

---

# **Citizen's Brochure**

## **for the**

### **452d Air Mobility Wing**

#### **Air Installation Compatible Use Zone Study**



**March Air Reserve Base, California**



**August 2005**

---

## **What is AICUZ?**

The Air Installation Compatible Use Zone (AICUZ) program concerns people, and their comfort, safety, and protection. This pamphlet briefly summarizes the 2005 March Air Reserve Base (ARB) AICUZ Study, an extensive analysis of the effects of aircraft noise, accident potential, and compatible land use and development upon present and future neighbors of the March ARB. The AICUZ program seeks a cooperative understanding and a reasonable solution to this intricate problem.

## **Is there a problem?**

Military airfields attract development to immediate surrounding areas. In the absence of compatible land use controls, inappropriate uses may be made of properties near or adjacent to the installation causing eventual conflicts between flight operations and surrounding landowners. Because land close to March ARB is subject to aircraft noise and accident potential, certain types of development are not suitable.

## **What has been done?**

The March ARB has attempted to be a good neighbor by restricting flying activities that could adversely affect its neighbors. For example, the majority of base-assigned aircraft flying operations are conducted between dawn and dusk, Monday through Saturday. Practice approach and departure operations are also normally conducted during these hours. However, flying operations are not limited to these flying times. In addition to the base-assigned aircraft, civilian and cargo aircraft operations are conducted by the March Joint Powers Authority and the California Department of Forestry. Civilian and cargo operations are conducted during the day, evening, and nighttime hours. Flight pattern altitudes and the runway approach angles have been adjusted over the years in an effort to reduce noise impacts while maintaining safe operations. The base has demonstrated a spirit of cooperation by participating with surrounding communities in the areawide planning process. Continued cooperation by the March ARB, local governments, and the local populace will further reduce the potential for land use conflicts. This action will help ensure that future land uses will be compatible and beneficial.

## **What are the benefits?**

In addition to protecting public safety and health, primary benefits include protecting the taxpayers' investment in national defense represented by March ARB, and protecting economic benefits to the surrounding communities generated by base activities and employment. March ARB's

expenditures for salaries, contracts, construction, retirement pay, tuition, aid to schools, health insurance payments, and off-base accommodations for travelers enhance the local economy. In 2004, March ARB employed nearly 9,167 people with an annual payroll of about \$153 million. Through service and construction contracts, including primary and secondary employment and payrolls, more than \$423 million enters the local economy. While shrinking budgets challenge the leadership at March ARB, the installation continues to be a strong partner in the economic future of the local communities.

## **Why AICUZ now?**

March ARB has recently been approved to base C-17 aircraft. Modifications to flight operations at March ARB have resulted in changes to the noise contours outlined in the 1998 AICUZ Study. Information provided in the 2005 AICUZ Study is intended to offer assistance to those planning the future of March ARB's adjacent townships. By using the updated noise modeling program and information provided by Base personnel and the March Joint Powers Authority, neighboring communities are better equipped to make land use decisions and adopt land use controls which are compatible with March ARB, yet able to accommodate growth.

## **What does AICUZ mean to me?**

The AICUZ program means protection of public safety and health as well as protection of the Air Force's national defense mission, which includes training pilots. The AICUZ program itself is a composite of many factors: average noise levels, aircraft flight paths and altitudes, and accident potential. The noise contour map identifies the clear zone and accident potential zones, as well as the noise zones in increments of 5 decibels (dB), ranging from a Community Noise Equivalent Level (CNEL) of 60 to 80 dBA. The noise zones depict the average sound levels for a particular area using a CNEL system for describing the noise environment. The accompanying Land Use/Aircraft Noise Compatibility Guidelines table provides a quick reference of compatible land uses for the various noise and accident potential zones around March ARB. More detailed information can be found in the updated March ARB AICUZ Study.

