Chapter 2

March Air Reserve Base / Inland Port Airport Background Data

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March Air Reserve Base/ Inland Port Airport Background Data

INTRODUCTION

This chapter examines information regarding current and projected future aviation activity at March Air Reserve Base/Inland Port Airport and the impact that this activity has and will have on surrounding land uses. The objective of this effort is to identify where land use compatibility measures may be necessary as well as an overall airport influence area. The maps included in this chapter depict the factors that are determinants of the airport influence area boundary.

AIRPORT HISTORY AND ROLE

Originally established as a military airport at the present site in 1918, March air base has gone through various changes in name and function. For most of the second half of the twentieth century, the base was known as March Air Force Base. The current March Air Reserve Base name became official in 1996 as a result of recommendations of the 1993 Defense Base Realignment and Closure Commission (BRAC). This change in military function also meant that major portions of the base not essential to aircraft operations became excess to military needs and that exclusive military use of runways was no longer required.

To take responsibility for civilian development and use of the excess military property, a joint powers authority was established comprised of the four surrounding land use jurisdictions: the County of Riverside and the cities of Moreno Valley, Perris, and Riverside. The March Joint Powers Authority (JPA) has full land use and redevelopment authority—comparable to that of the county and cities—over the portions of the former base that are now under its direct control. These lands include the adjacent industrial park and a portion of the airport building area.

The JPA shares responsibility for operation and maintenance of the airport through a joint use agreement with the U.S. Department of Defense (DOD). The JPA designated the civilian component of the joint use facility as the March Inland Port Airport and operates it under an umbrella agency, the March Inland Port Airport Authority (MIPAA). The DOD has sole authority over the types of military aircraft based at the field. Decisions on civilian aircraft usage are under the JPA's purview, but are subject to the provisions of the joint use agreement as well as limitations that the Federal Aviation

Administration would establish as a condition for acceptance of airport development grants. The emphasis of the MIPAA is upon development of air cargo activities at the airport. The JPA General Plan also identifies passenger service as an objective for the airport. Meetings of the JPA and umbrella agencies are open to the public.

Ownership of the runway system and strictly military areas of the airport remain under the control of the U.S. Air Force, specifically the 452nd Air Mobility Wing. The primary missions of this unit include providing military airlift and air refueling capabilities. In this capacity, the unit transports people, equipment, and supplies to meet U.S. armed forces requirements anywhere in the world. The aerial refueling aircraft based at March ARB also operate anywhere in the world where the need for their capabilities arises. In addition to these functions of the host unit, several other government organizations operate flying missions from the base.

The civilian component of the joint use facility accommodates commercial operations and will likely accommodate general aviation activity in the future. Under the joint use agreement, air cargo service was initiated at the airport in October 2005 and ceased in December 2008. Operations by private general aviation aircraft currently (late 2010) require prior permission. Once general aviation facilities are constructed, future general aviation operations may not require prior permission. Civilian flight training is not allowed.

AIRFIELD CONFIGURATION AND FLIGHT PATTERNS

As the role of March ARB/IPA has evolved over time, the facilities have changed as well. However, the runway system and other basic aeronautical components of the base have existed in largely their present configuration since the World War II era. A summary of major features is presented in Exhibit 2−1. Exhibit 2−2 depicts the overall layout of the airport.

Today, the airport has two runways. The primary runway—oriented north-northwest/south-southeast and designated Runway 14-32—is 13,300 feet in length, making it one of the longest in the state. The length, width, and pavement strength of Runway 14-32 enable it to accommodate nearly any type of military or civilian aircraft. The smaller secondary runway—Runway 12-30—was once the primary runway, but its length is now reduced to just over 3,000 feet and its use restricted to light aircraft.

Instrument approach procedures serving the airport include a Category II Instrument Landing System (ILS) enabling precision instrument approaches from the south for landing on Runway 32 with minimums as low as 100 feet cloud ceiling and ¼-mile visibility. All but a small fraction of the aircraft approaches are made to Runway 32 and the ILS is used on many of these operations even when visual flight conditions exist. From the north, only nonprecision approach capabilities are provided for Runway 14. The approach path is offset nearly 30° to the west presumably because of high terrain. The high terrain also affects instrument procedures in other ways: aircraft approaching from the south and circling to land on Runway 14 must do so west of the airport; and aircraft executing a missed approach on the Runway 32 ILS must turn to the left as they climb. Both of these occurrences are relatively infrequent, however.

Aircraft departing March ARB also commonly follow defined instrument procedures. The SKYES-ONE departure procedure (Exhibit 2-3) applies to takeoffs in either direction on the runway. For takeoffs on Runway 14, aircraft fly straight out along the runway heading for a distance of 20 nautical miles (n.m.), then turn right and proceed southward to the SKYES intersection (approximately 10 n.m. east of the Fallbrook airport). When taking off on Runway 32, which is the most common direction of

operation, aircraft fly the runway heading to approximately 2.0 n.m. beyond the north end of the runway (1.4 n.m. past the March TACAN), then turn left to head southward to the DIAMD intersection (situated near the south end of Lake Elsinore) before again turning left to 130° at DIAMD intersection and proceeding to the SKYES intersection east of Fallbrook. Aircraft must cross over DIAMD intersection at or above 5,800 feet MSL unless otherwise instructed by air traffic control. Depending upon factors such as aircraft performance and wind conditions, the flight tracks actually flown will vary slightly. In particular, the radius of the turn that aircraft make from the Runway 32 heading to the southward course will vary.

In addition to these instrument approach procedures, a variety of flight patterns are flown by aircraft operating at March ARB/IPA under visual flight conditions. Closed circuit flight training operations by military aircraft constitutes a significant component of this activity. Because of the particular needs of military aircraft and missions, the routes flown differ from standard patterns utilized at civilian airports. Also, the affected area is larger than typical civilian airport traffic patterns. The *March ARB Air Installation Compatible Use Zone (AICUZ) Study* shows closed pattern routes extending 3 to 4 n.m. north of the airport and into central Perris 6 n.m. to the south. The high terrain to the north and east limits most of this training activity to the area west of the airport, primarily within about 2 n.m. of the runway.

Exhibit 2−4 depicts in simplified form the locations of the major instrument and visual flight patterns at March ARB/IPA. These locations are as shown in the 2005 AICUZ Study and were used for the purposes of modeling the airport noise impacts. Except perhaps along the extended runway centerline, few aircraft follow these precise routes. In order to more fully represent the range of actual aircraft flight tracks, it is necessary to turn to data from ground radar or as transmitted from transponders on board the aircraft. Additionally, the simplified flight-track data does not provide aircraft altitude information. For compatibility planning purposes around March ARB/IPA, it is necessary to identify the locations where aircraft commonly fly at less than approximately 3,000 feet above the airport's elevation of 1,535 feet above mean sea level while approaching or departing the airport or conducting closed circuit flight training there. Radar images recorded by Federal Aviation Administration air traffic control facilities provide representative data for aircraft operations at March ARB/IPA. Exhibits 2−5 and 2−6 depict a selection of radar flight tracks during summer (2004) and winter (2004-05) periods, respectively. Note that the altitude data is referenced to mean sea level (MSL). Thus, flight altitudes below 3,000 feet above the airport are represented by the blue (2,000 to 3,000 feet MSL), green (3,000 to 4,000 feet MSL), and first part of the purple (4,000 to 10,000 feet MSL) track colors. Problems have been encountered in obtaining arrival track data for the lower altitudes of interest. However, the instrument approach procedures flown by most aircraft at March ARB suggest that, by the time that aircraft descend to about 4,000 feet MSL, they are beginning to line up along the final, straight-in approach course for landings on Runway 32 (from the south). The 3,000-foot altitude on a 3.0° glide slope is reached at a distance of just beyond 10 statute miles from the runway end.

AVIATION ACTIVITY LEVELS

Historic

Compared to the years when March operated as an Air Force Base, aircraft activity levels are substantially lower. Activity counts maintained by the Air Force air traffic control tower personnel at the base indicate a total of 34,230 aircraft operations took place during calendar year 2006 compared to

approximately 125,000 during the peak years as an Air Force Base. The following tabulation summarizes how this activity was split among military, air carrier, and general aviation users. Additional data is contained in Exhibit 2–7.

Aircraft Operations — Calendar Year 2006

Category	*Operations*	*Percentage*
Military	16,201	47.3%
Air Carrier **	4,608	13.5%
General Aviation *	13,421	39.2%
Total	*34,230*	*100.0%*

* General aviation operations are almost exclusively March Aero Club aircraft operations on the secondary runway.

** Air carrier operations were mostly DHL air cargo operations, but also include civilian air transport aircraft operated under military contract.

Newer activity data is not currently available from the Air Force. However, the Air Force indicates that the number of military operations remains about the same as tabulated here (some changes have occurred in the mix of aircraft). Civilian air carrier activity has declined with the discontinuation of DHL service. General aviation activity continues to be generated almost entirely by military personnel flying aircraft associated with the March Aero Club.

Forecast

Beginning with the *Joint Use Feasibility Study* in 1997, a variety of aircraft activity forecasts have been prepared March ARB/IPA. Exhibit 2–8 summarizes these forecasts. As the summary shows, the forecasts make different assumptions as to the mix of military and civilian operations.

In each of these forecasts, military operations are assumed to remain constant over time, although the level at which the volume is held constant varies from one forecast to another. All of the forecasts also include a civilian air cargo component, although again the operational volumes vary. Where the forecasts greatly differ is with regard to the anticipated volume of air passenger service. This number ranges from none in the 2005 AICUZ to as much as 8.0 million passengers per year in the Southern California Association of Governments (SCAG) 2004 *Regional Transportation Plan* projections. However, in work for the 2008 *Regional Transportation Plan*, the SCAG Aviation Technical Advisory Committee approved a 2035 forecast that limits the passenger carrying capacity of March ARB/IPA to 2.5 million passengers per year.

The joint use agreement between the U.S. Air Force and the March JPA allows for civilian use of the airport provided that the aircraft and their operators meet certain specified conditions. The focus of the JPA, has generally been upon attracting air cargo operators. Additional limiting factors are that the airport air quality conformity determination and the joint use agreement with the U.S. Air Force both limit civilian aircraft operations to no more than 21,000 per year.

Of all the forecasts, the 2005 *AICUZ Study* prepared for the Air Force best reflects the future role of the facility as envisioned by its operators. The forecast of 69,600 annual operations was a short-term

one, extending only to 2010. It anticipated a maximum military mission of 44,860 annual operations. Civilian aircraft operations are capped at 21,000 operations per year, consistent with the terms of the joint use agreement and related air quality conformity determination. A recent amendment to the Joint Use Agreement allows general aviation activity as part of the 21,000 civilian aircraft operations. The JPA estimates that general aviation will comprise no more than 8,400 operations by 2025 with about 25% being by jet aircraft and the remainder by propeller airplanes. The 2010 projections also anticipated 3,740 fire attack aircraft operations by the California Department of Forestry and Fire Protection (CalFire) not included within the 21,000 operations cap. However, subsequent to completion of the AICUZ, CalFire decided not to relocate to March ARB.

State law governing airport land use compatibility planning requires that the time horizon be at least 20 years. Based upon the constraints established by the joint powers agreement and air quality conformity determination, the March Operations Assurance Task Force (MOATF) has recommended that the projected 69,600 operations projection contained in the 2005 AICUZ be used for airport planning as it provides the best long-term estimation of future airport activity through the 20-year time range. Accordingly, this projection is the one used for the purposes of this *JLUS*. Fleet mix and other activity data distributions associated with this projection are included in Exhibit 2–7.

AIRPORT INFLUENCE AREA

As stated in the introduction, the primary purpose of this chapter is to establish a suitable boundary for the influence area of March ARB/IPA. The California Civil Code Section 1353(a)(2) defines an airport influence area as "the area in which current or future airport-related noise, overflight, safety, or airspace protection factors may significantly affect land uses or necessitate restrictions on those uses as determined by an airport land use commission." The geographic extent of these four impact factors is depicted on the accompanying maps and described below.

