COMPREHENSIVE LAND USE PLAN

SOUTHERN CALIFORNIA LOGISTICS AIRPORT

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COMPREHENSIVE LAND USE PLAN

SOUTHERN CALIFORNIA LOGISTICS AIRPORT
Victorville, California

Final Report

Prepared By
COFFMAN ASSOCIATES, INC.

September 2008

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Victorville, California

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INTRODUCTION

BACKGROUND

The most recent Comprehensive Land Use Plan for the Southern California Logistics Airport (SCLA) was prepared in April 1996, and revised in July 1999. Since that time, the California Department of Transportation (Caltrans) Division of Aeronautics published an updated *Airport Land Use Planning Handbook* in January 2002. The *Handbook* provides compatibility planning guidance to those jurisdictions having influence over airport area land uses. Previous editions of the *Handbook* presented the information as suggestions and recommendations; however, with the passage of legislation in 1994, the tone of the document changed to be more definitive in nature, reflecting the more conservative opinion of the Division of Aeronautics.

PURPOSE AND SCOPE

The Comprehensive Land Use Plan for SCLA is intended to protect and promote the safety and welfare of airport users, residents, and visitors to the Cities of Victorville and Adelanto, while promoting the continued operation of the airport. Specifically, the plan seeks to protect the public from the adverse effects of aircraft noise, to ensure that people and facilities are not concentrated in areas susceptible to aircraft crashes, and to ensure that no structures or activities encroach upon or adversely affect the use of navigable airspace.

Implementation of this plan will promote compatible use of land and restrict incompatible development in the

vicinity of SCLA, thus allowing for the continued operation of the airport. Four elements of compatibility are considered in this plan:

- Compatibility of surrounding land uses with respect to aircraft noise;
- Compatibility of surrounding land uses considering the safety of persons on the ground, as well as those aboard aircraft, in the event of an aircraft accident;
- Protection of airspace needed for safe air navigation near the airport; and
- General concerns pertaining to aircraft overflight.

Careful consideration of these four elements will yield a plan that will promote safety and land use compatibility in the area surrounding SCLA.

Legal Authority

In 1967, the California State Legislature enacted airport land use laws mandating the creation of Airport Land Use Commissions (ALUCs) to assist local agency land use compatibility efforts.

In 1993, Senate Bill 443 modified the law making the establishment of an ALUC permissive rather than mandatory. As a result, San Bernardino County, after consultation with all cities affected by airports, disbanded the ALUC per Resolution 93-295, effective as of November 18, 1993. However, in 1994, Assembly Bill 2831 was enacted which, effective January 1, 1995, reinstated the requirement that to address the potential for land use conflicts, each County in which there is an airport operated for the benefit of the general public establish either (1) an ALUC; (2) a designated agency to act as the ALUC; or (3) an alternative process with a designated responsible agency or agencies.

San Bernardino County and the Cities of Adelanto and Victorville have adopted resolutions supporting the establishment of an alternative process, where each local agency affected by the SCLA will serve as the responsible agency for projects within their jurisdiction. The City of Victorville has the responsibility of preparing the Comprehensive Land Use Plan. Additionally, Victorville is responsible for coordinating the adoption of the plan by other affected jurisdictions.

Role of the Responsible Agencies

Section 21675 of the Public Utilities Code requires that the Airport Land Use Commission, or in this case the responsible agencies, develop a comprehensive land use plan for nearly all public use airports in the state. The *Handbook* states, "Compatibility plans are the fundamental tool used by airport land use commissions in fulfilling their purpose of promoting airport land use compatibility." There are two purposes for the comprehensive land use plan specified in Section 21674(a):

- To "provide for the orderly growth of each public use airport and the area surrounding the airport with-

in the jurisdiction of the commission..."

- To "safeguard the general welfare of the inhabitants within the vicinity of the airport and the public in general."

Pursuant to resolutions 95-81, 95-26, and 95-46 adopted by the County of San Bernardino, the City of Adelanto, and the City of Victorville, respectively, the agency responsible for the preparation, adoption, and amendment of this Comprehensive Land Use Plan is the local jurisdiction that contains the airport within its boundaries, in cooperation with adjacent impacted jurisdictions (copies of these resolutions can be found in **Appendix A**). As a result, in accordance with these prepared resolutions and Public Utilities Code 21670.1(c)(2), the City of Victorville, with the assistance of Coffman Associates, Inc., has prepared this plan. In addition to the requirement for adopting this process, the Public Utilities Code also requires the County and the appropriate affected cities to do the following:

1. Adopt processes for the notification of the general public, landowners, interested groups, and other public agencies regarding the preparation, adoption, and amendment of comprehensive land use plans.

2. Adopt processes for the mediation of disputes arising from the preparation, adoption, and amendment of comprehensive land use plans.

3. Adopt processes for the amendment of general and specific plans to be consistent with comprehensive land use plans.

Section 21676 requires that local general plans conform with the ALUC's comprehensive land use plan and grants the ALUC the authority to review amendments to general plans, specific plans, zoning amendments, and building regulations that apply within the airport planning boundary.

Airport Land Use Planning Area

This Comprehensive Land Use Plan has been prepared for development in the area surrounding SCLA. It has been prepared consistent with federal and state law and is the primary airport land use compatibility document for the planning area illustrated in **Exhibit 1A**.

In accordance with Public Utilities Code 21675(A), this plan regulates the use of land in the SCLA environs to ensure compatibility by specifying land use, establishing height restrictions for structures, requiring noise attenuation in certain structures, as well as utilizing avigation easements.

About the Phase 2 Report

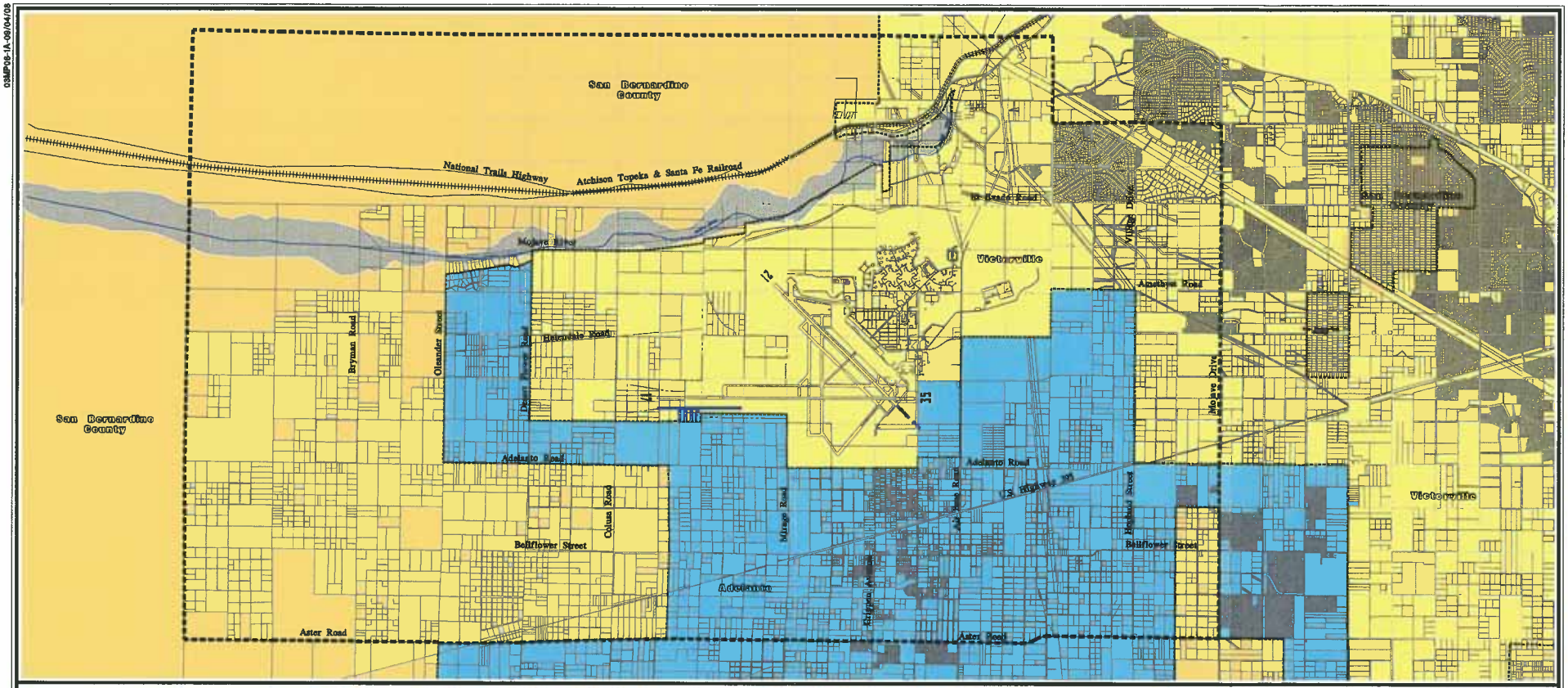
This document represents the second phase of work needed to update the SCLA Comprehensive Land Use Plan.

Chapter Two provides background information about SCLA and the surrounding area. This information includes a discussion on existing airport

facilities, forecast airport operations (takeoffs and landings), land use in the airport vicinity, and airport noise exposure in the area.

Chapter Three provides a discussion for the rationale behind the four major areas of focus for this Comprehensive Land Use Plan: noise, safety, overflights, and airspace protection.

Chapter Four outline the policies needed to implement the Comprehensive Land Use Plan.



LEGEND

- Detailed Land Use Planning Area
- Municipal Boundary
- Airport Property
- Railroad Tracks
- Short Austere Airfield (SAAF)/ Runway Extension
- County of San Bernardino
- City of Adelanto
- City of Victorville

Source: San Bernardino County Official Land Use Map.
City of Victorville General Plan Map.
City of Adelanto General Plan Land Land Use/Zoning Map.
Coffman Associates Analysis.

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Exhibit 1A
PLANNING AREA

03MP06-1A-06/04/08

Chapter Two
SOUTHERN CALIFORNIA LOGISTICS AIRPORT AND ENVIRONS

This chapter presents an overview of the Southern California Logistics Airport (SCLA) and the surrounding area. The background information in this chapter is as follows:

- A description of the study area and existing land uses in the vicinity.
- A discussion of the local land use planning and regulatory framework in the study area.
- A description of key airport facilities.
- A discussion of airport activity and flight tracks.
- A description of current and forecast noise exposure around the airport.

AIRPORT SETTING

SCLA is located in the Mojave Desert of California, in the City of Victorville. The City of Victorville is located in San Bernardino County and is surrounded by the Victor Valley high desert plain. Neighboring communities include the City of Hesperia, the City of Adelanto, the Town of Apple Valley, and a number of smaller unincorporated communities. The airport is located 90 miles northeast of Los Angeles, 95 miles east of the Pacific

Coast, and 165 miles southwest of Las Vegas, Nevada.

As shown in **Exhibit 2A**, the SCLA site encompasses approximately 2,762 acres. The airport, located in the northwestern part of Victorville, is bordered by the Mojave River to the east, a federal correctional facility to the south, and the City of Adelanto to the west.

STUDY AREA

The boundary was developed to encompass the 65 Community Noise Equivalent Level (CNEL) noise contour and general traffic patterns in the vicinity of the airport. It was squared off to align with physical features such as roadways or section lines. The study area is bounded on the north by the section line one mile north of Bryman Road, on the south by Mojave Drive, one mile east of Amargosa Road to the east, and Aster Road to the west.

Exhibit 2B shows the boundaries of the study area and the affected jurisdictional boundaries.

Land Use Planning Policies and Regulations

The State of California requires that all local governments enact a "general plan" establishing the framework policies for future development of the city or county. (See Government Code, Sections 65300, *et seq.*) The general plan is the key local land use regulatory instrument in California. It establishes overall development policy and provides the legal foundation for all development regulations in the community. According to California law, the general plan must contain at least seven elements: land use, circulation, housing, conservation, open space, noise, and safety (Curtin 1996, pp. 9-10). Other elements may be prepared as needed and desired.

The policies of the general plan are implemented through specific ordinances regulating development. Chief among these is the zoning ordinance. Zoning regulates the use of land, the density of development, and the height and bulk of buildings. Subdivision regulations are another important land use regulatory tool, regulating the platting of land. Local communities also regulate development through building codes which set detailed standards for construction.

Additionally, communities can adopt specific plans that are restricted to smaller geographic areas within the city. According to the California Government Code, Section 65451, a specific plan is a regulatory document that provides detailed guidance and standards for a specific area or project. A specific plan details the overall development scheme, establishes development standards and guidelines that future projects in the plan area will follow, and identifies the public facilities and infrastructure required to support the development of the project.

