

Chapter **6**

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**BACKGROUND DATA:  
OROVILLE MUNICIPAL AIRPORT AND ENVIRONS**

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# Background Data: Oroville Municipal Airport and Environs

## INTRODUCTION

Oroville Municipal Airport is owned and operated by the City of Oroville and is situated within an extension of the Oroville city limits three miles southwest of the downtown center. Although the city's sphere of influence extends a mile west of the airport, only the airport property, the Table Mountain Golf Course and some private land to the north and west are currently within the city boundary. The surrounding unincorporated area includes the community of Thermalito situated northeast of the airport. To the southwest and southeast, lie state-owned water project and wildlife refuge lands.

An airport has existed on the present site since 1936 when the City of Oroville acquired the original 188 acres. During World War II, the U.S. Army took temporary control of the airport. The Army made various improvements including establishing the basic runway configuration which remains today. The facility reverted to the city in 1947. In the subsequent half century of owning and operating the airport, the city has acquired additional land and made numerous improvements to the facilities. Today, the airport occupies 877 acres and has two runways: Runway 2-20 (6,020 feet long) and Runway 13-31 (3,540 feet long). Runway 2 is served with a straight-in nonprecision (RNAV/GPS) instrument approach procedure. No significant airfield improvements are reflected in the Airport Layout Plan (2013).

The airport's historically moderate activity levels, together with the extensive agricultural and open space lands in the surrounding area, have kept compatibility conflicts to a minimum. The Planned Airport Business Park adjacent to the airport to the north and east is to be used for mainly industrial and limited retail purposes. More intensive residential development within the southwestern area of Thermalito presents the major future compatibility concern. Anticipated growth in airport activity also much be accounted for in long-range compatibility planning for the airport environs. The *Oroville 2030 General Plan* sets goals to establish compatible land use development within the airport influence area. The city aims to develop the areas adjacent to the airport and is developing strategies to annex unincorporated areas within its sphere of influence (SOI). These areas include Oro Bay and Rio d'Oro which are within the airport influence area. The nearby Oroville Wildlife Area surrounding the airport from the south, east, and west may provide large expanses of perpetual open space but any habitat improvements that would attract hazardous wildlife (e.g., birds) to cross aircraft traffic corridors is a potential compatibility concern.

The following exhibits illustrate the compatibility factors and background information which serve as the basis for this *Airport Land Use Compatibility Plan* for Oroville Municipal Airport.

- **Exhibit 6-1: Airport Features Summary.** Presents information pertaining to the airport configuration, operational characteristics and applicable planning documents.
- **Exhibit 6-2: Airport Layout Plan.** The Airport Layout Plan (2013) depicts the existing airfield configuration and airport building areas. The Airport Layout Plan (2013) reflects proposed future aviation compatible commercial and industrial areas as well as non-aviation commercial areas. Proposed facility improvements include a future solar farm, parachute landing area, helipad and expansions for tiedown, hangars, administration, FBO, and tee hangars. No significant runway improvements are proposed.
- **Exhibit 6-3: Airport Activity Data Summary.** This table summarizes existing and forecast airport activity data. Airport records indicate some 36,500 annual operations and 80 based aircraft as of January 2016. This activity level is consistent with the base year activity data provided in the Airport Master Plan (1990). The Master Plan's 2010 forecast reflecting some 72,000 annual operations is brought forward for this *ALUCP* to cover the requisite 20-year timeframe. The forecast represents a doubling of aircraft activity.
- **Exhibit 6-4 through 6-7: Compatibility Factors.** Depicts the extents of the four compatibility factors upon which the *Compatibility Zones* for Oroville Municipal Airport were derived. The four compatibility factors are defined by:
  - *Noise* – Future noise contours reflecting an ultimate aircraft activity forecast level of 72,000 annual operations.
  - *Safety* – Generic safety zones provided in the California Airport Land Use Planning Handbook (October 2011) are applied to the existing runway configurations in the following manner:
    - Runway 2-20: Safety zones for a long general aviation runway (length 6,000 feet or more) are applied to the existing 6,020-foot runway configuration. The generic safety zones for a medium general aviation runway (length 4,000 feet to 5,999 feet) are also applied to the existing runway configuration to reflect the dominant use by single-engine, piston aircraft.
    - Runway 13-31: Safety zones for a short general aviation runway (length less than 4,000 feet) are applied to the existing runway configuration.
  - *Overflight* – Primary traffic patterns reflecting where aircraft operating at the airport routinely fly.
  - *Airspace Protection* – Outer boundary of the Obstruction Surfaces as defined by Federal Aviation Regulation (FAR) Part 77, *Safe, Efficient Use and Preservation of the Navigable Airspace*.
- **Exhibit 6-8: Airport Environs Information.** Summarizes information about current and planned land uses in the environs of the Chico Municipal Airport. The status of local general plans and airport land use compatibility policies contained in those plans are also summarized.
- **Exhibit 6-9: County of Butte General Plan Land Uses.** Shows the planned land use designations as reflected in the Butte County General Plan 2030 Land Use Element (amended November 2012).
- **Exhibit 6-10: City of Oroville General Plan Land Uses.** Shows planned land use designations as reflected in the adopted Oroville 2030 General Plan Land Use Diagram (amended March 2015).