Airport Impact Factors

Noise

The noise contours depicted in the 2005 *AICUZ Study* are shown in Exhibit 2–9. Exhibits 2–10, 2–11, and 2–12 illustrate the extent of the noise impact based on the activity levels and other assumptions identified in the 1998, 1992, and 1985 AICUZ Studies, respectively. For comparison purposes, Exhibit 2–13 shows the CNEL 65 and 75 dB noise contours from all four AICUZ studies.

The noise contours from the 1985 *AICUZ Study* are reflected in the interim compatibility plan (*Airport Influenced Area* map) which remains in use by the Riverside County ALUC. At that time, the airport was operating as an Air Force Base. As can be seen, the 2005 AICUZ noise contours are greatly diminished from those in 1985, both north and south of the base.

The March JPA's General Plan (1999) references both the 1992 and 1998 *AICUZ Studies*. The 1992 *AICUZ Study* was prepared while the airport was still operating as a military base. The 1992 *Study* identified 125,000 annual operations conducted by the U.S. Air Force aircraft fleet. The 1992 noise contours are significantly larger than the 1998 contours.

The noise contours in the 1998 *AICUZ Study* reflect the realignment conditions of the airport resulting from the Base Realignment and Closure (BRAC) process. This activity includes the military mission of

the Air Force Reserves and the civilian operations of March Inland Port as permitted under the joint use agreement. The 2005 *AICUZ Study* was based upon similar assumptions regarding the activity at the base and thus produced similar noise contours. In comparison with the noise contours from the 1998 *AICUZ Study*, the CNEL 65 dB noise contours from the 2005 *AICUZ Study* are generally slightly smaller on the north, but essentially identical on the south; the CNEL 60 dB contours, however, are slightly elongated in the 2005 study compared to 1998, particularly to the south.

Noise contours themselves are not a direct determinant of an airport influence area. The noise level considered significant must first be decided. In some cases, it may be appropriate to consider a composite set of noise contours to account for changes in military missions, as well as to consider the inherent imprecision of noise contours. The MOATF has established the 65 dB CNEL as the maximum noise exposure considered normally acceptable for residential land uses. For clarity, the 65-CNEL contour is shown with a heavier line-weight in all of the noise contour graphics.

Overflight

Regardless of the Community Noise Equivalent Level (CNEL) set as the maximum acceptable for residential land use development, the noise of individual aircraft operations will be audible over a much more widespread area. These overflight impacts do not necessarily require that restrictions on land use development be established, but they are nevertheless airport land use compatibility factors. Overflights primarily are considerations for the purposes of disclosures in real estate transactions.

Again, the presence of aircraft overflights is not directly an airport influence area determinant. Some measure of significance must be defined. For general aviation airports, the airport traffic pattern is often used to delineate where aircraft overflights are significant in that aircraft fly both frequently and at a relatively low altitude over these areas. At air carrier and military airports, the larger and often noisier aircraft operating there suggests a more expanded definition of significant overflight area. In this regard, a useful criterion is the area within which aircraft typically are flying at less than 3,000 feet above the ground level (AGL). Most air carrier and military aircraft at this altitude are both distinctly audible and visible. Also, 3,000 feet is the altitude above which the FAA considers air traffic routes locations to be environmentally insignificant in most circumstances.

The locations of where aircraft are below 3,000 feet AGL when flying in the vicinity of March ARB/IPA can be determined from radar data and the airport's instrument approach procedures. To the north, most aircraft are climbing and therefore reach the 3,000-foot height relatively close to the runway compared to landing aircraft. Exhibits 2–5 and 2–6 show departure flight track data for several Summer and Winter days, respectively. Similar data for arrival flight tracks was not available for this study. However, most arriving aircraft approach from the south and utilize the Runway 32 ILS approach procedure. Based upon this procedure's 3.0° glide slope, the point at which aircraft descend below 3,000 feet above the runway elevation can be calculated as slightly over 10 statute miles from the southern end of the runway.

Safety

Although accidents involving aircraft approaching, departing, or maneuvering around an airport can occur anywhere in an airport vicinity, most occur either on the runway or close to the runway ends. The Air Force has defined a set of accident potential zones (APZs) for use in AICUZ studies for individual air bases based upon Air Force accident data collected over a nearly 30-year period. The three zones—Clear Zone (CZ), APZ I, and APZ II—extend a total of 15,000 feet beyond the runway end at a width of 3,000 feet. The first study conducted by the U.S. Air Force reviewed 369 major

accidents from 1968 to 1972. The results of this study showed that approximately 75% of all accidents occurred on or near the runway or in the defined accident zones, while the balance of aircraft accidents (over 25%) took place within a 10-nautical mile radius of the airport. A subsequent update of the study incorporated aircraft accidents through July 1995 and included a total of 838 records. The accident statistics indicated that a larger percentage of accidents (over 30%) occurred outside the defined safety zones, but within a 10-nautical mile radius of the facility. The percent distribution is as follows:

Military Aircraft Accident Statistics

	1989 Study	*1995 Study*
On-Airport Accidents		
On or near runway	23%	25%
Subtotal	*23%*	*25%*
Near-Airport Accidents		
Defined Safety Zones		
Clear Zone (CZ)	39%	27%
Accident Potential Zone I (APZ I)	8%	10%
Accident Potential Zone II (APZ II)	5%	6%
Subtotal	*52%*	43%
Within Airport Environs		
Within 10 nautical-mile radius of base, but outside of defined accident zones	25%	32%
Subtotal	*25%*	*32%*
Total	*100%*	*100%*

Unlike Navy practice, the APZs for Air Force facilities are normally depicted as aligned with the extended runway centerline and do not curve to follow the flight routes. For March ARB/IPA, this APZ configuration is appropriate to the south because most aircraft are following the instrument approach procedure course on landing or fly straight out on departure. To the north, however, the flight track data shows that essentially all aircraft make a left turn after takeoff, generally at a distance of about 7,000 to 10,000 feet beyond the north end of the runway. This turning departure flight route should be considered in the safety compatibility planning for this portion of the airport environs. The APZs for March ARB, as defined by the *2005 AICUZ Study*, are depicted in Exhibit 2−14.

As can be seen on the map, these zones extend 15,000 feet beyond the runway ends and thus onto private lands around the base. The Air Force recommends significant land use restrictions within these areas. As a determinant of the overall airport influence area, however, APZs are smaller and thus less of a factor than the noise and airspace protection factors.

Airspace Protection

The final airport land use compatibility factor is the need to protect the airspace around the airport from activities that can impair the use of the facility or even be the cause of an accident. The height of structures in the nearby area is the most critical concern in this regard. Other land use activities also can adversely affect airport usage, however. These include uses that attract birds, generate electronic interference with aircraft navigation or communications, or generate visual impairments such as smoke, glare, or distracting lights.

Criteria defining nominal limits on the heights of structures around airports are set forth in Part 77 of the Federal Aviation Regulations (FAR). Objects that exceed these heights are considered to be

airspace obstructions and, subject to FAA evaluation, may be deemed hazards. Significant with respect to March ARB/IPA is that the FAR Part 77 airspace protection criteria differ between military and civilian airports. The military FAR Part 77 surfaces create height limits that are more restrictive than the civilian surfaces along the runway approaches, but are less restrictive in some other locations. Also, the military surfaces extend over a larger geographic area and include protection for a future precision instrument approach from the north. Given the joint use nature of the airport, both sets of surfaces need to be taken into account. Exhibit 2-1 5 combines the military and civilian airspace surfaces in a manner that more clearly distinguishes which set of surfaces are controlling (more restrictive) in the different areas within the airport vicinity. These controlling surfaces dictate the allowable heights of objects within the airport environs. Cross-sections show the vertical relationship between the military and civilian airspace surfaces.

As the airspace protection map illustrates, high terrain penetrates the FAR Part 77 surfaces in several areas, especially to the north and southwest. This terrain, as well as any individual existing obstacles, is taken into account in establishment of the airport's instrument approach and departure procedures. The true critical airspace protection needs for the airport are represented by a set of TERPS (U.S. Standard for Terminal Instrument Procedures) surfaces which correlate with the actual instrument procedures and their associated minimums. A review of the TERPS surface mapping provided by the Air Force indicates that the TERPS surfaces are generally less restrictive than either set of FAR Part 77 surfaces. In the areas where the TERPS surfaces are more restrictive, the restrictions would not limit objects to less than 200 feet in height. In these few locations, provisions of Part 77 requiring FAA review of all objects taller than 200 feet regardless of their proximity to the airport should ensure protection of the airport airspace. Height limitation policies based upon TERPS surfaces therefore do not appear to be necessary for March ARB/IPA—the FAR Part 77 requirements will suffice.

Determining Overall Airport Influence Area Boundary

To determine the overall influence area boundary for March ARB/IPA, decisions must be made as to where the compatibility factors described herein represent significant concerns. Examination of the maps shows that the military FAR Part 77 surfaces are the most geographically extensive of any of the impact factors. However, in the outer portions of this area, only very tall objects (over 200 feet in height) are a concern and these are addressed through other processes. Areas affected by noise and routine overflights thus become prominent determinants of the airport influence area. As previously discussed, the suggested overflight impact significance threshold is based upon where aircraft are below 3,000 feet above ground level. Radar flight track data and the altitudes associated with the Runway 32 ILS approach, as described earlier, provide a reasonable approximation as to how large of an area is affected by this overflight criterion.

As noted earlier, the Riverside County Airport Land Use Commission (ALUC) has established a set of study area boundaries (the *Airport Influenced Area*) for March ARB/IPA that have served as an interim compatibility plan for the airport (Exhibit 2-1 6). A look at the outermost boundary indicates that it encompasses most of the area of overflight concern as represented by the traffic pattern map and the Runway 32 ILS glide slope criterion noted above. Expansion of this boundary to encompass areas of high terrain may be necessary if frequent overflights of those areas are depicted. Additionally, input from the affected jurisdictions, JPA, and ALUC, as well as new data collected as part of this *JLUS,* may warrant some adjustments to the airport influence area boundary.

A final point to again emphasize is that inclusion of an area within the airport influence area does not necessarily mean that major restrictions on land use development are required. Typically, the outer

portions of an airport influence area have few restrictions other than on tall structures. Real estate transaction disclosure requirements are the only other significant policy that would be applicable within this area.

