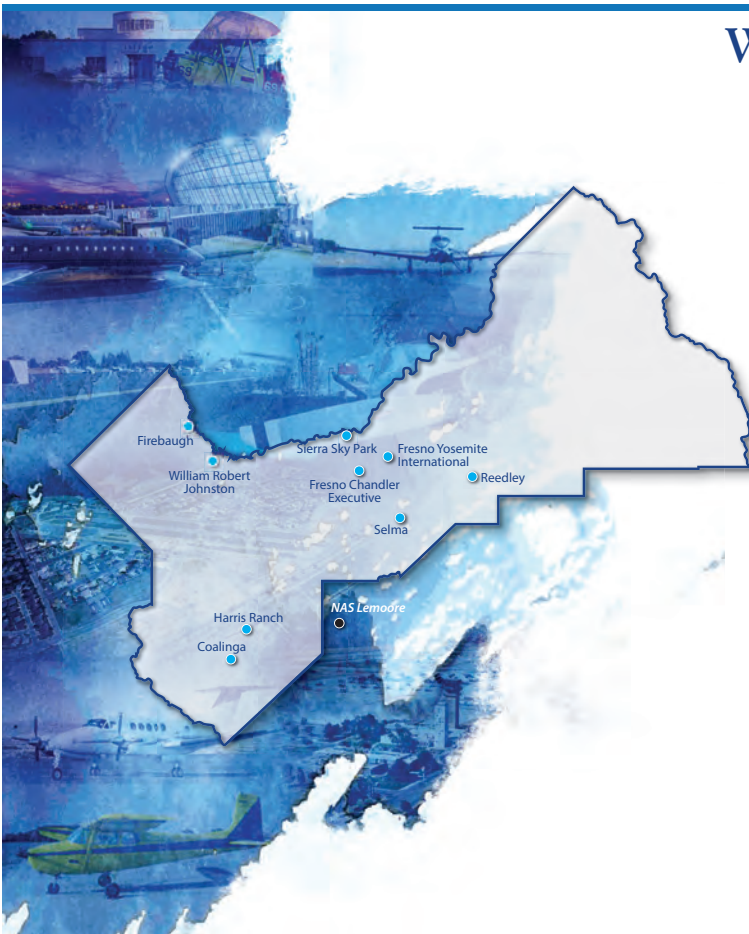




Fresno Council  
of Governments

## Appendix J

# WILLIAM ROBERT JOHNSTON MUNICIPAL AIRPORT



## Appendix J: William Robert Johnston Municipal Airport

---

Appendix J provides an overview of William Robert Johnston Municipal's (Airport) setting, airport influence area (AIA), safety zones, noise, and airspace and overflight areas. This Appendix will also discuss the existing and planned land uses, as well as current and future Airport facilities.

The Airport lies on the eastern boundary of the City of Mendota. The 2017 – 2021 *National Plan of Integrated Airport Systems* classifies it as a general aviation Airport while the 2013 *California Aviation System Plan* considers it a community facility. The Airport is owned by the City of Mendota and is available for public use. The Airport covers 130 acres of land and is at an elevation of 162 feet. The Airport is primarily used for aerial application operations.

### SAFETY ZONES

The Airport Influence Area (AIA) and Safety Zones for William Robert Johnston Municipal Airport are shown on **Exhibit J1**. Figure 3A of the California Airport Land Use Planning Handbook (Handbook) provides three example zones for general aviation airports, which are differentiated by runway length. The Handbook zone examples are provided as a starting point for developing safety zones specific to an airport. As discussed below, the Airport has one runway, Runway 15-33, which is 3,499 feet long. The Federal Aviation Administration (FAA)-approved Airport Layout Plan (ALP) includes an extension of 1,400 feet to the northwest for a total of 4,899 feet. Therefore, the Safety Zones are based on the Medium General Aviation Runway example. As discussed below, the traffic pattern is located east of the Airport, therefore; based on Handbook guidance, the Inner Turning Zone is only shown to the east. For this plan, the outermost zone in the Handbook examples was replaced by the 14 CFR Part 77 Conical Surface, which also represents the airspace and overflight review area boundaries. Additional information regarding the safety compatibility zones can be found in **Appendix M**.

## NOISE

The standard methodology for analyzing noise conditions at airports involves the use of a computer simulation model. The Airport Environmental Design Tool Version 2c (AEDT) is accepted by the State of California and required by the FAA for developing noise exposure contours. This is the model used to develop the noise exposure contours for this Airport Land Use Compatibility Plan (ALUCP). The following sections describe the noise modeling inputs for the William Robert Johnston Municipal Airport noise exposure contours shown on **Exhibit J2**. Additional information regarding the noise modeling process and land use compatibility thresholds can be found in **Appendix M**.

### AIRCRAFT OPERATIONS AND FLEET MIX

As outlined in Public Utilities Code (PUC) Section 21675(a), the noise contours included in an ALUCP must reflect the anticipated growth of the airport during at least the next 20 years. **Table J1** summarizes the 2037 operations for the Airport using the FAA's Terminal Area Forecast, Fiscal Years 2016-2045, and also includes the aircraft types used in the noise model. Airfield observations and based aircraft lists were used to determine the types of aircraft which frequently use the Airport. To accurately represent the noise conditions at the Airport, the AEDT provides aircraft noise data for many of the aircraft operating in the national fleet.

The selection of individual aircraft types is important to the modeling process because different aircraft types generate different noise levels. The aircraft fleet mix for William Robert Johnston Municipal Airport was derived from an interview with the Airport manager, based aircraft list, and a review of flight plan records. **Table J1** summarizes the generalized fleet mix data input into the noise analysis.

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

**TABLE J1**  
**William Robert Johnston Municipal Airport**  
**Aircraft Fleet Mix and Operations**

Operations	AEDT Designator	2017 <sup>1</sup>	2037 <sup>2</sup>
<b>Itinerant</b>			
Single Engine, Fixed	GASEPF	1,000	1,174
Single Engine, Variable	GASEPV	1,000	1,174
Subtotal		2,000	2,348
<b>Local</b>			
Single Engine, Fixed	GASEPF	1,000	1,180
Single Engine, Variable	GASEPV	1,000	1,181
Subtotal		2,000	2,361
Grand Total		4,000	4,709