**GENERAL INFORMATION**

- *Airport Ownership:* City of Oroville
- *Property Size:* 877 acres
- *Airport Classification:* General Aviation, regional use
- *Airport Elevation:* 194.3 MSL

**AIRPORT PLANNING DOCUMENTS**

- Airport Master Plan (July 1990)
- Airport Layout Plan (September 2013)

**RUNWAY/TAXIWAY DESIGN****Runway 2-20**

- *Critical Aircraft:* Medium business jet
- *Airport Category/Design Group:* Airport Reference Code C-III
- *Dimensions:* 6,020 ft. long, 100 feet wide
- *Pavement Strength (main landing gear configuration)*
  - 47,000 lbs (single wheel)
  - 90,000 lbs (dual wheel)
- *Average Gradient:* 0.6% (rising to northwest)
- *Runway Lighting:* HIRL
- *Primary Taxiways:* Full-length parallel on southeast

**Runway 13-31**

- *Critical Aircraft:* Small, Twin-Engine propeller
- *Airport Category/Design Group:* Airport Reference Code B-II
- *Dimensions:* 3,540 ft. long, 100 ft. wide
- *Pavement Strength (main landing gear configuration)*
  - 25,000 lbs (single wheel)
- *Average Gradient:* 0.4% (rising to northwest)
- *Runway Lighting:* HIRL
- *Primary Taxiways:* Full-length parallel each side of runway

**TRAFFIC PATTERNS AND APPROACH PROCEDURES**

- *Airplane Traffic Patterns*
  - Left traffic all runways
  - Pattern altitude: 800 feet AGL
- *Instrument Approach Procedures*
  - Runway 2 RNAV/GPS (nonprecision):
    - Straight-in: 7/8 mile visibility, 250 ft. min. descent ht.
    - Missed approach turns east
    - Circling (1 mi. visibility, 386 ft. min. descent height)
    - No circling northeast of Runway 13-31
  - Runway 2 VOR (nonprecision):
    - Approach course from south(338°)
    - Circling: 1 mile visibility, 646 ft. min. descent ht.
- *Visual Approach Aids*
  - Airport: Beacon
  - Runway 2: None
  - Runway 20: PAPI (3.0°)
  - Runway 13: PAPI (3.0°)
  - Runway 31: PAPI (3.0°)
- *Other*
  - Firefighting activity in airport environs May-Oct.

**APPROACH PROTECTION**

- *Runway Protection Zones (RPZs)*
  - Runway 2 & 20: 1,700-ft. long; all on airport
  - Runway 13: 1,000-ft. long; all on airport
  - Runway 3: 1,000-ft. long; 650 feet on airport
- *Approach Obstacles*
  - Runways 31: 20 ft. trees, 600 ft. from runway, 200 ft. left of centerline, 20:1 slope to clear

Exhibit 6-1

## Airport Features Summary

### Oroville Municipal Airport

**BUILDING AREA**

- *Location*
  - Most facilities northeast of Runway 13-31
  - Additional based aircraft parking in south quadrant
- *Aircraft Parking Capacity*
  - 45± hangar spaces
  - 120± tiedowns (based and transient)
- *Other Major Facilities*
  - Partially developed industrial park on east and south
  - Table Mountain Golf Course on west side
- *Services*
  - Airport has one fixed base operator:
  - Aviation gasoline (attendant service, daytime, daily)
  - Aircraft rental; flight instruction; pilot supplies
  - Charter services
  - Aircraft repairs

**PLANNED FACILITY IMPROVEMENTS**

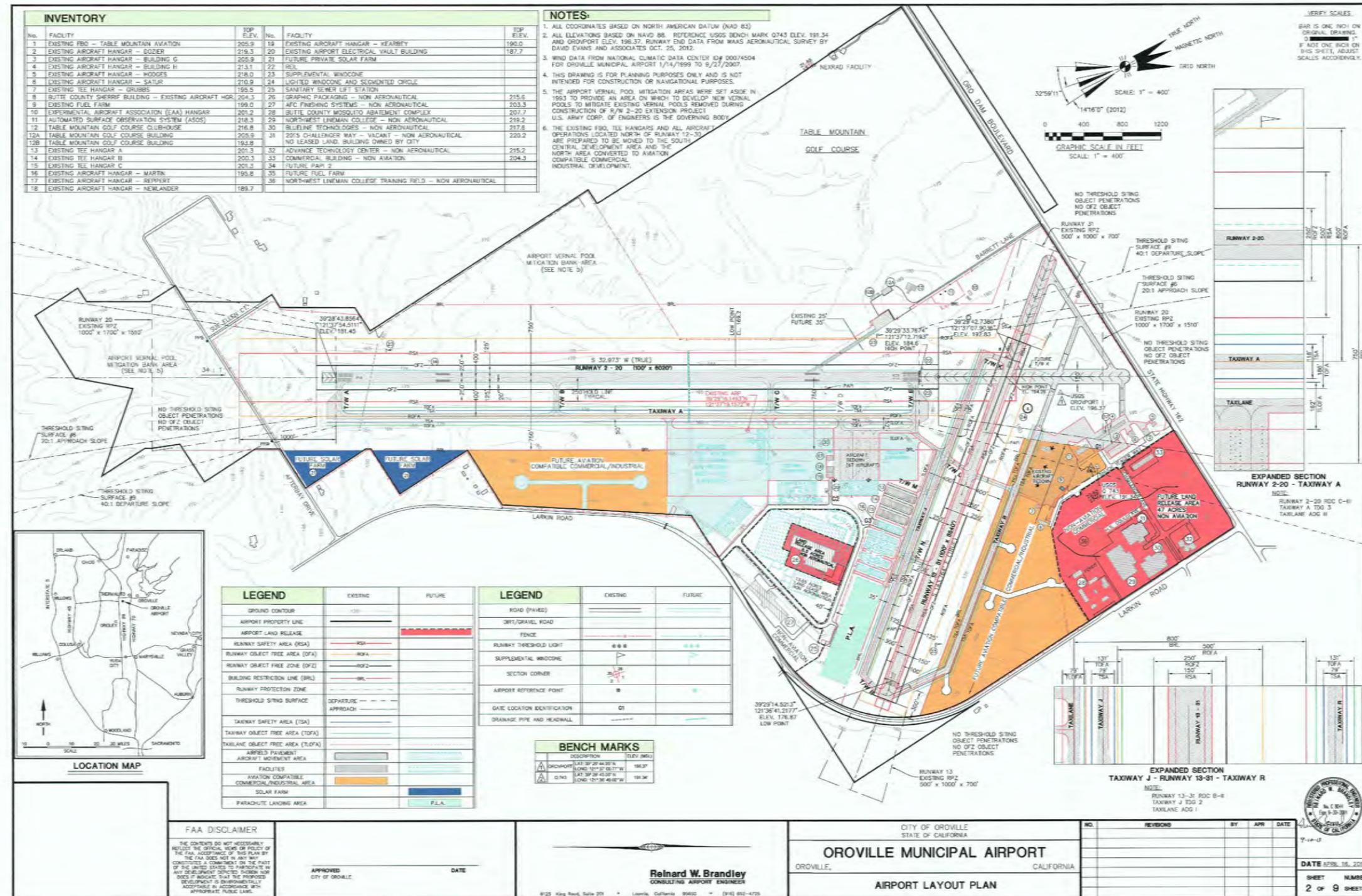
- *Airfield*
  - None
- *Building Area*
  - As needed, provide capacity for 200 based aircraft
  - Future aviation, compatible commercial/industrial
  - Future Solar Farm
  - Tiedown and hangars expansion
  - Administration expansion
  - FBO Expansion
  - Helipad
  - Tee Hangars Expansion
  - Parachute Landing Area
- *Approach Protection*
  - None