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GENERAL INFORMATION

- *Airport Ownership:* United States Air Force
  - Airfield maintenance and usage shared with March Joint Powers Authority (JPA) by means of joint use agreement last amended June 2008
- *Year Opened:* 1918
- *Airport Property Size*
  - Air Force property: 2,300 acres
  - JPA property: 360 acres
- *Airport Classification:* Joint Use
- *Airport Elevation:* 1,538 feet MSL

AIRPORT PLANNING DOCUMENTS

- *Joint Use Agreement*
  - Between March JPA and U.S. Air Force
  - Amended February 2001
- *Air Installation Compatible Use Zone (AICUZ) Study*
  - Prepared by U.S. Air Force, 2005
  - Prior versions: 1985, 1992, 1998
- *March Inland Port Air Cargo Development Plan*
  - Prepared for March JPA, April 1997

RUNWAY/TAXIWAY DESIGN

Runway 14-32

- *Critical Aircraft:* Military transport
- *Airport Reference Code:* D-VI
- *Dimensions:* 13,300 ft. long, 200 ft. wide
- *Pavement Strength (main landing gear configuration)*
  - 65,000 lbs (single wheel)
  - 260,000 lbs (dual wheel)
  - 530,000 lbs (dual-tandem wheel)
- *Average Gradient:* 0.35%
- *Runway Lighting*
  - High-intensity runway edge lights (HIRL)
  - Rwy 32: standard 2,400-foot high-intensity approach lighting system with centerline sequenced flashers

Runway 12-30

- *Critical Aircraft:* Small single- and twin-engine piston
- *Airport Reference Code:* B-I (small)
- *Dimensions:* 3,010 ft. long, 100 ft. wide
- *Pavement Strength (main landing gear configuration)*
  - 12,500 lbs (single wheel)
- *Average Gradient:* 0.44%
- *Runway Lighting:* None

APPROACH PROTECTION

- *Runway Clear Zones*
  - Runways 14 and 32: 3,000-ft. long; mostly on-airport
  - Runway 12 and 30: 1,000-ft. long; all on-airport
- *Approach Obstacles:* None

BUILDING AREA

- *Aircraft Parking Locations*
  - Military: Northeast side of airport
  - Civilian: Northeast of Runway 32 threshold
- *Other Major Facilities*
  - Air Traffic Control Tower
  - Extensive military facilities including military passenger terminal; aircraft maintenance facilities; alert aprons/ hangars; munitions storage
  - Former DHL air cargo facility
- *Services*
  - No public services

TRAFFIC PATTERNS AND APPROACH PROCEDURES

- *Airplane Traffic Patterns*
  - All runways: Left traffic
  - Pattern altitude:
    - Rectangular 3,000 ft. MSL (1,465 ft. above runway elevation)
    - Overhead 3,500 ft. (1,965 ft. above runway elevation)
- *Instrument Approach Procedures (best minimums)*
  - Runway 32 ILS (CAT II):
    - Straight-in (1,600 ft. visibility; 100 ft. descent height)
  - Runway 32 ILS:
    - Straight-in (½ mi. visibility; 200 ft. descent height)
    - Circling (1 mi. visibility; 600 ft. descent height)
  - Runway 32 TACAN:
    - Straight-in (½ mi. visibility; 400 ft. descent height)
    - Circling (1 mi. visibility; 600 ft. descent height)
  - Runway 32 VOR:
    - Straight-in (½ mi. visibility; 400 ft. descent height)
    - Circling (1 mi. visibility; 600 ft. descent height)
  - Runway 14 TACAN (offset 29° west of straight in):
    - Straight-in (1 mi. visibility; 700 ft. descent height)
    - Circling (1 mi. visibility; 700 ft. descent height)
  - No circling northeast of runway on any procedure
- *Standard Instrument Departure Procedures (SKYES-ONE)*
  - Rwy 14: straight out to 20 NM, then right turn
  - Rwy 32: left turn to at 2.0± mile beyond runway end south to DIAMD intersection (south of Lake Elsinore)
- *Visual Approach Aids*
  - Airport: Rotating beacon
  - Runways 14 and 32: PAPI
- *Operational Restrictions / Noise Abatement Procedures*
  - Prior permission required for all transient aircraft
  - General Aviation provisions currently being negotiated by March ARB and March JPA

PLANNED FACILITY IMPROVEMENTS

- *Airfield*
  - Construct full-length west parallel taxiway for civilian use
  - Civilian fuel farm
- *Building Area*
  - Air cargo facilities expansion northeast and northwest of Runway 32 approach end
- *Property*
  - No fee acquisition planned

Exhibit 2–1

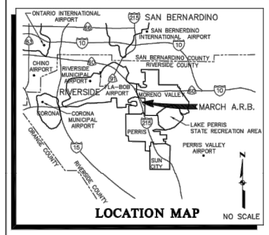
Airport Features Summary

March Air Reserve Base / Inland Port Airport

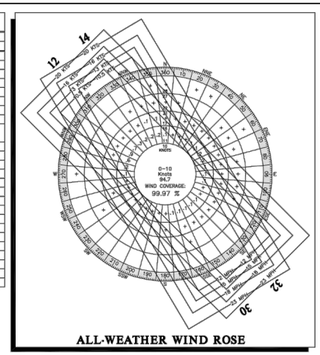
RUNWAY DATA

	RUNWAY 14–32 EXISTING	RUNWAY 14–32 FUTURE	RUNWAY 12–30* EXISTING
EFFECTIVE GRADIENT (IN %)	0.35	SAME	0.44
PAVEMENT STRENGTH (X 1000 LBS.)	65(S) 260(D) 175(ST) 530(DT)	SAME SAME SAME SAME	12.5(S) --- --- ---
PAVEMENT STRENGTH (PCN NO.)	47	SAME	---
RUNWAY LIGHTING	HIRL	SAME	NONE
RUNWAY MARKING	PRECISION	SAME	VISUAL
NAVAIDS, VISUAL AIDS	ILS(32) PAPI(14,32)	SAME	NONE
WIND COVERAGE % (20 Knots)	99.97	SAME	99.7
AIRPLANE DESIGN GROUP	V	VI	---
APPROACH CATEGORY (FAR PART 77)	NPI/PIR	SAME	VISUAL/VISUAL
APPROACH SURFACES	34:1/50:1	SAME	20:1/20:1
APPROACH VISIBILITY MINIMUMS	1 MI/CAT II	SAME	VISUAL/VISUAL
MAXIMUM ELEV. ABOVE MSL	1,535' (14)	SAME	1,515'(12)
RUNWAY LENGTH	13,300'	SAME	3,150'
RUNWAY WIDTH	300'	SAME	75'
RUNWAY AND TAXIWAY SURFACES	CONCRETE	SAME	ASPHALT
OBSTACLE FREE ZONE (OFZ) WIDTH	400'	SAME	---
OFZ LENGTH BEYOND RUNWAY END	200'	SAME	---
RUNWAY SAFETY AREA (RSA) WIDTH	500'	SAME	---
RSA LENGTH BEYOND RUNWAY END	1,000'	SAME	---
RUNWAY OBJECT FREE AREA (ROFA) WIDTH	800'	SAME	---
ROFA LENGTH BEYOND RUNWAY END	1,000'	SAME	---
RUNWAY CATEGORY	TRANSPORT	SAME	---

* RUNWAY 12–30 IS NOT USED FOR CIVILIAN OPERATIONS.



LOCATION MAP



ALL-WEATHER WIND ROSE

CROSSWIND COVERAGE

RUNWAY	10.5	13	16	20 (KTS)
12	32.07%	32.40%	32.68%	32.74%
14	32.61%	32.85%	33.11%	33.20%
30	69.21%	69.21%	69.66%	69.71%
32	68.48%	68.85%	69.09%	69.13%
12–30	98.80%	99.39%	99.85%	99.96%
14–32	98.72%	99.32%	99.83%	99.96%
COMBINED	99.02%	99.51%	99.90%	99.97%

Based on 76,725 observations between 1996 through 2005 taken at March ARB.

Source: National Climatic Data Center Ashville, NC

LAND CONVEYANCES

TYPE OF TRANSFER	TRANSFER NAME	PROPERTIES OR AREAS
A	AVIATION USE	EAST CIVILIAN AVIATION AREA
		WEST CIVILIAN AVIATION AREA
B	AVIATION USE	AIR MUSEUM AREA

BUILDING TABLE

#	DESCRIPTION	TOP ELEVATION
1	AIR MUSEUM	1,560'
2	AIR CARGO SORT FACILITY	1,522'
3	PHILLIPS CONSUMER ELECTRONICS	1,522'
4	GROUND HANDLING FACILITY	1,510'
5	PROPOSED FUEL FARM	1,525'

NOTES:
1. Existing facilities are from Tabs C–1 and E–10 by March Air Force Base.
2. All elevations given are NAVD 88. All coordinates are in California Coordinate System Zone 6 NAD 83.
3. Property within RPZs is owned by the Department of Defense in fee.
4. Building Restriction Line for east side area set at military Taxiway Clearance Line.
5. Topography for the March Inland Port east area based on aerial survey by The Keith Cos. in 1999.
6. All survey monuments are protected in concrete.
7. Top elevations noted in the Building Table are estimated.

AIRPORT DATA

		EXISTING	FUTURE
AIRPORT ELEVATION (Above MSL)		1,538'	SAME
AIRPORT REFERENCE POINT (ARP) COORDINATES (NAD 83)	LATITUDE	33°52'50.56" N	SAME
	LONGITUDE	117°15'32.03" W	SAME
MEAN MAX. TEMP. OF HOTTEST MONTH		94°F (AUGUST)	SAME
AIRPORT AND TERMINAL NAVAIDS		ILS,VORTAC	SAME
AIRPORT REFERENCE CODE		D–V	D–VI
AIRPORT WIND COVERAGE % (20 Knots)		99.97	SAME
MISCELLANEOUS FACILITIES		ATCT WIND CONES	SAME
AIRPORT TYPE		TRANSPORT	SAME
DESIGN AIRCRAFT		AN–124	SAME
GPS AT AIRPORT?		NO	YES

FAA APPROVAL

The preparation of this plan was financed in part through a grant from the Federal Aviation Administration as provided under Section 505 of the Airport and Airway Improvement Act of 1982, as amended. The contents do not necessarily reflect the official views or policy of the FAA. Acceptance of this plan by the FAA does not in any way constitute a commitment on the part of the United States to participate in any development depicted therein nor does it indicate that the proposed development is environmentally acceptable in accordance with appropriate public laws.

SPONSOR APPROVAL

APPROVED BY _____ NAME _____ DATE

True / Magnetic 12°52' E (MAY, 2006)

Annual Rate of Change: –5.0 min/year

600 0 300 600 1200 2400

SCALE IN FEET

APZ	Accident Potential Zone
ATCT	Air Traffic Control Tower
BRL	Building Restriction Line
D	Dual Wheel Gear
DT	Dual Tandem Wheel Gear
FAR	Federal Aviation Regulations
GS	Glide Slope
HIRL	High Intensity Runway Lights
ILS	Instrument Landing System
LOC	Localizer
MSL	Mean Sea Level
OFZ	Obstacle Free Zone
PAPI	Precision Approach Path Indicator
PCN	Pavement Classification Number
ROFA	Runway Object Free Area
RPZ	Runway Protection Zone
RSA	Runway Safety Area
S	Single Wheel Gear
ST	Single Tandem Wheel Gear
VORTAC	Very High Frequency Omnirange/ Tactical Air Navigation

ABBREVIATIONS

RUNWAY END DATA

RUNWAY		EXISTING	FUTURE
32	LATITUDE	33°51.9' N	SAME
	LONGITUDE	117°14.9' W	SAME
	ELEVATION	1488.3'	SAME
14	LATITUDE	33°53.8' N	SAME
	LONGITUDE	117°16.2' W	SAME
	ELEVATION	1,535.1'	SAME
30	LATITUDE	33°53.0' N	SAME
	LONGITUDE	117°15.1' W	SAME
	ELEVATION	1,501'	SAME
12	LATITUDE	33°53.4' N	SAME
	LONGITUDE	117°15.6' W	SAME
	ELEVATION	1,515'	SAME

LEGEND

	EXISTING	FUTURE
AIRFIELD PAVEMENT		
AIR FORCE BASE BOUNDARY		SAME
AIRPORT REFERENCE POINT (ARP)		SAME
MARCH JPA BUILDINGS		
EXPLOSIVES AREA		SAME
FENCE		SAME
GROUND CONTOURS	100	SAME
MILITARY APPROACH ZONE		SAME
MILITARY CLEAR ZONE		SAME
ROAD/VEHICLE PARKING		
RUNWAY CLEARANCE LINE		SAME
RUNWAY PROTECTION ZONE		SAME
RUNWAY SAFETY AREA	RSA	SAME
RUNWAY OBSTACLE FREE ZONE	OFZ	SAME
RUNWAY OBJECT FREE AREA	ROFA	SAME
BUILDING RESTRICTION LINE	BRL	SAME
CIVILIAN AVIATION AREA CONVEYANCES		SAME
SURVEY MONUMENT		SAME
SECTION CORNER		SAME