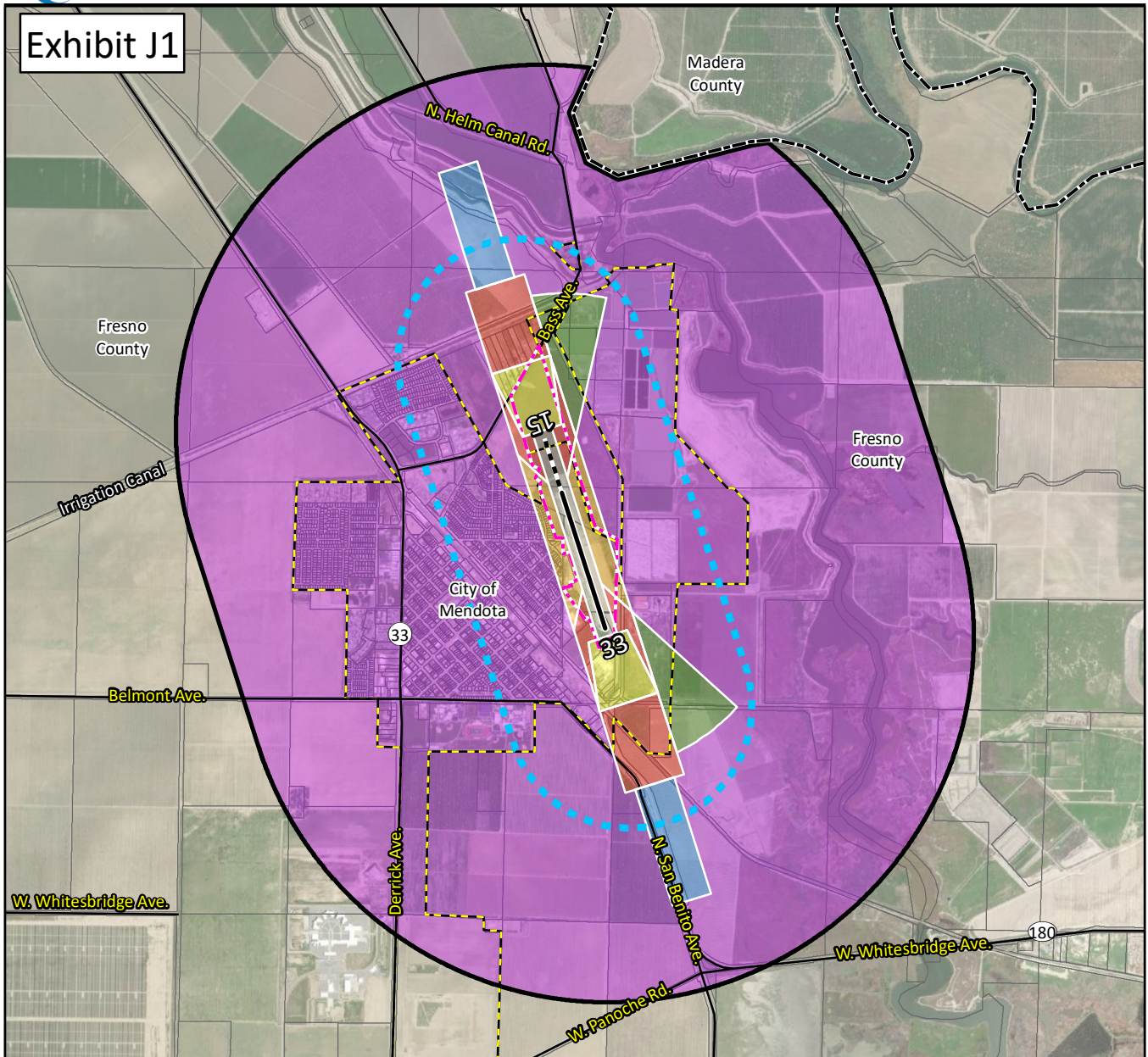
Source:

<sup>1</sup> FAA 5010 Airport Master Record, operations for 12 months ending July 12, 2016

<sup>2</sup> FAA Terminal Area Forecast, Fiscal Years 2016-2045, January 2017



Exhibit J1

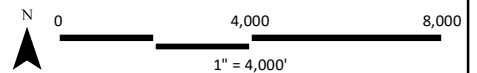


### LEGEND

- Existing Runway<sup>1</sup>
- - - Ultimate Runway<sup>2</sup>
- Airport Property<sup>2</sup>
- Parcel Boundary
- Municipal Boundary
- County Boundary
- Streets
- Airport Influence Area (AIA)<sup>3</sup>
- Vulnerable Occupants Review Area (See Section 3.2.2 & Table 3A)

### Safety Zones<sup>4</sup>

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



<sup>1</sup>FAA 5010 Master Record.

<sup>2</sup>William Robert Johnston Airport Layout Plan.

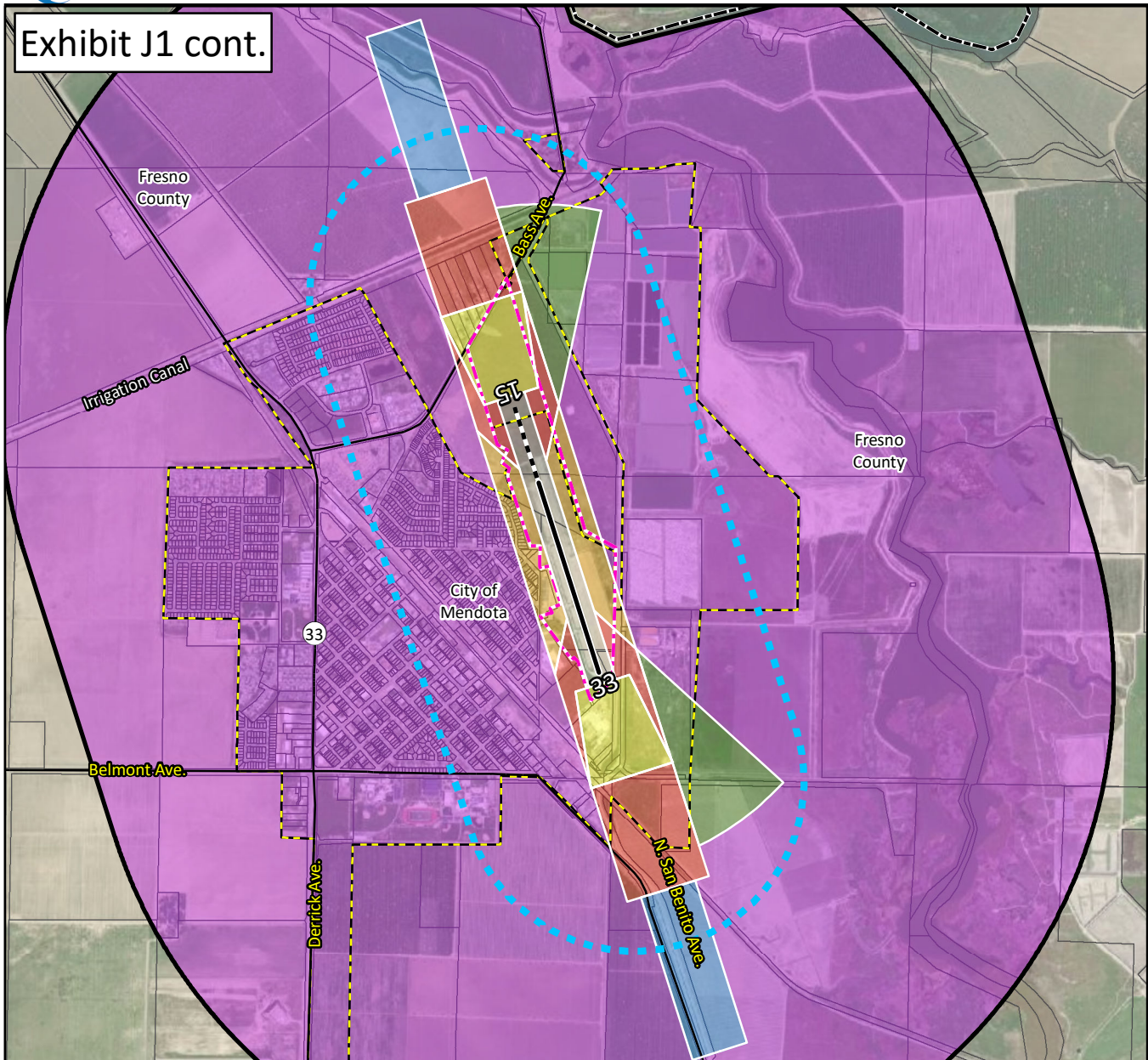
<sup>3</sup>Part 77 Conical Surface. See 14 CFR, Subchapter E, Part 77, §77.25.

