real property, for the purposes described in subparagraphs (3) and (4) above at reasonable times and after reasonable notice.

(5) The prohibition against creating on the real property electrical and electronic interference, glint, glare, and other conditions that would impair the vision of pilots, high-velocity exhaust plumes, and other interference with radio, radar, microwave, or means of aircraft communication, and uses or features that make it difficult for pilots to distinguish between airfield navigation lights and visual aids and other lights, and other potential hazards to flight.

For and on behalf of itself, its successors and assigns, the Grantor hereby covenants with the [Insert County or City name], for the direct benefit of the real property constituting the _____ Airport hereinafter described, that neither the Grantor, nor its successors in interest or assigns will construct, install, erect, place or grow in or upon the hereinabove described real property, nor will they permit to allow, any building structure, improvement, tree or other object which extends into or above the Airspace, or which constitutes an obstruction to air navigation, or which obstructs or interferes with the use of the easement and rights-of-way herein granted.

The easements and rights-of-way herein granted shall be deemed both appurtenant to and for the direct benefit of that real property which constitutes the _____ Airport, in the [Insert County or City name], State of California; and shall further be deemed in gross, being conveyed to the Grantee for the benefit of the [for public-use airports: Grantee and any and all members of the general public] [for military airports: United States Government] who may use said easement or right-of-way, in landing at, taking off from or operating such aircraft in or about the _____ Airport, or in otherwise flying through said Airspace.

Grantor, together with its successors in interest and assigns, hereby waives its right to legal action against Grantee, its successors, or assigns for monetary damages or other redress due to impacts, as described in Paragraph (2) of the granted rights of easement, associated with aircraft operations in the air or on the ground at the airport, including future increases in the volume or changes in location of said operations. Furthermore, Grantee, its successors, and assigns shall have no duty to avoid or mitigate such damages through physical modification of airport facilities or establishment or modification of aircraft operational procedures or restrictions. However, this waiver shall not apply if the airport role or character of its usage (as identified in an adopted airport master plan, for example) changes in a fundamental manner which could not reasonably have been anticipated at the time of the granting of this easement and which results in a substantial increase in the impacts associated with aircraft operations. Also, this grant of easement shall not operate to deprive the Grantor, its successors or assigns, of any rights which may from time to time have against any air carrier or private operator for negligent or unlawful operation of aircraft.

These covenants and agreements run with the land and are binding upon the heirs, administrators, executors, successors and assigns of the Grantor, and, for the purpose of this instrument, the real property firstly hereinabove described is the servient tenement and said _____ Airport is the dominant tenement.

DATED: _____

STATE OF: _____

COUNTY OF: _____

On_____, before me, the undersigned, a Notary Public in and for said County and State, personally appeared_____, and_____known to me to be the persons whose names are subscribed to the within instrument and acknowledged that they executed the same.

WITNESS my hand and official seal.

_____
Notary Public

Appendix B3 Sample Deed Notices
For Property within Zones 1-6

A statement similar to the following should be included on the deed for any real property subject to the deed notice requirements set forth in the Rio Vista Airport Land Use Compatibility Plan. Such notice should be recorded by the county of Solano County. Also, this deed notice should be included on any parcel map, tentative map, or final map for subdivision approval.

For military airports:

> The Rio Vista Airport Land Use Compatibility Plan and [Insert County / City Name] Resolution (Resolution No. _____) identify a Rio Vista Airport Influence Area. Properties within this area are routinely subject to overflights by aircraft using this military airport and, as a result, residents may experience inconvenience, annoyance, or discomfort arising from the noise of such operations. State law (Public Utilities Code Section 21670 et seq.) supports the importance of military airports in protection of the public interest of the people of the United States and the state of California. Residents of property near such airports should therefore be prepared to accept the inconvenience, annoyance, or discomfort from normal aircraft operations. Residents also should be aware that the current volume of aircraft activity may increase in the future in response to federal military needs. Any subsequent deed conveying this parcel or subdivisions thereof shall contain a statement in substantially this form.

For Property within Zone 7

A statement similar to the following should be included on the deed for any real property subject to the deed notice requirements set forth in the Rio Vista Airport Land Use Compatibility Plan. Such notice should be recorded by the county of Solano County. Also, this deed notice should be included on any parcel map, tentative map, or final map for subdivision approval.

For military airports

> The Travis Air Force Base Land Use Compatibility Plan and Solano County Resolution (Resolution No. _____) identify a Travis Air Force Base Airport Influence Area. Properties within this area are routinely subject to overflights by aircraft using this military airport and, as a result, residents may experience inconvenience, annoyance, or discomfort arising from the noise of such operations. Additionally, portions of the Travis Air Force Base Airport Influence Area are subject to a high volume of pilot training or unusual type of aerial activity. This may include overflights by military aircraft performing training maneuvers on the base's Assault Landing Zone runway. These maneuvers involve frequent, low-level overflights (500 feet above ground level) by large aircraft. For example, the Boeing C-17 Globemaster has a wingspan of 170 feet. These operations may occur overnight and at irregular intervals.

State law (Public Utilities Code Section 21670 et seq.) supports the importance of military airports in protection of the public interest of the people of the United States and the state of California. Residents of property near such airports should therefore be prepared to accept the inconvenience, annoyance, or discomfort from normal aircraft operations. Residents also should be aware that the current volume of aircraft activity may increase in the future in response to federal military needs. Any subsequent deed conveying this parcel or subdivisions thereof shall contain a statement in substantially this form.

APPENDIX C

Noise Modeling Assumptions

APPENDIX C
Noise Modeling Assumptions

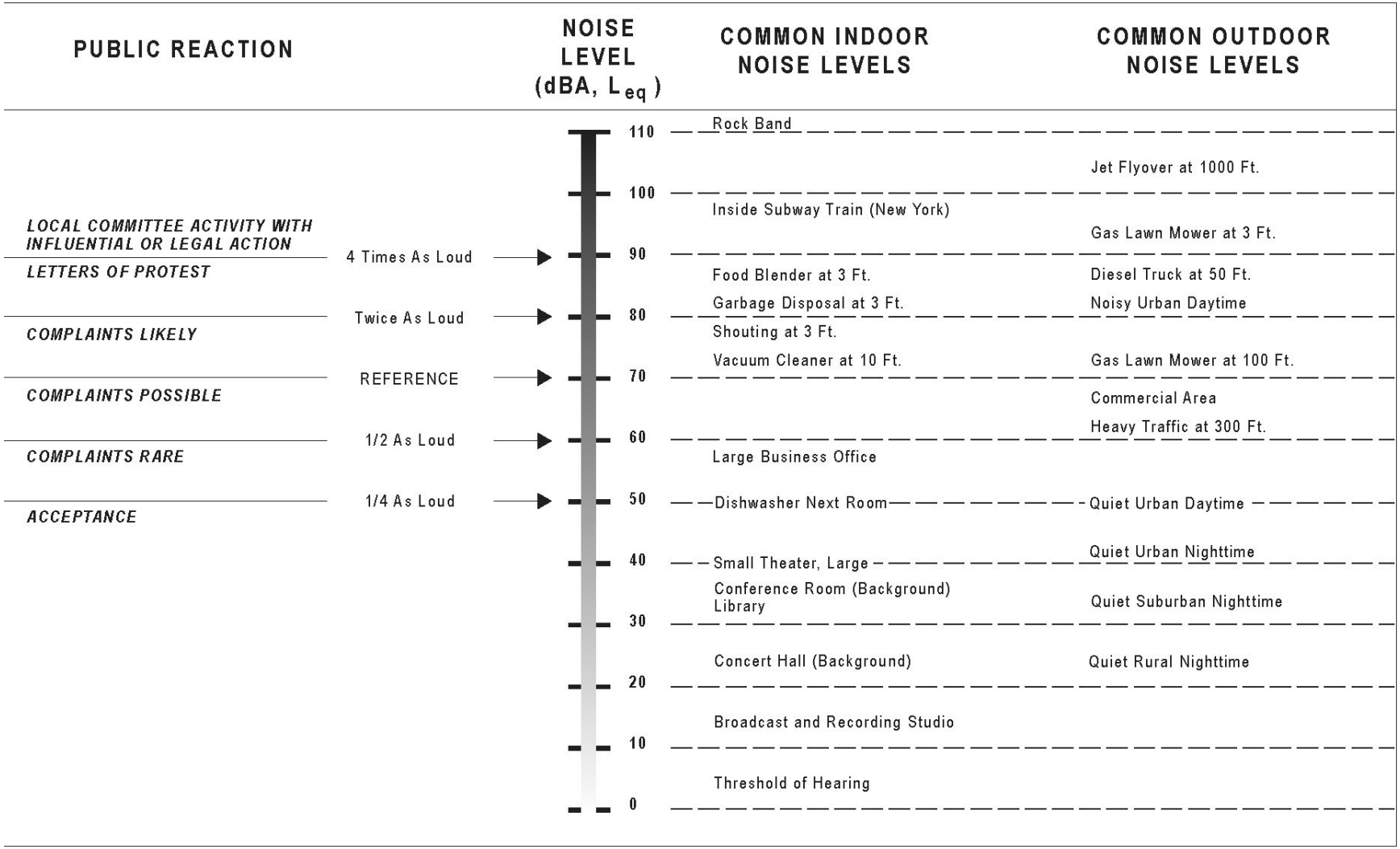
This Appendix describes the assumptions used in the noise modeling analysis conducted in support of the ALUCP update for Rio Vista Municipal Airport.

C.1 Environmental Noise Fundamentals

Noise is defined as unwanted sound. Sound, traveling in the form of waves from a source, exerts a sound pressure level (referred to as sound level) which is measured in decibels (dB), with zero dB corresponding roughly to the threshold of human hearing, and 120 to 140 dB corresponding to the threshold of pain. Pressure waves traveling through air exert a force registered by the human ear as sound.

Sound pressure fluctuations can be measured in units of hertz (Hz), which correspond to the frequency of a particular sound. Typically, sound does not consist of a single frequency, but rather a broad band of frequencies varying in levels of magnitude (sound power). When all the audible frequencies of a sound are measured, a sound spectrum is plotted consisting of a range of frequencies spanning 20 to 20,000 Hz. The sound pressure level, therefore, constitutes the additive force exerted by a sound corresponding to the sound frequency/sound power level spectrum.

The typical human ear is not equally sensitive to all frequencies of the audible sound spectrum. As a consequence, when assessing potential noise impacts, sound is measured using an electronic filter that de-emphasizes the frequencies below 1,000 Hz and above 5,000 Hz in a manner corresponding to the human ear's decreased sensitivity to extremely low and extremely high frequencies. This method of frequency weighting is referred to as A-weighting and is expressed in units of A-weighted decibels (dBA). A-weighting follows an international standard methodology of frequency weighting and is typically applied to community noise measurements. Some representative noise sources and their corresponding A-weighted noise levels are shown on **Figure C-1**.



Rio Vista Municipal Airport ALUCP.150732

SOURCE: OSHA, 2013. Adapted by ESA, 2016.

Figure C-1
Effect of Noise on People

C.2 Noise Exposure and Community Noise

An individual's noise exposure is a measure of noise over a period of time. A noise level is a measure of noise at a given instant in time. The noise levels presented on Figure C-1 are representative of measured noise at a given instant in time, however, they rarely persist consistently over a long period of time. Rather, community noise varies continuously over a period of time with respect to the contributing sound sources of the community noise environment. Community noise is primarily the product of many distant noise sources, which constitute a relatively stable background noise exposure, with the individual contributors unidentifiable.

The background noise level changes throughout a typical day, but does so gradually, corresponding with the addition and subtraction of distant noise sources such as traffic and atmospheric conditions. What makes community noise constantly variable throughout a day, besides the slowly changing background noise, is the addition of short duration single event noise sources (e.g., aircraft flyovers, motor vehicles, sirens), which are readily identifiable to the individual.

These successive additions of sound to the community noise environment varies the community noise level from instant to instant requiring the measurement of noise exposure over a period of time to legitimately characterize a community noise environment and evaluate cumulative noise impacts. This time-varying characteristic of environmental noise is described using statistical noise descriptors. The most frequently used noise descriptors are summarized below.

C.3 Noise Descriptors

Noise levels are measured using a variety of scientific metrics. As a result of extensive research into the characteristics of transportation-related noise and human response to that noise, standard noise descriptors have been developed for use in noise exposure analyses.

The noise descriptor most commonly used to describe aircraft and surface transportation noise is referred to as a "cumulative" noise descriptor. Such descriptors present the amount of noise occurring at a given location over a defined period of time in numerical terms. Depending upon the descriptor used, this period can be as brief as one hour, but is usually calculated for an annualized 24-hour period. Cumulative noise descriptors can be used to present noise exposure from a specific source, such as a roadway or an airport, to describe total noise exposure from all noise sources affecting a specific location.

The noise descriptors used in this analysis are described as follows:

A-Weighted Sound Pressure Level (dBA): The decibel (dB) is a unit used to describe sound pressure level. When expressed in dBA, the sound has been filtered to reduce the effect of very low and very high frequency sounds, much as the human ear filters sound frequencies. Without this filtering, calculated and measured sound levels would include events that the human ear cannot hear (e.g., dog whistles and low frequency sounds, such as the groaning sounds emanating from large buildings with changes in temperature and wind). With A-weighting, calculations and

sound monitoring equipment approximate the sensitivity of the human ear to sounds of different frequencies.

Some common sounds on the dBA scale are listed in **Table C-1**. The relative perceived loudness of a sound doubles for each increase of 10 dBA, although a 10-dBA change in the sound level corresponds to a factor of 10 change in relative sound energy. Generally, individual sounds with differences of 2 dBA or less are not perceived to be noticeably different by most listeners.

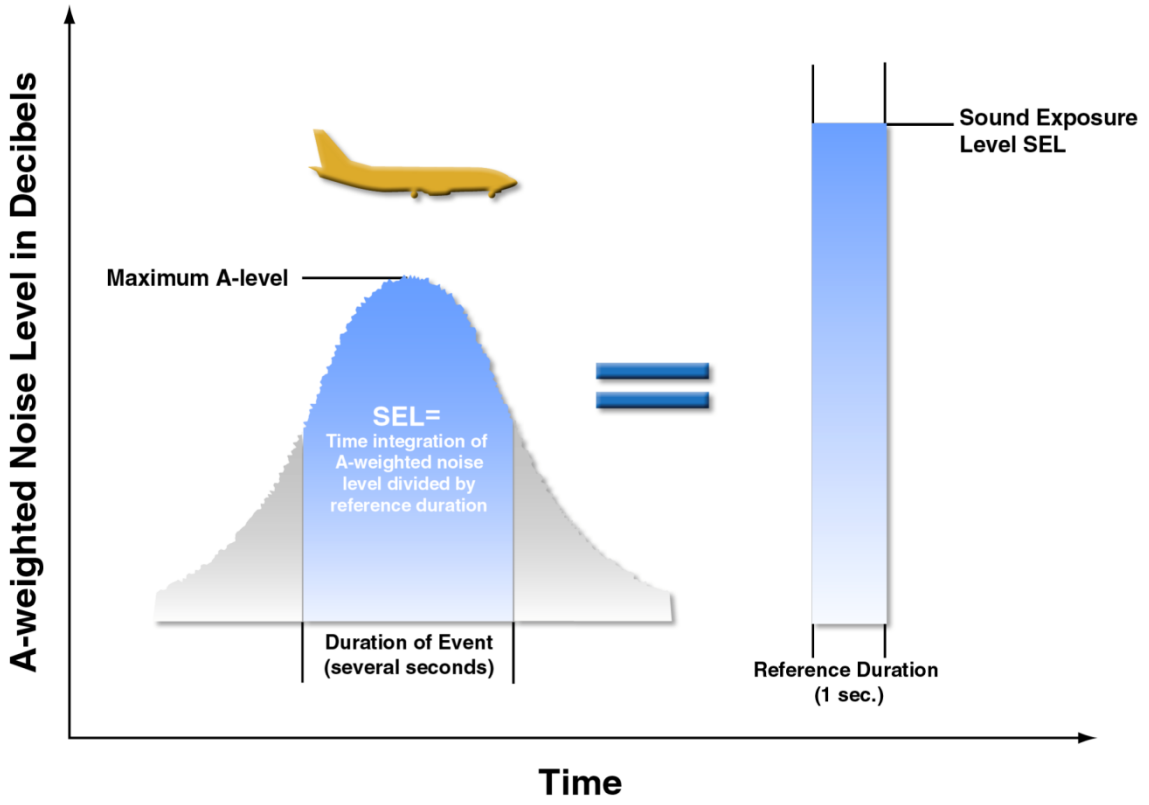
TABLE C-1
COMMON SOUNDS ON THE A-WEIGHTED DECIBEL SCALE

Sound	Sound level (dBA)	Relative loudness (approximate)	Relative sound energy
Rock music, with amplifier	120	64	1,000,000
Thunder, snowmobile (operator)	110	32	100,000
Boiler shop, power mower	100	16	10,000
Orchestral crescendo at 25 feet, noisy kitchen	90	8	1,000
Busy street	80	4	100
Interior of department store	70	2	10
Ordinary conversation, 3 feet away	60	1	1
Quiet automobiles at low speed	50	1/2	.1
Average office	40	1/4	.01
City residence	30	1/8	.001
Quiet country residence	20	1/16	.0001
Rustle of leaves	10	1/32	.00001
Threshold of hearing	0	1/64	.000001

SOURCE: U.S. Department of Housing and Urban Development, Aircraft Noise Impact—Planning Guidelines for Local Agencies, 1972.

Maximum Noise Level (Lmax): Lmax is the maximum or peak sound level during a noise event. The metric only accounts for the instantaneous peak intensity of the sound, and not for the duration of the event. As an aircraft passes by an observer, the sound level increases to a maximum level and then decreases. Some sound level meters measure and record the maximum level or Lmax.

Sound Exposure Level (SEL): SEL, expressed in dBA, is a time integrated measure, expressed in decibels, of the sound energy of a single noise event at a reference duration of one second. The sound level is integrated over the period that the level exceeds a threshold. Therefore, SEL accounts for both the maximum sound level and the duration of the sound. The standardization of discrete noise events into a one-second duration allows calculation of the cumulative noise exposure of a series of noise events that occur over a period of time. Because of this compression of sound energy, the SEL of an aircraft noise event is typically 7 to 12 dBA greater than the Lmax of the event. SELs for aircraft noise events depend on the location of the aircraft relative to the noise receptor, the type of operation (landing, takeoff, or overflight), and the type of aircraft. The SEL concept is depicted on **Figure C-2**.



Rio Vista Municipal Airport ALUCP.150732

SOURCE: Brown-Buntin Associates, Inc., November 2004.

Figure C-2
Sound Exposure Level Concept

Community Noise Equivalent Level (CNEL): The cumulative noise descriptor required for aircraft noise analyses in the State of California is the CNEL. CNEL is used to describe cumulative noise exposure for an annual-average day of aircraft operations. The CNEL is calculated by mathematically combining the number of single events that occur during a 24-hour day with how loud the events were and what time of day they occurred.

CNEL includes penalties applied to noise events occurring after 7:00 p.m. and before 7:00 a.m., when noise is considered more intrusive. The penalized time period is further subdivided into evening (7:00 p.m. through 9:59 p.m.) and nighttime (10:00 p.m. to 6:59 a.m.). CNEL treats every evening operation as though it were three and every night as though it were ten. This "weighting" adds a 4.77 dB penalty during the evening hours and a 10 dB penalty during the nighttime hours.

Because of the interrelationship between the weighted number of daily noise events and the noise levels generated by the events, it is possible to have the same CNEL value for an area exposed to a few loud events as for an area exposed to many quieter events.

The CNEL metric used for this aircraft noise analysis is based on an average annual day of aircraft operations, generally derived from data for a calendar year. An annual-average day (AAD) activity profile is computed by adding all aircraft operations occurring during the course

of a year and dividing the result by 365. As such, AAD does not reflect activities on any one specific day, but represents average conditions as they occur during the course of the year. The evening weighting is the only difference between CNEL and DNL. For purposes of aircraft noise analysis in the State of California, the FAA recognizes the use of CNEL, and the metric is used to assess potential significant impacts.

C.4 Aviation Environmental Design Tool

The Aviation Environmental Design Tool (AEDT) is the FAA's standard model for evaluating aircraft noise at airports. The AEDT Version 2b SP3 (which was the latest version of this model when the project was started) was used to model aircraft noise exposure at the Airport for the 2015 existing condition and 2035 future condition. The noise analysis used AEDT standard settings.

The AEDT uses runway and flight track information, operation levels distributed by time of day, aircraft fleet mix, and aircraft profiles as inputs. The AEDT calculates noise exposure levels at a series of "noise grids", and produces noise exposure contours based on the grid results, for a variety of noise metrics including CNEL, DNL, Lmax, Leq, and SEL. As described below, for this ALUCP the AEDT was used to calculate CNEL contours for existing conditions (2015) and 20-year future conditions (2035).

C.5 Existing and Future Conditions Noise Exposure

Noise exposure contours were developed for the Airport using the latest version of the FAA's AEDT. The following sections summarize the data/inputs used to develop the existing (2015) and future (2035) conditions CNEL contours. The 2035 CNEL contours are presented in Chapter 4 of this ALUCP.

C.5.1 Aircraft Operations and Fleet Mix

For CNEL aircraft noise exposure calculations, aircraft operations associated with the annual-average day (AAD) are used in the AEDT. The number of annual operations by each AEDT aircraft type is divided by 365 to arrive at the AAD level. This representation of airport activity does not reflect any particular day, but gives an accurate picture of the character of operations throughout the year. Use of AAD is required by the FAA for aircraft noise modeling.

2015 and 2035 AAD operations by aircraft type, operation type (i.e., arrival, departure, touch-and-go), and time of day are summarized in **Table C-4** of this Appendix. Touch-and-go operations in the AEDT consist of an arrival and a departure. The number of touch-and-go operations at the Airport in 2015 and 2035 was assumed to be 90% of local operations divided by two.

C.5.2 Time of Day

As noted previously, the CNEL metric applies different weighting penalties to aircraft operations during the evening or nighttime hours. Therefore, the average daily numbers of operations by aircraft type during the evening and nighttime periods are required inputs to the AEDT. Due to the CNEL weighting scheme, evening and nighttime operations have a greater potential effect on the shape and size of the noise exposure area than their number might suggest. In the calculation of CNEL, one operation during the evening hours is equivalent to three daytime operations and one operation during the nighttime hours is equivalent to 10 daytime operations.

Based on information contained in the 1988 ALUCP for Rio Vista Municipal Airport, it was assumed that approximately 90% of the operations at the Airport in 2015 were performed during daytime hours, 9% of the operations were performed during evening hours, and 1% of the operations were performed during nighttime hours. Note that it was also assumed that (1) jet engine aircraft operations were only performed during daytime and evening hours and (2) approximately 20% of agricultural related operations occurred during nighttime hours.

C.5.3 Runway Use

Runway use for departures or arrivals is typically a function of prevailing wind and weather; lengths and widths of the runways; runway instrumentation; and effects of other airports or air traffic facilities in the area. Runway use may also be influenced by the direction of flight of an arriving or departing aircraft; the aircraft parking position; and/or periodic closures of runways and taxiways. Finally, noise abatement procedures may also influence runway use at an airport.

Runway use information for the existing (2015) and future (2035) conditions was derived from the 1988 ALUCP and is presented in **Table C-2**.

TABLE C-2
EXISTING (2015) AND FUTURE (2035) CONDITIONS RUNWAY USE BY OPERATION TYPE

	Operational Category		
Runway	**SEP/MEP**	**JET**	**AG Departure / Arrival**
07	7%	10%	1% / 17%
25	70%	90%	96% / 80%
15	3%	0%	0.5% / 0.5%
33	20%	0%	2.5% / 2.5%

NOTES:
SEP = Single Engine Propeller Aircraft
MEP = Multi Engine Propeller Aircraft
JET = Jet Engine Aircraft
AG = Agricultural Aircraft

SOURCE: Solano County Airport Land Use Commission. Airport/Land Use Compatibility Plan, Rio Vista Municipal Airport and New Rio Vista Airport. May 1988.

C.5.4 Flight Tracks and Flight Track Use

Once aircraft leave a runway on departure or while approaching a runway on arrival, their location and altitude over surrounding communities becomes a determining factor in how much noise is experienced on the ground. For this reason, flight track information is an important input to the AEDT.

Flight tracks are defined to represent the typical paths of the large majority of aircraft located throughout the study area. When using AEDT, these flight tracks are specified to capture the complexity of the actual flight patterns by representing the center of a specific flow of traffic.

Arrival, departure, and touch and go flight tracks used to model existing conditions (2015) and future conditions (2035) noise contours for the Airport are presented at the end of this appendix on **Figures C-3 through C-6.** Due to the extension of the Runway 7-25 in the future (2035), touch and go flight tracks are larger than ones used in the existing conditions (2015). Arrival and departure flight tracks would remain unchanged in the future. **Table C-3** presents flight track use data for existing conditions (2015) and future conditions (2035).

C.6 Future Conditions Noise Exposure

Noise exposure contours were developed for the Airport using the latest version of the FAA's AEDT. The following sections summarize the data/inputs used to develop the future conditions (2035) CNEL contours presented in Section 4 of this ALUCP.

It should be noted that FAA's Terminal Area Forecast (TAF) predicts that the number of aircraft operations at the airport in 2035 will be unchanged from the number of aircraft operations that occurred in 2015. For the purposes of developing aircraft noise contours for 2035, it was assumed that time of day, runway use, and flight track use in 2035 will also be unchanged from 2015. The primary difference between the existing conditions (2015) and future conditions (2035) scenarios involves the length of Runway 07-25. According to the Rio Vista Municipal Airport Layout Plan, May 2016, Runway 07-25 will be extended by approximately 1,700 feet to the east in the future.

TABLE C-3
FLIGHT TRACK USE BY RUNWAY AND OPERATION TYPE

Flight Track Name[1]	Runway	Operation Type	Track Use %
07D1	07	Departure	100%
		Subtotal	**100%**
25D1	25	Departure	95%[1]
25D2	25	Departure	95%[1]
25D3	25	Departure	5%[2]
		Subtotal	**100%**
15D1	15	Departure	100%
		Subtotal	**100%**
33D1	33	Departure	100%
		Subtotal	**100%**
07A1	07	Arrival	100%
		Subtotal	**100%**
25A1	25	Arrival	95%
25A2	25	Arrival	5%[2]
		Subtotal	**100%**
15A1	15	Arrival	100%
		Subtotal	**100%**
33A1	33	Arrival	100%
		Subtotal	**100%**
07T1	07	Touch and Go	100%
		Subtotal	**100%**
25T1	25	Touch and Go	100%
		Subtotal	**100%**
15T1	15	Touch and Go	100%
		Subtotal	**100%**
33T1	33	Touch and Go	100%
		Subtotal	**100%**
H1D1	Helipad	Departure	70%
H1D2	Helipad	Departure	7%
H1D3	Helipad	Departure	20%
H1D4	Helipad	Departure	3%
		Subtotal	**100%**
H1A1	Helipad	Arrival	70%
H1A2	Helipad	Arrival	7%
H1A3	Helipad	Arrival	20%
H1A4	Helipad	Arrival	3%
		Subtotal	**100%**

[1] 25D1 is used by aircraft, which will be greater than 700 feet above ground elevation before making a right turn over the residential area. 25D2 is used by aircraft, which will be less than 700 feet above ground elevation over the residential area.
[2] 25A2 and 25D3 comprise the arrival and departure portions of the published missed approach flight procedure.

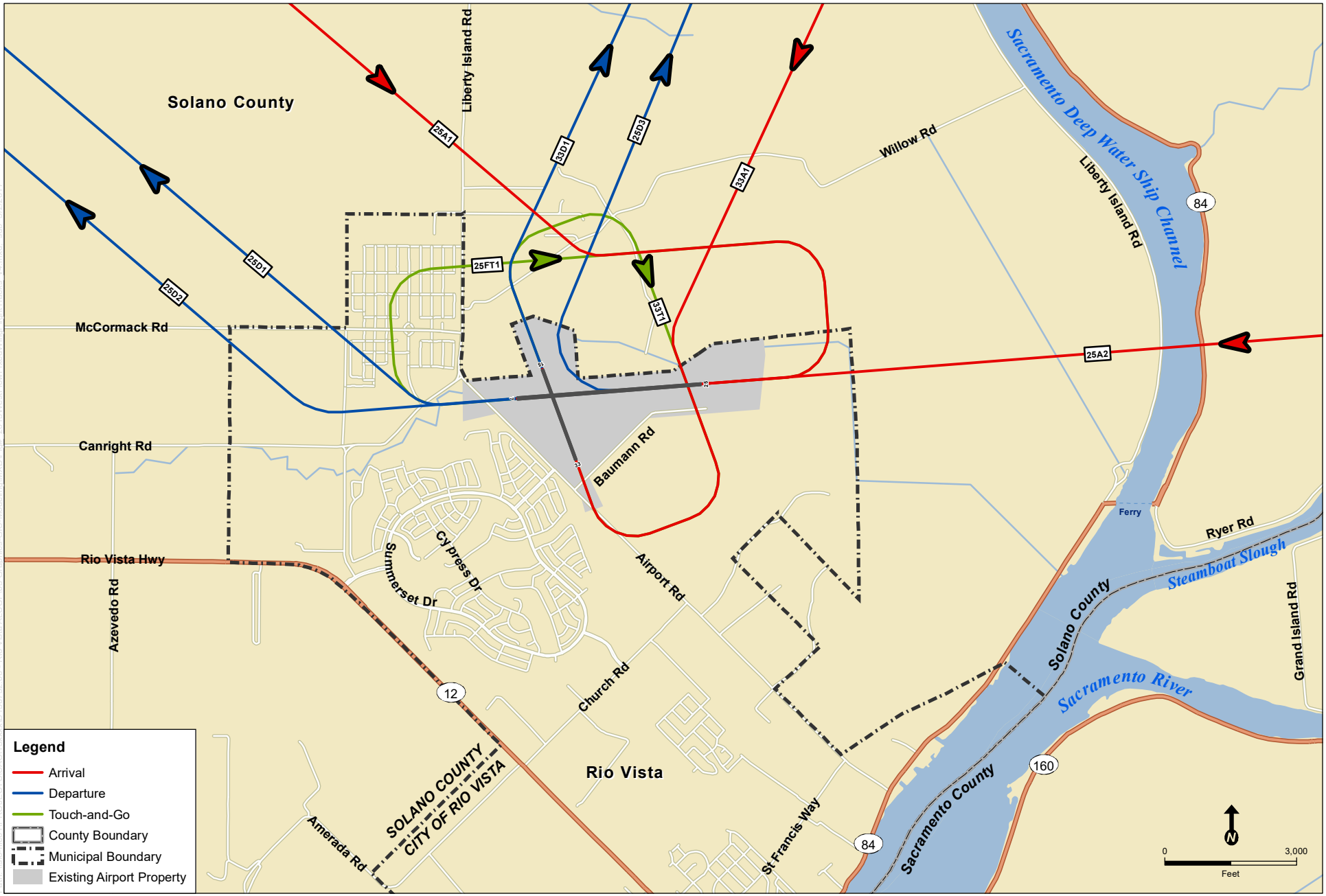
SOURCE: ESA 2016

TABLE C-4
ANNUAL AVERAGE DAY OPERATIONS – EXISTING (2015) AND FUTURE (2035) CONDITIONS

		Arrivals			Departures			Touch-and-Go Operations		
Aircraft Type	**INM Type**	**Day**	**Evening**	**Night**	**Day**	**Evening**	**Night**	**Day**	**Evening**	**Night**
Helicopter	B206L	1.18	0.12	0.02	1.18	0.12	0.02	0.00	0.00	0.00
Single-engine propeller	GASEPV	7.99	0.80	0.13	7.99	0.80	0.13	20.49	1.08	0.00
Single-engine propeller	GASEPF	4.44	0.45	0.07	4.44	0.45	0.07	0.00	0.00	0.00
Single-engine propeller	CNA172	1.77	0.18	0.03	1.77	0.18	0.03	0.00	0.00	0.00
Single-engine propeller	CNA206	1.77	0.18	0.03	1.77	0.18	0.03	0.00	0.00	0.00
Single-engine propeller	PA28	1.77	0.18	0.03	1.77	0.18	0.03	0.00	0.00	0.00
Multi-engine propeller	BEC58P	2.49	0.25	0.04	2.49	0.25	0.04	0.00	0.00	0.00
Multi-engine propeller	PA30	1.07	0.11	0.02	1.07	0.11	0.02	0.00	0.00	0.00
Jet	LEAR35	0.07	0.01	0.00	0.07	0.01	0.00	0.00	0.00	0.00
Jet	CNA500	0.05	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00
	Total	**22.60**	**2.28**	**0.37**	**22.60**	**2.28**	**0.37**	**20.49**	**1.08**	**0.00**

NOTE: In the AEDT, a touch-and-go operation consists of an arrival and a departure. Touch and go operations were divided by two to calculate the number of touch-and-go operations at Rio Vista Airport.

SOURCES: ESA, 2016, based on aircraft operation information included in the 1988 ALUCP. FAA TAF, 2016.