**Notes**

Sources: Data Compiled by Mead & Hunt (July 2016); Airport Layout Plan (2013), FAA 5010, AIRNAV.

**Exhibit 6-1, Continued**

- Notes:  
 1. Source: Oroville Municipal Airport, Airport Layout Plan.



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Butte County  
 Airport Land Use Commission  
**Oroville Municipal Airport  
 Land Use Compatibility Plan**  
 (Adopted November 15, 2017)

Exhibit 6-2

**Airport Layout Plan  
 Oroville Municipal Airport**

BASED AIRCRAFT			RUNWAY USE DISTRIBUTION <sup>c</sup>		
	Current <sup>a</sup> 2016	Future <sup>b</sup> 2030		Current	Future
<i>Aircraft Type</i>			<i>Takeoffs &amp; Landings</i>		
Single-Engine	74		Single-Engine Aircraft		
Twin-Engine, Piston	2		Runway 2	11%	
Twin-Engine, Turboprop	0		Runway 20	64%	
Helicopters	2		Runway 13	12%	
Ultralight	2		Runway 31	4%	
<i>Total</i>	<i>80</i>	<i>200</i>	Twin-Engine & Business Jet Aircraft		
			Runway 2	15%	
			Runway 20	85%	

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AIRCRAFT OPERATIONS			TIME OF DAY DISTRIBUTION <sup>c</sup>			
	Current <sup>a</sup> 2016	Future <sup>b</sup> 2030		Day	Evening	Nigh
<i>Total</i>			<i>Single-Engine Aircraft</i>	80%	18%	2%
Annual	36,500	72,000	<i>Twin-Engine Aircraft &amp; Business Jet Aircraft</i>	90%	9%	1%
Average Day, Annual	100	200				
<i>Distribution by Operation Type <sup>d</sup></i>			<b>FLIGHT TRACK USAGE <sup>d</sup></b>			
Local (incl. touch-and-goes)	40%		<i>All Aircraft</i>			
Itinerant	60%		▪ Left traffic on all runways			
<i>Distribution by Aircraft Type <sup>c</sup></i>						
General Aviation						
Single-Engine Piston	94%	91%				
Twin-Engine Piston	5%	7%				
Turboprop	<1%	1%				
Business Jet	<1%	1%				
Helicopter	<1%	<1%				

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**Notes**

<sup>a</sup> Source: City and fixed base operator records (January 2016)

<sup>b</sup> Source: *Oroville Municipal Airport Master Plan (1990)* forecast for 2010; Master Plan forecast brought forward for this ALUCP as it represents a doubling of current airport activity; 2013 Airport Layout Plan depicts potential capacity for 200 based aircraft

<sup>c</sup> Source: *Oroville Municipal Airport Master Plan (1990)*

<sup>d</sup> Source: FAA 5010 Airport Master Record (2017)

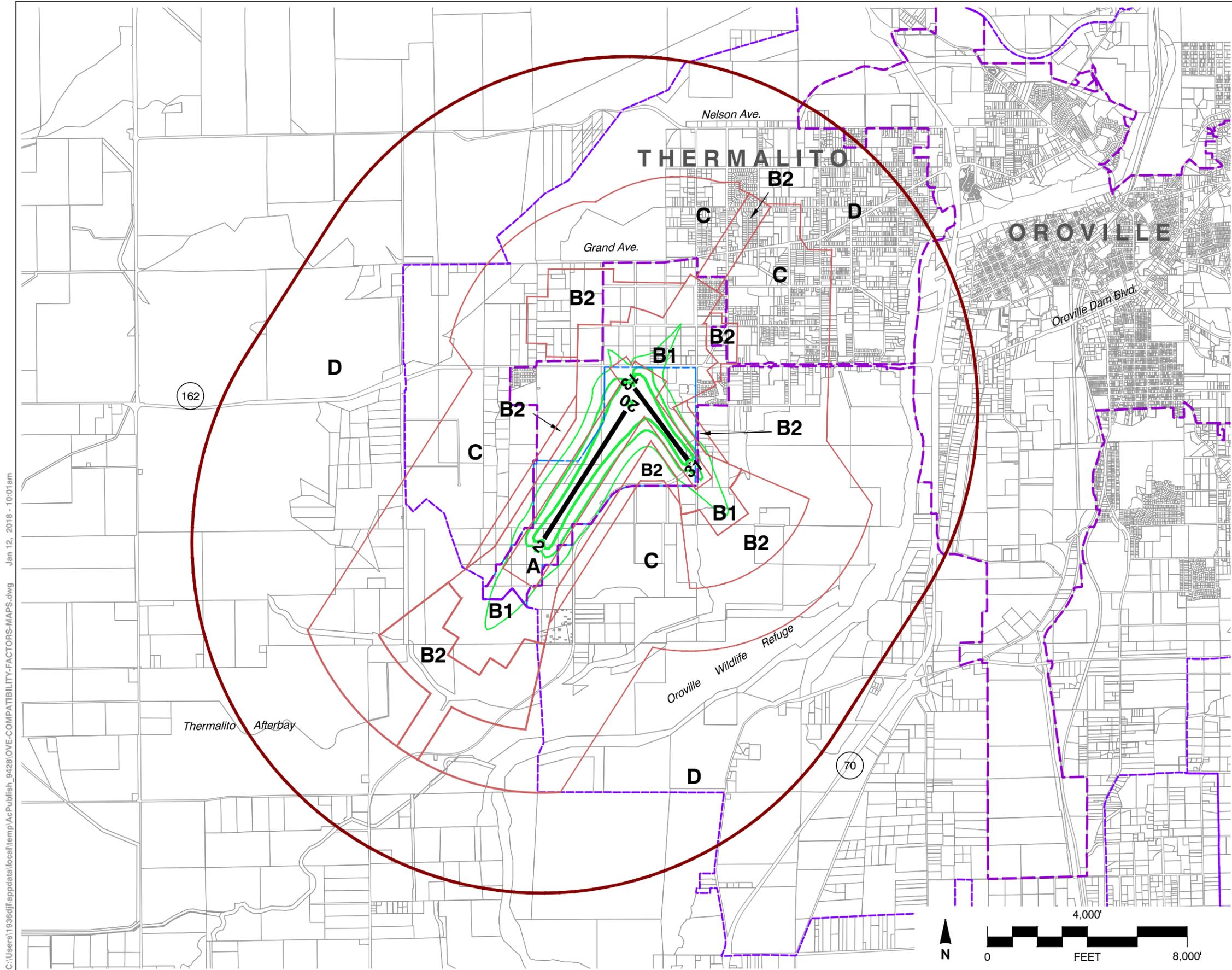
Source: Data Compiled by Mead & Hunt (July 2017)