The following sections briefly summarize the land use element of the general plans and applicable specific

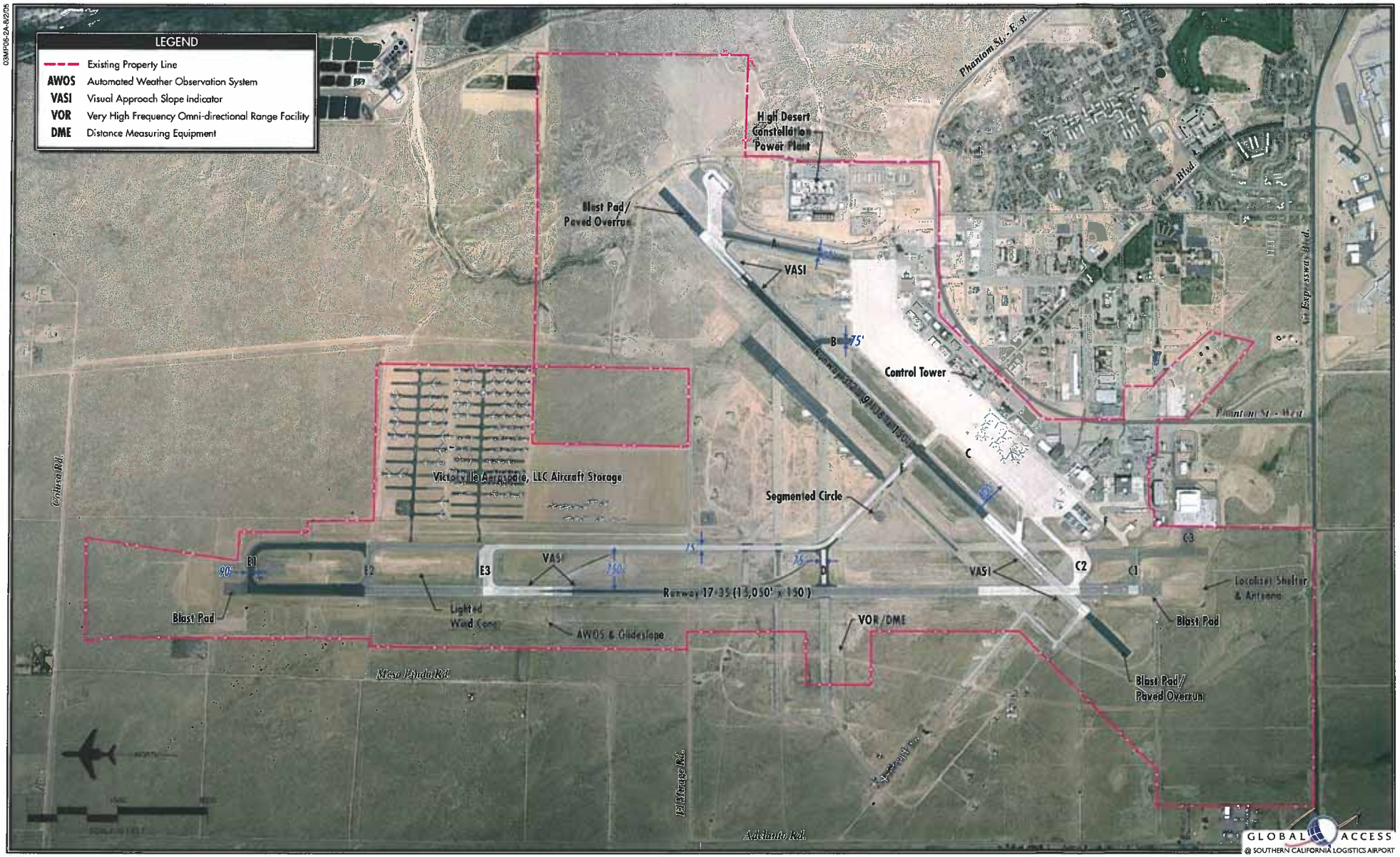


Exhibit 2A
EXISTING FACILITIES

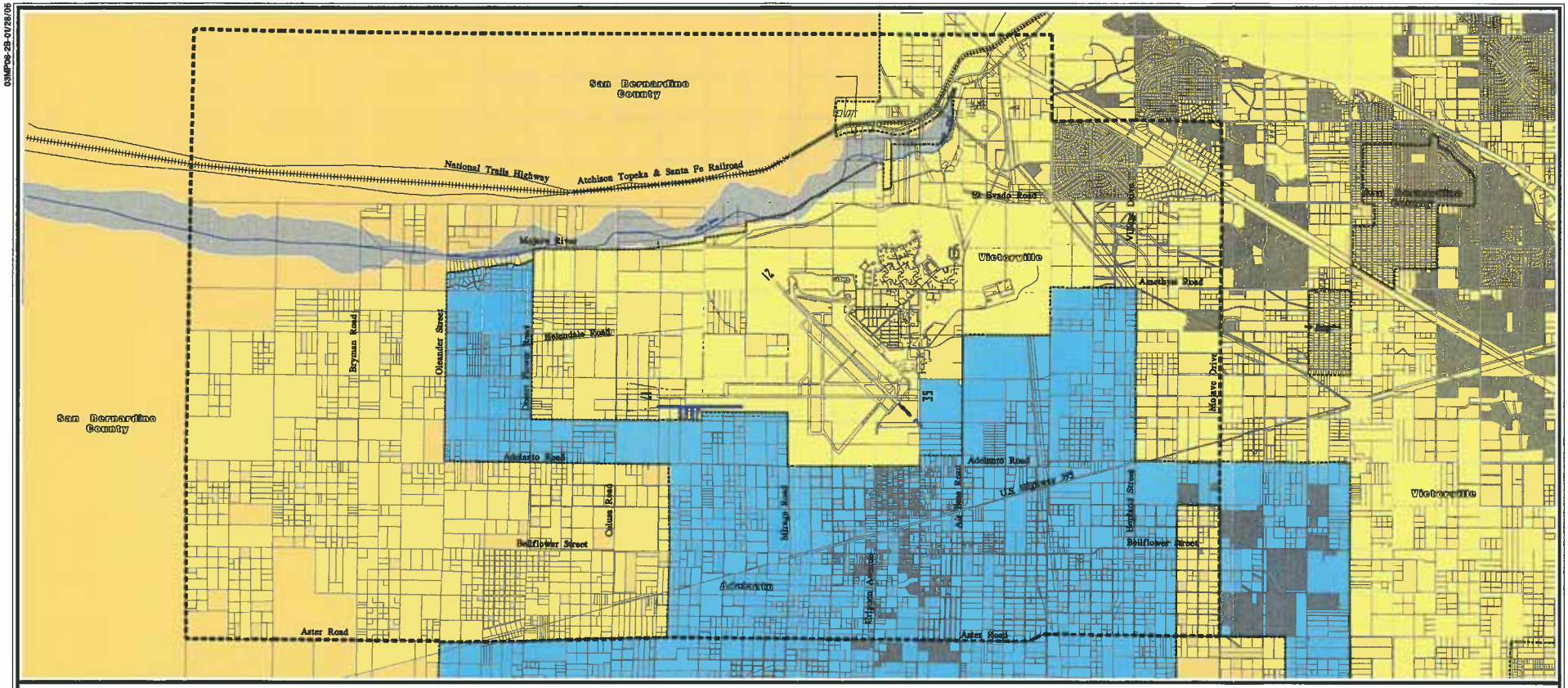


Exhibit 2B
STUDY AREA BOUNDARY

plans for the jurisdictions with land in the study area. **Exhibit 2B** illustrates jurisdictional boundaries of the general plans in the study area. Additional information regarding each jurisdiction's general plan can be found in **Appendix A**.

Victorville General Plan

The Land Use Element of the Victorville General Plan outlines the city's long range plans for development within its incorporated boundaries and sphere of influence. It is a policy document that serves as guidance for land use decisions to ensure the orderly growth of Victorville. The General Plan also provides guidance to San Bernardino County within the Victorville sphere of influence.

The General Plan Map designates land uses within the city limits of Victorville. **Exhibit 2C** shows the Victorville General Plan land use designations within the study area. The airport boundary coincides with Victorville city limits; therefore, the City of Victorville has jurisdiction over the lands immediately east and southeast of the airport. To the east of the airport there is land designated rural residential. To the southeast there is land classified as light industrial and low-density residential. The remaining portions of land surrounding the airport are under the jurisdiction of San Bernardino County or the City of Adelanto.

Southern California Logistics Airport Community Plan Element

The City of Victorville has also adopted a Specific Plan for development near SCLA. The Specific Plan includes Public/Open Space, Business Park, and Industrial designations for land southeast of the runways. These land use designations are shown on **Exhibit 2C**.

Adelanto General Plan

The City of Adelanto's General Plan, updated in 1994, is the base document for implementation programs, including zoning ordinances, specific plans, development plans, area plans, and other permit processes. Additionally, the plan strives to preserve open space and natural resources, and to protect life and property from natural and man-made hazards.

The City of Adelanto's General Plan makes several references to Southern California Logistics Airport. These references include not only noise and overflight impacts, but also the economic impact in terms of business and employment opportunities.

The General Plan Map illustrates the zoning districts for the City of Adelanto. The city limits for Adelanto abut the Victorville city limits, as well as the airport boundary. Adelanto has jurisdiction over lands immediately to the north, west, and south of the air-

port. The land to the south is designated as manufacturing/industrial. Additionally, there is land classified as Airport Development District, which is oriented toward airport operation and associated businesses. To the west there is a mix of light/manufacturing, general commercial, commercial restricted, and single-family residential land. To the northwest there is land classified as airport development district. North of the airport the land is designated as desert living. The land use designations are illustrated in **Exhibit 2C**.

Merger Plan 95-1

Merger Plan 95-1, adopted by the City of Adelanto, applies to the area directly west of SCLA. The intent of this plan is to "improve, upgrade and revitalize all areas of the City and in particular those areas within the City which have become blighted because of deterioration, disuse and economic, physical and social maladjustments." The plan was prepared by the Adelanto Redevelopment Agency, and is jointly administered by the City of Adelanto and the Adelanto Redevelopment Agency. The plan provides various financial incentives to promote development including tax increment financing and bonds. Permitted land uses within the Merger Area include those permitted in the zoning ordinance when the ordinance is in conformance with the General Plan. The number of dwelling units allowed in the Merger Area must be in accordance with the zoning ordinance and General Plan.

San Bernardino County General Plan

The General Plan is the fundamental policy document for the unincorporated, privately owned lands of San Bernardino County. It sets the framework for decision-making regarding the County's long-term development and utilization of resources. It also contains the goals, policies, and implementing actions for a variety of issues, including natural and man-made hazards, and natural and man-made resources.

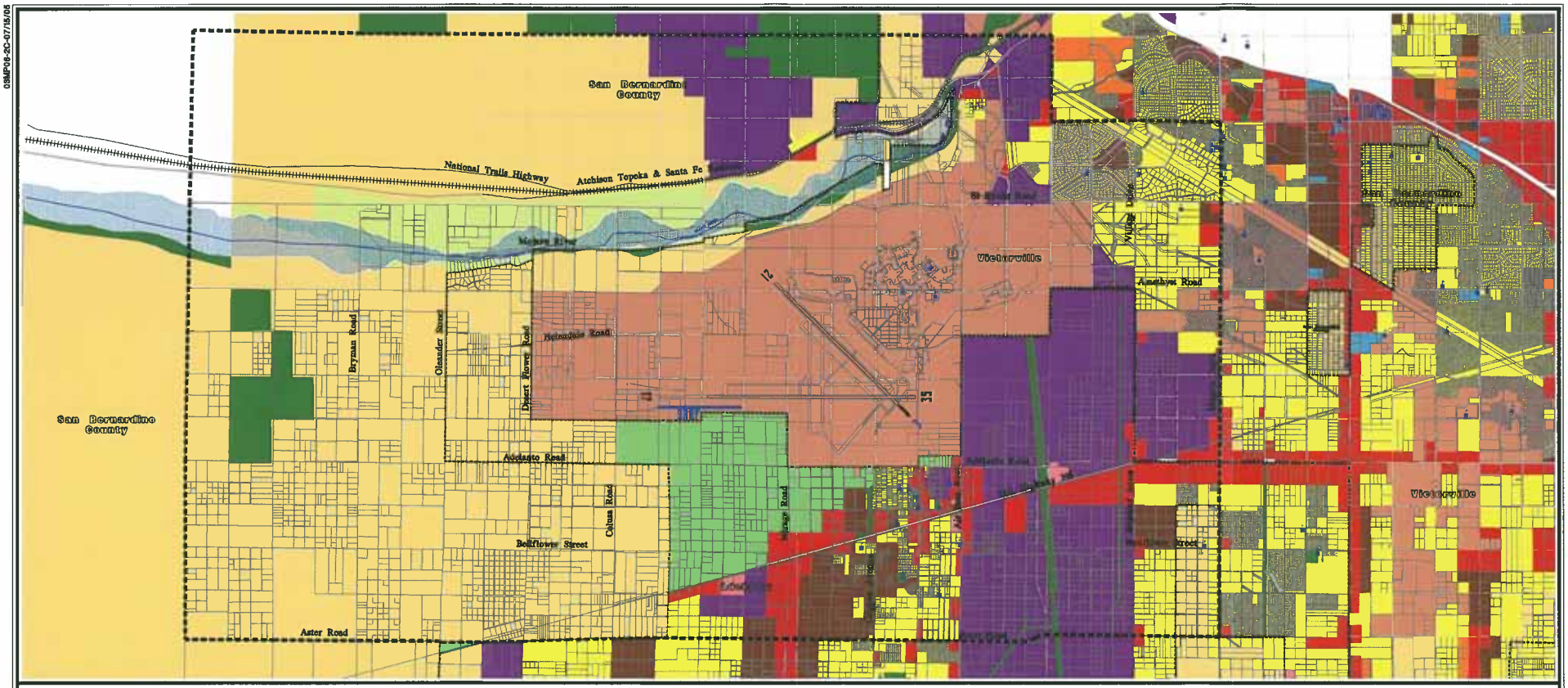
Land across the Mojave River to the east is under the jurisdiction of San Bernardino County. The unincorporated community of Oro Grande is located to the east of the airport. There are six land use designations for the land east of the airport: Rural Living, Floodway, Agriculture, Regional Industrial, Single Residential, and Neighborhood Commercial. **Exhibit 2C** shows the land use designations for San Bernardino County within the study area.

Airport Facilities

Airside facilities include runways, taxiways, airfield lighting, and navigational aids. Existing and proposed airside facilities are identified on **Exhibit 2D**.

Runways

The existing runway configuration at SCLA includes two intersecting run-



LEGEND

- Detailed Land Use Planning Area
- Municipal Boundary
- Airport Property
- Railroad Tracks
- Short Austere Airfield (SAAF)/ Runway Extension
- Rural Density Residential
- Low Density Residential
- Medium Density Residential
- High Density Residential
- Public
- Commercial
- Industrial
- Parks and Open Space
- Airport Development District
- Agriculture
- Specific Plans
- Undeveloped
- No General Plan Designation
- Water
- Noise-Sensitive Institutions
- Place of worship
- School
- Hospital
- Day Care Center

Source: San Bernardino County Official Land Use Map.
City of Victorville General Plan Map.
City of Adelanto General Plan Land Land Use/Zoning Map.
Coffman Associates Analysis.