SOURCE: ESA, 2016; ESRI Mapping Services

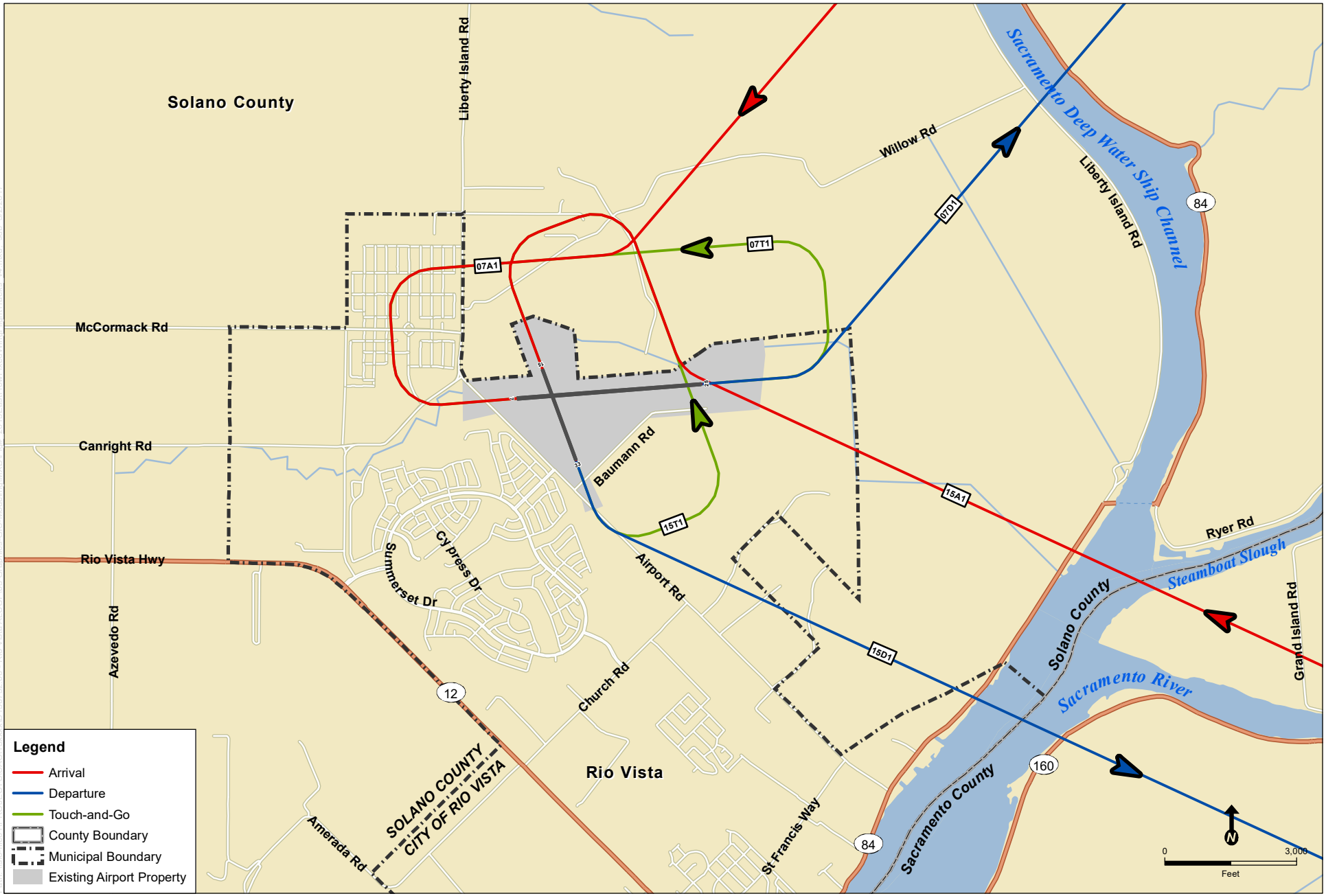
Rio Vista Municipal Airport ALUCP.150732

Figure C-3

2015 West Flow Fixed-Wing Flight Tracks
Rio Vista Municipal Airport

ESA

Draft - Subject to Change



SOURCE: ESA, 2016; ESRI Mapping Services

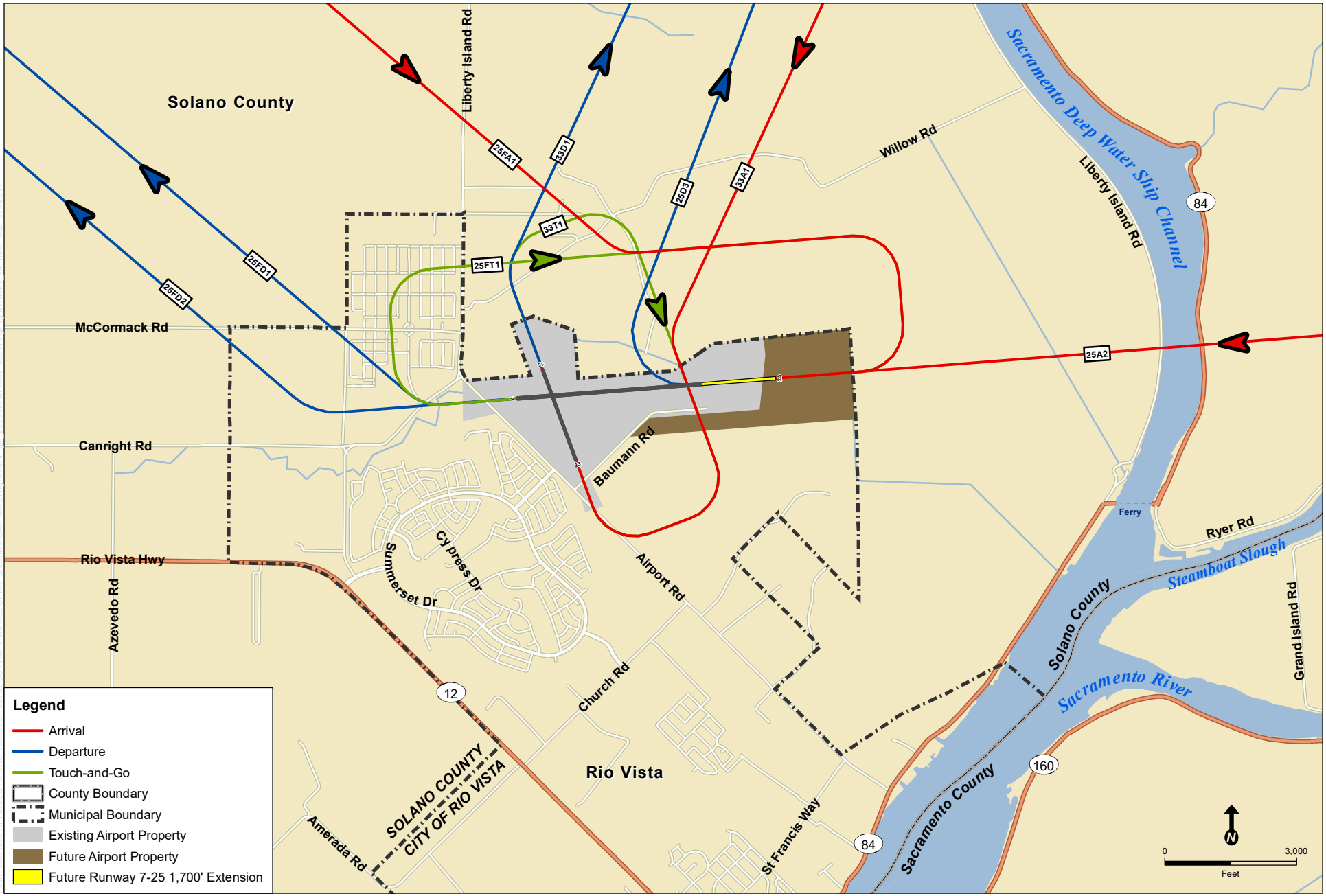
Rio Vista Municipal Airport ALUCP.150732

Figure C-4

2015 East Flow Fixed-Wing Flight Tracks
Rio Vista Municipal Airport

ESA

Draft - Subject to Change



SOURCE: ESA, 2016; ESRI Mapping Services

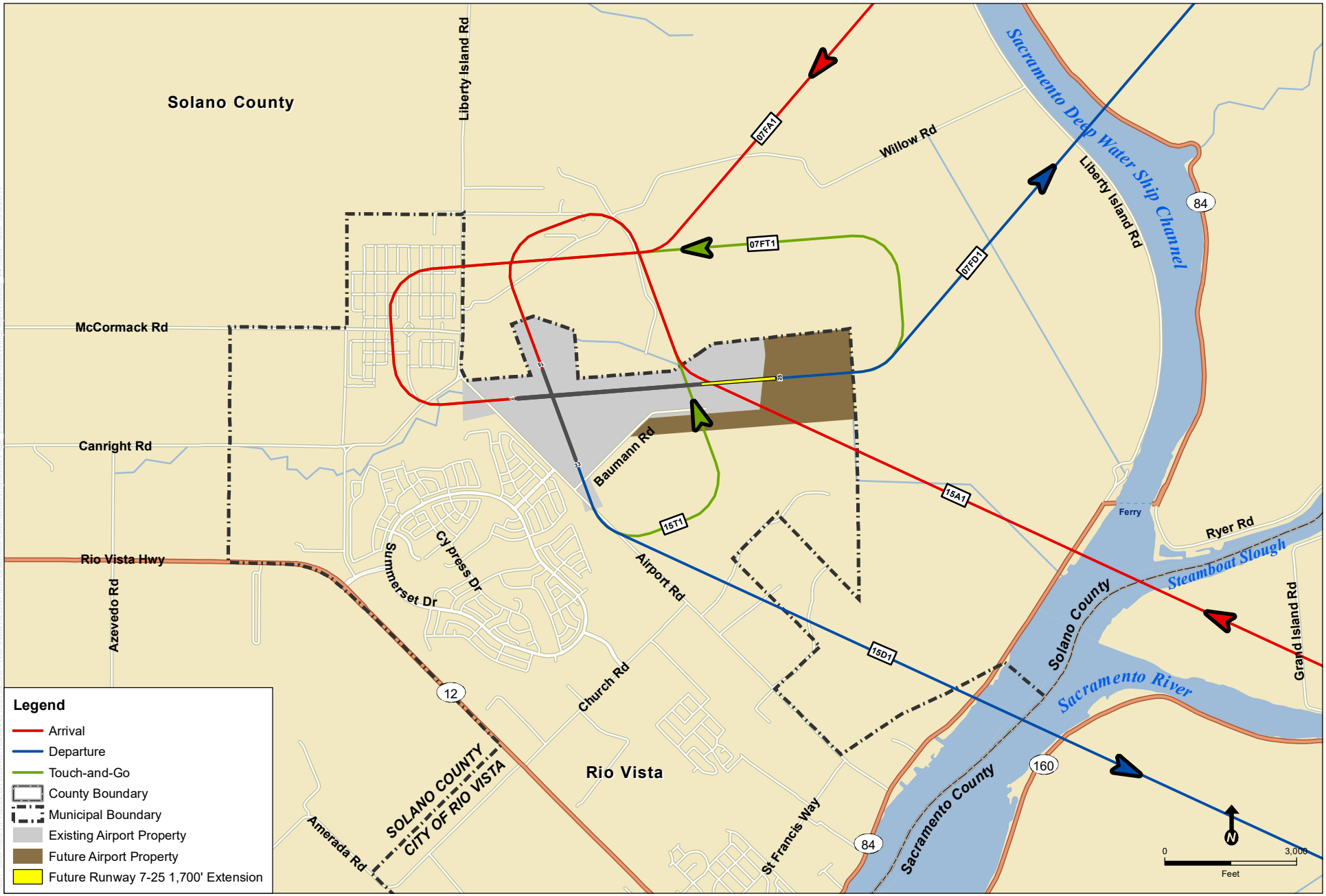
Rio Vista Municipal Airport ALUCP.150732

Figure C-5

2035 West Flow Fixed-Wing Flight Tracks
Rio Vista Municipal Airport

ESA

Draft - Subject to Change



SOURCE: ESA, 2016; ESRI Mapping Services

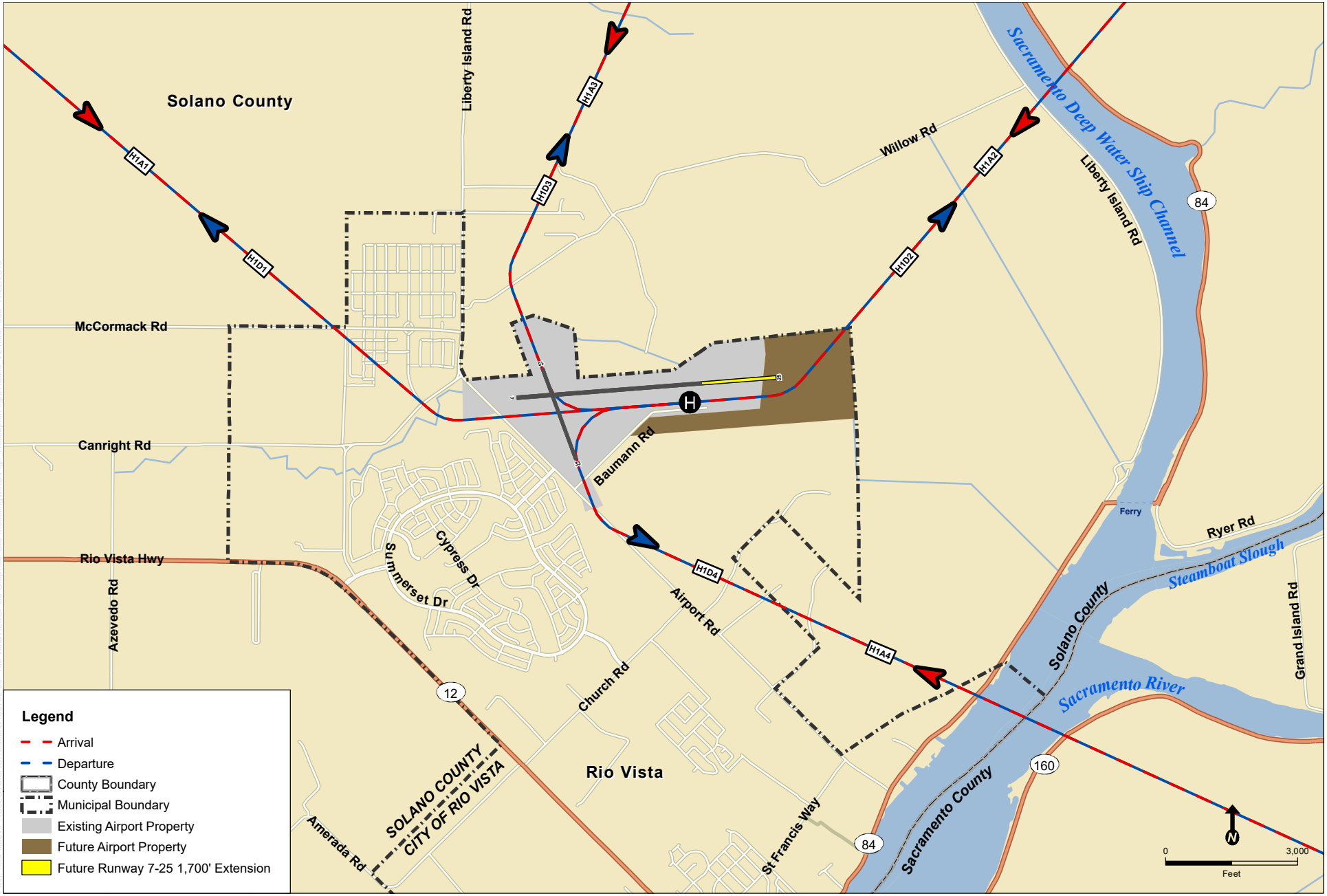
Rio Vista Municipal Airport ALUCP.150732

Figure C-6

2035 East Flow Fixed-Wing Flight Tracks
Rio Vista Municipal Airport

ESA

Draft - Subject to Change



SOURCE: ESA, 2016; ESRI Mapping Services

Rio Vista Municipal Airport ALUCP.150732

Figure C-7

Helicopter Flight Tracks
Rio Vista Municipal Airport

ESA

Draft - Subject to Change

This page intentionally left blank

APPENDIX D

Methods for Determining Concentrations of People

APPENDIX D

Methods for Determining Concentrations of People

One criterion used in many compatibility plans is the maximum number of people per acre that can be present in a given area at any one time. If a proposed use exceeds the maximum density, it is considered inconsistent with compatibility planning policies. This appendix provides some guidance on how the people-per-acre determination can be made.

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. Some assumption regarding the number of people per vehicle needs to be developed to calculate the number of people on-site. 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.
- Maximum Occupancy- The Uniform or California Building Code (CBC) can be used as a standard for determining the maximum occupancy of certain uses. Table D-1 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 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 percent) to reflect the actual occupancy levels before making the final people-per-acre determination. Even with this adjustment, the CBC-based methodology typically produces intensities at the high end of the likely range.
- Survey of Similar Uses - Certain uses may require an estimate based upon a survey of similar uses. This approach is more difficult, but is appropriate for uses which, because of the nature of the use, cannot be reasonably estimated based upon parking or square footage.

Appendix D1 shows sample calculations.

TABLE D-1
MAXIMUM FLOOR AREA ALLOWANCES PER OCCUPANT[1]

Function of Space	Occupant Load Factor[2]
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
Concourse	100 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 1004.4[3]
Assembly without fixed seats	
Concentrated (chairs only—not fixed)	7 net
Standing space	5 net
Unconcentrated (tables and chairs)	15 net
Business areas	100 gross
Courtrooms	40 net
Day care	35 net
Dormitories	50 gross
Educational	
Classroom area	20 net
Shops and other vocational room areas	50 net
Exercise rooms	50 gross
Group H-5 Fabrication and manufacturing areas	200 gross
Industrial areas	100 gross
Institutional Areas	
Inpatient treatment areas	240 gross
Outpatient areas	100 gross
Sleeping areas	100 gross
Kitchens, commercial	200 gross
Laboratory	
Educational	50 net
Laboratories, non-educational	100 net
Laboratory suite[4]	200 gross
Library	
Reading rooms	50 net
Stack area	100 gross
Mall buildings – covered and open	See Section 402.8.2[5]
Mercantile	
Areas on other floors	60 gross
Basement and grade floor areas	30 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

NOTES:

1. For SI: 1 square foot = 0.929 m^2

2. Floor area in square feet per occupant.

3. **Section 1004.4 Fixed seating.**

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 1004.1.2 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 1108.2.3.

For areas having fixed seating without dividing arms, the occupant load shall not be less than the number of seats based on 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.

4. **Section 443.2 Definitions.** The following terms are defined in Chapter 2 [of the CBC]:

Laboratory suite.

[F] Liquid tight floor.

5. **Section 402.8.2 Determination of occupant load.**

The occupant load permitted in any individual tenant space in a covered or open mall building shall be determined by this code. Means of egress requirements for individual tenant spaces shall be based on the occupant load thus determined.

402.8.2.1 Occupant formula

In determining required means of egress of the mall, the number of occupants for whom means of egress are to be provided shall be based on gross leasable area of the covered or open mall building (excluding anchor buildings) and the occupant load factor as determined by Equation 4-1.

OLF = (0.00007) (GLA) + 25

Equation 4-1

where:

OLF = The occupant load factor (square feet per person)

GLA = The gross leasable area (square feet).

Exception: Tenant spaces attached to a covered or open mall building but with a means of egress system that is totally independent of the open mall of an open mall building or of a covered mall building shall not be considered as gross leasable area for determining the required means of egress for the mall building.

402.8.2.2 OLF range. The occupant load factor (OLF) is not required to be less than 30 and shall not exceed 50.

402.8.2.3 Anchor buildings. The occupant load of anchor buildings opening into the mall shall not be included in computing the total number of occupants for the mall.

402.8.2.4 Food courts. The occupant load of a food court shall be determined in accordance with Section 1004. For the purposes of determining the means of egress requirements for the mall, the food court occupant load shall be added to the occupant load of the covered or open mall building as calculated above.

SOURCE: California Building Code (2013), Table 1004.1.2 (p. 372)

Appendix D1
Sample People-Per-Acre Calculations

Example 1

Proposed Development: Two office buildings, each two stories and containing 20,000 square feet of floor area per building. Site size is 3.0 net acres. Counting a portion of the adjacent road, the gross area of the site is 3.5± acres.

A. Calculation Based on Parking Space Requirements

For office uses, assume that a county or city parking ordinance requires 1 parking space for every 300 square feet of floor area. Data from traffic studies or other sources can be used to estimate the average vehicle occupancy. For the purposes of this example, the number of people on the property is assumed to equal 1.5 times the number of parking spaces.

The average usage intensity would therefore be calculated as follows:

1) 40,000 sq. ft. floor area x 1.0 parking space per 300 sq. ft. = 134 required parking spaces
2) 134 parking spaces x 1.5 people per space = 201 people maximum on site
3) 200 people / 3.5 acres gross site size = 57 people per acre average for the site

Assuming that occupancy of each building is relatively equal throughout, but that there is some separation between the buildings and outdoor uses are minimal, the usage intensity for a single acre would be estimated to be:

1) 20,000 sq. ft. bldg. / 2 stories = 10,000 sq. ft. bldg. footprint
2) 10,000 sq. ft. bldg. footprint / 43,560 sq. ft. per acre= 0.23 acre bldg. footprint
3) Building footprint <1.0 acre; therefore maximum people in 1 acre = bldg. occupancy = 100 people per single acre

B. Calculation Based on California Building Code

Using the CBC (Appendix D1) as the basis for estimating building occupancy yields the following results for the above example:

1) 40,000 sq. ft. bldg. / 100 sq. ft./occupant = 400 people max. bldg. occupancy (under UBC)
2) 400 max. bldg. occupancy x 50% adjustment = 200 people maximum on site
3) 200 people / 3.5 acres gross site size = 57 people per acre average tor the site

Conclusions: In this instance, both methodologies give the same results. For different uses and/or different assumptions, the two methodologies are likely to produce different numbers. In most such cases, the CBC methodology will indicate a higher intensity.

APPENDIX E

State Laws Related to Airport Land Use Planning

APPENDIX E: STATE LAWS RELATED TO AIRPORT LAND USE PLANNING

Table of Contents

(as of May 2017)

Public Utilities Code Sections

21670–21679.5 Airport Land Use Commission E–1
(complete article)

21402–21403 Regulation of Aeronautics E–14
(excerpts pertaining to rights of aircraft flight)

21417 Regulation of Aeronautics E–15
(excerpts pertaining to meteorological towers)

21655, 21658, 21659 Regulation of Obstructions E–17
(excerpts)

21661.5, 21664.5 Regulation of Airports E–19
(excerpts pertaining to approval of new airports and airport expansion)

Government Code Sections

65302.3 Authority for and Scope of General Plans E–20
(excerpts pertaining to general plans consistency with airport land use plans)

65943–65945.7 Application for Development Projects E–21
(excerpts referenced in State Aeronautics Act)

66030–66031 Mediation and Resolution of Land Use Disputes E–26
(excerpts applicable to ALUC decisions)

66455.9 School Site Review E–28
(excerpts applicable to ALUCs)

Education Code Sections

17215 School Facilities, General Provisions E–29
(excerpts pertaining to Department of Transportation review of elementary and secondary school sites)

81033 Community Colleges, School Sites E–31
(excerpts pertaining to Department of Transportation review of community college sites)

Public Resources Code Sections

21096 California Environmental Quality Act, Airport Planning E–33
(excerpts pertaining to projects near airports)

Business and Professions Code Sections

11010 Regulation of Real Estate Transactions, Subdivided Lands..... E–34
(excerpts regarding airport influence area disclosure requirements)

Civil Code Sections

1103–1103.4 Disclosure of Natural Hazards upon Transfer of Residential Property E–35
1353 Common Interest Developments..... E–39
(excerpts regarding airport influence area disclosure requirements)

Legislative History Summary

Airport Land Use Commission Statutes E–40

AERONAUTICS LAW

PUBLIC UTILITIES CODE
Division 9 — Aviation
Part 1 — State Aeronautics Act
Chapter 4 — Airports and Air Navigation Facilities

Article 3.5
AIRPORT LAND USE COMMISSION

(As of April 2015)

21670. Creation; Membership; Selection

(a) The Legislature hereby finds and declares that:

(1) It is in the public interest to provide for the orderly development of each public use airport in this state and the area surrounding these airports so as to promote the overall goals and objectives of the California airport noise standards adopted pursuant to Section 21669 and to prevent the creation of new noise and safety problems.

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

(b) In order to achieve the purposes of this article, every county in which there is located an airport which is served by a scheduled airline shall establish an airport land use commission. Every county, in which there is located an airport which is not served by a scheduled airline, but is operated for the benefit of the general public, shall establish an airport land use commission, except that the board of supervisors of the county may, after consultation with the appropriate airport operators and affected local entities and after a public hearing, adopt a resolution finding that there are no noise, public safety, or land use issues affecting any airport in the county which require the creation of a commission and declaring the county exempt from that requirement. The board shall, in this event, transmit a copy of the resolution to the Director of Transportation. For purposes of this section, "commission" means an airport land use commission. Each commission shall consist of seven members to be selected as follows:

(1) Two representing the cities in the county, appointed by a city selection committee comprised of the mayors of all the cities within that county, except that if there are any cities contiguous or adjacent to the qualifying airport, at least one representative shall be appointed therefrom. If there are no cities within a county, the number of representatives provided for by paragraphs (2) and (3) shall each be increased by one.

(2) Two representing the county, appointed by the board of supervisors.

(3) Two having expertise in aviation, appointed by a selection committee comprised of the managers of all of the public airports within that county.

(4) One representing the general public, appointed by the other six members of the commission.

(c) Public officers, whether elected or appointed, may be appointed and serve as members of the commission during their terms of public office.

(d) Each member shall promptly appoint a single proxy to represent him or her in commission affairs and to vote on all matters when the member is not in attendance. The proxy shall be designated in a signed written instrument which shall be kept on file at the commission offices, and the proxy shall serve at the pleasure of the appointing member. A vacancy in the office of proxy shall be filled promptly by appointment of a new proxy.

(e) A person having an "expertise in aviation" means a person who, by way of education, training, business, experience, vocation, or avocation has acquired and possesses particular knowledge of, and familiarity with, the function, operation, and role of airports, or is an elected official of a local agency which owns or operates an airport.

(f) It is the intent of the Legislature to clarify that, for the purposes of this article, that special districts, school districts, and community college districts are included among the local agencies that are subject to airport land use laws and other requirements of this article.

21670.1. Action by Designated Body Instead of Commission

(a) Notwithstanding any other provision of this article, if the board of supervisors and the city selection committee of mayors in the county each makes a determination by a majority vote that proper land use planning can be accomplished through the actions of an appropriately designated body, then the body so designated shall assume the planning responsibilities of an airport land use commission as provided for in this article, and a commission need not be formed in that county.

(b) A body designated pursuant to subdivision (a) that does not include among its membership at least two members having expertise in aviation, as defined in subdivision (e) of Section 21670, shall, when acting in the capacity of an airport land use commission, be augmented so that body, as augmented, will have at least two members having that expertise. The commission shall be constituted pursuant to this section on and after March 1, 1988.

(c) (1) Notwithstanding subdivisions (a) and (b), and subdivision (b) of Section 21670, if the board of supervisors of a county and each affected city in that county each makes a determination that proper land use planning pursuant to this article can be accomplished pursuant to this subdivision, then a commission need not be formed in that county.

(2) If the board of supervisors of a county and each affected city makes a determination that proper land use planning may be accomplished and a commission is not formed pursuant to paragraph (1), that county and the appropriate affected cities having jurisdiction over an airport, subject to the review and approval by the Division of Aeronautics of the department, shall do all of the following:

(A) Adopt processes for the preparation, adoption, and amendment of the airport land use compatibility plan for each airport that is served by a scheduled airline or operated for the benefit of the general public.

(B) Adopt processes for the notification of the general public, landowners, interested groups, and other public agencies regarding the preparation, adoption, and amendment of the airport land use compatibility plans.

(C) Adopt processes for the mediation of disputes arising from the preparation, adoption, and amendment of the airport land use compatibility plans.

(D) Adopt processes for the amendment of general and specific plans to be consistent with the airport land use compatibility plans.

(E) Designate the agency that shall be responsible for the preparation, adoption, and amendment of each airport land use compatibility plan.

(3) The Division of Aeronautics of the department shall review the processes adopted pursuant to paragraph (2), and shall approve the processes if the division determines that the processes are consistent with the procedure required by this article and will do all of the following:

(A) Result in the preparation, adoption, and implementation of plans within a reasonable amount of time.

(B) Rely on the height, use, noise, safety, and density criteria that are compatible with airport operations, as established by this article, and referred to as the Airport Land Use Planning Handbook, published by the division, and any applicable federal aviation regulations, including, but not limited to, Part 77 (commencing with Section 77.1) of Title 14 of the Code of Federal Regulations.

(C) Provide adequate opportunities for notice to, review of, and comment by the general public, landowners, interested groups, and other public agencies.

(4) If the county does not comply with the requirements of paragraph (2) within 120 days, then the airport land use compatibility plan and amendments shall not be considered adopted pursuant to this article and a commission shall be established within 90 days of the determination of noncompliance by the division and an airport land use compatibility plan shall be adopted pursuant to this article within 90 days of the establishment of the commission.

(d) A commission need not be formed in a county that has contracted for the preparation of airport land use compatibility plans with the Division of Aeronautics under the California Aid to Airports Program (Chapter 4 (commencing with Section 4050) of Title 21 of the California Code of Regulations), Project Ker-VAR 90-1, and that submits all of the following information to the Division of Aeronautics for review and comment that the county and the cities affected by the airports within the county, as defined by the airport land use compatibility plans:

(1) Agree to adopt and implement the airport land use compatibility plans that have been developed under contract.

(2) Incorporated the height, use, noise, safety, and density criteria that are compatible with airport operations as established by this article, and referred to as the Airport Land Use Planning Handbook, published by the division, and any applicable federal aviation

regulations, including, but not limited to, Part 77 (commencing with Section 77.1) of Title 14 of the Code of Federal Regulations, as part of the general and specific plans for the county and for each affected city.

(3) If the county does not comply with this subdivision on or before May 1, 1995, then a commission shall be established in accordance with this article.

(e) (1) A commission need not be formed in a county if all of the following conditions are met:

(A) The county has only one public use airport that is owned by a city.

(B) (i) The county and the affected city adopt the elements in paragraph (2) of subdivision (d), as part of their general and specific plans for the county and the affected city.

(ii) The general and specific plans shall be submitted, upon adoption, to the Division of Aeronautics. If the county and the affected city do not submit the elements specified in paragraph (2) of subdivision (d), on or before May 1, 1996, then a commission shall be established in accordance with this article.

21670.2. Applicability to Counties Having over 4 Million in Population

(a) Sections 21670 and 21670.1 do not apply to the County of Los Angeles. In that county, the county regional planning commission has the responsibility for coordinating the airport planning of public agencies within the county. In instances where impasses result relative to this planning, an appeal may be made to the county regional planning commission by any public agency involved. The action taken by the county regional planning commission on such an appeal may be overruled by a four-fifths vote of the governing body of a public agency whose planning led to the appeal.

(b) By January 1, 1992, the county regional planning commission shall adopt the airport land use compatibility plans required pursuant to Section 21675.

(c) Sections 21675.1, 21675.2, and 21679.5 do not apply to the County of Los Angeles until January 1, 1992. If the airport land use compatibility plans required pursuant to Section 21675 are not adopted by the county regional planning commission by January 1, 1992, Sections 21675.1 and 21675.2 shall apply to the County of Los Angeles until the airport land use compatibility plans are adopted.

21670.3. San Diego County

(a) Sections 21670 and 21670.1 do not apply to the County of San Diego. In that county, the San Diego County Regional Airport Authority, as established pursuant to Section 170002, shall be responsible for the preparation, adoption, and amendment of an airport land use compatibility plan for each airport in San Diego County.

(b) The San Diego County Regional Airport Authority shall engage in a public collaborative planning process when preparing and updating an airport land use compatibility plan.

21670.4. Intercounty Airports

(a) As used in this section, "intercounty airport" means any airport bisected by a county line through its runways, runway protection zones, inner safety zones, inner turning zones, outer safety zones, or sideline safety zones, as defined by the department's Airport Land Use Planning Handbook and referenced in the airport land use compatibility plan formulated under Section 21675.

(b) It is the purpose of this section to provide the opportunity to establish a separate airport land use commission so that an intercounty airport may be served by a single airport land use planning agency, rather than having to look separately to the airport land use commissions of the affected counties.

(c) In addition to the airport land use commissions created under Section 21670 or the alternatives established under Section 21670.1, for their respective counties, the boards of supervisors and city selection committees for the affected counties, by independent majority vote of each county's two delegations, for any intercounty airport, may do either of the following:

(1) Establish a single separate airport land use commission for that airport. That commission shall consist of seven members to be selected as follows:

(A) One representing the cities in each of the counties, appointed by that county's city selection committee.

(B) One representing each of the counties, appointed by the board of supervisors of each county.

(C) One from each county having expertise in aviation, appointed by a selection committee comprised of the managers of all the public airports within that county.

(D) One representing the general public, appointed by the other six members of the commission.

(2) In accordance with subdivision (a) or (b) of Section 21670.1, designate an existing appropriate entity as that airport's land use commission.

21670.6

Any action brought in the superior court relating to this article may be subject to a mediation proceeding conducted pursuant to Chapter 9.3 (commencing with Section 66030) of Division 1 of Title 7 of the Government Code.

21671. Airports Owned by a City, District, or County; Appointment of Certain Members by Cities and Counties

In any county where there is an airport operated for the general public which is owned by a city or district in another county or by another county, one of the representatives provided by paragraph (1) of subdivision (b) of Section 21670 shall be appointed by the city selection

committee of mayors of the cities of the county in which the owner of that airport is located, and one of the representatives provided by paragraph (2) of subdivision (b) of Section 21670 shall be appointed by the board of supervisors of the county in which the owner of that airport is located.

21671.5. Term of Office

(a) Except for the terms of office of the members of the first commission, the term of office of each member shall be four years and until the appointment and qualification of his or her successor. The members of the first commission shall classify themselves by lot so that the term of office of one member is one year, of two members is two years, of two members is three years, and of two members is four years. The body that originally appointed a member whose term has expired shall appoint his or her successor for a full term of four years. Any member may be removed at any time and without cause by the body appointing that member. The expiration date of the term of office of each member shall be the first Monday in May in the year in which that member's term is to expire. Any vacancy in the membership of the commission shall be filled for the unexpired term by appointment by the body which originally appointed the member whose office has become vacant. The chairperson of the commission shall be selected by the members thereof.

(b) Compensation, if any, shall be determined by the board of supervisors.

(c) Staff assistance, including the mailing of notices and the keeping of minutes and necessary quarters, equipment, and supplies shall be provided by the county. The usual and necessary operating expenses of the commission shall be a county charge.

(d) Notwithstanding any other provisions of this article, the commission shall not employ any personnel either as employees or independent contractors without the prior approval of the board of supervisors.

(e) The commission shall meet at the call of the commission chairperson or at the request of the majority of the commission members. A majority of the commission members shall constitute a quorum for the transaction of business. No action shall be taken by the commission except by the recorded vote of a majority of the full membership.

(f) The commission may establish a schedule of fees necessary to comply with this article. Those fees shall be charged to the proponents of actions, regulations, or permits, shall not exceed the estimated reasonable cost of providing the service, and shall be imposed pursuant to Section 66016 of the Government Code. Except as provided in subdivision (g), after June 30, 1991, a commission that has not adopted the airport land use compatibility plan required by Section 21675 shall not charge fees pursuant to this subdivision until the commission adopts the plan.

(g) In any county that has undertaken by contract or otherwise completed airport land use compatibility plans for at least one-half of all public use airports in the county, the commission may continue to charge fees necessary to comply with this article until June 30, 1992, and, if the airport land use compatibility plans are complete by that date, may continue charging fees after June 30, 1992. If the airport land use compatibility plans are not complete by June 30, 1992, the commission shall not charge fees pursuant to subdivision (f) until the commission adopts the land use plans.

21672. Rules and Regulations

Each commission shall adopt rules and regulations with respect to the temporary disqualification of its members from participating in the review or adoption of a proposal because of conflict of interest and with respect to appointment of substitute members in such cases.

21673. Initiation of Proceedings for Creation by Owner of Airportz

In any county not having a commission or a body designated to carry out the responsibilities of a commission, any owner of a public airport may initiate proceedings for the creation of a commission by presenting a request to the board of supervisors that a commission be created and showing the need therefor to the satisfaction of the board of supervisors.

21674. Powers and Duties

The commission has the following powers and duties, subject to the limitations upon its jurisdiction set forth in Section 21676:

(a) To assist local agencies in ensuring compatible land uses in the vicinity of all new airports and in the vicinity of existing airports to the extent that the land in the vicinity of those airports is not already devoted to incompatible uses.

(b) To coordinate planning at the state, regional, and local levels so as to provide for the orderly development of air transportation, while at the same time protecting the public health, safety, and welfare.

(c) To prepare and adopt an airport land use compatibility plan pursuant to Section 21675.

(d) To review the plans, regulations, and other actions of local agencies and airport operators pursuant to Section 21676.

(e) The powers of the commission shall in no way be construed to give the commission jurisdiction over the operation of any airport.

(f) In order to carry out its responsibilities, the commission may adopt rules and regulations consistent with this article.

21674.5. Training of Airport Land Use Commission's Staff

(a) The Department of Transportation shall develop and implement a program or programs to assist in the training and development of the staff of airport land use commissions, after consulting with airport land use commissions, cities, counties, and other appropriate public entities.

(b) The training and development program or programs are intended to assist the staff of airport land use commissions in addressing high priority needs, and may include, but need not be limited to, the following:

(1) The establishment of a process for the development and adoption of airport land use compatibility plans.

(2) The development of criteria for determining the airport influence area.

(3) The identification of essential elements that should be included in the airport land use compatibility plans.

(4) Appropriate criteria and procedures for reviewing proposed developments and determining whether proposed developments are compatible with the airport use.

(5) Any other organizational, operational, procedural, or technical responsibilities and functions that the department determines to be appropriate to provide to commission staff and for which it determines there is a need for staff training or development.

(c) The department may provide training and development programs for airport land use commission staff pursuant to this section by any means it deems appropriate. Those programs may be presented in any of the following ways:

(1) By offering formal courses or training programs.

(2) By sponsoring or assisting in the organization and sponsorship of conferences, seminars, or other similar events.

(3) By producing and making available written information.

(4) Any other feasible method of providing information and assisting in the training and development of airport land use commission staff.

21674.7. Airport Land Use Planning Handbook

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

(b) It is the intent of the Legislature to discourage incompatible land uses near existing airports. Therefore, prior to granting permits for the renovation or remodeling of an existing building, structure, or facility, and before the construction of a new building, it is the intent of the Legislature that local agencies shall be guided by the height, use, noise, safety, and density criteria that are compatible with airport operations, as established by this article, and referred to as the Airport Land Use Planning Handbook, published by the division, and any applicable federal aviation regulations, including, but not limited to, Part 77 (commencing with Section 77.1) of Title 14 of the Code of Federal Regulations, to the extent that the criteria has been incorporated into the plan prepared by a commission pursuant to Section 21675. This subdivision does not limit the jurisdiction of a commission as established by this article. This subdivision does not limit the authority of local agencies to overrule commission actions or recommendations pursuant to Sections 21676, 21676.5, or 21677.

21675. Land Use Plan

(a) Each commission shall formulate an airport land use compatibility plan that will provide for the orderly growth of each public airport and the area surrounding the airport within the jurisdiction of the commission, and will safeguard the general welfare of the inhabitants within the vicinity of the airport and the public in general. The commission's airport land use compatibility plan shall include and shall be based on a long-range master plan or an airport layout plan, as determined by the Division of Aeronautics of the Department of Transportation, that reflects the anticipated growth of the airport during at least the next 20 years. In formulating an airport land use compatibility plan, the commission may develop height restrictions on buildings, specify use of land, and determine building standards, including soundproofing adjacent to airports, within the airport influence area. The airport land use compatibility plan shall be reviewed as often as necessary in order to accomplish its purposes, but shall not be amended more than once in any calendar year.

(b) The commission shall include, within its airport land use compatibility plan formulated pursuant to subdivision (a), the area within the jurisdiction of the commission surrounding any military airport for all of the purposes specified in subdivision (a). The airport land use compatibility plan shall be consistent with the safety and noise standards in the Air Installation Compatible Use Zone prepared for that military airport. This subdivision does not give the commission any jurisdiction or authority over the territory or operations of any military airport.

(c) The airport influence area shall be established by the commission after hearing and consultation with the involved agencies.

(d) The commission shall submit to the Division of Aeronautics of the department one copy of the airport land use compatibility plan and each amendment to the plan.

(e) If an airport land use compatibility plan does not include the matters required to be included pursuant to this article, the Division of Aeronautics of the department shall notify the commission responsible for the plan.

21675.1. Adoption of Land Use Plan

(a) By June 30, 1991, each commission shall adopt the airport land use compatibility plan required pursuant to Section 21675, except that any county that has undertaken by contract or otherwise completed airport land use compatibility plans for at least one-half of all public use airports in the county, shall adopt that airport land use compatibility plan on or before June 30, 1992.

(b) Until a commission adopts an airport land use compatibility plan, a city or county shall first submit all actions, regulations, and permits within the vicinity of a public airport to the commission for review and approval. Before the commission approves or disapproves any actions, regulations, or permits, the commission shall give public notice in the same manner as the city or county is required to give for those actions, regulations, or permits. As used in this section, "vicinity" means land that will be included or reasonably could be included within the airport land use compatibility plan. If the commission has not designated an airport influence area for the airport land use compatibility plan, then "vicinity" means land within two miles of the boundary of a public airport.

(c) The commission may approve an action, regulation, or permit if it finds, based on substantial evidence in the record, all of the following:

(1) The commission is making substantial progress toward the completion of the airport land use compatibility plan.

(2) There is a reasonable probability that the action, regulation, or permit will be consistent with the airport land use compatibility plan being prepared by the commission.

(3) There is little or no probability of substantial detriment to or interference with the future adopted airport land use compatibility plan if the action, regulation, or permit is ultimately inconsistent with the airport land use compatibility plan.

(d) If the commission disapproves an action, regulation, or permit, the commission shall notify the city or county. The city or county may overrule the commission, by a two-thirds vote of its governing body, if it makes specific findings that the proposed action, regulation, or permit is consistent with the purposes of this article, as stated in Section 21670.

(e) If a city or county overrules the commission pursuant to subdivision (d), that action shall not relieve the city or county from further compliance with this article after the commission adopts the airport land use compatibility plan.

(f) If a city or county overrules the commission pursuant to subdivision (d) with respect to a publicly owned airport that the city or county does not operate, the operator of the airport is not liable for damages to property or personal injury resulting from the city's or county's decision to proceed with the action, regulation, or permit.

(g) A commission may adopt rules and regulations that exempt any ministerial permit for single-family dwellings from the requirements of subdivision (b) if it makes the findings required pursuant to subdivision (c) for the proposed rules and regulations, except that the rules and regulations may not exempt either of the following:

(1) More than two single-family dwellings by the same applicant within a subdivision prior to June 30, 1991.

(2) Single-family dwellings in a subdivision where 25 percent or more of the parcels are undeveloped.

21675.2. Approval or Disapproval of Actions, Regulations, or Permits

(a) If a commission fails to act to approve or disapprove any actions, regulations, or permits within 60 days of receiving the request pursuant to Section 21675.1, the applicant or his or her representative may file an action pursuant to Section 1094.5 of the Code of Civil Procedure to compel the commission to act, and the court shall give the proceedings preference over all other actions or proceedings, except previously filed pending matters of the same character.

(b) The action, regulation, or permit shall be deemed approved only if the public notice required by this subdivision has occurred. If the applicant has provided seven days advance notice to

the commission of the intent to provide public notice pursuant to this subdivision, then, not earlier than the date of the expiration of the time limit established by Section 21675.1, an applicant may provide the required public notice. If the applicant chooses to provide public notice, that notice shall include a description of the proposed action, regulation, or permit substantially similar to the descriptions which are commonly used in public notices by the commission, the location of any proposed development, the application number, the name and address of the commission, and a statement that the action, regulation, or permit shall be deemed approved if the commission has not acted within 60 days. If the applicant has provided the public notice specified in this subdivision, the time limit for action by the commission shall be extended to 60 days after the public notice is provided. If the applicant provides notice pursuant to this section, the commission shall refund to the applicant any fees which were collected for providing notice and which were not used for that purpose.