Exhibit 6-3

## Airport Activity Data Summary

Oroville Municipal Airport

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**Legend**

- Boundary Lines**
- Existing Runway
  - Runway 02-20 (6,020' X 100')
  - Runway 13-31 (3,540' X 100')
  - Airport Property Line
  - City Limits
  - City Sphere of Influence
  - Compatibility Zones
  - Airport Influence Area

- Noise Impacts<sup>1</sup>**
- 55 dB CNEL
  - 60 dB CNEL
  - 65 dB CNEL
- 72,000 Future Annual Operations

**Notes:**

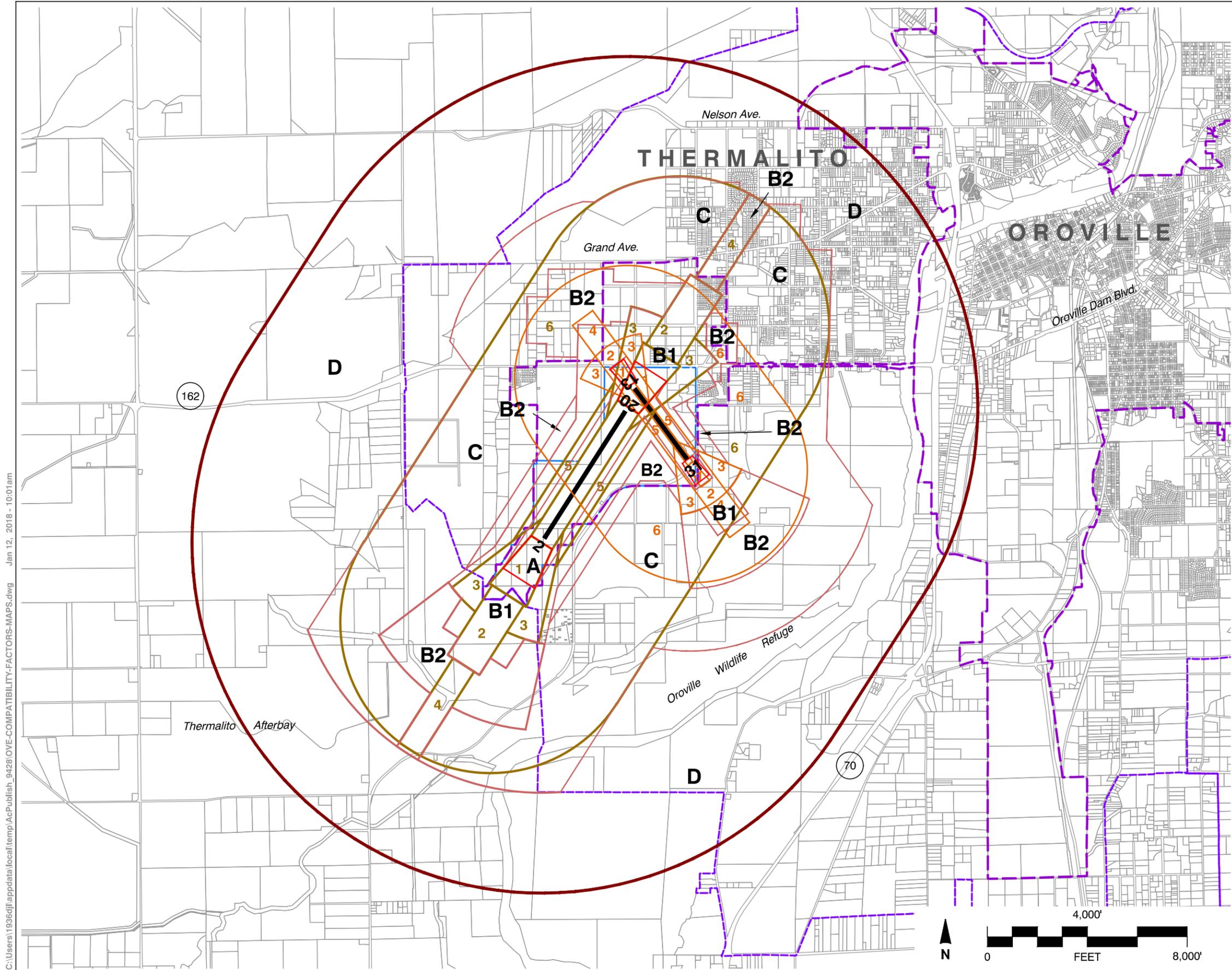
- Noise Contour Source: Orville Municipal Airport Master Plan (1990); for compatibility planning purposes, the 2010 Master Plan forecast is brought forward to cover the requisite 20-year timeframe.

