TRAVIS AIR FORCE BASE

LAND USE COMPATIBILITY PLAN

AUGUST 8, 2024

LAND USE
COMPATIBILITY PLAN

FOR

Travis Air Force Base

PREPARED FOR

County of Solano
Department of Resource Management

2024 AMENDMENTS PREPARED BY

Coffman Associates, Inc.

August 8, 2024

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CHAPTER 1

INTRODUCTION

1.1 Overview of the Plan

This *Travis Air Force Base Land Use Compatibility Plan* presents an update to the land use compatibility policies that apply to future development in the vicinity of Travis Air Force Base (Travis AFB, or the Air Force Base). The policies herein are designed to ensure that future land uses in the surrounding area will remain compatible with the realistically foreseeable, ultimate potential aircraft activity at the base. As adopted by the Solano County Airport Land Use Commission (ALUC or Commission), these policies provide the foundation through which the ALUC can navigate its duties in land use development review, in accordance with Section 21670 et seq. of the California State Public Utilities Code.

The compatibility criteria defined by these policies are also intended to be reflected within general plans and other policy instruments adopted by jurisdictions that manage land uses near Travis AFB. Specifically, the *Travis AFB Land Use Compatibility Plan* (LUCP) affects and requires action by the following jurisdictions:

- Solano County
- City of Benicia
- City of Dixon
- City of Fairfield
- City of Rio Vista
- City of Suisun City
- City of Vacaville
- City of Vallejo

The Legislature has also clarified 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, regarding airport land use commissions and LUCPs.

The plan only holds an advisory status with respect to the small portions of the Travis AFB airport influence area (AIA), as defined herein, which extend into the counties of Napa, Contra Costa, Sacramento and Yolo — the Solano County ALUC has jurisdiction only within Solano County boundaries.

This LUCP addresses compatibility issues involving the Air Force Base. The ALUC has also adopted separate airport land use compatibility plans for the two public-use airports in Solano County: Nut Tree Airport and Rio Vista Municipal Airport. The Travis AFB AIA overlaps the AIAs of the other airports. Where influence areas of two airports overlap, both compatibility plans apply.

This document contains both policies directly associated with assessment of land use compatibility (Chapters 3, 4, and 5), and separate review procedures for Travis Air Force Base in Chapter 6. The compatibility plan for Travis AFB consists of this LUCP which now incorporates review procedures within the plan document itself. The *Solano County Airport Land Use Compatibility Review Procedures*, adopted by the ALUC in 2002, continues to establish the procedures to be followed by the Commission and affected local land use jurisdictions with respect to other airports in Solano County. The compatibility plan for each of the other airports in Solano County continues to consist of two documents: the LUCP document for that airport plus the separate *Review Procedures* document that applies countywide.

1.2 Plan Preparation and Review

As adopted by the Solano County ALUC, the LUCP represented by this document replaces the previous LUCP, titled *Travis Air Force Base Land Use Compatibility Plan*, which was adopted by the ALUC on June 13, 2002. Before this 2002 document, the earlier plan, entitled *Comprehensive Airport Land Use Plan: Travis Air Force Base*, was adopted by the ALUC in 1990 and amended in 1994. For additional detail on the factors that have resulted in the need to prepare this LUCP update, see Appendix X.

The Travis Air Force Base Assault Landing Zone Training Overlay Zone (ALZ) was added to the Travis AFB LUCP in 2014 to establish additional compatibility criteria, based on the area overflown by these operations at that time.

Following construction of the runway and the evolving long-term operations of the ALZ Overlay Training Zone, updated information provided by Travis AFB was reviewed. With this information, the Solano County Airport Land Use Commission amended the LUCP in 2024. The 2024 amendments include the addition of the Low Altitude Maneuvering Zone (LAMZ); guidance regarding wildlife hazards; clarification regarding the inclusion of second or accessory dwelling units when calculating residential densities; and other minor amendments.

The Travis AFB LUCP has taken each of these factors into account in preparation for this document. Other sources have also provided some input for this document. In particular, personnel at Travis AFB have played a critical role in providing data related to the existing aircraft operations at Travis AFB.

1.3 How to Use the Travis AFB LUCP

In this Travis LUCP update, there are seven chapters that guide the reader on the compatibility requirements for Travis AFB, as well as review procedures and implementation strategies. Besides this chapter, Chapter 1, Introduction, Chapter 2, General Applicability, provides a context for this update to the LUCP, explaining recent changes in recent airport compatibility law in California and general background information about Solano County and the Air Force Base. Chapter 3, Summary Guide of Land Use Compatibility Criteria,

summarizes land use compatibility criteria and policies. Chapter 4, Detailed Guide to Land Use Compatibility, presents the land use compatibility policies for the six compatibility zones and two overlay zones for Travis AFB. Chapter 5, Development Standards, provides detailed policies pertaining to general, noise, safety, airspace protection, and overflight standards, as well as policies involving renewable energy, meteorological towers, objects greater than 100 feet in height, and wildlife hazards. Chapter 6, ALUC Review Procedures, describes the procedures, roles, and responsibilities for the Solano County ALUC. Chapter 7, Implementation, presents the Implementation Program for the LUCP, requiring an initiation of specific actions within twelve months of LUCP adoption.

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CHAPTER 2

GENERAL APPLICABILITY

2.1 Purpose

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

2.1.1 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 base for compatibility with aircraft operations at the base. The authority for conducting such reviews is established by the California State Aeronautics Act (Public Utilities Code, Section 21670 et seq.).

2.1.2 Affected Land Use Jurisdictions

The County of Solano and affected cities in the Travis AFB AIA, as defined herein, shall utilize these policies as the basis for:

(a) 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.

(b) Making planning decisions regarding specific development proposals involving the lands impacted by aircraft activity.

2.2 Geographic Scope

2.2.1 Nature of Compatibility Concerns

This Travis AFB LUCP applies to:

(a) All lands on which the uses could be negatively affected by noise or safety impacts associated with present or future aircraft operations on the runway systems of Travis AFB.

(b) All lands on which the uses could negatively impact flight operations and flight support activities.

(c) Lands on which the uses could negatively affect the operation of aircraft at the base.

2.2.2 Boundaries of Airport Influence Area

The specific limits of the Travis AFB AIA are depicted on the following page.

(a) The AIA is comprised of the entirety of Solano County and Compatibility Zones A, B1, B2, C, D, and E, together with the ALZ and Height Review Overlay Zones. Figure 1 depicts the compatibility zones and the AIA for Travis AFB; additionally, a description of each of the compatibility zones is located in Policy 4.1. These compatibility zones also include some portions Contra Costa, Napa, Sacramento, and Yolo Counties.

(b) For the portions of the AIA that extend into Contra Costa, Napa, Sacramento, and Yolo counties, these areas are advisory to the ALUCs within those counties. This LUCP is not binding on any areas located outside Solano County.

(c) Within the AIA, all proposed development with 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.

(d) The AIA is the same as the ALUC planning area as referred to in the Public Utilities Code, Section 21675.

CHAPTER 3

SUMMARY GUIDE TO LAND USE COMPATIBILITY

3.1 Understanding Land Use Compatibility at Travis AFB

This chapter represents a summary guide to land use compatibility at Travis AFB and includes land use criteria for development. Table 1 provides a summary of the regulations and restrictions affecting the six compatibility zones, A, B1, B2, C, D, and E, as well as two overlay zones, the ALZ Training Overlay Zone and the Height Review Overlay Zone, at Travis AFB. The LUCP is designed to account for issues relating to noise, safety, aircraft protection, and overflight, and Table 1 provides the requirements associated with these components. Table 1 is organized by each compatibility zone and overlay zone, and then provides the maximum densities and intensities (indoor, outdoor, and single acre intensity), uses that are prohibited within the given zone, and additional development conditions.

Development within each of the compatibility zones is subject to the standards defined in Table 1, as well as within Chapter 4 of the LUCP, Detailed Land Use Compatibility Criteria. In addition to height specifications, Table 1 also provides specific development conditions for discretionary projects that fall within one of the wildlife hazard zones, the Bird Strike Hazard Zone and Outer Perimeter. These requirements are discussed in detail in Policy 5.8, and they overlap a few of the compatibility zones and overlay zones.

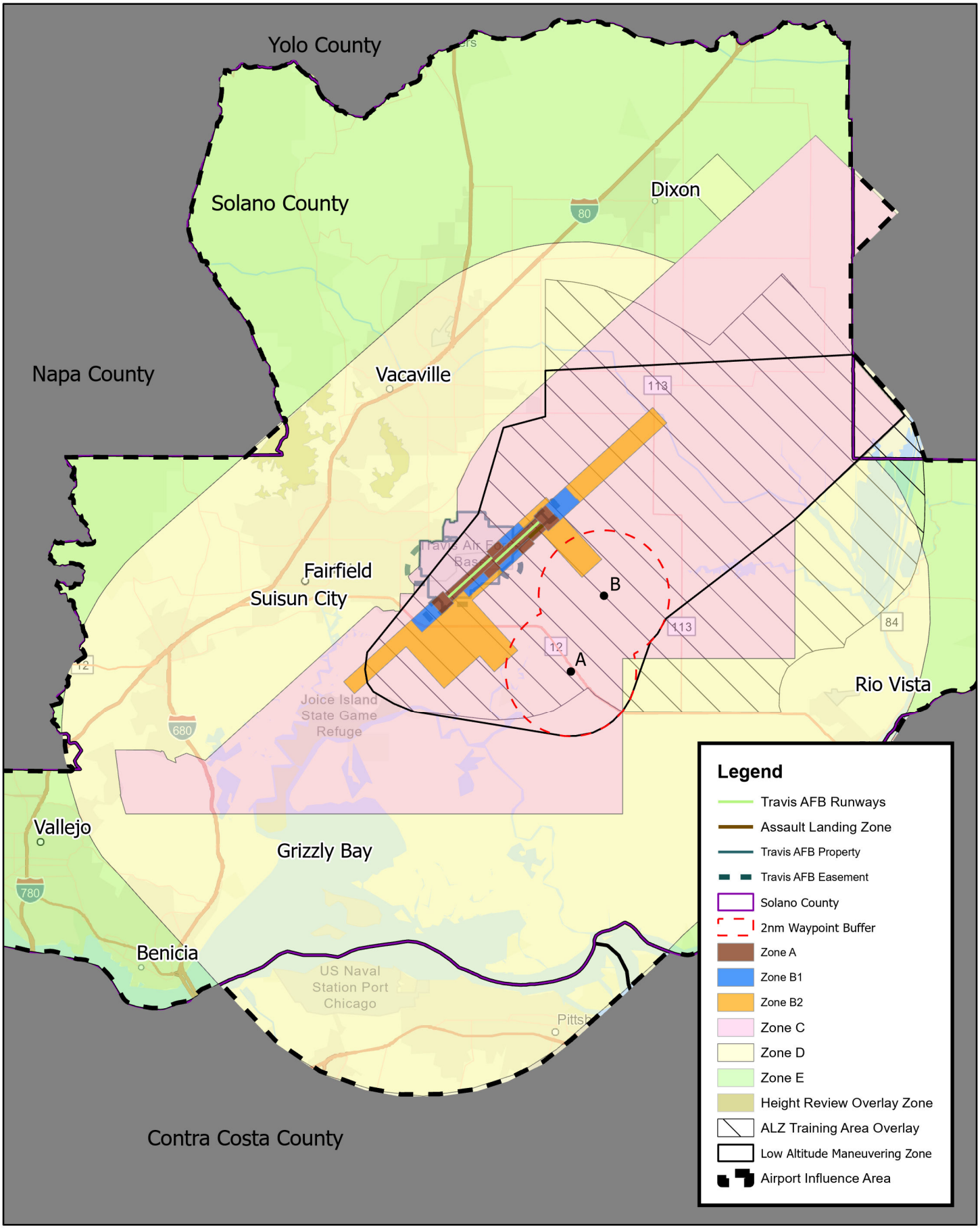


Figure 1
Compatibility Zones

TABLE 1: LAND USE COMPATIBILITY CRITERIA

Zone	Locations	Maximum Densities/Intensities[1]				Additional Criteria	
		Residential (du/ac)[1]	Other Uses (people/ac)[2]				
			Indoor Uses	Outdoor Uses	Single Acre[3]	Prohibited Uses[4]	Other Development Conditions[5]
A	Runway Primary Surface and Clear Zone	0	0	5	5	• All structures except aeronautical facilities with location set by U.S. Dept. of Defense criteria. • Assemblages of people • Objects exceeding FAR Part 77 height limits • Aboveground bulk storage of hazardous materials • Hazards to flight[6]	• Avigation easement dedication • For areas within the Bird Strike Hazard Zone, 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.
B1	Inner Approach / Departure Zone	0	15	20	30	• Children's schools,[7] day care centers,[8] libraries • Theatres, 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 maximum distance from extended runway centerline • Minimum NLR of 40 dB in buildings with noise-sensitive uses[9] • ALUC review required for objects > 35 feet AGL[10] • Avigation easement dedication • All proposed wind turbines must meet line-of-sight criteria in Policy 5.6.1(b) • All new or expanded commercial-scale solar facilities must conduct an SGHAT glint and glare study for ALUC review and coordination with Travis AFB • For areas within the Bird Strike Hazard Zone, 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.
B2	Extended Approach / Departure Zone	See Policy 4.2.1 Primary and secondary or ADU units must be included when calculating residential densities	25	40	60	• Children's schools,[7] day care centers,[8] libraries • Stadiums, group recreational uses • Hospitals, nursing homes • Highly noise-sensitive uses (e.g. outdoor theaters) • Aboveground bulk storage of hazardous materials[11] • Hazards to flight[6]	• Minimum NLR of 35 dB in residences (including mobile homes) and buildings with noise-sensitive uses[9] • ALUC review required for objects > 50 feet AGL • Avigation easement dedication • All proposed wind turbines must meet line-of-sight criteria in Policy 5.6.1(b) • All new or expanded commercial-scale solar facilities must conduct an SGHAT glint and glare study for ALUC review and coordination with Travis AFB • For areas within the Bird Strike Hazard Zone, 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. • For areas outside of the Bird Strike Hazard Zone but within the Outer Perimeter, 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.
C	Traffic Pattern	11 Primary and secondary or ADU units must be included when calculating residential dens	75	100	300	• Children's schools,[7] day care centers,[8] libraries • Hospitals, nursing homes • Hazards to flight[6]	• Minimum NLR of 20 dB in residences (including mobile homes) and buildings with noise-sensitive uses[9] • Deed notice required • ALUC review required for objects > 100 feet AGL • All proposed wind turbines must meet line-of-sight criteria in Policy 5.6.1(b) • All new or expanded commercial-scale solar facilities must conduct an SGHAT glint and glare study for ALUC review and coordination with Travis AFB • All new or expanded meteorological towers > 100 feet AGL, whether temporary or permanent, require ALUC review • For areas within the Bird Strike Hazard Zone, 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. • For areas outside of the Bird Strike Hazard Zone but within the Outer Perimeter, 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.