<sup>4</sup>Figure 3A, California Airport Land Use Planning Handbook (2011), and Coffman Associates Analysis. Sources: Fresno County Parcels, Fresno County Streets, ESRI Basemap Imagery (2020).





Exhibit J1 cont.

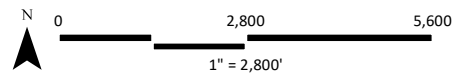


LEGEND

- Existing Runway<sup>1</sup>
- Ultimate Runway<sup>2</sup>
- Airport Property<sup>2</sup>
- Parcel Boundary
- Municipal Boundary
- County Boundary
- Streets
- Airport Influence Area (AIA)<sup>3</sup>
- Vulnerable Occupants Review Area (See Section 3.2.2 & Table 3A)

Safety Zones<sup>4</sup>

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



<sup>1</sup>FAA 5010 Master Record.

<sup>2</sup>William Robert Johnston Airport Layout Plan.

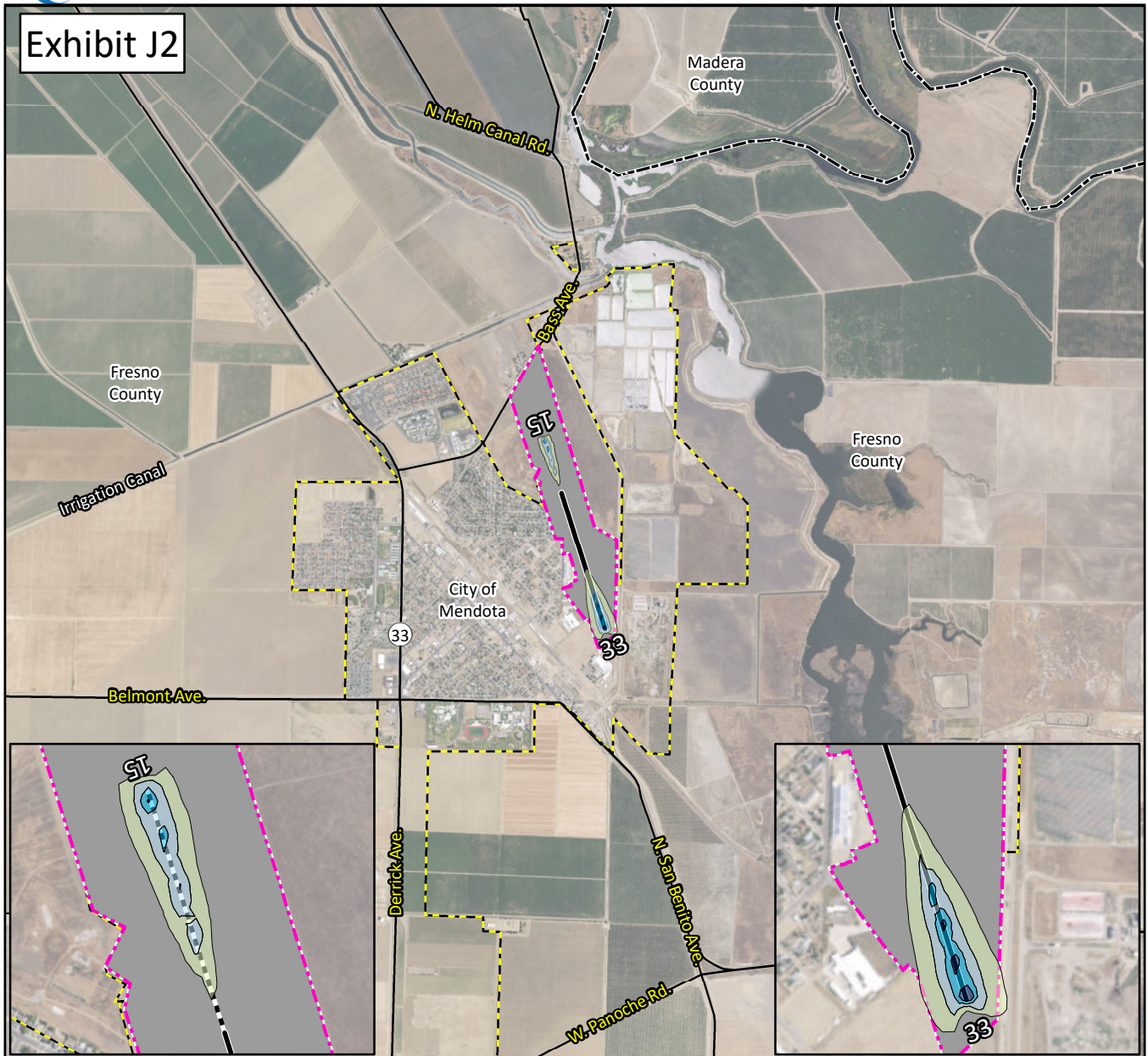
<sup>3</sup>Part 77 Conical Surface. See 14 CFR, Subchapter E, Part 77, §77.25.

<sup>4</sup>Figure 3A, California Airport Land Use Planning Handbook (2011), and Coffman Associates Analysis. Sources: Fresno County Parcels, Fresno County Streets, ESRI Basemap Imagery (2016).





Exhibit J2

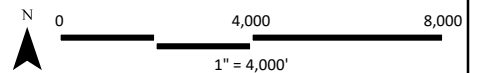


**LEGEND**

- Existing Runway<sup>1</sup>
- - - Ultimate Runway<sup>2</sup>
- Airport Property<sup>2</sup>
- Parcel Boundary
- Municipal Boundary
- County Boundary
- Streets

**Future Noise Contours<sup>3</sup>**

- 60 CNEL
- 65 CNEL
- 70 CNEL
- 75 CNEL



<sup>1</sup>FAA 5010 Master Record.

<sup>2</sup>William Robert Johnston Airport Layout Plan.