## **How can I help?**

Historically, the citizens of the cities of Riverside, Perris, and Moreno Valley; and Riverside County have worked with March ARB personnel in cooperative efforts to better serve the needs and desires of all parties concerned. March ARB

has collectively found solutions, which have maximized benefits to the local communities and to March ARB. If the future of March ARB is to be as bright as its past, you, the citizens of the cities of Riverside, Perris, and Moreno Valley; and Riverside County need to participate in the solution of our mutual concerns. We request your careful and considered review of the recommendations contained in the 2005 March ARB AICUZ Study. In brief, these recommendations include

- (a) The AICUZ Study should be adopted as an official guideline for future planning.
- (b) Zoning ordinances for local communities should be adopted, or modified, to reflect the compatible land uses outlined in the March ARB AICUZ Study.
- (c) Final development plans should have notices identifying the potential of aircraft overflight.
- (d) Fair disclosure ordinances should be enacted to specify disclosure to the public of those AICUZ items directly related to operations at March ARB.
- (e) Height control of structures near flight paths should be regulated by incorporation into zoning ordinances.
- (f) Comprehensive plans should include the land use recommendations of the AICUZ Study.
- (g) Subdivision regulations should provide for rejection of new subdivisions or developments not compatible with

AICUZ land use objectives and provide controls for continued development in existing subdivisions.

- (h) Building codes should be amended to require noise level reduction efforts for structures to be built in noise zones, where alternative locations are not an option.
- (i) Capital improvement programs should be carefully reviewed to discourage incompatible land use patterns, with particular emphasis on utility extension planning.

### Who prepared the AICUZ study?

The AICUZ Study was developed by many concerned people at March ARB. The complete AICUZ Study is available through the Public Affairs Office at March ARB. Only the major points of the complete AICUZ Study are included in this pamphlet.

### What are the compatibility guidelines?

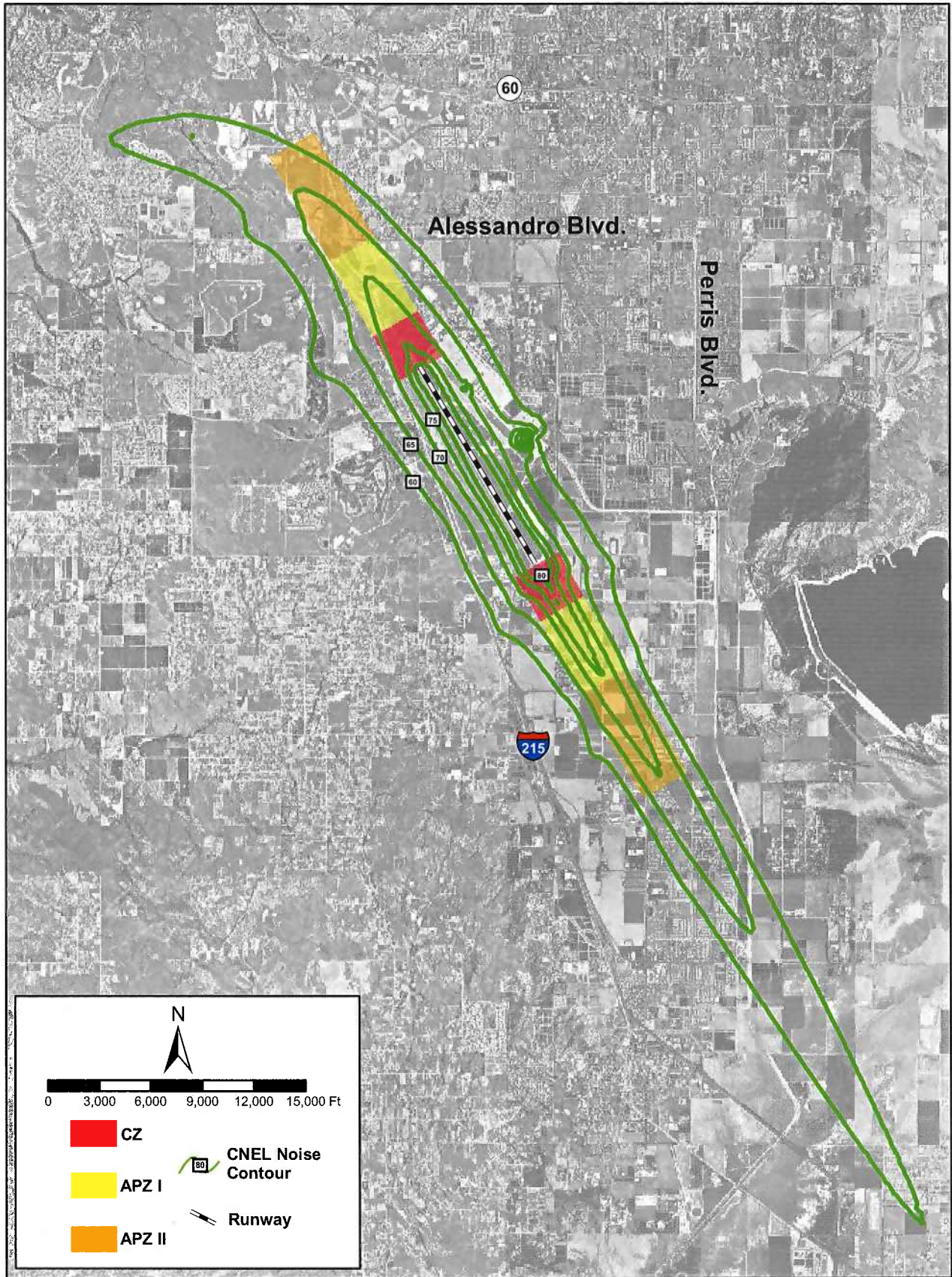
The following table lists the compatibility of various land uses with accident potential zones. A more comprehensive summary of land use compatibility with respect to aircraft noise and accident potential is included in Table 3-1 of the complete 2005 March ARB AICUZ Study.