TABLE 1 (Continued): LAND USE COMPATIBILITY CRITERIA

Zone	Locations	Maximum Densities/Intensities[1]				Additional Criteria	
		Residential (du/ac)[1]	Other Uses (people/ac)[2]				
			Indoor Uses	Outdoor Uses	Single Acre[3]	Prohibited Uses[4]	Other Development Conditions[5]
D	Other Airport Environs	No Limit	No Limit			• Hazards to flight[6]	• ALUC review required for objects > 200 feet AGL • Deed Notice Required • All proposed wind turbines must meet line-of-sight criteria in Policy 5.6.1(b) • All new or expanded commercial-scale solar facilities must conduct an SGHAT glint and glare study for ALUC review and coordination with Travis AFB • All new or expanded meteorological towers > 200 feet AGL, whether temporary or permanent, require ALUC review • For areas within the Bird Strike Hazard Zone, 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. For areas outside of the Bird Strike Hazard Zone but within the Outer Perimeter, 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.
E	Remainder of Airport Influence Area	No Limit	No Limit[12]			• None	• ALUC review required for objects > 200 feet AGL • All proposed wind turbines must meet line-of-sight criteria in Policy 5.6.1(b) • All new or expanded commercial-scale solar facilities must conduct an SGHAT glint and glare study for ALUC review and coordination with Travis AFB • All new or expanded meteorological towers > 200 feet AGL, whether temporary or permanent, require ALUC review • Outside of the Bird Strike Hazard Zone but within the Outer Perimeter, 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.
--	Assault Landing Zone Training Overlay Zone	Same as Underlying Compatibility Zone				• Same as Underlying Compatibility Zone • Structures greater than 200 feet AGL in height	• Same as Underlying Compatibility Zone • All proposed wind turbines must meet line-of-sight criteria in Policy 5.6.1(b) • All new or expanded commercial-scale solar facilities must conduct an SGHAT glint and glare study for ALUC review and coordination with Travis AFB
--	Height Review Overlay	Same as Underlying Compatibility Zone				• Same as Underlying Compatibility Zone	• ALUC review required for objects > 35 feet AGL[10] • Avigation easement dedication required • All proposed wind turbines must meet line-of-sight criteria in Policy 5.6.1(b) • All new or expanded commercial-scale solar facilities must conduct an SGHAT glint and glare study for ALUC review and coordination with Travis AFB • For areas within the Bird Strike Hazard Zone, 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. For areas outside of the Bird Strike Hazard Zone but within the Outer Perimeter, 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.
--	Low Altitude Maneuvering Zone (LAMZ)	Refer to Section 4.10 for detailed discussion.				• Objects or structures 200 feet tall or greater. • New residential development within 2 nautical miles of waypoint A (N38 12.32' W121 52.65') and B (N38 14.64' W121 51.36'). • New residential development on any non-agricultural zoning within the LAMZ • Non - agricultural uses are incompatible within the LAMZ, with the exception of areas that are zoned for non—agricultural uses (such as MG-3 or CR) as effective on August 8, 2024 • Hazards to flight[6] • Children's schools[7], day care centers[8], libraries • Hospitals, nursing homes	• Objects or structural heights are limited to 200 feet and must comply with FAR Part 77 obstruction height clearances. • Areas outside of 2 nautical miles of waypoint A (N38 12.32' W121 52.65') and B (N38 14.64' W121 51.36'), residential development is limited to two units per agriculturally zoned parcels (one primary and one secondary or ADU unit) as effective on August 8, 2024. • Commercial solar is allowed within the LAMZ if found compatible following referral to the ALUC in coordination with Travis AFB. New or expanded commercial solar facilities must conduct an SGHAT glint and glare study for ALUC review and coordination with Travis AFB. To prevent interference with night-time tactical flying, including use of Night Vision Goggles (NVG), any new outdoor lighting sources within the LAMZ require review by the ALUC in coordination with Travis AFB. • For development within the existing MG-3 or CR zone, refer to the Maximum Densities/Intensities criteria in Zone C. ALUC review is required. • For areas within the LAMZ, 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.

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. Primary and secondary or Accessory Dwelling Unit (ADU) units must be included when calculating residential densities.

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 Clustering of nonresidential development is permitted except in Zones A, B1, or B2. However, no single acre of a project site shall exceed the indicated number of people per acre. See Policy 5.3.4 for details.

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 compatibility 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), visual, and electronic forms of interference with the safety of aircraft operations. Any new consistency determinations for general plan amendments or zoning changes in the Bird Strike Hazard Zone will be required to analyze the potential for wildlife attractants of this nature and must incorporate reasonably feasible mitigation measures. See the supporting compatibility policies on airspace protection (Section 5.4) for details.

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 Compatibility Zone C provided that the overall use of the property meets the indicated intensity criteria.

9 NLR = Noise Level Reduction; the outside-to-inside sound level attenuation that the structure provides. See the supporting compatibility policy on interior noise (Policy 5.2.4) for details.

10 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 5.4) for details.

11 Storage of up to 2,000 gallons is exempted.

12 Large stadiums and similar uses should be avoided.

CHAPTER 4

DETAILED GUIDE TO LAND USE COMPATIBILITY

4.1 Compatibility Zones Established

The following chapter provides a summary for each of the compatibility zones for Travis AFB. In total, the Air Force Base features six compatibility zones, A, B1, B2, C, D, and E, as well as two overlay zones, the ALZ Training Overlay Zone and the Height Review Overlay Zone. Below, each of the compatibility zones and overlay zones are generally described with tabular information relating to density and intensity requirements and additional zone-specific criteria. These details are also summarized in Table 1. Following this section, the Plan provides additional general, noise, safety, aircraft protection, and overflight regulations and supporting criteria that apply to each of the compatibility zones.

Within each of these compatibility zone sections, a series of criteria discussions are provided that reflect the specific requirements and regulations for each compatibility and/or overlay 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 Air Force Base. 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 FAA Part 77 surfaces and approach surfaces of the two runways and ALZ at Travis AFB. Lastly, Avigation Easement Dedication describes the avigation easement requirements for parcels located within Compatibility Zones A, B1, B2, and the Height Review Overlay Zone.

A description of the general standards that apply to the Travis AFB AIA, and more detailed development standards and descriptions associated with noise, safety, airspace protection, overflight, renewable energy, other objects, and wildlife hazard areas are provided in Chapter 5.

4.2 Compatibility Zone A

Compatibility Zone A (see Figure 1) consists of the Travis AFB runways (the two existing major runways and the ALZ, as described in Section 4.8), together with immediately adjoining areas within the runway primary surface and clear zones. The dimensions are set in accordance with FAA and Air Force criteria.

Zone	Locations	Maximum Densities/Intensities			
		Residential (du/ac)	Other Uses (people/ac)		
			Indoor Uses	Outdoor Uses	Single Acre
A	Runway Primary Surface and Clear Zone	0	0	5	5

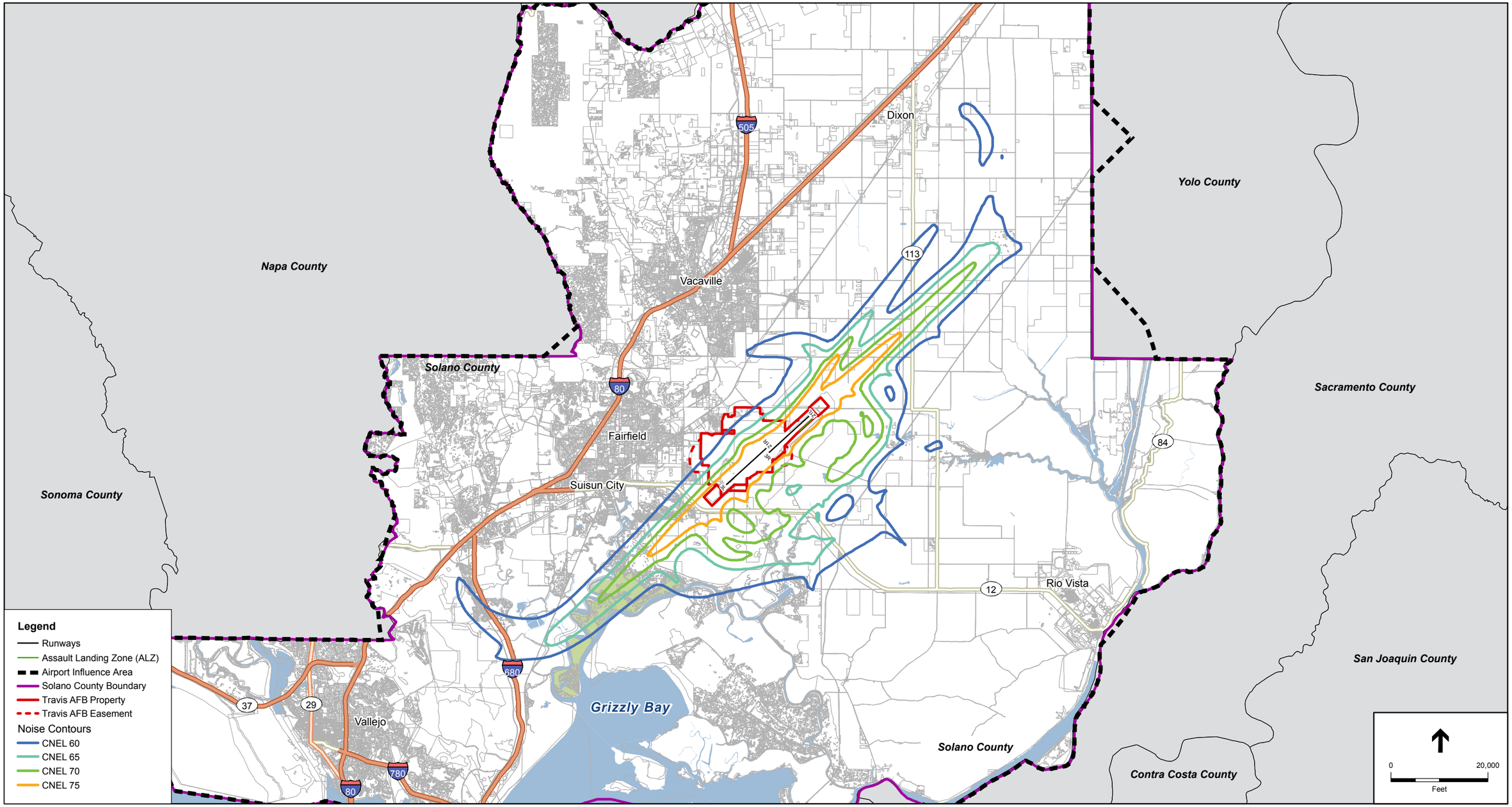
Additional Criteria	
Prohibited Uses	**Other Development Conditions**
• All structures except aeronautical facilities with location set by U.S. Dept. of Defense criteria. • Assemblages of people • Objects exceeding FAR Part 77 height limits • Aboveground bulk storage of hazardous materials • Hazards to flight	• Avigation easement dedication • For areas within the Bird Strike Hazard Zone, 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.

4.2.1 General Standards

The general standards applicable to the review of proposed land use actions in the vicinity of Travis AFB are set forth in Table 1. No new residential development is permitted. Permitted non-residential uses allow for the following intensities: 0 people per acre for indoor uses and 5 people per acre for outdoor uses. Also, to prevent clustering of nonresidential development on larger lots, 5 people per acre shall be the limit for a single acre.

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 Travis AFB aircraft operations. Residential development shall not be permitted in this zone and nonresidential development shall be highly limited within the general standards. Noise contours are shown on Figure 2. See Policy 5.2.4 for additional interior noise detail.



SOURCE: Mead & Hunt, 2015; ESA Airports, 2015; ESRI

Travis AFB ALUCP Update. 130898

Figure 2

2015 Maximum Mission CNEL Contours

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4.2.3 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, hospitals (medical facilities that include provision for overnight stays by patients), nursing homes, and other uses in which the majority of occupants are children, elderly, and/or disabled shall be prohibited within Zone A. In addition, no storage of any fuel or other hazardous materials shall be permitted, and no clustering shall be permitted either. 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).

4.2.4 Airspace Protection Criteria

Proposed buildings of any height require ALUC review. Part 77 surfaces and approach surfaces are defined in Figure 3. 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 Zone A shall be required to dedicate an avigation easement to the County of Solano. FAA notification is required for all new buildings. For a description of the FAR Part 77 surfaces, see Policy 5.4.3.

4.2.5 Avigation Easement Dedication

As a condition for development approval, the owner of any property proposed for development within Compatibility Zone A shall be required to dedicate an avigation easement to the County of Solano. The avigation easement (see Appendix D 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.

4.3 Compatibility Zone B1

Compatibility Zone B1 (see Figure 1) comprises Accident Potential Zone I (APZ I) as defined by the Air Force. This is an area of substantial risk situated within 7,500 feet of the runway ends. It is also subject to potential noise levels in excess of 80 dB CNEL.

Zone	Locations	Maximum Densities/Intensities			
		Residential (du/ac)	Other Uses (people/ac)		
			Indoor Uses	Outdoor Uses	Single Acre
B1	Inner Approach/ Departure Zone	0	15	20	30

Additional Criteria	
Prohibited Uses	**Other Development Conditions**
• Children's schools, day care centers, libraries • Theatres, 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 • Minimum NLR of 40 dB in buildings with noise-sensitive uses • ALUC review required for objects > 35 feet AGL • Avigation easement dedication • All proposed wind turbines must meet line-of-sight criteria in Policy 5.6.1(b) • All new or expanded commercial-scale solar facilities must conduct an SGHAT glint and glare study for ALUC review and coordination with Travis AFB • For areas within the Bird Strike Hazard Zone, 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.

4.3.1 General Standards

The general standards applicable to the review of proposed land use actions in the vicinity of Travis AFB are set forth in Table 1. No new residential development is permitted. Permitted non-residential uses allow for the following intensities: 15 people per acre for indoor uses and 20 people per acre for outdoor uses. Also, to prevent clustering of nonresidential development on larger lots, 30 people per acre shall be the limit for a single acre.

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 Travis AFB aircraft operations. Residential development shall only be permitted in this zone if a minimum noise level reduction (NLR) of 40 dB can be achieved for buildings with noise sensitive uses. Nonresidential development shall be highly limited within the general standards. See Policy 5.2.4 for additional interior noise detail.

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, hospitals (medical facilities that include provision for overnight stays by patients), nursing homes, 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 Zone B1. In addition, no storage of any fuel or other hazardous materials shall be permitted, and no clustering shall be permitted either. 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).

4.3.4 Airspace Protection Criteria

Proposed buildings that are 35 feet or higher AGL require ALUC review, excluding buildings on land for which the US Air Force controls an easement and grants a waiver to height restrictions. 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 Zone B1 shall be required to dedicate an avigation easement to the County of Solano. FAA notification is required for all new buildings.

For a description of the FAR Part 77 surfaces, see Policy 5.4.3.

4.3.5 Avigation Easement Dedication

As a condition for development approval, the owner of any property proposed for development within Compatibility Zone B1 shall be required to dedicate an avigation easement to the County of Solano. The avigation easement (see Appendix D 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 Compatibility Zone B2

Compatibility Zone B2 (see Figure 1) is comparable to Accident Potential Zone II (APZ II) as indicated in Air Force guidelines, but is expanded to encompass approach and departure flight tracks that are not aligned with the runway. High risk and potential noise levels in the 70-to-80-dB CNEL range are the major compatibility factors.

Zone	Locations	Maximum Densities/Intensities			
		Residential (du/ac)	Other Uses (people/ac)		
			Indoor Uses	Outdoor Uses	Single Acre
B2	Extended Approach/Departure Zone	See Policy 4.2.1	25	40	60
Note: Primary and secondary or ADU units must be included when calculating residential densities					

Additional Criteria	
Prohibited Uses	**Other Development Conditions**
• Children's schools, day care centers, libraries • Stadiums, group recreational uses • Hospitals, nursing homes • Highly noise-sensitive uses (e.g. outdoor theaters) • Aboveground bulk storage of hazardous materials • Hazards to flight	• Minimum NLR of 35 dB in residences (including mobile homes) and buildings with noise-sensitive uses • ALUC review required for objects > 50 feet AGL • Avigation easement dedication • All proposed wind turbines must meet line-of-sight criteria in Policy 5.6.1(b) • All new or expanded commercial-scale solar facilities must conduct an SGHAT glint and glare study for ALUC review and coordination with Travis AFB • For areas within the Bird Strike Hazard Zone, 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. • For areas outside of the Bird Strike Hazard Zone but within the Outer Perimeter, any new or expanded land use involving discretionary review that has the potential to attract the movement of wildlife that could cause bird strikes are required to prepare a WHA.