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Exhibit 2C
GENERALIZED COMPREHENSIVE LAND USE

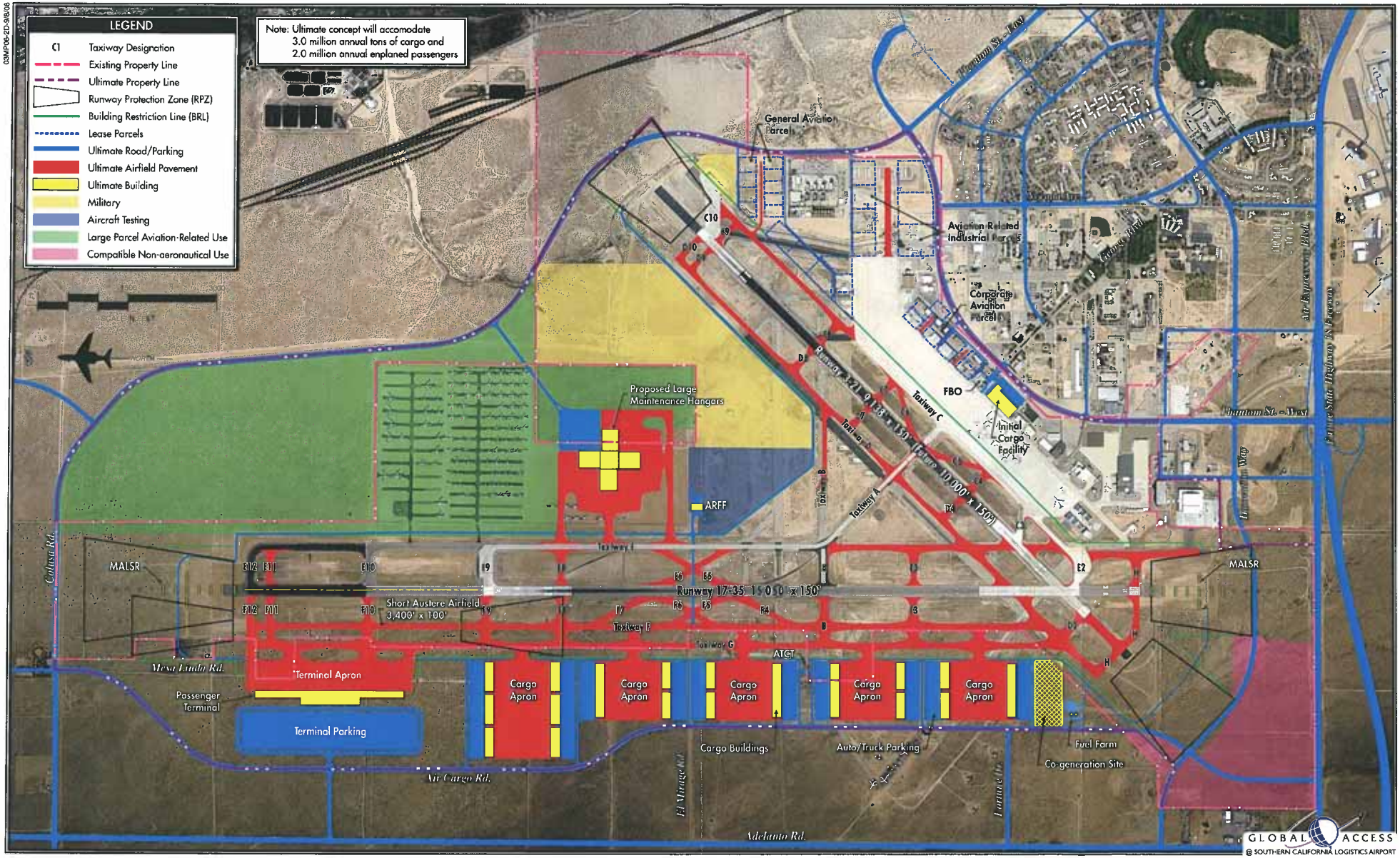

Exhibit 2D
MASTER PLAN CONCEPT

ways. Runway 17-35, oriented in a north-south direction, serves as the primary runway and is currently 15,050 feet long by 150 feet wide. Runway 17-35 is constructed of concrete and asphalt. Blast pads are available on each end of the runway. Blast pads reduce soil erosion near the runway end by deflecting the initial exhaust blast generated by turbojet aircraft departing the airport.

Runway 17-35 has a grooved surface. The grooved surface consists of a series of small channels embedded in the runway surface which extend laterally across the width of the runway. The grooved surface promotes water drainage and reduces the risks of hydroplaning.

Runway 3-21 serves as the crosswind runway and is 9,138 feet by 150 feet and constructed of concrete and asphalt. Runway 3-21 is oriented in a northeast-southwest direction. Runway information for the airport is summarized in **Table 2A**.

TABLE 2A
Airside Facility Data
Southern California Logistics Airport

	Runway 17-35		Runway 3-21	
Length (ft.)	15,050		9,138	
Width (ft.)	150		150	
Surface Material	Asphalt/Concrete		Asphalt/Concrete	
Load Bearing Strength				
Single Wheel	60,000 lbs.		60,000 lbs.	
Dual Wheel	200,000 lbs.		200,000 lbs.	
Dual Tandem Wheel	400,000 lbs.		400,000 lbs.	
Double Dual Tandem Wheel	850,000 lbs.		850,000 lbs.	
Instrument Approach Procedures	ILS – Runway 17 VOR/DME – Runway 17 GPS – Runway 17		None	
Runway Edge Lighting	High Intensity		High Intensity	
Pavement Markings	Precision		Non-Precision	
	17	35	3	21
Runway End Elevation (ft.)	2815.6	2885.2	2877.7	2844.1
Pavement Markings	Precision	Non-precision	Non-precision	Non-precision
Visual Approach Aid	VASI	PAPI	VASI	VASI
Approach Lighting	REIL	REIL	None	None
Fixed Wing Aircraft Traffic Pattern	Left	Right	Right	Left
Airport Elevation (ft.)	2,885 Mean Sea Level (MSL)			
Weather Report	Automated Weather Observing System (AWOS)			
Other Facilities	Lighted Wind Indicator, Segmented Circle, Rotating Beacon			
Air Traffic Control	Airport Traffic Control Tower			

GPS- Global Positioning System
VASI - Visual Approach Slope Indicator
PAPI - Precision Approach Path Indicator
REIL - Runway End Identifier Light
ILS – Instrument Landing System
VOR – Very High Frequency Omnidirectional Range Facility
DME – Distance Measuring Equipment

Source: Airport/Facility Directory, Southwest U.S., August 5, 2004

The master plan development concept for SCLA indicates plans to extend Runway 3-21 862 feet for a total length of 10,000 feet. The width of this runway will remain the same.

Additionally, the master plan concept includes the location of a Short Austere Air Field (SAAF) to be constructed west of Runway 17-35. The SAAF will be 3,400 feet long with its northern end aligned with Runway 35. The SAAF, identified as Runway 16-34, will be used by C-17 military aircraft for assault landing training operations.

Taxiways

There are twelve different taxiways at SCLA, as identified on **Exhibit 2A**. Taxiway A extends between the main apron area and the Runway 21 end. Taxiway C is located on the northwest edge of the ramp and extends parallel to and southeast of Runway 3-21. Taxiway E extends between the apron and Taxiway D, where it turns to the north, parallel with Runway 3-21. In addition to the primary taxiways, there are also several connecting taxiways. The Master Plan development concept indicates that two full-length parallel taxiways are to be constructed. One will be constructed west of Runway 17-35 and the other will be constructed on the north side of Runway 3-21. In addition to the parallel taxiways several connecting taxiways and exit taxiways are planned.

Landside Facilities

Landside facilities are the facilities that support the aircraft and pilot/passenger handling functions. These facilities typically include the terminal building, aircraft storage/maintenance hangars, aircraft parking aprons, and support facilities such as fuel storage, automobile parking, roadway access, and aircraft rescue and firefighting. Landside facilities are identified on **Exhibit 2E**.

Apron and Aircraft Parking

The main apron area at the airport is located along Taxiway C, southeast of Runway 3-21. The apron area encompasses approximately 556,900 square yards or 115 acres. The apron is segregated for air cargo, military, private, public, and general aviation uses. The cargo portion of the apron is located northeast of buildings 682 and 685. Approximately 10 acres of the apron are reserved for air cargo uses. The general aviation apron encompasses approximately 18 acres and is located at the center of the main apron area, directly accessible via Taxiway E. The northeastern portion of the apron is leased to the Fort Irwin NTC. Southern California Aviation, LLC, leases the portion of the apron between the cargo apron and general aviation apron. The general aviation apron provides parking for both itinerant and based aircraft.

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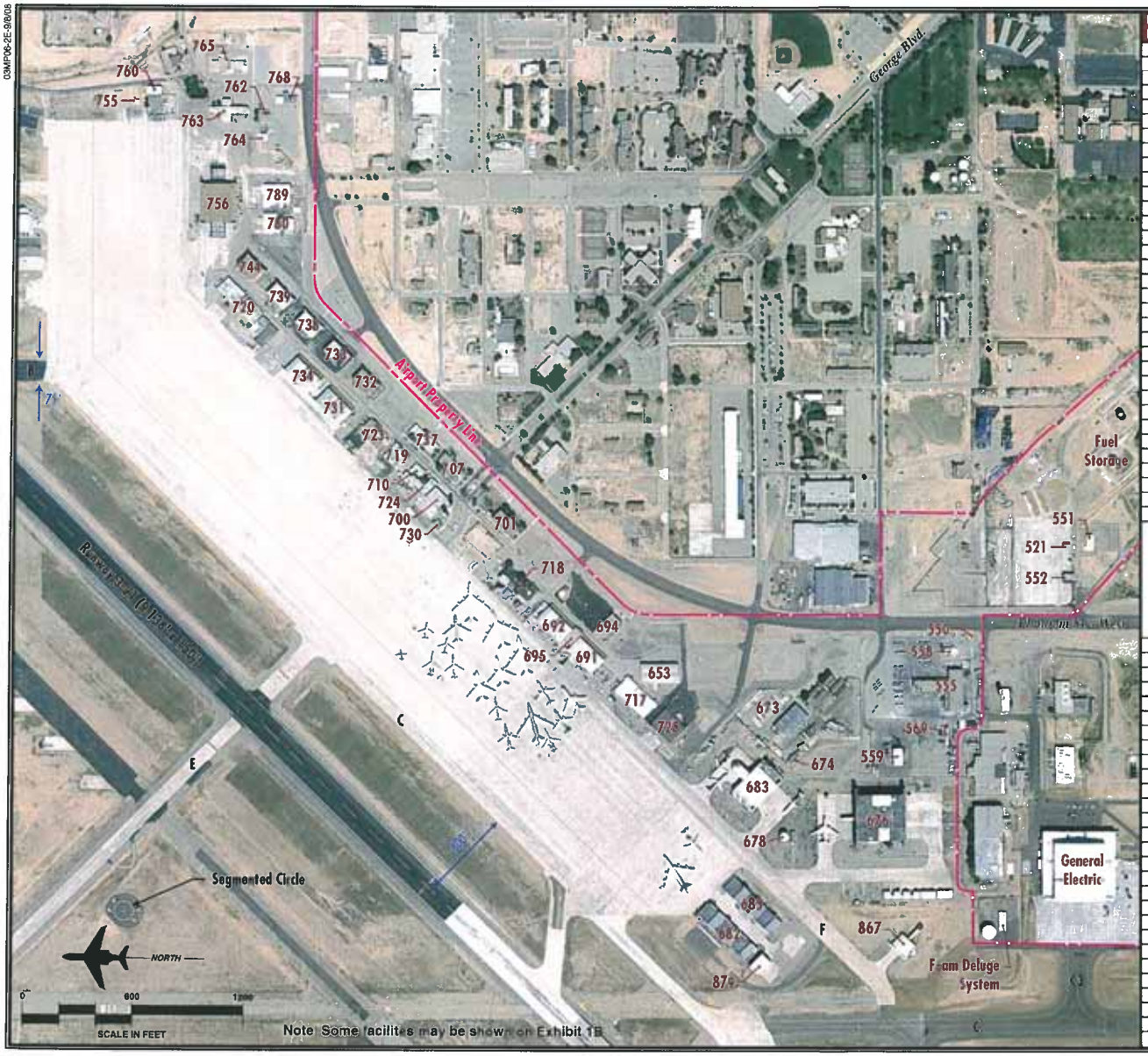

Building Number	Square Feet	Year Built	Building Type	Tenant
521	240	N/A	Office	Truck Depot, Army
524	1,720	N/A	Outdoor Operations	Truck Depot, Army
533	80	N/A	Storage/Wash Rack	Truck Depot, Army
542	440	1960	Kennels	Vacant
550	960	N/A	Industrial	Kitchens Transportation (GB&L)
551	3,480	N/A	Office	Truck Depot, Army
552	2,483	1985	Storage & Maintenance	Truck Depot, Army
555	33,155	1964	Industrial	Kitchens Transportation (GB&L)
558	2,040	1971	Office	Kitchens Transportation (GB&L)
559	5,175	1965	Aviation Industrial	Jim Aartman
569	2,014	1955	Shop	Kitchens Transportation (GB&L)
643	520	N/A	N/A	AFBCA
645	N/A	N/A	Wash Rack	Vacant
653	22,440	1942	Cargo Storage	COVV Storage
671	3,444	1965	Aviation	Arnold D. Cicerone & Associates
674	2,320	1942	Shop	To Be Demolished
676	86,654	1956	Hangar	Victorville Aerospace, LLC
682	35,300	1965	Cargo Hangar	World Service West Paint Booth
683	42,658	1960	Maintenance Hangar	Victorville Aerospace, LLC
685	35,300	1964	Hangar	Apple Aero
				World Service West
691	49,741	1942	Hangar/Office	Southern California Aviation, LLC
700	1,298	1956	Control Tower	Serco
701	19,800	1968	Office	Vacant
707	9,480	1968	Office	Vacant
710	2,901	N/A	Office	Vacant
717	24,145	1965	Office	Boeing
718	22,423	1964	Office	Vacant
719	10,202	1965	Office	World Service West
720	49,493	1965	Troop Rotation	Fort Irwin, NTC
723	18,628	1952	Old Fire Station	Vacant
724	16,250	1988	Airport Rescue and Firefighting	Mercy Air / SCLAA
728	18,848	1983	Office	SCLAA Administration
				Embry-Riddle Aeronautical Univ.
				Block's Import/Export
				Kleinfelder, Inc.
				Valley Air Express
				AFBCA
				IT Corporation
				U.S. Customs
				Montgomery Watson
731	23,525	1942	Troop Rotation	Fort Irwin, NTC
732	12,768	1942	Warehouse	Vacant
733	12,768	1942	Warehouse	Frontier Systems
734	23,410	1942	Troop Rotation	Fort Irwin, NTC
737	10,556	1976	Office	Vacant
738	12,048	1942	Troop Rotation	Fort Irwin, NTC
739	12,718	1942	Troop Rotation	Fort Irwin, NTC
744	14,368	1942	Troop Rotation	Fort Irwin, NTC
752	111	1984	Office	U.S. Army Reserve
755	9,000	N/A	Wash Rack	Fort Irwin, NTC
756	46,901	1942	Hangar	Leading Edge
760	3,200	1984	Maintenance Hangar	World Service West
761	22,686	1953	Hangar	U.S. Army Reserve
762	3,224	1953	Industrial	K&S Metal Products
763	15,323	1953	Warehouse	Fort Irwin, NTC
764	400	N/A	Warehouse	Vacant
765	11,434	1956	Office	Vacant
768	5,600	1961	Industrial	K&S Metal Products
769	6,888	1959	Storage	Vacant
771	2,000	N/A	Office	U.S. Army Reserve
779	2,112	N/A	Storage/Office	Fort Irwin, NTC
785	4,368	1959	Storage/Office	Fort Irwin, NTC
786	5,472	1959	Storage	Vacant
789	15,000	1979	Shop	Vacant
867	12,688	1985	Hangar	Vacant
868	12,688	1985	Office	Frontier Systems
873	1,751	N/A	Office	Frontier Systems
879	3,750	1979	Hangar	Vacant

Exhibit 2E
LANDSIDE FACILITIES

Area Airspace and Air Traffic Control

The Federal Aviation Administration (FAA) Act of 1958 established the FAA as the responsible agency for the control and use of navigable airspace within the United States. The FAA has established the National Airspace System (NAS) to protect persons and property on the ground and to establish a safe and efficient airspace environment for civil, commercial, and military aviation. The NAS covers the common network of U.S. airspace including: air navigation facilities; airports and landing areas; aeronautical charts; associated rules, regulations, and procedures; technical information; and personnel and material. The system also includes components shared jointly with the military.