Butte County  
 Airport Land Use Commission  
**Orville Municipal Airport  
 Land Use Compatibility Plan**  
 (Adopted November 15, 2017)

Exhibit 6-4  
**Compatibility Factors Map:  
 Noise**  
 Orville Municipal Airport

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**Legend**

**Boundary Lines**

- Existing Runway
- Runway 02-20 (6,020' X 100')
- Runway 13-31 (3,540' X 100')
- Airport Property Line
- City Limits
- City Sphere of Influence
- Compatibility Zones
- Airport Influence Area

**Runway Factors<sup>1</sup>**

- Runway Protection Zone

**Generic Safety Zones<sup>2</sup>**

- Short General Aviation Runway (up to 3,999') Applied to Runway 13-31
- Long General Aviation Runway (6,000'+) Applied to Runway 02-20
- Medium Length General Aviation Runway (4,000'-5,999') Applied to Runway 02-20
- Zone 1 Runway Protection Zone
- Zone 2 Inner Approach/Departure Zone
- Zone 3 Inner Turning Zone
- Zone 4 Outer Approach/Departure Zone
- Zone 5 Sideline Zone
- Zone 6 Traffic Pattern Zone

**Notes:**

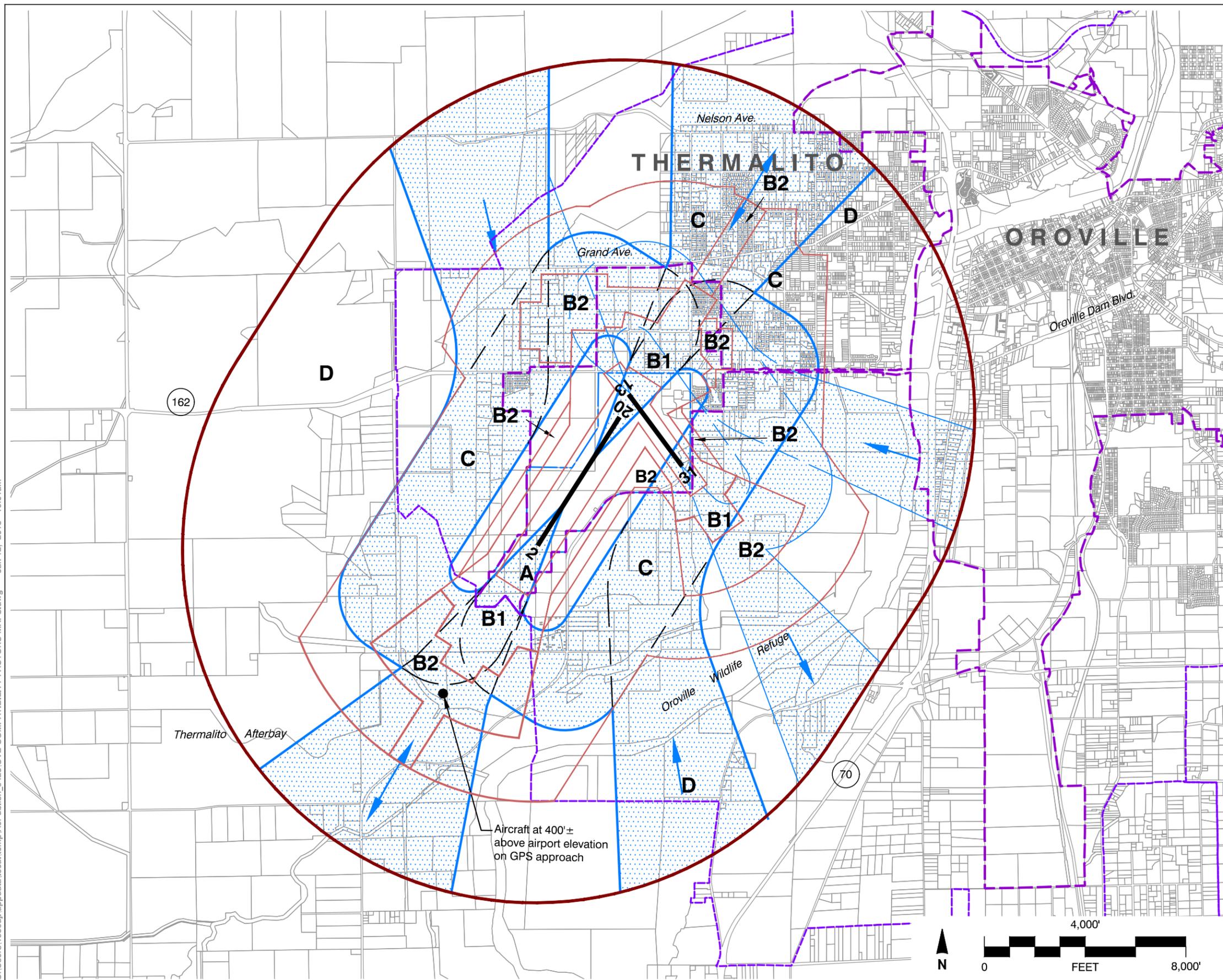
1. Runway Protection Zone Source: Orville Municipal Airport Layout Plan (September 2013).
2. Safety Zones Source: California Airport Land Use Planning Handbook (2011).