**For further information, contact:  
March ARB Base Civil Engineer  
951-655-4851**

## Land Use/Accident Potential Zone Compatibility Guidelines

<i>Generalized Land Use</i>	<i>Clear Zone</i>	<i>APZ I</i>	<i>APZ II</i>
Residential	No	No	Yes <sup>1</sup>
Manufacturing	No	No <sup>2</sup>	Yes
Transportation, communications, and utilities	No <sup>3</sup>	Yes <sup>4</sup>	Yes
Trade, business, and offices	No	Yes <sup>2</sup>	Yes
Shopping districts	No	Yes <sup>2</sup>	Yes <sup>2</sup>
Public and quasi-public services	No	No	Yes <sup>5</sup>
Recreation	No	Yes <sup>6,7,8</sup>	Yes
Public Assembly	No	No	No
Agriculture and mining	No	Yes <sup>9</sup>	Yes

1. Suggested maximum density of 1–2 dwelling units per acre, possibly increased under a Planned Unit Development where maximum lot coverage is less than 20 percent.
2. Within each land use category, uses exist where further deliberating by local authorities could be needed due to the variation of densities in people and structures. Shopping malls and shopping centers are considered incompatible use in any accident potential zone (CZ, APZ I, or APZ II).
3. The placement of structures, buildings, or aboveground utility lines in the CZ is subject to severe restrictions. In a majority of the CZs, these items are prohibited. See Air Force Instruction 32-7060 and Air Force Joint Manual 32-8008 for specific guidance.
4. No passenger terminals and no major aboveground transmission lines in APZ I.
5. Low-intensity office uses only. Meeting places, auditoriums, and the like are not recommended.
6. Facilities must be low intensity.
7. Clubhouse not recommended.
8. Areas for gatherings of people are not recommended.
9. Factors to be considered: labor intensity, structural coverage, explosive characteristics, and air pollution.