NO.	DATE	REVISION	BY	APP.
5	2/2007	Removed future parallel Taxiway A.	AWS	LMS
4	7/13/06	Revised ALP per FAA comments.	SLA	LMS
3	11/18/04	Added cargo hub site plan and aircraft parking per operator.	DPS	JAH
2	5/18/04	Depict existing CAT II ILS, proposed CDF, cargo, fuel, and other improvements.	DPS	JAH
1	4/3/97	Added Conveyance Information	SLA	CCB

AIRPORT LAYOUT PLAN

MARCH INLAND PORT MORENO VALLEY, CALIFORNIA

DMJM AVIATION | AECOM
600 Town and Country Road, 4th Floor
Orange, CA 92868
Tel: 714.648.3500
Fax: 714.286.0740

DESIGNED: AWS	CHECKED: SLA	SHEET 1 OF 1	
DRAWN: AWS	DATE: FEB. 2007		

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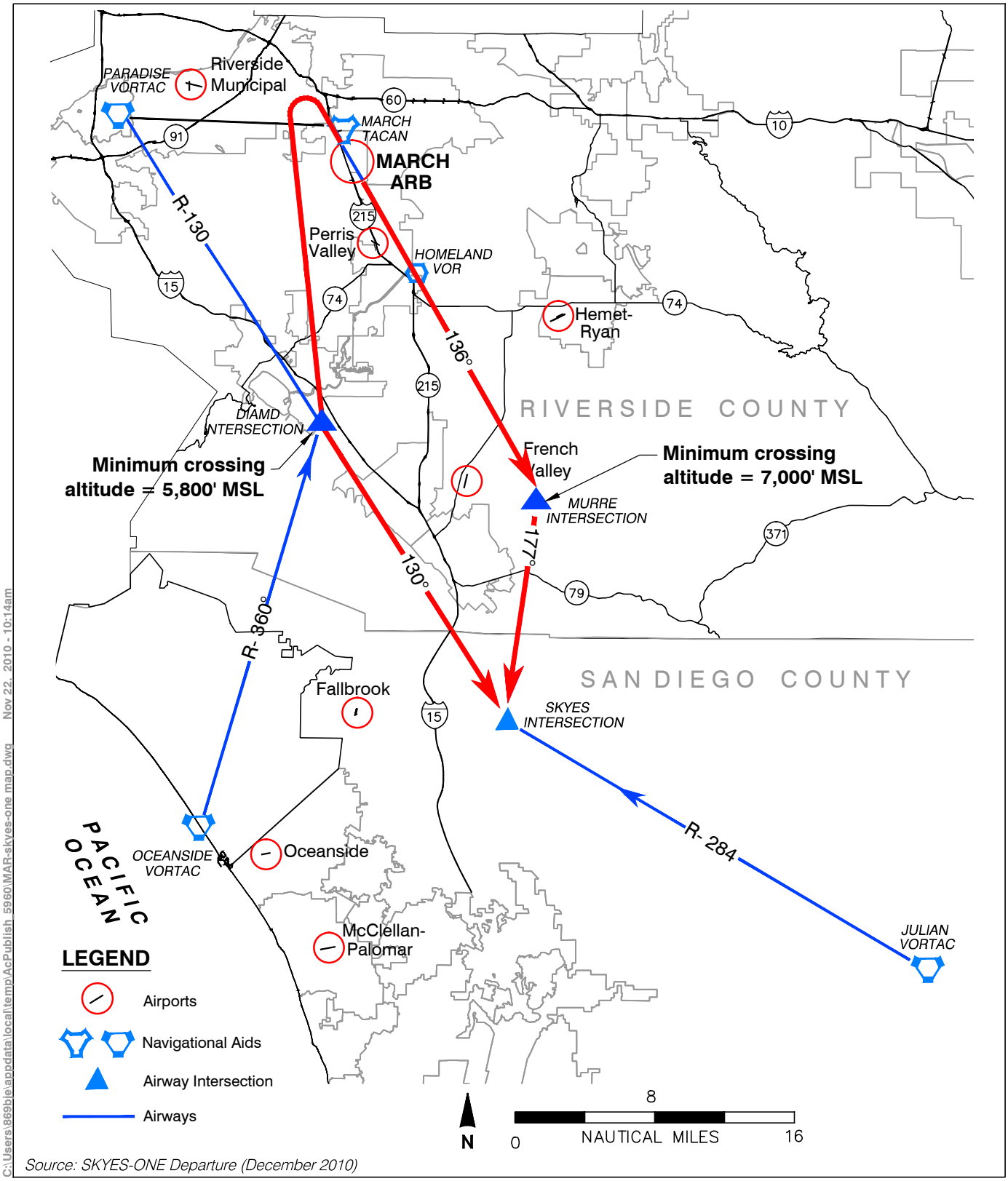
Exhibit 2-2

Airport Diagram

March Air Reserve Base / Inland Port Airport

Source: DMJM Aviation (May 2004)



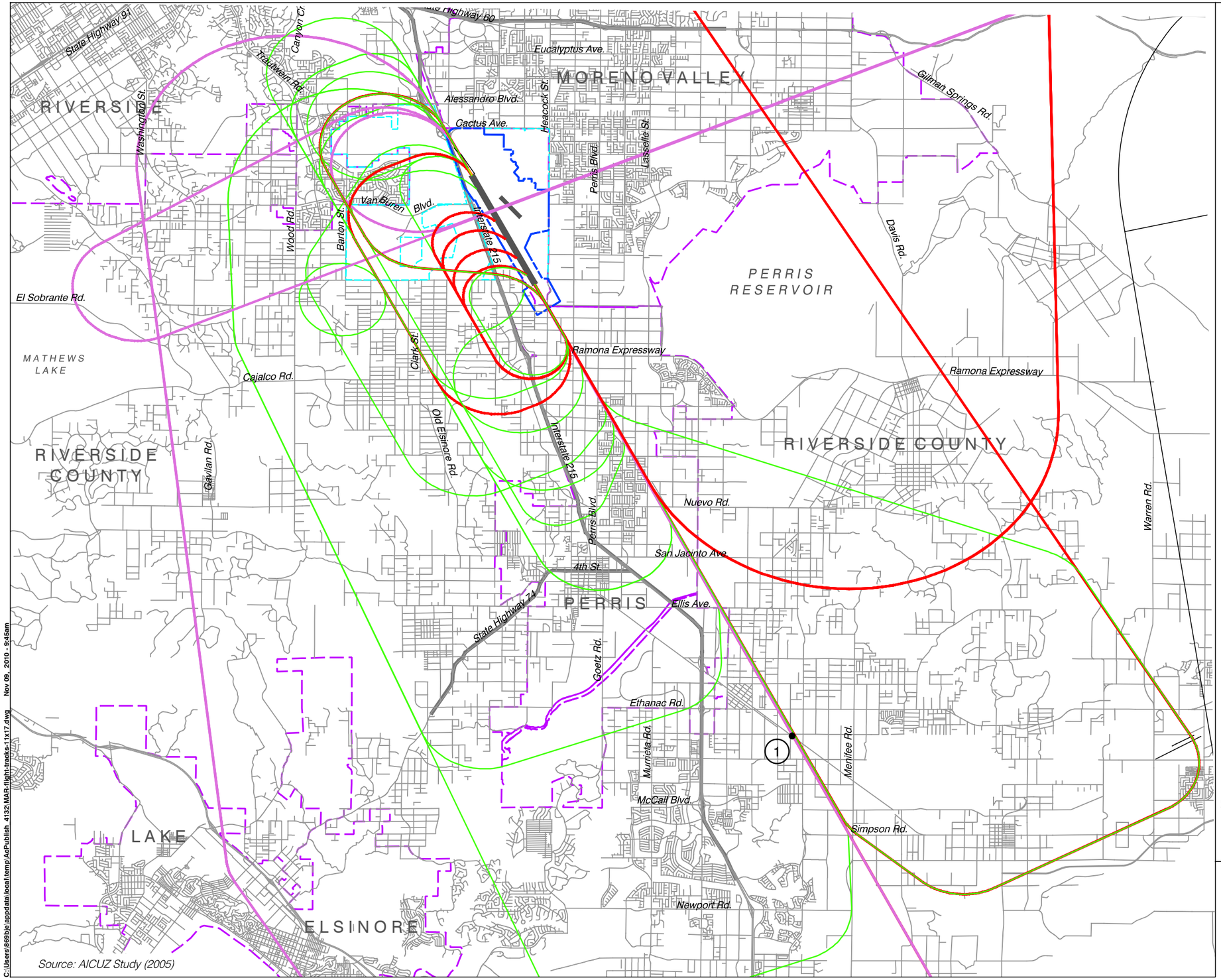
Source: SKYES-ONE Departure (December 2010)

C:\Users\869bie\appdata\local\temp\AcPublish_5960\MAR-skyes-one map.dwg Nov 22, 2010 - 10:14am

Exhibit 2-3

SKYES-ONE Departure Procedure

March Air Reserve Base / Inland Port Airport



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LEGEND

Flight Tracks

- Arrival
- Departure
- Closed Pattern

(1) Point at which aircraft on Runway 32 ILS approach descend below 3,000 feet above runway end. Airport Elevation is 1,535 feet MSL.

Boundary Lines

- March Air Reserve Base / Inland Port Airport
- March Joint Powers Authority Property Line
- City Limits

Source:

Flight tracks as depicted in Air Installation Compatible Use Zone Study for March Air Reserve Base (August 2005).

N

0 2 4 MILES

MILES

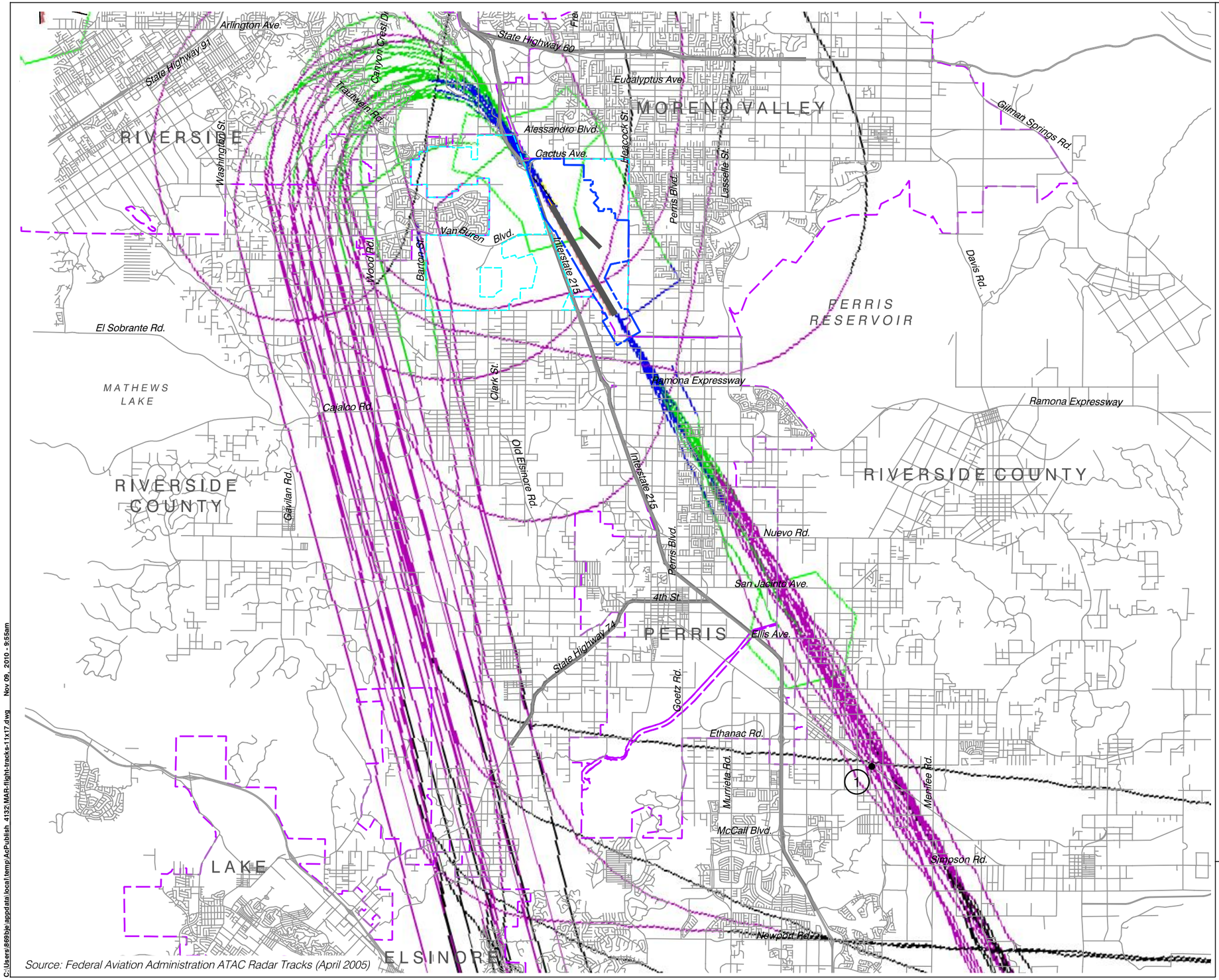
March Air Reserve Base / Inland Port Airport Joint Land Use Study