(c) Failure of an applicant to submit complete or adequate information pursuant to Sections 65943 to 65946, inclusive, of the Government Code, may constitute grounds for disapproval of actions, regulations, or permits.

(d) Nothing in this section diminishes the commission's legal responsibility to provide, where applicable, public notice and hearing before acting on an action, regulation, or permit.

21676. Review of Local General Plans

(a) Each local agency whose general plan includes areas covered by an airport land use compatibility plan shall, by July 1, 1983, submit a copy of its plan or specific plans to the airport land use commission. The commission shall determine by August 31, 1983, whether the plan or plans are consistent or inconsistent with the airport land use compatibility plan. If the plan or plans are inconsistent with the airport land use compatibility plan, the local agency shall be notified and that local agency shall have another hearing to reconsider its airport land use compatibility plans. The local agency may propose to overrule the commission after the hearing by a two-thirds vote of its governing body if it makes specific findings that the proposed action is consistent with the purposes of this article stated in Section 21670. At least 45 days prior to the decision to overrule the commission, the local agency governing body shall provide the commission and the division a copy of the proposed decision and findings. The commission and the division may provide comments to the local agency governing body within 30 days of receiving the proposed decision and findings. If the commission or the division's comments are not available within this time limit, the local agency governing body may act without them. The comments by the division or the commission are advisory to the local agency governing body. The local agency governing body shall include comments from the commission and the division in the final record of any final decision to overrule the commission, which may only be adopted by a two-thirds vote of the governing body.

(b) Prior to the amendment of a general plan or specific plan, or the adoption or approval of a zoning ordinance or building regulation within the planning boundary established by the airport land use commission pursuant to Section 21675, the local agency shall first refer the proposed action to the commission. If the commission determines that the proposed action is inconsistent with the commission's plan, the referring agency shall be notified. The local agency may, after a public hearing, propose to overrule the commission by a two-thirds vote of its governing body if it makes specific findings that the proposed action is consistent with the purposes of this article stated in Section 21670. At least 45 days prior to the decision to

overrule the commission, the local agency governing body shall provide the commission and the division a copy of the proposed decision and findings. The commission and the division may provide comments to the local agency governing body within 30 days of receiving the proposed decision and findings. If the commission or the division's comments are not available within this time limit, the local agency governing body may act without them. The comments by the division or the commission are advisory to the local agency governing body. The local agency governing body shall include comments from the commission and the division in the public record of any final decision to overrule the commission, which may only be adopted by a two-thirds vote of the governing body.

(c) Each public agency owning any airport within the boundaries of an airport land use compatibility plan shall, prior to modification of its airport master plan, refer any proposed change to the airport land use commission. If the commission determines that the proposed action is inconsistent with the commission's plan, the referring agency shall be notified. The public agency may, after a public hearing, propose to overrule the commission by a two-thirds vote of its governing body if it makes specific findings that the proposed action is consistent with the purposes of this article stated in Section 21670. At least 45 days prior to the decision to overrule the commission, the public agency governing body shall provide the commission and the division a copy of the proposed decision and findings. The commission and the division may provide comments to the public agency governing body within 30 days of receiving the proposed decision and findings. If the commission or the division's comments are not available within this time limit, the public agency governing body may act without them. The comments by the division or the commission are advisory to the public agency governing body. The public agency governing body shall include comments from the commission and the division in the final decision to overrule the commission, which may only be adopted by a two-thirds vote of the governing body.

(d) Each commission determination pursuant to subdivision (b) or (c) shall be made within 60 days from the date of referral of the proposed action. If a commission fails to make the determination within that period, the proposed action shall be deemed consistent with the airport land use compatibility plan.

21676.5. Review of Local Plans

(a) If the commission finds that a local agency has not revised its general plan or specific plan or overruled the commission by a two-thirds vote of its governing body after making specific findings that the proposed action is consistent with the purposes of this article as stated in Section 21670, the commission may require that the local agency submit all subsequent actions, regulations, and permits to the commission for review until its general plan or specific plan is revised or the specific findings are made. If, in the determination of the commission, an action, regulation, or permit of the local agency is inconsistent with the airport land use compatibility plan, the local agency shall be notified and that local agency shall hold a hearing to reconsider its plan. The local agency may propose to overrule the commission after the hearing by a two-thirds vote of its governing body if it makes specific findings that the proposed action is consistent with the purposes of this article as stated in Section 21670. At least 45 days prior to the decision to overrule the commission, the local agency governing body shall provide the commission and the division a copy of the proposed decision and findings. The commission and the division may provide comments to the local agency governing body within 30 days of receiving the proposed decision and findings. If the commission or the division's comments are not available within this time limit, the local

agency governing body may act without them. The comments by the division or the commission are advisory to the local agency governing body. The local agency governing body shall include comments from the commission and the division in the final decision to overrule the commission, which may only be adopted by a two-thirds vote of the governing body.

(b) Whenever the local agency has revised its general plan or specific plan or has overruled the commission pursuant to subdivision (a), the proposed action of the local agency shall not be subject to further commission review, unless the commission and the local agency agree that individual projects shall be reviewed by the commission.

21677. Marin County Override Provisions

Notwithstanding the two-thirds vote required by Section 21676, any public agency in the County of Marin may overrule the Marin County Airport Land Use Commission by a majority vote of its governing body. At least 45 days prior to the decision to overrule the commission, the public agency governing body shall provide the commission and the division a copy of the proposed decision and findings. The commission and the division may provide comments to the public agency governing body within 30 days of receiving the proposed decision and findings. If the commission or the division's comments are not available within this time limit, the public agency governing body may act without them. The comments by the division or the commission are advisory to the public agency governing body. The public agency governing body shall include comments from the commission and the division in the public record of the final decision to overrule the commission, which may be adopted by a majority vote of the governing body.

21678. Airport Owner's Immunity

With respect to a publicly owned airport that a public agency does not operate, if the public agency pursuant to Section 21676, 21676.5, or 21677 overrules a commission's action or recommendation, the operator of the airport shall be immune from liability for damages to property or personal injury caused by or resulting directly or indirectly from the public agency's decision to overrule the commission's action or recommendation.

21679. Court Review

(a) In any county in which there is no airport land use commission or other body designated to assume the responsibilities of an airport land use commission, or in which the commission or other designated body has not adopted an airport land use compatibility plan, an interested party may initiate proceedings in a court of competent jurisdiction to postpone the effective date of a zoning change, a zoning variance, the issuance of a permit, or the adoption of a regulation by a local agency, that directly affects the use of land within one mile of the boundary of a public airport within the county.

(b) The court may issue an injunction that postpones the effective date of the zoning change, zoning variance, permit, or regulation until the governing body of the local agency that took the action does one of the following:

(1) In the case of an action that is a legislative act, adopts a resolution declaring that the proposed action is consistent with the purposes of this article stated in Section 21670.

(2) In the case of an action that is not a legislative act, adopts a resolution making findings based on substantial evidence in the record that the proposed action is consistent with the purposes of this article stated in Section 21670.

(3) Rescinds the action.

(4) Amends its action to make it consistent with the purposes of this article stated in Section 21670, and complies with either paragraph (1) or (2), whichever is applicable.

(c) The court shall not issue an injunction pursuant to subdivision (b) if the local agency that took the action demonstrates that the general plan and any applicable specific plan of the agency accomplishes the purposes of an airport land use compatibility plan as provided in Section 21675.

(d) An action brought pursuant to subdivision (a) shall be commenced within 30 days of the decision or within the appropriate time periods set by Section 21167 of the Public Resources Code, whichever is longer.

(e) If the governing body of the local agency adopts a resolution pursuant to subdivision (b) with respect to a publicly owned airport that the local agency does not operate, the operator of the airport shall be immune from liability for damages to property or personal injury from the local agency's decision to proceed with the zoning change, zoning variance, permit, or regulation.

(f) As used in this section, "interested party" means any owner of land within two miles of the boundary of the airport or any organization with a demonstrated interest in airport safety and efficiency.

21679.5. Deferral of Court Review

(a) Until June 30, 1991, no action pursuant to Section 21679 to postpone the effective date of a zoning change, a zoning variance, the issuance of a permit, or the adoption of a regulation by a local agency, directly affecting the use of land within one mile of the boundary of a public airport, shall be commenced in any county in which the commission or other designated body has not adopted an airport land use compatibility plan, but is making substantial progress toward the completion of the airport land use compatibility plan.

(b) If a commission has been prevented from adopting the airport land use compatibility plan by June 30, 1991, or if the adopted airport land use compatibility plan could not become effective, because of a lawsuit involving the adoption of the airport land use compatibility plan, the June 30, 1991, date in subdivision (a) shall be extended by the period of time during which the lawsuit was pending in a court of competent jurisdiction.

(c) Any action pursuant to Section 21679 commenced prior to January 1, 1990, in a county in which the commission or other designated body has not adopted an airport land use compatibility plan, but is making substantial progress toward the completion of the airport land use compatibility plan, which has not proceeded to final judgment, shall be held in

abeyance until June 30, 1991. If the commission or other designated body adopts an airport land use compatibility plan on or before June 30, 1991, the action shall be dismissed. If the commission or other designated body does not adopt an airport land use compatibility plan on or before June 30, 1991, the plaintiff or plaintiffs may proceed with the action.

(d) An action to postpone the effective date of a zoning change, a zoning variance, the issuance of a permit, or the adoption of a regulation by a local agency, directly affecting the use of land within one mile of the boundary of a public airport for which an airport land use compatibility plan has not been adopted by June 30, 1991, shall be commenced within 30 days of June 30, 1991, or within 30 days of the decision by the local agency, or within the appropriate time periods set by Section 21167 of the Public Resources Code, whichever date is later.

AERONAUTICS LAW

PUBLIC UTILITIES CODE
Division 9, Part 1
Chapter 3 — Regulation of Aeronautics
(excerpts)

21402. Ownership; Prohibited Use of Airspace

The ownership of the space above the land and waters of this State is vested in the several owners of the surface beneath, subject to the right of flight described in Section 21403. No use shall be made of such airspace which would interfere with such right of flight; provided, that any use of property in conformity with an original zone of approach of an airport shall not be rendered unlawful by reason of a change in such zone of approach.

21403. Lawful Flight; Unauthorized and Forced Landings; Damages; Use of Highways; Burden of Proof; Within Airport Approach Zone

(a) Flight in aircraft over the land and waters of this state is lawful, unless at altitudes below those prescribed by federal authority, or unless conducted so as to be imminently dangerous to persons or property lawfully on the land or water beneath. The landing of an aircraft on the land or waters of another, without his or her consent, is unlawful except in the case of a forced landing or pursuant to Section 21662.1. The owner, lessee, or operator of the aircraft is liable, as provided by law, for damages caused by a forced landing.

(b) The landing, takeoff, or taxiing of an aircraft on a public freeway, highway, road, or street is unlawful except in the following cases:

(1) A forced landing.

(2) A landing during a natural disaster or other public emergency if the landing has received prior approval from the public agency having primary jurisdiction over traffic upon the freeway, highway, road, or street.

(3) When the landing, takeoff, or taxiing has received prior approval from the public agency having primary jurisdiction over traffic upon the freeway, highway, road or street.

The prosecution bears the burden of proving that none of the exceptions apply to the act which is alleged to be unlawful.

(c) The right of flight in aircraft includes the right of safe access to public airports, which includes the right of flight within the zone of approach of any public airport without restriction or hazard. The zone of approach of an airport shall conform to the specifications of Part 77 of the Federal Aviation Regulations of the Federal Aviation Administration, Department of Transportation.

AERONAUTICS LAW

PUBLIC UTILITIES CODE
Division 9, Part 1
Chapter 3 — Regulation of Aeronautics
(excerpts)

21417. Definitions for Meteorological Towers

(a) As used in this section, the following terms have the following meanings.

(1) "Meteorological instrument" means an instrument for measuring and recording the speed of the wind.

(2) "Meteorological tower" means a structure, including all guy wires and accessory facilities, on which a meteorological instrument is mounted for the purposes of documenting whether a site has wind resources sufficient for the operation of a wind turbine generator.

(3) "Prime agricultural land" means land that satisfies the requirements of paragraph (1), (2), or (4) of subdivision (c) of Section 51201 of the Government Code.

(b) A meteorological tower below 200 feet in height and above 50 feet in height that is located on prime agricultural land, or within one mile of prime agricultural land, and erected after January 1, 2013, shall be marked as follows:

(1) The full length of the meteorological tower shall be painted in equal, alternating bands of aviation orange and white, beginning with orange at the top of the tower and ending with orange at the bottom of the marked portion of the tower. The bands shall be between 20 and 30 feet in width.

(2) Two or more high visibility spherical marker balls, also called cable balls, that are aviation orange shall be attached to each outside guy wire that is connected to a meteorological tower.

(3) One or more seven-foot high visibility safety sleeves shall be placed at each anchor point and shall extend from the anchor point along each guy wire attached to the anchor point.

(c) A light may be affixed to the highest point on a meteorological tower as an additional option for the marking of the meteorological tower.

(d)

(1) A local agency may incorporate any requirements of this section into any applicable land use permit that the agency administers.

(2) This section shall not be construed to authorize a local agency to require a new permit that applies to a meteorological tower.

(3) To the extent that the requirements of this section conflict with local permitting requirements, the requirements of this section shall supersede those permitting requirements.

(e) This section shall remain in effect only until January 1, 2018, and as of that date is repealed, unless a later enacted statute, that is enacted before January 1, 2018, deletes or extends that date.

AERONAUTICS LAW

PUBLIC UTILITIES CODE
Division 9, Part 1
Chapter 4 — Airports and Air Navigation Facilities

Article 2.7
REGULATION OF OBSTRUCTIONS
(excerpts)

21655. Proposed Site for Construction of State Building Within Two Miles of Airport; Investigation and Report; Expenditure of State Funds

Notwithstanding any other provision of law, if the proposed site of any state building or other enclosure is within two miles, measured by air line, of that point on an airport runway, or runway proposed by an airport master plan, which is nearest the site, the state agency or office which proposes to construct the building or other enclosure shall, before acquiring title to property for the new state building or other enclosure site or for an addition to a present site, notify the Department of Transportation, in writing, of the proposed acquisition. The department shall investigate the proposed site and, within 30 working days after receipt of the notice, shall submit to the state agency or office which proposes to construct the building or other enclosure a written report of the investigation and its recommendations concerning acquisition of the site.

If the report of the department does not favor acquisition of the site, no state funds shall be expended for the acquisition of the new state building or other enclosure site, or the expansion of the present site, or for the construction of the state building or other enclosure, provided that the provisions of this section shall not affect title to real property once it is acquired.

21658. Construction of Utility Pole or Line in Vicinity of Aircraft Landing Area

No public utility shall construct any pole, pole line, distribution or transmission tower, or tower line, or substation structure in the vicinity of the exterior boundary of an aircraft landing area of any airport open to public use, in a location with respect to the airport and at a height so as to constitute an obstruction to air navigation, as an obstruction is defined in accordance with Part 77 of the Federal Aviation Regulations, Federal Aviation Administration, or any corresponding rules or regulations of the Federal Aviation Administration, unless the Federal Aviation Administration has determined that the pole, line, tower, or structure does not constitute a hazard to air navigation. This section shall not apply to existing poles, lines, towers, or structures or to the repair, replacement, or reconstruction thereof if the original height is not materially exceeded and this section shall not apply unless just compensation shall have first been paid to the public utility by the owner of any airport for any property or property rights which would be taken or damaged hereby.

21659. Hazards near Airports Prohibited

(a) No person shall construct or alter any structure or permit any natural growth to grow at a height which exceeds the obstruction standards set forth in the regulations of the Federal Aviation Administration relating to objects affecting navigable airspace contained in Title 14

of the Code of Federal Regulations, Part 77, Subpart C, unless a permit allowing the construction, alteration, or growth is issued by the department.

(b) The permit is not required if the Federal Aviation Administration has determined that the construction, alteration, or growth does not constitute a hazard to air navigation or would not create an unsafe condition for air navigation. Subdivision (a) does not apply to a pole, pole line, distribution or transmission tower, or tower line or substation of a public utility.

(c) Section 21658 is applicable to subdivision (b).

AERONAUTICS LAW

PUBLIC UTILITIES CODE
Division 9, Part 1, Chapter 4

Article 3
REGULATION OF AIRPORTS
(excerpts)

21661.5. City Council or County Board of Supervisors and ALUC Approvals

(a) No political subdivision, any of its officers or employees, or any person may submit any application for the construction of a new airport to any local, regional, state, or federal agency unless the plan for construction is first approved by the board of supervisors of the county, or the city council of the city, in which the airport is to be located and unless the plan is submitted to the appropriate commission exercising powers pursuant to Article 3.5 (commencing with Section 21670) of Chapter 4 of Part 1 of Division 9, and acted upon by that commission in accordance with the provisions of that article.

(b) A county board of supervisors or a city council may, pursuant to Section 65100 of the Government Code, delegate its responsibility under this section for the approval of a plan for construction of new helicopter landing and takeoff areas, to the county or city planning agency.

21664.5. Amended Airport Permits; Airport Expansion Defined

(a) An amended airport permit shall be required for every expansion of an existing airport. An applicant for an amended airport permit shall comply with each requirement of this article pertaining to permits for new airports. The department may by regulation provide for exemptions from the operation of this section pursuant to Section 21661, except that no exemption shall be made limiting the applicability of subdivision (e) of Section 21666, pertaining to environmental considerations, including the requirement for public hearings in connection therewith.

(b) As used in this section, "airport expansion" includes any of the following:

(1) The acquisition of runway protection zones, as defined in Federal Aviation Administration Advisory Circular 150/1500-13, or of any interest in land for the purpose of any other expansion as set forth in this section.

(2) The construction of a new runway.

(3) The extension or realignment of an existing runway.

(4) Any other expansion of the airport's physical facilities for the purpose of accomplishing or which are related to the purpose of paragraph (1), (2), or (3).

(c) This section does not apply to any expansion of an existing airport if the expansion commenced on or prior to the effective date of this section and the expansion met the

approval, on or prior to that effective date, of each governmental agency that required the approval by law.

PLANNING AND ZONING LAW

GOVERNMENT CODE
Title 7 — Planning and Land Use
Division 1 — Planning and Zoning
Chapter 3 — Local Planning

Article 5
AUTHORITY FOR AND SCOPE OF GENERAL PLANS
(excerpts)

65302.3. General and Applicable Specific Plans; Consistency with Airport Land Use Plans; Amendment; Nonconcurrence Findings

(a) The general plan, and any applicable specific plan prepared pursuant to Article 8 (commencing with Section 65450), shall be consistent with the plan adopted or amended pursuant to Section 21675 of the Public Utilities Code.

(b) The general plan, and any applicable specific plan, shall be amended, as necessary, within 180 days of any amendment to the plan required under Section 21675 of the Public Utilities Code.

(c) If the legislative body does not concur with any provision of the plan required under Section 21675 of the Public Utilities Code, it may satisfy the provisions of this section by adopting findings pursuant to Section 21676 of the Public Utilities Code.

(d) In each county where an airport land use commission does not exist, but where there is a military airport, the general plan, and any applicable specific plan prepared pursuant to Article 8 (commencing with Section 65450), shall be consistent with the safety and noise standards in the Air Installation Compatible Use Zone prepared for that military airport.

PLANNING AND ZONING LAW

GOVERNMENT CODE
Title 7, Division 1
Chapter 4.5 — Review and Approval of Development Projects

Article 3
APPLICATION FOR DEVELOPMENT PROJECTS
(excerpts)

Note: The following government code sections are referenced in Section 21675.2(c) of the ALUC statutes.

65943. Completeness of Application; Determination; Time; Specification of Parts not Complete and Manner of Completion

(a) Not later than 30 calendar days after any public agency has received an application for a development project, the agency shall determine in writing whether the application is complete and shall immediately transmit the determination to the applicant for the development project. If the written determination is not made within 30 days after receipt of the application, and the application includes a statement that it is an application for a development permit, the application shall be deemed complete for purposes of this chapter. Upon receipt of any resubmittal of the application, a new 30-day period shall begin, during which the public agency shall determine the completeness of the application. If the application is determined not to be complete, the agency's determination shall specify those parts of the application which are incomplete and shall indicate the manner in which they can be made complete, including a list and thorough description of the specific information needed to complete the application. The applicant shall submit materials to the public agency in response to the list and description.

(b) Not later than 30 calendar days after receipt of the submitted materials, the public agency shall determine in writing whether they are complete and shall immediately transmit that determination to the applicant. If the written determination is not made within that 30-day period, the application together with the submitted materials shall be deemed complete for purposes of this chapter.

(c) If the application together with the submitted materials are determined not to be complete pursuant to subdivision (b), the public agency shall provide a process for the applicant to appeal that decision in writing to the governing body of the agency or, if there is no governing body, to the director of the agency, as provided by that agency. A city or county shall provide that the right of appeal is to the governing body or, at their option, the planning commission, or both.

There shall be a final written determination by the agency on the appeal not later than 60 calendar days after receipt of the applicant's written appeal. The fact that an appeal is permitted to both the planning commission and to the governing body does not extend the 60-day period. Notwithstanding a decision pursuant to subdivision (b) that the application and submitted materials are not complete, if the final written determination on the appeal is not

made within that 60-day period, the application with the submitted materials shall be deemed complete for the purposes of this chapter.

(d) Nothing in this section precludes an applicant and a public agency from mutually agreeing to an extension of any time limit provided by this section.

(e) A public agency may charge applicants a fee not to exceed the amount reasonably necessary to provide the service required by this section. If a fee is charged pursuant to this section, the fee shall be collected as part of the application fee charged for the development permit.

65943.5.

(a) Notwithstanding any other provision of this chapter, any appeal pursuant to subdivision (c) of Section 65943 involving a permit application to a board, office, or department within the California Environmental Protection Agency shall be made to the Secretary for Environmental Protection.

(b) Notwithstanding any other provision of this chapter, any appeal pursuant to subdivision (c) of Section 65943 involving an application for the issuance of an environmental permit from an environmental agency shall be made to the Secretary for Environmental Protection under either of the following circumstances:

(1) The environmental agency has not adopted an appeals process pursuant to subdivision (c) of Section 65943.

(2) The environmental agency declines to accept an appeal for a decision pursuant to subdivision (c) of Section 65943.

(c) For purposes of subdivision (b), "environmental permit" has the same meaning as defined in Section 71012 of the Public Resources Code, and "environmental agency" has the same meaning as defined in Section 71011 of the Public Resources Code, except that "environmental agency" does not include the agencies described in subdivisions (c) and (h) of Section 71011 of the Public Resources Code.

65944. Acceptance of Application as Complete; Requests for Additional Information; Restrictions; Clarification, Amplification, Correction, etc.; Prior to Notice of Necessary Information

(a) After a public agency accepts an application as complete, the agency shall not subsequently request of an applicant any new or additional information which was not specified in the list prepared pursuant to Section 65940. The agency may, in the course of processing the application, request the applicant to clarify, amplify, correct, or otherwise supplement the information required for the application.

(b) The provisions of subdivision (a) shall not be construed as requiring an applicant to submit with his or her initial application the entirety of the information which a public agency may require in order to take final action on the application. Prior to accepting an application, each public agency shall inform the applicant of any information included in the list prepared

pursuant to Section 65940 which will subsequently be required from the applicant in order to complete final action on the application.

(c) This section shall not be construed as limiting the ability of a public agency to request and obtain information which may be needed in order to comply with the provisions of Division 13 (commencing with Section 21000) of the Public Resources Code.

(d)

(1) After a public agency accepts an application as complete, and if the project applicant has identified that the proposed project is located within 1,000 feet of a military installation or within special use airspace or beneath a low-level flight path in accordance with Section 65940, the public agency shall provide a copy of the complete application to any branch of the United States Armed Forces that has provided the Office of Planning and Research with a single California mailing address within the state for the delivery of a copy of these applications. This subdivision shall apply only to development applications submitted to a public agency 30 days after the Office of Planning and Research has notified cities, counties, and cities and counties of the availability of Department of Defense information on the Internet pursuant to subdivision (d) of Section 65940.

(2) Except for a project within 1,000 feet of a military installation, the public agency is not required to provide a copy of the application if the project is located entirely in an "urbanized area." An urbanized area is any urban location that meets the definition used by the United State Department of Commerce's Bureau of Census for "urban" and includes locations with core census block groups containing at least 1,000 people per square mile and surrounding census block groups containing at least 500 people per square mile.

(e) Upon receipt of a copy of the application as required in subdivision (d), any branch of the United States Armed Forces may request consultation with the public agency and the project applicant to discuss the effects of the proposed project on military installations, low-level flight paths, or special use airspace, and potential alternatives and mitigation measures.

(f)

(1) Subdivisions (d), (e), and (f) as these relate to low-level flight paths, special use airspace, and urbanized areas shall not be operative until the United States Department of Defense provides electronic maps of low-level flight paths, special use airspace, and military installations, at a scale and in an electronic format that is acceptable to the Office of Planning and Research.

(2) Within 30 days of a determination by the Office of Planning and Research that the information provided by the Department of Defense is sufficient and in an acceptable scale and format, the office shall notify cities, counties, and cities and counties of the availability of the information on the Internet. Cities, counties, and cities and counties shall comply with subdivision (d) within 30 days of receiving this notice from the office.

65945. Notice of Proposal to Adopt or Amend Certain Plans or Ordinances by City or County, Fee; Subscription to Periodically Updated Notice as Alternative, Fee

(a) At the time of filing an application for a development permit with a city or county, the city or county shall inform the applicant that he or she may make a written request to receive notice

from the city or county of a proposal to adopt or amend any of the following plans or ordinances:

(1) A general plan.

(2) A specific plan.

(3) A zoning ordinance.

(4) An ordinance affecting building permits or grading permits.

The applicant shall specify, in the written request, the types of proposed action for which notice is requested. Prior to taking any of those actions, the city or county shall give notice to any applicant who has requested notice of the type of action proposed and whose development project is pending before the city or county if the city or county determines that the proposal is reasonably related to the applicant's request for the development permit. Notice shall be given only for those types of actions which the applicant specifies in the request for notification.

The city or county may charge the applicant for a development permit, to whom notice is provided pursuant to this subdivision, a reasonable fee not to exceed the actual cost of providing that notice. If a fee is charged pursuant to this subdivision, the fee shall be collected as part of the application fee charged for the development permit.

(b) As an alternative to the notification procedure prescribed by subdivision (a), a city or county may inform the applicant at the time of filing an application for a development permit that he or she may subscribe to a periodically updated notice or set of notices from the city or county which lists pending proposals to adopt or amend any of the plans or ordinances specified in subdivision (a), together with the status of the proposal and the date of any hearings thereon which have been set.

Only those proposals which are general, as opposed to parcel-specific in nature, and which the city or county determines are reasonably related to requests for development permits, need be listed in the notice. No proposal shall be required to be listed until such time as the first public hearing thereon has been set. The notice shall be updated and mailed at least once every six weeks; except that a notice need not be updated and mailed until a change in its contents is required.

The city or county may charge the applicant for a development permit, to whom notice is provided pursuant to this subdivision, a reasonable fee not to exceed the actual cost of providing that notice, including the costs of updating the notice, for the length of time the applicant requests to be sent the notice or notices.

65945.3. Notice of Proposal to Adopt or Amend Rules or Regulations Affecting Issuance of Permits by Local Agency other than City or County; Fee

At the time of filing an application for a development permit with a local agency, other than a city or county, the local agency shall inform the applicant that he or she may make a written request to receive notice of any proposal to adopt or amend a rule or regulation affecting the issuance of development permits.

Prior to adopting or amending any such rule or regulation, the local agency shall give notice to any applicant who has requested such notice and whose development project is pending before the agency if the local agency determines that the proposal is reasonably related to the applicant's request for the development permit.

The local agency may charge the applicant for a development permit, to whom notice is provided pursuant to this section, a reasonable fee not to exceed the actual cost of providing that notice. If a fee is charged pursuant to this section, the fee shall be collected as part of the application fee charged for the development permit.

65945.5. Notice of Proposal to Adopt or Amend Regulation Affecting Issuance of Permits and Which Implements Statutory Provision by State Agency

At the time of filing an application for a development permit with a state agency, the state agency shall inform the applicant that he or she may make a written request to receive notice of any proposal to adopt or amend a regulation affecting the issuance of development permits and which implements a statutory provision.

Prior to adopting or amending any such regulation, the state agency shall give notice to any applicant who has requested such notice and whose development project is pending before the state agency if the state agency determines that the proposal is reasonably related to the applicant's request for the development permit.

65945.7. Actions, Inactions, or Recommendations Regarding Ordinances, Rules or Regulations; Invalidity or Setting Aside Ground of Error Only if Prejudicial

No action, inaction, or recommendation regarding any ordinance, rule, or regulation subject to this Section 65945, 65945.3, or 65945.5 by any legislative body, administrative body, or the officials of any state or local agency shall be held void or invalid or be set aside by any court on the ground of any error, irregularity, informality, neglect or omission (hereinafter called "error") as to any matter pertaining to notices, records, determinations, publications or any matters of procedure whatever, unless after an examination of the entire case, including evidence, the court shall be of the opinion that the error complained of was prejudicial, and that by reason of such error the party complaining or appealing sustained and suffered substantial injury, and that a different result would have been probable if such error had not occurred or existed. There shall be no presumption that error is prejudicial or that injury was done if error is shown.

65946. [Replaced by AB2351 Statutes of 1993]

PLANNING AND ZONING LAW

GOVERNMENT CODE
Title 7, Division 1
Chapter 9.3 — Mediation and Resolution of Land Use Disputes
(excerpts)

66030.

(a) The Legislature finds and declares all of the following:

(1) Current law provides that aggrieved agencies, project proponents, and affected residents may bring suit against the land use decisions of state and local governmental agencies. In practical terms, nearly anyone can sue once a project has been approved.

(2) Contention often arises over projects involving local general plans and zoning, redevelopment plans, the California Environmental Quality Act (Division 13 (commencing with Section 21000) of the Public Resources Code), development impact fees, annexations and incorporations, and the Permit Streamlining Act (Chapter 4.5 (commencing with Section 65920)).

(3) When a public agency approves a development project that is not in accordance with the law, or when the prerogative to bring suit is abused, lawsuits can delay development, add uncertainty and cost to the development process, make housing more expensive, and damage California's competitiveness. This litigation begins in the superior court, and often progresses on appeal to the Court of Appeal and the Supreme Court, adding to the workload of the state's already overburdened judicial system.

(b) It is, therefore, the intent of the Legislature to help litigants resolve their differences by establishing formal mediation processes for land use disputes. In establishing these mediation processes, it is not the intent of the Legislature to interfere with the ability of litigants to pursue remedies through the courts.

66031.

(a) Notwithstanding any other provision of law, any action brought in the superior court relating to any of the following subjects may be subject to a mediation proceeding conducted pursuant to this chapter:

(1) The approval or denial by a public agency of any development project.

(2) Any act or decision of a public agency made pursuant to the California Environmental Quality Act (Division 13 (commencing with Section 21000) of the Public Resources Code).

(3) The failure of a public agency to meet the time limits specified in Chapter 4.5 (commencing with Section 65920), commonly known as the Permit Streamlining Act, or in the Subdivision Map Act (Division 2 (commencing with Section 66410)).

(4) Fees determined pursuant to Chapter 6 (commencing with Section 17620) of Division 1 of Part 10.5 of the Education Code or Chapter 4.9 (commencing with Section 65995).

(5) Fees determined pursuant to the Mitigation Fee Act (Chapter 5 (commencing with Section 66000), Chapter 6 (commencing with Section 66010), Chapter 7 (commencing with Section 66012), Chapter 8 (commencing with Section 66016), and Chapter 9 (commencing with Section 66020)).

(6) The adequacy of a general plan or specific plan adopted pursuant to Chapter 3 (commencing with Section 65100).

(7) The validity of any sphere of influence, urban service area, change of organization or reorganization, or any other decision made pursuant to the Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000 (Division 3 (commencing with Section 56000) of Title 5).

(8) The adoption or amendment of a redevelopment plan pursuant to the Community Redevelopment Law (Part 1 (commencing with Section 33000) of Division 24 of the Health and Safety Code).

(9) The validity of any zoning decision made pursuant to Chapter 4 (commencing with Section 65800).

(10) The validity of any decision made pursuant to Article 3.5 (commencing with Section 21670) of Chapter 4 of Part 1 of Division 9 of the Public Utilities Code.

(b) Within five days after the deadline for the respondent or defendant to file its reply to an action, the court may invite the parties to consider resolving their dispute by selecting a mutually acceptable person to serve as a mediator, or an organization or agency to provide a mediator.

(c) In selecting a person to serve as a mediator, or an organization or agency to provide a mediator, the parties shall consider the following:

(1) The council of governments having jurisdiction in the county where the dispute arose.

(2) Any subregional or countywide council of governments in the county where the dispute arose.

(3) Any other person with experience or training in mediation including those with experience in land use issues, or any other organization or agency that can provide a person with experience or training in mediation, including those with experience in land use issues.

(d) If the court invites the parties to consider mediation, the parties shall notify the court within 30 days if they have selected a mutually acceptable person to serve as a mediator. If the parties have not selected a mediator within 30 days, the action shall proceed. The court shall not draw any implication, favorable or otherwise, from the refusal by a party to accept the invitation by the court to consider mediation. Nothing in this section shall preclude the parties from using mediation at any other time while the action is pending.

PLANNING AND ZONING LAW

GOVERNMENT CODE
Title 7 — Planning and Land Use
Division 2 — Subdivisions
Chapter 3 — Procedure

Article 3
REVIEW OF TENTATIVE MAP BY OTHER AGENCIES
(excerpts)

66455.9. Potential School Sites; Notice; Investigation

Whenever there is consideration of an area within a development for a public schoolsite, the advisory agency shall give the affected districts and the State Department of Education written notice of the proposed site. The written notice shall include the identification of any existing or proposed runways within the distance specified in Section 17215 of the Education Code. If the site is within the distance of an existing or proposed airport runway as described in Section 17215 of the Education Code, the department shall notify the State Department of Transportation as required by the section and the site shall be investigated by the State Department of Transportation required by Section 17215.

EDUCATION CODE
Title 1 — General Education Code Provisions
Division 1 — General Education Code Provisions
Part 10.5 — School Facilities
Chapter 1 — School Sites

Article 1
GENERAL PROVISIONS
(excerpts)

Note: SB 161, Statutes of 1997, replaced Education Code Section 39005 with Section 17215; SB 967, Statutes of 1995, deleted Sections 39006 and 39007.

17215.

(a) In order to promote the safety of pupils, comprehensive community planning, and greater educational usefulness of schoolsites, before acquiring title to or leasing property for a new schoolsite, the governing board of each school district, including any district governed by a city board of education, or a charter school, shall give the State Department of Education written notice of the proposed acquisition or lease and shall submit any information required by the State Department of Education if the site is within two miles, measured by air line, of that point on an airport runway or a potential runway included in an airport master plan that is nearest to the site.

(b) Upon receipt of the notice required pursuant to subdivision (a), the State Department of Education shall notify the Department of Transportation in writing of the proposed acquisition or lease. If the Department of Transportation is no longer in operation, the State Department of Education shall, in lieu of notifying the Department of Transportation, notify the United States Department of Transportation or any other appropriate agency, in writing, of the proposed acquisition or lease for the purpose of obtaining from the department or other agency any information or assistance that it may desire to give.

(c) The Department of Transportation shall investigate the site and, within 30 working days after receipt of the notice, shall submit to the State Department of Education a written report of its findings including recommendations concerning acquisition or lease of the site. As part of the investigation, the Department of Transportation shall give notice thereof to the owner and operator of the airport who shall be granted the opportunity to comment upon the site. The Department of Transportation shall adopt regulations setting forth the criteria by which a site will be evaluated pursuant to this section.

(d) The State Department of Education shall, within 10 days of receiving the Department of Transportation's report, forward the report to the governing board of the school district or charter school. The governing board or charter school may not acquire title to or lease the property until the report of the Department of Transportation has been received. If the report does not favor the acquisition or lease of the property for a schoolsite or an addition to a present schoolsite, the governing board or charter school may not acquire title to or lease the property. If the report does favor the acquisition or lease of the property for a schoolsite or an addition to a present schoolsite, the governing board or charter school shall hold a public hearing on the matter prior to acquiring or leasing the site.

(e) If the Department of Transportation's recommendation does not favor acquisition or lease of the proposed site, state funds or local funds may not be apportioned or expended for the acquisition or lease of that site, construction of any school building on that site, or for the expansion of any existing site to include that site.

(f) This section does not apply to sites acquired prior to January 1, 1966, nor to any additions or extensions to those sites.

EDUCATION CODE
Title 3 — Postsecondary Education
Division 7 — Community Colleges
Part 49 — Community Colleges, Education Facilities
Chapter 1 — School Sites

Article 2
SCHOOL SITES
(excerpts)

81033. Investigation: Geologic and Soil Engineering Studies; Airport in Proximity

(c) To promote the safety of students, comprehensive community planning, and greater educational usefulness of community college sites, the governing board of each community college district, if the proposed site is within two miles, measured by air line, of that point on an airport runway, or runway proposed by an airport master plan, which is nearest the site and excluding them if the property is not so located, before acquiring title to property for a new community college site or for an addition to a present site, shall give the board of governors notice in writing of the proposed acquisition and shall submit any information required by the board of governors.

Immediately after receiving notice of the proposed acquisition of property which is within two miles, measured by air line, of that point on an airport runway, or runway proposed by an airport master plan, which is nearest the site, the board of governors shall notify the Division of Aeronautics of the Department of Transportation, in writing, of the proposed acquisition. The Division of Aeronautics shall make an investigation and report to the board of governors within 30 working days after receipt of the notice. If the Division of Aeronautics is no longer in operation, the board of governors, in lieu of notifying the Division of Aeronautics, shall notify the Federal Aviation Administration or any other appropriate agency, in writing, of the proposed acquisition for the purpose of obtaining from the authority or other agency any information or assistance it may desire to give.

The board of governors shall investigate the proposed site and, within 35 working days after receipt of the notice, shall submit to the governing board a written report and its recommendations concerning acquisition of the site. The governing board shall not acquire title to the property until the report of the board of governors has been received. If the report does not favor the acquisition of the property for a community college site or an addition to a present community college site, the governing board shall not acquire title to the property until 30 days after the department's report is received and until the board of governors' report has been read at a public hearing duly called after 10 days' notice published once in a newspaper of general circulation within the community college district, or if there is no such newspaper, then in a newspaper of general circulation within the county in which the property is located.