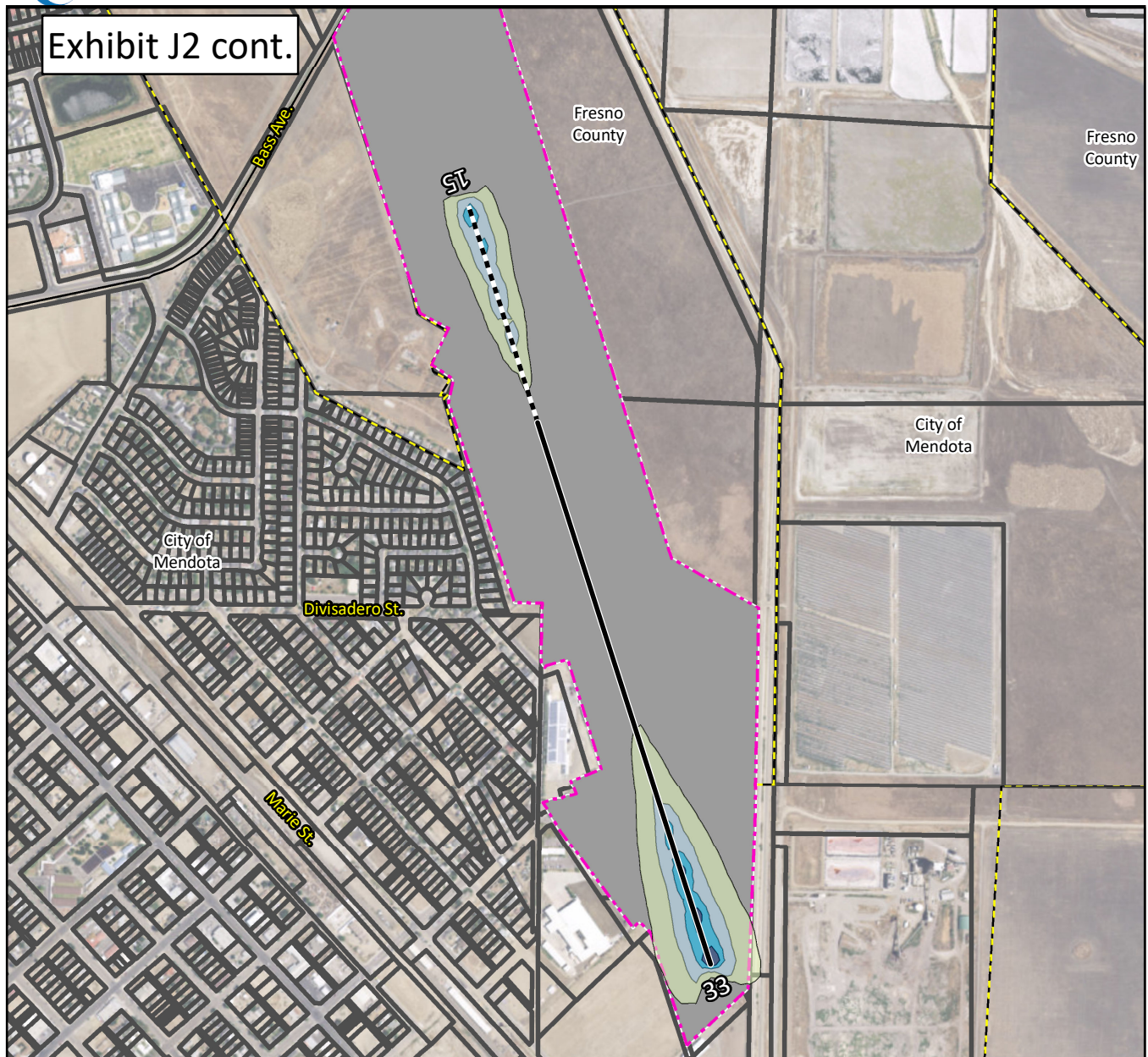
<sup>3</sup>Community Noise Equivalent Level -  
Coffman Associates Analysis.

Sources: Fresno County Parcels, Fresno County  
Streets, ESRI Basemap Imagery (2016).





Exhibit J2 cont.

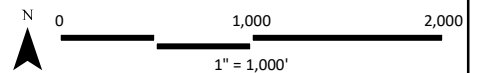


LEGEND

- Existing Runway<sup>1</sup>
- - - Ultimate Runway<sup>2</sup>
- Airport Property<sup>2</sup>
- Parcel Boundary
- - - Municipal Boundary
- Streets

Future Noise Contours<sup>3</sup>

- 60 CNEL
- 65 CNEL
- 70 CNEL
- 75 CNEL



<sup>1</sup>FAA 5010 Master Record.

<sup>2</sup>William Robert Johnston Airport Layout Plan.

<sup>3</sup>Community Noise Equivalent Level -  
Coffman Associates Analysis.

Sources: Fresno County Parcels, Fresno County  
Streets, ESRI Basemap Imagery (2016).

## **Time-of-Day**

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

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

## **Runway Use**

Runway usage data is also an essential component for developing noise exposure contours. Based on a review of regional airport activity and wind conditions, the following assumptions were made for runway use:

- Runway 15 – 25 percent
- Runway 33 – 75 percent

## **Flight Tracks**

A review of local flight procedures was used to develop consolidated flight tracks for use in the AEDT. As discussed below, the traffic pattern for Runway 15 is left hand and the traffic pattern for Runway 33 right hand. Accordingly, it is assumed that touch-and-go traffic occurs to the east of the Airport for Runway 15-33.

## **Flight Profiles**

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

## ***AIRSPACE AND OVERFLIGHT***

**Exhibit J3** depicts the Airspace Plan from the 2005 William Robert Johnston Municipal Airport Layout Plan. This exhibit includes the 14 CFR Part 77 Conical Surface which is also the Airport Influence Area for the Airport.



## AIRPORT INFORMATION

### AIRPORT FACILITIES

Airport facilities are summarized in **Table J2** and **Exhibit J4** shows the ALP (November 2005).

Runway 15-33 is the Airport's only runway. It is 3,499 feet long and sixty feet wide. It is constructed of asphalt and in fair condition. Runway 15 has a left-handed traffic pattern and Runway 33 has a non-standard right-handed traffic pattern. The runway is designed for single wheel aircraft weighing 12,000 pounds or less. The runway markings are basic and in fair condition. There is no runway lighting, visual, or instrument approach aids.

**TABLE J2**  
**Airport Facilities**  
**William Robert Johnston Municipal Airport**

	Runway 15-33
<b>RUNWAY(S)</b>	
Length (feet)	3,499
Width (feet)	60
Threshold Displacement (feet)	0
Runway Pavement Surface Material	Asphalt
Runway Pavement Surface Treatment	Not listed
Runway Pavement Condition	Fair
Traffic Pattern	Left   Right
<b>Runway Pavement Load Bearing Strength (lbs.)</b>	
Single Wheel	12,000
Dual Wheel	N/A
Double Tandem	N/A
Double Dual Tandem	N/A
<b>Runway Pavement Markings</b>	
Type	Basic
Condition	Fair
<b>Runway Lighting</b>	
Runway Edge Lighting	None
Approach Lighting System (ALS)	None
Touchdown Point	None
Runway End Identifier Lights (REILs)	None
<b>VISUAL APPROACH AIDS</b>	
Type	None
Glide Path	N/A
<b>INSTRUMENT APPROACH AIDS</b>	
Instrument Landing System (ILS)	No
Global Positioning System (GPS)	No
VOR/DME	No