Airspace Structure

Airspace within the United States is broadly classified as either controlled or uncontrolled. The difference between controlled and uncontrolled airspace relates primarily to requirements for pilot qualifications, ground-to-air communications, navigation and air traffic services, and weather conditions. Six classes of airspace have been designated in the United States. Airspace designated as Class A, B, C, D, or E is considered controlled airspace. Aircraft operating within controlled airspace are subject to varying requirements for positive air traffic control. Class G airspace is considered uncontrolled airspace. Pilots flying through class G airspace are not required to have radios, or to make contact with air traffic control or other aircraft. In the SCLA area, Class B airspace does not exist; therefore, it will not be discussed in this report. Airspace in the vicinity of SCLA is shown on **Exhibit 2F**.

Class A Airspace: Class A airspace includes all airspace from 18,000 feet mean sea level (MSL) to flight level (FL) 600 (approximately 60,000 feet MSL). This airspace is designated in Federal Aviation Regulation (F.A.R.) Part 71.193 for positive control of aircraft. The positive control area (PCA) allows flights governed only under instrument flight rule (IFR) operations. The aircraft must have special radio and navigation equipment, and the pilot must obtain clearance from an airport traffic control tower (ATCT) to enter Class A airspace. In addition, the pilot must possess an instrument rating.

Class C Airspace: The FAA has established Class C airspace at 120 airports around the country as a means of regulating air traffic in these areas. Class C airspace is designed to regulate the flow of uncontrolled traffic above, around, and below the arrival and departure airspace required for high-performance, passenger-carrying aircraft at major airports. In order to fly inside Class C airspace, the aircraft must have a two-way radio and an encoding transponder, and the pilot must obtain an air traffic control (ATC) clearance. However, aircraft may fly below the floor of the Class C airspace, or above the Class C airspace ceiling without an ATC clearance.

Class D Airspace: Class D airspace is controlled airspace surrounding airports with an ATCT. The Class D airspace typically constitutes a cylinder with a horizontal radius of four or five nautical miles (NM) from the airport, extending from the surface up to a designated vertical limit, typically set at approximately 2,500 feet above the airport elevation. If an airport has an instrument approach or departure, the Class D airspace sometimes extends along the approach or departure path.

The immediate airspace surrounding SCLA is classified as a Class D. Class D airspace surrounds the airport, with a radius of five nautical miles. The Class D airspace starts at ground level and extends to 5,400 feet MSL.

Class E Airspace: Class E airspace consists of controlled airspace designed to contain IFR operations near an airport, while aircraft are transitioning between the airport and en route environments. Unless otherwise specified, Class E airspace terminates at the base of the overlying airspace. Only aircraft operating under IFR are required to be in contact with air traffic control when operating in Class E air-space. While aircraft conducting visual flights in Class E airspace are not required to be in radio communications with air traffic control facilities, visual flight can only be conducted if minimum visibility and cloud ceilings exist.

SCLA is located west of Apple Valley Airport, which is surrounded by Class E airspace. The Class E airspace begins 700 feet above the ground and extends upward to Class A airspace. Since Class D airspace is more restrictive than Class E, a portion of SCLA's Class D airspace overlaps into the Apple Valley Airport's airspace.

Class G Airspace: Airspace not designated as Class A, B, C, D, or E is considered uncontrolled, or Class G airspace. Air traffic control does not have the authority or responsibility to exercise control over air traffic within this airspace. Class G airspace lies between the surface and the overlaying Class E airspace (700 to 1,200 feet above ground level [AGL]). Class G airspace extends below the floor of the Class E airspace transition area.

While aircraft may technically operate within this Class G airspace without any contact with ATC, it is unlikely that many aircraft will operate this low to the ground. Furthermore, federal regulations specify minimum altitudes for flight. Federal Aviation Regulation (FAR) Part 91.119, *Minimum Safe Altitudes*, generally states that except when necessary for takeoff or landing, pilots must not operate an aircraft over any congested area of a city, town, or settlement, or over any open-air assembly of persons, below an altitude of 1,000 feet above the highest obstacle within a horizontal radius of 2,000 feet of the aircraft. Over less congested areas, pilots must maintain an altitude of 500 feet above the surface, except over open water or sparsely populated areas. In those cases, the aircraft may not be operated closer than 500 feet to any person, vessel, vehicle, or structure. Finally, this section states that helicopters may be operated at less than the minimums prescribed above if the operation is

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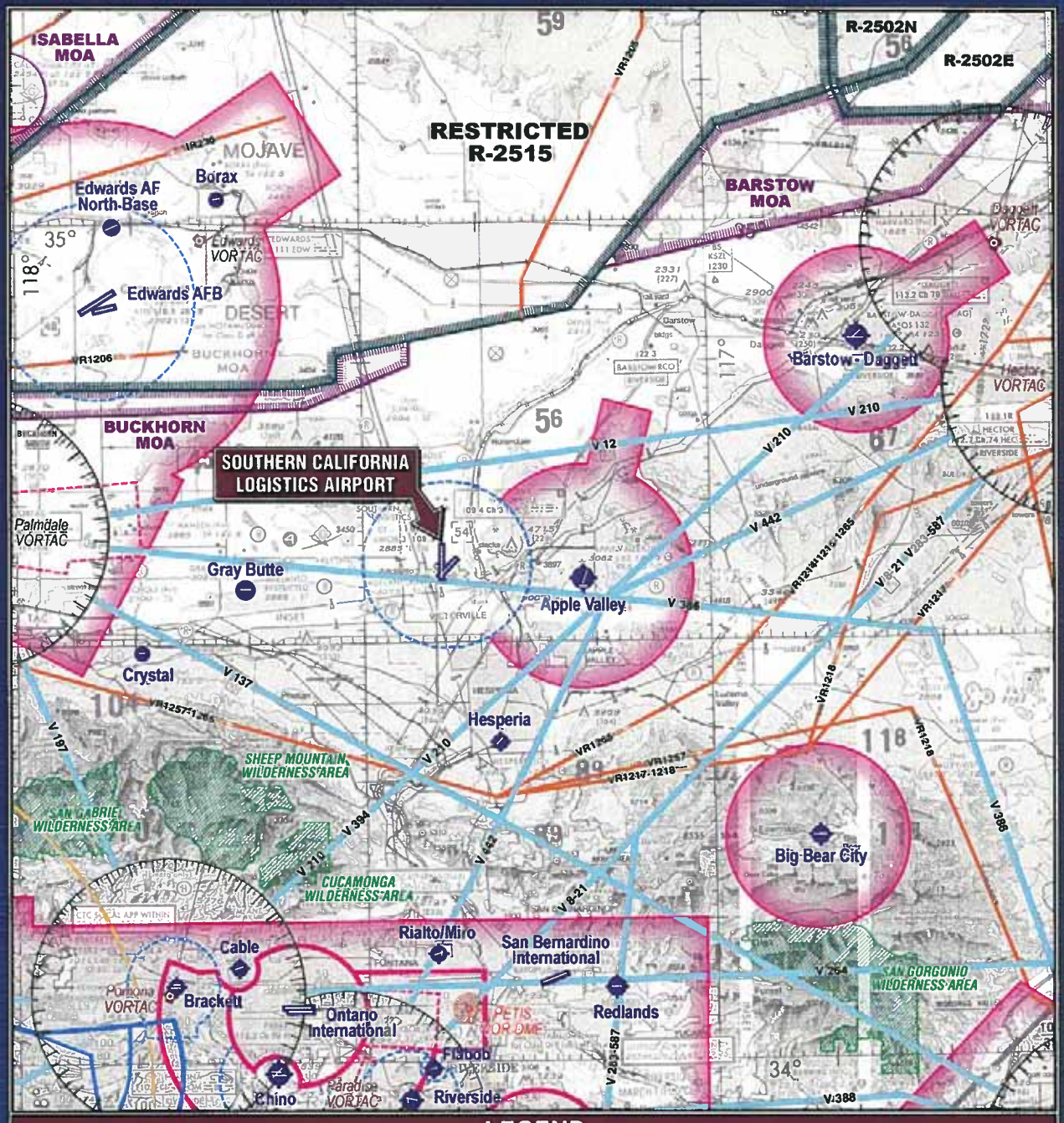

LEGEND

- Airport with other than hard-surfaced runways
- Airport with hard-surfaced runways 1,500' to 8,069' in length
- Airports with hard-surfaced runways greater than 8,069' or some multiple runways less than 8,069'
- Non-Directional Radiobeacon (NDB)
- VORTAC
- VHF Omni Range (VOR)
- VOR-DME
- Compass Rose
- Class B Airspace
- Class C Airspace
- Class D Airspace
- Class E Airspace
- Class E Airspace with floor 700 ft. above surface
- Victor Airways
- Wilderness Area
- Military Training Routes
- Mode C
- Military Operations Area - MOA
- Restricted Areas

Source: Los Angeles Sectional Chart, US Department of Commerce, National Oceanic and Atmospheric Administration December 25, 2003

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Exhibit 2F
AREA AIRSPACE

conducted without hazard to persons or property on the surface. In addition, each person operating a helicopter shall comply with any routes or altitudes specifically prescribed for helicopters by the FAA.

Restricted Airspace: To the north of SCLA, there is a large area of restricted airspace. Restricted airspace is off limits for public use unless granted permission from the controlling agency. Each of the restricted areas with close proximity to SCLA has an unlimited altitude range and is used continuously. Two of the restricted areas (R-2502N and R-2509) are used for air-to-ground bombing and gunnery training. These restricted areas have been depicted in **Exhibit 2F**.

Military Operating Areas: There are several Military Operating Areas (MOAs) surrounding SCLA, as shown in **Exhibit 2F**. MOAs define areas of high-level military activity and are intended to segregate military and civilian aircraft. While civilian operations are not restricted within the MOA, civilian aircraft are cautioned to be alert for military aircraft when operating in the MOA. The two closest MOAs to SCLA are the Barstow MOA and Buckhorn MOA. Each MOA has a different operating time and altitudes of use.

Military Training Routes: Military Training Routes in the vicinity of SCLA are shown in orange on **Exhibit 2F**. These routes are designated with the letters VR (visual route) and a four digit number, or with IR (instrument route) and a three digit number. There are also arrows in the route which show the direction of travel in those routes. Military jets travel on these routes below 10,000 feet MSL, at speeds in excess of 250 knots.

Wilderness Areas: There are several wilderness areas located to the south of SCLA. These are San Gabriel, Sheep Mountain, Cucamonga, and San Gorgonio. Aircraft operations are not specifically restricted over these areas; however, aircraft are requested to maintain a minimum altitude of 2,000 feet above the surface. **Exhibit 2F** depicts the boundaries of these areas near SCLA.

Airspace Control

The FAA is responsible for the control of aircraft within the Class A, Class C, Class D, and Class E airspace described above. The Los Angeles Air Route Traffic Control Center (ARTCC) controls aircraft operating in Southern California and portions of Western Nevada, Southwestern Utah, and Western Arizona. Joshua Approach Control provides en route air traffic control functions to and from SCLA.

The SCLA Airport Traffic Control Tower (ATCT) controls the traffic in the airport's Class D airspace. The ATCT is located on the south side of the main apron near the airport rescue and firefighting (ARFF) building. The tower at SCLA is a federal contract tower, which means a company operates the tower on behalf of the FAA. The contract at SCLA is held by Serco Management Services. The tower operates 24 hours per day.

The Riverside Flight Service Station (FSS) provides pilots with weather information and flight planning processing.

Navigational Aids

Navigational aids are electronic devices that transmit radio frequencies, which pilots of properly equipped aircraft translate into point-to-point guidance and position information. The types of electronic navigational aids available for aircraft flying to or from SCLA include the very high frequency omnidirectional range/distance measuring equipment (VOR/DME) facility and global positioning system (GPS).

The VOR, in general, provides azimuth readings to pilots of properly equipped aircraft by transmitting a radio signal at every degree to provide 360 individual navigational courses. Frequently, DME is combined with a VOR facility to provide distance as well as directional information to the pilot. Military tactical air navigation aids (TACANs) and civil VORs are commonly combined to form a VORTAC. A VORTAC provides distance and directional information to civil and military pilots.

The Victorville VOR/DME serves SCLA and is located on the airport west of Runway 17-35. For aircraft arriving or departing the regional area using VOR facilities, a system of Federal Airways, referred to as Victor Airways, has been established. Victor Airways are corridors of airspace eight miles wide that extend upward from 1,200 feet AGL to 18,000 feet MSL and extend between VOR navigational facilities. Victor Airways are shown with solid blue lines on **Exhibit 2F**. V386 crosses SCLA, extending between the Palmdale VORTAC and the Palm Springs VOR. V12 extends north of the airport and runs between the Palmdale VORTAC and the Hector VORTAC.

GPS was initially developed by the United States Department of Defense for military navigation around the world. However, GPS is now used extensively for a wide variety of civilian uses, including the civil aircraft navigation.

GPS uses satellites placed in orbit around the globe to transmit electronic signals, which pilots of properly equipped aircraft use to determine altitude, speed, and navigational information. This provides more freedom in flight planning and allows for more direct routing to the final destination.

A GPS modernization effort is underway by the FAA and focuses on augmenting the GPS signal to satisfy requirements for accuracy, coverage, availability, and integrity. For civil aviation use, this includes the development of the Wide Area Augmentation System (WAAS), which was launched on July 10, 2003. The WAAS uses a system of reference stations to correct signals from the GPS satellites for improved navigation and approach capabilities. The present GPS provides for en route navigation and instrument approaches with both course and vertical navigation. After 2015, the WAAS upgrades are ex-

pected to allow for the development of approaches to most airports with cloud ceilings as low as 250 feet above the ground and visibilities restricted to three-quarters mile.