(d) If, with respect to a proposed site located within two miles of an operative airport runway, the report of the board of governors submitted to a community college district governing board under subdivision (c) does not favor the acquisition of the site on the sole or partial basis of the unfavorable recommendation of the Division of Aeronautics of the Department of Transportation, no state agency or officer shall grant, apportion, or allow to that community college district for expenditure in connection with that site, any state funds otherwise made

available under any state law whatever for community college site acquisition or college building construction, or for expansion of existing sites and buildings, and no funds of the community college district or of the county in which the district lies shall be expended for those purposes. However, this section shall not be applicable to sites acquired prior to January 1, 1966, or to any additions or extensions to those sites.

If the recommendation of the Division of Aeronautics is unfavorable, the recommendation shall not be overruled without the express approval of the board of governors and the State Allocation Board.

(e) No action undertaken by the board of governors or by any other state agency or by any political subdivision pursuant to this chapter, or in compliance with this chapter, shall be construed to affect any rights arising under Section 19 of Article I of the California Constitution.

PUBLIC RESOURCES CODE
California Environmental Quality Act Statutes
Division 13 — Environmental Quality
Chapter 2.6 — General
(excerpts)

21096. Airport Planning

(a) If a lead agency prepares an environmental impact report for a project situated within airport land use compatibility plan boundaries, or, if an airport land use compatibility plan has not been adopted, for a project within two nautical miles of a public airport or public use airport, the Airport Land Use Planning Handbook published by the Division of Aeronautics of the Department of Transportation, in compliance with Section 21674.5 of the Public Utilities Code and other documents, shall be utilized as technical resources to assist in the preparation of the environmental impact report as the report relates to airport-related safety hazards and noise problems.

(b) A lead agency shall not adopt a negative declaration for a project described in subdivision (a) unless the lead agency considers whether the project will result in a safety hazard or noise problem for persons using the airport or for persons residing or working in the project area.

BUSINESS AND PROFESSIONS CODE
Division 4 — Real Estate
Part 2 — Regulation of Transactions
Chapter 1 — Subdivided Lands
Article 2 — Investigation, Regulation and Report
(excerpts)

11010.

(a) Except as otherwise provided pursuant to subdivision (c) or elsewhere in this chapter, any person who intends to offer subdivided lands within this state for sale or lease shall file with the Bureau of Real Estate an application for a public report consisting of a notice of intention and a completed questionnaire on a form prepared by the bureau.

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

[Sub-Sections (1) through (12) omitted]

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

NOTICE OF AIRPORT 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, if any, are associated with the property before you complete your purchase and determine whether they are acceptable to you.

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

CIVIL CODE
Division 2 — Property
Part 4 — Acquisition of Property
Title 4 — Transfer
Chapter 2 — Transfer of Real Property
Article 1.7 — Disclosure of Natural Hazards Upon Transfer of Residential Property
(excerpts)

1103.

(a) Except as provided in Section 1103.1, this article applies to the transfer by sale, exchange, installment land sale contract, as defined in Section 2985, lease with an option to purchase, any other option to purchase, or ground lease coupled with improvements, of any real property described in subdivision (c), or residential stock cooperative, improved with or consisting of not less than one nor more than four dwelling units.

(b) Except as provided in Section 1103.1, this article shall apply to a resale transaction entered into on or after January 1, 2000, for a manufactured home, as defined in Section 18007 of the Health and Safety Code, that is classified as personal property intended for use as a residence, or a mobilehome, as defined in Section 18008 of the Health and Safety Code, that is classified as personal property intended for use as a residence, if the real property on which the manufactured home or mobilehome is located is real property described in subdivision (c).

(c) This article shall apply to the transactions described in subdivisions (a) and (b) only if the transferor or his or her agent is required by one or more of the following to disclose the property's location within a hazard zone:

(1) A person who is acting as an agent for a transferor of real property that is located within a special flood hazard area (any type Zone "A" or "V") designated by the Federal Emergency Management Agency, or the transferor if he or she is acting without an agent, shall disclose to any prospective transferee the fact that the property is located within a special flood hazard area if either:

(A) The transferor, or the transferor's agent, has actual knowledge that the property is within a special flood hazard area.

(B) The local jurisdiction has compiled a list, by parcel, of properties that are within the special flood hazard area and a notice has been posted at the offices of the county recorder, county assessor, and county planning agency that identifies the location of the parcel list.

(2) …is located within an area of potential flooding…shall disclose to any prospective transferee the fact that the property is located within an area of potential flooding…

(3) …is located within a very high fire hazard severity zone, designated pursuant to Section 51178 of the Public Resources Code…shall disclose to any prospective transferee the fact that the property is located within a very high fire hazard severity zone and is subject to the requirements of Section 51182…

(4) …is located within an earthquake fault zone, designated pursuant to Section 2622 of the Public Resources Code…shall disclose to any prospective transferee the fact that the property is located within a delineated earthquake fault zone…
(5) …is located within a seismic hazard zone, designated pursuant to Section 2696 of the Public Resources Code…shall disclose to any prospective transferee the fact that the property is located within a seismic hazard zone…
(6) …is located within a state responsibility area determined by the board, pursuant to Section 4125 of the Public Resources Code, shall disclose to any prospective transferee the fact that the property is located within a wildland area that may contain substantial forest fire risks and hazards and is subject to the requirements of Section 4291…

(d) Any waiver of the requirements of this article is void as against public policy.

1103.1

(a) This article does not apply to the following transfers:

(1) Transfers pursuant to court order, including, but not limited to, transfers ordered by a probate court in administration of an estate, transfers pursuant to a writ of execution, transfers by any foreclosure sale, transfers by a trustee in bankruptcy, transfers by eminent domain, and transfers resulting from a decree for specific performance.

(2) Transfers to a mortgagee by a mortgagor or successor in interest who is in default, transfers to a beneficiary of a deed of trust by a trustor or successor in interest who is in default, transfers by any foreclosure sale after default, transfers by any foreclosure sale after default in an obligation secured by a mortgage, transfers by a sale under a power of sale or any foreclosure sale under a decree of foreclosure after default in an obligation secured by a deed of trust or secured by any other instrument containing a power of sale, or transfers by a mortgagee or a beneficiary under a deed of trust who has acquired the real property at a sale conducted pursuant to a power of sale under a mortgage or deed of trust or a sale pursuant to a decree of foreclosure or has acquired the real property by a deed in lieu of foreclosure.

(3) Transfers by a fiduciary in the course of the administration of a decedent's estate, guardianship, conservatorship, or trust.

(4) Transfers from one coowner to one or more other coowners.

(5) Transfers made to a spouse, or to a person or persons in the lineal line of consanguinity of one or more of the transferors.

(6) Transfers between spouses resulting from a judgment of dissolution of marriage or of legal separation of the parties or from a property settlement agreement incidental to that judgment.

(7) Transfers by the Controller in the course of administering Chapter 7 (commencing with Section 1500) of Title 10 of Part 3 of the Code of Civil Procedure.

(8) Transfers under Chapter 7 (commencing with Section 3691) or Chapter 8 (commencing with Section 3771) of Part 6 of Division 1 of the Revenue and Taxation Code.

(9) Transfers or exchanges to or from any governmental entity.

(b) Transfers not subject to this article may be subject to other disclosure requirements, including those under Sections 8589.3, 8589.4, and 51183.5 of the Government Code and Sections 2621.9, 2694, and 4136 of the Public Resources Code. In transfers not subject to this article, agents may make required disclosures in a separate writing.

1103.2

(a) The disclosures required by this article are set forth in, and shall be made on a copy of, the following Natural Hazard Disclosure Statement: [content omitted].

(b) If an earthquake fault zone, seismic hazard zone, very high fire hazard severity zone, or wildland fire area map or accompanying information is not of sufficient accuracy or scale that a reasonable person can determine if the subject real property is included in a natural hazard area, the transferor or transferor's agent shall mark "Yes" on the Natural Hazard Disclosure Statement. The transferor or transferor's agent may mark "No" on the Natural Hazard Disclosure Statement if he or she attaches a report prepared pursuant to subdivision (c) of Section 1103.4 that verifies the property is not in the hazard zone. Nothing in this subdivision is intended to limit or abridge any existing duty of the transferor or the transferor's agents to exercise reasonable care in making a determination under this subdivision.

[Sub-Sections (c) through (h) omitted]

[Section 1103.3 omitted]

1103.4

(a) Neither the transferor nor any listing or selling agent shall be liable for any error, inaccuracy, or omission of any information delivered pursuant to this article if the error, inaccuracy, or omission was not within the personal knowledge of the transferor or the listing or selling agent, and was based on information timely provided by public agencies or by other persons providing information as specified in subdivision (c) that is required to be disclosed pursuant to this article, and ordinary care was exercised in obtaining and transmitting the information.

(b) The delivery of any information required to be disclosed by this article to a prospective transferee by a public agency or other person providing information required to be disclosed pursuant to this article shall be deemed to comply with the requirements of this article and shall relieve the transferor or any listing or selling agent of any further duty under this article with respect to that item of information.

(c) The delivery of a report or opinion prepared by a licensed engineer, land surveyor, geologist, or expert in natural hazard discovery dealing with matters within the scope of the professional's license or expertise shall be sufficient compliance for application of the exemption provided by subdivision (a) if the information is provided to the prospective transferee pursuant to a request therefor, whether written or oral. In responding to that request, an expert may indicate, in writing, an understanding that the information provided will be used in fulfilling the requirements of Section 1103.2 and, if so, shall indicate the

required disclosures, or parts thereof, to which the information being furnished is applicable. Where that statement is furnished, the expert shall not be responsible for any items of information, or parts thereof, other than those expressly set forth in the statement.

(1) In responding to the request, the expert shall determine whether the property is within an airport influence area as defined in subdivision (b) of Section 11010 of the Business and Professions Code. If the property is within an airport influence area, the report shall contain the following statement:

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.

[Remainder of Article 1.7 omitted]

CIVIL CODE
Division 2, Part 4
Title 6 — Common Interest Developments
Chapter 2 — County Documents
Article 1 — Creation
(excerpts)

1353.

(a)

(1) A declaration, recorded on or after January 1, 1986, shall contain a legal description of the common interest development, and a statement that the common interest development is a community apartment project, condominium project, planned development, stock cooperative, or combination thereof. The declaration shall additionally set forth the name of the association and the restrictions on the use or enjoyment of any portion of the common interest development that are intended to be enforceable equitable servitudes. If the property is located within an airport influence area, a declaration, recorded after January 1, 2004, shall contain the following statement:

> 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.

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

(3) [Omitted]

(4) The statement in a declaration acknowledging that a property is located in an airport influence area or within the jurisdiction of the San Francisco Bay Conservation and Development Commission does not constitute a title defect, lien, or encumbrance.

(b) The declaration may contain any other matters the original signator of the declaration or the owners consider appropriate.

LEGISLATIVE HISTORY SUMMARY

PUBLIC UTILITIES CODE
Section 21670 et seq.
Airport Land Use Commission Statutes

1967 Original ALUC statute enacted.
- Establishment of ALUCs required in each county containing a public airport served by a certificated air carrier.
- The purpose of ALUCs is indicated as being to make recommendations regarding height restrictions on buildings and the use of land surrounding airports.

1970 Assembly Bill 1856 (Badham) Chapter 1182, Statutes of 1970 — Adds provisions which:
- Require ALUCs to prepare comprehensive land use plans.
- Require such plans to include a long-range plan and to reflect the airport's forecast growth during the next 20 years.
- Require ALUC review of airport construction plans (Section 21661.5).
- Exempt Los Angeles County from the requirement of establishing an ALUC.

1971 The function of ALUCs is restated as being to require new construction to conform to Department of Aeronautics standards.

1973 ALUCs are permitted to establish compatibility plans for military airports.

1982 Assembly Bill 2920 (Rogers) Chapter 1041, Statutes of 1982 — Adds major changes which:
- More clearly articulate the purpose of ALUCs.
- Eliminate reference to "achieve by zoning."
- Require consistency between local general and specific plans and airport land use commission plans; the requirements define the process for attaining consistency, they do not establish standards for consistency.
- Eliminate the requirement for proposed individual development projects to be referred to an ALUC for review once local general/specific plans are consistent with the ALUC's plan.
- Require that local agencies make findings of fact before overriding an ALUC decision.
- Change the vote required for an override from 4/5 to 2/3.

1984 Assembly Bill 3551 (Mountjoy) Chapter 1117, Statutes of 1984 — Amends the law to:
- Require ALUCs in all counties having an airport which serves the general public unless a county and its cities determine an ALUC is not needed.
- Limit amendments to compatibility plans to once per year.
- Allow individual projects to continue to be referred to the ALUC by agreement.
- Extend immunity to airports if an ALUC action is overridden by a local agency not owning the airport.
- Provide state funding eligibility for preparation of compatibility plans through the Regional Transportation Improvement Program process.

1987 Senate Bill 633 (Rogers) Chapter 1018, Statutes of 1987 — Makes revisions which:

- Require that a designated body serving as an ALUC include two members having "expertise in aviation."
- Allows an interested party to initiate court proceedings to postpone the effective date of a local land use action if a compatibility plan has not been adopted.
- Delete sunset provisions contained in certain clauses of the law.
- Allows reimbursement for ALUC costs in accordance with the Commission on State Mandates.

1989 Senate Bill 255 (Bergeson) Chapter 54, Statutes of 1989 —

- Sets a requirement that comprehensive land use plans be completed by June 1991.
- Establishes a method for compelling ALUCs to act on matters submitted for review.
- Allows ALUCs to charge fees for review of projects.
- Suspends any lawsuits that would stop development until the ALUC adopts its plan or until June 1, 1991.

1989 Senate Bill 235 (Alquist) Chapter 788, Statutes of 1989 — Appropriates $3,672,000 for the payment of claims to counties seeking reimbursement of costs incurred during fiscal years 1985-86 through 1989-90 pursuant to state-mandated requirement (Chapter 1117, Statutes of 1984) for creation of ALUCs in most counties. This statute was repealed in 1993.

1990 Assembly Bill 4164 (Mountjoy) Chapter 1008, Statutes of 1990 — Adds section 21674.5 requiring the Division of Aeronautics to develop and implement a training program for ALUC staffs.

1990 Assembly Bill 4265 (Clute) Chapter 563, Statutes of 1990 — With the concurrence of the Division of Aeronautics, allows ALUCs to use an airport layout plan, rather than a long-range airport master plan, as the basis for preparation of a compatibility plan.

1990 Senate Bill 1288 (Beverly) Chapter 54, Statutes of 1990 — Amends Section 21670.2 to give Los Angeles County additional time to prepare compatibility plans and meet other provisions of the ALUC statutes.

1991 Senate Bill 532 (Bergeson) Chapter 140, Statutes of 1991 —

- Allows counties having half of their compatibility plans completed or under preparation by June 30, 1991, an additional year to complete the remainder.
- Allows ALUCs to continue to charge fees under these circumstances.
- Fees may be charged only until June 30, 1992, if plans are not completed by then.

1993 Senate Bill 443 (Committee on Budget and Fiscal Review) Chapter 59, Statutes of 1993 — Amends Section 21670(b) to make the formation of ALUCs permissive rather than mandatory as of June 30, 1993. (Note: Section 21670.2 which assigns responsibility for coordinating the airport planning of public agencies in Los Angeles County is not affected by this amendment.)

1994 Assembly Bill 2831 (Mountjoy) Chapter 644, Statutes of 1994 — Reinstates the language in Section 21670(b) mandating establishment of ALUCs, but also provides for an alternative airport land use planning process. Lists specific actions which a county and affected cities must take in order for such alternative process to receive Caltrans'

approval. Requires that ALUCs be guided by information in the Caltrans' Airport Land Use Planning Handbook when formulating airport land use plans.

1994 Senate Bill 1453 (Rogers) Chapter 438, Statutes of 1994 — Amends California Environmental Quality Act (CEQA) statutes as applied to preparation of environmental documents affecting projects in the vicinity of airports. Requires lead agencies to use the Airport Land Use Planning Handbook as a technical resource when assessing the airport-related noise and safety impacts of such projects.

1997 Assembly Bill 1130 (Oller) Chapter 81, Statutes of 1997 — Added Section 21670.4 concerning airports whose planning boundary straddles a county line.

2000 Senate Bill 1350 (Rainey) Chapter 506, Statutes of 2000 — Added Section 21670(f) clarifying that special districts are among the local agencies to which airport land use planning laws are intended to apply.

2001 Assembly Bill 93 (Wayne) Chapter 946, Statutes of 2001—Added Section 21670.3 regarding San Diego County Regional Airport Authority's responsibility for airport planning within San Diego County.

2002 Assembly Bill 3026 (Committee on Transportation) Chapter 438, Statutes of 2002—Changes the term "comprehensive land use plan" to "airport land use compatibility plan."

2002 Assembly Bill 2776 (Simitian) Chapter 496, Statutes of 2002—Requires information regarding the location of a property within an airport influence area be disclosed as part of certain real estate transactions effective January 1, 2004.

2002 Senate Bill 1468 (Knight) Chapter 971, Statutes of 2002—Changes ALUC preparation of airport land use compatibility plans for military airports from optional to required. It requires that the plans be consistent with the safety and noise standards in the Air Installation Compatible Use Zone for that airport. Requires that the general plan and any specific plans be consistent with these standards where there is military airport, but an airport land use commission does not exist.

2003 Assembly Bill 332 (Mullin) Chapter 351, Statutes of 2003—Clarifies that school districts and community college districts are subject to compatibility plans. Requires local public agencies to notify ALUC and Division of Aeronautics at least 45 days prior to deciding to overrule the ALUC.

Adds that prior to granting building construction permits, local agencies shall be guided by the criteria established in the Airport Land Use Planning Handbook and any related federal aviation regulations to the extent that the criteria has been incorporated into their airport land use compatibility plan.

2004 Senate Bill 1223 (Committee on Transportation) Chapter 615, Statutes of 2004—Technical revisions eliminating most remaining references to the term "comprehensive land use plan" and replacing it with "airport land use compatibility plan." Also replaces the terms "planning area" and "study area" with "airport influence area."

2005 Assembly Bill 1358 (Mullin) Chapter 29, Statutes of 2005—Requires a school district to notify the Department of Transportation before leasing property for a new school site. Also makes these provisions applicable to charter schools.

2007 Senate Bill 10 (Kehoe) Chapter 287, Statutes of 2007—The San Diego County Regional Airport Authority Reform Act of 2007. Restructures the airport authority established in 2001 by AB 93 (Wayne), with a set of goals related to governance, accountability, planning and operations at San Diego International Airport.

APPENDIX F

Title 14, Code of Federal Regulations, Part 77

Appendix F

Title 14, Code of Federal Regulations, Part 77

Subpart A
GENERAL

Amdt. 77-13, as of May 24, 2017.

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 that three-fourths of a statute mile;
v. 4,000 feet for that end of a non-precision instrument runway, other than utility, having a non-precision instrument approach with visibility minimums as low as three-fourths statute mile; and
vi. 16,000 feet for precision instrument runways.

(2) The approach surface extends for a horizontal distance of:

i. 5,000 feet at a slope of 20 to 1 for all utility and visual runways;
ii. 10,000 feet at a slope of 34 to 1 for all non-precision instrument runways other than utility; and
iii. 10,000 feet at a slope of 50 to 1 with an additional 40,000 feet at a slope of 40 to 1 for all precision instrument runways.

(3) The outer width of an approach surface to an end of a runway will be that width prescribed in this subsection for the most precise approach existing or planned for that runway end.

(e) *Transitional surface.* These surfaces extend outward and upward at right angles to the runway centerline and the runway centerline extended at a slope of 7 to 1 from the sides of the primary surface and from the sides of the approach surfaces. Transitional surfaces for those portions of the precision approach surface which project through and beyond the limits of the conical surface, extend a distance of 5,000 feet measured horizontally from the edge of the approach surface and at right angles to the runway centerline.

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.

This page intentionally left blank

APPENDIX G

Federal Aviation Administration (FAA)
Advisory Circular 150/5200-33C

U.S. Department
of Transportation
Federal Aviation
Administration

Advisory Circular

Subject: Hazardous Wildlife Attractants on or near Airports	**Date:** 02/21/2020	**AC No:** 150/5200-33C
	Initiated By: AAS-300	**Change:**

1 **Purpose.**

This Advisory Circular (AC) provides guidance on certain land uses that have the potential to attract hazardous wildlife on or near public-use airports. It also discusses airport development projects (including airport construction, expansion, and renovation) affecting aircraft movement near hazardous wildlife attractants. Appendix 1 provides definitions of terms used in this AC.

2 **Cancellation.**

This AC cancels AC 150/5200-33B, *Hazardous Wildlife Attractants on or near Airports*, dated August 28, 2007.

3 **Application.**

The Federal Aviation Administration recommends the guidance in this AC for land uses that have the potential to attract hazardous wildlife on or near public-use airports. This AC does not constitute a regulation, is not mandatory, and is not legally binding in its own right. It will not be relied upon as a separate basis by the FAA for affirmative enforcement action or other administrative penalty. Conformity with this AC is voluntary, and nonconformity will not affect rights and obligations under existing statutes and regulations, except as follows:

1. Airports that hold Airport Operating Certificates issued under Title 14, Code of Federal Regulations (CFR), Part 139, Certification of Airports, Subpart D, may use the standards, practices and recommendations contained in this AC as one, but not the only, acceptable means of compliance with the wildlife hazard management requirements of Part 139.
2. The FAA recommends the guidance in this AC for airports that receive funding under Federal grant assistance programs, including the Airport Improvement Program. See Grant Assurance #34.

3. The FAA recommends the guidance in this AC for projects funded by the Passenger Facility Charge program. See PFC Assurance #9.
4. The FAA recommends the guidance in this AC for land-use planners and developers of projects, facilities, and activities on or near airports.

4 Principal Changes.

Changes are marked with vertical bars in the margin. Change in this AC include:

1. Clarification by the FAA that non-certificated airports are recommended to conduct a Wildlife Hazard Assessment (Assessment) or a Wildlife Hazard Site Visit (Site Visit);
2. Table 1, Ranking of Hazardous Species, has been moved to Advisory Circular 150/5200-32, *Reporting Wildlife Aircraft Strikes* (5/31/2013);
3. Consolidation and reorganization of discussion on land uses of concern; and updated procedures for evaluation and mitigation. Discussion addresses off-airport hazardous wildlife attractants, followed by discussion of on-airport attractants. It also clarifies language regarding the applicability of the AC.

5 Background.

1. Information about the risks posed to aircraft by certain wildlife species has increased a great deal in recent years. Improved reporting, studies, documentation, and statistics clearly show that aircraft collisions with birds and other wildlife are a serious economic and public safety problem. While many species of wildlife can pose a risk[1] to aircraft safety, they are not equally hazardous[2]. These hazard rankings can help focus hazardous wildlife management efforts on those species or groups that represent the greatest risk to safe air and ground operations in the airport environment. Used in conjunction with a site-specific Assessment that will determine the relative abundance and use patterns of wildlife species, these rankings combined with a systematic risk analysis can help airport operators better understand the general threat level (and consequences) of certain wildlife species. Also, the rankings can assist with the creation of a "high risk" list of hazardous species that warrant immediate attention.
2. Most public-use airports have large tracts of open, undeveloped land that provide added margins of safety and noise mitigation. These areas can also present potential hazards to aviation if they encourage wildlife to enter an airport's approach or departure airspace or aircraft operations area. Constructed or natural areas— such as

[1] Risk is the relationship between the severity and probability of a threat. It is the product of hazard level and abundance in the critical airspace, and is thus defined as the probability of a damaging strike with a given species.
[2] Hazardous wildlife are species of wildlife (birds, mammals, reptiles), including feral and domesticated animals, not under control that may pose a direct hazard to aviation (i.e., strike risk to aircraft) or an indirect hazard such as an attractant to other wildlife that pose a strike hazard or are causing structural damage to airport facilities (e.g., burrowing, nesting, perching).

poorly drained locations, detention/retention ponds, roosting habitats on buildings, landscaping, odor-causing rotting organic matter (putrescible waste) disposal operations, wastewater treatment plants, agricultural or aquaculture activities, surface mining, wetlands, or some conservation-based land uses — can provide wildlife with ideal locations for feeding, loafing, reproduction, and escape. Even small facilities, such as fast food restaurants, taxicab staging areas, rental car facilities, aircraft viewing areas, and public parks, can produce substantial attractions for hazardous wildlife.

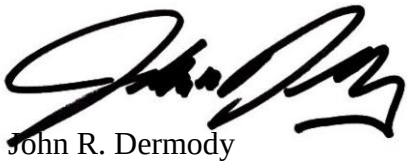
3. During the past century, wildlife-aircraft strikes have resulted in the loss of hundreds of lives worldwide, as well as billions of dollars in aircraft damage. Hazardous wildlife attractants on and near airports can jeopardize future airport expansion, making proper community land-use planning essential. This AC provides airport operators and those parties with whom they cooperate with the guidance they need to assess and address potentially hazardous wildlife attractants when locating new facilities and implementing certain land-use practices on or near public-use airports.

6 Memorandum of Agreement Between Federal Resource Agencies.

The FAA, the U.S. Air Force, the U.S. Army Corps of Engineers, the U.S. Environmental Protection Agency, the U.S. Fish and Wildlife Service, and the U.S. Department of Agriculture - Wildlife Services signed a Memorandum of Agreement (MOA) to acknowledge their respective missions in protecting aviation from wildlife hazards. Through the MOA, the agencies established procedures necessary to coordinate their missions to address more effectively existing and future environmental conditions contributing to collisions between wildlife and aircraft (wildlife strikes) throughout the United States. These efforts are intended to minimize wildlife risks to aviation and human safety while protecting the Nation’s valuable environmental resources.

7 Feedback on this AC.

If you have suggestions for improving this AC, you may use the Advisory Circular Feedback form at the end of this AC.



John R. Dermody
Director of Airport Safety and Standards

CONTENTS

Paragraph **Page**

Chapter 1. General Separation Criteria for Hazardous Wildlife Attractants on or Near Airports 1-1

1.1 Introduction. 1-1

1.2 Airports Serving Piston-Powered Aircraft. 1-1

1.3 Airports Serving Turbine-Powered Aircraft. 1-2

1.4 Protection of Approach, Departure, and Circling Airspace. 1-2

Chapter 2. Land-Use Practices on or Near Airports that Potentially Attract Hazardous Wildlife 2-1

2.1 General. 2-1

2.2 Waste Disposal Operations. 2-2

2.3 Water Management Facilities. 2-4

2.4 Wetlands. 2-8

2.5 Dredge Spoil Containment Areas. 2-10

2.6 Agricultural Activities. 2-10

2.7 Aquaculture. 2-12

2.8 Golf Courses, Landscaping, Structures and Other Land-Use Considerations. 2-14

2.9 Habitat for State and Federally-Listed Species on Airports. 2-16

2.10 Synergistic Effects of Surrounding Land Uses. 2-17

Chapter 3. Procedures for Wildlife Hazard Management by Operators of Public-Use Airports and Conditions for Non-Certificated Airports to Conduct Wildlife Hazard Assessments and Wildlife Hazard Site Visits 3-1

3.1 Introduction. 3-1

3.2 Coordination with Qualified Airport Wildlife Biologists. 3-1

3.3 Wildlife Hazard Management at Airports: A Manual For Airport Personnel. 3-1

3.4 Wildlife Hazard Site Visits and Wildlife Hazard Assessments. 3-2

3.5 Wildlife Hazard Management Plan. 3-2

3.6 Local Coordination. 3-3

3.7 Operational Notifications of Wildlife Hazards. 3-3

3.8 Federal and State Depredation Permits. 3-4

Chapter 4. Recommended Procedures for the FAA, Airport Operators and Other Government Entities Regarding Off-Airport Attractants 4-1

4.1 FAA Notification and Review of Proposed Land-Use Practice Changes in the Vicinity of Public-Use Airports. 4-1

4.2 Waste Management Facilities. 4-2

4.3 Other Land-Use Practice Changes. 4-3

4.4 Coordination to Prevent Creation of New Off-Airport Hazardous Wildlife Attractants. 4-4

4.5 Coordination on Existing Off-Airport Hazardous Wildlife Attractants. 4-5

4.6 Prompt Remedial Action. 4-5

4.7 FAA Assistance. 4-5

Appendix A. Definitions of Terms Used in this Advisory Circular A-1

Appendix B. Additional Resources B-1

Page Intentionally Blank

CHAPTER 1. GENERAL SEPARATION CRITERIA FOR HAZARDOUS WILDLIFE ATTRACTANTS ON OR NEAR AIRPORTS

1.1 Introduction.

1.1.1 Airport operators should maintain an appropriate environment for the safe and efficient operation of aircraft, which entails mitigating wildlife strike hazards by fencing, modifying the landscape in order to deter wildlife or by hazing or removing wildlife hazardous to aircraft from congregating on airports. When considering proposed land uses, operators and sponsors of airports certificated under Part 139, local planners, and developers must take into account whether the proposed land uses, including new development projects, will increase wildlife hazards. Land-use practices that attract or sustain hazardous wildlife populations on or near airports, specifically those listed in Chapter 2, can significantly increase the potential for wildlife strikes.

1.1.2 The FAA urges regulatory agencies and planning and zoning agencies to evaluate proposed new land uses within the separation criteria and prevent the creation of land uses that attract or sustain hazardous wildlife within the separation distances.

1.1.3 The FAA recommends the use of minimum separation criteria outlined below for land-use practices that attract hazardous wildlife to the vicinity of airports. Please note that FAA criteria include land uses that cause movement of hazardous wildlife onto, into, or across the airport's approach or departure airspace or aircraft operations area. (See the discussion of the synergistic effects of surrounding land uses in Paragraph 2.8 of this AC.). For the purpose of evaluating distance criteria, the delineation of the aircraft operations area may also consider future airport development plans depicted on the Airport Layout Plan (e.g., planned runway extension).

1.1.4 The separation distances are based on (1) flight patterns and performance criteria of piston-powered aircraft and turbine-powered aircraft, (2) the altitude at which most strikes happen (78 percent occur under 1,000 feet and 90 percent occur under 3,000 feet above ground level), and (3) National Transportation Safety Board recommendations.

1.2 Airports Serving Piston-Powered Aircraft.

Airports that do not sell Jet-A fuel normally serve piston-powered aircraft. Notwithstanding more stringent requirements for specific land uses, the FAA recommends a separation distance of 5,000 feet from these airports for any of the hazardous wildlife attractants discussed in Chapter 2 or for new airport development projects meant to accommodate aircraft movement. This distance is to be maintained between the closest point of the airport's aircraft operations area and the hazardous wildlife attractant. Figure 1 depicts an example of the 5,000-foot separation distance measured from the nearest aircraft operations area.

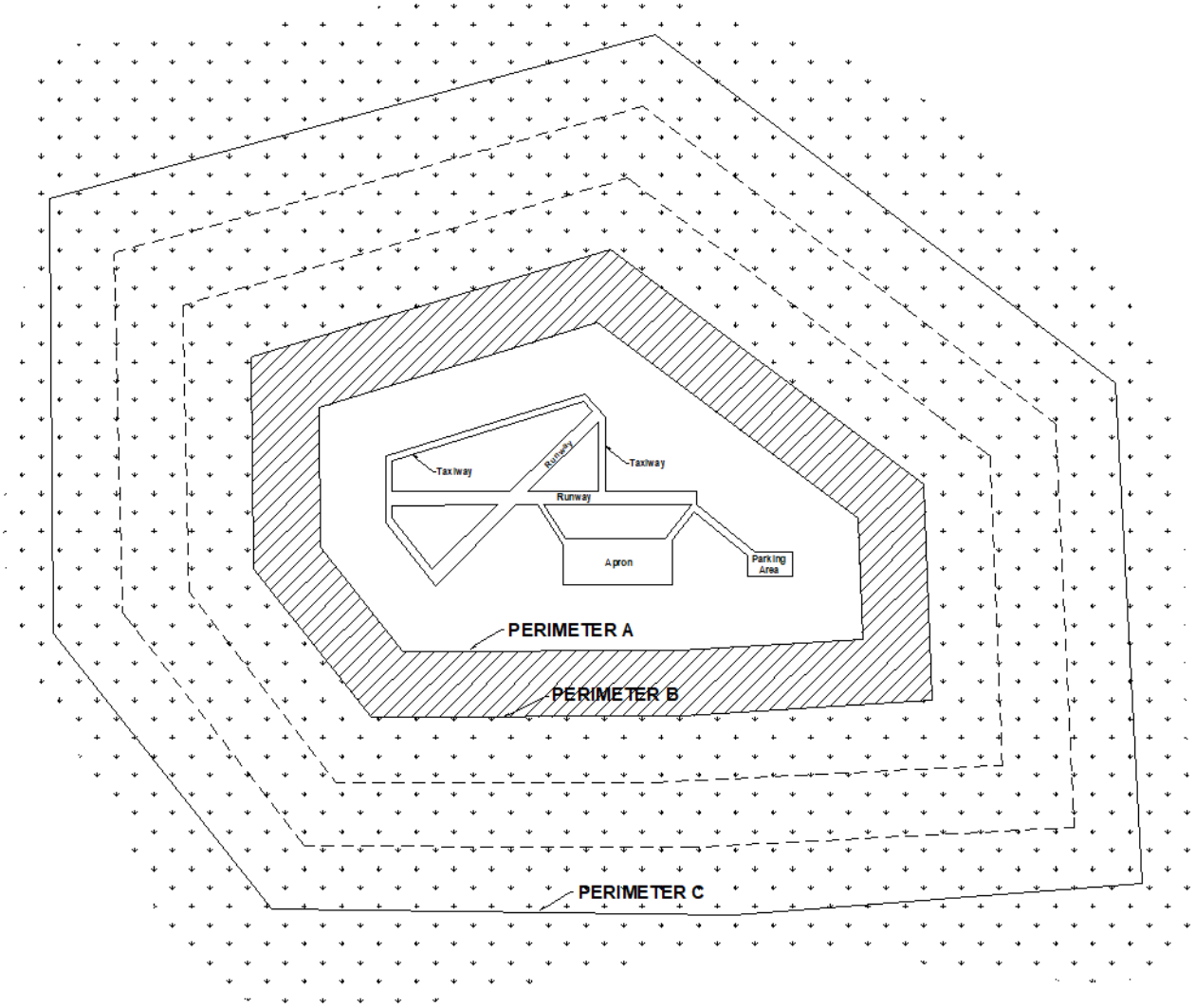
1.3 Airports Serving Turbine-Powered Aircraft.

For airports serving turbine-powered aircraft, the FAA recommends a separation distance of 10,000 feet from these airports for any of the hazardous wildlife attractants discussed in Chapter 2 or for new airport development projects meant to accommodate aircraft movement. This distance is to be maintained between the closest point of the airport's aircraft operations area and the hazardous wildlife attractant. Figure 1 depicts an example of the 10,000-foot separation distance from the nearest aircraft movement areas.

1.4 Protection of Approach, Departure, and Circling Airspace.

For all airports, the FAA recommends a distance of 5 miles between the closest point of the airport's aircraft operations area and the hazardous wildlife attractant. Special attention should be given to hazardous wildlife attractants that could cause hazardous wildlife movement into or across the approach or departure airspace. Figure 1 depicts an example of the 5-mile separation distance measured from the nearest aircraft operations area.

Figure 1. Example of recommended separation distances described in Chapter 1 within which hazardous wildlife attractants should be avoided, eliminated, or mitigated.



PERIMETER A: For airports serving piston-powered aircraft, it is recommended hazardous wildlife attractants be 5,000 feet from the nearest aircraft operations area.

PERIMETER B: For airports serving turbine-powered aircraft, it is recommended hazardous wildlife attractants be 10,000 feet from the nearest aircraft operations area.

PERIMETER C: Recommended for all airports, 5-mile range to protect approach, departure and circling airspace.

Page Intentionally Blank

CHAPTER 2. LAND-USE PRACTICES ON OR NEAR AIRPORTS THAT POTENTIALLY ATTRACT HAZARDOUS WILDLIFE

2.1 General.

2.1.1 Many types of vegetation, habitats and land use practices can provide an attractant to animals that pose a risk to aviation safety. Hazardous wildlife use the natural or artificial habitats on or near an airport for food, water or cover. The wildlife species and the size of the populations attracted to the airport environment vary considerably, depending on several factors, including land-use practices on or near the airport. In addition to the specific considerations outlined below, airport operators should refer to *Wildlife Hazard Management at Airports* manual, prepared by FAA and U.S. Department of Agriculture (USDA) staff. (This manual is available in English, Spanish, and French). This manual, as well as other helpful resources can be viewed and downloaded free of charge from the Wildlife Strike Resources section of the FAA's wildlife hazard mitigation web site: http://www.FAA.gov/airports/airport_safety/wildlife).

2.1.1.1 The USDA / Animal and Plant Health Inspection Service (APHIS) / Wildlife Services developed a new publication series on wildlife damage management and is available online. The Wildlife Damage Management Technical Series highlights wildlife species or groups of wildlife species that cause damage to agriculture, property and natural resources, and/or impact aviation and human health and safety. The publications can be found at: https://www.aphis.usda.gov/aphis/ourfocus/wildlifedamage/sa_reports/ct_wildlife+damage+management+technical+series.

2.1.1.2 Additional resources have been provided by the USDA / APHIS / Wildlife Services National Wildlife Research Center (NWRC) at: https://www.aphis.usda.gov/aphis/ourfocus/wildlifedamage/programs/nwrc/sa_publications/ct_research_gateway. The NWRC Research Gateway contains research articles, reports, factsheets, technical notes, data and other materials on wildlife hazard mitigation, risk reduction, animal ecology, habitats, and advanced technologies and methodologies.

2.1.2 This section discusses land-use practices having the potential to attract hazardous wildlife and threaten aviation safety. The FAA has determined that the land uses listed below are generally not compatible with safe airport operations when they are located within the separation distances provided in Paragraphs 1.2 through 1.4.

2.1.3 As a reminder, these types of land uses or facilities often require permits from the appropriate permitting agency. The FAA may work with the permitting agency to include conditions for monitoring and mitigation measures, if necessary. Ultimately, the permittee is responsible for compliance to these conditions and the permitting agency is responsible for tracking compliance.

2.2 Waste Disposal Operations.

Municipal solid waste landfills (municipal landfills) are known to attract large numbers of hazardous wildlife, particularly birds. Because of this, these operations, when located within the separations identified in the siting criteria in Paragraphs 1.2 through 1.4, are considered incompatible with safe airport operations.

2.2.1 Siting for New Municipal Solid Waste Landfills Subject to AIR 21.

2.2.1.1 Section 503 of the Wendell H. Ford Aviation Investment and Reform Act for the 21st Century (P. L. 106-181) (AIR 21), 49 U.S.C. § 44718(d), prohibits the construction or establishment of a new municipal landfill within 6 miles of certain public-use airports. Before these prohibitions apply, both the airport and the landfill must meet the very specific conditions described below. These restrictions do not apply to airports or landfills located within the state of Alaska.