4.4.1 General Standards

The general standards applicable to the review of proposed land use actions in the vicinity of Travis AFB are set forth in Table 1. Within Zone B2, new dwelling units are strongly discouraged and the division of existing parcels shall not be permitted if the change would allow more dwelling units. Permitted non-residential uses allow for the following intensities: 25 people per acre for indoor uses and 40 people per acre for outdoor uses. Also, to prevent clustering of nonresidential development on larger lots, 60 people per acre shall be the limit for a single acre. See Policy 5.1.2 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 significantly impacted by noise from Travis AFB aircraft operations. Residential development shall only be permitted in this zone if a minimum noise level reduction NLR of 35 dB can be achieved for buildings with noise sensitive uses. Nonresidential development shall be highly limited within the general standards. See Policy 5.2.4 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, hospitals (medical facilities that include provision for overnight stays by patients), nursing homes, 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 Zone B2. In addition, no storage of any fuel or other hazardous materials shall be permitted, and no clustering of nonresidential development shall be permitted either. Within this zone, storage of fuel or other hazardous materials is permitted only as follows:

(a) The substances are stored in underground tanks.

(b) The quantity stored is no more than 2,000 gallons.

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).

4.4.4 Airspace Protection Criteria

Proposed buildings that are 50 feet or higher AGL require ALUC review, excluding buildings on land for which the US Air Force controls an easement and grants a waiver to height restrictions. 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 Zone B2 shall be required to dedicate an avigation easement to the County of Solano. For a description of the FAR Part 77 surfaces, see Policy 5.4.3.

4.4.5 Avigation Easement Dedication

As a condition for development approval, the owner of any property proposed for development within Compatibility Zone B2 shall be required to dedicate an avigation easement to the County of Solano. The avigation easement (see Appendix D 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.

4.5 Compatibility Zone C

Compatibility Zone C (see Figure 1) encompasses locations exposed to potential noise in excess of approximately 60 dB CNEL together with additional areas occasionally affected by concentrated numbers of low-altitude aircraft overflights. To the greatest extent practical, the boundaries are delineated so as to follow sections, lines, other geographic features, and fixed offset distances from the extended runway centerlines. Developed residential areas within existing city limits are excluded.

Zone	Locations	Maximum Densities/Intensities			
		Residential (du/ac)	Other Uses (people/ac)		
			Indoor Uses	Outdoor Uses	Single Acre
C	Traffic Pattern	11	75	100	300
Note: Primary and secondary or ADU units must be included when calculating residential densities					

Additional Criteria	
Prohibited Uses	**Other Development Conditions**
• Children's schools, day care centers, libraries • Hospitals, nursing homes • Hazards to flight	• Minimum NLR of 20 dB in residences (including mobile homes) and buildings with noise-sensitive uses • Deed notice required • ALUC review required for objects > 100 feet AGL • All proposed wind turbines must meet line-of-sight criteria in Policy 5.6.1 • All new or expanded commercial-scale solar facilities must conduct an SGHAT glint and glare study for ALUC review and coordination with Travis AFB • All new or expanded meteorological towers > 100 feet AGL, whether temporary or permanent, require ALUC review • For areas within the Bird Strike Hazard Zone, 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. • For areas outside of the Bird Strike Hazard Zone but within the Outer Perimeter, any new or expanded land use involving discretionary review that has the potential to attract the movement of wildlife that could cause bird strikes are required to prepare a WHA.

4.5.1 General Standards

The general standards applicable to the review of proposed land use actions in the vicinity of Travis AFB are set forth in Table 1. Permitted non-residential uses allow for the following intensities: 75 people per acre for indoor uses and 100 people per acre for outdoor uses. Also, to prevent clustering of nonresidential development on larger lots, 300 people per acre shall be the limit for a single acre. For residential uses, the maximum allowable residential density for this zone shall be 11 dwelling units per acre. As a condition for approval of development within Zone C, 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 D of this document. Primary and secondary or Accessory Dwelling Unit (ADU) units must be included when calculating residential densities

4.5.2 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 Travis AFB aircraft operations. Residential development shall only be permitted in this zone if a minimum noise level reduction NLR of 20 dB can be achieved for buildings with noise sensitive uses. See Policy 5.2.4 for additional details on acceptable interior noise levels. Nonresidential development shall be highly limited within the general standards. The noise impact area is defined as being all locations within the outer boundary of Zone C as shown on Figure 1.

(a) Zone C includes locations where concentrated numbers of flights at low altitudes are often conducted, although not at a sufficiently high frequency on an annual basis to generate a CNEL of 60 dB or more. The outer boundary of Compatibility Zone C encompasses this noise contour.

(b) Any mobile home situated within the Compatibility Zone C shall have to submit evidence to the ALUC that it will be designed to comply with the interior noise levels specified in Policy 5.2.4. (A typical mobile home has an exterior-to-interior noise level reduction [NLR] of approximately 15 dB with windows closed.)

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, hospitals (medical facilities that include provision for overnight stays by patients), nursing homes, and other uses in which the majority of occupants are children, elderly, and/or disabled shall be prohibited within Zone C. Noncommercial day care centers ancillary to a place of business are permitted in Compatibility Zone C provided that the overall use of the

property meets the intensity criteria indicated in Table 1. Medical clinics are permitted in Compatibility Zone C provided that these facilities meet the maximum intensity standards listed in Table 1. 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).

4.5.4 Airspace Protection Criteria

Proposed buildings that are 100 feet or higher AGL require ALUC review, excluding buildings on land for which the US Air Force controls an easement and grants a waiver to height restrictions. 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 perimeters shall be permitted. For a description of the FAR Part 77 surfaces, see Policy 5.4.3.

4.5.5 Deed Notice

As a condition for approval of development within Compatibility Zone C, 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 D of this document.

4.6 Compatibility Zone D

Compatibility Zone D (see Figure 1) includes all other locations beneath any of the Travis AFB airspace protection surfaces delineated in accordance with FAR Part 77 as well as areas subject to frequent aircraft overflight. Limitations on the height of structures and notice of aircraft overflights are the only compatibility factors within this zone.

Zone	Locations	Maximum Densities/Intensities			
		Residential (du/ac)	Other Uses (people/ac)		
			Indoor Uses	Outdoor Uses	Single Acre
D	Other Airport Environs	No Limit	No Limit		

Additional Criteria	
Prohibited Uses	**Other Development Conditions**
• Hazards to flight	• ALUC review required for objects > 200 feet AGL • Deed Notice Required • All proposed wind turbines must meet line-of-sight criteria in Policy 5.6.1 • All new or expanded commercial-scale solar facilities must conduct an SGHAT glint and glare study for ALUC review and coordination with Travis AFB • All new or expanded meteorological towers > 200 feet AGL, whether temporary or permanent, require ALUC review • For areas within the Bird Strike Hazard Zone, 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. • For areas outside of the Bird Strike Hazard Zone but within the Outer Perimeter, any new or expanded land use involving discretionary review that has the potential to attract the movement of wildlife that could cause bird strikes are required to prepare a WHA.

4.6.1 General Standards

The general standards applicable to the review of proposed land use actions in the vicinity of Travis AFB are set forth in Table 1. There are no general restrictions for Zone D.

4.6.2 Noise Criteria

As a condition for approval of development within Zone D, 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 D of this document. See Policy 5.2.4 for additional details on acceptable interior noise levels.

4.6.3 Safety Criteria

There are no particular safety requirements for Zone D. 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).

4.6.4 Airspace Protection Criteria

Proposed buildings that are 200 feet or higher AGL require ALUC review, excluding buildings on land for which the US Air Force controls an easement and grants a waiver to height restrictions. 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 FAR Part 77 surfaces, see Policy 5.4.3.

4.6.5 Deed Notice

As a condition for approval of development

within Compatibility Zone D, 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 D of this document.

4.7 Compatibility Zone E

Compatibility Zone E (see Figure 1) includes the area located between Zone D and the AIA boundary, which is coterminous with the Solano County boundaries. Zone E requires ALUC review for all proposed buildings or structures that are 200 feet or higher AGL. There is no limit on the types of land uses, densities, or intensities, although large stadiums and similar uses should be avoided in this compatibility zone.

Zone	Locations	Maximum Densities/Intensities			
		Residential (du/ac)	Other Uses (people/ac)		
			Indoor Uses	Outdoor Uses	Single Acre
E	Remainder of Airport Influence Area	No Limit, Although Large Stadiums and Similar Uses Should Be Avoided			

Additional Criteria	
Prohibited Uses	**Other Development Conditions**
• No Limit	• Airspace review required for objects > 200 feet AGL • All proposed wind turbines must meet line-of-sight criteria in Policy 5.6.1 • All new or expanded commercial-scale solar facilities must conduct an SGHAT glint and glare study for ALUC review and coordination with Travis AFB • All new or expanded meteorological towers > 200 feet AGL, whether temporary or permanent, require ALUC review • Outside of the Bird Strike Hazard Zone but within the Outer Perimeter, any new or expanded land use involving discretionary review that has the potential to attract the movement of wildlife that could cause bird strikes are required to prepare a WHA.

4.8 Assault Landing Zone Training Overlay Zone

The Assault Landing Zone is a short runway on the northeast end of the Travis AFB airfield complex that is used for practicing landings and takeoffs from short austere fields encountered in combat theaters. It is a regional training facility used by airlift crews based at Travis AFB and other locations in California and Nevada. This additional runway simulates the short field environment and allows the operations to remain segregated from other Travis AFB flight operations. This ALZ Training Overlay Zone (see Figure 1) was developed to restrict tall structures that might interfere with tactical flight operations commencing approaches toward or departures from the Assault Landing Zone.

Zone	Locations	Maximum Densities/Intensities			
		Residential (du/ac)	Other Uses (people/ac)		
			Indoor Uses	Outdoor Uses	Single Acre
--	Assault Landing Zone Training Overlay Zone	Same as Underlying Compatibility Zone			

Additional Criteria	
Prohibited Uses	**Other Development Conditions**
• Same as Underlying Compatibility Zone • Structures greater than 200 feet AGL in height	• Same as Underlying Compatibility Zone • All proposed wind turbines must meet line-of-sight criteria in Policy 5.6.1(b) • All new or expanded commercial-scale solar facilities must conduct an SGHAT glint and glare study for ALUC review and coordination with Travis AFB

4.8.1 General Standards

The general standards are the same as the underlying compatibility zone.

4.8.2 Noise Criteria

The noise criteria are the same as the underlying compatibility zone. See Policy 5.2.4 for additional details on acceptable interior noise levels.

4.8.3 Safety Criteria

The safety criteria are the same as the underlying compatibility zone. 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).

4.8.4 Airspace Protection Criteria

No structures greater than 200 feet AGL within this overlay zone are permitted.

4.9 Height Review Overlay Zone

The Height Review Overlay Zone (see Figure 1) covers locations where the terrain exceeds or comes within 35 feet of any of the FAR Part 77 airspace protection surfaces for Travis AFB. The Height Review zone overlays portions of the other compatibility zones, and is generally located in portions of Cement Hill and the Vaca Mountains, to the northwest of Travis AFB and between the cities of Fairfield and Vacaville.

Zone	Locations	Maximum Densities/Intensities			
		Residential (du/ac)	Other Uses (people/ac)		
			Indoor Uses	Outdoor Uses	Single Acre
--	Height Review Overlay Zone	Same as Underlying Compatibility Zone			

Additional Criteria	
Prohibited Uses	**Other Development Conditions**
• Same as Underlying Compatibility Zone	• Airspace review required for objects > 35 feet AGL • Avigation easement dedication required • All proposed wind turbines must meet line-of-sight criteria in Policy 5.6.1 • All new or expanded commercial-scale solar facilities must conduct an SGHAT glint and glare study for ALUC review and coordination with Travis AFB • For areas within the Bird Strike Hazard Zone, 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. • For areas outside of the Bird Strike Hazard Zone but within the Outer Perimeter, any new or expanded land use involving discretionary review that has the potential to attract the movement of wildlife that could cause bird strikes are required to prepare a WHA.

4.9.1 General Standards

The general standards are the same as the underlying compatibility zone.

4.9.2 Noise Criteria

The noise criteria are the same as the underlying compatibility zone. See Policy 5.2.4 for additional details on acceptable interior noise levels.

4.9.3 Safety Criteria

The safety criteria are the same as the underlying compatibility zone. 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).

4.9.4 Airspace Protection Criteria

Proposed structures that are 35 feet or higher AGL above the ground require ALUC review. 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. For a description of the FAR Part 77 surfaces, see Policy 5.4.3.

4.10 Low Altitude Maneuvering Zone

Travis AFB is a major Air Force tactical training base for large mobility aircraft in the USA. The FAA has established special use airspace alert area A-682 surrounding Travis AFB. This is to warn other aircraft transiting the area of the potential for a high volume of pilot training, or an unusual type of aerial activity. Tactical flying within the ALZ Training Overlay Zone will be at random altitudes and routes simulating combat arrivals and departures. They can be flown day or night, and at higher or lower altitudes.

To maintain FAA requirements for low altitude flying below 1000 feet, it is necessary to restrict underlying land uses to low population and density. A specialized Low Altitude Maneuvering Zone (LAMZ) has been defined to implement this requirement. The LAMZ shown in Figure 1 lies underneath FAA special use airspace alert area A-682 and has been identified through analysis of historical flight traffic patterns and aircraft performance parameters.

Zone	Locations	Maximum Densities/Intensities			
		Residential (du/ac)	Other Uses (people/ac)		
			Indoor Uses	Outdoor Uses	Single Acre
--	Low Altitude Maneuvering Zone	Refer to the additional criteria below			

Additional Criteria	
Prohibited Uses	**Other Development Conditions**
• Objects or structures 200 feet tall or greater. • New residential development within 2 nautical miles of waypoint A (N38 12.32' W121 52.65') and B (N38 14.64' W121 51.36'). • New residential development on any non-agricultural zoning within the LAMZ • Non -agricultural uses are incompatible within the LAMZ, with the exception of areas that are zoned for non—agricultural uses (such as MG-3 or CR) as effective on August 8, 2024 • Hazards to flight • Children's schools, day care centers, libraries • Hospitals, nursing homes	• Objects or structural heights are limited to 200 feet and must comply with FAR Part 77 obstruction height clearances. • Areas outside of 2 nautical miles of waypoint A (N38 12.32' W121 52.65') and B (N38 14.64' W121 51.36'), residential development is limited to two units per agriculturally zoned parcels (one primary and one secondary or ADU unit) as effective on August 8, 2024. • Commercial solar is allowed within the LAMZ if found compatible following referral to the ALUC in coordination with Travis AFB. New or expanded commercial solar facilities must conduct an SGHAT glint and glare study for ALUC review and coordination with Travis AFB. • To prevent interference with night-time tactical flying, including use of Night Vision Goggles (NVG), any new outdoor lighting sources within the LAMZ require review by the ALUC in coordination with Travis AFB. • For development within the existing MG-3 or CR zone, refer to the Maximum Densities/Intensities criteria in Zone C. ALUC review is required. • For areas within the LAMZ, 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.

4.10.1 Noise Criteria

The noise criteria are the same as the underlying compatibility zone. See Policy 5.2.4 for additional details on acceptable interior noise levels.

4.10.2 Safety Criteria

The safety criteria are the same as the underlying compatibility zone. 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).

CHAPTER 5

DEVELOPMENT STANDARDS

5.1 General Standards

5.1.1 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.

5.1.2 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 shall also apply.

(a) 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.

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

  (2) 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.

  (3) 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.

(b) No single acre of a project site shall exceed the number of people per acre indicated in Policy 5.3.4 and listed in Table 1.