Instrument Approach Procedures

Instrument approach procedures are a series of predetermined maneuvers established by the FAA, using electronic navigational aids that assist pilots in locating and landing at an airport during low visibility and low cloud ceiling conditions. SCLA has three published instrument approach procedures: Runway 17 Instrument Landing System (ILS) approach, Runway 17 VOR/DME approach, and Runway 17 GPS approach. The Runway 17 Instrument Landing System (ILS) approach is a precision instrument approach, as it provides both vertical descent information and course guidance information to the pilot. In contrast, the Runway 17 VOR/DME and Runway 17 GPS approaches are non-precision approaches, which provide only course guidance information to the pilot.

Visual Flight Procedures

Most flights at SCLA are conducted under VFR. Under VFR flight, the pilot is responsible for collision avoidance. The purpose of basic radar services is to sequence arriving IFR and VFR traffic into the traffic pattern and to provide traffic information and radar vectors to departing VFR traffic. Typically, the pilot will contact the tower for sequencing into the traffic pattern for landing when approximately 15 miles from the airport.
In most situations, under VFR and basic radar services, the pilot is responsible for navigation and choosing the arrival and departure flight paths to and from the airport. However, depending on the needs of the ATCT for sequencing, the pilot may be given directions by the ATC to fly specified headings to position their aircraft behind a preceding aircraft in the approach sequence. Tower controllers sequence arriving and departing aircraft based on observed traffic, pilot reports, and anticipated aircraft maneuvers. The results of individual pilot navigation for sequencing and collision avoidance and ATCT instructions for sequencing and safety are that aircraft do not fly a precise flight path to and from the airport. Therefore, aircraft can be found flying over a wide area around the airport for sequencing and safety reasons.

While aircraft can be expected to operate over most areas of the airport, the density of aircraft operations is higher near the airport. This is the result of aircraft following the established traffic patterns and noise abatement procedures for the airport and common sequencing techniques used by the ATCT. The traffic pattern is the traffic flow that is prescribed for aircraft landing or taking off from an airport. The components of a typical traffic pattern are upwind leg, crosswind leg, downwind leg, base leg, and final approach.

a. Upwind Leg - A flight path parallel to the landing runway in the direction of landing.

b. Crosswind Leg - A flight path at right angles to the landing runway off its upwind end.

c. Downwind Leg - A flight path parallel to the landing runway in the direction opposite to landing. The downwind leg normally extends between the crosswind leg and the base leg.

d. Base Leg - A flight path at right angles to the landing runway off its approach end. The base leg normally extends from the downwind leg to the intersection of the extended runway centerline.

e. Final Approach - A flight path in the direction of landing along the extended runway centerline. The final approach normally extends from the base leg to the runway.

Essentially, the traffic pattern defines to which side of the runway aircraft will operate. For example, at SCLA, Runway 35 and Runway 3 have an established right-hand traffic pattern. For these runways, aircraft make a right turn from base leg to final for landing. Therefore, aircraft operating to Runway 35 remain east of the runway. For Runway 3, aircraft remain south of the runway. When landing to Runway 17 and Runway 21, aircraft make left-hand turns. This also allows these aircraft to remain east of Runway 17-35 and south of Runway 3-21.

Departure Procedures and Weather Minimums

There are certain procedures that are published for departures at SCLA. These procedures provide obstruction clearance from the terminal area to the appropriate en route structure. These procedures are primarily designed for system enhancement and to reduce pilot/controller workload.

The departure procedure for Runways 3 and 35 requires the pilot to climb in a left turn to heading 220. When departing on Runways 17 and 21, the pilot is to climb in a right turn to heading 325. All aircraft departing on Runway 17 should cross the departure end of the runway at or above 35 feet AGL due to an antenna which is 703 feet from the departure end of the runway, and 203 feet left of the centerline.

When departing Runway 3, there are certain weather minimums that must exist. The cloud level must be at or above 600 feet with 2 1/4 miles visibility. When climbing, the pilot must maintain a minimum climb of 280 feet per nautical mile until an altitude of 3,500 feet is reached.

AIRPORT NOISE EXPOSURE

Noise exposure patterns were analyzed for both existing airport activity conditions and projected long term ac-

tivity conditions. The basic methodology employed to define aircraft noise levels involves the use of a mathematical model for aircraft noise predication. The Community Noise Exposure Level (CNEL) was used in this study to assess aircraft noise. CNEL is defined as the average A-weighted sound level as measured in decibels (dB) during a 24-hour period. A 5 dB penalty applies to noise events occurring in the evening (7:00 p.m. to 10:00 p.m.), while a 10 dB penalty applies to noise events occurring at night (10:00 p.m. to 7:00 a.m.). CNEL is a summation metric which allows objective analysis and can describe noise expo-sure comprehensively over a large area. The 65 CNEL contour has been established as the threshold of incompatibility, meaning that noise levels below 65 CNEL are considered compatible with underlying land uses.

Many communities are going beyond the recommended compatibility threshold by adopting land use compatibility policies for the 60 and 55 CNEL noise contours. Establishing these policies before encroachment occurs can prevent noise impacts from occurring in the future. These can result from increased operations or physical development at the airport. Within the field of airport compatibility planning, professionals are beginning to understand the limitations of the CNEL metric for use in local regulations. Its limitations result from decreasing accuracy at lower noise levels and its inability to incorporate varying perceptions of noise in a community. As a result, noise regulation and mitigation efforts for airports are being applied to areas with less prolonged noise exposure such as the 55 and 60 DNL noise contours.

Since noise decreases at a constant rate in all directions from a source, points of equal CNEL noise levels are routinely indicated by means of a contour line. The various contour lines are then superimposed on a map of the airport and its environs. It is important to recognize that a line drawn on a map does not imply that a particular noise condition exists on one side of the line and not on the other. CNEL calculations do not precisely define noise impacts. Nevertheless, CNEL contours can be used to: (1) highlight existing or potential incompatibilities between an airport and any surrounding development; (2) assess relative exposure levels; (3) assist in the preparation of airport environs land use plans; and (4) provide guidance in the development of land use control devices such as zoning ordinances, subdivision regulations, and building codes.

The noise contours for SCLA have been developed from the Integrated Noise Model (INM), Version 6.1. The INM is required by the FAA for federally funded aircraft noise assessments.

Airport Activity Data

Detailed airport activity data is needed for noise modeling and for establishing airport safety zones and standards. Among the most important information is the number of aircraft operations (takeoffs and landings), the mix of aircraft types using the airport, runway use percentages, and flight tracks. This section summarizes key airport activity data.

Operations

Presently, a majority of the operations at Southern California Logistics Airport are categorized as General Aviation. As SCLA is a former military base, a portion of the operations are related to military training missions. The smallest portions of the annual operations are categorized as air carrier and air taxi. There are no regularly scheduled commercial flights at SCLA; however, there is regularly scheduled air taxi service. In the future, it is expected that air-cargo operations at SCLA will increase considerably as the capacity of nearby cargo facilities is exceeded. The information in **Table 2B** illustrates the 2003 operation counts for each of these categories, as well as the forecasted operations.

TABLE 2B
Annual Operations by Aircraft Type
Southern California Logistics Airport

	Existing 2003	Long Range
ITINERANT OPERATIONS		
Air Carrier/Air Taxi		
Jet	1,080	132,780
Turboprop	648	6,520
Single engine Piston	7	0
Multi-engine Piston	2	0
Total	1,737	139,300
General Aviation		
Business Jet	831	21,000
Turboprop	597	6,500
Single engine Piston	3,120	4,000
Multi-engine Piston	3,842	4,000
Helicopter	2,000	3,000
Total	10,390	38,500
Military		
Jet	914	2,189
Helicopter	1,500	6,561
Total	2,414	8,750
Itinerant Total	14,541	186,550
LOCAL OPERATIONS		
General Aviation		
Multi-engine Piston	7,535	19,800
Single engine Piston	22,606	41,700
Rotorcraft	500	2,000
Total	30,641	63,500
Military		
Jet	1,800	9,547
Turboprop	2,964	0
Helicopter	200	6,703
Total	4,964	16,250
Local Total	35,605	79,750
Total	50,146	266,300

Fleet Mix

The fleet mix refers to the types of aircraft that are using the airport. **Table 2B** also separates the operations by type of aircraft and type of operation. This information is generally used for airport facility planning purposes, as well as developing noise contours. Each type of aircraft has different noise characteristics; therefore, greater numbers of noisy aircraft will increase the size of the contour. This is covered further in Section 2.8. The Long Range forecast is Table 2B is based upon forecasts found in the 2006 Airport Master Plan.

Runway Use

Runway 17 is the primary runway at SCLA. The tower manager estimates that 75 percent of arrivals and departures occur on this runway. Approximately 20 percent of the operations occur on Runway 21. The remaining 5 percent of operations are split between Runway 3 and 35. Runway 35 is generally used for two weeks every year when a shift in the prevailing winds cause Runway 17 to close.

Flight Tracks

A review of local and regional air traffic control procedures, as well as interviews with ATCT staff, were used to develop consolidated flight tracks. The resulting analysis is a series of consolidated flight tracks describing the average corridors that lead to and from SCLA.

At airports similar to SCLA, aircraft traffic is expected over most areas around the airport. The density of the air traffic generally increases closer to the airport. The flight tracks were developed to reflect these common patterns and to account for the various flight track dispersions around the airport.

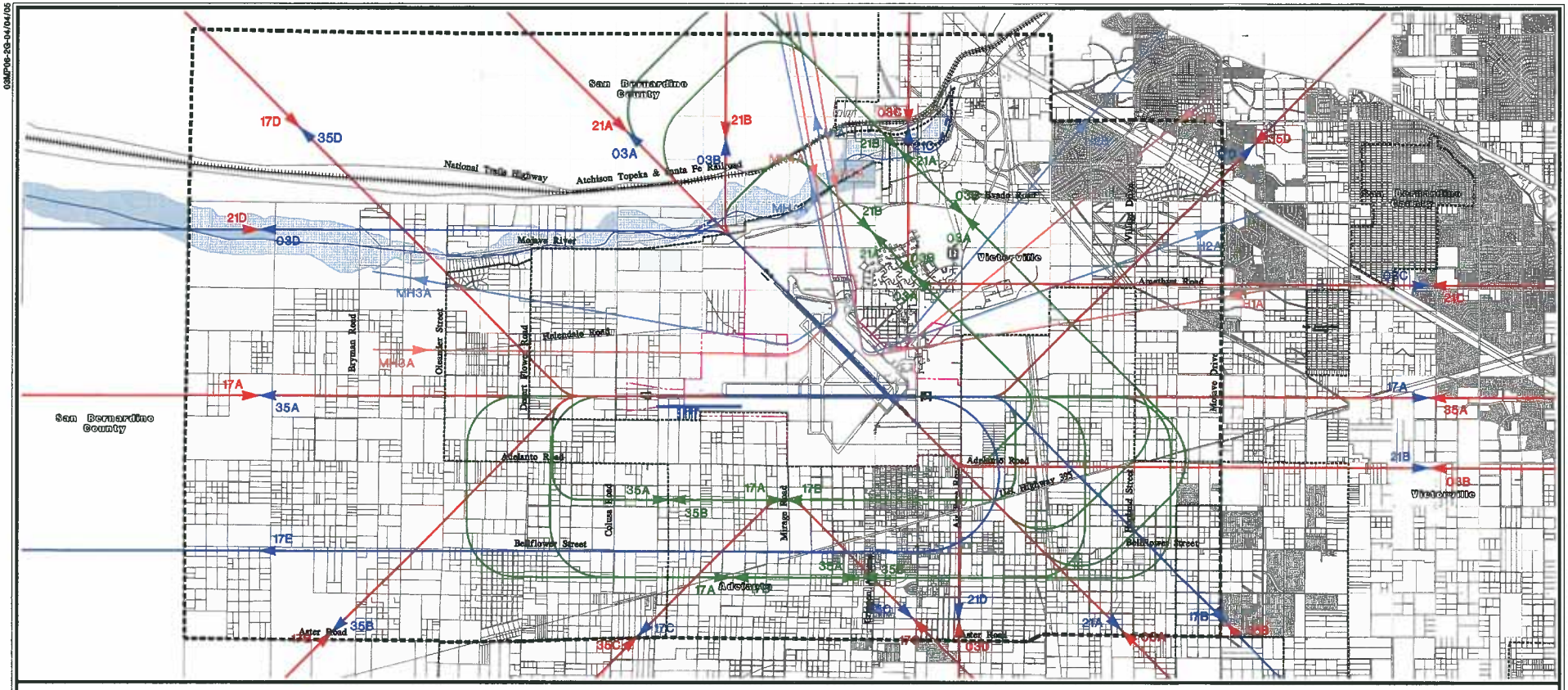
Exhibit 2G illustrates the flight tracks used for the modeling of the departure operations at Southern California Logistics Airport. These tracks represent the common departure paths used by aircraft operating at SCLA. The consolidated arrival flight tracks for SCLA are presented in **Exhibit 2G** and represent the typical approach patterns for the airport.

Noise Contours

The aircraft noise contours generated using the aforementioned data for SCLA are depicted on **Exhibit 2H**, Existing Noise Exposure, and **Exhibit 2J**, Future Noise Contours. For existing activity levels, the 70 and 75 CNEL contours remain entirely on airport property. The 65 CNEL noise contour extends off airport property to the south. This area is presently undeveloped. The 60 CNEL noise contour extends off airport property to the north, south, and southwest. The 55 CNEL noise contour extends off airport property to the north, south, northeast, and southwest.

When considering the long-term forecast activity at the SCLA, all of the

noise contours (75, 70, 65, 60, 55 CNEL) extend beyond airport property. As noted on **Exhibit 2J**, the contours that are considered to have a significant noise effect are the 75, 70, and 65 CNEL contours. The 75 CNEL noise contour extends a short distance beyond the airport property line to the north and south. To the east and west this contour does not go beyond the airport property line. The 70 CNEL noise contour extends north and south of airport property approximately one mile. This contour does not extend beyond the property line to the east or west. The 65 CNEL noise contour extends south of the airport property line approximately three miles to Mojave Drive. It extends north of airport property approximately 2.5 miles. Additionally, this contour extends beyond airport property west of Adelanto Road.



LEGEND

- Detailed Land Use Planning Area
- Municipal Boundary
- Airport Property
- Railroad Tracks
- Short Austere Airfield (SAAF)/ Runway Extension
- Fixed Wing Approach Tracks
- Fixed Wing Departure Tracks
- Helicopter Arrival Tracks
- Helicopter Departure Tracks
- Touch and Go Tracks

Source: San Bernardino County Official Land Use Map.
City of Victorville General Plan Map.
City of Adelanto General Plan Land Land Use/Zoning Map.
Coffman Associates Analysis.