2.2.1.2 The airport must (1) have received a Federal grant(s) under 49 U.S.C. § 47101, et. seq.; (2) be under control of a public agency; (3) serve some scheduled air carrier operations conducted in aircraft with less than 60 seats; and (4) have total annual enplanements consisting of at least 51 percent of scheduled air carrier enplanements conducted in aircraft with less than 60 passenger seats.

2.2.1.3 The proposed municipal landfill must (1) be within 6 miles of the airport, as measured from airport property line to the landfill property line, and (2) have started construction or establishment on or after April 5, 2001. Section 44718(d) only limits the construction or establishment of some new landfills. It does not limit the expansion, either vertical or horizontal, of existing landfills.

2.2.1.4 Regarding existing municipal landfills and lateral expansions of landfills, 40 CFR § 258.10 requires owners or operators of a landfill units located within the separation distances provided in Paragraphs 1.2 through 1.4 to demonstrate that the unit is designed and operated so that it does not pose a bird hazard to aircraft. To accomplish this, follow the instructions provided in Paragraphs 3.2 and 3.3, document the wildlife monitoring and mitigation procedures that are cooperatively developed, and place this documentation in the operating permit of the facility.

2.2.2 Siting for New Municipal Landfills Not Subject to AIR 21.

If an airport and a municipal landfill do not meet the criteria of § 44718(d), then FAA recommends against locating the landfill within the separation distances identified in Paragraphs 1.2 through 1.4. In determining this distance separation, measurements should be made from the closest point of the airport property boundary to the closest point of the landfill property boundary.

2.2.3 Considerations for Existing Waste Disposal Facilities Within the Limits of Separation Criteria.

The FAA recommends against airport development projects that would increase the number of aircraft operations or accommodate larger or faster aircraft near landfill operations located within the separations identified in Paragraphs 1.2 through 1.4. In addition, in accordance with 40 CFR § 258.10, owners or operators of existing landfill units that are located within the separations listed in Paragraphs 1.2 through 1.4 must demonstrate that the unit is designed and operated so it does not pose a bird hazard to aircraft. (See Paragraph 4.3.2 of this AC for a discussion of this demonstration requirement.)

2.2.4 Enclosed Trash Transfer Stations.

Enclosed waste-handling facilities that receive garbage behind closed doors; process it via compaction, incineration, or similar manner; and remove all residue by enclosed vehicles generally are compatible with safe airport operations, provided they are constructed and operated properly and are not located on airport property or within the Runway Protection Zone. These facilities should not handle or store putrescible waste outside or in a partially enclosed structure accessible to hazardous wildlife. Trash transfer facilities that are open on one or more sides; or store uncovered quantities of municipal solid waste outside, even if only for a short time; or use semi-trailers that leak or have trash clinging to the outside; or do not control odors by ventilation and filtration systems (odor masking is not acceptable) do not meet the FAA's definition of fully enclosed trash transfer stations. The FAA considers fully enclosed waste-handling facilities constructed or operated incorrectly incompatible with safe airport operations if they are located closer than the separation distances specified in Paragraphs 1.2 through 1.4.

2.2.5 Composting Operations on or near Airport Property.

Composting operations that accept only yard waste (e.g., leaves, lawn clippings, or branches) generally do not attract hazardous wildlife. Sewage sludge, woodchips, and similar material are not municipal solid wastes and may be used as compost bulking agents. The compost, however, must never include food or other municipal solid waste. Composting operations should not be located on airport property unless effective, risk-reducing mitigations are in place. Off-airport property composting operations should be located no closer than the greater of the following distances: 1,200 feet from any aircraft operations area or the distance called for by airport design requirements (see AC 150/5300-13, *Airport Design*). This spacing should prevent material, personnel, or equipment from penetrating any Object Free Area, Obstacle Free Zone, Threshold Siting Surface, or Clearway. Airport operators should monitor composting operations located in proximity to the airport to ensure that steam or thermal rise does not adversely affect air traffic.

2.2.6 Underwater Waste Discharges.

The FAA recommends against the underwater discharge of any food waste (e.g., fish processing offal) within the separations identified in Paragraphs 1.2 through 1.4 because it could attract scavenging hazardous wildlife.

2.2.7 Recycling Centers.

Recycling centers that accept previously sorted non-food items, such as glass, newspaper, cardboard, aluminum, electronic, and household wastes such as paint, batteries, and oil, are, in most cases, not attractive to hazardous wildlife and are acceptable.

2.2.8 Construction and Demolition Debris Facilities.

2.2.8.1 Construction and demolition landfills generally do not attract hazardous wildlife and are acceptable if maintained in an orderly manner, admit no putrescible waste, and are not co-located with other waste disposal operations. However, construction and demolition landfills have similar visual and operational characteristics to putrescible waste disposal sites. When co-located with putrescible waste disposal operations, construction and demolition landfills are more likely to attract hazardous wildlife because of the similarities between these disposal facilities.

2.2.8.2 Therefore, a construction and demolition landfill co-located with another waste disposal operation should be located outside of the separations identified in Paragraphs 1.2 through 1.4.

2.2.8.3 Airport operators should be aware that on-site storage of construction and maintenance debris, as well as out-of-service aircraft or aircraft components, may provide an attractant for hazardous species (e.g., nesting or perching locations). The FAA recommends these on-site areas be monitored and/or mitigated, if necessary.

2.2.9 Fly Ash Disposal.

2.2.9.1 The incinerated residue from resource recovery power/heat-generating facilities that are fired by municipal solid waste, coal, or wood is generally not a wildlife attractant because it no longer contains putrescible matter. Landfills accepting only fly ash are generally not considered to be wildlife attractants and are acceptable as long as they admit no putrescible waste of any kind, and are not co-located with other disposal operations that attract hazardous wildlife.

2.2.9.2 Since varying degrees of waste consumption are associated with general incineration (not resource recovery power/heat-generating facilities), the FAA considers the ash from general incinerators a regular waste disposal by-product and, therefore, a hazardous wildlife attractant if disposed of within the separation criteria outlined in Paragraphs 1.2 through 1.4.

2.3 Water Management Facilities.

Drinking water intake and treatment facilities, storm water and wastewater treatment facilities, associated retention and settling ponds, ponds built for recreational use, ponds

and fountains for ornamental purposes, and ponds that result from mining activities often attract large numbers of potentially hazardous wildlife. Development of new open water facilities within the separation criteria identified in Paragraphs 1.2 through 1.4 should be avoided to prevent wildlife attractants. If necessary, land-use developers and airport operators may need to develop management plans, in compliance with local and state regulations, to support the operation of storm water management facilities on or near all public-use airports to ensure a safe airport environment. The FAA recommends these plans be developed in consultation with a Qualified Airport Wildlife Biologist[3], to minimize hazardous wildlife attractants.

2.3.1 Existing Stormwater Management Facilities.

2.3.1.1 On-airport stormwater management facilities allow the quick removal of surface water, including discharges related to aircraft deicing, from impervious surfaces, such as pavement and terminal/hangar building roofs. Existing on-airport detention ponds collect stormwater, protect water quality, and control runoff. Because they slowly release water after storms, they may create standing bodies of water that can attract hazardous wildlife. Where the airport has developed a Wildlife Hazard Management Plan, Part 139 regulations require the immediate correction of any wildlife hazards arising from existing stormwater facilities located on or near airports using appropriate wildlife hazard mitigation techniques. Airport operators should develop measures to minimize hazardous wildlife attraction in consultation with a Qualified Airport Wildlife Biologist.

2.3.1.2 Where possible, airport operators should modify stormwater detention ponds to allow a maximum 48-hour detention period for the design storm. The combination of open water and vegetation is particularly attractive to waterfowl and other hazardous wildlife. Water management facilities holding water longer than 48 hours should be maintained in a manner that keeps them free of both emergent and submergent vegetation. The FAA recommends that airport operators avoid or remove retention ponds and detention ponds featuring dead storage to eliminate standing water. Detention basins should remain totally dry between rainfalls. Where constant flow of water is anticipated through the basin, or where any portion of the basin bottom may remain wet, the detention facility should include a concrete or paved pad and/or ditch/swale in the bottom to prevent vegetation that may provide nesting habitat. Drainage basins with a concrete or paved pad should be maintained to prevent or remove any sediment build-up to prevent vegetation growth.

2.3.1.3 When it is not possible to drain a large detention pond completely, airport operators may use physical barriers, such as bird balls, wire grids, pillows,

[3] See Advisory Circular 150/5200-36, *Qualifications for Wildlife Biologist Conducting Wildlife Hazard Assessments and Training Curriculums for Airport Personnel Involved in Controlling Wildlife Hazards on Airports.*

or netting, to deter birds and other hazardous wildlife. When physical barriers are proposed, airport operators must evaluate their use, effectiveness and maintenance requirements. Airport operators must also ensure physical barriers will not adversely affect water rescue. Before installing any physical barriers over detention ponds on Part 139 airports, airport operators must get approval from the appropriate FAA Regional Airports Division Office.

2.3.1.4 The FAA recommends that airport operators encourage off-airport stormwater treatment facility operators to incorporate appropriate wildlife hazard mitigation techniques into stormwater treatment facility operating practices when their facility is located within the separation criteria specified in Paragraphs 1.2 through 1.4.

2.3.2 New Stormwater Management Facilities.

The FAA recommends that storm water management systems located within the separations identified in Paragraphs 1.2 through 1.4 be designed and operated so as not to create above-ground standing water. Stormwater detention ponds should be designed, engineered, constructed, and maintained for a maximum 48–hour detention period after the design storm and to remain completely dry between storms. To facilitate the control of hazardous wildlife, the FAA recommends the use of steep-sided, rip-rap or concrete lined, narrow, linear-shaped water detention basins. When it is not possible to place these ponds away from an airport's aircraft operations area (but still on airport property), airport operators may use physical barriers, such as bird balls, wire grids, floating covers, vegetation barriers (bottom liners), or netting, to prevent access of hazardous wildlife to open water and minimize aircraft-wildlife interactions. Caution is advised when nets or wire grids are used for deterring birds from attractants. Mesh size should be < 5 cm (2") to avoid entangling and killing birds and should not be made of a monofilament material. Grids installed above and across water to deter hazardous birds (e.g., waterfowl, cormorants, etc.) are different than using a small mesh covering but also provides an effective deterrent. Grid material, size, pattern and height above water may differ on a case-by-case basis. When physical barriers are used, airport operators must evaluate their use and ensure they will not adversely affect water rescue. Before installing any physical barriers over detention ponds on Part 139 airports, a review by a Qualified Airport Wildlife Biologist should be conducted, prior to approval from the appropriate FAA Regional Airports Division Office. All vegetation in or around detention basins that provide food or cover for hazardous wildlife should be eliminated. If soil conditions and other requirements allow, the FAA encourages the use of underground storm water infiltration systems because they are less attractive to wildlife.

2.3.3 Existing Wastewater Treatment Facilities.

2.3.3.1 The FAA recommends that airport operators immediately correct any wildlife hazards arising from existing wastewater treatment facilities located on or near the airport.

2.3.3.2 Where required, a wildlife management plan will outline appropriate wildlife hazard mitigation techniques. Accordingly, airport operators should encourage wastewater treatment facility operators to incorporate measures, developed in consultation with a Qualified Airport Wildlife Biologist, to minimize hazardous wildlife attractants. Airport operators should also encourage those wastewater treatment facility operators to incorporate these mitigation techniques into their standard operating practices. In addition, airport operators should consider the existence of wastewater treatment facilities when evaluating proposed sites for new airport development projects and avoid such sites when practicable.

2.3.4 New Wastewater Treatment Facilities.

The FAA recommends against the construction of new wastewater treatment facilities or associated settling ponds within the separations identified in Paragraphs 1.2 through 1.4. Appendix 1 defines wastewater treatment facility as "any devices and/or systems used to store, treat, recycle, or reclaim municipal sewage or liquid industrial wastes." The definition includes any pretreatment involving the reduction or elimination of pollutants prior to introducing such pollutants into a treatment facility. When a wastewater treatment facility is proposed within the separation criteria, the airport operator, project proponent, and local jurisdiction should discuss the proposed project location with regard to its location near the airport and the separation distances identified in Paragraphs 1.2 through 1.4. If possible, a more suitable location for the proposed facility should be identified. If no other suitable location exists, FAA recommends that the proposed facility plans be reviewed by a Qualified Airport Wildlife Biologist to identify measures to avoid or reduce the facility's potential to attract hazardous wildlife. If appropriate measures cannot be incorporated to reduce potential wildlife hazards, airport operators should document their opposition in a letter to the local jurisdiction.

2.3.5 Artificial Marshes.

In warmer climates, wastewater treatment facilities sometimes employ artificial marshes and use submergent and emergent aquatic vegetation as natural filters. These artificial marshes may be used by some species of flocking birds, such as blackbirds and waterfowl, for breeding or roosting activities. The FAA recommends against establishing artificial marshes within the separations identified in Paragraphs 1.2 through 1.4.

2.3.6 Wastewater Discharge and Sludge Disposal.

The FAA recommends careful consideration regarding the discharge of wastewater or biosolids (i.e., secondarily treated sewage sludge) on airport property. Such discharges might improve soil moisture and quality on unpaved areas and lead to improved turf growth. Depending on the airfield plant communities and habitats present, this can be an attractive food source for many species of animals or, conversely, could result in limited attractiveness to hazardous wildlife. Also, improved turf requires more frequent mowing and could attract geese. Airports should improve their turf with the goal of a monoculture of turf that is least attractive to wildlife. Wastewater or biosolids

applications might assist in achieving this goal. Caution should be exercised when discharges saturate airfield areas adjacent to paved surfaces. The resultant soft, muddy conditions could restrict or prevent emergency vehicles from reaching accident sites in a timely manner.

2.4 Wetlands.

Wetlands provide a variety of functions and can be regulated by local, state, and Federal laws. Wetlands can be attractive to many types of wildlife, including many which rank high on the list of hazardous wildlife species (Table 1 - AC 150/5200-32). Some types of wetlands are not as attractive to wildlife as others and they should be reviewed on a case-by-case basis to determine the likelihood of proposed wetlands increasing the numbers of hazardous wildlife at the airport. Factors such as size, shape, location, canopy cover and vegetative composition among other things should be considered when determining compatibility.

Note: If questions exist as to whether an area qualifies as a wetland, contact the District Office of the U.S. Army Corps of Engineers, the Natural Resources Conservation Service, or a wetland consultant qualified to delineate wetlands.

2.4.1 Existing Wetlands on or near Airport Property.

If wetlands are located on or near airport property, airport operators should be alert to any wildlife use or habitat changes in these areas that could affect safe aircraft operations. At public-use airports, the FAA recommends immediately correcting, in cooperation with local, state, and Federal regulatory agencies, any wildlife hazards arising from existing wetlands located on or near airports within 5 miles of the aircraft operations area. Where required, a wildlife management plan will outline appropriate wildlife hazard mitigation techniques. Accordingly, airport operators should develop measures to minimize hazardous wildlife attraction in consultation with a FAA Qualified Airport Wildlife Biologist.

2.4.2 New Airport Development.

Whenever possible, the FAA recommends locating new airports using the separations from wetlands identified in Paragraphs 1.2 through 1.4. Where alternative sites are not practicable, or when airport operators are expanding an existing airport into or near wetlands, a Qualified Airport Wildlife Biologist, in coordination with the U.S. Fish and Wildlife Service, the U.S. Army Corps of Engineers, and the state wildlife management agency should evaluate the wildlife hazards and prepare a wildlife management plan that indicates methods of minimizing the hazards.

2.4.3 Mitigation for Wetland Impacts from Airport Projects.

Wetland mitigation may be necessary when unavoidable wetland disturbances result from new airport development projects or projects required to correct wildlife hazards from wetlands. Wetland mitigation must be designed so it does not create a wildlife hazard. The FAA recommends that wetland mitigation projects that may attract hazardous wildlife be sited outside of the separations identified in Paragraphs 1.2 through 1.4.

2.4.3.1 **Onsite Mitigation of Wetland Functions.**

Wetland mitigation/conservation easements must not inhibit the airport operator's ability to effectively control hazardous wildlife on or near the mitigation site or effectively maintain other aspects of safe airport operations. Enhancing such mitigation areas to attract hazardous wildlife must be avoided. The FAA will review any onsite mitigation proposals to determine compatibility with safe airport operations and grant assurance compliance. Early coordination with the FAA is encouraged for any proposal to use airport land for wetland mitigation. A Qualified Airport Wildlife Biologist should evaluate any wetland mitigation projects that are needed to protect unique wetland functions and that must be located in the separation criteria in Paragraphs 1.2 through 1.4 before the mitigation is implemented. A wildlife management plan should be developed to reduce the wildlife hazards.

2.4.3.2 **Offsite Mitigation of Wetland Functions.**

2.4.3.2.1 The FAA recommends that wetland mitigation projects that may attract hazardous wildlife be sited outside of the separations identified in Paragraphs 1.2 through 1.4 unless they provide unique functions that must remain onsite (see 2.4.3.1). Agencies that regulate impacts to or around wetlands recognize that it may be necessary to split wetland functions in mitigation schemes. Therefore, regulatory agencies may, under certain circumstances, allow portions of mitigation to take place in different locations.

2.4.3.2.2 The FAA encourages landowners or communities supporting the restoration or enhancement of wetlands to do so only after critically analyzing how those activities would affect aviation safety. To do so, landowners or communities should contact the affected airport sponsor, FAA, and/or a Qualified Airport Wildlife Biologist.

2.4.3.2.3 Those parties should work cooperatively to develop restoration or enhancement plans that would not worsen existing wildlife hazards or create such hazards. See Paragraphs 4.1.1 – 4.1.3 for land-use modifications evaluation criteria.

2.4.3.2.4 If parties develop a mutually acceptable restoration or enhancement plan, the landowner or community proposing the restoration or enhancement must monitor the restored or enhanced site. This monitoring must verify that efforts have not worsened or created hazardous wildlife attraction or activity. If such attraction or activity occurs, the landowner or community should work with the airport sponsor, or a Qualified Airport Wildlife Biologist to reduce the hazard to aviation.

2.4.3.3 **Mitigation Banking.**

Wetland mitigation banking is the creation or restoration of wetlands in order to provide mitigation credits that can be used to offset permitted wetland losses. Mitigation banking benefits wetland resources by providing advance replacement for permitted wetland losses; consolidating small projects into larger, better-designed and managed units; and encouraging integration of wetland mitigation projects with watershed planning. This last benefit is most helpful for airport projects, as wetland impacts mitigated outside of the separations identified in Paragraphs 1.2 through 1.4 can still be located within the same watershed. Wetland mitigation banks meeting the separation criteria offer an ecologically sound approach to mitigation in these situations. Airport operators should work with local watershed management agencies or organizations to develop mitigation banking for wetland impacts on airport property.

2.5 Dredge Spoil Containment Areas.

The FAA recommends against locating dredge spoil containment areas (also known as Confined Disposal Facilities) within the separations identified in Paragraphs 1.2 through 1.4 if the containment area or the spoils contain material that would attract hazardous wildlife. Proposals for new dredge spoil containment areas located within the separation distances should be reviewed on a case-by-case basis to determine the likelihood of resulting in an increase in hazardous wildlife. The FAA recommends that airport sponsors work with a Qualified Airport Wildlife Biologist and/or the FAA to review proposals for dredge spoil containment areas located within separation criteria.

2.6 Agricultural Activities.

Many agricultural crops can attract hazardous wildlife and should not be planted within the separations identified in Paragraphs 1.2 through 1.4. Corn, wheat, and other small grains in particular should be avoided. If the airport has no financial alternative to agricultural crops to produce the income necessary to maintain the viability of the airport, then the airport should consider growing crops that hold little food value for hazardous wildlife, such as grass hay. Attractiveness to hazardous wildlife species during all phases of production, from planting through harvest and fallow periods, should be considered when contemplating the use of airport property for agricultural production. Where agriculture is present, crop residue (e.g., waste grain) should not be left in the field following harvest. Also, airports should consult AC 150/5300-13, *Airport Design,* to ensure that agricultural crops do not create airfield obstructions or other safety hazards. Before planning or initiating any agricultural practices on airport property, operators should get approval from the appropriate FAA regional Airports Division Office and demonstrate that the additional cost of wildlife control and potential accidents is offset by revenue generated by agricultural leases. Annual review of the Airport Certification Manual by the Certification Inspector does not constitute approval and is insufficient to meet this requirement.

2.6.1 Livestock Production.

Confined livestock operations (i.e., feedlots, dairy operations, hog or chicken production facilities, or egg laying operations) often attract flocking birds, such as blackbirds, starlings, or pigeons that pose a hazard to aviation. Therefore, the FAA recommends against such facilities within the separations identified in Paragraphs 1.2 through 1.4. The airport operator should be aware of any wildlife hazards that appear to be attracted to off-site livestock operations and consider working with a Qualified Airport Wildlife Biologist to identify reasonable and feasible measures that may be proposed to landowners to reduce the attractiveness of the site to the potentially hazardous wildlife species.

2.6.1.1 In exceptional circumstances, and following FAA review and approval, livestock may be grazed on airport property as long as they are off the airfield and separated behind fencing where they cannot pose a hazard to aircraft. The livestock should be fed and watered as far away from the airfield and approach/departure space as possible because the feed and water may attract birds. The wildlife management plan should include monitoring and wildlife mitigation for any areas where the livestock and their feed/water is located in case a wildlife hazard is detected. Airports without wildlife management plans should equally consider monitoring and mitigation protocols to identify and address any wildlife hazards associated with livestock and their feeding operations.

2.6.2 Alternative Uses of Agricultural Land.

2.6.2.1 Habitat modification both on and surrounding an airfield is one of the best and most economical long term mitigation strategies to decrease risk that wildlife pose to flight safety. Alternative land uses (e.g., solar and biofuel) at airports could help mitigate many of the challenges for the airport operator, developers, and conservationists. However, careful planning must first determine that proposed alternative energy production at airports does not create wildlife attractants or other hazards.

2.6.2.2 Some airports are surrounded by vast areas of farmed land within the distances specified in Paragraphs 1.2 through 1.4. Seasonal uses of agricultural land for activities such as hunting can create a hazardous wildlife situation. In some areas, farmers will rent their land for hunting purposes. Rice farmers, among others, flood their land to attract waterfowl or for conservation efforts. This is often done during waterfowl hunting season to obtain additional revenue by renting out duck blinds.

2.6.2.3 The waterfowl hunters then use decoys and call in hundreds, if not thousands, of birds, creating a threat to aircraft safety. It is recommended that a Qualified Airport Wildlife Biologist review, in coordination with local farmers and producers, these types of seasonal land uses and incorporate mitigating measures into the wildlife management plan, when possible.

2.7 Aquaculture.

Aquaculture is the breeding, rearing, and harvesting of fish, shellfish, and plants in all types of water environments including ponds, rivers, lakes, and the ocean. Aquaculture is used to produce food fish, sport fish, bait fish, ornamental fish, and to support restoration activities. Aquacultured species are grown in a range of facilities including tanks, cages, ponds, and raceways. When an aquaculture facility is proposed within the separation criteria, the airport operator, project proponent, and local jurisdiction should discuss the proposed project location with regard to its attraction to hazardous species, location near the airport and the separation distances identified in Paragraphs 1.2 through 1.4. If a facility is identified as a possible significant attraction, a more suitable location for the proposed facility should be identified. If no other suitable location exists, it is recommended that the proposed facility plans be reviewed by a Qualified Airport Wildlife Biologist to identify measures to avoid or reduce the facility's potential to attract hazardous wildlife.

2.7.1 Freshwater Aquaculture.

2.7.1.1 Freshwater aquaculture activities (e.g., catfish, tilapia, trout or bass production) are typically conducted outside of fully enclosed buildings in constructed ponds or tanks and are inherently attractive to a wide variety of birds and therefore pose a significant risk to airport safety when within the separation distances specified in Paragraphs 1.2 through 1.4. Freshwater aquaculture should only be considered if extensive mitigation measures have been incorporated to eliminate attraction to hazardous birds. Examples of such mitigation include:

1. Netting or other material to exclude hazardous birds (e.g., eagles, osprey, gulls, cormorants);
2. Acoustic hazing including pyrotechnics, propane cannons, directional sonic/hailing devices and other similar technologies;
3. Feeding procedure cleanliness, exclusion techniques prohibiting birds from perching or accessing food; efficiency of feeding operation procedures that reduce fish food attraction to hazardous birds;
4. Operation procedure efficiency transferring live fish to and from enclosures or removal of dead fish; maintenance and upkeep of facility;
5. Monitoring, mitigation and communication protocols with nearby airports as a proactive safety feature in response to specific hazardous species in the event they are identified at the facility in unacceptable numbers.

2.7.2 Marine Aquaculture.

Marine aquaculture (Mariculture) refers to the culturing of species that live in the ocean. When appropriately managed and mitigated as necessary, mariculture facilities do not pose a significant risk to airport safety.

2.7.2.1 **Finfish Mariculture.**

2.7.2.1.1 U.S. finfish mariculture primarily produces salmon and steelhead trout as well as lesser amounts of cod, moi, yellowtail, barramundi, seabass, and seabream. Maricultures use rigid and non-rigid enclosures (e.g., cages) at the surface or submerged in the water column. These enclosures may be fully enclosed, or be open at the top or covered with netted material to negate losses from depredation by birds or other predators. Different facilities employ different designs and operational protocols.

2.7.2.1.2 While mariculture operations typically do not pose a significant attractant to hazardous birds, design and operational features can be incorporated as permit conditions to mitigate attraction and effectively reduce this risk. Examples of such mitigation include:

1. Fully enclosed cages using netting or other material to exclude hazardous birds (e.g., gulls, cormorants, pelicans) and to insure retention of fish;
2. Submerged enclosures to reduce attraction to hazardous birds;
3. Feed barge cleanliness, exclusion techniques prohibiting birds from perching or accessing food; efficiency of feeding operation procedures that reduce fish food attraction to hazardous birds;
4. Operation procedure efficiency transferring live fish to and from enclosures or removal of dead fish; maintenance and upkeep of facility;
5. Monitoring, mitigation and communication protocols with nearby airports as a proactive safety feature in response to specific hazardous species in the event they are identified at the facility in unacceptable numbers.

2.7.2.2 **Shellfish Mariculture.**

U.S. shellfish mariculture primarily produces oysters, clams, mussels, lobster and shrimp. Shellfish may be grown directly on the bottom, in submerged cages or bags, or on suspended lines. These types of mariculture operations do not typically present a significant attractant to hazardous birds. For those operations that are found to pose a significant risk, design and operation features that diminish possible attraction to hazardous bird species (e.g., reducing areas for perching or feeding) can effectively reduce this risk.

2.7.2.3 **Plant Mariculture.**

2.7.2.3.1 Microalgae, also referred to as phytoplankton, microphytes, or planktonic algae constitute the majority of cultivated algae. Macroalgae, commonly known as seaweed, also have many commercial and industrial uses.

2.7.2.3.2 While few commercial seaweed farms exist, the sector is growing. These types of mariculture operations do not typically present an attractant to hazardous birds.

2.8 Golf Courses, Landscaping, Structures and Other Land-Use Considerations.

2.8.1 Golf Courses.

The large grassy areas and open water found on most golf courses are attractive to hazardous wildlife, particularly Canada geese and some species of gulls. These species can pose a threat to aviation safety. If golf courses are located on or near airport property, airport operators should be alert to any wildlife use or habitat changes in these areas that could affect safe aircraft operations. Accordingly, airport operators should develop, at a minimum, onsite measures to minimize hazardous wildlife attraction in consultation with a Qualified Airport Wildlife Biologist. Existing golf courses located within these separations that have been documented to attract hazardous wildlife are encouraged to develop a program to reduce the attractiveness of the sites to species that are hazardous to aviation safety. The FAA recommends against construction of new golf courses within the separations identified in Paragraphs 1.2 through 1.4 if determined that the new facility would create a significant wildlife hazard attractant by a Qualified Airport Wildlife Biologist. Airport operators should ensure these golf courses are monitored on a continuing basis for the presence of hazardous wildlife. If hazardous wildlife is detected, corrective actions should be immediately implemented.

2.8.2 Landscaping and Landscape Maintenance.

2.8.2.1 Depending on its geographic location, landscaping can attract hazardous wildlife. The FAA recommends that airport operators approach landscaping with caution and confine it to airport areas not associated with aircraft movements. Vegetation that produces seeds, fruits, or berries, or that provides dense roosting or nesting cover should not be used. Airports should develop a landscape plan to include approved and prohibited plants. The landscape plan should consider the watering needs of mature plants. A Qualified Airport Wildlife Biologist should review all landscaping plans. Airport operators should also monitor all landscaped areas on a continuing basis for the presence of hazardous wildlife. If hazardous wildlife is detected, corrective actions should be immediately implemented.

2.8.2.2 Turf grass areas on airports have the potential to be highly attractive to a variety of hazardous wildlife species. Research conducted by the USDA Wildlife Services' National Wildlife Research Center has shown that no one airfield vegetation management regimen will deter all species of hazardous wildlife in all situations. The composition and height of airfield grasslands should be properly managed to reduce their attractiveness to hazardous wildlife. In many situations, an intermediate height, monoculture turf grass might be most favorable. In cooperation with a

Qualified Airport Wildlife Biologist, airport operators should develop airport turf grass management plans on a prescription basis, including cultivar selection during reseeding efforts, that is specific to the airport's geographic location, climatic conditions, and the type of hazardous wildlife likely to frequent the airport.

2.8.2.3 Airport operators should ensure that plant varieties attractive to hazardous wildlife are not used on the airport. Disturbed areas or areas in need of re-vegetating should not be planted with seed mixtures containing millet or any other large-seed producing grass. For airport property already planted with seed mixtures containing millet, rye grass, or other large-seed producing grasses, the FAA recommends disking, plowing, or another suitable agricultural practice to prevent plant maturation and seed head production. Plantings should follow the specific recommendations for grass management and seed and plant selection made by the State University Cooperative Extension Service, the local office of Wildlife Services, or a Qualified Airport Wildlife Biologist. Airport operators should also consider developing and implementing a preferred/prohibited plant species list, reviewed by a Qualified Airport Wildlife Biologist, which has been designed for the geographic location to reduce the attractiveness to hazardous wildlife for landscaping airport property.

2.8.3 Structures.

2.8.3.1 Certain structures attract birds for loafing and nesting. Flat rooftops can be attractive to many species of gulls for nesting, hangars provide roosting / nesting opportunities for rock doves, towers, light posts and navigation aids can provide loafing / hunting perches for raptors and aircraft can provide loafing / nesting sites for European starlings, blackbirds and other species. These structures should be monitored and mitigated, if located on-site. Off-site structural attractions may require additional coordination to effectively mitigate their use by hazardous species.

2.8.3.2 Cellular communications towers are becoming increasingly more attractive to large birds (e.g., osprey, eagles, herons, vultures) for nesting and rearing their young. This problem is a growing concern because once the young fledge from nests built on manmade structures they are more likely to return to these kinds of sites to reproduce in future years.

2.8.4 Other Hazardous Wildlife Attractants.

Other land uses (e.g., conservation easements, parks, wildlife management areas) or activities not addressed in this AC may have the potential to attract hazardous wildlife. Regardless of the source of the attraction, when hazardous wildlife is noted on a public-use airport, each certificate holder must take prompt remedial action(s) to protect aviation safety and all non-certificated airports should take prompt remedial action(s) to protect aviation safety.

2.9 Habitat for State and Federally Listed Species on Airports.

An airport's air operations area is an artificial environment that has been created and maintained for aircraft operations. Because an aircraft operations area can be markedly different from the surrounding native landscapes, it may attract wildlife species that do not normally occur, or that occur only in low numbers in the area. Some of the grassland species attracted to an airport's aircraft operations area are at the edge of their natural ranges, but are attracted to habitat features found in the airport environment. Also, some wildlife species may occur on the airport in higher numbers than occur naturally in the region because the airport offers habitat features the species prefer. Some of these wildlife species are Federal or state-listed threatened and endangered species or have been designated by state resource agencies as species of special concern.

2.9.1 State-Listed Species Habitat Concerns.

2.9.1.1 Many state wildlife agencies have requested that airport operators facilitate and encourage habitat on airports for state-listed threatened and endangered species or species of special concern. Airport operators should exercise caution in adopting new management techniques because they may increase wildlife hazards and be inconsistent with safe airport operations. Managing the on-airport environment to facilitate or encourage the presence of hazardous wildlife species can create conditions that are incompatible with, or pose a threat to, aviation safety.

2.9.1.2 Not all state-listed threatened and endangered species or species of concern pose a direct threat to aviation safety. However, these species may pose an indirect threat and be hazardous because they attract other wildlife species or support prey species attractive to other species that are directly hazardous. Also, the habitat management practices that benefit these state-listed threatened and endangered species and species of special concern may attract other hazardous wildlife species. On-airport habitat and wildlife management practices designed to benefit wildlife that directly or indirectly create safety hazard where none existed before are incompatible with safe airport operations.

2.9.2 Federally Listed Species Habitat Concerns.

2.9.2.1 The FAA supports efforts to protect threatened and endangered species, as a matter of principle and consistent with the Endangered Species Act of 1973. The FAA must balance these requirements with our requirements and mission to maintain a safe and efficient airport system. Requests to enhance or create habitat for threatened and endangered species often conflict with the safety of the traveling public and may place the protected species at risk of mortality by aircraft collisions. The FAA does not support the creation, conservation or enhancement of habitat or refuges to attract endangered species on airports. If endangered species are present on an airport, specific obligations may apply under the Endangered

Species Act, 16 U.S.C. § 1531 et seq. and the airport operator should contact the Airports District Office Environmental Protection Specialist.

2.9.2.2 The designation of critical habitat for listed species under the Endangered Species Act on airport lands may be an incompatible land use in conflict with the intended and dedicated purpose of airport lands and may limit or preclude the ability of the airport to develop new infrastructure and growth capacity to meet future air carrier service demand. In addition, depending on the listed species (primarily but not limited to avian species), the designation of critical habitat within the separation distances provided in paragraphs 1.2 - 1.4 can represent a hazardous wildlife attractant in conflict with 14 CFR Part 139.337.

2.10 Synergistic Effects of Surrounding Land Uses.

There may be circumstances where two or more different land uses would not, by themselves, be considered hazardous wildlife attractants or are located outside of the separations identified in Paragraphs 1.2 through 1.4 but collectively may create a wildlife corridor directly through the airport and/or surrounding airspace. An example involves a lake located outside of the separation criteria on the east side of an airport and a large hayfield on the west side of an airport. These two land uses, taken together, could create a flyway for Canada geese directly across the airspace of the airport. Airport operators must consider the entire surrounding landscape and community when developing the wildlife management plan.

Page Intentionally Blank

CHAPTER 3. PROCEDURES FOR WILDLIFE HAZARD MANAGEMENT BY OPERATORS OF PUBLIC-USE AIRPORTS AND CONDITIONS FOR NON-CERTIFICATED AIRPORTS TO CONDUCT WILDLIFE HAZARD ASSESSMENTS AND WILDLIFE HAZARD SITE VISITS

3.1 Introduction.

In recognition of the increased risk of serious aircraft damage or the loss of human life that can result from a wildlife strike, the FAA recommends all airports conduct a Wildlife Hazard Site Visit or Wildlife Hazard Assessment unless otherwise mandated after an initial triggering events defined in Part 139 Section 139.337. After the airport has completed the site visit or assessment and implemented a wildlife management plan, investigations should be conducted following subsequent triggering events to determine if the original assessment and plan adequately address the situation or if conditions have changed that would warrant an update to the plan. In this section, airports that are certificated under 14 C.F.R. § 139.337 are referred to as "certificated airports" and all others are referred to as "non-certificated airports." When a statement refers to both certificated and non-certificated airports, "airport" or "all airports" is used.

3.2 Coordination with Qualified Airport Wildlife Biologists.

Hazardous wildlife management is a complex discipline and conditions vary widely across the United States. Therefore, only airport wildlife biologists meeting the qualification requirements in Advisory Circular 150/5200-36, *Qualifications for Wildlife Biologist Conducting Wildlife Hazard Assessments and Training Curriculums for Airport Personnel Involved in Controlling Wildlife Hazards on Airports*, can conduct Site Visits and Assessments. Airports must maintain documentation that the Qualified Airport Wildlife Biologist meets the qualification requirements in Advisory Circular 150/5200-36.

3.3 Wildlife Hazard Management at Airports: A Manual For Airport Personnel.

3.3.1 The Wildlife Hazard Management at Airports manual, prepared by FAA and USDA Wildlife Services staff, contains a compilation of information to assist airport personnel in the development, implementation, and evaluation of wildlife management plans at airports. The manual includes specific information on the nature of wildlife strikes, legal authority, regulations, wildlife management techniques, Assessments, Plans, and sources of help and information. The manual is available in three languages: English, Spanish, and French. It can be viewed and downloaded free of charge from the FAA's wildlife hazard mitigation web site: https://www.faa.gov/airports/airport_safety/wildlife. This manual only provides a starting point for addressing wildlife hazard issues at airports. FAA recommends that airports consult with a Qualified Airport Wildlife Biologists to assist with development of a wildlife management plan and the implementation of management actions by airport personnel.

3.3.2 There are many other resources complementary to this manual for use in developing and implementing wildlife management plans. Several are listed in the manual's bibliography or on the FAA Wildlife Mitigation website: https://www.faa.gov/airports/airport_safety/wildlife

3.4 Wildlife Hazard Site Visits and Wildlife Hazard Assessments.

3.4.1 Operators of certificated airports are encouraged to conduct an initial assessment regardless of whether the airport has experienced one of the triggering events. Doing so would allow the airport to take proactive action and mitigate the wildlife risk before experiencing an incident. All other airports are encouraged to conduct an assessment or site visit (as defined in FAA Advisory Circular 150/5200-38) conducted by a Qualified Airport Wildlife Biologist (as defined in FAA Advisory Circular 150/5200-36). Part 139 certificated airports are currently required to ensure that an assessment is conducted consistent with 14 C.F.R. § 139.337.

3.4.2 The intent of a site visit is to provide an abbreviated analysis of an airport's wildlife hazards and to provide timely information that allows the airport to expedite the mitigation of these hazards. The FAA also recommends that airports conduct an assessment or site visit as soon as practicable in order to identify any immediate wildlife hazards and/or mitigation measures.

3.4.3 Non-certificated airports should submit the results of the site visit or assessment to the FAA for review. The FAA will review the submitted site visit or assessment and make a recommendation regarding the development of a wildlife management plan. A wildlife management plan can be developed based on a site visit and will be required if the non-certificated airport is going to request federal grants for the purpose of mitigating wildlife hazards.

3.5 Wildlife Hazard Management Plan.

3.5.1 The FAA will consider the results of the assessment, along with the aeronautical activity at the airport and the views of the airport operator and airport users, in determining whether a wildlife management plan is needed for certificated airports, or recommended for non-certificated airports.