(December 2010)

Exhibit 2-4

Generalized Flight Tracks

March Air Reserve Base / Inland Port Airport



Source: Federal Aviation Administration ATAC Radar Tracks (April 2005)

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LEGEND

Altitudes*

0	---	1,000	**RED**
1,000	---	2,000	**YELLOW**
2,000	---	3,000	**BLUE**
3,000	---	4,000	**GREEN**
4,000	---	10,000	**PURPLE**
10,000	---	23,000	**BLACK**

(1) Point at which aircraft on Runway 32 ILS approach descend below 3,000 feet above runway end. Airport Elevation is 1,535 feet MSL.

Boundary Lines

March Air Reserve Base / Inland Port Airport

March Joint Powers Authority Property Line

City Limits

* Note

Airfield flight altitudes relate to mean sea level.

Flight tracks shown represent FAA radar data for departures from March ARB/IPA on selected Summer dates.

July 19, 21, and 22, 2004
August 12, 19, and 29, 2004
September 10, and 23, 2004

Source:

Flight tracks provided by Federal Aviation Administration ATAC Radar (April 2005).

N

0 2 4 MILES

MILES

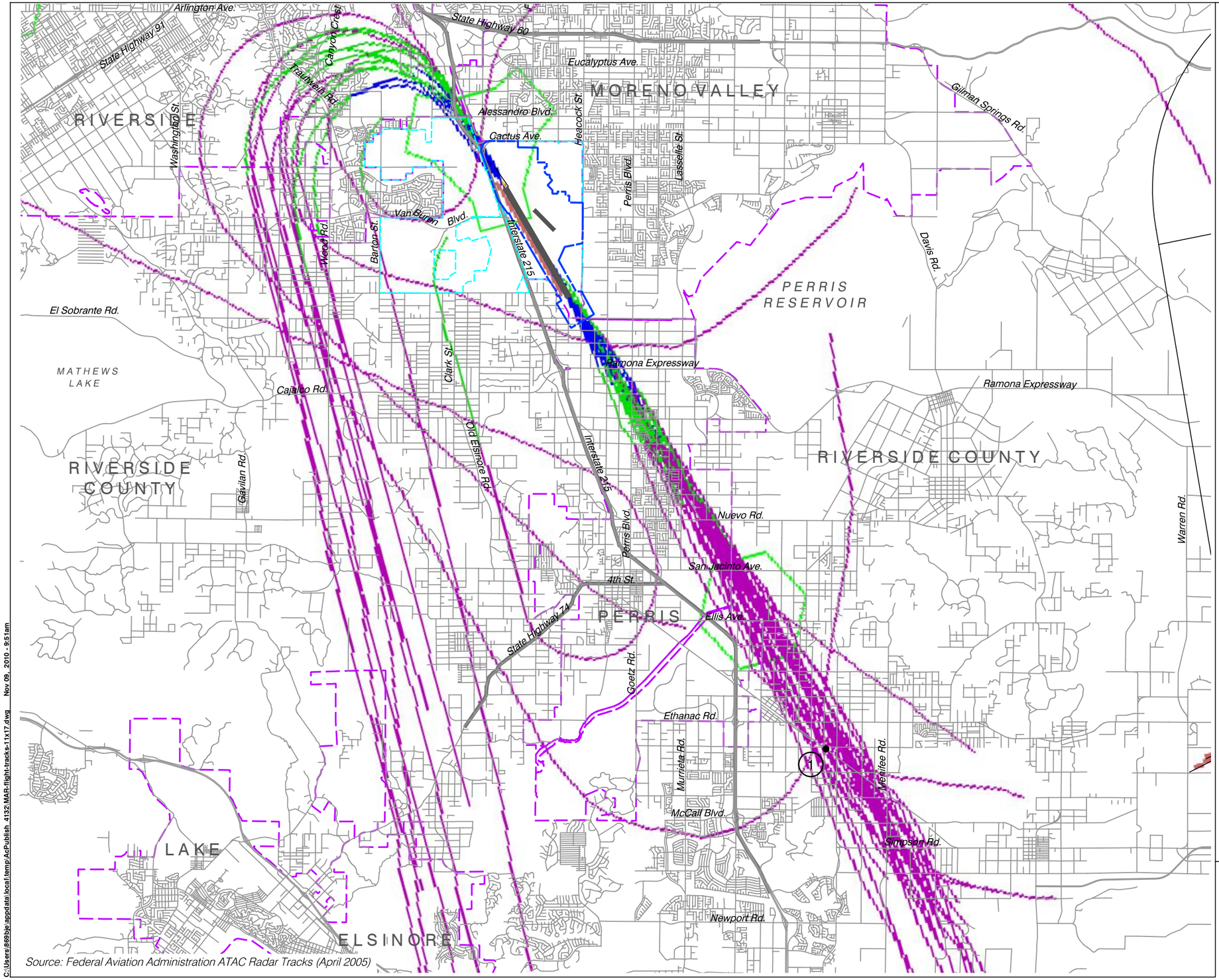
March Air Reserve Base / Inland Port Airport Joint Land Use Study

(December 2010)

Exhibit 2-5

Departure Flight Tracks (Summer)

March Air Reserve Base / Inland Port Airport



Source: Federal Aviation Administration ATAC Radar Tracks (April 2005)

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LEGEND

Altitudes*

0	---	1,000	**RED**
1,000	---	2,000	**YELLOW**
2,000	---	3,000	**BLUE**
3,000	---	4,000	**GREEN**
4,000	---	10,000	**PURPLE**
10,000	---	23,000	**BLACK**

(1) Point at which aircraft on Runway 32 ILS approach descend below 3,000 feet above runway end. Airport Elevation is 1,535 feet MSL.

Boundary Lines

- March Air Reserve Base / Inland Port Airport
- March Joint Powers Authority Property Line
- City Limits

* Note

Airfield flight altitudes relate to mean sea level.

Flight tracks shown represent FAA radar data for departures from March ARB/IPA on selected Winter dates.

December 9 and 14, 2004
February 3, 8, and 18, 2005
March 1, 16, and 21, 2005

Source:

Flight tracks provided by Federal Aviation Administration ATAC Radar (April 2005).

N

0 2 4 MILES

MILES

March Air Reserve Base / Inland Port Airport Joint Land Use Study

(December 2010)

Exhibit 2-6

Departure Flight Tracks (Winter)

March Air Reserve Base / Inland Port Airport

BASED AIRCRAFT [a]

	Current Mission	Future Mission
Aircraft Type		
KC-135 Tanker	10	no
C-17 Transport	8	change
F-16 Fighter/Attack	4	
UH-60 Helicopter	2	
Cessna	1	
Total	*25*	

AIRCRAFT OPERATIONS [a]

	Current Mission [b]	Future Mission [c]
Annual Operations [d]		
Military	33,637 [d]	44,860
Civilian	7,176	21,000
CalFire	0	3,740 [e]
Total Annual Operations	*40,813* [f]	*69,600*
Average Per Day	*181*	*305*
Distribution by Aircraft Type		
Military		*(64.4%)*
Transport	33.9%	29.3%
Fighter/Attack	5.0%	3.2%
Helicopter	3.5%	3.0%
Tanker	37.6%	27.3%
Contract Air Carrier	2.4%	1.6%
Aero Club	?? [d]	??
Civilian		*(30.2%)*
Commercial Cargo	0.0%	18.1%
Business Jet	0.0%	2.8%
Propeller (singles & twins)	0.0%	9.3%
CalFire	0.0%	5.4%
Distribution by Type of Operation		
Local Operations		
Military	50%	43%
Civilian	0%	0%
CalFire	—	0%
Itinerant Operations		
Military	50%	57%
Civilian	100%	100%
CalFire	—	100%

TIME OF DAY DISTRIBUTION [a]

	Current	Future
All Aircraft (Military & Civilian)		
Day (7:00a.m. – 7:00 p.m.)	72%	67%
Evening (7:00p.m. – 10:00p.m.)	13%	20%
Night (10:00 p.m. – 7:00a.m.)	15%	13%
Military Aircraft Only		
Day	77%	77%
Evening	13%	13%
Night	10%	10%
Civilian Aircraft Only (Commercial Cargo)		
Day	42%	37%
Evening	13%	35%
Night	45%	28%

RUNWAY USE DISTRIBUTION [a]

	Current	Future
All Aircraft – Day/Evening/Night		
Takeoffs & Landings		
Runway 14	10%	no
Runway 32	90%	change
Runway 12	Restricted Use	
Runway 30	Restricted Use	

FLIGHT TRACK USAGE [a]

Current and Future

- Departures, Runway 32
  - Aircraft make immediate left turn for southbound departure or left turn to eastbound departure.
- Approaches, Runway 32
  - Most aircraft enter wide right-traffic pattern from north
  - Straight in approach from the south
- Departures, Runway 14
  - Straight out departure
- Approaches, Runway 14
  - Aircraft use close in right traffic
- Closed Traffic Pattern
  - Departing Runway 32 use left traffic procedures
  - Departing Runway 14 use right traffic procedures

Notes

[a] Source: March ARB AICUZ Study (August 2005)

[b] "Current Mission" represents 2004 military and military-related contract carrier activity as itemized in the 2005 AICUZ Study plus anticipated civilian air cargo operations beginning late Autumn 2005.

[c] "Future Mission" is 2005 AICUZ projected activity for 2010, including both military and civilian aircraft operations. Per the Joint Use Agreement, civilian operations are capped at 21,000 annually, excluding CalFire. The March Operations Assurance Task Force (MOATF) has determined that this 69,600 annual operations projection is representative of a 20-year forecast for compatibility planning purposes.

[d] Air Force Aero Club operations on the secondary runway are not included in the AICUZ data.

[e] California Department of Forestry and Fire Protection no longer plans to establish a fire attack base at March ARB.

[f] Total activity level for CY 2006 equaled 34,230 operations: military 16,201; general aviation 13,421; and air carrier 4,608. This data is from air traffic control tower and includes Aero Club aircraft operations on the secondary runway. Unlike AICUZ data, the tower counts contract military transport operations as air carrier rather than military and Air Force Aero Club operations as general aviation.