NORTH

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SCALE IN FEET

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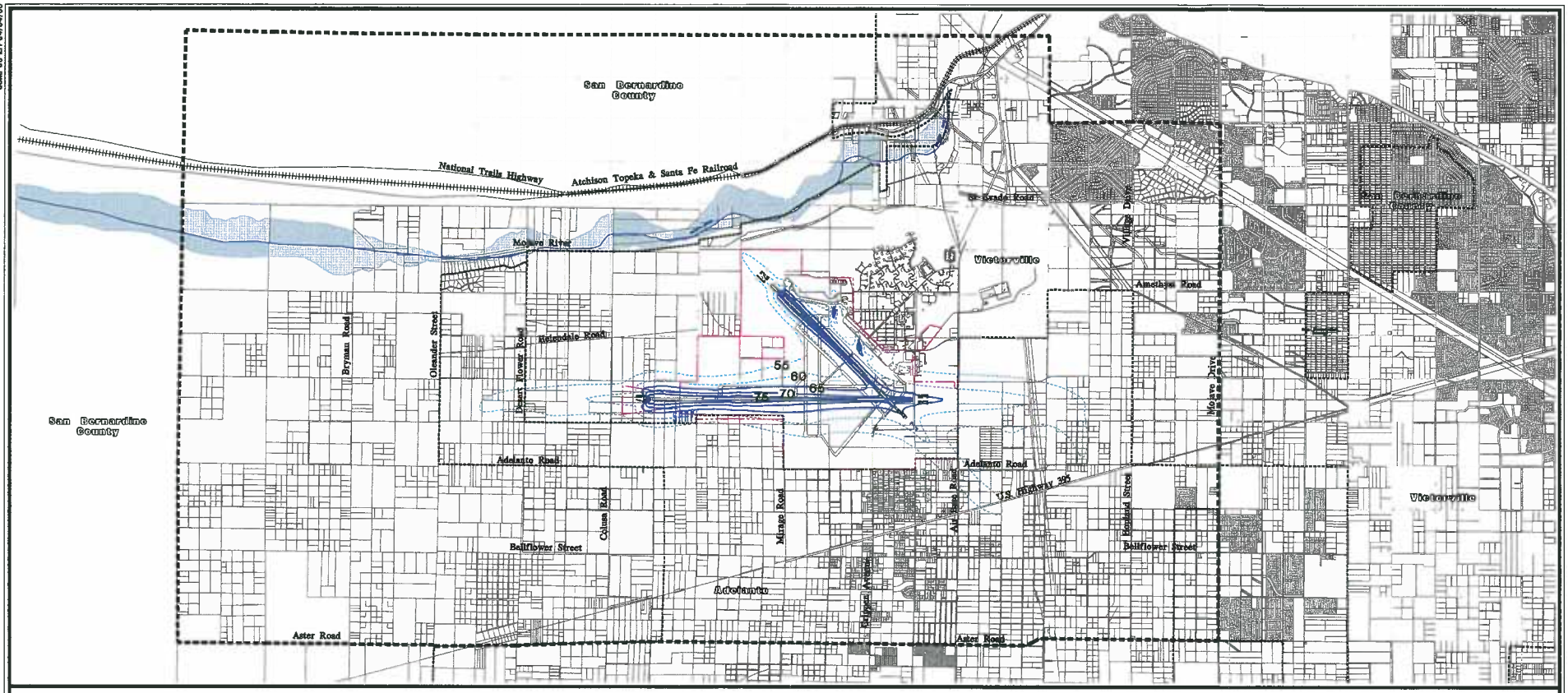
Exhibit 2G
FLIGHT TRACKS



LEGEND

- Detailed Land Use Planning Area
- Municipal Boundary
- Airport Property
- Railroad Tracks
- 2004 CNEL Contour - Marginal Effect
- 2004 CNEL Contour - Significant Effect

Source: San Bernardino County Official Land Use Map.
City of Victorville General Plan Map.
City of Adelanto General Plan Land Land Use/Zoning Map.
Coffman Associates Analysis.

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Exhibit 2H
EXISTING NOISE CONTOURS

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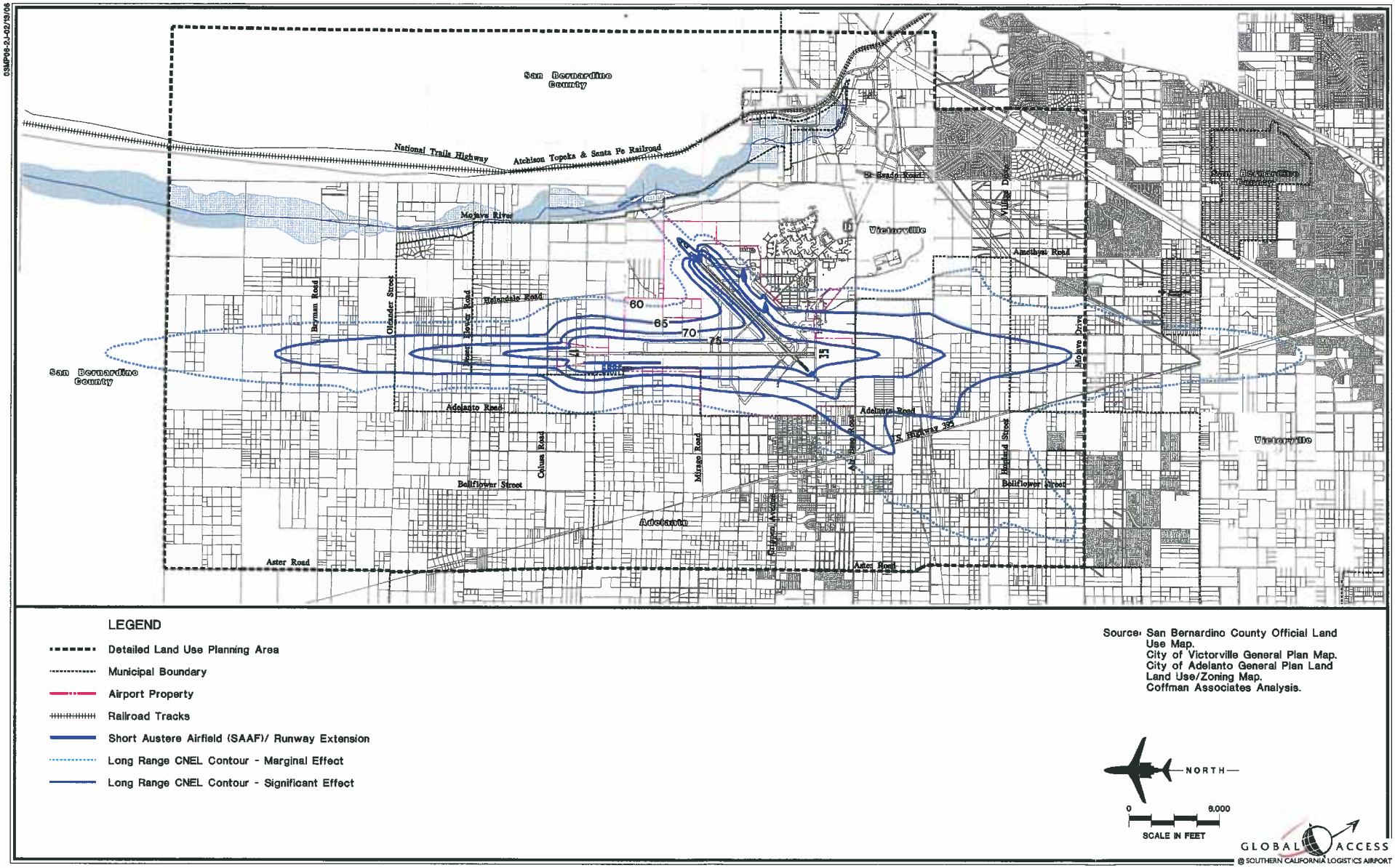

LEGEND

- Detailed Land Use Planning Area
- Municipal Boundary
- Airport Property
- Railroad Tracks
- Short Austere Airfield (SAAF)/ Runway Extension
- Long Range CNEL Contour - Marginal Effect
- Long Range CNEL Contour - Significant Effect

Source: San Bernardino County Official Land Use Map.
City of Victorville General Plan Map.
City of Adelanto General Plan Land Land Use/Zoning Map.
Coffman Associates Analysis.

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Exhibit 2J
LONG RANGE NOISE CONTOURS

Chapter Three
COMPREHENSIVE LAND USE PLAN POLICIES

The following set of policies is intended to ensure compatible development in the area surrounding Southern California Logistics Airport (SCLA). It has been developed in accordance with *the California Airport Land Use Planning Handbook* published in January 2002.

1.0 Local Jurisdictional Responsibilities: This section outlines the responsibilities of the jurisdictions affected by the SCLA Comprehensive Land Use Plan.

1.1 General Plan Consistency: Within 180 days of adoption of this plan by each affected agency, each local jurisdiction subject to this Comprehensive Land Use Plan shall amend its general plan and any other land use controls and regulations, where necessary, to be consistent with this Plan.

Projects that are determined to be consistent with this Plan by the permitting local jurisdiction do not need to be reviewed by the other affected agencies (the County of San Bernardino and the City of Adelanto). If a dispute arises, the designated Mediator will process the project consistent with the Mediation Procedures contained in Section 5 of this chapter.

Because San Bernardino County is using the alternative approach to the Airport Land Use Commission, a legally recognized board must be designated to serve as Mediator. The Local

Agency Formation Commission will serve as the Mediator for this plan.

1.2 Geographic Scope: The geographic scope of the SCLA Comprehensive Land Use Plan encompasses:

A. All lands on which the uses could be negatively affected by present or future aircraft operations at SCLA.

B. The specific limits of the Review Areas depicted on **Exhibit 3A** and defined as follows:

   i. Review Area 1 – Runway Protection Zone as illustrated on the Southern California Logistics Airport Layout Plan

   ii. Review Area 2 – Future 65 CNEL Noise Contour based on long range (2029) noise exposure contours.

   iii. Review Area 3 – Part 77 Horizontal Surface based on the Southern California Logistics Airport Layout Plan

   iv. Review Area 4 – Airport Planning Area based on the Detailed Land Use Study Area found in the 2008 Southern California Logistics Airport Comprehensive Land Use Plan Update.

C. Other lands, regardless of their location, on which certain land use characteristics could adversely affect the safety of aircraft flight.

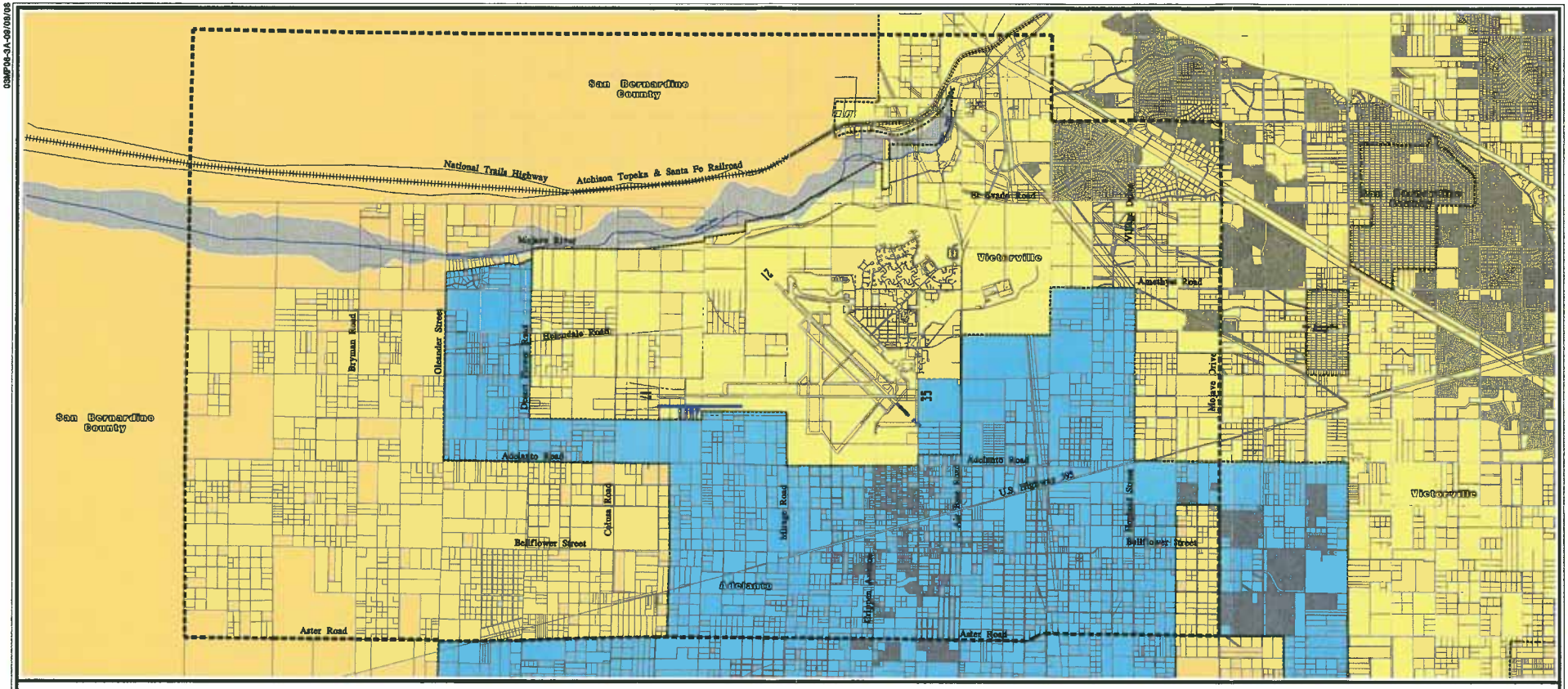
1.3 Types of Actions Reviewed: The following projects shall require compliance with this Plan before project approval by the local jurisdiction having permit authority over the project, subject to review and approval by all affected agencies. All projects subject to this section shall also be referred to the SCLA management for review:

A. Any projects that are determined by the local jurisdiction not to be appropriate for the safety or noise compatibility areas, judged on their impact to the airport and aviation activities, compliance with local ordinances, and compliance with the development standards of this Plan. Projects that are inconsistent with this Plan shall require review by all affected agencies, and potentially amended to this Plan before project approval.

B. All proposed amendments to the text or maps of the San Bernardino County, City of Victorville, or City of Adelanto General Plan, or any Specific Plan which affects any territory within the planning areas, or changes in the existing permitted land use or building standards within the Airport Planning Area.