3.5.2 If the FAA determines that a wildlife management plan is needed for a certificated airport, the airport operator must formulate a plan, using the assessment as its basis and submit to the FAA for approval. If the FAA recommends that a non-certificated airport develop a plan, either an assessment or a site visit can be used as the basis for the wildlife management plan. Airports should consult AC 150/5200-38, *Protocol for the Conduct and Review of Wildlife Hazard Site Visits, Wildlife Hazard Assessments, and Wildlife Hazard Management Plans,* for further information on preparation and implementation requirements for their wildlife management plan.

3.5.3 The goal of an airport's wildlife management plan is to minimize the risk to aviation safety, airport structures or equipment, or human health posed by populations of hazardous wildlife on and around the airport. For wildlife management plans to effectively reduce wildlife hazards on and near airports, accurate and consistent wildlife strike reporting is essential. Airports should consult AC 150/5200-32, *Reporting Wildlife Aircraft Strikes,* for further information on responsibilities and recommendations concerning wildlife strikes.

3.5.4 The wildlife management plan must identify hazardous wildlife attractants on or near the airport and the appropriate wildlife management techniques to minimize the wildlife hazard. It must also prioritize the management measures.

3.6 Local Coordination.

The FAA recommends establishing a Wildlife Hazards Working Group to facilitate the communication, cooperation, and coordination of the airport and its surrounding community necessary to ensure the effectiveness of the wildlife management plan. The cooperation of the airport community is essential to prevent incompatible development in the airport vicinity. Whether on or off the airport, input from all involved parties must be considered when a potentially hazardous wildlife attractant is being proposed. Based on available resources, airport operators should undertake public education activities with the local planning agencies because some activities in the vicinity of an airport, while harmless under normal conditions, can attract wildlife and present a danger to aircraft (see Paragraphs 4.5 to 4.8). For example, if public trails are planned near wetlands or in parks adjoining airport property, the public should know that feeding birds and other wildlife in the area may pose a risk to aircraft.

3.7 Operational Notifications of Wildlife Hazards.

3.7.1 Operational notifications include active correspondence addressing wildlife issues on or near an airport, notifications and alerts. If an existing land-use practice creates a wildlife hazard and the land-use practice or wildlife hazard cannot be immediately eliminated, airport operators must issue a Notice to Airmen (NOTAM) and encourage the land owner or manager to take steps to control the wildlife hazard and minimize further attraction. Permanent attractions that cannot be eliminated or mitigated may be noted in the Airport/Facility Directory. NOTAMS and Airport/Facility Directory notifications are not appropriate for short-term or immediate advisories that can be relayed via Pilot Reports, direct air traffic control voice communications, or temporary Automated Terminal Advisory System alerts. Care should be given to avoid the continual broadcast of general warnings for extended periods of time. General warnings such as "birds in the vicinity of the aerodrome" offer little timely information to aid pilots and eventually may be ignored if not updated.

3.7.2 The Automated Terminal Advisory System (ATIS) is a continuous broadcast of recorded aeronautical information for aerodromes and their immediate surroundings. ATIS broadcasts contain essential information, such as current weather information,

active runways, available approaches, wildlife hazards and any other information required by the pilots. They indicate significant (moderate or severe) wildlife activity, as reported by an approved agency that presents temporary hazards on the ATIS broadcast. Pilots take notice of available ATIS broadcasts before contacting the local control unit, which reduces the controllers' workload and relieves frequency congestion. The recording is updated in fixed intervals or when there is a significant change in the information. Although ATIS broadcasts involving wildlife should be timely and specific, pilots do not need to know species-specific information. General descriptive information detailing size and number of animals, locations and timing of occurrence provides useful, actionable information for pilots.

3.7.3 A pilot report (PIREP) is reported by a pilot to indicate encounters of hazardous weather (e.g., icing or turbulence) and hazardous wildlife. Pilot reports are short-lived warnings providing immediate information on pilot observations that are transmitted in real-time to air traffic control. Large animals near active surfaces, soaring vultures and raptors within approach/ departure corridors and waterfowl such as geese feeding in grassy areas next to runways are all examples of pilot reports generated by pilots.

3.8 Federal and State Depredation Permits.

The FAA recommends that airports maintain federal and state depredation permits to allow mitigation and/ or removal of hazardous species. All protected species require special permits for lethal mitigation or capture and relocation procedures. Similarly, endangered or threatened species mitigation also requires special permits. The FAA recommends that airports work closely with a Qualified Airport Wildlife Biologist during the U.S. Fish and Wildlife Service consultation and permitting process. The following Orders can help airports reduce risks from hazardous species by allowing private citizens to control hazardous species off airport properties without the need for a Federal depredation permit.

3.8.1 Standing Depredation Orders.

3.8.1.1 Federal law allows people to protect themselves and their property from damage caused by migratory birds. Provided no effort is made to kill or capture the birds, a depredation permit is not required to merely scare or herd depredating migratory birds other than endangered or threatened species or bald or golden eagles (50 CFR 21.41).

3.8.1.2 In addition, certain species of migratory birds may be mitigated without a federal permit under specific circumstances, many of which relate to agricultural situations. The following Standing Depredation Orders have applicability near airports:

- 50 CFR § 21.49- Control Order for Resident Canada Geese at Airports and Military Airfields.
- 50 CFR § 21.50- Depredation Order for Resident Canada Geese Nests and Eggs.

- 50 CFR § 21.43 - Depredation Order for Blackbirds, Cowbirds, Crows, Grackles, and Magpies.
- 50 CFR § 21.54 - Control Order for Muscovy Ducks in the United States.
- 50 CFR § 21.55 - Control Order for Invasive Migratory Birds in Hawaii.

Page Intentionally Blank

CHAPTER 4. RECOMMENDED PROCEDURES FOR THE FAA, AIRPORT OPERATORS AND OTHER GOVERNMENT ENTITIES REGARDING OFF-AIRPORT ATTRACTANTS

4.1 FAA Notification and Review of Proposed Land-Use Practice Changes in the Vicinity of Public-Use Airports.

4.1.1 For projects that are located within 5 miles of the airport's aircraft operations area, the FAA may review development plans, proposed land-use changes, operational changes, major federal actions or wetland mitigation plans to determine if such changes increase risk to airport safety by attracting hazardous wildlife on and around airports. The FAA is not a permitting agency for land use modifications that occur off airport properties, therefore, such reviews are typically initiated by state or federal permitting agencies seeking FAA input on new or revised permits. Each of the land uses listed in Chapter 2 of this AC has the potential to pose a risk to airport operations when they are located within the separation distances provided in Paragraphs 1.2 through 1.4.

4.1.2 Off-site land use modifications near airports may include an assessment of risk for facilities and land-use changes and, if necessary, mitigation strategies that may reduce risk to an acceptable level. However, the FAA recognizes that individual facilities or land-use modifications may present a range of attractants to different species, resulting in varying levels of risk. Therefore, the FAA considers each proposal on a case-by-case basis.

4.1.3 The FAA analyzes each land-use modification or new facility proposal prior to its establishment or any significant planned changes to design or operations that may increase the risk level. As part of a review, the FAA considers several factors that include, but are not limited to:

1. Type of attractant;
2. Size of attractant;
3. Location/distance of attractant from airport;
4. Design (e.g., construction, material, mitigation techniques employed into design);
5. Operation (e.g., cleanliness, constancy/ volume of use, seasonality, time of day);
6. Monitoring protocols (e.g., frequency, documentation, evaluation, species identification and number thresholds that trigger actions of communication or mitigation, baseline wildlife data);
7. Mitigation protocols (e.g., responsibilities, methods, intensity, pre-determined objectives, documentation, evaluation); and
8. Communication protocols to airport and/ or air traffic control tower;

4.1.4 The review of these factors may result in FAA recommended additions or modifications to a conditional use permit that allows the permitting agency to track compliance with the permittee obligations. Such conditions placed within a permit

may involve a comprehensive outline and recognition of individuals responsible for monitoring, communication, and mitigation measures if certain action thresholds are met. Action thresholds are defined in this instance as those pre-determined parameters (e.g., number, location, behavior, time of day) of specific hazardous species that would trigger a mitigation response. Additionally, baseline data should be used to determine the effect, if any, on wildlife populations at the proposed off-site location and/or at the airport.

4.1.5 Baseline data may need to be collected, depending on the existence of useful data and timeline for site modification. If, after taking into account the factors above, FAA determines that a facility poses a significant risk to airport safety, FAA will object to its establishment or renewal.

4.1.6 For projects that are located within 5 miles of the airport's aircraft operations area, the FAA Airport District Office may review development plans, proposed land-use changes, operational changes, major federal actions or wetland mitigation plans to determine if such changes present potential wildlife hazards to aircraft operations. The FAA considers sensitive airport areas as those that lie under or next to approach or departure airspace. This brief examination should indicate if further investigation is warranted.

4.1.7 Where a Qualified Airport Wildlife Biologist has conducted a further study to evaluate a site's compatibility with airport operations, the FAA may use the study results to make a determination.

4.2 Waste Management Facilities.

4.2.1 Notification of New/Expanded Project Proposal.

4.2.1.1 49 U.S.C. § 44718(d), prohibits the construction or establishment of new municipal landfills within 6 miles of certain public-use airports, when both the airport and the landfill meet specific conditions. See Paragraph 2.2 of this guidance for a more detailed discussion of these restrictions.

4.2.1.2 The Environmental Protection Agency (EPA) requires any landfill operator proposing a new or expanded waste disposal operation within 5 miles of a runway end to notify the appropriate FAA Regional Airports Division Office and the airport operator of the proposal. See 40 CFR § 258, *Criteria for Municipal Solid Waste Landfills,* Section 258.10, *Airport Safety*. The EPA also requires owners or operators of new landfill units, or lateral expansions of existing MSWLF landfill units, that are located within 10,000 feet of any airport runway end used by turbine-powered aircraft, or within 5,000 feet of any airport runway end used only by piston-type aircraft, to demonstrate successfully that such units are not hazards to aircraft. (See 4.3.2 below.)

4.2.1.3 When new or expanded municipal landfills are being proposed near airports, landfill operators must notify the airport operator and the FAA of the proposal as early as possible pursuant to 40 CFR § 258.

4.2.1.4 The FAA discourages the development of waste disposal and other facilities, discussed in Chapter 2, located within the separation criteria specified in Paragraphs 1.2 through 1.4. To show that a waste-handling facility sited within the separations identified in Paragraphs 1.2 through 1.4 does not attract hazardous wildlife and does not threaten aviation, the developer must establish the facility will not handle putrescible material other than that as outlined in 2.2.4. The FAA recommends against any facility other than those outlined in 2.2.4 (enclosed transfer stations). The FAA will use this information to determine if the facility will be a hazard to aviation.

4.3 Other Land-Use Practice Changes.

4.3.1 The FAA encourages operators of public-use airports who become aware of proposed land use practice changes that may attract hazardous wildlife within 5 miles of their airports to notify their assigned Airport Certification Safety Inspector or Airports District Office Program Manager. The FAA also encourages proponents of such land use changes to notify the FAA as early in the planning process as possible. Advanced notice affords the FAA an opportunity (1) to evaluate the effect of a particular land-use change on aviation safety and (2) to support efforts by the airport sponsor to restrict the use of land next to or near the airport to uses that are compatible with the airport.

4.3.2 The airport operator, project proponent, or land-use operator may use FAA Form 7460-1, Notice of Proposed Construction or Alteration, or other suitable documents similar to FAA Form 7460-1 to notify the appropriate FAA Regional Airports Division Office. Project proponents can contact the appropriate FAA Regional Airports Division Office for assistance with the notification process prior to submitting Form 7460-1.

4.3.3 It is helpful if the notification includes a 15-minute quadrangle map of the area identifying the location of the proposed activity. The land-use operator or project proponent should also forward specific details of the proposed land-use change or operational change or expansion. In the case of solid waste landfills, the information should include the type of waste to be handled, how the waste will be processed, and final disposal methods.

4.3.4 Airports that have Received Federal Assistance.

Airports that have received Federal assistance are required under their grant assurances to take appropriate actions to restrict the use of land next to or near the airport to uses that are compatible with normal airport operations. See Grant Assurance 21. The FAA recommends that airport operators oppose off-airport land-use changes or practices, to

the extent practicable, within the separations identified in Paragraphs 1.2 through 1.4, which may attract hazardous wildlife. Failure to do so may lead to noncompliance with applicable grant assurances. The FAA will not approve the placement of airport development projects pertaining to aircraft movement in the vicinity of hazardous wildlife attractants without appropriate mitigating measures. Increasing the intensity of wildlife control efforts is not a substitute for preventing, eliminating or reducing a proposed wildlife hazard. Airport operators should identify hazardous wildlife attractants and any associated wildlife hazards during any planning process for airport development projects.

4.4 Coordination to Prevent Creation of New Off-Airport Hazardous Wildlife Attractants.

Airport operators should work with local and regional planning and zoning boards to be aware of proposed land-use changes, or modification of existing land uses, that could create hazardous wildlife attractants within the separations identified in Paragraphs 1.2 through 1.4. Pay particular attention to proposed land uses involving creation or expansion of wastewater treatment facilities, development of wetland mitigation sites, or development or expansion of dredge spoil containment areas. At the very least, it is recommended that airport operators are on the notification list of the local planning board or equivalent review entity for all communities located within 5 miles of the airport, so they will receive notification of any proposed project and have the opportunity to review it for attractiveness to hazardous wildlife. This may be accomplished through one or more of the following:

4.4.1 Site-specific Criteria.

The airport should establish site-specific criteria for assessment of land uses attractive to hazardous wildlife and locations that would be of concern based on wildlife strikes and on wildlife abundance and activity at the airport and in the local area. These criteria may be more selective, but should not be less restrictive than this guidance.

4.4.2 Outreach.

Airports should actively seek to provide educational information and/ or provide input regarding local development, natural resource modification or wildlife-related concerns that affect wildlife hazards and safe air travel.

4.4.2.1 **External Outreach.**

Airport operators and a Qualified Airport Wildlife Biologist should consider outreach to local planning and zoning organizations on land uses of concern or to local organizations responsible for natural resource management (including wildlife, wetlands, and parks.) Airports should also consider developing and distributing position letters and educational materials on airport-specific concerns regarding wildlife hazards, wildlife activity and attraction. Finally, airports should provide formal comments on local procedures, laws, ordinances, plans, and regulatory actions such as permits related to land uses of concern.

4.4.2.2 **Internal Outreach.**

Airports should consider developing and distributing position letters and educational materials on airport-specific concerns regarding species identification and mitigation procedures, wildlife hazards, wildlife activity and attraction to employees and personnel with access to the aircraft operations area.

4.5 Coordination on Existing Off-Airport Hazardous Wildlife Attractants.

Airports are encouraged to work with landowners and managers to cooperatively develop procedures to monitor and manage hazardous wildlife attraction. If applicable, these procedures may include:

1. Conducting a wildlife hazard site visit by a wildlife biologist meeting the qualification requirements of Advisory Circular 150/5200-36, *Qualifications for Wildlife Biologist Conducting Wildlife Hazard Assessments and Training Curriculums for Airport Personnel Involved in Controlling Wildlife Hazards on Airports*
2. Conducting regular, standardized, wildlife monitoring surveys;[4]
3. Establishing threshold numbers of wildlife which would trigger certain actions and/or communications;
4. Establishment of procedures to deter or remove hazardous wildlife.

4.6 Prompt Remedial Action.

For attractants found on and off airport property, and with landowner or manager cooperation, Part 139 certificated airports must take immediate action in accordance with their Airport Certification Manual and the requirements of Part 139.337, to alleviate wildlife hazards whenever they are detected. It is also recommended that non-certificated airports take immediate action to alleviate wildlife hazards whenever they are detected. In addition, airports should take prompt action to identify the source of attraction and cooperatively develop procedures to mitigate and monitor the attractant. **For Part 139 Certificated airports, immediate actions are required in accordance with 139.337(a).**

4.7 FAA Assistance.

If there is a question on the implementation of any of the guidance in this section, contact the FAA Regional Airports Division for assistance.

[4] Recommended survey protocols can be found in AC 150/5200-38, *Protocol for the Conduct and Review of Wildlife Hazard Site Visits, Wildlife Hazard Assessments, and Wildlife Hazard Management Plans*, and DeVault, T.L., B.F. Blackwell, and J.L. Belant, eds. 2013. *Wildlife in Airport Environments: Preventing Animal–Aircraft Collisions through Science-Based Management.* Johns Hopkins University Press, Baltimore, MD, USA. 181 pp.

4.7.1 Airport Documentation Procedures.

Airports should document on-site and off-site wildlife attractants as part of their "Wildlife Hazard Management Plan Annual Review," "Wildlife Hazard Management Plan Review Following a Triggering Event," and the airport's Continual Monitoring Annual Report (as outlined in FAA Advisory Circular 150/5200-38). As a best management practice, airports may choose to keep a log to track contacts from landowners or managers, permitting agencies, or other entities concerning land uses near the airport.

APPENDIX A. DEFINITIONS OF TERMS USED IN THIS ADVISORY CIRCULAR

A.1 **General.**

This appendix provides definitions of terms used throughout this AC.

1. **Air operations area.** Any area of an airport used or intended to be used for landing, takeoff, or surface maneuvering of aircraft. An air operations area includes such paved areas or unpaved areas that are used or intended to be used for the unobstructed movement of aircraft in addition to its associated runway, taxiways, or apron.
2. **Airport operator.** The operator (private or public) or sponsor of a public-use airport.
3. **Approach or departure airspace.** The airspace, within 5 statute miles of an airport, through which aircraft move during landing or takeoff.
4. **Bird balls.** High-density plastic floating balls that can be used to cover ponds and prevent birds from using the sites.
5. **Certificate holder.** The holder of an Airport Operating Certificate issued under 14 C.F.R. Part 139.
6. **Construct a new municipal landfill.** To begin to excavate, grade land, or raise structures to prepare a municipal solid waste landfill as permitted by the appropriate regulatory or permitting agency.
7. **Detention ponds.** Storm water management ponds that hold storm water for short periods of time, a few hours to a few days.
8. **Establish a new municipal landfill.** When the first load of putrescible waste is received on-site for placement in a prepared municipal solid waste landfill.
9. **Fly ash.** The fine, sand-like residue resulting from the complete incineration of an organic fuel source. Fly ash typically results from the combustion of coal or waste used to operate a power generating plant.
10. **General aviation aircraft.** Any civil aviation aircraft operating under 14 CFR Part 91.
11. **Hazardous wildlife.** Species of wildlife (birds, mammals, reptiles), including feral and domesticated animals, not under control that may pose a direct hazard to aviation (i.e., strike risk to aircraft) or an indirect hazard such as an attractant to other wildlife that pose a strike hazard or are causing structural damage to airport facilities (e.g., burrowing, nesting, perching).
12. **Municipal Landfill.** A publicly or privately owned discrete area of land or an excavation that receives household waste and that is not a land application unit, surface impoundment, injection well, or waste pile, as those terms are defined under 40 CFR § 257.2. A municipal landfill may receive other types wastes, such as commercial solid waste, non-hazardous sludge, small-quantity generator waste, and

industrial solid waste, as defined under 40 CFR § 258.2. A municipal landfill can consist of either a stand-alone unit or several cells that receive household waste.

13. **New municipal landfill.** A municipal solid waste landfill that was established or constructed after April 5, 2001.
14. **Piston-powered aircraft.** Fixed-wing aircraft powered by piston engines.
15. **Piston-use airport.** Any airport that does not sell Jet-A fuel for fixed-wing turbine-powered aircraft, and primarily serves fixed-wing, piston-powered aircraft. Incidental use of the airport by turbine-powered, fixed-wing aircraft would not affect this designation. However, such aircraft should not be based at the airport.
16. **Public agency.** A state or political subdivision of a state, a tax-supported organization, or an Indian tribe or pueblo (49 U.S.C. § 47102(19)).
17. **Public airport.** An airport used or intended to be used for public purposes that is under the control of a public agency; and of which the area used or intended to be used for landing, taking off, or surface maneuvering of aircraft is publicly owned (49 U.S.C. § 47102(20)).
18. **Public-use airport.** An airport used or intended to be used for public purposes where the area used or intended to be used for landing, taking off, or surface maneuvering of aircraft may be under the control of a public agency or privately owned and used for public purposes (49 U.S.C. § 47102(21)).
19. **Putrescible waste.** Solid waste that contains organic matter capable of being decomposed by micro-organisms and of such a character and proportion as to be capable of attracting or providing food for birds (40 CFR §257.3-8).
20. **Putrescible-waste disposal operation.** Landfills, garbage dumps, underwater waste discharges, or similar facilities where activities include processing, burying, storing, or otherwise disposing of putrescible material, trash, and refuse.
21. **Retention ponds.** Storm water management ponds that hold water for more than 48 hours.
22. **Risk**. Risk is the relationship between the severity and probability of a threat. It is the product of hazard level and abundance in the critical airspace, and is thus defined as the probability of a damaging strike with a given species.
23. **Runway protection zone.** An area off the runway end to enhance the protection of people and property on the ground (see AC 150/5300-13). The dimensions of this zone vary with the airport design, aircraft, type of operation, and visibility minimum.
24. **Scheduled air carrier operation.** Any common carriage passenger-carrying operation for compensation or hire conducted by an air carrier or commercial operator for which the air carrier, commercial operator, or their representative offers in advance the departure location, departure time, and arrival location. It does not include any operation that is conducted as a supplemental operation under 14 CFR Part 119 or as a public charter operation under 14 CFR Part 380 (14 CFR § 119.3).

25. **Sewage sludge.** Any solid, semi-solid, or liquid residue generated during the treatment of domestic sewage in a treatment works. Sewage sludge includes, but is not limited to, domestic septage; scum or solids removed in primary, secondary, or advanced wastewater treatment process; and a material derived from sewage sludge. Sewage does not include ash generated during the firing of sewage sludge in a sewage sludge incinerator or grit and screenings generated during preliminary treatment of domestic sewage in a treatment works. (40 CFR § 257.2)

26. **Sludge.** Any solid, semi-solid, or liquid waste generated form a municipal, commercial or industrial wastewater treatment plant, water supply treatment plant, or air pollution control facility or any other such waste having similar characteristics and effect. (40 CFR § 257.2).

27. **Solid waste.** Any garbage, refuse, sludge, from a waste treatment plant, water supply treatment plant or air pollution control facility and other discarded material, including, solid liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations, and from community activities, but does not include solid or dissolved materials in domestic sewage, or solid or dissolved material in irrigation return flows or industrial discharges which are point sources subject to permits under section 402 of the Clean Water Act, or source, special nuclear, or by product material as defined by the Atomic Energy Act of 1954.(40 CFR § 257.2).

28. **Turbine-powered aircraft.** Aircraft powered by turbine engines including turbojets and turboprops but excluding turbo-shaft rotary-wing aircraft.

29. **Turbine-use airport.** Any airport that sells fuel for fixed-wing turbine-powered aircraft.

30. **Wastewater treatment facility.** Any devices and/or systems used to store, treat, recycle, or reclaim municipal sewage or liquid industrial wastes, including publicly owned treatment works, as defined by Section 212 of the Clean Water Act. This definition includes any pretreatment involving the reduction of the amount of pollutants, the elimination of pollutants, or the alteration of the nature of pollutant properties in wastewater prior to or in lieu of discharging or otherwise introducing such pollutants into a publicly owned treatment system. (See 40 CFR § 403.3 (q), (r), & (s)).

31. **Wildlife.** Any wild animal, including without limitation any wild mammal, bird, reptile, fish, amphibian, mollusk, crustacean, arthropod, coelenterate, or other invertebrate, including any part, product, egg, or offspring thereof. 50 CFR § 10.12. As used in this AC, wildlife includes feral animals and domestic animals out of the control of their owners (14 CFR Part 139, Certification of Airports).

32. **Wildlife attractants.** Any human-made structure, land-use practice, or human-made or natural geographic feature that can attract or sustain hazardous wildlife within the landing or departure airspace or the airport's aircraft operations area. These attractants can include architectural features, landscaping, waste disposal sites, wastewater treatment facilities, agricultural or aquaculture activities, surface mining, or wetlands.

33. **Wildlife hazard.** A potential for a damaging aircraft collision with wildlife on or near an airport.

34. **Wildlife strike.** A wildlife strike is deemed to have occurred when:

    a. A strike between wildlife and aircraft has been witnessed;

    b. Evidence or damage from a strike has been identified on an aircraft;

    c. Bird or other wildlife remains, whether in whole or in part, are found:

        i. Within 250 feet of a runway centerline or within 1,000 feet of a runway end unless another reason for the animal's death is identified or suspected, unless another reason for the animal's death is identified or;

        ii. On a taxiway or anywhere else on or off airport that there is reason to believe was the result of a strike with an aircraft.

    d. The presence of birds or other wildlife on or off the airport had a significant negative effect on a flight (i.e., aborted takeoff, aborted landing, high-speed emergency stop, aircraft left pavement area to avoid collision with animal).

APPENDIX B. ADDITIONAL RESOURCES

B.1 Regulations

- 14 CFR § 139.337, *Wildlife Hazard Management*
- 40 CFR § 258, *Criteria for Municipal Solid Waste Landfills*

B.2 Advisory Circulars

- AC 150/5200-32, *Reporting Wildlife Aircraft Strikes*
- AC 150/5200-33, *Hazard Wildlife Attractants on or Near Airports*
- AC 150/5200-34, *Construction or Establishment of New Landfills Near Public Airports*
- AC 150/5200-36, *Qualifications for Wildlife Biologist Conducting Wildlife Hazard Assessments and Training Curriculums for Airport Personnel Involved in Controlling Wildlife Hazards on Airports*
- AC 150/5200-38, *Protocol for the Conduct and Review of Wildlife Hazard Site Visits, Wildlife Hazard Assessments, and Wildlife Hazard Management Plans*
- AC 150/5220-25, *Airport Avian Radar Systems*
- AC 150/5210-24, *Airport Foreign Object Debris (FOD) Management*

B.3 Certification Alerts

- Certalert No. 97-09, *Wildlife Hazard Management Plan Outline* (11/17/1997)
- Certalert No. 98-05, *Grasses Attractive To Hazardous Wildlife* (9/21/1998)
- Certalert No. 06-07, *Requests by State Wildlife Agencies to Facilitate and Encourage Habitat for State Listed Threatened and Endangered Species and Species of Special Concern on Airports* (11/21/2006)
- Certalert No. 13-01, *Federal and State Depredation Permit Assistance* (1/30/2013)
- Certalert No.14-01, *Seasonal Mitigation of Hazardous Species at Airports: Attention to Snowy Owls* (2/26/2014)
- Certalert No. 16-03, *Recommended Wildlife Exclusion Fencing* (8/2016)

B.4 Airport Cooperative Research Program Reports

These, and other wildlife / aviation reports, are available from the Transportation Research Board of the National Academies (TRB) at http://www.trb.org/Publications/Publications.aspx.

- ACRP Research Report 198: Wetland Mitigation, Volume 2, A Guidebook for Airports (2019)
- ACRP Synthesis 92: Airport Waste Management and Recycling Practices (2018)
- ACRP Research Report 174: Guidebook and Primer (2018)
- ACRP Report 122: Innovative Airport Responses to Threatened / Endangered Species (2015)
- ACRP Report 125: Balancing Airport Stormwater and Bird Hazard Management (2015)
- ACRP Report 145: Applying an SMS Approach to Wildlife Hazard Management (2015)
- ACRP Synthesis 39 Report: Airport Wildlife Population Management (2013)
- ACRP Synthesis 52 Report: Habitat Management to Deter Wildlife at Airports (2014)
- ACRP Synthesis 23 Report: Bird Harassment, Repellent, and Deterrent Techniques for Use on and Near Airports (2011)
- ACRP Report 32: Guidebook for Addressing Aircraft/Wildlife Hazards at General Aviation Airports (2010)

B.5 Manuals

- Wildlife Hazard Management at Airports - A Manual for Airport Personnel (2005)

B.6 Orders

- 50 CFR § 21.49, Control Order for Resident Canada Geese at Airports and Military Airfields
- 50 CFR § 21.50, Depredation Order for Resident Canada Geese Nests and Eggs
- 50 CFR § 21.43, Depredation Order for Blackbirds, Cowbirds, Crows, Grackles, and Magpies
- 50 CFR § 21.54, Control Order for Muscovy Ducks in the United States
- 50 CFR § 21.55, Control Order for Invasive Migratory Birds in Hawaii

Advisory Circular Feedback

If you find an error in this AC, have recommendations for improving it, or have suggestions for new items/subjects to be added, you may let us know by (1) mailing this form to Manager, Airport Safety and Operations Division, Federal Aviation Administration ATTN: AAS-300, 800 Independence Avenue SW, Washington DC 20591 or (2) faxing it to the attention of AAS-300 at (202) 267-5257.

Subject: AC 150/5200-33C Date: _____

Please check all appropriate line items:

☐ An error (procedural or typographical) has been noted in paragraph _____ on page _____.

☐ Recommend paragraph _____ on page _____ be changed as follows:

_____
_____
_____

☐ In a future change to this AC, please cover the following subject:
(Briefly describe what you want added.)

_____
_____
_____

☐ Other comments:

_____
_____
_____

☐ I would like to discuss the above. Please contact me at (phone number, email address).

Submitted by: _____ Date: _____

APPENDIX H

Wildlife Hazard Memo to Solano County

ESA Airports

2600 Capitol Avenue
Suite 200
Sacramento, CA 95816
916.564.4500 phone
916.564.4501 fax

www.esassoc.com

memorandum

date August 26, 2015

to Mr. Jim Leland
Department of Resource Management
Solano County
675 Texas Street, Suite 5500
Fairfield, CA 94533-6341

from LeChi Huynh

subject RE: Aerial Analysis of Potential Wildlife Attractants in the Vicinity of Travis Air Force Base (SUU)

Wildlife hazard concerns at airports have risen to the forefront following the "Miracle on the Hudson" and other recent high profile incidents related to hazardous wildlife. With ongoing economic challenges and limited budgetary resources, airports must balance managing wildlife concerns with providing cost effective infrastructure and resources for their users. Solano County (County) has requested that ESA conduct an aerial analysis of potential wildlife attractants occurring in the vicinity of Travis Air Force Base (AFB) (SUU) and identify potential wildlife that may use these attractants. The purpose of this memo is to summarize general (remote) results from an analysis of potential land uses in the vicinity of Travis AFB that may serve as wildlife attractants. This analysis does not include field surveys and further studies such as a formal Wildlife Hazard Assessment (WHA), which may be necessary for specific land use or development actions.

Methodology

The following methodology and sources were used to conduct the analysis:

- Bird strike data provided by Travis AFB;
- Review of aerial imagery for areas within 14,500 feet and 5 miles of Travis AFB to identify land uses that serve as potential wildlife attractants;
- Review of the Travis Air Force Base Bird/Wildlife Aircraft Strike Hazard (BASH) Reduction Program;
- Review of Federal Aviation Administration (FAA) Advisory Circulars (ACs); and
- Review of regional wildlife and bird lists and online databases such as e-Bird and National Wetland Inventory (NWI).

Results

The data provided by Travis AFB includes a record of 312 bird strikes at SUU from 2005-2015 (**Table 1**) that cost a total of $432,649 in damages. There has been a substantial increase in the number of bird strikes in the last few years at Travis AFB, with a sharp increase from 2009 to 2010 and onward. While 2011 had the greatest number of bird strikes (55), 2015 had the second highest number of bird strikes (49) to date and the highest overall cost ($156,954). The cost for the year 2015 alone accounts for about 36 percent of the total costs for the ten-year period.

Table 1. Bird Strike Database Results for SUU within 15 Nautical Miles

Year	Strikes	Cost
2005	11	$40,322
2006	17	$33,913
2007	13	$41,058
2008	12	$0
2009	9	$17,960
2010	31	$573
2011	55	$2,112
2012	39	$114,589
2013	46	$22,634
2014	30	$2,524
2015	49	$156,954
Total	**312**	**$432,649**
Source: Travis Air Force Base		

Travis AFB also has a Bird Aircraft Strike Hazard (BASH) Plan, which serves to implement two documents, Air Force Instruction (AFI) 91-202 ("US Air Force Mishap Prevention Program) and Air Force Pamphlet (AFPAM) 91-212 ("Bird/Wildlife Aircraft Strike Hazard (BASH) Management Techniques"). The BASH Plan analyzes existing conditions and wildlife attractants in the vicinity of Travis AFB to develop strategies to minimize wildlife attraction and strikes. The actions to be taken through the BASH Plan are designed to operate through two phases: Phase I is implemented year-round and focuses on wildlife control and dispersal. Phase II imposes wildlife avoidance techniques that involve scheduling and restricting airfield operations during the avian migration period from September 1 to April 30 and is implemented in conjunction with Phase I. Within the Phase II period, two windows that severely limit aircraft operations remain in effect for the entire Phase II period. These windows are imposed daily from one hour before sunrise to one hour after sunrise and 30 minutes before sunset to 30 minutes after sunset. All departures and any other deviations in aircraft operations within either window require Operations Group Commander approval.

In addition to reported bird strikes, SUU is situated north of Suisun Bay, and within five miles of the San Francisco Bay National Estuarine Research Reserve and Grizzly Island Wildlife Area. SUU is situated near several parks (Lagoon Valley Park, Allan Witt Park), golf courses (Green Tree Golf Club, Green Valley Country Club, Paradise Valley Golf Course, Cypress Lakes Golf Course, and Rancho Solano Golf Course), estuarine habitat, open space and

agricultural lands. Union Creek runs through the southern portion of the airport and has hydrological connectivity to Hill Slough and Suisun Slough. Two landfills occur near Travis AFB: Recology Hay Road Landfill is located five miles to the northeast and Potrero Hills Landfill is located approximately two miles to the south. North Bay Regional Water Treatment Plant is located within five miles northwest of Travis AFB. Data from the National Wetland Inventory (NWI) indicate a large number of wetland features, primarily freshwater emergent wetland and estuarine marine wetland features southeast, southwest, and west of Travis AFB. The potential habitat features/land uses within 14,500 feet and five miles of SUU are shown on **Figure 1**. Wetlands known to occur in the vicinity of the airport (based on NWI Database) is shown on **Figure 2**.

Per FAA AC 150/5200-33B *Hazardous Wildlife Attractants on or Near Airports*, large tracts of open, undeveloped land can ". . . present potential hazards to aviation if they encourage wildlife to enter an airport's approach or departure airspace or air operations area (AOA)." Constructed or natural areas such as detention/retention ponds, odor-causing rotting organic matter (putrescible waste) disposal operations, wastewater treatment plants, agricultural or aquaculture activities, and wetlands can provide wildlife with ideal locations for feeding, loafing, reproduction, and escape. Based on known land uses in the vicinity of Travis AFB, the following types of wildlife are expected to potentially use habitats provided by each land use type (**Table 2**).

Table 2. Species Groups Known to be Attracted to Land Use Types in the Vicinity of SUU

Land Use Type/Habitat Feature	Species Group(s) Known to be Attracted to Land Use Type/Habitat Feature
Public Parks	Swallows, sparrows, blackbirds/starlings, crows/ravens, doves, pigeons, geese and ducks
Golf Courses	Geese and ducks, blackbirds/starlings, sparrows, swallows
Water Treatment Plants	Geese and ducks, cormorants/pelicans, herons, shorebirds
Landfills	Gulls, blackbirds/starlings, vultures
Agricultural Lands	Hawks, vultures, blackbirds/starlings, crows/ravens
Rivers and Creeks	Egrets, songbirds, geese and ducks, mammals such as raccoons and otters
Estuarine/Wetland Habitat	Shore birds, blackbirds, geese and ducks, egrets, cormorants, pelicans
Open Space	Hawks, swallows, sparrows, kestrels, coyote, owls, turkey/pheasants, osprey, eagles, vultures
Note: Table 2 is not comprehensive; it provides general groups of wildlife that may use each land use type/habitat feature.	

Based on a cursory review of the e-Bird database, "hotspot" areas near SUU that are also known to contain the highest number of bird species in Solano County include the Grizzly Island Wildlife Area and Lagoon Valley/Pena Adobe Regional Park. Approximately 200 species of birds have been observed in these areas; species most frequently observed include blackbirds, ducks, red-winged blackbird, swallow, geese (wild and domestic), ducks, gulls, pelicans, and egrets. The nearest observation point is at Creed Road near the southern perimeter of Travis AFB, in which 86 species were recorded. Red-winged blackbird, greater white-fronted goose, long-billed dowitcher, tricolored blackbird, and brewer's blackbird were the most abundant in count at this location.

The information presented within this memo is based on the best available information without performing a field reconnaissance. Please feel free to contact me if you have any questions.

Sincerely,

LeChi Huynh
Senior Associate Biologist

References:

eBird. 2015. eBird: An online database of bird distribution and abundance [web application]. eBird, Ithaca, New York. Available: http://www.ebird.org. (Accessed: Date [e.g., August 13, 2015]).

Federal Aviation Administration. 2007. FAA AC 150/5200-33B *Hazardous Wildlife Attractants on or Near Airports.* Issued August 28, 2007. Available: http://www.faa.gov/documentLibrary/media/advisory_circular/150-5200-33B/150_5200_33b.pdf

Solano County Airport Land Use Commission (ALUC). 2002. Travis Air Force Base Land Use Compatibility Plan. Adopted June 13.

U. S. Fish and Wildlife Service. 2015. National Wetlands Inventory website. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C. http://www.fws.gov/wetlands/. Data last modified on May 28, 2015.

APPENDIX I

Glossary of Terms

APPENDIX E
Glossary of Terms

14 CFR Part 77: The part of the Federal Aviation Regulations that addresses objects affecting navigable airspace, per the Title 14 Code of Federal Regulations.

14 CFR Part 77 Surfaces: Imaginary airspace surfaces established with relation to each runway of an airport. There are five types of surfaces: (1) primary; (2) approach; (3) transitional; (4) horizontal; and (5) conical.

Above Ground Level (AGL): Height that is expressed, in feet, of an object measured from the ground.

Aeronautics Act: Except as indicated otherwise, the article of the California Public Utilities Code (Section 21670 et seq.) pertaining to ALUCs.

Aircraft Accident: An occurrence incident to flight in which, as a result of the operation of an aircraft, a person (occupant or nonoccupant) receives fatal or serious injury or an aircraft receives substantial damage.

- Except as provided below, *substantial damage* means damage or structural failure which adversely affects the structural strength, performance, or flight characteristics of the aircraft, and which would normally require major repair or replacement of the affected component.

- Engine failure, damage limited to an engine, bent fairings or cowling, dented skin, small puncture holes in the skin or fabric, ground damage to rotor or propeller blades, damage to landing gear, wheels, tires, flaps, engine accessories, brakes, or wingtips are not considered substantial damage.