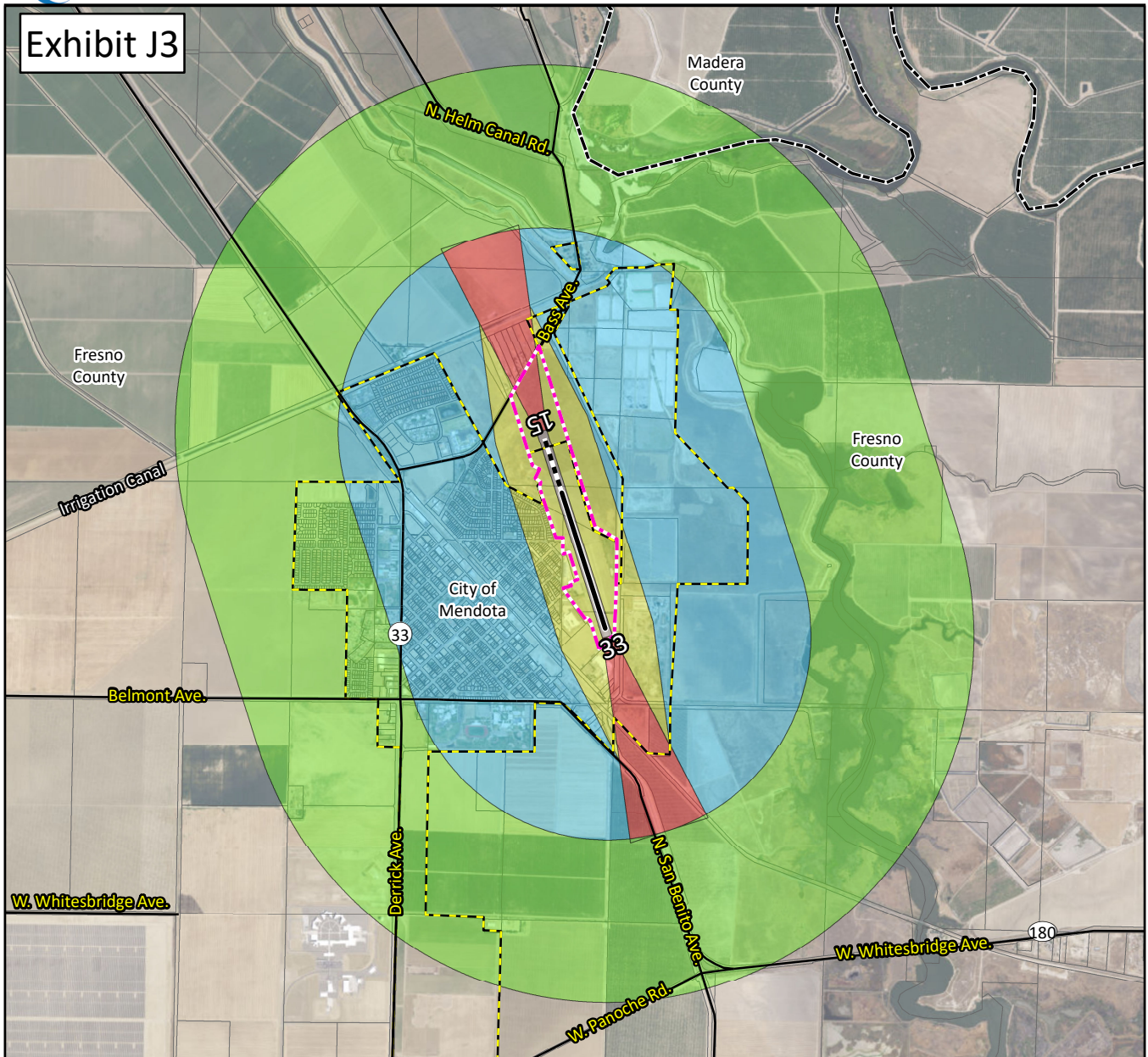
N/A: Not Applicable

VOR/DME: Very High Frequency Omnidirectional Range Distance Measuring Equipment

**Source:** AirNav (July 2017)



Exhibit J3

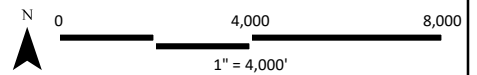


LEGEND

- Existing Runway<sup>1</sup>
- Ultimate Runway<sup>2</sup>
- Airport Property<sup>2</sup>
- Parcel Boundary
- Municipal Boundary
- County Boundary
- Streets

Part 77 Surfaces<sup>3</sup>

- Primary Surface
- Approach Surface
- Transitional Surface
- Horizontal Surface
- Conical Surface



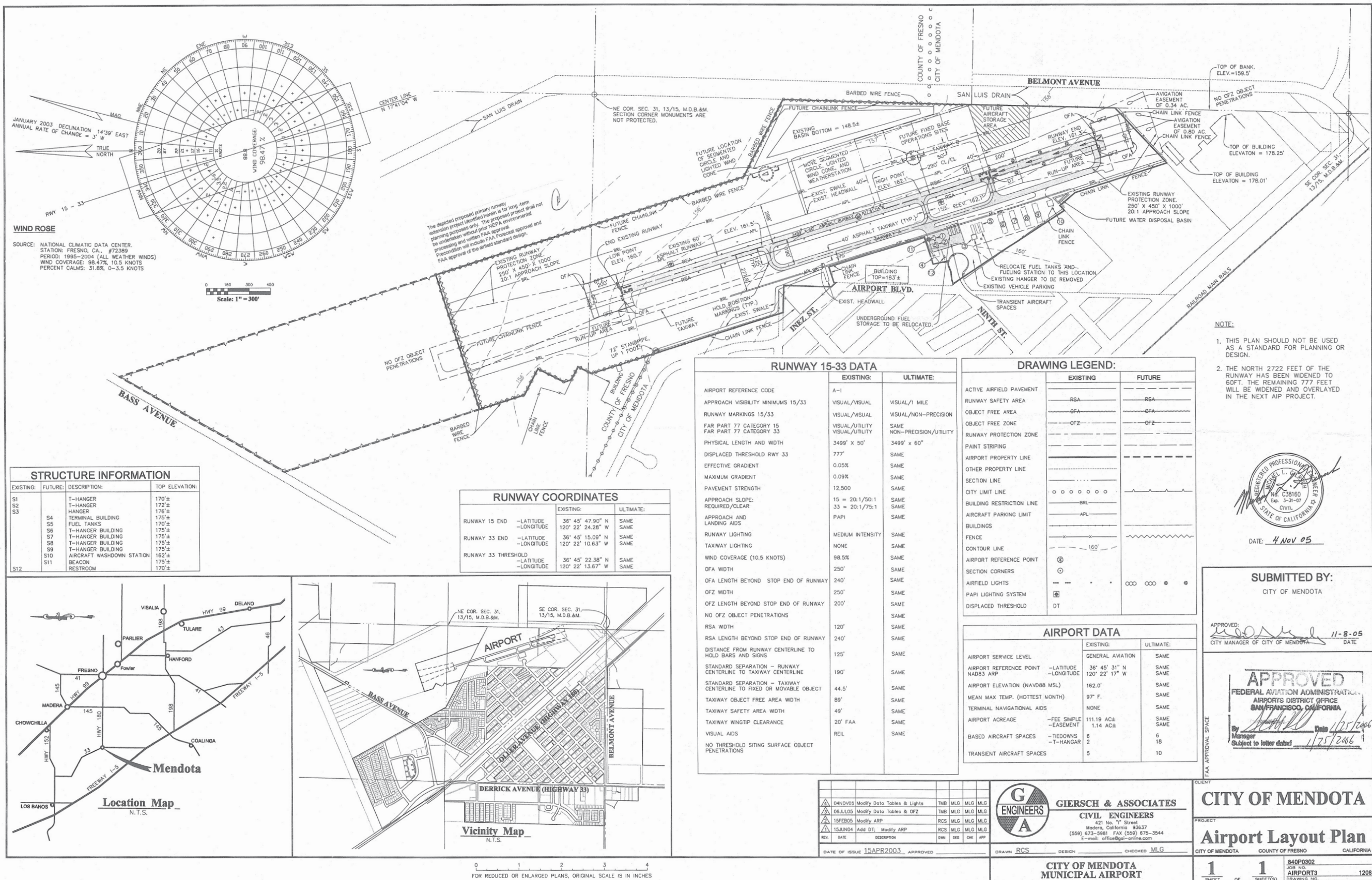
<sup>1</sup>FAA 5010 Master Record.

<sup>2</sup>William Robert Johnston Airport Layout Plan.

<sup>3</sup>14 CFR, Subchapter E, Part 77, §77.25.

Sources: Fresno County Parcels, Fresno County Streets, ESRI Basemap Imagery (2016).