**Forecast CNEL Noise Zones and Accident Potential Zones**

---

---

# Air Installation Compatible Use Zone Study

for

## March Air Reserve Base



### March Air Reserve Base, California



August 2005

---

---

## *Abbreviations and Acronyms*

163 ARW	163 Air Refueling Wing	IMC	Instrument Meteorological Conditions
452 AMW	452d Air Mobility Wing	IR	Instrument Route
AFCEE	Air Force Center for Environmental Excellence	KIAS	Knots Indicated Air Speed
AFRC	Air Force Reserve Command	MAJCOM	Major Command
AGL	above ground level	MJPA	March Joint Powers Authority
AICUZ	Air Installation Compatible Use Zone	MOA	Military Operations Area
APZ	Accident Potential Zone	Mph	miles per hour
ARB	Air Reserve Base	MSL	mean sea level
ATC	Air Traffic Control	MTR	Military Training Route
CAARNG	California Air National Guard	NM	nautical mile
CNEL	Community Noise Equivalent Level	NOAD	North American Air Defense
CZ	Clear Zone	NZ	Noise Zone
DB	decibel	PAA	Primary Authorized Aircraft
DBA	A-Weighted decibel	SEL	Sound Exposure Level
DNL	Day-Night Average A-Weighted Sound Level	SLUCM	Standard Land Use Coding Manual
DOD	Department of Defense	U.S.	United States
EA	Environmental Assessment	USAF	United States Air Force
FAA	Federal Aviation Administration	USEPA	United States Environmental Protection Agency
FAR	Federal Aviation Regulations	VFR	Visual Flight Rule
FHA	Federal Housing Authority	VMC	Visual Meteorological Conditions
FY	fiscal year	VR	Visual Route
HUD	Department of Housing and Urban Development		




**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE RESERVE COMMAND**

**MEMORANDUM FOR AREA GOVERNMENTS**

**FROM:** 452 AMW/CC  
2145 Graeber Street, Suite 117  
March ARB CA 92518-1667

**SUBJECT:** Air Installation Compatible Use Zone Study

1. The Department of Defense's Air Installation Compatible Use Zone (AICUZ) Program is intended to promote compatible land uses in nongovernment areas adjacent to military airfields. This AICUZ Study for March Air Reserve Base (ARB), Riverside County, California, is designed to aid in the development of local planning mechanisms that will protect public safety and health and preserve the mission and operational capabilities of March ARB.
2. The Study outlines the location of runway clear zones, aircraft accident potential zones, and noise contours. In addition, incompatible land uses are identified and compatible land use recommendations are provided for areas in the vicinity of the base. It is our hope that this information will be incorporated into your community plans, zoning ordinances, subdivision regulations, building codes, and other related documents, such as the *Joint Land Use Study (JLUS)*.
3. The basic objective of the AICUZ program is to achieve compatible uses of public and private lands in the vicinity of military airfields by controlling incompatible development through local actions. This AICUZ Study provides March ARB aircraft noise contours based upon the Day-Night Average A-weighted Sound Level (DNL) metric used by the U.S. Air Force and Community Noise Equivalent Level (CNEL) used by the State of California. It also provides the information necessary to maximize beneficial use of the land surrounding March ARB while minimizing the potential for degradation of the health and safety of the affected public.
4. We greatly value the positive relationship that March ARB has experienced with its neighbors over the years. As a partner in the process, we have attempted to minimize noise disturbances through such actions as avoiding flights over heavily populated areas and minimizing military night flights. In addition, March ARB has a working relationship with the community through the JLUS and the Joint Use Agreement between March ARB and the Joint Powers Authority. We solicit your cooperation in implementing the recommendation and guidelines presented in this AICUZ report.
5. This AICUZ study is being released with two sets of noise contours, which are based on Current (2005) and Forecast (2010) aircraft operations in both Day-Night Average A-Weighted Sound Level and Community Noise Equivalent Level noise metrics.