Exhibit 2–7

Airport Activity Data Summary

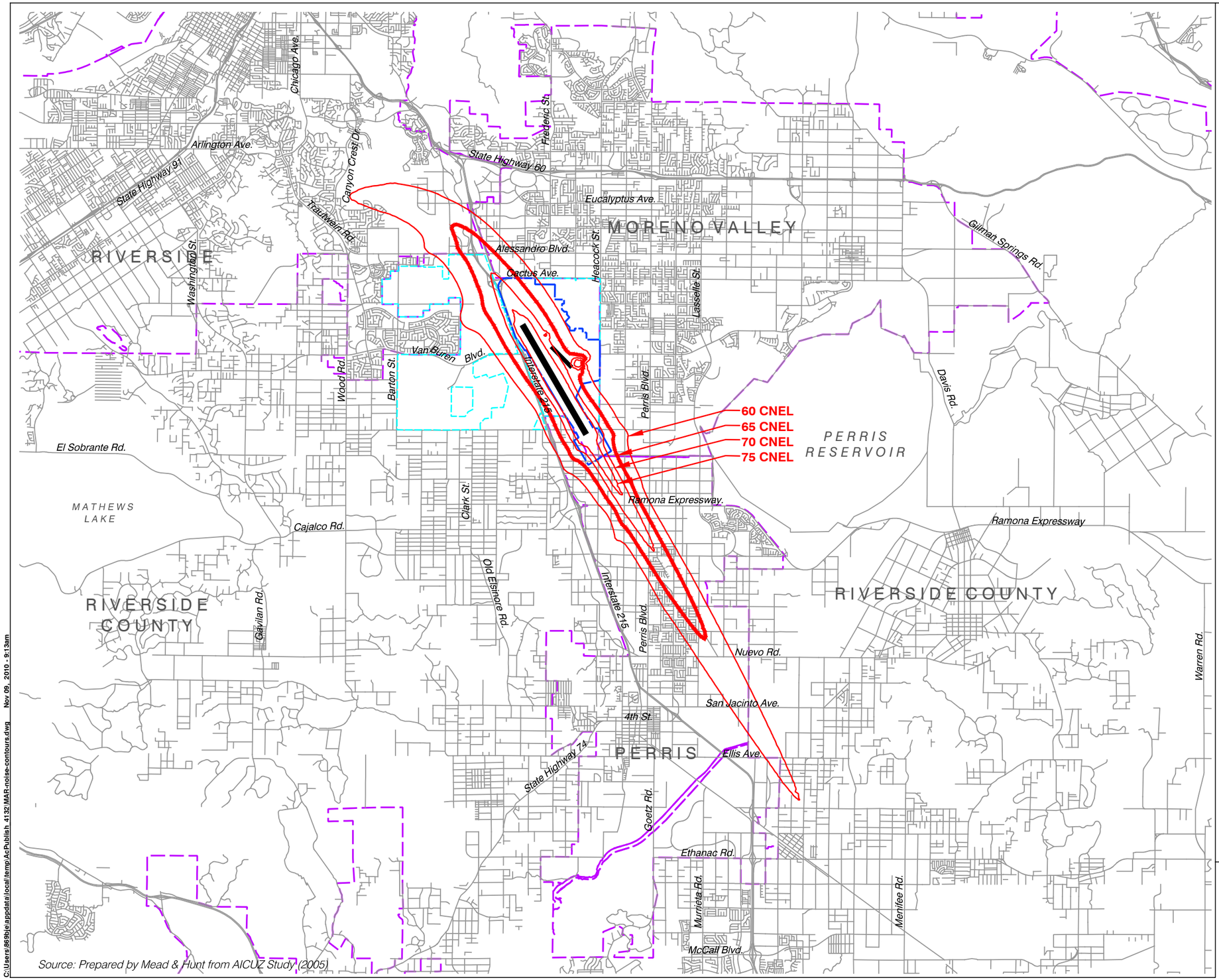
March Air Reserve Base / Inland Port Airport

Source	Operations			Comments
	Military	Civilian	Total	
March AFB Joint Use Feasibility Study (SCAG – 1997)				
2016 All-Cargo	40,950	33,945	74,895	All scenarios except first include passenger flights as well as air cargo
2016 Minimum Demand	40,950	41,913	82,863	
2016 Preferred Plan	40,950	56,581	97,531	
2016 Maximum Demand	40,950	84,455	125,405	
AICUZ Study (U.S. Air Force – 1998)				Civilian operations for air cargo only; no passenger service
Current and Forecast (no specific year)	40,396	21,000	61,396	
March Inland Port Air Cargo Development Plan (March JPA – 1999)				
2020 Low Growth Scenario	22,000	12,012	34,012	In all 3 scenarios, civilian operations are all-cargo only; no passenger service
2020 Moderate Growth Scenario	22,000	24,596	46,596	
2020 High Growth Scenario	22,000	58,344	70,344	
Joint Use Agreement (USAF and March JPA – 2001)				The same number is found in the Clean Air Act General Conformity Determination for joint use of the base
Authorized limits	40,396	21,000		
Regional Transportation Plan (SCAG – 2004)				Assumes 8.0 million annual passengers; air cargo operations not included
2030 Preferred Aviation Plan Forecast		132,519		
March Inland Port Ground Access Study (SCAG – 2004)				
2030 Constrained Forecast		46,720		2.0 million annual passengers + air cargo
2030 Preferred Forecast		198,560		8.0 million annual passengers + air cargo
AICUZ Study (U.S. Air Force – 2005)				
2010 Forecast	44,860	21,000	69,600	Total operations include 3,740 annual operations by California Department of Forestry
2008 Regional Transportation Plan Forecasts (SCAG – 2007)				
2035 Forecast				2.5 million annual passengers

Exhibit 2–8

Aircraft Operations Forecasts

March Air Reserve Base / Inland Port Airport



Source: Prepared by Mead & Hunt from AICUZ Study (2005)

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LEGEND

Noise Contours

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

2005 AICUZ Future Mission Average Annual Day*

Boundary Lines

- March Air Reserve Base / Inland Port Airport
- March Joint Powers Authority Property Line
- City Limits

Forecast (2010)*

Annual Operations	69,600
Average Annual Day	191

Source:
Forecasts and noise contours from Air Installation Compatible Use Study for March Air Reserve Base (August 2005).

*Note:
Forecast total operations reflect forecasted 2010 military mission plus 2010 forecast of civil activity.

N

0 2 4 MILES

MILES

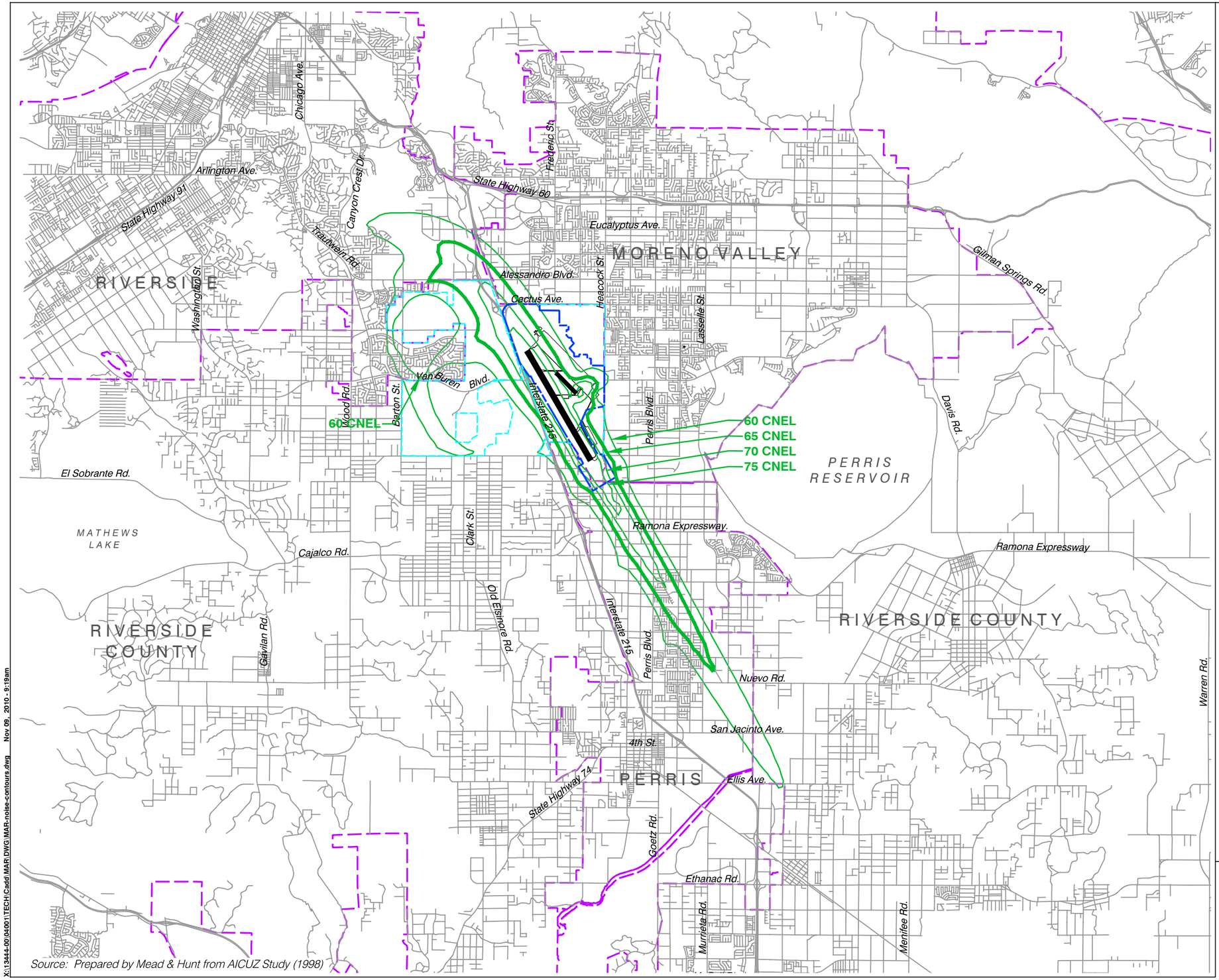
March Air Reserve Base / Inland Port Airport Joint Land Use Study

(December 2010)

Exhibit 2-9

Noise Contours (2005 AICUZ)

March Air Reserve Base / Inland Port Airport



Source: Prepared by Mead & Hunt from AICUZ Study (1998)

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LEGEND

Noise Contours

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

1998 AICUZ Forecast* Average Annual Day

Boundary Lines

- March Air Reserve Base / Inland Port Airport
- March Joint Powers Authority Property Line
- City Limits

Forecast (2010)*

Annual Operations	61,396
Average Annual Day	168

Source: AICUZ Study (1998)

Source:
Forecasts and noise contours from Air Installation Compatible Use Zone Study for March Air Reserve Base (1998).

*Note:
Forecast total operations reflect current and forecast military activity plus 2010 forecast of civil activity.