**Butte County**  
**Airport Land Use Commission**  
**Orville Municipal Airport**  
**Land Use Compatibility Plan**  
*(Adopted November 15, 2017)*

Exhibit 6-5

**Compatibility Factors Map:**  
**Safety**  
**Orville Municipal Airport**

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**Legend**

**Boundary Lines**

- Airport Property Line
- City Limits
- City Sphere of Influence
- Compatibility Zones
- Airport Influence Area

**Overflight Factors<sup>1</sup>**

- General Traffic Pattern Envelope/Primary Flight Direction (approximately 80% of powered aircraft overflights estimated to occur within these limits)

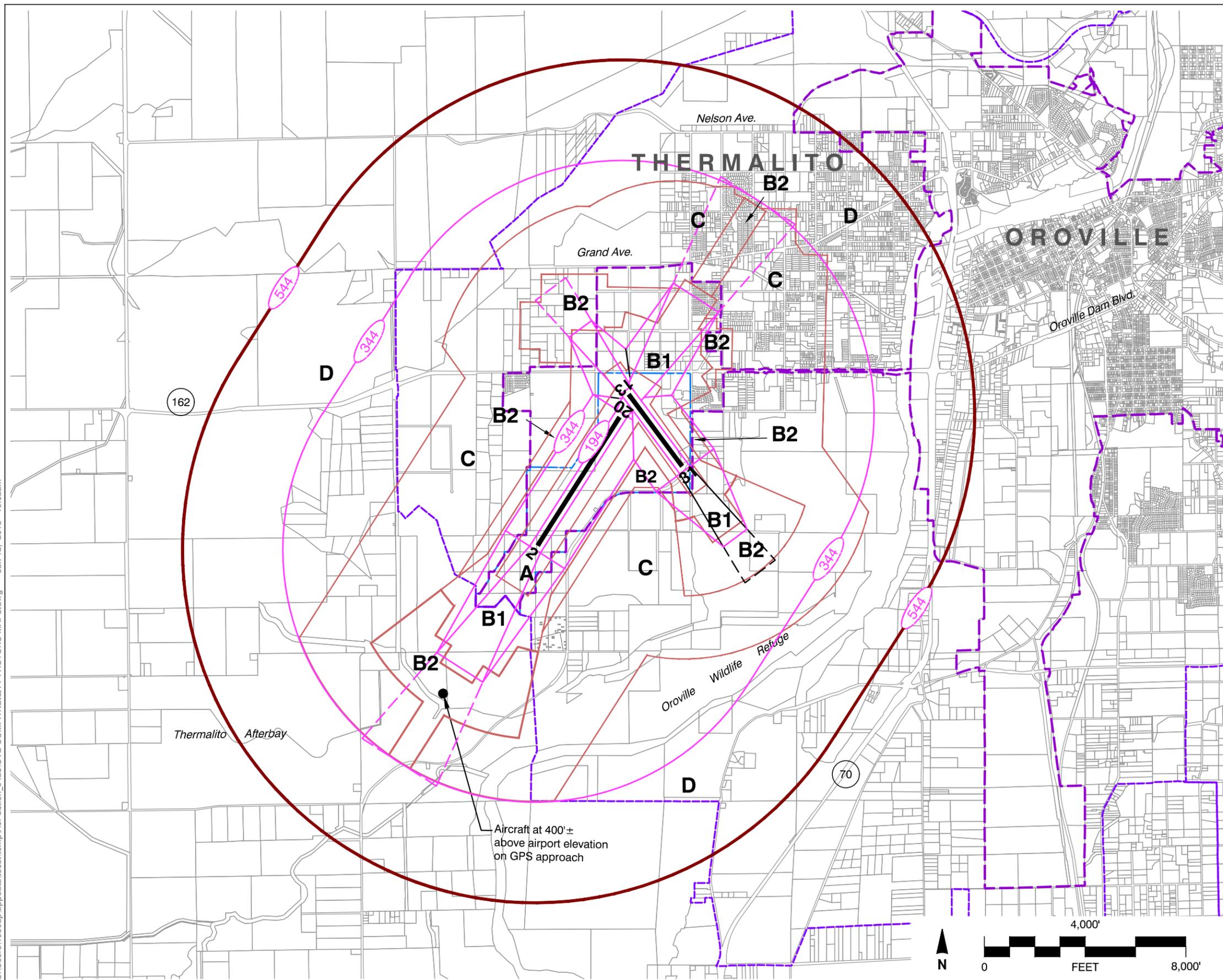
**Notes**

1. Source: Butte County Airport Land Use Compatibility Plan, adopted December 2000 and airport management.

**Butte County**  
**Airport Land Use Commission**  
**Oroville Municipal Airport**  
**Land Use Compatibility Plan**  
*(Adopted November 15, 2017)*

Exhibit 6-6  
**Compatibility Factors Map:**  
**Overflight**  
**Oroville Municipal Airport**

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**Legend**

**Boundary Lines**

- Airport Property Line
- City Limits
- City Sphere of Influence
- Compatibility Zones
- Airport Influence Area

**Airspace Factors<sup>1</sup>**

- FAR Part 77 Surfaces

**Notes**

1. Source: Federal Aviation Regulation (FAR) Part 77, Safe, Efficient Use and Preservation of Navigable Airspace (August 4, 2017).

**Butte County**  
**Airport Land Use Commission**  
**Oroville Municipal Airport**  
**Land Use Compatibility Plan**  
*(Adopted November 15, 2017)*

Exhibit 6-7  
**Compatibility Factors Map:**  
**Airspace**  
 Oroville Municipal Airport

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**AIRPORT LOCATION**

- *Location*
  - Southern Butte County
  - 3 miles southwest of central Oroville
- *Topography*
  - Situated at 194.3 foot elevation in gently rolling hills along eastern edge of Sacramento Valley
  - Rising terrain (elevations above 1,000 ft. MSL) 5± miles northeast
  - Thermalito Afterbay (part of state water system) immediately southwest of airport

**AIRPORT ENVIRONS LAND USE JURISDICTIONS**

- *County of Butte*
  - Most of surrounding area in unincorporated county jurisdiction, except north and northeast of airport
- *City of Oroville*
  - Airport property and inner portion of northeast approach within city limits
  - City sphere of influence covers entire airport environs
- *State of California*
  - Dept. of Water Resources controls State Water project facilities including Thermalito Forebay and Afterbay which stores and delivers water to over 2/3 of California's population
  - Dept. of Fish and Game governs Oroville Wildlife Refuge (11,400-acre area)