(c) The noise exposure limitations cited in Policy 5.2.3 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 Travis AFB LUCP. The ability of buildings to satisfy the interior noise level criteria noted in Policy 5.2.4 shall also be considered.

(d) All height requirements for this LUCP shall be assessed in feet AGL.

TABLE 2: NOISE COMPATIBILITY CRITERIA

Land Use Category	Location[1]			
	Remainder of Zone C	CNEL (dB)		
		60-65	65-70	>70
Public				
schools, libraries, hospitals, nursing homes, museums	+	-	--	--
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	-
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 1 for locations.

5.1.3 Prohibited Uses

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

5.1.4 Other Development Conditions

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

5.1.5 Projects with a Development Agreement Prior to LUCP Adoption

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

5.2 Noise Standards

5.2.1 Potential Future Noise Levels

Assessment of whether proposed land use development near Travis AFB is compatible with the noise impacts of aircraft activity at the base shall be made with respect to potential future noise levels.

(a) The potential future noise levels are based upon the maximum mission aircraft activity scenario described in Appendix F.

(b) The ALUC should periodically review the projected noise level contours and update them if appropriate. Reviews should be done at least every five years and should be done sooner if the mission of the base or the characteristics of aircraft operations change in a manner not reflected in this LUCP.

5.2.2 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 Travis AFB aircraft operations. For this purpose, the noise impact area is defined as being all locations within the outer boundary of Compatibility Zone C, as shown on Figure 1. The Travis AFB aircraft noise exposure contours for the forecast maximum mission are presented in Figure 2.

(a) New residential development is deemed normally incompatible where the noise exposure exceeds a potential future CNEL of 60 dB, unless interior noise levels are attenuated to 45 dB or less. Above CNEL 65 dB, new residential uses are prohibited.

(b) Other locations where aircraft fly at relatively low altitudes in the vicinity of Travis AFB also may experience individual noise events that may be disruptive to residential land use activities. Compatibility Zone D includes locations where concentrated numbers of flights at low altitudes are often conducted, although not at a sufficiently high frequency on an annual basis to generate a CNEL of 60 dB or more.

5.2.3 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.

(a) 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.”

(b) The noise contours depicted in Figure 2 shall be used as the basis for determining compliance with interior noise level criteria listed in Policy 5.2.4.

5.2.4 Interior Noise Levels

Land uses for which interior activities may be easily disrupted by noise shall be required to comply with the following interior noise level criteria.

(a) The maximum, aircraft-related, interior noise 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.

(b) Interior CNEL calculations should assume that windows are closed.

(c) When reviewed as part of a general 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:

(1) Any single- or multi-family residence situated within the 60 dB CNEL Maximum Mission contour shown in Figure 2. [Wood frame buildings typically have an NLR of approximately 20 dB with windows closed.]

(2) 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 Maximum Mission contour.

5.3 Safety Standards

5.3.1 Objective

The intent of land use safety compatibility criteria for Travis AFB 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. Table 1 contains the density and intensity limitations for the various compatibility zones.

5.3.2 Risks to People on the Ground

The principal means of reducing risks to people on the ground is to restrict land uses so as to limit the number of people who might gather in areas most susceptible to aircraft accidents. (Methods for determining the concentration of people for various land uses are provided in Appendix A of this document.)

5.3.3 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. Family day care homes are permitted in any location where residential development is permitted.

5.3.4 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 compatibility 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 Chapter 6 for policies regarding infill development.

(a) With respect to the vicinity of Travis AFB, 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 compatibility zones, which are incorporated into this Policy 5.3.4 by reference.

(b) In addition to the detailed clustering requirements for each zone:

(1) For the purposes of this Policy 5.3.4, the areas to be evaluated within the compatibility zones shall be rectangles, not irregular shapes.

(2) 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.

(3) Open land sites, at least 300 feet long by 75 feet wide (or approximately 0.5 acres) should be provided and maintained in the compatibility zones, particularly Compatibility Zones A, B1, and B2, for emergency landing purposes.

5.4 Airspace Protection Standards

5.4.1 Purpose of Airport Land Use Commission Policies

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 purpose of ALUC 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.

5.4.2 Airport Land Use Commission Review of Height of Proposed Objects

Based upon FAA criteria, proposed objects that would exceed the heights indicated in Chapter 4 for the respective compatibility 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 LUCP. 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 compatibility zones.

5.4.3 Height Restriction Criteria

The general criteria to be used in assessing whether objects may represent airspace obstructions are established by Part 77 of the Federal Aviation Regulations (FAR), Safe, Efficient Use and Preservation of the Navigable Airspace. In general, the height of objects in the vicinity of Travis AFB shall be limited so as not to exceed the imaginary airspace surfaces defined for the airport in accordance with Part 77 criteria.

(a) A simplified diagram of the FAR Part 77 Subpart C surfaces for Travis AFB is depicted in Figure 3.

(b) In certain circumstances, objects may need to be restricted to heights less than the limits indicated by Figure 3.

  (1) In locations along portions of instrument approach procedure routes, restrictions of object heights to less than indicated by FAR Part 77 may be necessary so as not

to impair the utilization of these procedures. The applicable criteria are set forth in the 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.

(2) 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 FAR Part 77 limits. Based upon 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 of Travis AFB personnel should be sought with regard to any such cases that may be brought to the ALUC's attention.

(c) Objects may be permitted to exceed FAR Part 77 criteria under the following conditions.

(1) On property over which the Air Force controls an easement, exceptions to the height limits shall be made only if Air Force grants a waiver to the restrictions.

(2) In locations where the ground level exceeds or lies within 35 feet of a Part 77 horizontal or conical surface (the Height Review Overlay Zone), objects up to 35 feet in height AGL are permitted. 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.

(3) 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 the views of Travis AFB personnel, shall also be taken into account in the ALUC's decision to grant such exceptions.

(d) All height requirements shall be measured AGL in all other locations.

5.4.4 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 FAR Part 77. Under most circumstances, when reviewing proposed structures that exceed the height criteria indicated in Policy 5.4.3, 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.

5.4.5 Federal Aviation Administration Notification

Proponents of a project that may exceed the elevation of a Part 77 surface must notify the FAA as required by FAR Part 77, Subpart B, and by the State Aeronautics Act, Public Utilities Code Sections 21658 and 21659. (Notification to the FAA under FAR 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 B of this document for a copy of these sections of the state codes and to Appendix C 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 included in Appendix C as well.)

(a) Local jurisdictions shall inform project proponents of the requirements for notifying the FAA.

(b) 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 LUCP including but not limited to Policy 5.4.2.

(c) 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.

(d) Any project submitted to the ALUC for consistency determination for reason of height issues shall include a copy of FAR 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.

5.4.6 Other Flight Hazards

Land uses that may cause visual, electronic, or wildlife hazards to aircraft in flight shall not be permitted within 14,500 feet of the Travis AFB runways (as depicted in Figure 4). Specific characteristics to be avoided include new or expansion of existing land uses that result in:

(a) Glint, glare or distracting lights that could be mistaken for airport lights;

(b) Sources of dust, steam, high-velocity exhaust plumes, or smoke that may impair pilot visibility;

(c) Sources of electrical interference with aircraft communications or navigation; and

(d) Any use, especially landfills and certain agricultural uses, that may attract an increased number of birds.

(e) Radar interference, which is required to be minimized by only erecting commercial and non-commercial wind turbines in certain areas of the County, consistent with Policy 5.6.1.

(f) Outdoor sources of light that may diminish the effectiveness of night vision goggles used by pilots of military aircraft performing ALZ & LAMZ training maneuvers.

5.5 Overflight

5.5.1 Airport Land Use Commission Review of Overflight

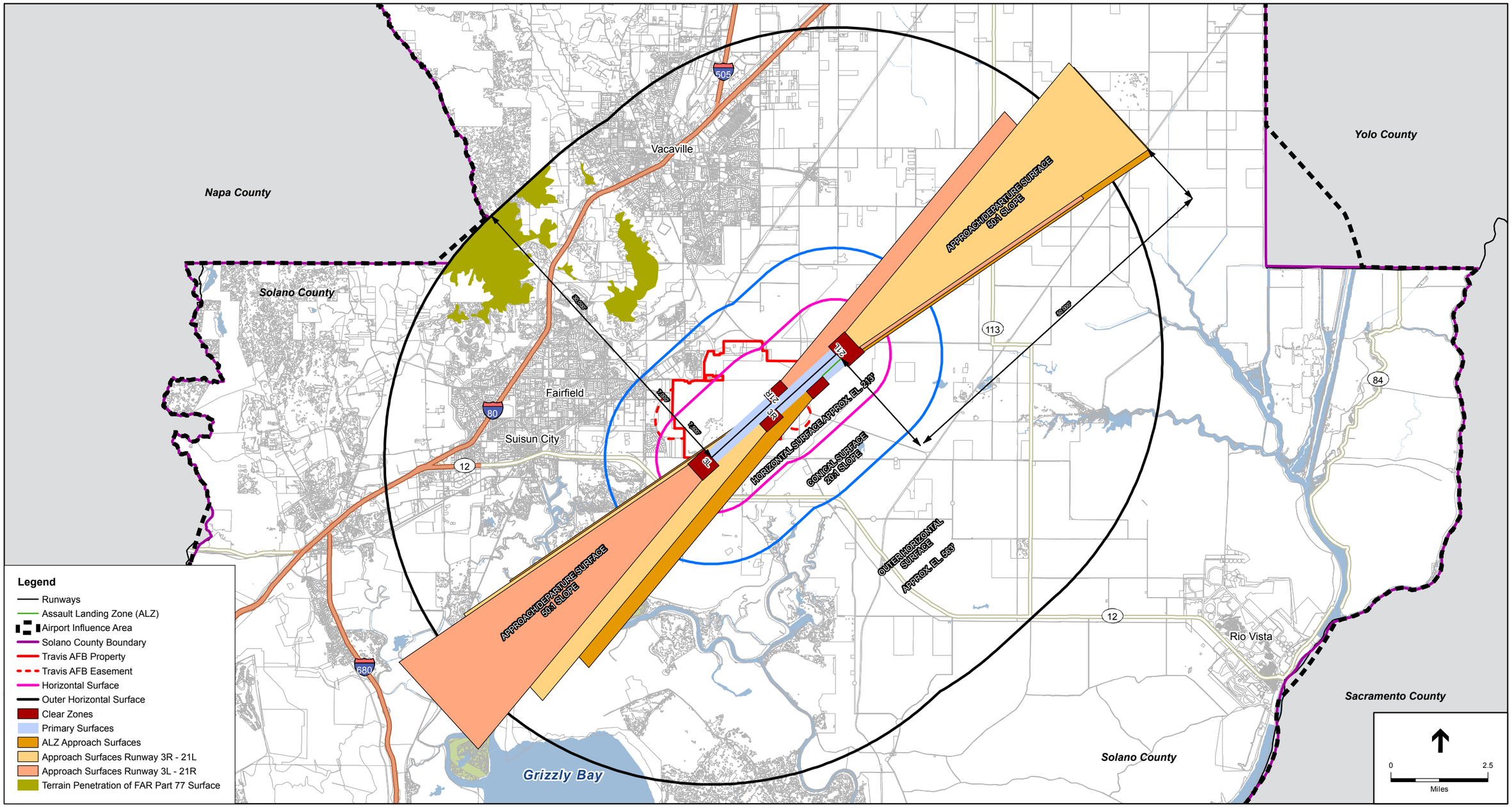
Based on aircraft noise exposure in the vicinity of Travis AFB, existing and future people living near or within specific overflight zones will need to be informed of the aircraft noise levels and potential nuisance of overflight. Acceptability of a particular noise level, with respect to a specific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

(a) The overflight zones are based upon the aircraft activity scenario presented in the Maximum Mission, found in Appendix F.

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

5.5.2 Disclosure

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



SOURCE: Solano County GIS Department, 2014; Mead & Hunt, 2015; ESA Airports, 2015; ESRI

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Figure 3

FAR Part 77 Surfaces

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5.6 Renewable Energy Standards

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 policies to account for wind turbine and solar facilities.

5.6.1 Wind Turbine Facilities

The presence of wind turbines can generate air traffic control radar interference, rotor turbulence, and vertical obstruction hazards for aircraft operations at Travis AFB. To ensure adequate hazard prevention for aircraft operations and to minimize radar interference, the following requirements below present limits for wind turbine development and operation.

The beyond the radar line-of-sight method of siting wind turbines is the most proven and effective method for minimizing wind turbine impacts on a radar's aircraft detection capabilities. Siting wind turbines outside of the radar's line-of-sight is critical to mitigating additional cumulative effects arising from the addition of new turbines to those already existing within the current radar line-of-sight as every turbine within the radar's line-of-sight negatively impacts the radar.

New wind turbine facilities, depending on height, are subject to the following limitations. Height of all wind turbines shall be reported in feet AGL as measured at the apex of the blade at its highest point.

(a) This LUCP does not restrict wind turbines, whether commercial or non-commercial, 100 feet or less in height AGL from being built anywhere in the County.

(b) No wind turbine greater than 100 feet in height AGL shall be within a line-of-sight of the Travis AFB Digital Airport Surveillance Radar (DASR) Radar Installation. All commercial and non-commercial wind turbine facilities greater than 100 feet in height AGL shall provide an individual radar line-of-sight analysis to demonstrate that the placement of the proposed wind turbine is not within a line-of-sight to the Travis DASR Radar Installation and shall be referred to the ALUC for a consistency determination. The line-of-sight method used in such analysis shall, at a minimum, be performed using a standard curvature of the earth radar beam assessment model to provide an accurate radar line-of-sight. A discussion of the methodology and assumptions that are to be used in the line-of-sight analysis is found in Appendix H.

This requirement applies throughout the AIA (and is advisory outside of Solano County). The five example line-of-sight depictions presented in Appendix H of this LUCP do not show the boundary of the area within which the line-of-sight requirement applies, but rather depict a shaded area (labeled "viewshed" on the Legend) which illustrates, at a large scale, approximately where wind turbines that are 100 feet, 200 feet, 300 feet, 400 feet, and 500 feet in height AGL, respectively, would likely be within the line-of-sight of the Travis AFB DASR Radar Installation. Conversely, the remaining areas that are not shaded as "viewshed" are areas where wind turbines of the specified heights are not likely to be within the line-of-sight of the Travis AFB DASR Radar Installation.

(c) Existing commercial and non-commercial wind turbines, in existence at the time of adoption by the ALUC of this LUCP, can be replaced at identical dimensions and constructed of the same materials without ALUC review; however, the turbine materials shall not increase the height or reflectivity of the wind turbine. All replacement turbines with different dimensions (e.g., taller or with larger blades or rotor diameter) than the originally

permitted turbine are subject to Policy 5.6.1(b) above, if greater than 100 feet in height AGL, and shall be referred to the ALUC for a consistency determination and shall include an individual radar line-of-site analysis to demonstrate that the placement of the proposed wind turbine is not within a line-of-sight to the Travis DASR Radar Installation.

(d) In locations where new commercial and/or non-commercial wind turbines are authorized under this LUCP, these facilities can be replaced without ALUC review if there is no increase in height or reflectivity.

5.6.2 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 Travis AFB 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.

(a) No commercial-scale solar facility shall have a potential for glint or glare in an existing or planned Airport Traffic Control Tower cab at Travis AFB. 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 Layout Plan for Travis AFB. 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 LUCP 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, FAAPolicy: Review of Solar Energy System Projects on Federally-Obligated Airports, 86 Fed. Reg. 25801 (May 11, 2021).

5.7 Other Height Regulations

5.7.1 Meteorological Towers

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

(a) All proposed new or expanded meteorological towers 100 feet in height AGL or greater in Compatibility Zone C, or 200 feet AGL or greater in Compatibility Zones D and E, whether temporary or permanent, shall require ALUC review.