N

0 2 4 MILES

MILES

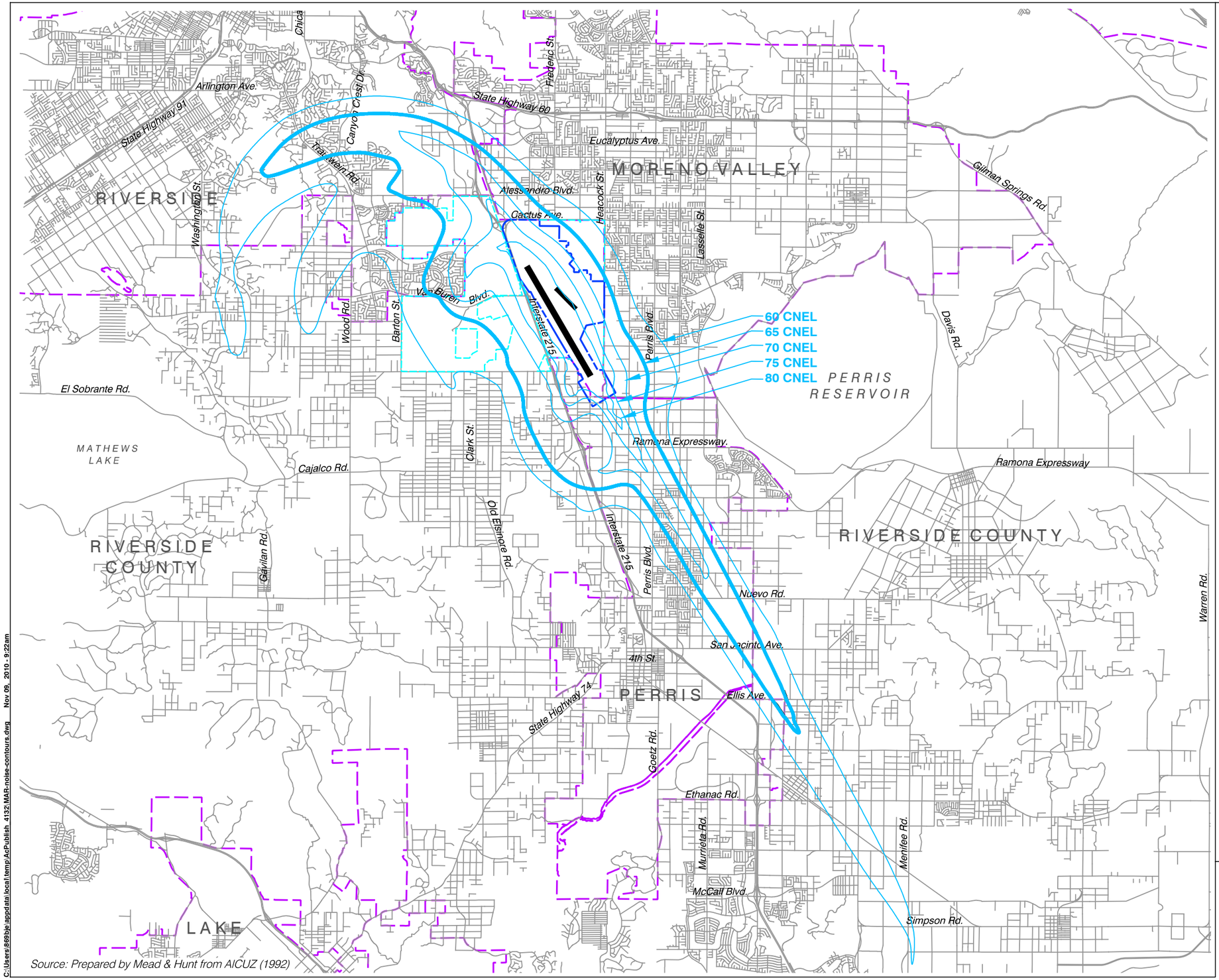
March Air Reserve Base / Inland Port Airport Joint Land Use Study

(December 2010)

Exhibit 2-10

Noise Contours (1998 AICUZ)

March Air Reserve Base / Inland Port Airport



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LEGEND

Noise Contours

- 60 dB CNEL
- 65 dB CNEL
- 70 dB CNEL
- 75 dB CNEL
- 80 dB CNEL

1992 AICUZ Projected* Average Annual Day

Boundary Lines

- March Air Reserve Base / Inland Port Airport
- March Joint Powers Authority Property Line
- City Limits

Projected*

Annual Operations	125,560
Average Annual Day	344

Source:
Forecasts and noise contours from Air Installation Compatible Use Zone Study for March Air Reserve Base (1992).

*Note:
The 1992 AICUZ indicates the average daily operations projected for the base after implementation of the Base Realignment and Closure (BRAC) then underway. Projected annual operations data is not provided in the AICUZ Study. The number shown here is estimated assuming 365 days of average daily operations.

N

0 2 4 MILES
MILES

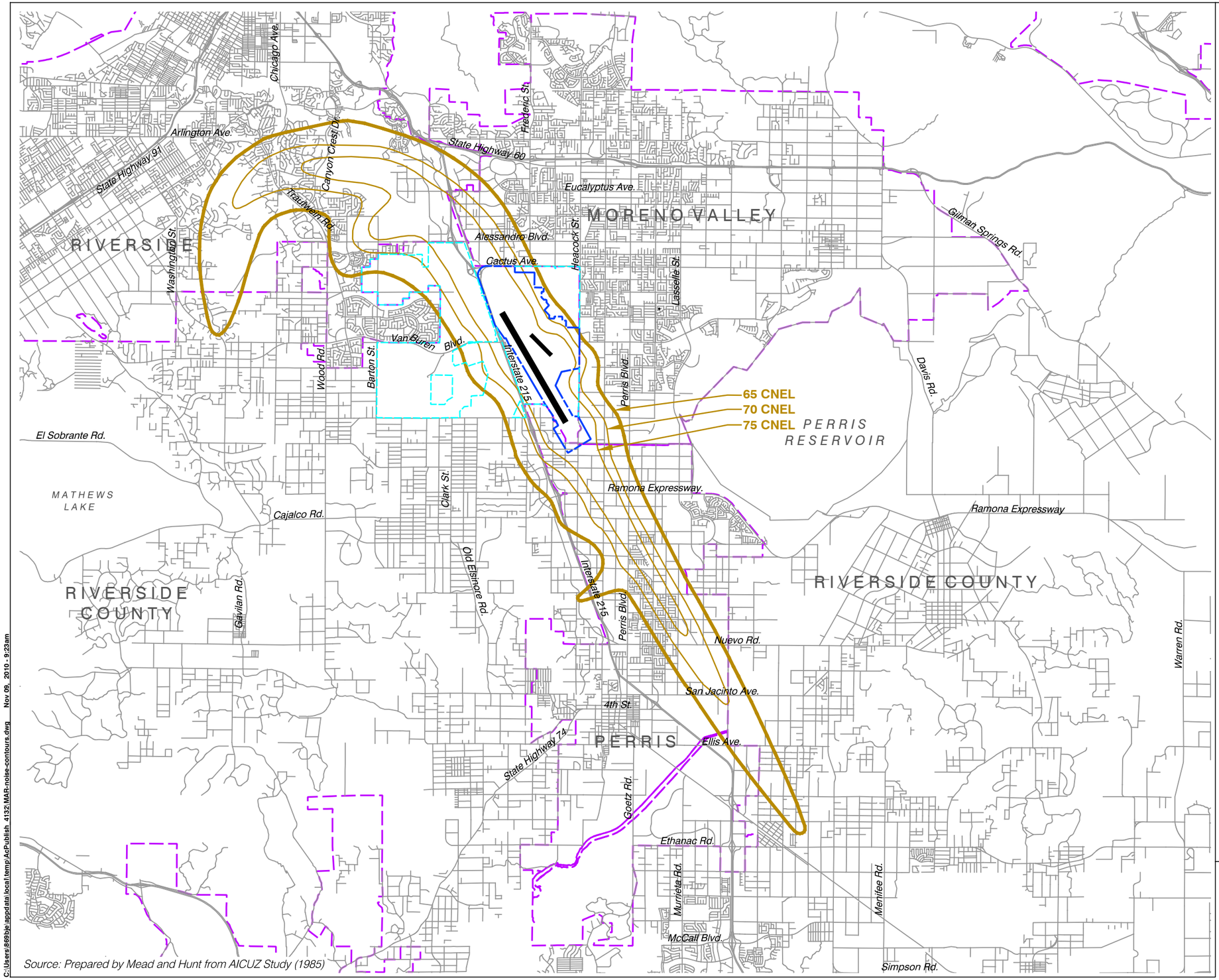
March Air Reserve Base / Inland Port Airport Joint Land Use Study

(December 2010)

Exhibit 2-11

Noise Contours (1992 AICUZ)

March Air Reserve Base / Inland Port Airport



Source: Prepared by Mead and Hunt from AICUZ Study (1985)

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LEGEND

Noise Contours

65 dB CNEL
70 dB CNEL
75 dB CNEL
} 1985 AICUZ Average Annual Day

Boundary Lines

- March Air Reserve Base / Inland Port Airport
- March Joint Powers Authority Property Line
- City Limits

Note:

1. When comparing with 2005 and 1998 AICUZ contours, note that this map does not depict a 60 dBCNEL contour.
2. Aircraft activity data used to generate 1985 AICUZ noise contours is not available.

Source:
Noise contours from Air Installation Compatible Use Zone Study for March Air Reserve Base (1985).

N

0 2 4 MILES

MILES

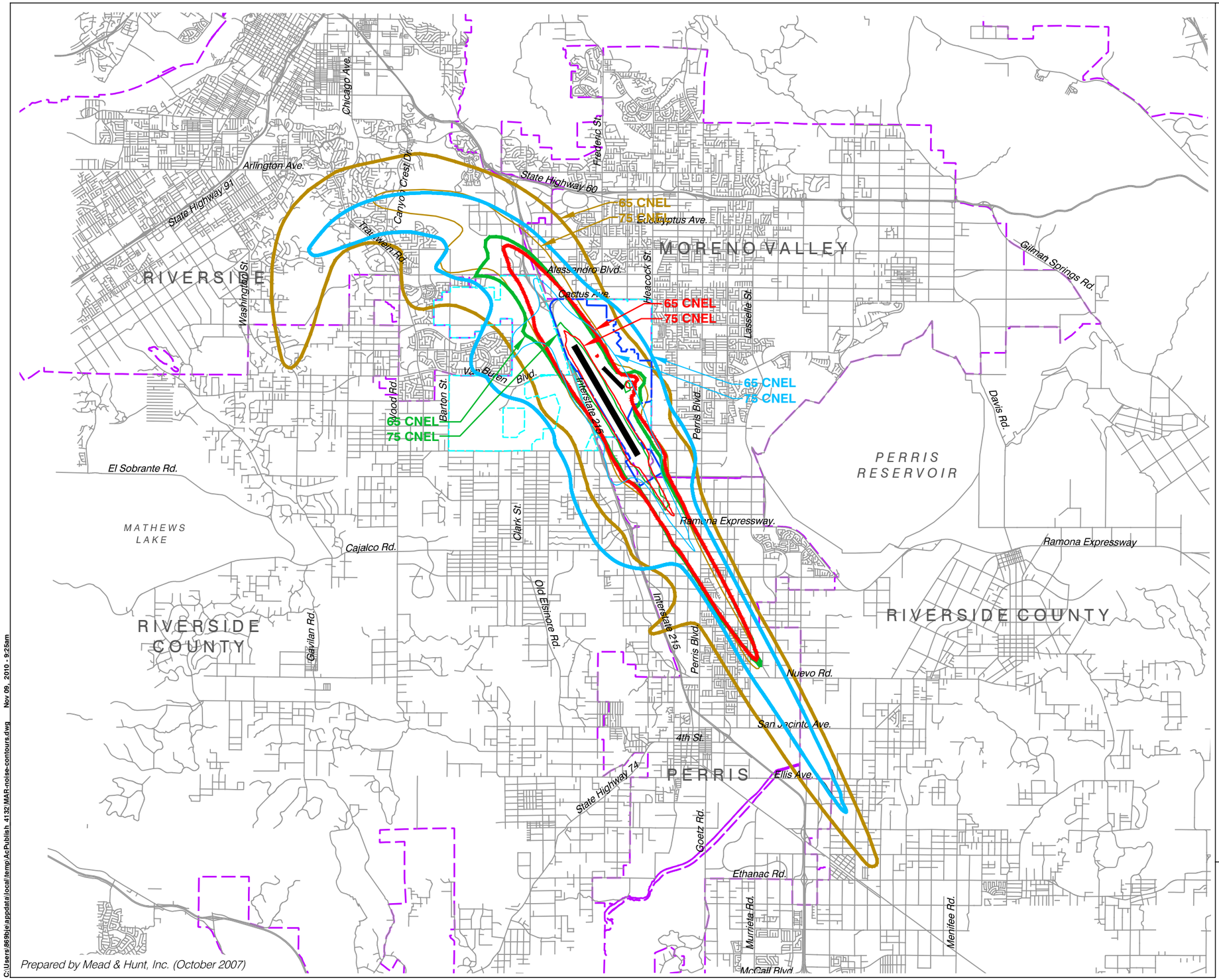
March Air Reserve Base / Inland Port Airport Joint Land Use Study