**JAMES T. RUBEOR, Brig Gen, USAFR**  
Commander

**AIR INSTALLATION COMPATIBLE USE ZONE STUDY  
FOR  
MARCH AIR RESERVE BASE**

---

---

**March Air Reserve Base, California**

**PREPARED BY**

**ENGINEERING-ENVIRONMENTAL MANAGEMENT, INC.  
510 EAST RAMSEY  
SAN ANTONIO, TEXAS 78216**

**AUGUST 2005**



**AIR INSTALLATION COMPATIBLE USE ZONE STUDY  
FOR MARCH AIR RESERVE BASE, CALIFORNIA**

**CONTENTS**

<u>SECTION</u>	<u>PAGE</u>
ACRONYMS AND ABBREVIATIONS .....	INSIDE FRONT COVER
<b>1. AIR INSTALLATION COMPATIBLE USE ZONE STUDY .....</b>	<b>1-1</b>
1.1 Introduction .....	1-1
1.2 Purpose and Need .....	1-1
1.3 Process and Procedure .....	1-2
<b>2. INSTALLATION DESCRIPTION .....</b>	<b>2-1</b>
2.1 Mission .....	2-1
2.2 Location .....	2-2
2.3 Economic Impact .....	2-2
2.4 Flying Activity .....	2-5
<b>3. LAND USE COMPATIBILITY GUIDELINES .....</b>	<b>3-1</b>
3.1 Introduction .....	3-1
3.2 Land Use Compatibility .....	3-4
3.3 Participation in the Planning Process .....	3-4
<b>4. LAND USE ANALYSIS .....</b>	<b>4-1</b>
4.1 Introduction .....	4-1
4.2 Existing Land Use .....	4-1
4.3 Current Zoning .....	4-7
4.4 Incompatible Land Uses .....	4-8
4.4.1 Noise Zones .....	4-8
4.4.2 Accident Potential Zones .....	4-8
4.4.3 Planning Considerations .....	4-12
<b>5. POTENTIAL FUTURE MISSIONS .....</b>	<b>5-1</b>
5.1 Forecasted Mission .....	5-1
5.2 Land Use Controls .....	5-10
5.2.1 Compatible Zoning .....	5-10
5.2.2 Building Code Modifications .....	5-12
5.2.3 Avigation Easements .....	5-13
<b>6. IMPLEMENTATION .....</b>	<b>6-1</b>
6.1 U.S. Air Force Responsibilities .....	6-1
6.2 Local Community Responsibilities .....	6-2
<b>7. REFERENCES .....</b>	<b>7-1</b>

**APPENDICES**

- A – AICUZ CONCEPT, PROGRAM, METHODOLOGY, AND POLICIES**
- B – CLEAR ZONES AND ACCIDENT POTENTIAL ZONES**
- C – DESCRIPTION OF THE NOISE ENVIRONMENT**
- D – HEIGHT OBSTRUCTION CRITERIA**

**FIGURES**

<b><u>FIGURE</u></b>	<b><u>PAGE</u></b>
2-1. Location of March ARB .....	2-3
2-2. March ARB Main Airfield.....	2-4
2-3. March ARB Flight Tracks – Departures.....	2-10
2-4. March ARB Flight Tracks – Arrivals .....	2-11
2-5. March ARB Flight Tracks – Closed-Patterns .....	2-12
2-6. Federal Aviation Administration Controlled Airspace Classifications .....	2-14
2-7. Local Controlled Airspace in Vicinity of March ARB.....	2-17
3-1. Current DNL Noise Zones and Accident Potential Zones.....	3-2
3-2. Current CNEL Noise Zones and Accident Potential Zones .....	3-3
4-1. Existing Land Use with Current DNL Noise Zones in the Vicinity of March ARB .....	4-5
4-2. Existing Zoning with Current DNL Noise Zones in the Vicinity of March ARB.....	4-6
4-3. Land Use Compatibility Based on Current DNL Noise Zones .....	4-9
4-4. Land Use Compatibility Based on Accident Potential Zones.....	4-10
5-1. Forecast DNL Noise Zones and Accident Potential Zones .....	5-8
5-2. Forecast CNEL Noise Zones and Accident Potential Zones .....	5-9
5-3. Land Use Compatibility Based on Forecast DNL Noise Zones .....	5-11