C. All new projects proposed within the Airport Planning Area boundaries of this Comprehensive Land Use Plan shall be reviewed for consistency utilizing the Land Use Compatibility Noise and Safety Standards found in Section 3.

2.0 Types of Airport Impacts: This section identifies the compatibility concerns to be addressed by the Comprehensive Land Use Plan. Rationale for including these concerns can be



LEGEND

- Detailed Land Use Planning Area
- Municipal Boundary
- Airport Property
- Railroad Tracks
- Short Austere Airfield (SAAF)/ Runway Extension
- County of San Bernardino
- City of Adelanto
- City of Victorville

Source: San Bernardino County Official Land Use Map.
City of Victorville General Plan Map.
City of Adelanto General Plan Land Land Use/Zoning Map.
Coffman Associates Analysis.

NORTH

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Exhibit 3A
AIRPORT PLANNING AREA

found in Chapter Two of this document.

2.1 Principal Compatibility Concerns: This Plan is concerned only with the potential impacts related to:

A. Exposure to aircraft noise;

B. Land use safety with respect to both occupants of aircraft and to people on the ground;

C. Protection of airport airspace; and

D. General concerns related to aircraft overflights.

3.0 Review Process: This section outlines the review process for the comprehensive Land Use Plan. Any development that is proposed within the Airport Planning Area, as illustrated in **Exhibit 3B,** is subject to review and must be checked for compliance with the compatibility criteria outlined in **Table 3A.**

TABLE 3A
Land Use Compatibility Standards
Southern California Logistics Airport Environs

Land Use Category	Review Area 1 Runway Protection Zone	Review Area 2 Future 65 CNEL Contour	Review Area 3 Part 77 Horizontal Surface	Review Area 4 Airport Planning Area
Residential – Single Family, Duplex, Mobile home	CU	CU	CU	NA[3]
Residential – Multi-Family	CU	CU	CU	NA[3]
Transient Lodging – Motels, Hotels	CU	CU	CA[1]	NA
Schools, Libraries, Churches, Hospitals, Nursing Homes	CU	CU	CA[1]	NA
Auditoriums, Concert Halls,	CU	CU	CA[1]	NA
Sports Arenas, Outdoor Spectator Sports, Amphitheatres	CU	CU	CU	NA
Playgrounds, Neighborhood Parks	CU	CA[1]	NA[2]	NA
Golf Courses, Riding Stables, Water Recreation, Cemetery	CU	CA[1]	CA[2]	NA
Office Buildings, Business Commercial, Professional	CU	CA[1]	NA[2]	NA
Manufacturing, Transportation Services, Contract Construction	CU	NA[1]	NA[2]	NA
Wholesale/Warehouse Operations, Salvage Operations	CU	NA[1]	NA[2]	NA
Utilities	CU	NA[1]	NA[2]	NA
Agriculture	NA	NA	NA	NA
Livestock, Animal Breeding	CU	NA[1]	NA[2]	NA
Retail Trade/Commercial Services	CU	CA[1]	NA[2]	NA

[1] – The average intensity should not exceed 100 people per gross acre.
[2] – The average intensity should not exceed 150 people per gross acre.
[3] – Fair disclosure notice required for residential real estate transactions.

NA – Normally Acceptable: Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.
CA – Conditionally Acceptable: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice. Uses also subject to intensity/density restrictions for the purposes of public safety.
CU – Clearly Unacceptable: New construction of development should generally not be undertaken due to noise and safety concerns.

3.1 Noise and Safety Policies: All new projects proposed within the Airport Planning Area boundary of this Plan shall be reviewed for consistency utilizing the Land Use Compatibility Standards outlined in **Table 3A**. This table identifies land uses and establishes the compatibility standard for those types of uses. **Table 3A** is to be used in conjunction with **Exhibit 3B**, which displays the corresponding compatibility zones in relation to SCLA.

3.2 Definitions

3.2.1 Normally Acceptable (NA): Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

3.2.2 Conditionally Acceptable (CA): New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features are included in the design. Conventional construction with closed windows and fresh air supply systems or air conditioning will normally suffice. Uses are also subject to restrictions for purposes of public safety. Average usage intensity/density restrictions may apply.

(Please see the Glossary in Appendix F for additional terms and definitions.)

3.2.3 Clearly Unacceptable (CU): New construction of development should generally not be undertaken due to noise and safety concerns.

4.0 Airspace and Overflight Policies: This section includes the policies for protecting the airspace surrounding SCLA.

4.1 Airspace Obstructions: The proposed use or structure shall not be greater than the imaginary surfaces defined according to 14 CFR Part 77. These surfaces are displayed in **Exhibit 3C**.

4.2 Visual Hazards: The proposed use or structure shall not reflect glare, include distracting lights that could be mistaken for airfield lights, or produce smoke that would endanger aircraft operations. Outdoor lights shall be shielded so that they do not aim above the horizon.

4.3 Electronic Hazards: The proposed use or structure shall not emit electronic signals that will interfere with aircraft instruments or radio communication.

4.4 Wildlife Hazards: The following land uses should be kept at least 10,000 feet away from the runways at SCLA to prevent the attraction of birds:

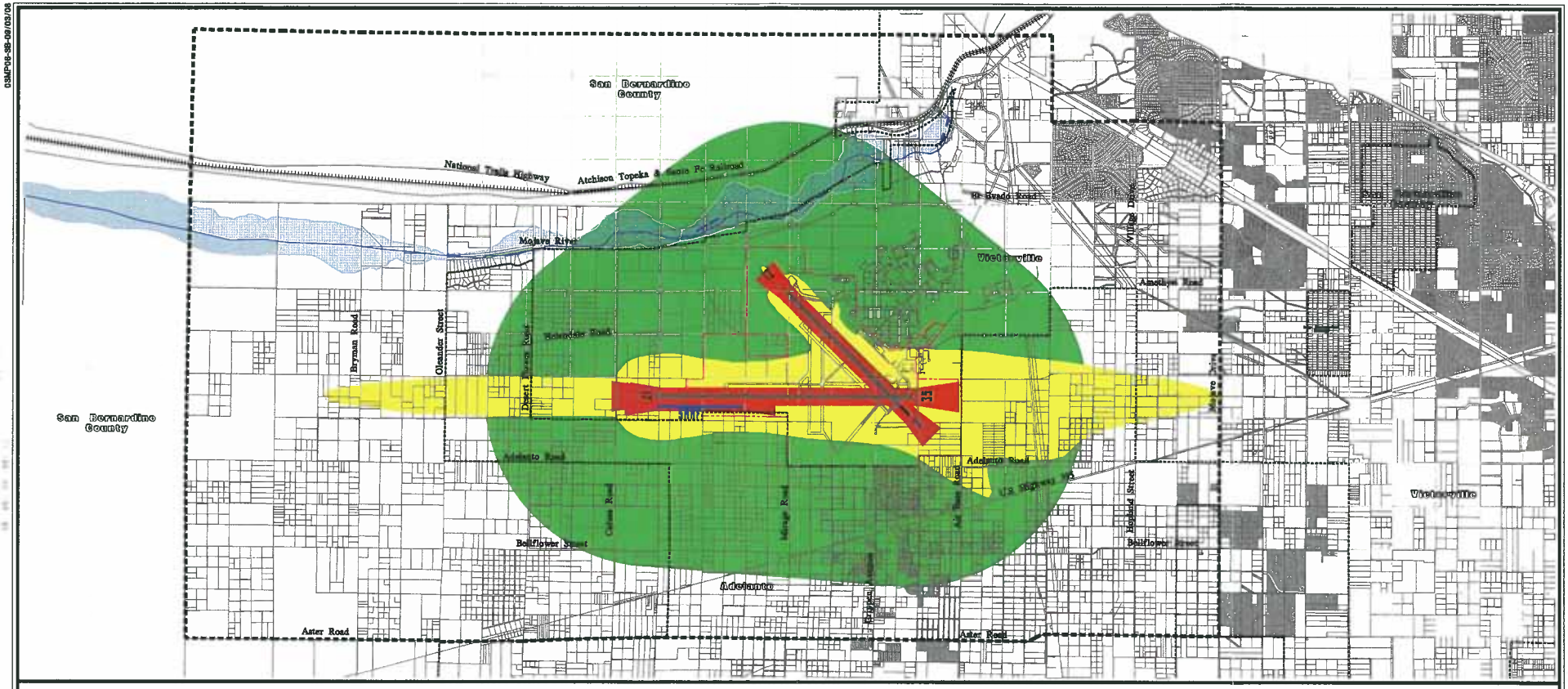
A. Golf courses with water hazards;

B. Drainage detention and retention basins;

C. Wetlands created as mitigation measures;

D. Water features incorporated into landscaped area;

E. Wildlife refuges; and



LEGEND

- Municipal Boundary
- Airport Property
- Railroad Tracks
- Short Austere Airfield (SAAF)/ Runway Extension
- Compatibility Review Area 1
- Compatibility Review Area 2
- Compatibility Review Area 3
- Compatibility Review Area 4 (Airport Planning Area)
- Water

Source: San Bernardino County Official Land Use Map.
City of Victorville General Plan Map.
City of Adelanto General Plan Land Land Use/Zoning Map.
Coffman Associates Analysis.

NORTH

0 8,000

SCALE IN FEET

GLOBAL ACCESS
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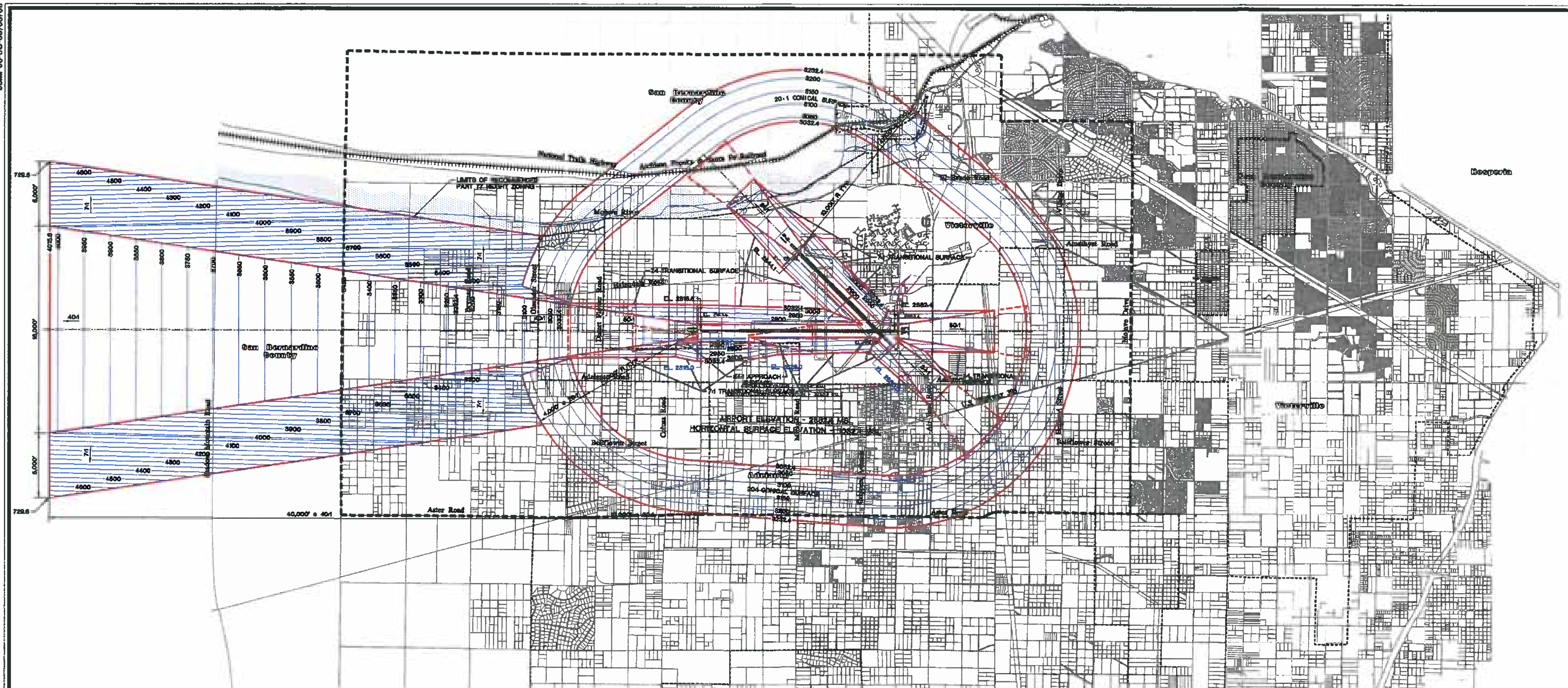
Exhibit 3B
COMPATIBILITY REVIEW AREAS



LEGEND

- Detailed Land Use Planning Area
- Municipal Boundary
- Airport Property
- Railroad Tracks
- Short Austere Airfield (SAAF)/ Runway Extension
- Water

Source: San Bernardino County Official Land Use Map.
City of Victorville General Plan Map.
City of Adelanto General Plan Land Land Use/Zoning Map.
Coffman Associates Analysis.

NORTH

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SCALE IN FEET

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Exhibit 3C
PART 77 SURFACES

F. Cereal grain agriculture.

4.5 Avigation Easements: An avigation easement will be recorded for each property developed within Compatibility Review Area Three prior to the issuance of a building permit or conditional use permit. A sample avigation easement can be found in **Appendix C**.

4.6 Fair Disclosure: All owners and potential purchasers will receive full and accurate disclosure concerning the noise, safety, or overflight impacts associated with airport operations prior to entering any contractual obligation to purchase any property within the Airport Planning Area. A sample fair disclosure statement can be found in **Appendix C**.

5.0 Amendments and Mediation: This section includes policies for amending the Comprehensive Land Use Plan and also outlines the mediation process in the event that this action is necessary.

5.1 Amendments to the Plan: Amendment to this Plan shall only occur upon review and approval of a proposed amendment by all affected agencies, as well as the SCLA operator, and consistent with Public Utilities Code 21675, and shall occur no more than once during any calendar year. Failure of all affected agencies to approve the amendment shall constitute a denial of the amendment, which shall be transmitted to the local jurisdiction having authority to approve the development approval. The local jurisdiction shall deny the amendment proposal or file for mediation in accordance with the mediation process flowchart set forth in **Exhibit 3D** and outlined in **Appendix D**, in order to approve the project.