(December 2010)

Exhibit 2-12

Noise Contours (1985 AICUZ)

March Air Reserve Base / Inland Port Airport



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LEGEND

Noise Contours

- 65 dB CNEL / 75 dB CNEL — 2005 AICUZ
- 65 dB CNEL / 75 dB CNEL — 1998 AICUZ
- 65 dB CNEL / 75 dB CNEL — 1992 AICUZ
- 65 dB CNEL / 75 dB CNEL — 1985 AICUZ

Boundary Lines

- March Air Reserve Base / Inland Port Airport
- March Joint Powers Authority Property Line
- City Limits

Source:
Forecasts and noise contours from Air Installation Compatible Use Zone Study for March Air Reserve Base (years 1985, 1992, 1998, and 2005)

N

0 2 4 MILES

MILES

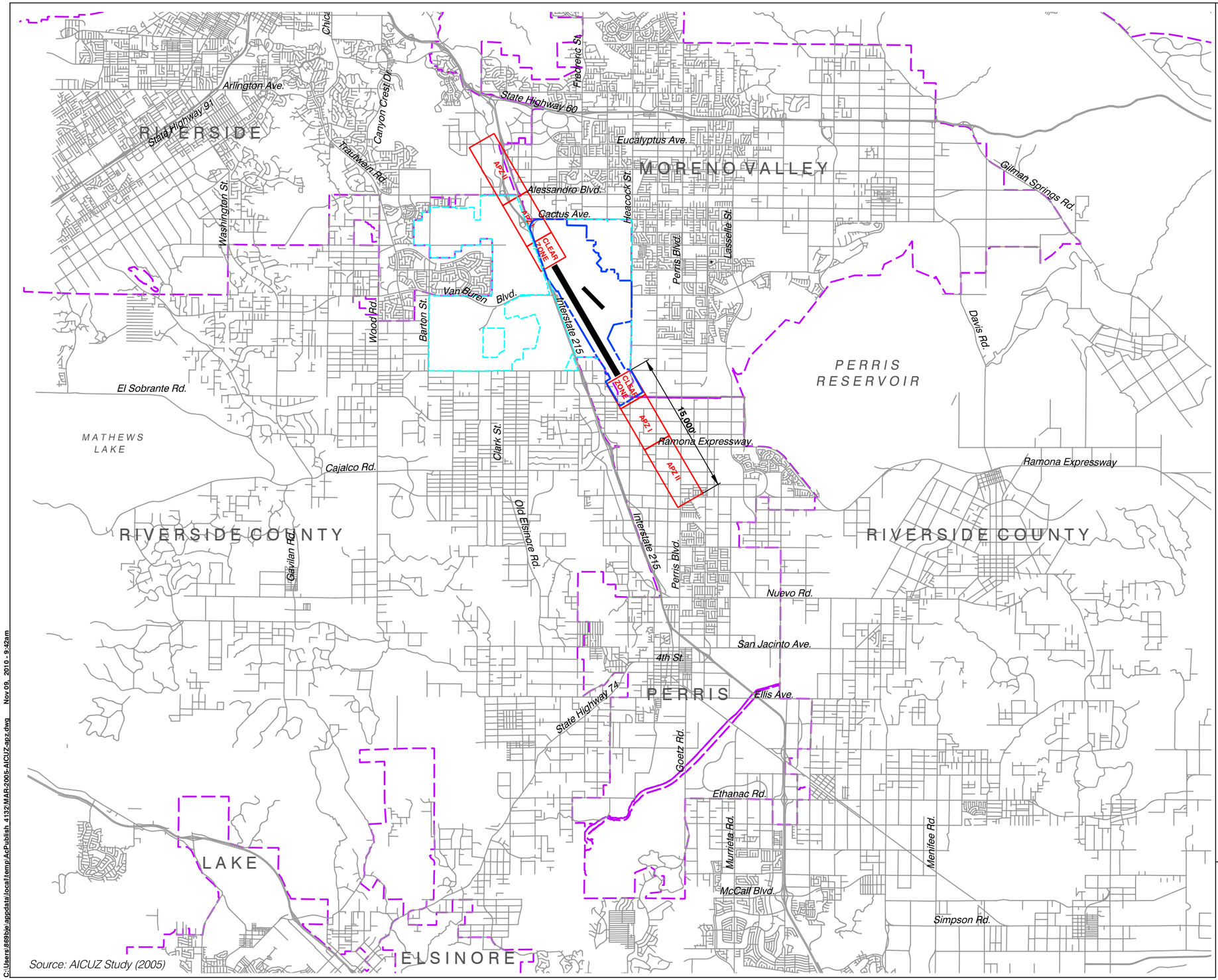
March Air Reserve Base / Inland Port Airport Joint Land Use Study

(December 2010)

Exhibit 2-13

Comparison of AICUZ Noise Contours

March Air Reserve Base / Inland Port Airport



Source: AICUZ Study (2005)

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LEGEND

CLEAR ZONE Clear Zone
APZ I Accident Potential Zone I
APZ II Accident Potential Zone II

Boundary Lines
- March Air Reserve Base / Inland Port Airport
- March Joint Powers Authority Property Line
- City Limits

Source:
Clear and Accident Potential Zones from Air Installation Compatible Use Zone Study for March Air Reserve Base (August 2005).

N

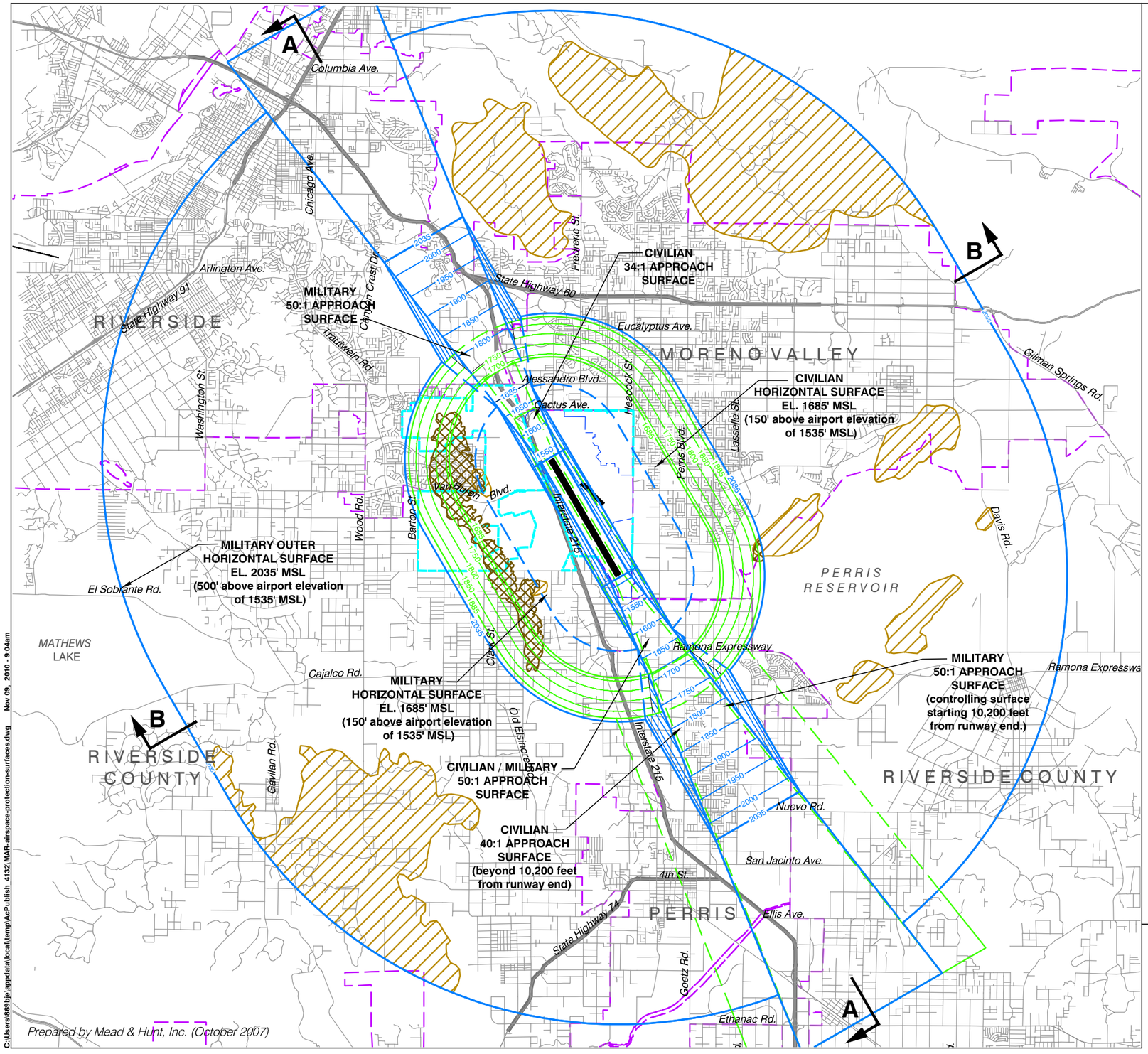
0 2 4 MILES
MILES

March Air Reserve Base / Inland Port Airport Land Use Study
(December 2010)

Exhibit 2-14

Accident Potential Zones

March Air Reserve Base / Inland Port Airport



LEGEND

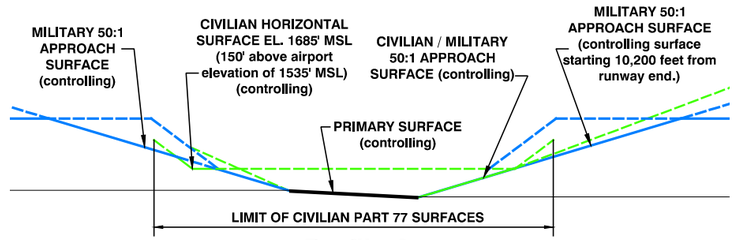
FAR Part 77

- Military Surfaces
- Civilian Surfaces

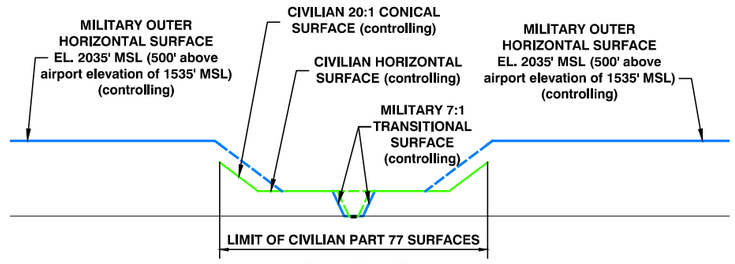
Dashed line indicates other set of surfaces is controlling

Terrain Penetration of FAR Part 77 Surfaces
- Military
- Civilian

Boundary Lines
- March Air Reserve Base / Inland Port Airport
- March Joint Powers Authority Property Line
- City Limits



Profile A



Profile B

Source:
Civilian airspace protection surfaces from March Air Force Base Joint Use Feasibility Study (January 1997). Military airspace protection surfaces from Air Installation Compatible Use Study for March Air Reserve Base (August 2005).

N

0 2 4 MILES

1"= 2 MILES

March Air Reserve Base / Inland Port Airport Joint Land Use Study

(December 2010)

Exhibit 2-15

Airspace Protection Surfaces

March Air Reserve Base / Inland Port Airport