**TABLES**

<b><u>TABLE</u></b>	<b><u>PAGE</u></b>
2-1. FY 2004 Economic Impact of March ARB .....	2-2
2-2. Race and Poverty Characteristics in Riverside County, the State of California, and the U.S.....	2-5
2-3. Summary of Current Airfield Operations .....	2-7
3-1. Land Use Compatibility.....	3-5
4-1. Land Use Acreage within Current DNL Noise Zones .....	4-3
4-2. Land Use Compatibility Based on Current DNL Noise Zones .....	4-4
4-3. Land Use Compatibility Based on Accident Potential Zones.....	4-11
5-1. Summary of Forecast Airfield Operations.....	5-2
5-2. Land Use Acreage within Forecast DNL Noise Zones.....	5-7
5-3. Land Use Compatibility based on Forecast DNL Noise Zones.....	5-12

# 1. Air Installation Compatible Use Zone Study

## 1.1 Introduction

The Air Installation Compatible Use Zone (AICUZ) Study is an update to the 1998 March Air Reserve Base (ARB) AICUZ Study. This update presents the Current (2005) and Forecast (2010) noise contours produced by aircraft operations at March ARB. This AICUZ Study reaffirms the United States (U.S.) Air Force (USAF) policy of promoting public health, safety, and general welfare in areas surrounding USAF installations. It provides compatible use Guidelines for land use areas around the base. This information is provided to assist local communities in future planning and zoning activities. Differences between the Current and Forecast noise contours are attributable to

- Changes in flight operations and aircraft for mission purposes
- Proposed changes in Joint Powers Authority Commercial and Cargo Aircraft Operations
- Technical improvements to the NOISEMAP software program, (used for calculating the noise contours)

## 1.2 Purpose and Need

The purpose of the USAF AICUZ program is to promote compatible land development in areas exposed to aircraft noise and accident potential. As neighboring cities and counties prepare and modify their land use development plans, recommendations from this updated AICUZ Study should be considered in their planning process to prevent incompatibilities that might compromise March ARB's ability to fulfill its mission requirements and assist the residents of the cities of Moreno Valley, Riverside, and Perris; and the County of Riverside to avoid safety hazards. Accident potential and aircraft noise should be major considerations in their planning processes.

Land use guidelines set forth in the USAF AICUZ program reflect land use recommendations for clear zones (CZs), accident potential zones (APZs) I and II, and applicable noise zones (NZs). These guidelines have been established on the basis of studies prepared and sponsored by the USAF, U.S. Department of Housing and Urban Development (HUD), U.S. Environmental Protection Agency (USEPA), Federal Aviation Administration (FAA), Federal Housing Authority (FHA), and state and local agencies. The guidelines recommend land uses that are compatible with airfield operations while allowing maximum beneficial use of adjacent

properties. This study contains recommendations developed to assist local governments in determining land uses that are compatible with airport environs.

### **1.3 Process and Procedure**

A project kick-off meeting and data collection site visit for this document were conducted at March ARB from September 29 through October 1, 2003. The purpose of the site visit was to collect information and verify the average daily operations at the airfield for aircraft operations and maintenance data by aircraft type. Data were provided according to flight track (where they fly), flight profile (how they fly), and ground run-up (engine maintenance activities).

The AICUZ program uses approved computer modeling technology (NOISEMAP 6.5) to define noise levels in areas near USAF installations. An analysis was conducted of all flying operations (i.e., military, commercial, civilian) conducted at March ARB, including types of aircraft, flight patterns used, variations in altitude, power settings, number of operations, and hours of operation. An operation is defined as any takeoff (departure), landing (arrival), or individual climbout and descent portion of a closed pattern such as a touch-and-go or missed approach. This information was used to develop the noise contours contained in this study. The Department of Defense (DOD) NOISEMAP methodology, the Day-Night Average A-Weighted Sound Level (DNL) metric, and Community Noise Equivalent Level (CNEL) metric used by the State of California were used to define the NZs for March ARB.

After verification of accuracy, data were entered into the NOISEMAP 6.5 software program and converted into DNL and CNEL noise contours. Flight operations were distributed on flight tracks based on a primary wind direction, personnel interviews, and aircraft destination. Appendix A contains detailed information about the AICUZ program. Noise contours and AICUZ maps presented in Sections 3 and 4 of this study are based on both the current (2005) aircraft operations and forecasted (2010) aircraft operations. As such, the Current Scenario and Forecast Scenario are presented in this document.