(b) All meteorological towers, whether temporary or permanent, regardless of height, shall be subject to the height requirements stated elsewhere in this LUCP.

(c) 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 5.7.1(c), 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.

5.7.2 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.

(a) All proposed new or expanded objects 100 feet in height AGL or greater in Compatibility Zone C, or 200 feet AGL or greater in Compatibility Zones D and E, whether temporary or permanent, shall require ALUC review and shall be subject to the height requirements stated elsewhere in this LUCP.

(b) All proposed new or expanded objects 100 feet in height AGL or greater in Compatibility Zone C, or 200 feet AGL or greater in Compatibility Zones D and E, 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 in height AGL.

(c) 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

5.8.1 Wildlife Hazards

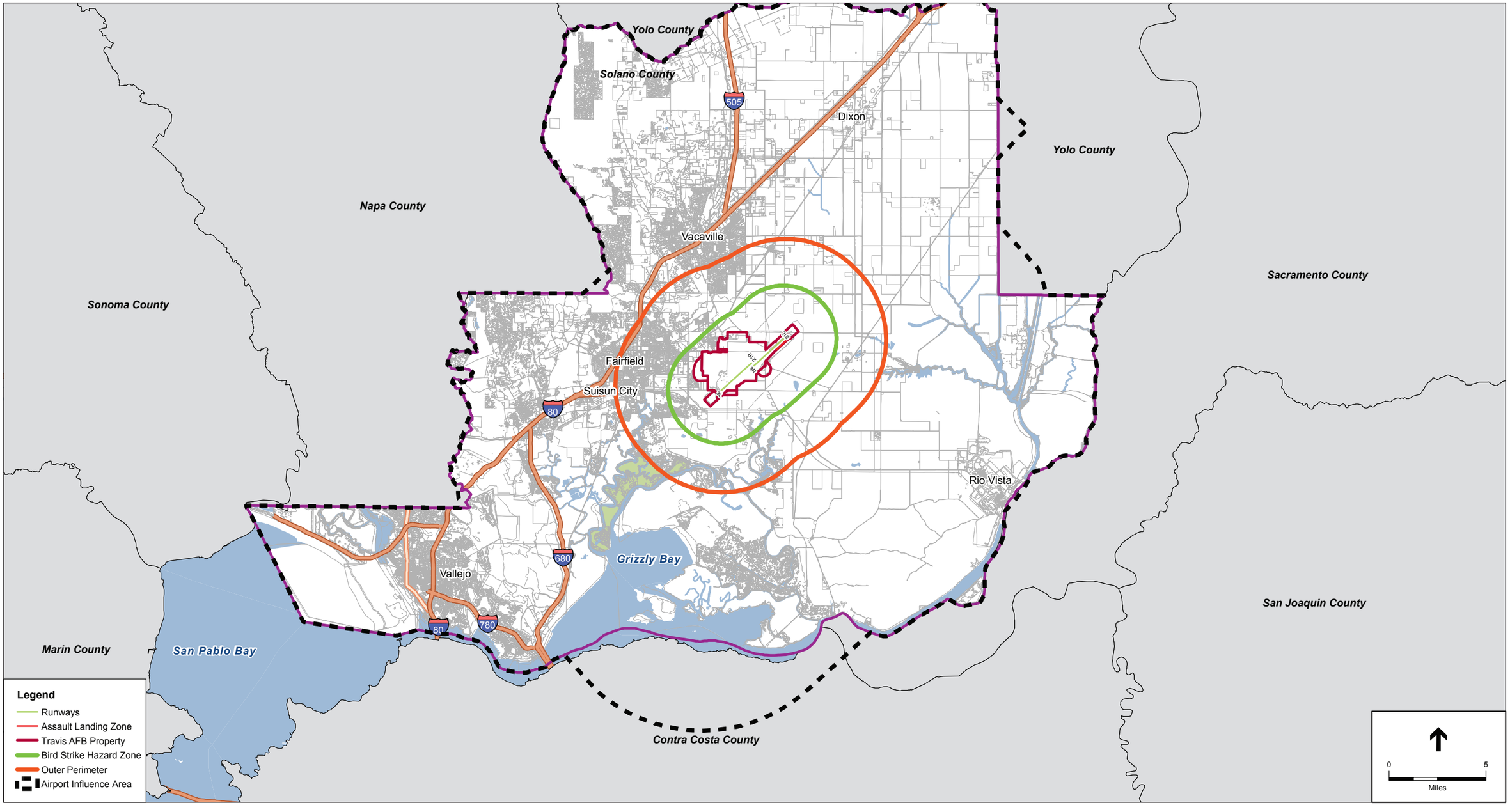
Figure 4 depicts two wildlife hazard zones, the Bird Strike Hazard Zone and the Outer Perimeter, which contain specific development requirements. The Bird Strike Hazard Zone is delineated by a radius 14,500 feet from the runway centerlines. The Outer Perimeter is located five miles from the farthest edge of the Air Force Base'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 Outer Perimeter is based on the fact that Travis AFB serves turbine-powered aircraft. Together, these perimeters encompass portions of all compatibility 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 following regulations do not apply to existing land uses.[1]

5.8.2 Known Wildlife Hazards in Solano County

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

(a) Bird Strike Hazard Zone: Within the Bird Strike Hazard Zone as shown on Figure 4, 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. If the land use development would comply with the policies of the 2002 LUCP with respect to bird strike hazards within the Bird Strike Hazard Zone, then based on the findings of the WHA, all reasonably feasible mitigation measures must be incorporated into the planned land use. Expansion of existing wildlife attractants includes newly created areas and increases in enhanced or restored areas.

[1] Land uses in existence that do not meet the wildlife hazard policies of this LUCP, 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: Mead & Hunt, 2015; Travis AFB, 2014; Solano County GIS Dept., 2015; ESA Airports, 2015; ESRI

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Figure 4

Wildlife Hazard Analysis Boundaries

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TABLE 3
SPECIES GROUPS KNOWN TO BE ATTRACTED TO LAND USE TYPES IN THE VICINITY OF TRAVIS AFB

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.

(b) Outer Perimeter: Outside the Bird Strike Hazard Zone but within the Outer Perimeter, as shown on Figure 4, 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. The WHA must demonstrate wildlife movement that may pose hazards to aircraft in flight will be minimized.

(c) All discretionary projects located within the Bird Strike Hazard Zone and Outer Perimeter 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).

(d) 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 5.8.2 as part of the CEQA process, and that separate documentation will not be needed. Proposed projects within the Bird Strike Hazard Zone that have the potential to cause a significant adverse impact under Policy 5.8.2(c), 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).

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CHAPTER 6

ALUC REVIEW PROCEDURES

6.1 General Applicability

6.1.1 Purpose and Precedence.

(a) Purpose — These Solano County Airport Land Use Compatibility 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 LUCP for Travis AFB.

(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 LUCP for Travis AFB in Solano County.

(1) The procedural policies set forth herein apply to Travis AFB.

(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 Travis AFB 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 Travis AFB, as well as lands on which the uses could negatively affect Travis AFB.

(2) The specific limits of the influence area for Travis AFB are depicted on the maps contained within this LUCP.

(3) An AIA can cross a county line. Portions of the Travis AFB AIA extend into Contra Costa, Napa, Sacramento, and Yolo Counties. However, the Travis LUCP is not binding outside Solano County.

(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 LUCP 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 (State Aeronautics Act Section 21676(b)).

(2) The adoption or approval of a zoning ordinance or building regulation that affects property within the AIA.

(3) Adoption or modification of the master plan for an existing public-use airport or military airfield (State Aeronautics Act Section 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 (State Aeronautics Act Section 21664.5).

(5) Any proposal for a new airport, heliport, or military airfield, whether for public use or private use (State Aeronautics Act Section 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 LUCP 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 Travis AFB AIA to the ALUC for review (State Aeronautics Act Section 21676.5(a)).

(2) After a local agency has revised its general plan or specific plan for consistency with the LUCP (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 Travis AFB AIA, ALUC review is requested only for actions that concern locations within Compatibility Zones A, B1, B2, C, D, the ALZ Training Area Overlay Zone, or the Height Review Overlay Zone, or that are within Compatibility Zone E and involve objects more than 200 feet in height AGL.

(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 LUCP, 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 LUCP 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 military airfield 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 military 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 LUCPs, 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, nonaviation use of land within a clear zone at Travis AFB.

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

(vi) Any project having the potential to attract hazardous wildlife to the vicinity of Travis AFB.

(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 Travis AFB'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 Compatibility Zone C, or greater than 200 feet in height AGL in Compatibility Zones D and E, whether temporary or permanent.

(xi) Any proposed projects within the Bird Strike Hazard Zone, concerning wildlife hazards, that have the potential to cause a significant adverse impact under Policy 5.8.2(d), with or without mitigation.

(xii) All proposed new or expanded objects greater than 100 feet in height AGL in Compatibility Zone C, or greater than 200 feet in height AGL in Compatibility Zones D and E, whether temporary or permanent.

(2) Proposed nonaviation 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 E, 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 FAR 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 Travis AFB 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 Travis AFB 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 Travis AFB LUCP, 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 LUCP, 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 (Government Code Section 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 — A 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 Travis AFB LUCP, the ALUC has three choices of action:

(1) Find the plan, ordinance, or regulation consistent with the Travis AFB LUCP. 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 Travis AFB LUCP, 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 Travis AFB LUCP. 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 (State Aeronautics Act Section 21676(d)).

(1) If the ALUC fails to make a determination within that period, the proposed action shall be deemed consistent with the Travis AFB LUCP.

(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 Travis AFB LUCP.

(2) Find the project consistent with the Travis AFB LUCP, 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 Travis AFB LUCP. 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 Travis AFB LUCP.

(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 LUCP 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 Travis AFB LUCP;

(ii) A proposed increase in the height of structures or other design features such that the height limits established by the Travis AFB LUCP 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 Travis AFB 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 Travis Air Force Base Land Use Compatibility Plan — In order for a general plan to be considered consistent with the Travis AFB LUCP, 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 Travis AFB LUCP although conflicts with regard to other policies also may exist.

(ii) Note, however, that a general plan cannot be found inconsistent with the Travis AFB LUCP 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 LUCP 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 Travis AFB LUCP.

(i) Even if the land use designations in a general plan have been deemed consistent with the Travis AFB LUCP, 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 Travis AFB LUCP (this requires both that the compatibility criteria be identified and that project review procedures be described);

(b) The Travis AFB LUCP 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 Travis AFB LUCP. 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 Travis AFB LUCP 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 Travis AFB LUCP unless replacement open land is provided within the same compatibility 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 Travis AFB LUCP.

(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 Travis AFB LUCP.

(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 Travis AFB LUCP. 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 Travis AFB LUCP 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 Travis AFB LUCP. No ALUC review of such changes is required.

(iii) ALUC review is required for any proposed expansion of a non-conforming 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 non-conforming 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 E for definition).

(5) *Parcels Lying within Two or More Compatibility Zones* — For the purposes of evaluating consistency with the compatibility criteria set forth herein, any parcel that is split by compatibility zone boundaries shall be considered as if it were multiple parcels divided at the compatibility 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 transferred to the less restricted portion. This transfer of development 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 compatibility zone.

(6) *Other Special Conditions* — The compatibility criteria set forth in the Travis AFB LUCP 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 military 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.

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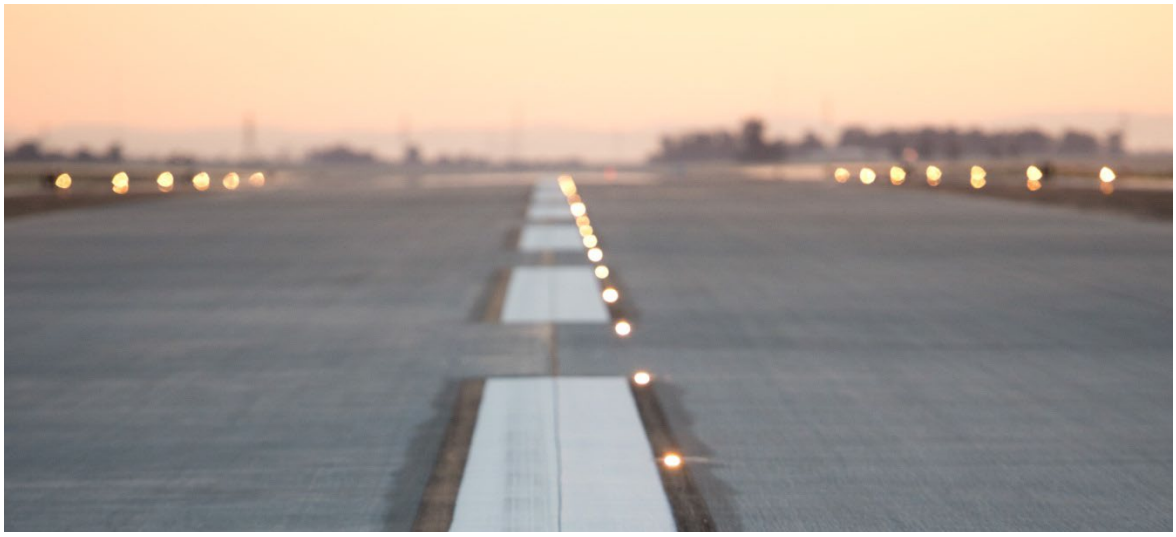


CHAPTER 7

IMPLEMENTATION

7.1 Implementation Program

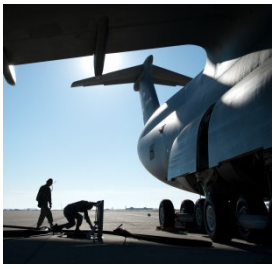
7.1.1 Implementation Program

Within twelve (12) months of the adoption of this LUCP, the Solano County ALUC shall take steps to initiate the preparation of an implementation program to address the following:

(a) The parameters of a WHA, including what a WHA shall contain to satisfy the ALUC's review requirements.

(b) Clarify and determine the exact limitations for land uses that have the potential to attract wildlife hazards located within the Bird Strike Hazard Zone.

(c) (c) Convene a working group to develop policies and approaches to address (b) above in order to implement the Solano Multispecies Habitat Conservation Plan and other regional conservation efforts in a manner consistent with this LUCP. The composition of this working group shall be subject to the approval of the Solano ALUC.



(d) Convene a working group to explore alternatives to the line-of-sight analysis for the replacement of existing facilities or repowering of existing wind farms within the Montezuma Hills Wind Resource Area. The composition of this working group shall be subject to the approval of the Solano ALU

APPENDICES

appendix A

Methods for Determining Concentrations of People

APPENDIX A

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 A-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 A1 shows sample calculations.

TABLE A-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 A1
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 A1) 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 B

State Laws Related to Airport Land Use Planning

APPENDIX B: STATE LAWS RELATED TO AIRPORT LAND USE PLANNING

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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 for 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 subdivisions (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 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 the member 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, special 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 provisions of this article, if the board of supervisors and the city selection committee of mayors in any 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) which does not include among its membership at least two members having an 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 the 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) of this subdivision, 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 comprehensive airport land use 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 comprehensive airport land use plans.

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

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

(E) Designate the agency that shall be responsible for the preparation, adoption, and amendment of each comprehensive airport land use 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 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 a 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 comprehensive airport land use plans with the Division of Aeronautics under the California Aid to Airport Program (Title 21 (commencing with Section 4050) 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 plans:

(1) Agree to adopt and implement the comprehensive airport 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 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 comprehensive land use 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 comprehensive land use 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 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 an existing airport land use commission in its comprehensive land use plan in accordance with 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 either:

(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.

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) 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 for 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 if four years. The body which 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 him or her. The expiration date of the term of office of each member shall be the first Monday in May in the year in which his or her 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 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 which has not adopted the comprehensive land use plan required by Section 21675 shall not charge fees pursuant to this subdivision until the commission adopts the plan.