## **FUTURE AIRPORT PLANS**

There is a runway extension proposed to the north of Runway 15 in the long-term future. Other ultimate airfield plans include widening Runway 15-33 ten feet, and updating runway marking on Runway 33 to be non-precision.

## ***AIRPORT ENVIRONS***

### **EXISTING LAND USES**

Existing land uses within the AIA are shown **Exhibit J5**. Note that only areas within Fresno County are considered as part of this ALUCP.

The Airport is within the municipal boundary of the City of Mendota; however, much of the AIA is considered unincorporated Fresno County. North of Bass Avenue are single family residential uses. East of the Airport are agricultural uses. South and southwest of Runway 33 are industrial uses, and along much of the western side of the Airport are single family residential neighborhoods. Downtown Mendota is west of the Airport, which consists of residential, commercial, and industrial uses. Much of the remainder of the AIA is used for agriculture; however, there is a substantial area east of the Airport for public use.

### **ZONING**

**Exhibit J6** shows the zoning in the AIA.

Much of the area in the AIA is zoned for agricultural uses, including the areas immediately northwest, north, and east of the Airport. To the southwest and south of Runway 33, the land is zoned for industrial purposes, and to the southeast, land is zoned for public use. The City of Mendota, primarily to the west of the Airport, is zoned for primarily single family residential, although there are parcels zoned for multi-family residential, industrial, commercial, and public uses, as well.

### **GENERAL PLAN**

General plan land uses are displayed on **Exhibit J7**.

Areas to the north and west of the Airport area planned for residential use. The area to the west of Runway 15-33 is planned for open space, whereas areas farther to the west are planned for public and then open space. To the southeast and south of the Runway 33 end, the land is planned for industrial uses. West of the Airport near the main area of the City of Mendota, there are uses planned for residential, office and mixed use, which is often a combination of commercial and residential uses. In contrast to the existing land use exhibit, **Exhibit J7** shows more development in the AIA. Much of the AIA is



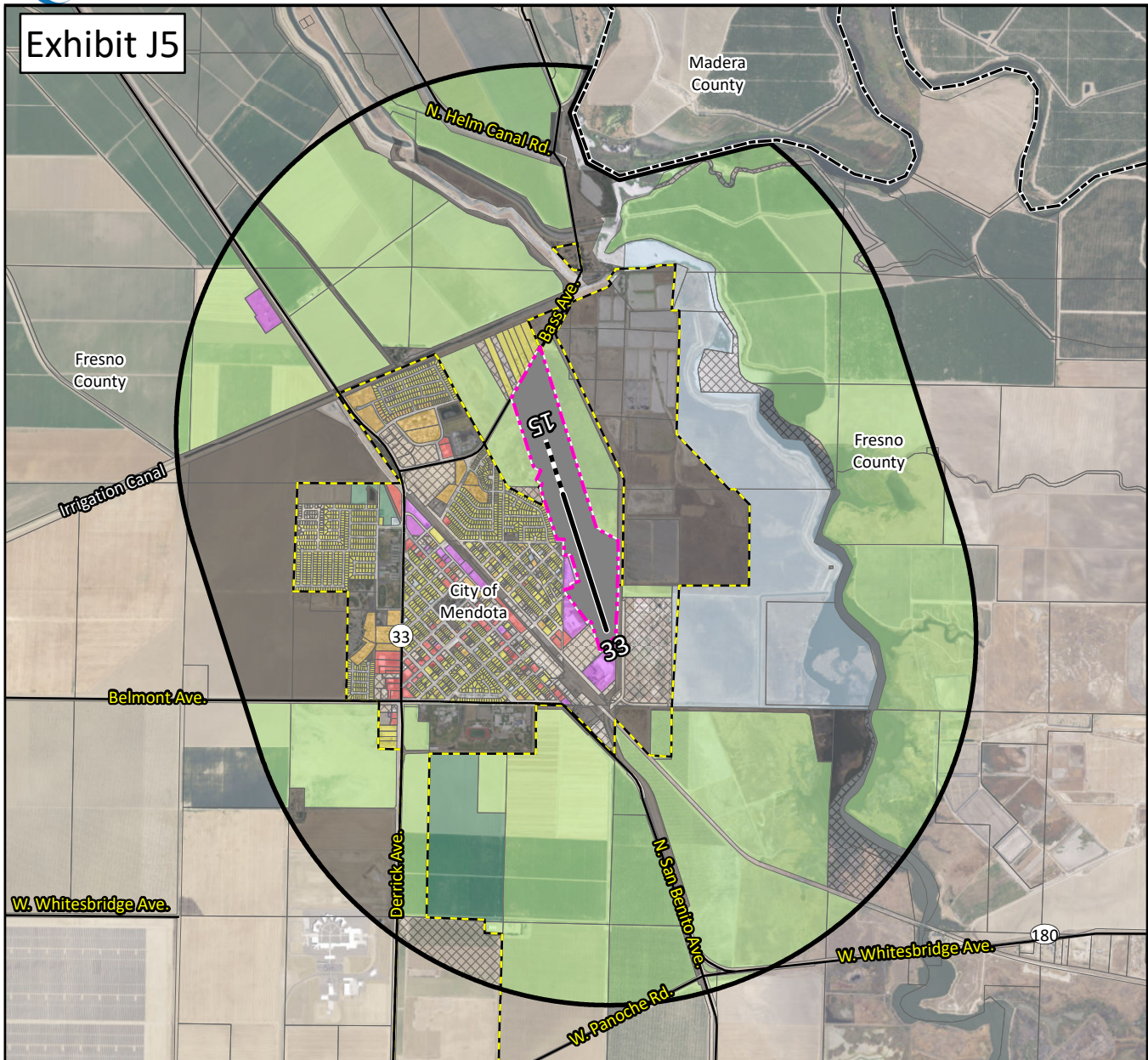
planned for single family residential and mixed use; however, there are still significant portions planned for open space and agricultural uses.

### ***COMPATIBILITY FACTORS***

**Exhibit J8** is a compatibility factors map, which compiles National Transportation Safety Board flight accident data for all airports in the United States, noise exposure contours, and arrival and departure flight tracks from the noise exposure contours. The purpose of this exhibit is to illustrate the methodology behind the shape and size of the safety, noise, and airspace compatibility zones.

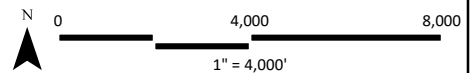


Exhibit J5



LEGEND

- Existing Runway<sup>1</sup>
  - - - Ultimate Runway<sup>2</sup>
  - Airport Property<sup>2</sup>
  - Parcel Boundary
  - Municipal Boundary
  - County Boundary
  - Streets
  - Airport Influence Area (AIA)<sup>3</sup>
- Existing Land Use<sup>4</sup>
- Single Family Residential
  - Multi-Family Residential
  - Commercial
  - Industrial
  - Open Space
  - Public
  - Agricultural
  - Transportation/Right-of-Way
  - Vacant
  - No Data



<sup>1</sup>FAA 5010 Master Record.

<sup>2</sup>William Robert Johnston Airport Layout Plan.

<sup>3</sup>Part 77 Conical Surface. See 14 CFR, Subchapter E, Part 77, §77.25.