**EXISTING AIRPORT AREA LAND USES**

- *General Character*
  - Sparsely populated except to northeast
  - Golf course in northwestern quadrant of airport
  - Clay Pit State Vehicular Recreation Area to southeast
- *Runway Approaches*
  - Northwest (Runway 13): Open pasture; widespread residential
  - Northeast (Runway 20): Mostly undeveloped, open pasture within ¼ mi. of runway end; suburban residential areas beyond
  - Southwest (Runway 2): Thermalito Afterbay
  - Southeast (Runway 31): Oroville Wildlife Refuge
- *Traffic Pattern*
  - Edge of Thermalito residential areas along left downwind for Runway 13 and left base for Runway 20
  - Minimal development elsewhere

**STATUS OF COMMUNITY PLANS**

- *County of Butte*
  - General Plan 2030 adopted October 2010; amended November 2012
  - Butte County Zoning Ordinance (November 2012), Airport Compatibility Overlay Zone (Section 24-34)
- *City of Oroville*
  - General Plan Adopted March, 2015
  - Oroville Zoning Ordinance (March 2015), Airport Influence Area Overlay District (26-42.050)

**PLANNED AIRPORT AREA LAND USES**

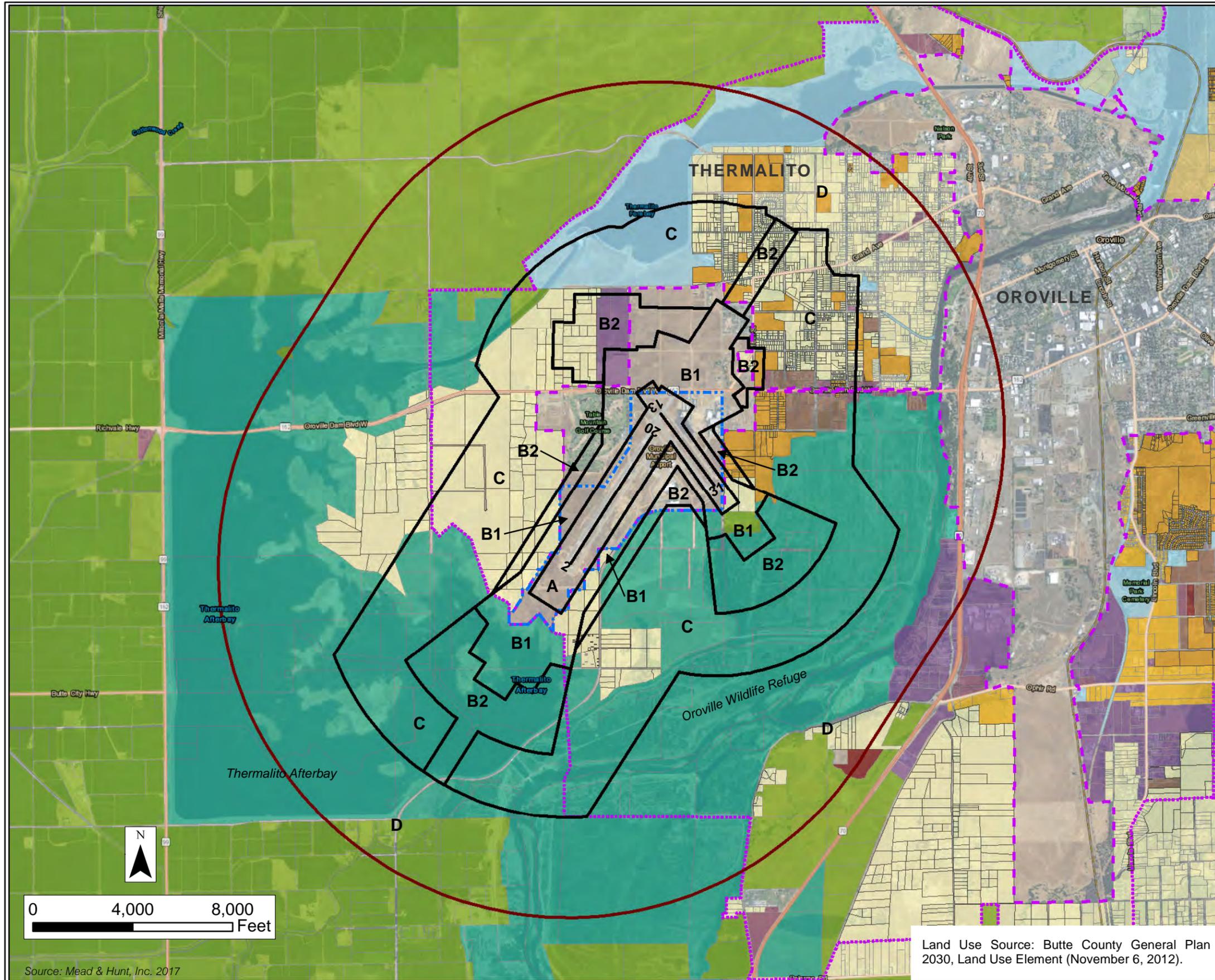
- *County of Butte*
  - Rural Residential (5-10 ac/du) to west and southeast; Residential uses of mixed types to northeast; Medium (up to 6 du/ac) and Medium High Residential (up to 14 du/ac) uses immediately east of airport
  - Industrial to north
  - Resource Conservation to southeast
- *City of Oroville*
  - Airport Business Park to promote commercial and business development in the area adjacent to the airport on the north and east
  - Environmental Conservation and Safety region to the east and southeast of the airport along the Feather River
  - Rural and medium-low residential uses to the west
  - Mix of predominantly medium-low residential use with some public use, mixed use, and rural and high density residential use in the north east
  - Proposed Oro Bay Specific plan area to the west of the airport to be of mixed use
  - Proposed Rio d'Oro Specific Plan Area southeast to the airport to be of mixed use