(g) In any county which has undertaken by contract or otherwise completed land use 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 land use plans are complete by that date, may continue charging fees after June 30, 1992. If the land use 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 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 comprehensive land use plans.

    (2) The development of criteria for determining airport land use planning boundaries.

    (3) The identification of essential elements which should be included in the comprehensive 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 which the department determines to be appropriate to provide the commission staff and for which it determines there is a need for staff training and development.

(c) The department may provide training and development programs for airport land 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

An airport land use commission that formulates, adopts or amends a comprehensive airport land use 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.

21675. Land Use Plan

(a) Each commission shall formulate a comprehensive land use 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 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 a land use plan, the commission may develop height restrictions on buildings, specify use of land, and determine building standards, including soundproofing adjacent to airports, within the planning area. The comprehensive land use 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 may include, within its plan formulated pursuant to subdivision (a), the area within the jurisdiction of the commission surrounding any federal military airport for all the purpose specified in subdivision (a). This subdivision does not give the commission any jurisdiction or authority over the territory or operations of any military airport.

(c) The planning boundaries 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 plan and each amendment to the plan.

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

(b) Until a commission adopts a comprehensive land use 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 the 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 which will be included or reasonably could be included within the plan. If the commission has not designated a study area for the 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 plan.

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

(3) There is little or no probability of substantial detriment to or interference with the future adopted plan if the action, regulation, or permit is ultimately inconsistent with the 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 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 shall be immune from liability for damages to property or personal injury from the city's or county's decision to proceed with the action, regulation, or permit.

(g) A commission may adopt rules and regulations which 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 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 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 commission 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 commission's plan. If the plan or plans are inconsistent with the commission's plan, the local agency shall be notified and that local agency shall have another hearing to reconsider its plans. The local agency may overrule the commission after such a 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.

(b) Prior to the amendment of a general plan or specific plan, or the addition 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, 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.

(c) Each public agency owning any airport within the boundaries of an airport land use commission plan shall, prior to modification of its airport master plan, refer such 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, 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.

(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 commission's 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 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 commission plan, the local agency shall be notified and that local agency shall hold a hearing to reconsider its plan. The local agency may overrule the commission after 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.

(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 the individual projects shall be reviewed by the commission.

21677. Marin County Override Provisions

Notwithstanding 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 or 21676.5 overrides 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 override 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 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, which 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 which postpones the effective date of the zoning change, zoning variance, permit, or regulation until the governing body of the local agency which took the action does one of the following:

(1) In the case of an action which 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 which 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) of this subdivision, whichever is applicable.

(c) The court shall not issue an injunction pursuant to subdivision (b) if the local agency which took the action demonstrates that the general plan and any applicable specific plan of the agency accomplishes the purposes of an airport land use 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 or a public airport, shall be commenced in any county in which the commission or other designated body has not adopted an airport land use plan, but is making substantial progress toward the completion of the plan.

(b) If a commission has been prevented from adopting the comprehensive land use plan by June 30, 1991, or if the adopted plan could not become effective, because of a lawsuit involving the adoption of the 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 plan, but is making substantial progress toward the completion of the plan, which has not proceeded to final judgment, shall be held in abeyance until June 30, 1991. If the commission or other designated body does not adopt an airport land use 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 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 such 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 Division 9, and acted upon by such commission in accordance with the provisions of such 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 the 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 clear zones 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 of the provisions 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.

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 the 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 of 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 72012 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 retrieve 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 proposals 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 that 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 Sections 53080 to 53082, inclusive, or Chapter 4.9 (commencing with Section 65995).

(5) Fees determined pursuant to Chapter 5 (commencing with Section 66000).

(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 Local Government Reorganization Act (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) The Office of Permit Assistance within the Trade and Commerce Agency, pursuant to its authority in Article 1 (commencing with Section 15399.50) of Chapter 11 of Part 6.7 of Division 3 of Title 2.

(4) Any other person with experience or training in mediation including those with experience in land use issues, or any other organization or agency which 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 school site, 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 school sites before acquiring title to property for a new school site, the governing board of each school district, including any district governed by a city board of education, shall give the Department of Transportation written notice of the proposed acquisition and shall submit any information required by the department if the proposed 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 school site or an addition to a present school site, 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 school site or an addition to a present school site, 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 a 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 a 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 shall, in lieu of notifying the Division of Aeronautics, 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 such information or assistance as 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 such community college district for expenditure in connection with that site, any state funds otherwise made

available under any state law whatever for a 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 such purposes; provided that provisions of this section shall not be applicable to sites acquired prior to January 1, 1966, nor any additions or extensions to such sites.

If the recommendations of the Division of Aeronautics are unfavorable, such recommendations shall not be overruled without the express approval of the board of governors and the State Allocation Board.

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 comprehensive land use plan boundaries, or, if a comprehensive land use 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 Department of Real Estate an application for a public report consisting of a notice of intention and a completed questionnaire on a form prepared by the department.

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

[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 can vary from person to person. You may wish to consider what airport annoyances, if any, are associated with the property before you complete your purchase and determine whether they are acceptable to you.

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

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 any 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 are 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 co-owner to one or more other co-owners.
   (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 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.

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appendix C

Federal Aviation Regulations Part 77 Objects Affecting Navigable Airspace

APPENDIX C

Federal Aviation Regulations Part 77
Objects Affecting Navigable Airspace

Subpart A
GENERAL

Amdt. 77-13, as of April 27, 2015.

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.

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appendix D

Sample Implementation Documents

APPENDIX D
Sample Implementation Documents

The responsibility for implementation of the compatibility criteria set forth in the compatibility plan for Travis Air Force Base 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 D1 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 D2.
- 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 D3 contains a sample of a deed notice.

Appendix D1
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 D2
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; and

(4) The 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

(5) 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.

(6) 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 D3
Sample Deed Notice

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 Travis Air Force Base (AFB) 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 types 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.

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appendix E

Glossary of Terms

APPENDIX E
Glossary of Terms

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.

Air Installation Compatible Use Zone (AICUZ): A land use compatibility plan prepared by the U.S. Department of Defense for military airfields. AICUZ plans serve as recommendations to local government bodies having jurisdiction over land uses surrounding these facilities.

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)

Assault Landing Zone: A runway at Travis AFB that is used for the tactical arrival, departure, and landing training for C-17 aircraft and aircrews, enabling C-17 operations to not conflict with other aircraft operations.

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.

Base Influence Zone: A combined zone, as delineated herein, containing Compatibility Zones A, B1, B2, C, and D, together with the Assault Landing Zone and Height Review Overlay Zone.

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.

FAR Part 77: The part of the Federal Aviation Regulations which deals with objects affecting navigable airspace. Objects that exceed the Part 77 height limits constitute airspace obstructions.

FAR 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.

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.

Federal Aviation Regulations (FAR): Regulations formally issued by the FAA to regulate air commerce.

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 3.2.4 (3) 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 3.1.5 (3).

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

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appendix F

Existing and Future Conditions Data for Maximum Mission

APPENDIX F

Existing and Future Conditions Data for Maximum Mission

Current Activity Levels

Limited information is available on the historic levels of operations at Travis Air Force Base (AFB). Since 2000, aircraft activity has ranged between 70,279 and 32,524 annual operations; the lowest figure being recorded at the end of 2013. This low is likely the result of the automatic Department of Defense budget cuts that went into effect that year from the Budget Control Act, also known as "sequestration." In fact, it was estimated that the United States Air Force (USAF) would have to reduce flying hours in 2013 by 18 percent, substantially impacting operational and training missions at all bases.

Interestingly, the new Assault Landing Zone (ALZ) at Travis AFB was commissioned shortly after sequestration went into effect on March 1st of 2013. At that time the Air Force indicated that while they would protect operations in Afghanistan and other contingency areas, about two-thirds of the active duty combat units would reduce training at their home bases. However, the most current Travis AFB data for the 12 months ending in July of 2014 was 33,806 operations, reflecting a 3.9 percent increase over the 12 months of 2013.

Future Activity Potential

Because of the investment and operational efficiency afforded to both based and transient training by the new ALZ, it is assumed that Travis AFB operations will be somewhat insulated from future cuts and that activity will recover from the low in 2013. However, the ability to accurately forecast this recovery or operations at any military air base is complicated by a number of facts. Essentially operational levels can fluctuate year to year as they are dependent on unpredictable variables such as annual defense budgets, national security threats, global military needs, and even natural disasters. Additionally, for national security reasons, the USAF stopped publishing maximum mission estimates for their bases; hence the reason the 2009 Air Installation Compatible Use Zone (AICUZ) study only included activity levels and the corresponding noise contours for the conditions at that time.

For similar reasons, a number of assumptions were used to project future activity levels in the 2002 Travis Air Force Base Land Use Compatibility Plan (LUCP). Effectively, the 2002 LUCP future scenario was defined by doubling the existing activity, estimating the additional operations associated with the proposed ALZ, and incorporating an air cargo hub element (which utilized Federal Express' hub at Oakland International as a model). Two observations related to the future activity potential at Travis AFB since in the 2002 LUCP include:

- **Assault Landing Zone Activity** - In 2002, activity for the proposed ALZ was estimated to be 27,700 operations annually which were doubled to 55,400 resulting in approximately 30 percent of the future scenario activity. Afterwards, the 2008

Environmental Assessment (EA) for the Permanent Western United States C-17 Landing Zone projected 12,000 annual operations (approximately 15 percent of total activity) would be conducted on the ALZ once operational. Current ALZ operations are difficult to determine since the activity is included within the total airfield counts. Nonetheless, while activity is not currently at the 2002 estimate of 27,700 annual operations, it is believed to represent a similar level (30 percent) of total operations. This is evident as the local training activity has historically represented more than half of the annual operations.

- **Air Cargo Hub Potential** - The civilian air cargo hub (and potentially some civilian airline activity) described in the 2002 LUCP has not been established at Travis AFB. Given that this was considered prior to September 11th and the current defense budget concerns, it is assumed this is no longer under consideration for the base. However, there are plans for a consolidated super aerial port which would combine the existing passenger terminal and air cargo capabilities at Travis AFB to a single location using either new or shared facilities.

As part of Air Mobility Command, the 60th Air Mobility Wing host unit at Travis AFB is the largest air mobility organization in the USAF. The primary mission of the Air Mobility Command is to provide strategic airlift, air refueling, and aeromedical evacuation capabilities around the globe. Travis AFB serves a key role in these core missions. The facilities handle more cargo and passengers than any other military air base west of the Appalachian Mountains and can be the busiest Air Force aerial port in the nation depending on the location of world events. Travis AFB is also the West Coast terminal for aeromedical evacuation aircraft returning sick or injured patients from the Pacific area with the largest Medical Center in the United States Air Force.

When the items above are taken into consideration with the current base infrastructure, Travis AFB has a significant potential to not only maintain its current missions, but also to expand its role as a priority airfield in the USAF inventory. The recent addition of the ALZ further supports the argument that the airfield has significant potential; however, based upon Department of Defense wide budget and manpower cuts, there is excess infrastructure across the military's assets. This is generating policy discussion on creating another round of Base Realignment and Closure (BRAC) within the next two to five years. Therefore, a calculation of the current airfield capacity is considered the best method to estimate the maximum mission potential of the base.

Theoretical Capacity of Airfield Facilities

When defining the maximum mission potential for Travis AFB, airfield facilities such as aprons, terminals, or even maintenance areas were not considered a limiting factor. Excluding the air cargo or maintenance areas, there are enough dedicated aircraft parking areas to accommodate the current 60 based aircraft. However, with the various missions and continuous activity there is rarely (if ever) a time when all of the based aircraft are at the airfield at the same time. Further, even if all based aircraft are on the ground, it is estimated that only 47 percent of the parking apron would be utilized; leaving over 50 percent of the ramp available for additional mission use and aircraft parking. Additionally, given the airfield configuration and base property, the ability to add or reconfigure aircraft parking and support facilities for future activity is possible. Conversely, the current runway and taxiway system does have a tangible capacity limit. This is predicated on the assumption that the USAF will not relocate or add any new runways to increase the future capacity of Travis AFB.

An estimate of the runway and taxiway capacity was included in the 2008 EA. Using criteria from Air Force Handbook 32-1084, *Facility Requirements*, the Practical Annual Capacity (PANCAP) for Travis AFB was calculated at 280,000 annual operations. At that time, the 2008 EA baseline data (70,279 annual operations for calendar year 2002) showed the runway and taxiway system operating at 25 percent of their capacity. It should be noted that the addition of the ALZ does not increase the airfield capacity as the centerline spacing with Runway 03R-21L does not permit simultaneous operations to all three runways.

As a means of comparison, the Federal Aviation Administration (FAA) methodology for computing the Annual Service Volume (ASV) of a runway and taxiway system was evaluated. ASV is the FAA equivalent to PANCAP but can be calculated using more specific details with respect to how the airfield is configured and operated. In fact, reference is made to FAA Advisory Circular (AC) 150-5060-5, *Airport Capacity and Delay*, in a couple of sections of Air Force Handbook 32-1084. Using current airfield configuration and operational fleet mix data, an ASV of 264,000 was calculated for Travis AFB using the FAA methodology.

Maximum Mission Estimate

The Air Force criteria state that an additional runway is required when the PANCAP is exceeded for two consecutive years or when certain thresholds for either hourly capacity or minutes of aircraft delay are reached. While the FAA has similar criteria, they have also defined the point at which the specific planning should begin to increase capacity. The purpose is to provide a sufficient lead-time for the actual capacity improvement to be made before aircraft delay or even safety issues become critical. For runway and taxiway system capacity, the FAA recommends starting the capacity enhancement process when the levels reach 60 to 75 percent of the ASV.

Under the assumption that the USAF will not conduct any future projects to increase runway and taxiway capacity at Travis AFB, it is reasonable to consider the upper end of the FAA range (75 percent) to define the limit at which the airfield could operate without significant delay or any safety concerns. This results in a future maximal level of 198,000 to 210,000 annual operations, depending on whether PANCAP or ASV is applied. The lower threshold from ASV was selected to define the maximum mission of the Travis AFB. While current activity is nearly half of what it has been in the past, applying a maximum mission of 198,000 annual operations creates a realistic level for which future noise contours and therefore comprehensive land use decisions can be made.

Aircraft Operational Fleet Mix

The operational fleet mix is split between based and transient aircraft activity. This facilitates establishing the average busy day operations that will be used to generate the noise contours. Consistent with the 2009 AICUZ model, the USAF concept of an average busy day utilizes a different number of average flying days depending on the type of operation. While the transient military, contract commercial, and general aviation aircraft operate 365 days a year, many of the based aircraft do not regularly fly on weekends or holidays. Thus the average busy day for based aircraft will can vary depending on the type of activity.

Of the 60 aircraft based at Travis AFB, the current fleet mix includes 13 C-17s, 18 C-5s, 27 KC-10s, and 2 US Navy E-6Bs. The types of transient military, contract commercial, and general aviation aircraft vary for any given period; however, the fleet mix includes mostly operations by

other C-17, C-5, and KC-10 units, as well as KC-135, B747, and C-130H models. The 2014 transient aircraft count provided by Travis AFB was utilized to identify a list representing the most predominate transient fleet mix (**Table 2-1**).

The local versus itinerant split for the current activity in **Table 2-1** is based on the Travis AFB tower counts (12 months ending July 2014). However, due to the limited detail available, the operational fleet mix split for the current condition is based on the historic data available. For the maximum mission, it is anticipated that the local versus itinerant activity will re-align with the historic splits between these operations (i.e. more local training activity). Similarly, the split associated with the operational fleet mix of the maximum mission has been adjusted to reflect an increase in the share of activity generated by transient aircraft. This follows the assumption that Travis AFB will continue to support significant training operations for the USAF and other military branches, especially with the establishment of the new ALZ.