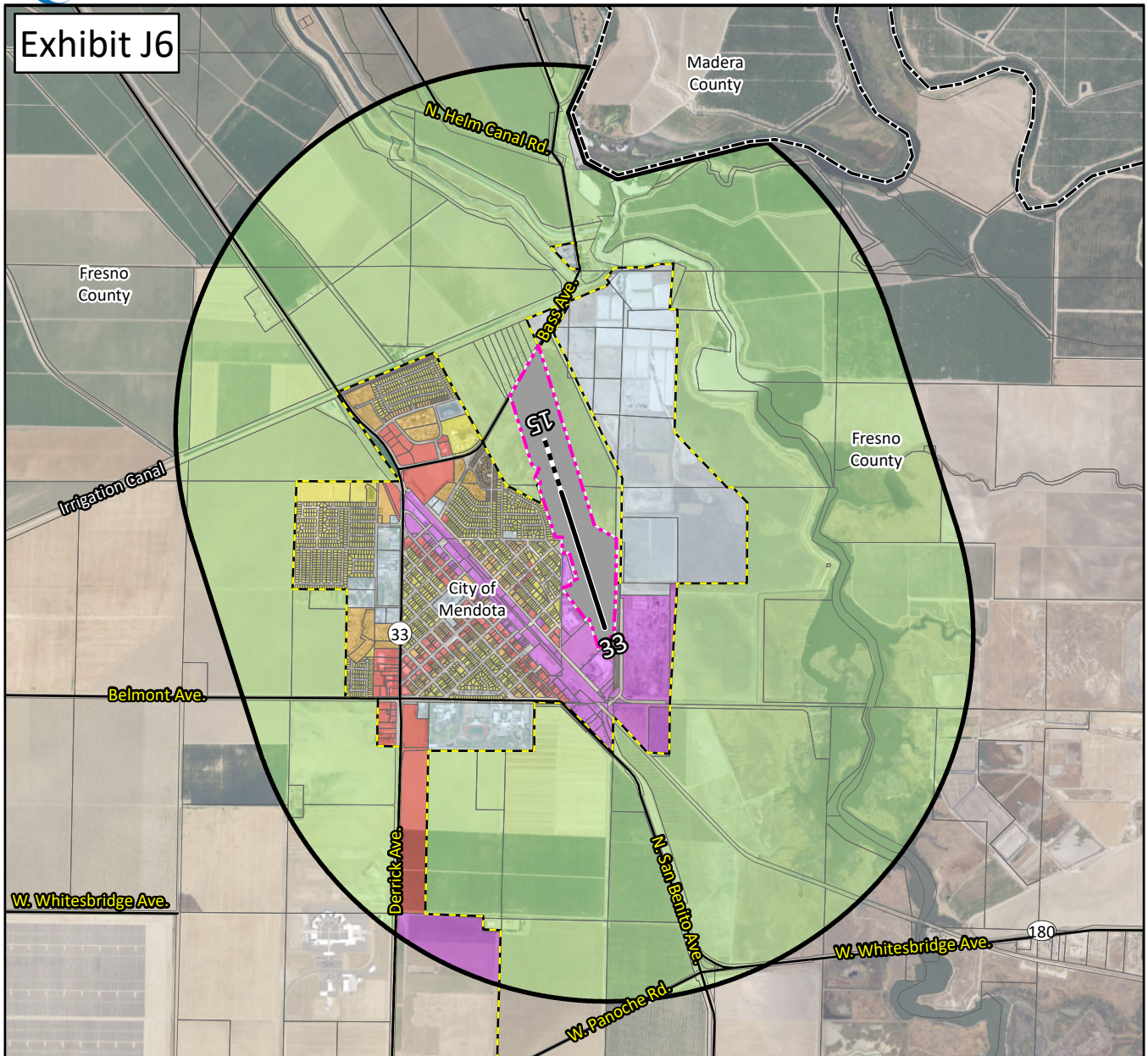
<sup>4</sup>Fresno Council of Governments.

Sources: Fresno County Parcels, Fresno County Streets, ESRI Basemap Imagery (2016).





Exhibit J6

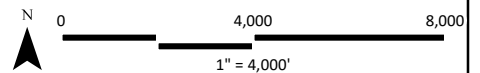


**LEGEND**

- Existing Runway<sup>1</sup>
- - - Ultimate Runway<sup>2</sup>
- Airport Property<sup>2</sup>
- Parcel Boundary
- Municipal Boundary
- County Boundary
- Streets
- Airport Influence Area (AIA)<sup>3</sup>

**Zoning<sup>4</sup>**

- Single Family Residential
- Multi-Family Residential
- Commercial
- Industrial
- Public
- Open Space
- Agriculture
- No Data



<sup>1</sup>FAA 5010 Master Record.

<sup>2</sup>William Robert Johnston Airport Layout Plan.

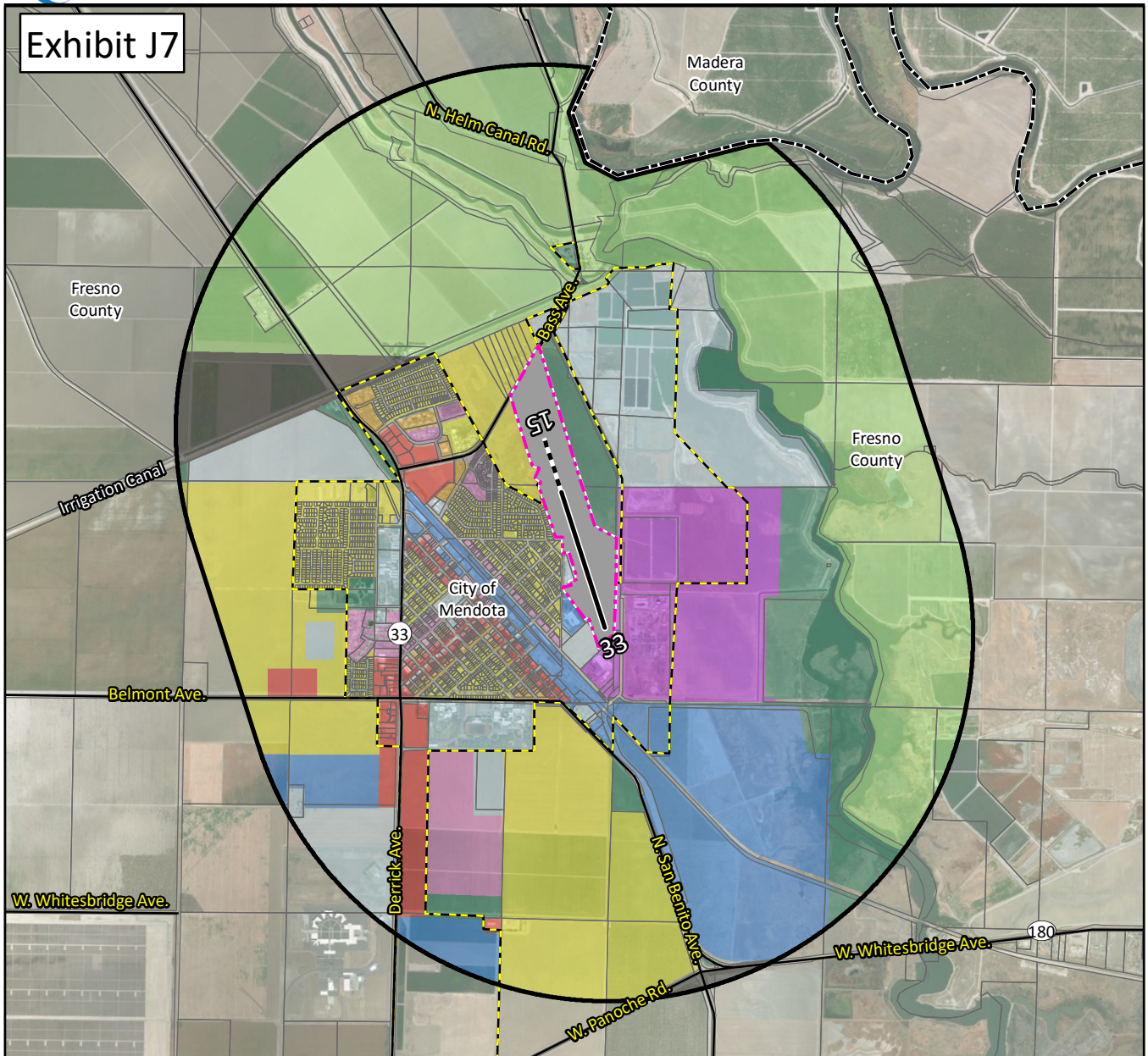
<sup>3</sup>77 Conical Surface. See 14 CFR, Subchapter E, Part 77, §77.25.