Aircraft Incident: A mishap associated with the operation of an aircraft in which neither fatal nor serious injuries nor substantial damage to the aircraft occur.

Aircraft Mishap: The collective term for an aircraft accident or an incident.

Aircraft Operation: The airborne movement of aircraft at an airport or about an en route fix or at other point where counts can be made. There are two types of operations: local and itinerant. An operation is counted for each landing and each departure, such that a touch-and-go flight is counted as two operations. (FAA Stats)

Airport: Travis Air Force Base or an area of land or water that is used or intended to be used for the landing and taking off of aircraft, and includes its buildings and facilities, if any. (FAR 1)

Airport Elevation: The highest point of an airport's usable runways, measured in feet above mean sea level. (AIM)

Airport Influence Area: An area, as delineated herein, that is routinely affected by aircraft operations at an airport and within which certain land use actions are subject to ALUC review. The term airport influence area is synonymous with the term planning area referred to in State Aeronautics Act Section 21675.

Airport Land Use Commission (ALUC): The Solano County Airport Land Use Commission. A commission authorized under the provisions of California Public Utilities Code, Sections 21670 et seq. and established (in any county within which a public-use airport is located) for the purpose of promoting compatibility between airports and the land uses surrounding them.

Airport Land Use Commission Secretary (ALUC Secretary): The Director of the Solano County Department of Environmental Management or a person designated by the director with the concurrence of the ALUC chairman.

Airport Layout Plan (ALP): A scale drawing of existing and proposed airport facilities, their location on an airport, and the pertinent clearance and dimensional information required to demonstrate conformance with applicable standards.

Airport Master Plan (AMP): A long-range plan for development of an airport, including descriptions of the data and analyses on which the plan is based.

Airport Reference Code (ARC): A coding system used to relate airport design criteria to the operational and physical characteristics of the airplanes intended to operate at an airport. (Airport Design AC)

Airports, Classes of: For the purposes of issuing a Site Approval Permit, the California Department of Transportation, Division of Aeronautics classifies airports into the following categories. (CCR)

- *Agricultural Airport or Heliport:* An airport restricted to use only by agricultural aerial applicator aircraft (FAR Part 137 operators).

- *Emergency Medical Services (EMS) Landing Site:* A site used for the landing and taking off of EMS helicopters that is located at or as near as practical to a medical emergency or at or near a medical facility and

  (1) has been designated an EMS landing site by an officer authorized by a public safety agency, as defined in PUC Section 21662.1, using criteria that the public safety agency has determined is reasonable and prudent for the safe operation of EMS helicopters and

(2) is used, over any twelve month period, for no more than an average of six landings per month with a patient or patients on the helicopter, except to allow for adequate medical response to a mass casualty event even if that response causes the site to be used beyond these limits, and

(3) is not marked as a permitted heliport as described in Section 3554 of these regulations and

(4) is used only for emergency medical purposes.

- *Heliport on Offshore Oil Platform:* A heliport located on a structure in the ocean, not connected to the shore by pier, bridge, wharf, dock, or breakwater, used in the support of petroleum exploration or production.

- *Personal-Use Airport:* An airport limited to the non-commercial use of an individual owner or family and occasional invited guests.

- *Public-Use Airport:* An airport that is open for aircraft operations to the general public and is listed in the current edition of the *Airport/Facility Directory* that is published by the National Ocean Service of the U.S. Department of Commerce.

- *Seaplane Landing Site:* An area of water used, or intended for use, for landing and takeoff of seaplanes.

- *Special-Use Airport or Heliport:* An airport not open to the general public, access to which is controlled by the owner in support of commercial activities, public service operations, and/or personal use.

- *Temporary Helicopter Landing Site:* A site, other than an emergency medical service landing site at or near a medical facility, which is used for landing and taking off of helicopters and

(1) is used or intended to be used for less than one year, except for recurrent annual events, and

(2) is not marked or lighted to be distinguishable as a heliport and

(3) is not used exclusively for helicopter operations.

Ambient Noise Level: The level of noise that is all-encompassing within a given environment for which a single source cannot be determined. It is usually a composite of sounds from many and varied sources near to and far from the receiver.

Approach Protection Easement: A form of easement which both conveys all of the rights of an avigation easement and sets specified limitations on the type of land uses allowed to be developed on the property.

Approach Speed: The recommended speed contained in aircraft manuals used by pilots when making an approach to landing. This speed will vary for different segments of an approach as well as for aircraft weight and configuration. (AIM)

Aviation-Related Use: Any facility or activity directly associated with the air transportation of persons or cargo or the operation, storage, or maintenance of aircraft at an airport or heliport. Such uses specifically include runways, taxiways, and their associated protected areas defined by the Federal Aviation Administration, together with aircraft aprons, hangars, fixed base operations, terminal buildings, etc.

Avigation Easement: A type of easement which typically conveys the following rights:

- A right-of-way for free and unobstructed passage of aircraft through the airspace over the property at any altitude above a surface specified in the easement (usually set in accordance with FAR Part 77 criteria).

- A right to subject the property to noise, vibrations, fumes, dust, and fuel particle emissions associated with normal airport activity.

- A right to prohibit the erection or growth of any structure, tree, or other object that would enter the acquired airspace.

- A right-of-entry onto the property, with proper advance notice, for the purpose of removing, marking, or lighting any structure or other object that enters the acquired airspace.

- A right to prohibit electrical interference, glare, misleading lights, visual impairments, and other hazards to aircraft flight from being created on the property.

Based Aircraft: Aircraft stationed at an airport on a long-term basis.

California Environmental Quality Act (CEQA): Statutes adopted by the state legislature for the purpose of maintaining a quality environment for the people of the state now and in the future. The Act establishes a process for state and local agency review of projects, as defined in the implementing guidelines, which may adversely affect the environment.

Ceiling: Height above the earth's surface to the lowest layer of clouds or obscuring phenomena. (AIM)

Circling Approach/Circle-to-Land Maneuver: A maneuver initiated by the pilot to align the aircraft with a runway for landing when a straight-in landing from an instrument approach is not possible or not desirable. (AIM)

Combining District: A zoning district which establishes development standards in areas of special concern over and above the standards applicable to basic underlying zoning districts.

Commercial Activities: Airport-related activities which may offer a facility, service or commodity for sale, hire or profit. Examples of commodities for sale are: food, lodging, entertainment, real estate, petroleum products, parts and equipment. Examples of services are: flight training, charter flights, maintenance, aircraft storage, and tiedown. (CCR)

Commercial Operator: A person who, for compensation or hire, engages in the carriage by aircraft in air commerce of persons or property, other than as an air carrier. (FAR 1)

Community Noise Equivalent Level (CNEL): The noise metric adopted by the State of California for evaluating airport noise. The noise impacts are typically depicted by a set of contours, each of which represents points having the same CNEL value. It represents the average daytime noise level during a 24-hour day, adjusted to an equivalent level to account for the lower tolerance of people to noise during evening and nighttime periods relative to the daytime period. (State Airport Noise Standards)

Compatibility Plan: As used herein, a plan, usually adopted by an Airport Land Use Commission, which sets forth policies for promoting compatibility between airports and the land uses which surround them. Often referred to as a *Comprehensive Land Use Plan (CLUP)*.

Compatibility Zone: Any of the zones set forth in a compatibility plan for the purposes of assessing land use compatibility within an airport influence area.

Controlled Airspace: Any of several types of airspace within which some or all aircraft may be subject to air traffic control. (FAR 1)

Day-Night Average Sound Level (DNL): The noise metric adopted by the U.S. Environmental Protection Agency for measurement of environmental noise. It represents the average daytime noise level during a 24-hour day, measured in decibels and adjusted to account for the lower tolerance of people to noise during nighttime periods. The mathematical symbol is L_{dn}.

Decibel (dB): A unit measuring the magnitude of a sound, equal to the logarithm of the ratio of the intensity of the sound to the intensity of an arbitrarily chosen standard sound, specifically a sound just barely audible to an unimpaired human ear. For environmental noise from aircraft and other transportation sources, an *A-weighted sound level* (abbreviated dBA) is normally used. The A-weighting scale adjusts the values of different sound frequencies to approximate the auditory sensitivity of the human ear.

Deed Notice: A formal statement added to the legal description of a deed to a property and on any subdivision map. As used in airport land use planning, a deed notice would state that the property is subject to aircraft overflights. Deed notices are used as a form of buyer notification as a means of ensuring that those who are particularly sensitive to aircraft overflights can avoid moving to the affected areas.

Designated Body: A local government entity, such as a regional planning agency or a county planning commission, chosen by the county board of supervisors and the selection committee of city mayors to act in the capacity of an airport land use commission.

Displaced Threshold: A landing threshold that is located at a point on the runway other than the designated beginning of the runway (see *Threshold*). (AIM)

Easement: A less-than-fee-title transfer of real property rights from the property owner to the holder of the easement.

Equivalent Sound Level (L_{eq}): The level of constant sound which, in the given situation and time period, has the same average sound energy as does a time-varying sound.

Existing Land Use: A land use that 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 not expired;
(b) A vesting tentative parcel or subdivision map has been approved;
(c) A development agreement has been approved and remains in effect;
(d) A final subdivision map has been recorded;
(e) A use permit or other discretionary entitlement has been approved and not yet expired; or
(f) A valid building permit has been issued.

Federal Aviation Administration (FAA): The U.S. government agency which is responsible for ensuring the safe and efficient use of the nation's airports and airspace.

Findings: Legally relevant subconclusions which expose a government agency's mode of analysis of facts, regulations, and policies, and which bridge the analytical gap between raw data and ultimate decision.

Fixed Base Operator (FBO): A business which operates at an airport and provides aircraft services to the general public including, but not limited to, sale of fuel and oil; aircraft sales, rental, maintenance, and repair; parking and tiedown or storage of aircraft; flight training; air taxi/charter operations; and specialty services, such as instrument and avionics maintenance, painting, overhaul, aerial application, aerial photography, aerial hoists, or pipeline patrol.

General Aviation: That portion of civil aviation which encompasses all facets of aviation except air carriers. (FAA Stats)

Glide Slope: An electronic signal radiated by a component of an ILS to provide vertical guidance for aircraft during approach and landing.

Global Positioning System (GPS): A navigational system which utilizes a network of satellites to determine a positional fix almost anywhere on or above the earth. Developed and operated by the U.S. Department of Defense, GPS has been made available to the civilian sector for surface, marine, and aerial navigational use. For aviation purposes, the current form of GPS guidance provides en route aerial navigation and selected types of nonprecision instrument approaches. Eventual application of GPS as the principal system of navigational guidance throughout the world is anticipated.

Height Review Overlay Zone: Areas of land in the vicinity of an airport where the ground lies above an FAR Part 77 surface or less than 35 feet beneath such surface

Helipad: A small, designated area, usually with a prepared surface, on a heliport, airport, landing/takeoff area, apron/ramp, or movement area used for takeoff, landing, or parking of helicopters. (AIM)

Heliport: A facility used for operating, basing, housing, and maintaining helicopters. For the purposes of the plan, 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. Personal-use heliports may or may not require a state permit depending upon their location and other factors. (HAI)

Infill: Development which takes place on vacant property largely surrounded by existing development, especially development which is similar in character. See Section 6.2.4(c)(1) for criteria used to identify infill areas for compatibility planning purposes.

Instrument Approach Procedure: A series of predetermined maneuvers for the orderly transfer of an aircraft under instrument flight conditions from the beginning of the initial approach to a landing or to a point from which a landing may be made visually. It is prescribed and approved for a specific airport by competent authority (refer to *Nonprecision Approach Procedure* and *Precision Approach Procedure*). (AIM)

Instrument Flight Rules (IFR): Rules governing the procedures for conducting instrument flight. Generally, IFR applies when meteorological conditions with a ceiling below 1,000 feet and visibility less than 3 miles prevail. (AIM)

Instrument Landing System (ILS): A precision instrument approach system which normally consists of the following electronic components and visual aids: (1) Localizer; (2) Glide Slope; (3) Outer Marker; (4) Middle Marker; (5) Approach Lights. (AIM)

Instrument Operation: An aircraft operation in accordance with an IFR flight plan or an operation where IFR separation between aircraft is provided by a terminal control facility. (FAA ATA)

Instrument Runway: A runway equipped with electronic and visual navigation aids for which a precision or nonprecision approach procedure having straight-in landing minimums has been approved. (AIM)

Inverse Condemnation: An action brought by a property owner seeking just compensation for land taken for a public use against a government or private entity having the power of eminent domain. It is a remedy peculiar to the property owner and is exercisable by that party where it appears that the taker of the property does not intend to bring eminent domain proceedings.

Land Use Density: A measure of the concentration of land use development in an area. Mostly the term is used with respect to residential development and refers to the number of dwelling units per acre. Unless otherwise noted, policies in this compatibility plan refer to *gross* rather than *net* acreage.

Land Use Intensity: A measure of the concentration of nonresidential land use development in an area. For the purposes of airport land use planning, the term indicates the number of people per acre attracted by the land use. Unless otherwise noted, policies in this compatibility plan refer to *gross* rather than *net* acreage.

Large Airplane: An airplane of more than 12,500 pounds maximum certificated takeoff weight. (Airport Design AC)

Localizer (LOC): The component of an ILS which provides course guidance to the runway. (AIM)

Local Jurisdiction: The County of Solano or any city or other government agency having jurisdiction over land uses or development projects within their boundaries.

Major Land Use Action: Actions related to proposed land uses for which compatibility with airport activity is a particular concern, but for which ALUC review is not always mandatory under state law. These types of actions are listed in Policy 6.1.4(C).

Meteorological Tower: A structure used for the measurement, collection, or monitoring of air quality, barometric pressure, temperature, wind speed, and wind energy resource data, and includes the tower, base plate, anchors, guy cables and hardware, anemometers (wind speed indicators), wind direction vanes, booms to hold equipment anemometers and vanes, data logger, instrument wiring, and any telemetry devices that are used to monitor or transmit wind speed and wind flow characteristics over a period of time for either instantaneous wind information or to characterize the wind resource at a given location.

Minimum Descent Altitude (MDA): The lowest altitude, expressed in feet above mean sea level, to which descent is authorized on final approach or during circle-to-land maneuvering in

execution of a standard instrument approach procedure where no electronic glide slope is provided. (FAR 1)

Missed Approach: A maneuver conducted by a pilot when an instrument approach cannot be completed to a landing. (AIM)

National Transportation Safety Board (NTSB): The U.S. government agency responsible for investigating transportation accidents and incidents.

Navigational Aid (Navaid): Any visual or electronic device airborne or on the surface which provides point-to-point guidance information or position data to aircraft in flight. (AIM)

Noise Contours: Continuous lines of equal noise level usually drawn around a noise source, such as an airport or highway. The lines are generally drawn in 5-decibel increments so that they resemble elevation contours in topographic maps.

Noise Level Reduction (NLR): A measure used to describe the reduction in sound level from environmental noise sources occurring between the outside and the inside of a structure.

Nonconforming Use: In general, a land use, parcel, or building that 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. For the purposes of the individual compatibility plans for airports in Solano County, a nonconforming use is one that exists (see definition of "existing land use" in Policy 4.1.2 (11)) as of the plan's adoption date, but which does not conform to the compatibility criteria set forth herein.

Nonprecision Approach Procedure: A standard instrument approach procedure in which no electronic glide slope is provided. (FAR 1)

Nonprecision Instrument Runway: A runway with an approved or planned straight-in instrument approach procedure which has no existing or planned precision instrument approach procedure. (Airport Design AC)

Obstruction: Any object of natural growth, terrain, or permanent or temporary construction or alteration, including equipment or materials used therein, the height of which exceeds the standards established in Subpart C of Federal Aviation Regulations Part 77, *Objects Affecting Navigable Airspace*.

Overflight: Any distinctly visible and audible passage of an aircraft in flight, not necessarily directly overhead.

Overflight Easement: An easement which describes the right to overfly the property above a specified surface and includes the right to subject the property to noise, vibrations, fumes, and emissions. An overflight easement is used primarily as a form of buyer notification.

Overflight Zone: The area(s) where aircraft maneuver to enter or leave the traffic pattern, typically defined by the FAR Part 77 horizontal surface.

Overlay Zone: See *Combining District*.

Planning Area Boundary: An area surrounding an airport designated by an ALUC for the purpose of airport land use compatibility planning conducted in accordance with provisions of the State Aeronautics Act.

Precision Approach Procedure: A standard instrument approach procedure where an electronic glide slope is provided. (FAR 1)

Precision Instrument Runway: A runway with an existing or planned precision instrument approach procedure. (Airport Design AC)

Project; Land Use Action; Development Proposal: Terms similar in meaning and all referring to the types of land use matters, either publicly or privately sponsored, which are subject to the provisions of this Compatibility Plan.

Referral Area: The area around an airport defined by the planning area boundary adopted by an airport land use commission within which certain land use proposals are to be referred to the commission for review.

Runway Protection Zone (RPZ): An area (formerly called a *clear zone*) off the end of a runway used to enhance the protection of people and property on the ground. (Airport Design AC)

Safety Zone: For the purpose of airport land use planning, an area near an airport in which land use restrictions are established to protect the safety of the public from potential aircraft accidents.

Single-Event Noise: As used in herein, the noise from an individual aircraft operation or overflight.

Single Event Noise Exposure Level (SENEL): A measure, in decibels, of the noise exposure level of a single event, such as an aircraft flyby, measured over the time interval between the initial and final times for which the noise level of the event exceeds a threshold noise level and normalized to a reference duration of one second. SENEL is a noise metric established for use in California by the state Airport Noise Standards and is essentially identical to *Sound Exposure Level (SEL)*.

Site Approval Permit: A written approval issued by the California Department of Transportation authorizing construction of an airport in accordance with approved plans, specifications, and conditions. Both public-use and special-use airports require a site approval permit. (CCR)

Small Airplane: An airplane of 12,500 pounds or less maximum certificated takeoff weight. (Airport Design AC)

Solar Facility, Commercial: A solar energy conversion system consisting of solar arrays, and associated control or conversion electronics that convert solar energy to utility power for the primary purpose of resale or off-site use.

Solar Facility, Non-commercial: A facility that converts sunlight into electricity either through photovoltaic, concentrated solar thermal, or solar hot water devices that are accessory to, and incorporated into, the development of an authorized use of the property, and which are designed for the purpose of reducing or meeting on-site energy needs.

Sound Exposure Level (SEL): A time-integrated metric (i.e., continuously summed over a time period) which quantifies the total energy in the A-weighted sound level measured during a transient noise event. The time period for this measurement is generally taken to be that between the moments when the A-weighted sound level is 10 dB below the maximum.

Straight-In Instrument Approach: An instrument approach wherein a final approach is begun without first having executed a procedure turn; it is not necessarily completed with a straight-in landing or made to straight-in landing weather minimums. (AIM)

Taking: Government appropriation of private land for which compensation must be paid as required by the Fifth Amendment of the U.S. Constitution. It is not essential that there be physical seizure or appropriation for a *taking* to occur, only that the government action directly interferes with or substantially disturbs the owner's right to use and enjoyment of the property.

Terminal Instrument Procedures (TERPS): Procedures for instrument approach and departure of aircraft to and from civil and military airports. There are four types of terminal instrument procedures: precision approach, nonprecision approach, circling, and departure.

Threshold: The beginning of that portion of the runway usable for landing (also see *Displaced Threshold*). (AIM)

Touch-and-Go: An operation by an aircraft that lands and departs on a runway without stopping or exiting the runway. (AIM)

Traffic Pattern: The traffic flow that is prescribed for aircraft landing at, taxiing on, or taking off from an airport. The components of a typical traffic pattern are upwind leg, crosswind leg, downwind leg, base leg, and final approach. (AIM)

Visual Approach: An approach where the pilot must use visual reference to the runway for landing under VFR conditions.

Visual Flight Rules (VFR): Rules that govern the procedures for conducting flight under visual conditions. VFR applies when meteorological conditions are equal to or greater than the specified minimum-generally, a 1,000-foot ceiling and 3-mile visibility.

Visual Runway: 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. (Airport Design AC)

Wind Turbine Generator, Commercial: A wind-driven machine, generating a total of 1.5 kilowatts (KW) or greater on-site, that converts wind energy into production of electrical power, either for the primary purpose of on-site use or resale or off-site use.

Wind Turbine Generator, Non-commercial: A wind-driven machine, generating a total of less than 1.5 kilowatts (KW) on-site, that converts wind energy into production of electrical power for the primary purpose of on-site use and not for resale.

Zoning: A police power measure, enacted primarily by units of local government, in which the community is divided into districts or zones within which permitted and special uses are established, as are regulations governing lot size, building bulk, placement, and other development standards. Requirements vary from district to district, but they must be uniform within districts. A zoning ordinance consists of two parts: the text and a map.

Glossary Sources

FAR 1: *Federal Aviation Regulations Part 1, Definitions and Abbreviations*

AIM: *Aeronautical Information Manual*

Airport Design AC: Federal Aviation Administration, *Airport Design* Advisory Circular 150/5300-13

CCR: California Code of Regulations, Title 21, Section 3525 et seq., *Division of Aeronautics*

FAA ATA: Federal Aviation Administration, *Air Traffic Activity*

FAA Stats: Federal Aviation Administration, *Statistical Handbook of Aviation*

HAI: Helicopter Association International

NTSB: National Transportation and Safety Board

This page intentionally left blank

APPENDIX J

Airport Layout Plan

NOTES:

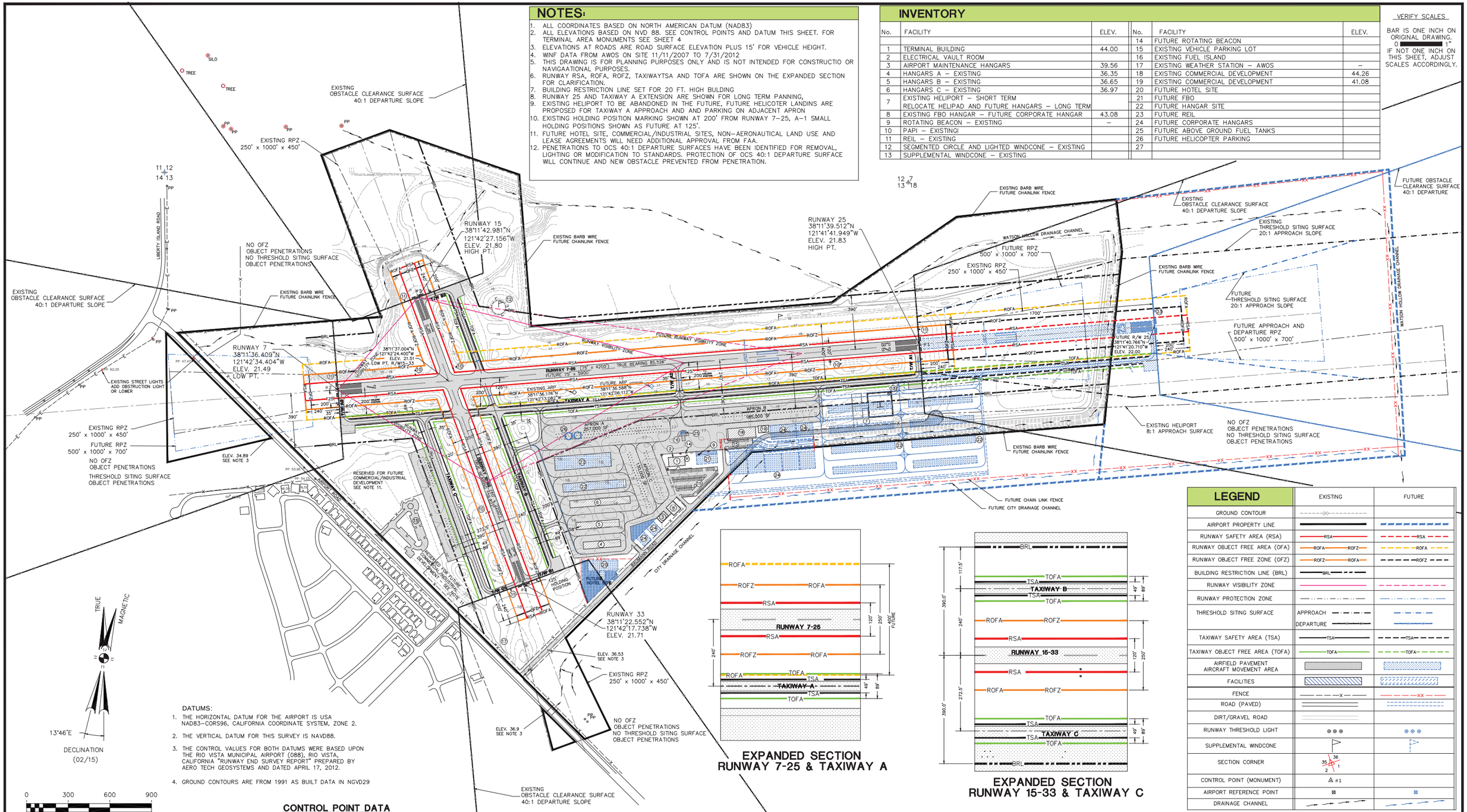
1. ALL COORDINATES BASED ON NORTH AMERICAN DATUM (NAD83)
2. ALL ELEVATIONS BASED ON NVD 88. SEE CONTROL POINTS AND DATUM THIS SHEET. FOR TERMINAL AREA MONUMENTS SEE SHEET 4
3. ELEVATIONS AT ROADS ARE ROAD SURFACE ELEVATION PLUS 15' FOR VEHICLE HEIGHT.
4. WINF DATA FROM AWOS ON SITE 11/11/2007 TO 7/31/2012
5. THIS DRAWING IS FOR PLANNING PURPOSES ONLY AND IS NOT INTENDED FOR CONSTRUCTIO OR NAVIGAATIONAL PURPOSES.
6. RUNWAY RSA, ROFA, ROFZ, TAXIWAYTSA AND TOFA ARE SHOWN ON THE EXPANDED SECTION FOR CLARIFICATION.
7. BUILDING RESTRICTION LINE SET FOR 20 FT. HIGH BULDING
8. RUNWAY 25 AND TAXIWAY A EXTENSION ARE SHOWN FOR LONG TERM PANNING,
9. EXISTING HELIPORT TO BE ABANDONED IN THE FUTURE, FUTURE HELICOTER LANDINS ARE PROPOSED FOR TAXIWAY A APPROACH AND AND PARKING ON ADJACENT APRON
10. EXISTING HOLDING POSITION MARKING SHOWN AT 200' FROM RUNWAY 7–25, A–1 SMALL HOLDING POSITIONS SHOWN AS FUTURE AT 125'.
11. FUTURE HOTEL SITE, COMMERCIAL/INDUSTRIAL SITES, NON–AERONAUTICAL LAND USE AND LEASE AGREEMENTS WILL NEED ADDITIONAL APPROVAL FROM FAA.
12. PENETRATIONS TO OCS 40:1 DEPARTURE SURFACES HAVE BEEN IDENTIFIED FOR REMOVAL, LIGHTING OR MODIFICATION TO STANDARDS. PROTECTION OF OCS 40:1 DEPARTURE SURFACE WILL CONTINUE AND NEW OBSTACLE PREVENTED FROM PENETRATION.

INVENTORY

No.	FACILITY	ELEV.	No.	FACILITY	ELEV.
			14	FUTURE ROTATING BEACON	
1	TERMINAL BUILDING	44.00	15	EXISTING VEHICLE PARKING LOT	
2	ELECTRICAL VAULT ROOM		16	EXISTING FUEL ISLAND	
3	AIRPORT MAINTENANCE HANGARS	39.56	17	EXISTING WEATHER STATION – AWOS	–
4	HANGARS A – EXISTING	36.35	18	EXISTING COMMERCIAL DEVELOPMENT	44.26
5	HANGARS B – EXISTING	36.65	19	EXISTING COMMERCIAL DEVELOPMENT	41.08
6	HANGARS C – EXISTING	36.97	20	FUTURE HOTEL SITE	
7	EXISTING HELIPORT – SHORT TERM RELOCATE HELIPAD AND FUTURE HANGARS – LONG TERM		21	FUTURE FBO	
			22	FUTURE HANGAR SITE	
8	EXISTING FBO HANGAR – FUTURE CORPORATE HANGAR	43.08	23	FUTURE REIL	
9	ROTATING BEACON – EXISTING	–	24	FUTURE CORPORATE HANGARS	
10	PAPI – EXISTINGI		25	FUTURE ABOVE GROUND FUEL TANKS	
11	REIL – EXISTING		26	FUTURE HELICOPTER PARKING	
12	SEGMENTED CIRCLE AND LIGHTED WINDCONE – EXISTING		27		
13	SUPPLEMENTAL WINDCONE – EXISTING				

VERIFY SCALES

BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.



EXPANDED SECTION RUNWAY 7-25 & TAXIWAY A

EXPANDED SECTION RUNWAY 15-33 & TAXIWAY C

DATUMS:

1. THE HORIZONTAL DATUM FOR THE AIRPORT IS USA NAD83–CORS96, CALIFORNIA COORDINATE SYSTEM, ZONE 2.
2. THE VERTICAL DATUM FOR THIS SURVEY IS NAVD88.
3. THE CONTROL VALUES FOR BOTH DATUMS WERE BASED UPON THE RIO VISTA MUNICIPAL AIRPORT (088), RIO VISTA, CALIFORNIA "RUNWAY END SURVEY REPORT" PREPARED BY AERO TECH GEOSYSTEMS AND DATED APRIL 17, 2012.
4. GROUND CONTOURS ARE FROM 1991 AS BUILT DATA IN NGVD29

CONTROL POINT DATA

CONTROL POINT # MONUMENT	STATE GRID COORDINATES NORTHING	EASTING	LATITUDE	LONGITUDE	ELEVATION	DESCRIPTION
1	1832731.0921	6649331.0756	38° 11' 39.512"N	121° 41' 41.949"W	21.83	SPIKE & DISK AT END RW. 25
2	1832403.4784	6645144..2752	38° 11' 36.409"N	121° 42' 34.404"W	21.49	SPIKE & DISK AT END RW. 7
3	1833070.1677	6645720.7726	38° 11' 42.981"N	121° 42' 27.156"W	21.80	SPIKE & DISK AT END RW. 15
4	1831005.9410	6646479.3632	38° 11' 22.552"N	121° 42' 17.738"W	21.71	SPIKE & DISK AT END RW. 33

LEGEND

	EXISTING	FUTURE
GROUND CONTOUR	20	
AIRPORT PROPERTY LINE		
RUNWAY SAFETY AREA (RSA)	RSA	RSA
RUNWAY OBJECT FREE AREA (OFA)	ROFA ROFZ	ROFA
RUNWAY OBJECT FREE ZONE (OFZ)	ROFZ ROFA	ROFZ
BUILDING RESTRICTION LINE (BRL)	BRL	
RUNWAY VISIBILITY ZONE		
RUNWAY PROTECTION ZONE		
THRESHOLD SITING SURFACE	APPROACH DEPARTURE	
TAXIWAY SAFETY AREA (TSA)	TSA	TSA
TAXIWAY OBJECT FREE AREA (TOFA)	TOFA	TOFA
AIRFIELD PAVEMENT AIRCRAFT MOVEMENT AREA		
FACILITIES		
FENCE	X	XX
ROAD (PAVED)		
DIRT/GRAVEL ROAD		
RUNWAY THRESHOLD LIGHT		
SUPPLEMENTAL WINDCONE		
SECTION CORNER	35 36 2 1	
CONTROL POINT (MONUMENT)	#1	
AIRPORT REFERENCE POINT		
DRAINAGE CHANNEL		

FAA DISCLAIMER

THE CONTENTS DO NOT NECESSARILY REFLECT THE OFFICIAL VIEWS OR POLICY OF THE FAA. ACCEPTANCE OF THIS PLAN BY THE FAA DOES NOT IN ANY WAY CONSTITUTES A COMMITMENT ON THE PART OF THE UNITED STATES TO PARTICIPATE IN ANY DEVELOPMENT DEPICTED THEREIN NOR DOES IT INDICATE THAT THE PROPOSED DEVELOPMENT IS ENVIRONMENTALLY ACCEPTABLE IN ACCORDANCE WITH APPROPRIATE PUBLIC LAWS.

APPROVED **DATE**

DAVID MELILLI
DIRECTOR OF PUBLIC WORKS & COMMUNITY DEVELOPMENT

Reinard W. Brandley
CONSULTING AIRPORT ENGINEER
6125 King Road, Suite 201 • Loomis, California 95650 • (916) 652–4725

CITY OF RIO VISTA
STATE OF CALIFORNIA

RIO VISTA MUNICIPAL AIRPORT

RIO VISTA, CALIFORNIA

AIRPORT LAYOUT PLAN

NO.	REVISIONS	BY	APR	DATE

REGISTERED PROFESSIONAL ENGINEER
REINARD W. BRANDLEY
No. C 8044
Exp. 9-30-2016
CIVIL
STATE OF CALIFORNIA

DATE JUNE 2, 2016

SHEET NUMBER
2 OF 12 SHEETS

APPENDIX K

Displacement Analysis

RIO VISTA AIRPORT

Displacement Analysis

Prepared for
Solano County Airport Land Use Commission

March 2018

ESA

RIO VISTA AIRPORT

Displacement Analysis

Prepared for
Solano County Airport Land Use Commission

March 2018

2600 Capitol Avenue
Suite 200
Sacramento, CA 95816
916.564.4500
www.esassoc.com

150732

OUR COMMITMENT TO SUSTAINABILITY | ESA helps a variety of public and private sector clients plan and prepare for climate change and emerging regulations that limit GHG emissions. ESA is a registered assessor with the California Climate Action Registry, a Climate Leader, and founding reporter for the Climate Registry. ESA is also a corporate member of the U.S. Green Building Council and the Business Council on Climate Change (BC3). Internally, ESA has adopted a Sustainability Vision and Policy Statement and a plan to reduce waste and energy within our operations. This document was produced using recycled paper.

TABLE OF CONTENTS

Displacement Analysis for Rio Vista Airport

Page

Chapter 1, Introduction 1-1
1.1 Introduction 1-1
1.2 Policy Changes to the ALUCP 1-3
1.3 Development Displacement Analysis for Residential Land Uses 1-7
1.4 Development Displacement Analysis for Non-Residential Land Uses 1-7

Chapter 2, Residential Displacement Analysis 2-1
2.1 Potential for Displacement Due to Safety Zone Policies 2-2

Chapter 3, Non-Residential Displacement Analysis 3-1
3.1 Introduction 3-1
3.2 Non-Residential Issues Not Screened Further 3-1
3.3 Vacant Parcel Screening Analysis 3-2
3.3.1 Displacement Analysis – Inner WHA Boundary 3-5
3.3.2 Displacement Analysis – Outer WHA Boundary 3-5

List of Figures

Figure 1 Rio Vista Municipal Airport and Travis Air Force Base Airport Influence Areas 1-2
Figure 2 Rio Vista Municipal Airport Safety Zones 1-4
Figure 3 Rio Vista Municipal Airport Wildlife Hazard Analysis Boundaries 1-6

List of Tables

Table 2-1 Housing Opportunity Sites Falling Within Safety Zone 4 2-1
Table 3-1 Vacant and Developable Parcels in the Inner WHA Boundary at Rio Vista Airport 3-3
Table 3-2 Vacant and Developable Parcels in the Outer WHA Boundary at Rio Vista Airport 3-3

This page intentionally left blank

CHAPTER 1
Introduction

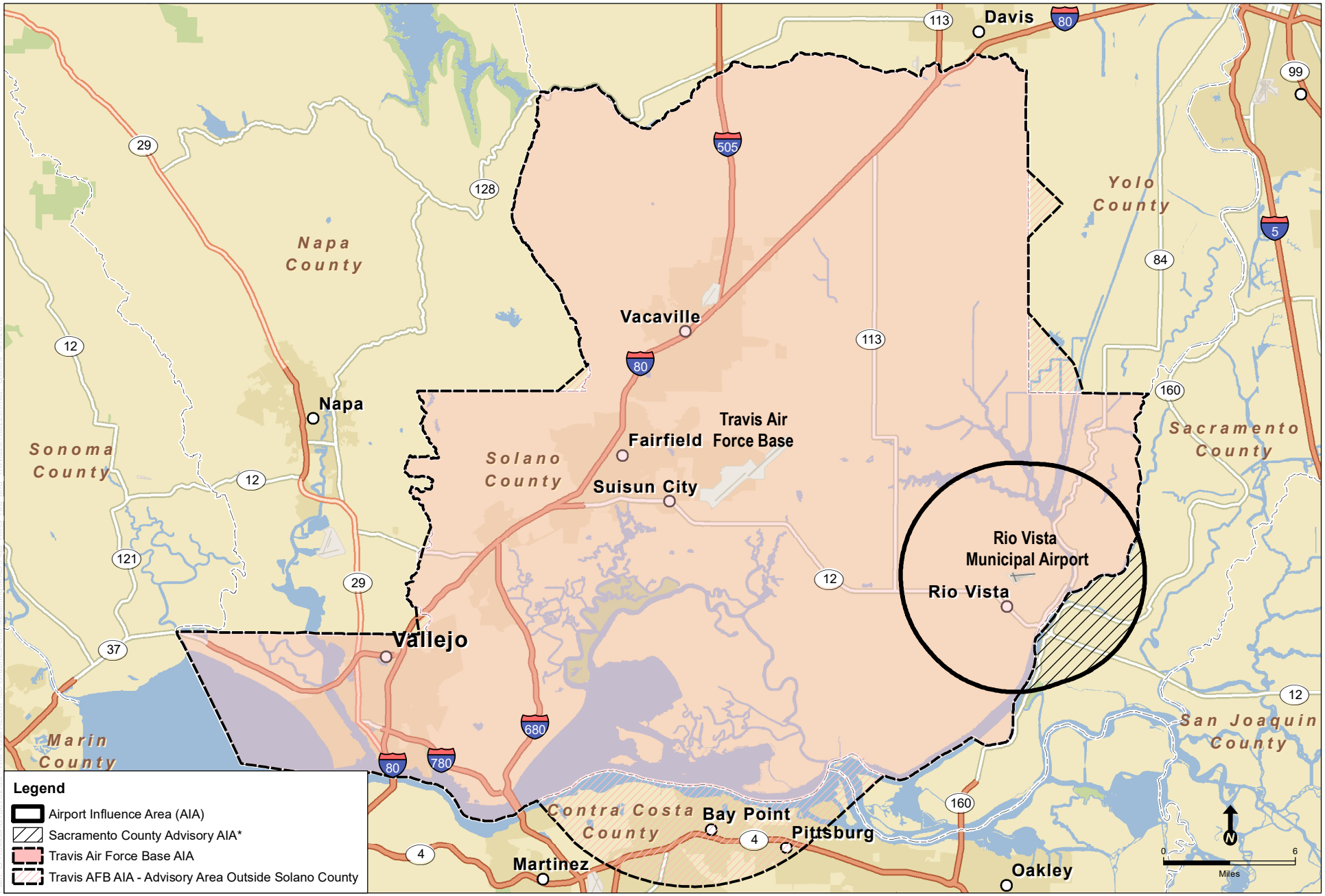
1.1 Introduction

Per Government Code section 65302(a)-(c), once an Airport Land Use Commission (ALUC) has adopted an Airport Land Use Compatibility Plan (ALUCP), local agencies are required to make their land use documents consistent with the ALUCP or to take steps to override all or part of the ALUCP. Because the policies and compatibility criteria in the ALUCP may vary from those included in existing land use documents, adoption of an ALUCP may have the effect of displacing potential future development by rendering it incompatible with relevant land use documents where previously it was not. Accordingly, adoption of the ALUCP for the environs of Rio Vista Airport (the Airport) has the potential to displace future land uses within portions of the Airport Influence Area (AIA). The AIA is depicted on **Figure 1**.