Exhibit 6-8

## Airport Environs Information

### Oroville Municipal Airport





**Legend**

**Boundaries**

- Airport Influence Area
- Compatibility Zone
- Airport Property
- Oroville City Limits
- Oroville Sphere of Influence

**Land Use Designations**

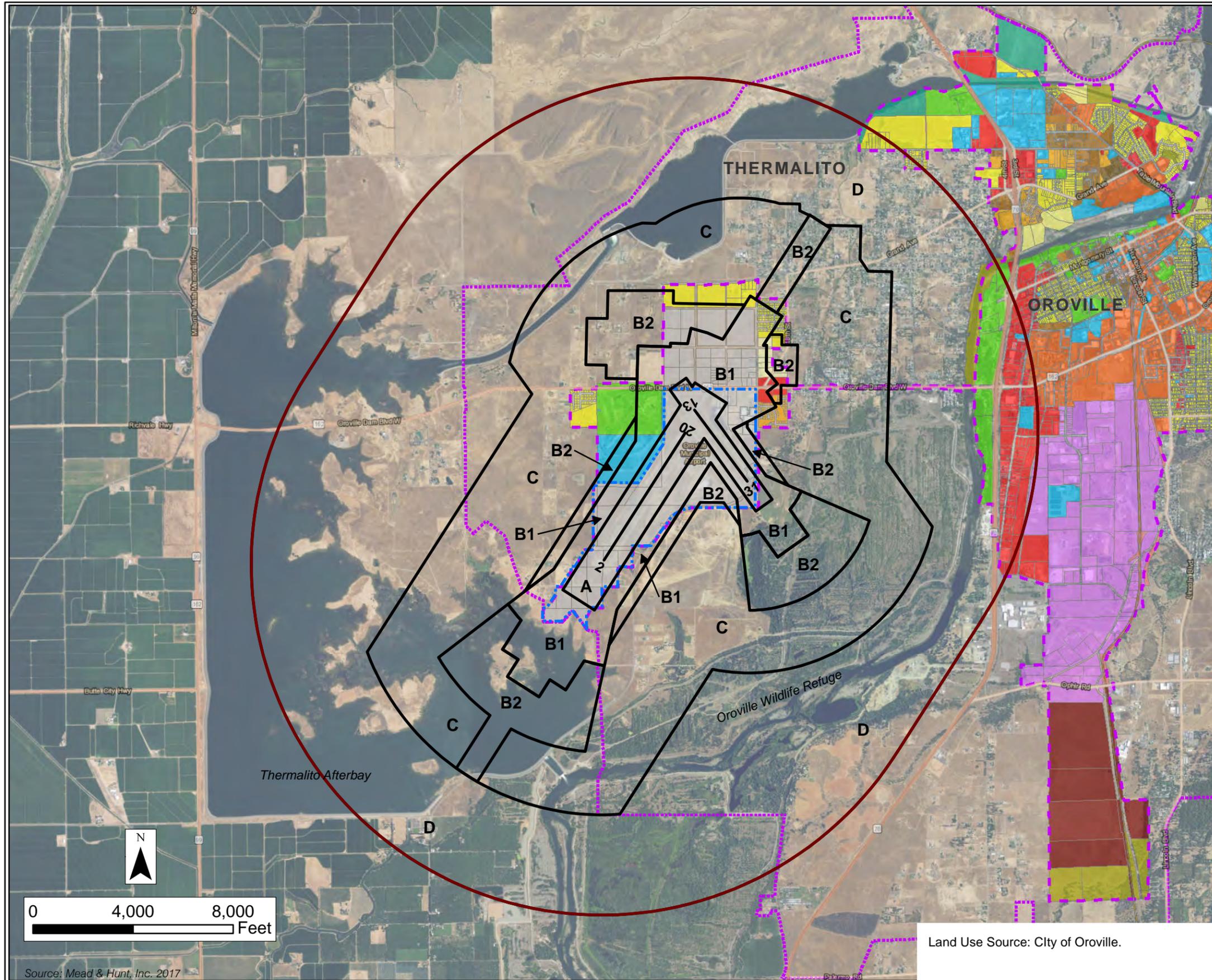
- Agricultural
- Resource Conservation
- Residential, FR (1-40 ac/du)
- Residential, RR (5-10 ac/du)
- Residential, VLDR (up to 1 du/ac)
- Residential, LDR (up to 3 du/ac)
- Residential, MDR (up to 6 du/ac)
- Residential, MHDR (up to 14 du/ac)
- Residential, HDR (14-20 du/ac)
- Mixed Use
- Retail & Office
- Industrial
- Public

**Butte County  
Airport Land Use Commission  
Oroville Municipal Airport  
Land Use Compatibility Plan**



Land Use Source: Butte County General Plan 2030, Land Use Element (November 6, 2012).

Source: Mead & Hunt, Inc. 2017



**Legend**

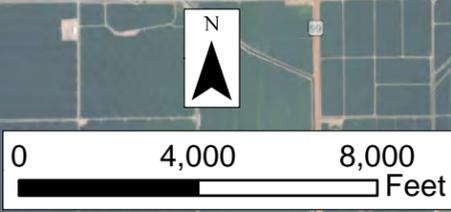
**Boundaries**

- Airport Influence Area
- Compatibility Zone
- Airport Property
- Oroville Sphere of Influence
- Oroville City Limits

**Designated Land Uses**

- Very Low Density Residential (0.2-1 du/ac)
- Low Density Residential (1-3 du/ac)
- Medium Low Density Residential (3-6 du/ac)
- Medium Density Residential (6-14 du/ac)
- Medium High Density Residential (14-20 du/ac)
- High Density Residential (20-30 du/ac)
- Mixed Use
- Retail and Business Services
- Office
- Industrial
- Airport Business Park
- Public
- Park
- Environmental Conservation/Safety
- State Water Project
- Right of Way
- SPA

**Butte County  
Airport Land Use Commission  
Oroville Municipal Airport  
Land Use Compatibility Plan**



Land Use Source: City of Oroville.

Source: Mead & Hunt, Inc. 2017