With respect to future operational fleet changes, the current types of based and transient aircraft are expected to remain the same in the near term (next two to five years). It has been estimated that around the 2020 timeframe, the KC-10 will face scrutiny for retirement. The current KC-46 program has completed the first and second round of basing decisions. The bases selected in these rounds were all primarily existing KC-135 installations. Current legislative language does not allow the retirement of the KC-10 without a viable mission replacement. Whether that is the KC-46 or another platform has yet to be determined. Additionally, a future airlift aircraft (to replace the current C-17 and C-5 aircraft) is an on-going project for the USAF and still in the preliminary stage of defining aircraft requirements.

Travis AFB is a viable installation for any future mission with its moderate weather, proximity to major land and sea transportation nodes, and excess ramp and real estate capacity. For the maximum mission, future activity will consider the potential for expanded operations by similar type aircraft from other units; however, the KC-46 will not substitute any of the based or transient KC-10 activity. While some are certain to operate at Travis AFB in the future, the extent of their activity is difficult to estimate. What is known is that the KC-10s will remain for some time, and with a slightly larger noise footprint, it is considered more conservative to keep this aircraft as the representative air refueling aircraft of the various units.

Summary of Initial Modeling Data

Table 2-1 lists the initial operational data that will be utilized to develop updated noise contours for Travis AFB.

Table 2-1
INITIAL OPERATIONAL DATA SET - TRAVIS AFB

		Current Condition	Maximum Mission
Total Annual Operations		33,806	198,000
Operational Fleet Mix			
	Based Aircraft		
	C-5	3,742	18,079
	C-17	9,545	45,991
	KC-10	14,888	71,518
	E-6B	558	12,921
	Sub Total	28,733	148,509
		(85%)	(75%)
	Transient Aircraft		
	B-747	142	1,376
	C-130H	1,650	16,106
	C-17	719	7,035
	KC-135R	1,530	14,927
	C-40	80	774
	KC-10	354	3,453
	DC-8	4	33
	C-5	263	2,555
	C-20	66	646
	C-12	40	405
	T-38	123	1,210
	F-15	51	485
	F-16	51	485
		5,073	49,489
	Sub Total	(15%)	(25%)
Types of Operations			
	Local (Closed Pattern)	17,918	130,680
		(53%)	(66%)
	Itinerant	15,888	67,320
		(47%)	(34%)

SOURCE: Environmental Science Associates, 2015
Note: The numbers are rounded.

Detail on how the operations have been distributed among the different periods of an average busy day as well as to the various arrival, departure, and training flight tracks will be determined.

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appendix G

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.

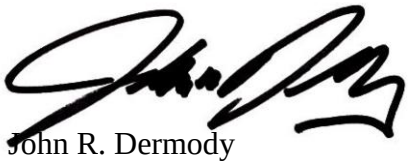
3. During the past century, wildlife-aircraft strikes have resulted in the loss of hundreds of lives worldwide, as well as billions of dollars in aircraft damage. Hazardous wildlife attractants on and near airports can jeopardize future airport expansion, making proper community land-use planning essential. 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

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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.

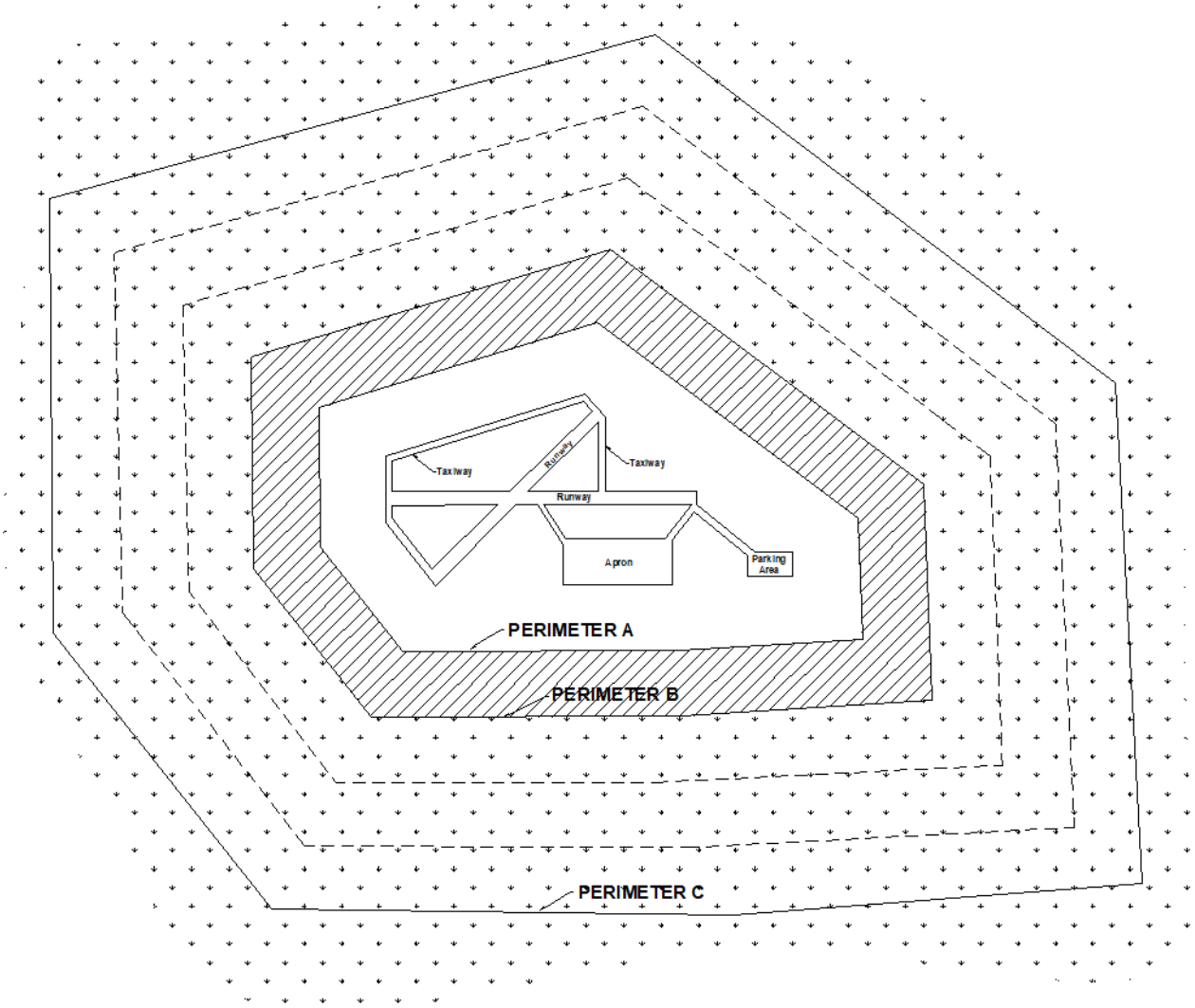
1.3 Airports Serving Turbine-Powered Aircraft.

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.

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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.

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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.

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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

DASR Line-of-Sight Viewsheds for Travis Air Force Base

The following line-of-sight figures were developed using wind turbine analysis tools. There are a number of private industry and government analysis tools that have been used to attempt to analyze or predict WT/RI effects on radar systems. The following is a list of many of the better-known organizations that have developed WT/RI analysis tools, many which are not available to industry:

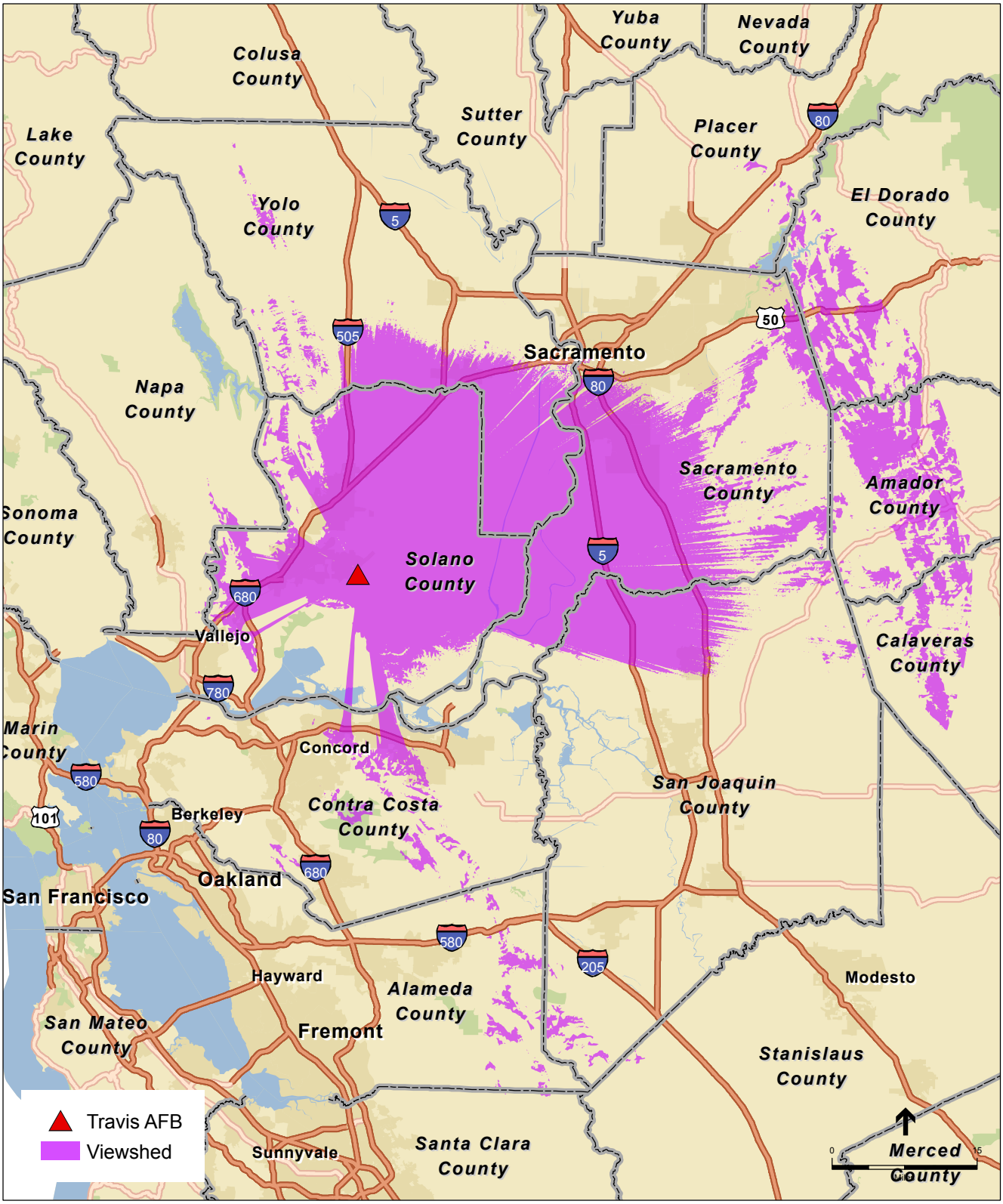
- Air Force Flight Test Center, Wind Turbine and Radar Interaction Program (DOD USAF Analysis Tool)
- RLSTAP - Research Laboratory Space-Time Adaptive Processing (DOD USAF Analysis Tool)
- RSS - Radar Support System (Private Industry Analysis Tool, used by the FAA)
- OE/AAA - Obstruction Evaluation / Airport Airspace Analysis Tool (FAA Management/ Review Software)
- MCAT - Mission Compatibility Assessment Tool (DOD USN Management/Review Software)
- USAF Radar Tool Box (DOD USAF Digital Air Surveillance Radar (DASR) Analysis Tool)
- Other proprietary tools used by individual consultants are used by companies like Westslope Consulting, LLC

The following analysis tools have been designed to combine typical WT/RI effects analysis with the ability to effectively prospect for the most appropriate sites to place wind farms down to the individual wind turbines; they can be considered “Wind Farm Siting Tools” as well as basic WT/RI analysis tools.

- TSPEAR - Tools for Siting, Planning, and Encroachment Analysis for Renewables Framework Radar Tools (Web-Enabled, GIS-based Framework w/Multiple Analysis and Siting Capabilities, Integrates Industry Planning & Radar Analysis Tools; Private-Public (DOE) Partnership)
- ROEMS – Radar Obstruction Evaluation Modeling and Simulation (DOD Analysis Tool; NORAD ROEMS is Capable Recommend Acceptable Sites to Industry)

In addition to the siting tools noted above, several organizations have attempted to provide useful information to assist wind farm developers in performing their own internal analysis. These include:

- The AWEA Interactive Handbook for Wind Energy Siting (general info on regulatory and NEPA issues associated with the development and siting of wind energy projects located at: http://www.awea.org/sitinghandbook/
- READ - National Resources Defense Council (NRDC) Renewable Energy and Defense Database (The NRDC website has an “Energy map” that displays RE resources including some DOD provided constraint data located at: http://www.nrdc.org/energy/renewables/energymap.asp)
- A flight planning software system called FalconView is often times used in conjunction with shape files of wind farm locations to do manual analysis of line-of-sight interactions with radar sites.