Displacement can occur as a result of any changes to land use development that have not yet occurred. As the policies and compatibility criteria in the ALUCP do not apply to existing land use, there is no potential for displacement of already existing development. This also applies to future land use development that although not started or completed has already been approved for development by the responsible local agency.

The updated ALUCP primarily continues policies and regulations included in the 1988 Rio Vista Airport ALUCP. The updated ALUCP, like the 1988 ALUCP, contains policies focused on noise, safety, overflight notification, and airspace protection. These four compatibility factors guide the policy strategies envisioned in the updated ALUCP. There are new or revised policies within these four categories that differ from the policies contained within the 1988 ALUCP.

While changes have been made to the policies relating to noise, overflight notification, and airspace protection, they are not of a nature that would result in displacement of residential or non-residential uses. As pertains to noise, the 2035 CNEL 65+ dB noise contours do not extend beyond the Airport property. While areas designated for residential use west of the Airport are found within the 2035 CNEL 55 - 65 dB noise contours, the policies applicable within these noise contours require that residential land uses in these areas must be sound insulated to achieve an indoor noise level of CNEL 45 dB or lower, which is a feasible and common standard, and therefore the criteria would not displace potential future development within the AIA. Other areas within the CNEL 55 -65 are designated for industrial, open space, and agricultural uses and do not include uses, residential or otherwise, that would conflict with the compatibility criteria



SOURCE: California Airport Land Use Planning Handbook, October 2011; ESA, 2016; ESRI Mapping Services

*NOTE: Crosshatched areas are in Contra Costa, Napa, Sacramento, and Yolo Counties, outside the jurisdiction of the Solano County Airport Land Use Commission. The TRavis AFB and Rio Vista ALUCPs are advisory only in these areas

Rio Vista Municipal Airport ALUCP.150732

Figure 1

Rio Vista Municipal Airport and
Travis Air Force Base Airport Influence Areas

ESA

included in Table 2 in the updated ALUCP. The overflight notification and airspace protection policies do not include criteria that would displace potential future development within the AIA.

The updated ALUCP does include changes to safety policies and compatibility criteria that vary from those included in the 1988 ALUCP and subsequently local agency land use plans. In addition, the updated ALUCP includes policies pertaining to wildlife hazard attractants that also may affect future land use development in the AIA. Consequently, this development displacement analysis is primarily concerned with the effects of the safety compatibility factor and wildlife hazard attractant policies included in the updated Rio Vista Airport ALUCP.

1.2 Policy Changes to the ALUCP

As discussed in the previous section, there are a series of policy changes that could potentially result in displacement of residential and non-residential uses in the AIA. First, policy changes pertaining to the revised Safety Zones (Safety Zones 1, 2, 3, 4, and 6) could restrict the future development of residential and non-residential land uses on vacant parcels located therein. The safety zones are depicted on **Figure 2**. The following list describes the more restrictive changes in the ALUCP update:

- Safety Zone 1 restricts maximum non-residential intensity to 0 people per acre. This is more restrictive than the maximum intensity of 10 people per acre provided within Compatibility Zone A in the 1988 ALUCP.

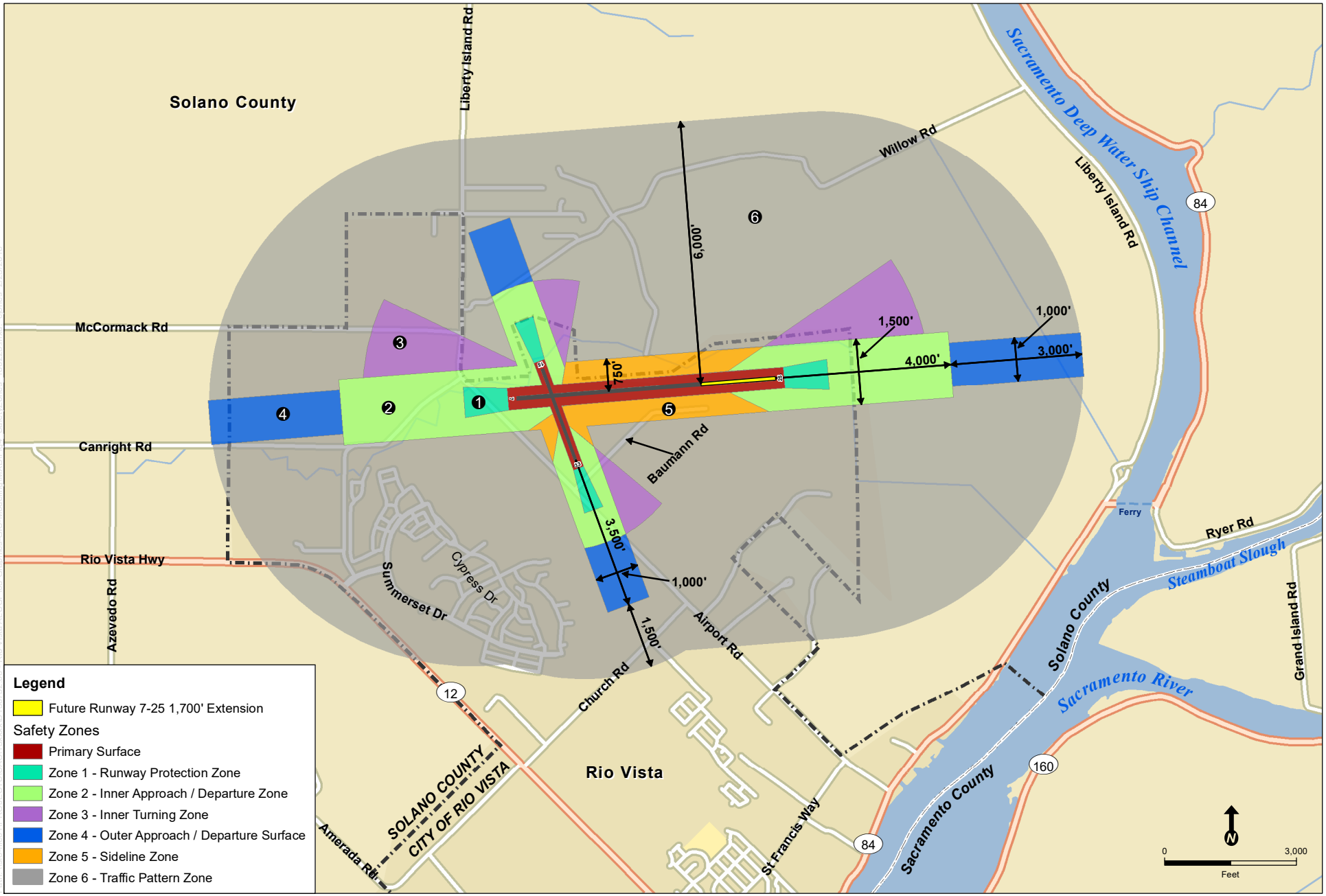
- Safety Zone 2 limits residential density to a maximum of 0.1 dwelling unit per acre (du/ac). This is more restrictive than the maximum residential density of 0.3 du/ac found in Compatibility Zone B in the 1988 ALUCP.

- Safety Zone 3 limits residential density to a maximum of 0.5 du/ac. This is more restrictive than the maximum residential density of 1 du/ac found in Compatibility Zone C in the 1988 ALUCP.

- Safety Zone 4 limits residential density to a maximum of 0.5 du/ac. This is more restrictive than the maximum residential density of 4 du/ac found in Compatibility Zone D in the 1988 ALUCP.

- There were portions of two vacant parcels observed within Safety Zone 5. However, Safety Zone 5 limits residential density to a maximum of 1 du/ac and non-residential intensity to 70 people per acre. This is more restrictive than the residential density limit of 6 du/ac and unlimited intensity in Compatibility Zone E in the 1988 ALUCP. Notwithstanding this, this land is currently designated for agricultural use in the Solano County General Plan, which gives a more restrictive designation for these parcels than the proposed ALUCP.

- Safety Zone 6 has no limits on residential density but limits non-residential intensity to a maximum of 200 people per acre (800 people when development is clustered). This is more restrictive than the generally unlimited intensity allowed in Compatibility Zone F in the 1988 ALUCP. However, the 1988 ALUCP suggested that no more than 100 people per structure should be allowed within Compatibility Zone F under the aircraft flight tracks, and that large assemblages should not exceed 300 people located in close proximity with one another.



SOURCE: California Airport Land Use Planning Handbook, October 2011; ESA, 2016; ESRI Mapping Services

Rio Vista Municipal Airport ALUCP.150732

Figure 2

Rio Vista Municipal Airport Safety Zones

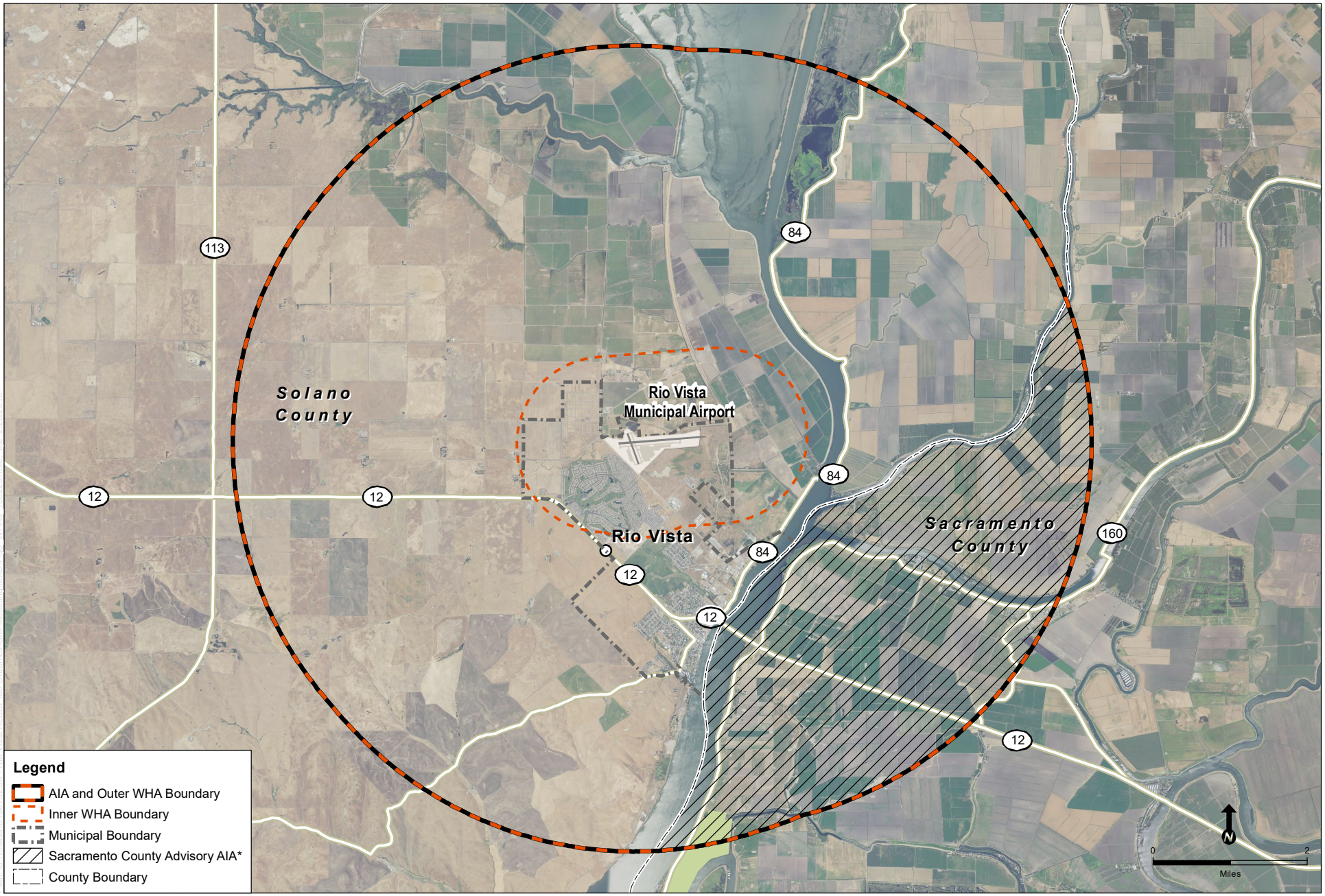
ESA

The second set of policy changes, involving wildlife hazards, could potentially result in displacement for several vacant parcels containing non-residential land uses. **Figure 3** depicts the two Wildlife Hazard Analysis (WHA) areas in which these policies apply. The Inner WHA Boundary, which extends to the outermost boundary of the safety and overflight notification zones, is intended to minimize bird strike hazard occurrence and builds on the policies designed to avoid bird attractants found in the 1988 ALUCP. The Inner WHA Boundary is based on Federal Aviation Administration (FAA) Advisory Circular (AC) 150/5200-33B. The Outer WHA Boundary extends to a radius of five miles from the Air Operations Area (AOA) and also is based on AC 150/5200-33B. This boundary also comprises the AIA for Rio Vista Airport. FAA AC 150/5200-33B provides guidance for minimizing the risks that certain wildlife species pose to aircraft. Together, these two boundaries impose additional conditions on certain types of land uses that are known to attract wildlife that are hazardous to aircraft operations. The Inner WHA Boundary specifically seeks to minimize any new or expanded land uses that are or include hazardous wildlife attractants, such as public parks, golf courses, water treatment plants, landfills, agricultural lands, wetlands, and open space.

As discussed in Section 5.8 in the ALUCP, any new consistency determinations for general plan amendments or zoning changes in the Inner WHA Boundary will be required to analyze the potential for wildlife attractants and must incorporate reasonably feasible mitigation measures to prevent wildlife hazards. Outside the Inner WHA Boundary and within the Outer WHA Boundary, any land use or expanded land use requiring discretionary review from a local agency that has the potential to attract the movement of hazardous wildlife that could cause bird strikes must demonstrate that hazards to flight will be minimized. Consequently, environmental impacts may arise from the displacement of future land uses from one area to another.

The third grouping of policy changes pertains to the possible limitation of three specific non-residential uses: solar facilities, wind turbine facilities, and other objects greater than 100 feet in height above ground level (AGL) including meteorological towers. While the proposed land use policies have the potential to limit the development of these land uses in certain areas of the city of Rio Vista and Solano County, all three of these land uses may still be developed within the Airport environs as long as they are consistent with ALUCP policies. Additional analysis of the effects of these policy changes is found in Chapter 3.

Potential environmental effects associated with displaced development may include changes in land use patterns and associated shifts in the distribution and concentration of population. By restricting development in parts of the Rio Vista Airport AIA, there is the potential for increased growth pressure in other areas of the AIA. If this “displaced” development was to occur, potential environmental impacts might include localized increases in vehicular traffic volumes and related increases in noise and air emissions.



SOURCE: California Airport Land Use Planning Handbook, October 2011; ESA, 2016; ESRI Mapping Services

*NOTE: Crosshatched areas are in Sacramento County, outside the jurisdiction of the Solano County Airport Land Use Commission. The Rio Vista ALUCP is advisory only in these areas

ESA

Rio Vista Municipal Airport ALUCP.150732

Figure 3

Rio Vista Municipal Airport
Wildlife Hazard Analysis Boundaries

All future development within the AIA, whether it is "displaced" or not, will be subject to the zoning and permitting authority of the City of Rio Vista and Solano County. While a portion of the AIA, notably the Outer WHA Boundary, is located in Sacramento County and the City of Isleton, the Solano County ALUC—and therefore this ALUCP—has jurisdiction only within Solano County. It is likely that future development projects within the updated ALUCP will undergo environmental review at the project level. Environmental impacts arising from future development projects will have to be specifically considered in the appropriate environmental documents prepared for those projects as a condition of permit issuance. The purpose of this development displacement analysis, therefore, is to inform local planning agencies of the potential for displaced development, and associated consequences, to enable them to plan accordingly.

1.3 Development Displacement Analysis for Residential Land Uses

Housing Elements from the City of Rio Vista and Solano County general plans were reviewed and compared to safety maps, policies, and criteria included in the updated ALUCP to determine the potential for the displacement of residential land uses within Safety Zones 2, 3, and 4 of the AIA for Rio Vista Airport. Excluding Airport Road, which traverses Safety Zone 1 off the Runway 7 and Runway 33 ends, all of Safety Zone 1 is located entirely on Airport property and are not available for development of residential uses. Similarly, with the exception of a portion of Safety Zone 5 north of Runway 7-25, all Safety Zones 5 are also limited to Airport property. The portion of Safety Zone 5 that extends beyond Airport property; however, is located on an isolated parcel designated for agricultural use with a more restrictive residential density limit under the Solano County General Plan than in the draft ALUCP. Finally, compatibility criteria for Safety Zone 6 does not constrain residential densities, thus there is no potential for displacement of residential uses in Zone 6. Other areas within the AIA yet outside the six safety zones and noise contours are not subject to the noise and safety compatibility criteria included in the updated ALUCP and were also excluded from further analysis.

Parcel data was obtained from the Solano County Assessor and aerial photographs, as well as information provided by the City of Rio Vista and Solano County, were used to determine the development status and development potential for vacant parcels within the safety zones. General plan land use policies applicable to the parcels identified as vacant were then compared to the safety compatibility criteria in the ALUCP to determine the potential for displaced development. The results of the analysis for residential land uses are discussed in Chapter 2 of this technical report.

1.4 Development Displacement Analysis for Non-Residential Land Uses

Similar to the approach employed to analyze potential displacement of residential uses, vacant non-residential parcels in the AIA were identified using the Solano County parcel database and

aerial photographs. The selected parcels were then analyzed for potential development displacement by evaluating City of Rio Vista and Solano County general plan policies compared to the policies in the updated ALUCP. The results of the vacant non-residential parcel evaluation are discussed in Chapter 3 of this technical report.

CHAPTER 2
Residential Displacement Analysis

This chapter presents the results of the development displacement analysis conducted for residential land uses under the updated Rio Vista ALUCP. The displacement analysis documented in this chapter was conducted to determine if there were any residential uses allowed under the current land use plans that would no longer be permitted after implementation of the updated ALUCP for Rio Vista Airport.

As discussed in Section 1.1, the updated ALUCP does not include changes that would result in displacement of residential uses due to the noise, airspace protection, and overflight compatibility policies. However, it was determined that policies associated with the safety zones included in the updated ALUCP would have the potential to displace residential uses. These policies would introduce stricter limits on residential density in Safety Zones 2, 3, and 4 than are in effect under the current ALUCP. To identify potential displacement, separate displacement calculations were performed for areas of the city of Rio Vista and Solano County located within these three safety zones.

The development displacement analysis results indicate that there would be potential displacement of residential land uses as a result of the implementation of the ALUCP. Potential displacement would be limited to a portion of one parcel in the city of Rio Vista. Overall, this parcel is 0.82 acres in size and designated for Neighborhood Residential use. A 0.16 acre portion of the parcel is located in Safety Zone 4 with the remainder located in Safety Zone 6. The safety compatibility criteria for Safety Zone 6 places no limits on residential density; therefore, there is no potential for residential displacement on the portion of the parcel located in Safety Zone 6. **Table 2-1** provides more details on this vacant parcel.

TABLE 2-1
HOUSING OPPORTUNITY SITES FALLING WITHIN SAFETY ZONE 4

WHA Boundary	Safety Zone	APN	Jurisdiction	GPLU Designation	Acreage	Maximum Density (du/ac)[1]
Inner	4	0176010130	City of Rio Vista	Neighborhood Residential	0.16	7.5
TOTAL	**--**	**--**	**--**	**--**	**0.16**	**--**

SOURCES:
City of Rio Vista, 2017. City of Rio Vista Municipal Code, Title 17. Available: http://qcode.us/codes/riovista/ on August 17, 2017.
City of Rio Vista, 2002. Rio Vista General Plan 2001. Adopted July 18, 2002.

Data regarding residentially zoned parcels were derived from the Rio Vista Zoning Ordinance and General Plan.[1] Vacant parcels were mapped and assessed based on their APN, and, using information contained in the ALUCP, parcels lying within Safety Zones 2, 3 and 4 were identified. Excluding the 0.82 acre parcel partially located within Safety Zone 6 and discussed above, no vacant residential parcels were found within Safety Zones 1, 3, or 6. Portions of two parcels designated for agricultural use that permit residential use, were identified in Safety Zone 5 and one vacant residential parcel was found in Safety Zone 4. Residential density is more restrictive under the Solano County General Plan for lands designated for agricultural use than the ALUCP, so there is no potential for displacement on the parcels in Safety Zone 5. Consequently, only the portion of the single parcel located in Safety Zone 4 was retained for further analysis.

2.1 Potential for Displacement Due to Safety Zone Policies

The safety zone boundaries for Safety Zones 2, 3, and 4 have been slightly altered from the existing 1988 Rio Vista Airport ALUCP, and the maximum densities allowed within these safety zones have been revised to 0.1 du/ac within Safety Zone 2 and 0.5 du/ac within Safety Zones 3 and 4. As indicated in Table 2-1, the Neighborhood Residential land use designation in the Rio Vista General Plan allows for a maximum density of 7.5 du/ac.

As stated above, analysis indicates that potential displacement of development could occur on a single 0.16-acre portion of an 0.82-acre parcel. The 0.16-acre portion of the parcel is located within Safety Zone 4 with the remainder of the parcel in Safety Zone 6. Under the allowable density provided for this land use designation in the Rio Vista General Plan, a total of 6.15 residential dwelling units would be allowed on this parcel, 1.2 residential dwelling units in the portion located within Safety Zone 4. Under the policies in the updated ALUCP, the maximum residential density for the portion of the parcel located within Safety Zone 4 would allow for 0.08 dwelling units. This would constitute a potential displacement of 1.12 dwelling units. This parcel is an isolate that borders the back of two residential parcels, but is not connected to the local street network. Excluding the residential uses that border the parcel to the northeast, it is otherwise surrounded by a larger parcel designated for industrial (warehouse) uses. In addition, there is a substantial amount of vacant land designated for residential uses and more practically situated to the surrounding community available for development within the city of Rio Vista. The housing needs assessment included in the City of Rio Vista's General Plan Housing Element identifies several vacant housing sites within the City. For example, the housing needs assessment identifies an approximately 500-acre parcel located south of Highway 12 and west of Esperson Court that is undeveloped, but can accommodate 1,500 single-family homes. Considering the availability of substantial amounts of vacant land designated for residential uses, the elimination of 1.12 dwelling units from Safety Zone 4 would not constitute displaced development.

[1] City of Rio Vista, 2017. City of Rio Vista Municipal Code, Title 17; available: http://qcode.us/codes/riovista/, accessed August 17, 2017.

CHAPTER 3
Non-Residential Displacement Analysis

3.1 Introduction

This chapter presents the results of the development displacement analysis for future/proposed non-residential land uses located within the Inner WHA Boundary and Outer WHA Boundary for Rio Vista Airport. As discussed in Section 1.1, the updated ALUCP does not include changes that would result in displacement of non-residential uses due to the noise, airspace protection, and overflight compatibility policies. The policies associated with the updated safety zones restrict certain non-residential uses based on location relative to each of the safety zones, including objects greater than 100 feet in height AGL including meteorological towers. The policies also include broader restrictions on land uses located within the Inner WHA Boundary and Outer WHA Boundary. These restrictions have the potential to cause displacement of non-residential uses.

The displacement analysis documented in this chapter provides a larger analysis on the vacant and underutilized land parcels within the Inner WHA Boundary. Because these parcels are vacant, there is the potential for future development of non-residential land uses that could attract wildlife leading to aircraft bird strikes. This chapter also focuses on the vacant and underutilized land parcels within the Outer WHA Boundary that have the potential for future development of non-residential land uses that could increase hazardous wildlife movement. Based on these two boundaries, a displacement analysis was conducted to determine if there were any non-residential land uses proposed in current land use plans (or allowed based on zoning classification) that would no longer be permitted after implementation of the updated Rio Vista ALUCP.

The displacement analysis was conducted using information from general plans adopted by Solano County and the City of Rio Vista, along with criteria contained in the updated ALUCP for Rio Vista Airport. The analysis revealed that, because no new prohibitions would occur as a result of these boundaries, there would be no displacement of land uses as a result of the adoption and implementation of the updated Rio Vista ALUCP.

3.2 Non-Residential Issues Not Screened Further

Policies related to the development of solar facilities, wind turbine facilities, and other objects greater than 100 feet in height AGL were updated in the ALUCP. As regards wind turbines, the updated ALUCP defers to the policies included in the Travis AFB ALUCP. These policies have been in effect since adoption of the Travis AFB ALUCP in October 2015. Accordingly, no displacement of wind turbines would occur as a result of the updated Rio Vista Airport ALUCP.

As regards solar facilities, developers of solar facilities are now required to provide a glint and glare study based on the Solar Glare Hazard Analysis Tool (SGHAT) model to demonstrate that the proposed or expanded facility would not pose a glint or glare risk. As long as proposed facilities do not cause glint or glare and are below the height limits associated with each compatibility zone, these future facilities could be located throughout Rio Vista and Solano County, in surrounding counties, and in other areas of the state or country. The outcome of an unfavorable SGHAT analysis typically results in adjustment to the planned tilt or orientation of a proposed array in order to reduce glint and glare, not relocation of a proposed array to a different site. Therefore, displacement of solar facilities is not anticipated to occur.

Other structures, including new meteorological towers, are required to undergo ALUC review if they are:

- ≥ 35 feet AGL in Safety Zone 2
- ≥ 50 feet AGL in Safety Zone 3
- ≥ 100 feet AGL in Safety Zone 4
- ≥ 200 feet AGL in Safety Zones 5 and 6

These height limits are consistent with the height limits established in the current ALUCP which are established in accordance with 14 CFR Part 77, as well as the standards established in the Travis AFB ALUCP and would not lead to potential displacement.

3.3 Vacant Parcel Screening Analysis

Vacant parcels within the Inner WHA Boundary and Outer WHA Boundary were identified using a parcel database obtained from the Solano County Assessor/Recorder's office. The database includes detailed information on each parcel, including the jurisdiction in which the parcel is located, parcel size, and existing land use. This information was augmented using geographic information systems (GIS) datasets derived from the City of Rio Vista and Solano County General Plans. These data sets were used to identify the planned land use for each parcel. Parcels without development potential (i.e., already developed or entitled by approved future development) were excluded from the analysis. In addition, parcels with land uses determined to be consistent with the policies in the updated ALUCP were also excluded from further analysis. In total, 12 vacant parcels planned for non-residential uses were identified within the Inner WHA Boundary and 57 vacant parcels planned for non-residential use were identified within the Outer WHA Boundary.

Table 3-1 provides information regarding the 12 vacant non-residential parcels with development potential within the Inner WHA Boundary.

Table 3-2 provides information regarding the 56 vacant non-residential parcels with development potential within the Outer WHA Boundary.

TABLE 3-1
VACANT AND DEVELOPABLE PARCELS IN THE INNER WHA BOUNDARY AT RIO VISTA AIRPORT

Perimeter	APN	Jurisdiction	General Plan Land Use Designation	Acreage
Inner WHA Boundary	0177110250	City of Rio Vista	Industrial (General)	4.12
Inner WHA Boundary	0177110240	City of Rio Vista	Industrial (General)	29.56
Inner WHA Boundary	0177110230	City of Rio Vista	Industrial (General)	12.01
Inner WHA Boundary	0176460010	City of Rio Vista	Industrial (Limited)	33.16
Inner WHA Boundary	0176010140	City of Rio Vista	Industrial (Warehouse)	9.25
Inner WHA Boundary	0176460020	City of Rio Vista	Industrial (Limited)	0.67
Inner WHA Boundary	0176321280	City of Rio Vista	Open Space	0.19
Inner WHA Boundary	0177100130	City of Rio Vista	Agricultural/Open Space	23.00
Inner WHA Boundary	0176321270	City of Rio Vista	Open Space	0.16
Inner WHA Boundary	0176010660	City of Rio Vista	Industrial (Warehouse)	51.27
Inner WHA Boundary	0176336090	City of Rio Vista	Industrial (Warehouse)	0.09
Inner WHA Boundary	0176336120	City of Rio Vista	Industrial (Warehouse)	0.11
TOTAL	**--**	**--**	**--**	**163.59**

SOURCES:
City of Rio Vista, 2017. City of Rio Vista Municipal Code, Title 17; accessed at http://qcode.us/codes/riovista/ on August 17, 2017.
City of Rio Vista, 2002. Rio Vista General Plan 2001. Adopted July 18, 2002.

TABLE 3-2
VACANT AND DEVELOPABLE PARCELS IN THE OUTER WHA BOUNDARY AT RIO VISTA AIRPORT

Perimeter	APN	Jurisdiction	General Plan Land Use Designation	Acreage
Outer WHA Boundary	0178141170	City of Rio Vista	Highway Commercial	0.63
Outer WHA Boundary	0178135050	City of Rio Vista	Downtown	0.17
Outer WHA Boundary	0178220020	City of Rio Vista	Industrial (General)	4.54
Outer WHA Boundary	0178121160	City of Rio Vista	Downtown	0.20
Outer WHA Boundary	0177110250	City of Rio Vista	Industrial (General)	4.12
Outer WHA Boundary	0178121140	City of Rio Vista	Downtown	0.13
Outer WHA Boundary	0178220050	City of Rio Vista	Industrial (General)	5.88
Outer WHA Boundary	0049193090	City of Rio Vista	School	0.13
Outer WHA Boundary	0178134070	City of Rio Vista	Downtown	0.16
Outer WHA Boundary	0177130080	City of Rio Vista	Study Area	3.46
Outer WHA Boundary	0049163020	City of Rio Vista	Downtown	0.12
Outer WHA Boundary	0049163020	City of Rio Vista	Downtown	0.12
Outer WHA Boundary	0049163020	City of Rio Vista	Downtown	0.12
Outer WHA Boundary	0177140050	City of Rio Vista	Study Area	0.31
Outer WHA Boundary	0049156100	City of Rio Vista	Downtown	0.04
Outer WHA Boundary	0177110240	City of Rio Vista	Industrial (General)	29.56

TABLE 3-2
VACANT AND DEVELOPABLE PARCELS IN THE OUTER WHA BOUNDARY AT RIO VISTA AIRPORT

Perimeter	APN	Jurisdiction	General Plan Land Use Designation	Acreage
Outer WHA Boundary	0177140070	City of Rio Vista	Study Area	1.63
Outer WHA Boundary	0178151110	City of Rio Vista	Highway Commercial	0.18
Outer WHA Boundary	0178020040	City of Rio Vista	Industrial (General)	5.15
Outer WHA Boundary	0049161120	City of Rio Vista	Downtown	0.08
Outer WHA Boundary	0176434080	City of Rio Vista	School	0.21
Outer WHA Boundary	0178152210	City of Rio Vista	Highway Commercial	0.56
Outer WHA Boundary	0177110210	City of Rio Vista	Industrial (General)	2.96
Outer WHA Boundary	0049175090	City of Rio Vista	Historic Residential	0.21
Outer WHA Boundary	0177140080	City of Rio Vista	Industrial (General)	0.88
Outer WHA Boundary	0049131090	City of Rio Vista	Highway Commercial	3.29
Outer WHA Boundary	0049131050	City of Rio Vista	Highway Commercial	0.84
Outer WHA Boundary	0178020060	City of Rio Vista	Industrial (General)	5.46
Outer WHA Boundary	0049183070	City of Rio Vista	Historic Residential	0.12
Outer WHA Boundary	0049165210	City of Rio Vista	Downtown	0.05
Outer WHA Boundary	0177130070	City of Rio Vista	Study Area	2.14
Outer WHA Boundary	0049161010	City of Rio Vista	Downtown	0.19
Outer WHA Boundary	0177110230	City of Rio Vista	Industrial (General)	12.01
Outer WHA Boundary	0049156020	City of Rio Vista	Downtown	0.27
Outer WHA Boundary	0178210140	City of Rio Vista	Industrial (General)	9.23
Outer WHA Boundary	0178121130	City of Rio Vista	Downtown	4.06
Outer WHA Boundary	0177122060	City of Rio Vista	Study Area	0.26
Outer WHA Boundary	0178123010	City of Rio Vista	Downtown	1.30
Outer WHA Boundary	0049156010	City of Rio Vista	Downtown	0.05
Outer WHA Boundary	0176460010	City of Rio Vista	Industrial (Limited)	33.16
Outer WHA Boundary	0178135030	City of Rio Vista	Downtown	0.11
Outer WHA Boundary	0176010140	City of Rio Vista	Industrial (Warehouse)	9.25
Outer WHA Boundary	0176460020	City of Rio Vista	Industrial (Limited)	0.67
Outer WHA Boundary	0176321280	City of Rio Vista	Open Space	0.19
Outer WHA Boundary	0178020080	City of Rio Vista	Industrial (Limited)	4.99
Outer WHA Boundary	0049132020	City of Rio Vista	Highway Commercial	1.68
Outer WHA Boundary	0177100130	City of Rio Vista	Agricultural/Open Space	23.00
Outer WHA Boundary	0049156110	City of Rio Vista	Downtown	0.16
Outer WHA Boundary	0176321270	City of Rio Vista	Open Space	0.16
Outer WHA Boundary	0178210150	City of Rio Vista	Industrial (General)	1.21
Outer WHA Boundary	0176010660	City of Rio Vista	Industrial (Warehouse)	51.27
Outer WHA Boundary	0176336090	City of Rio Vista	Industrial (Warehouse)	0.09
Outer WHA Boundary	0176336120	City of Rio Vista	Industrial (Warehouse)	0.11
Outer WHA Boundary	0048320040	Solano County	General Industrial	0.91
Outer WHA Boundary	0048320100	Solano County	General Industrial	1.32

TABLE 3-2
VACANT AND DEVELOPABLE PARCELS IN THE OUTER WHA BOUNDARY AT RIO VISTA AIRPORT

Perimeter	APN	Jurisdiction	General Plan Land Use Designation	Acreage
Outer WHA Boundary	0048100560	Solano County	Agriculture	37.74
Outer WHA Boundary	0048320090	Solano County	General Industrial	20.72
TOTAL	**--**	**--**	**--**	**287.35**

SOURCES:
City of Rio Vista. 2017. City of Rio Vista Municipal Code, Title 17; accessed at http://qcode.us/codes/riovista/ on August 17, 2017.
City of Rio Vista. 2002. Rio Vista General Plan 2001. Adopted July 18, 2002.
County of Solano, 2015. County of Solano Zoning Regulations: Zoning Regulations Compiled from Chapter 28 of the Code of Solano County; Available: https://www.solanocounty.com/depts/rm/planning/zoning_regulations.asp on August 17, 2017. Adopted October 6, 2015.
County of Solano. 2008. Solano County General Plan. Adopted August 5, 2008 .

3.3.1 Displacement Analysis – Inner WHA Boundary

As shown in Table 3-1, there are 29 vacant parcels within the Inner WHA Boundary, all located within the city of Rio Vista, that are potentially subject to the wildlife hazard policies in Section 5.8 of the updated ALUCP. These parcels are located in areas designated for agricultural, industrial, or open space uses in the Rio Vista General Plan.

Policy WH-1 requires any new land use within the Inner WHA Boundary that has the potential to attract wildlife and cause bird strikes and is subject to discretionary review to prepare a wildlife hazard analysis. Land uses include expansion of existing uses as well as development of new uses that serve as wildlife hazard attractants. The wildlife hazard analysis must demonstrate that wildlife attractants that may pose hazards to aircraft in flight will be minimized. In addition, Policy WH-3 requires that as part of the California Environmental Quality Act (CEQA) review process for any projects within the Inner WHA Boundary with a potential to create bird strike hazards include mitigation to minimize the potential for impacts. In addition, all projects, with or without mitigation, shall be subject to ALUC review for consistency with the ALUCP. Compliance with the policies in the ALUCP may not eliminate the potential for displacement; however, it would likely minimize it for the majority of projects. Regardless, without examining land uses associated with specific projects, none of which are known or reasonably foreseeable at this time, it would be unduly speculative to identify potential displacement associated with the WHA policies at this time. Any discretionary projects that become known in the future with the potential to cause significant adverse environmental effects would be reviewed and addressed under CEQA.

3.3.2 Displacement Analysis – Outer WHA Boundary

As presented in Table 3-2, 53 vacant parcels in the city of Rio Vista and four vacant parcels in unincorporated Solano County would be subject to the wildlife hazard policies in Section 5.8 of the updated ALUCP. These parcels are primarily located in areas designated for agricultural, industrial, open space, downtown, or highway commercial uses.

Typically, large tracts of open, undeveloped land can attract potential hazards if they include features such as wetlands or landfills that provide opportunities for wildlife to feed, loaf, and nest (see Appendix H). Accordingly, smaller parcels designated for downtown or highway commercial uses and surrounded by similar development are less likely to attract wildlife hazards. This would generally limit the potential for displacement to larger parcels, away from urban areas, designated for agricultural, industrial, or open space uses.

Policy WH-2 requires any new land use outside the Inner WHA boundary but within the Outer WHA Boundary, that has the potential to attract the movement of wildlife and cause bird strikes, and is subject to discretionary review are required to prepare a wildlife hazard analysis. Land uses include expansion of existing uses as well as development of new uses that has the potential to attract the movement of wildlife and cause bird strikes. The wildlife hazard analysis must demonstrate that wildlife attractants that may pose hazards to aircraft in flight will be minimized and mitigations to support that aim are a required part of the process. Furthermore, Policy WH-3 requires that mitigation measures be implemented as part of the CEQA review process for any projects within the Outer WHA Boundary. Compliance with the policies in the ALUCP may not eliminate the potential for displacement; however, it would likely minimize it for the majority of projects. Regardless, without examining land uses associated with specific projects, none of which are known or reasonably foreseeable at this time, it would be unduly speculative to identify potential displacement associated with the WHA policies at this time. Any discretionary projects that became known in the future with the potential to cause significant adverse environmental effects would be reviewed and addressed under CEQA.