<sup>4</sup>Fresno County Zoning, City of Mendota Zoning. Sources: Fresno County Parcels, Fresno County Streets, ESRI Basemap Imagery (2016).





Exhibit J7

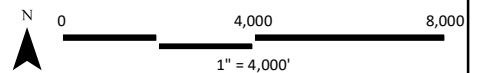


LEGEND

- Existing Runway<sup>1</sup>
- Ultimate Runway<sup>2</sup>
- Airport Property<sup>2</sup>
- Parcel Boundary
- Municipal Boundary
- County Boundary
- Streets
- Airport Influence Area (AIA)<sup>3</sup>

General Plan<sup>4</sup>

- Single Family Residential
- Multi-Family Residential
- Mixed Use
- Commercial
- Office
- Industrial
- Public
- Open Space
- Agriculture
- No Data



<sup>1</sup>FAA 5010 Master Record.

<sup>2</sup>William Robert Johnston Airport Layout Plan.

<sup>3</sup>Part 77 Conical Surface. See 14 CFR, Subchapter E, Part 77, §77.25.

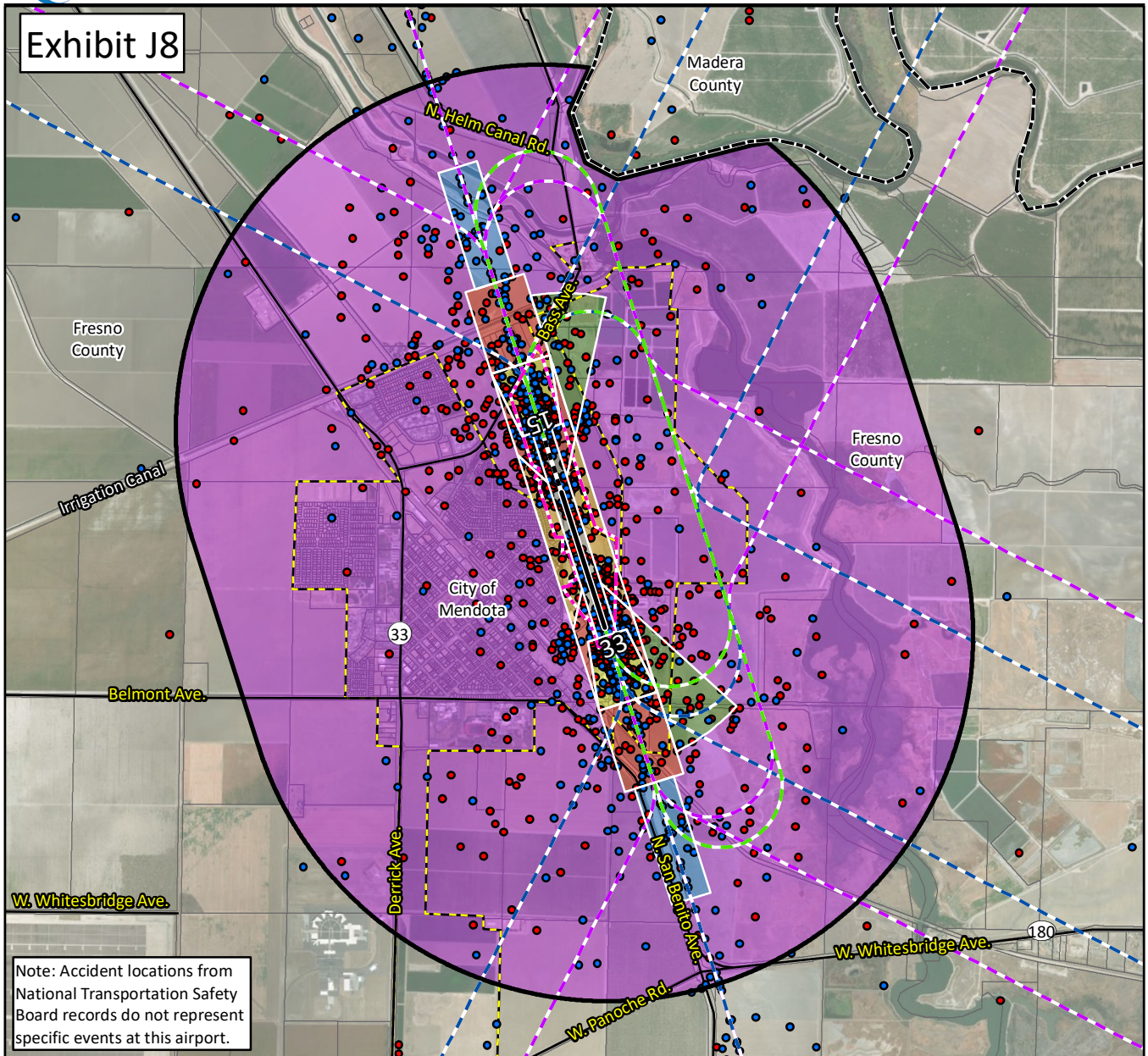
<sup>4</sup>Fresno County General Plan.

Sources: Fresno County Parcels, Fresno County Streets, ESRI Basemap Imagery (2016).





Exhibit J8



Note: Accident locations from National Transportation Safety Board records do not represent specific events at this airport.

**LEGEND**

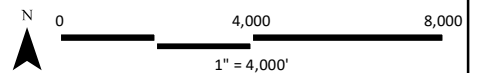
- Existing Runway<sup>1</sup>
- Ultimate Runway<sup>2</sup>
- Airport Property<sup>2</sup>
- Parcel Boundary
- Municipal Boundary
- County Boundary
- Streets
- Arrival Accidents<sup>3</sup>
- Departure Accidents<sup>3</sup>
- Airport Influence Area (AIA)<sup>4</sup>

**Flight Tracks<sup>5</sup>**

- Approach
- Departure
- Touch And Go

**Safety Zones<sup>6</sup>**

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



<sup>1</sup>FAA 5010 Master Record.  
<sup>2</sup>William Robert Johnston Airport Layout Plan.  
<sup>3</sup>California Airport Land Use Planning Handbook, 2011. Normalized from airports in United States.  
<sup>4</sup>Part 77 Conical Surface. See 14 CFR, Subchapter E, Part 77, §77.25.  
<sup>5</sup>Coffman Associates analysis.  
<sup>6</sup>Figure 3A, California Airport Land Use Planning Handbook (2011), and Coffman Associates Analysis.  
Sources: Fresno County Parcels, Fresno County Streets, ESRI Basemap Imagery (2016).