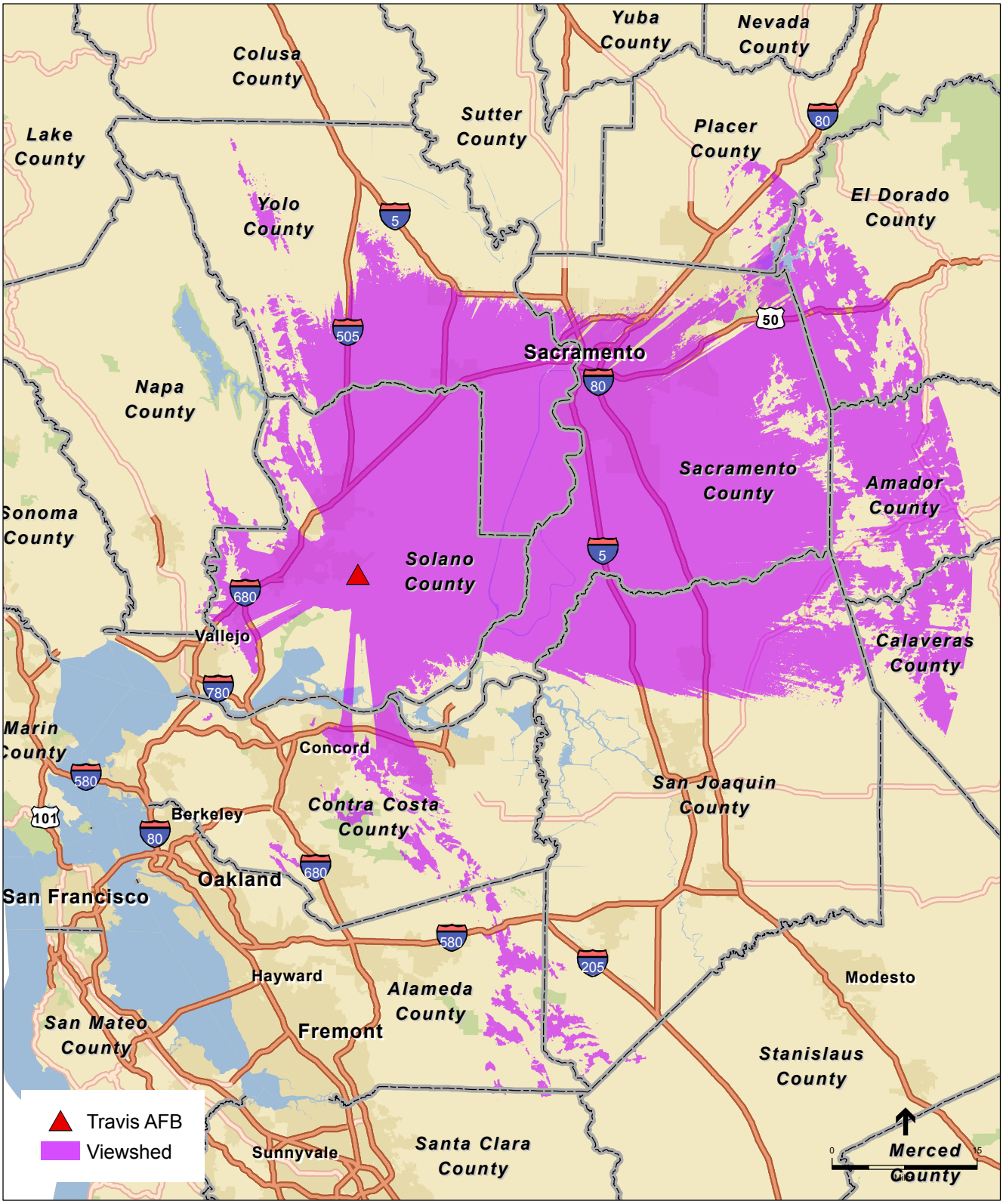


SOURCE: ESRI, 2015; BEM Int'l, 2015; ESA, 2015

Travis AFB ALUCP Update. 130898

Figure H-1

DASR Line-of-Sight Viewshed for 100 Foot Objects

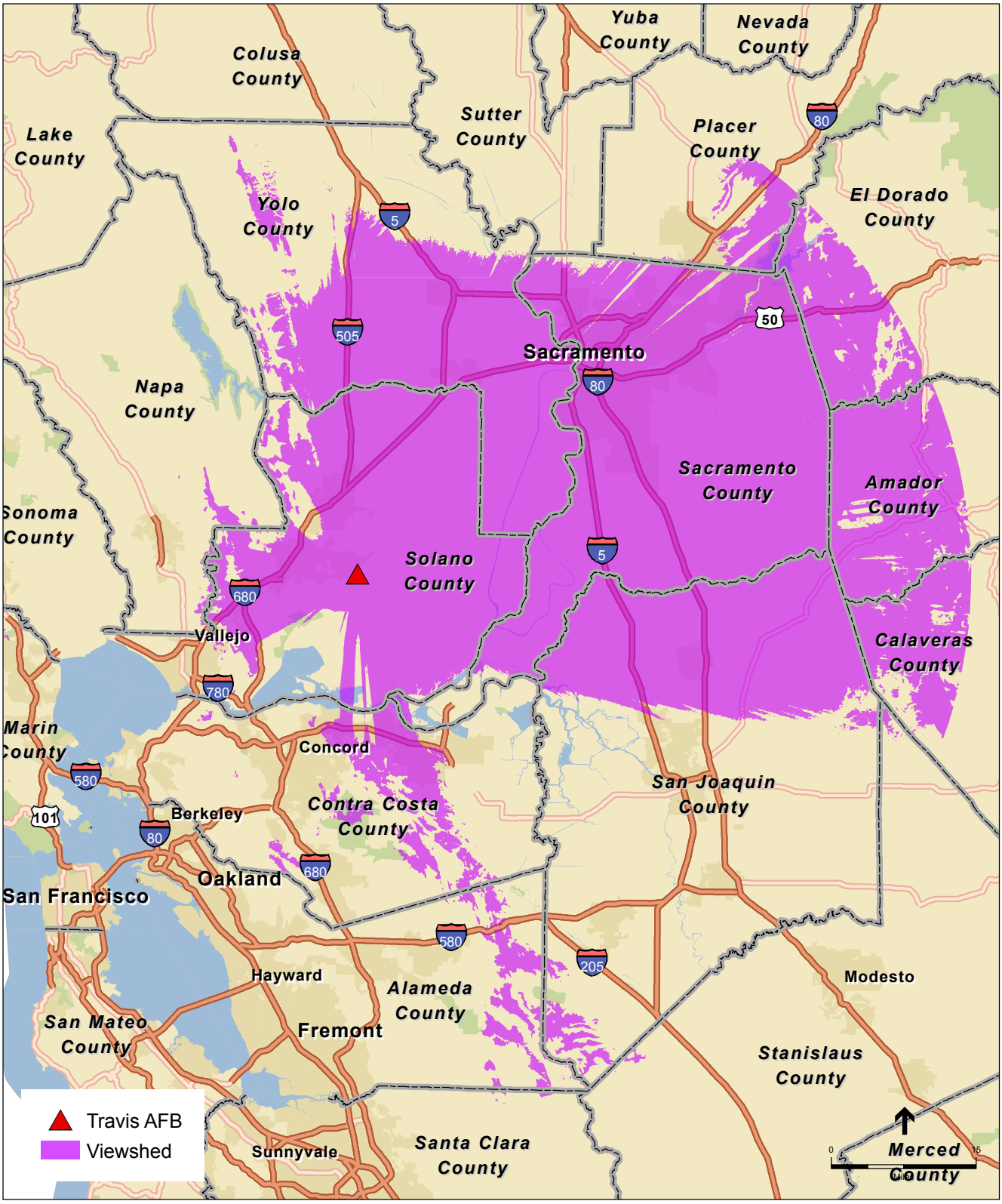


SOURCE: ESRI, 2015; BEM Int'l, 2015; ESA, 2015

Travis AFB ALUCP Update. 130898

Figure H-2

DASR Line-of-Sight Viewshed for 200 Foot Objects

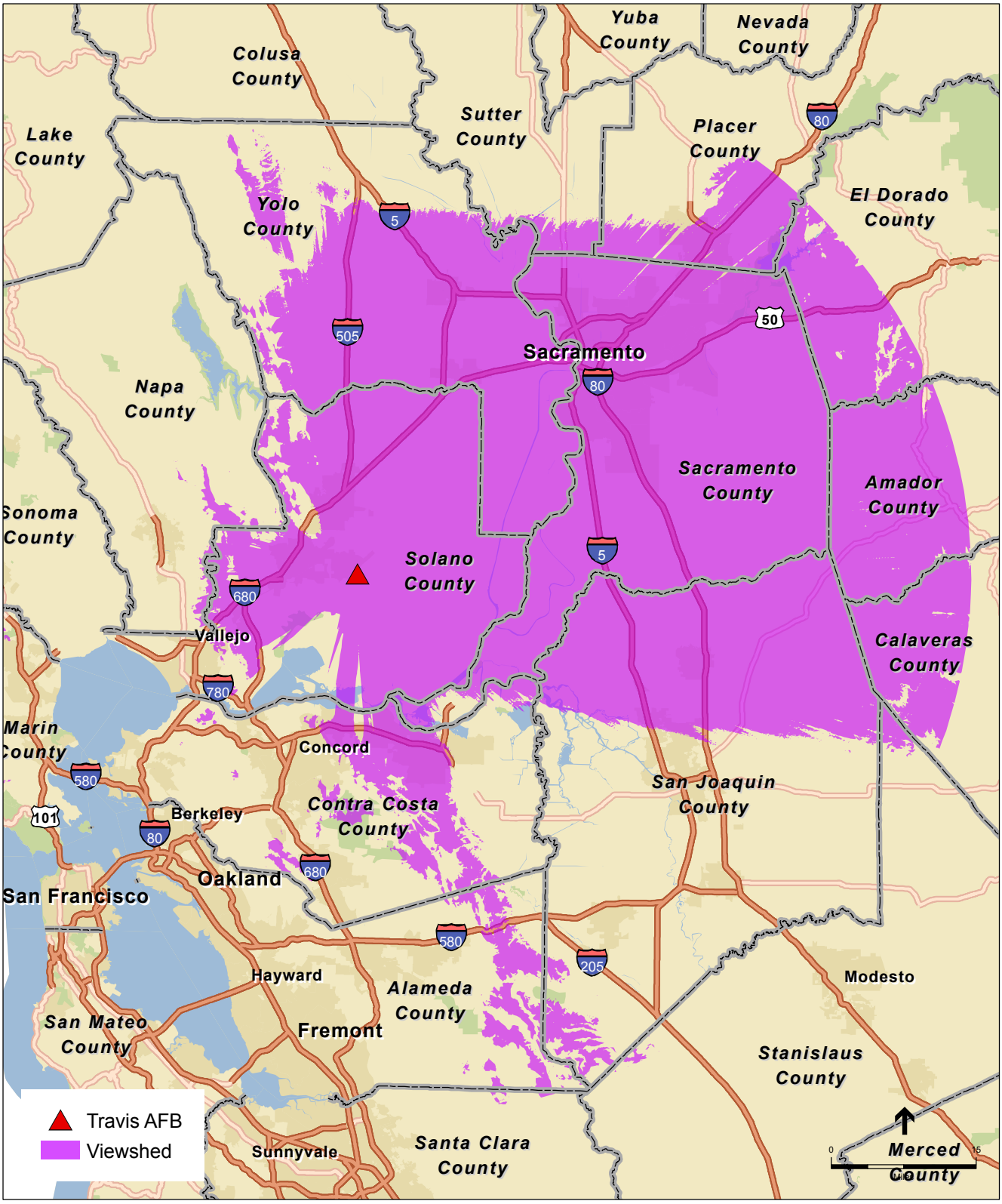


SOURCE: ESRI, 2015; BEM Int'l, 2015; ESA, 2015

Travis AFB ALUCP Update. 130898

Figure H-3

DASR Line-of-Sight Viewshed for 300 Foot Objects

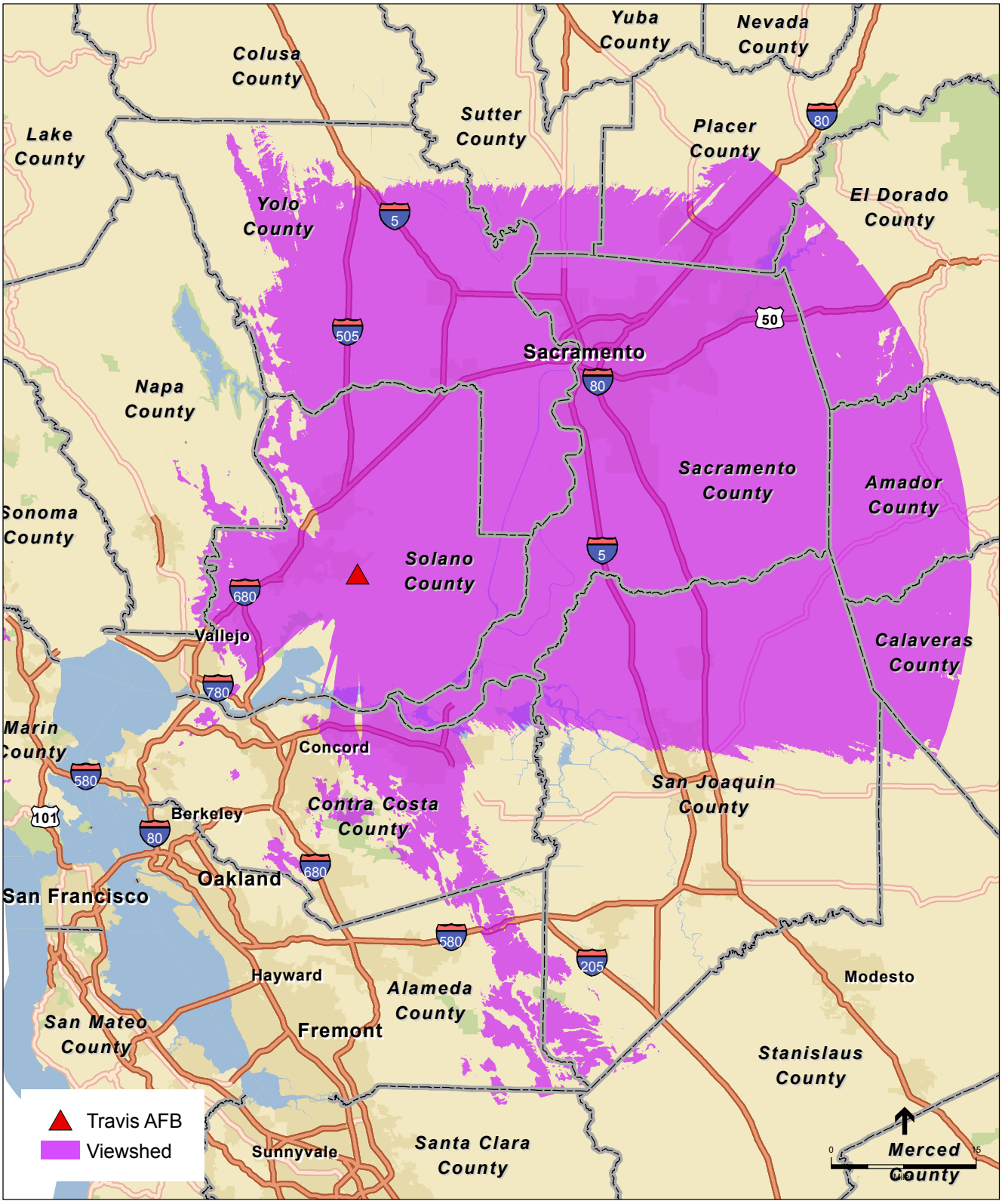


SOURCE: ESRI, 2015; BEM Int'l, 2015; ESA, 2015

Travis AFB ALUCP Update. 130898

Figure H-4

DASR Line-of-Sight Viewshed for 400 Foot Objects



SOURCE: ESRI, 2015; BEM Int'l, 2015; ESA, 2015

Travis AFB ALUCP Update. 130898

Figure H-5

DASR Line-of-Sight Viewshed for 500 Foot Objects

appendix I

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 J

Summary of LUCP Changes

APPENDIX J

Summary of LUCP Changes

The need to prepare this new LUCP has resulted from several key factors. In particular, five major issues have influenced this LUCP update. As noted in Appendix F, aircraft activity levels have changed, not only in terms of volume but also in terms of flight patterns. Community attitudes have also evolved since 2002, in light of the economic downtown and the heightened awareness of the Air Force Base's economic role for Solano County. In the last 13 years, several federal and state laws and regulations have also changed and necessitate revisions for a variety of policies relating to airport land use compatibility. Lastly, and more specifically involving Solano County, the proliferation of renewable energy facilities—both wind and solar—have also driven a need to update policies to reflect the reality of these facilities and their presence in Solano County and near Travis AFB.

The State Aeronautics Act establishes the roles and duties for ALUCs in regulating noise and safety hazards within the vicinity of airports and airfields, and coordinating with jurisdictions to ensure compatible land uses, adequately plan at the state, regional, and local level, develop and adopt an (A)LUCP pursuant to Public Utilities Code section 21675, review the plans, regulations, and other actions of local agencies and airport operators pursuant to Public Utilities Code section 21676, and protect public health, safety, and welfare. Public Utilities Code section 21675, subdivision (a), authorizes the Commission, in formulating a compatibility plan, to develop height restrictions on buildings, specify the use of land, and determine building standards. Public Utilities Code section 21676, subdivision (b), requires local agencies within the AIA of Solano County to first refer any proposed general plan, specific plan, or adoption or approval of a zoning ordinance or building regulation to the ALUC for a consistency determination.

Public Utilities Code section 21675, subdivision (b), requires ALUCs to prepare a compatibility plan for areas surrounding military airports. In a similar manner as civilian airports, the purpose of this section is to protect the operations of military installations from encroachment by development, in order to protect military readiness activities carried out in across California. Through this process, ALUCs exercise "statutory responsibility for protecting the public health, safety, and welfare ([Pub. Utilities Code,] § 21674) (Muzzy Ranch Co. v. Solano County Airport Land Use Com. (2008) 164 Cal.App.4th 1, 9-13.)."

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