5.2 Overruling the Airport Mediation Board: If the mediation process has been conducted, once mediation has concluded, any recommendation of the Airport Mediation Board may only be overruled by the local jurisdiction having authority to approve the development proposal, if all of the following conditions are met:

A. The local jurisdiction's governing body overrules the Local Agency Formation Commission's (LAFCO) recommendation by a minimum 2/3 vote; and the local jurisdiction's governing body makes the following findings supported by substantial evidence:

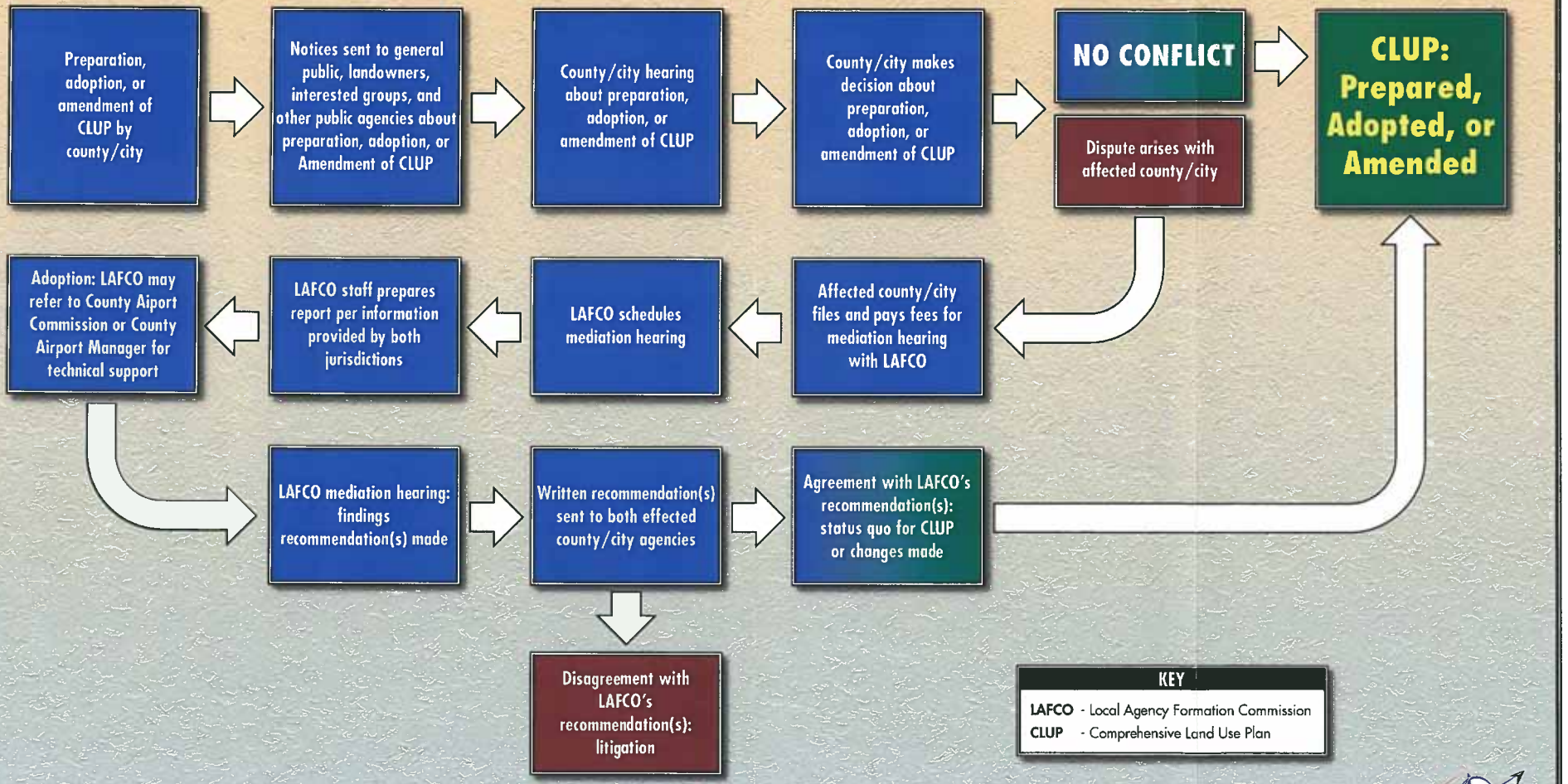
   1. The proposed use promotes the public interest by providing for the orderly development of SCLA and the surrounding environs so as to promote the overall goals and objective of the California Airport Noise Standards (PUC 21669) and does not create new noise and safety problems.

   2. The proposed use enhances the protection of the public health, safety, and welfare by ensuring the orderly expansion of the airport and the adoption of land use measures that minimize the public's exposure to excessive noise and safety hazards within the areas around SCLA to the extent that such areas are not

already devoted to incompatible uses.

5.3 Extent of Overrule: An overrule shall only apply to the development proposal for which the amendment was processed, and shall not constitute an amendment to this Comprehensive Land Use Plan. Such action shall not relieve the permitting local jurisdiction from further compliance with this plan.

CLUP PREPARATION PROCESS AND CONFLICT RESOLUTION



GLOBAL ACCESS
@ SOUTHERN CALIFORNIA LOGISTICS AIRPORT

Exhibit 3D
CLUP PREPARATION PROCESS
AND CONFLICT RESOLUTION

Appendix A
RESOLUTIONS AND GENERAL PLAN PROVISIONS RELATED TO AIRPORT LAND USE COMPATIBILITY

INTRODUCTION

This appendix provides copies of Resolutions 95-81, 95-26, and 95-46 adopted by the County of San Bernardino, the City of Adelanto, and the City of Victorville, respectively. These resolutions determine the agency responsible for the preparation, adoption, and amendment of this Comprehensive Land Use Plan.

This appendix also includes a listing of the general plan policies from the jurisdictions affected by Southern California Logistics Airport (SCLA). According to California law, the general plan must contain at least seven elements: land use, circulation, housing, conservation, open space, noise, and safety (Curtin 1996, p. 9-10). Other elements may be prepared as needed or desired. Airport policies can be implemented in several different elements. The three impacted communities each have different approaches to implementing land use compatibility policies. Following are the aviation-related policies from the City of Victorville, the City of Adelanto, and San Bernardino County.

RESOLUTION NO. 95-81

On April 18, 1995 , on motion of Supervisor Riordan , duly seconded by Supervisor Eaves and carried, the following resolution is adopted:

WHEREAS, Public Utilities Code section 21670 et seq. provides for the establishment of an airport land use commission (ALUC) in every county in which there is located an airport which is served by a scheduled airline; and

'WHEREAS, prior to passage of Senate Bill 443 (enacted and effective June 30, 1993), section 21670(b) of the Public Utilities Code provided that each county "shall" establish a commission in such circumstances; and

WHEREAS, Senate Bill 443 amended section 21670(b) to change the term "shall" to "may" in order to relieve local entities such as the County of the duty to incur unnecessary expenses in certain aspects of airport land use; and

WHEREAS, the County Board of Supervisors, by adoption of Resolution No. 93-295 on October 19, 1993, withdrew from the Joint Powers Agreement (JPA) which established the East, West, and Mountain/Desert Planning Agencies - Airport Land Use Commissions; and

WHEREAS, the State of California no longer reimburses San Bernardino County for administration of the ALUC program; and

WHEREAS, Assembly Bill No. 2831 (effective January 1, 1995) amended section 21670(b) to change the term "may" to "shall" in order to reinstate the requirement that local entities establish an ALUC; and

WHEREAS, Assembly Bill No. 2831 amended Public Utilities Code section 21670.1 to provide an alternative procedure to the requirement for the establishment of an ALUC which allow local jurisdictions to make land use decisions for areas within a public use airport sphere of influence as designated by the Comprehensive Airport Land Use Plan (CALUP);and

WHEREAS, use of the alternative procedure set forth in section 21670.1 rather than re-establishment of the County ALUCs will eliminate redundant reviews and streamline processes.

THEREFORE, BE IT RESOLVED that the Board of Supervisors hereby adopts the alternative procedure set forth in Public Utilities Code section 21670.1, subdivision (c).

RESOLVED, FURTHER that the Board of Supervisors hereby determines that proper land use planning pursuant to Article 3.5 of Chapter 4 of Part 1 of Division 9 of the Public Utilities Code can be accomplished pursuant to Public Utilities Code section 21670.1, subdivision (c).

RESOLVED, FURTHER that the Board of Supervisors hereby determines that proper land use planning may be accomplished within areas around public airports by using as guidelines the State Division of Aeronautics Airport Land Use Planning Handbook and any applicable federal aviation regulations.

RESOLVED, FURTHER that the Board of Supervisors hereby determines that proper land use planning may be accomplished within areas around public airports through county and local planning laws and 'ordinances which will address the preparation, adoption and amendment of the comprehensive airport land use plan.

RESOLVED, FURTHER that the Board of Supervisors hereby determines that the planning efforts of the County around public airports will involve notification of the general public, landowners, interested groups, and other public agencies regarding the preparation, adoption, and amendment of the comprehensive airport land use plan.

RESOLVED, FURTHER that the Board of Supervisors hereby determines that the Airport Mediation Board will serve as the mediator of disputes arising from the preparation, adoption, and amendment of the comprehensive airport land use plan.

RESOLVED, FURTHER that the Board of Supervisors hereby determines that its respective general and specific plans will be amended, where necessary to be consistent with the adopted comprehensive airport land use plan for each airport.

RESOLVED, FURTHER that the Board of Supervisors hereby determines that the agency responsible for the preparation, adoption, and amendment of each comprehensive airport land use plan shall be each local jurisdiction that contains an airport within its boundaries in cooperation with adjacent impacted jurisdictions. Within the unincorporated areas that contain an-airport, the County Planning Department shall be the agency charged with this responsibility.

RESOLVED, FURTHER that the Board of Supervisors hereby determines that the adoption of the alternative procedure is exempt from the provisions of the California Environmental Quality Act (CEQA) per Public Resources Code section 21000 et seq.

STATE OF CALIFORNIA)
) ss.
COUNTY OF SAN BERNARDINO)

I, EARLENE SPROAT, Clerk of the Board of Supervisors of San Bernardino County, California, hereby certify the foregoing to be a full, true and correct copy of the record of the action as the same appears in the Official Minutes of said Board at its meeting of April 18, 1995.

EARLENE SPROAT, Clerk of the Board of Supervisors of San Bernardino County

By _____ Deputy

RESOLUTION 95-26.

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF ADELANTO, SAN BERNARDINO COUNTY, CALIFORNIA, ADOPTING AN ALTERNATIVE PROCEDURE SET FORTH IN PUC SECTION 21670.1 (c) RE: AIRPORT LAND USE COMMISSION

WHEREAS, Public Utilities Code section 21670 et seq. Provides for the establishment of an Airport Land Use Commission (ALUC) in every county in which there is located an airport which is served by a scheduled airline; and

WHEREAS, prior to passage of Senate Bill 443 (enacted and effective June 30, 1993), section 21670(b) of the Public Utilities Code provided that each county "shall" establish a commission in such circumstances; and

WHEREAS, Senate Bill amended section 21670 (b) to change the term "shall" to "may", in order to relieve local entities such as the County of the duty to incur unnecessary expenses in certain aspects of airport land use; arid

WHEREAS, the City Council, by adoption of Resolution No. 93-105. on October 26, 1993 withdrew from the Joint Powers Agreement (JPA) which established the East, West, and Mountain/Desert Planning Agencies - Airport Land Use Commissions; and

WHEREAS, the State of California no longer reimburses San Bernardino County for administration of' the ALUC program; and

WHEREAS, Assembly Bill No. 2831 (effective January 1, 1995) amended section 21670(b)'to change the term "may" to "shall" in order to reinstate the requirement that local entities establish an

WHEREAS, Assembly Bill No. 2831 amended Public Utilities Code section 21670J1 to provide an alternative -procedure to the requirement for the establishment of .an ALUC which allow local jurisdictions to make land use decisions for areas within a public use airport sphere of influence as designated by the Comprehensive Airport Lane Use Plan (CALUP); and

WHEREAS, use of the alternative procedure set forth in section 21670.1 rather than re-establishment of the County ALUCs will eliminate redundant reviews and streamline processes.

THEREFORE, BE IT RESOLVED that the City Council hereby adopts the alternative procedure set forth in Public Utilities Code section 21670.1, subdivision (c).

RESOLVED, FURTHER that the City Council hereby determines that proper land use planning pursuant to Article 3.5 of Chapter 4 of Part 1 of Division 9 of the Public Utilities Code can be accomplished pursuant to Public Utilities Code section 21670.1, subdivision (c).

RESOLVED, FURTHER that the City Council hereby determines that proper land use planning may be accomplished within areas around public airports by using as guidelines the State Division of Aeronautics Airport Land Use Planning Handbook and any applicable federal aviation regulations.

RESOLVED, FURTHER that the City Council hereby determines that proper land use planning may be accomplished within areas around public airports through local planning laws and ordinances which will address the preparation, adoption and amendment of the comprehensive airport land use plan.

RESOLVED, FURTHER that the City Council hereby determines that the planning, efforts of the city around public airports will involve notification of the general public, landowners, interested groups, and other public agencies regarding the preparation, adoption, and amendment of the comprehensive' airport land use plan.

RESOLVEP, FURTHER that the City Council hereby determines that the Airport Mediation Board will serve as the mediator of disputes arising from the preparation, adoption, and amendment of the comprehensive airport land use plan.

RESOLVED, FURTHER that the City Council hereby determines that the agency responsible for the preparation, adoption, and amendment of the comprehensive airport land use plan shall be the local jurisdiction that contains an airport, within its" boundaries in cooperation with this city.

RESOLVED, FURTHER that the City Council hereby determines that the adoption of the alternative procedure is exempt from the provisions of the California Environmental Quality Act (CEQA) per Public Resources Code section 2100 et seq.

PASSED, APPROVED AND ADOPTED by the City Council of the City of Adelanto this 11th day of April, 1995.

Judith A. Crommie, Mayor

W. Gasaway, City Clerk

I, SHARON W. GASAWAY, City Clerk of the City of Adelanto, California, do hereby certify that the foregoing Resolution No. 95-26 was duly and regularly adopted at a regular meeting of the City Council of the City of Adelanto on the 11th day of April, 1995, by the following vote, to-wit:

AYES: Councilors Thornburg, Smith, Scott, Mayor Pro Tem Scarpa, Mayor Crommie

Noes: None

ABSENT: None

IN WITNESS WHEREOF, I hereunto set my hand and affix the official seal of the City of Adelanto, on the 11th day of April, 1995.

City Clerk of the City of Adelanto

Sharon W Gasaway

and of the City Counci

(SEAL)

RESOLUTION NO. 95-46

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF VICTORVILLE ADOPTING THE ALTERNATIVE PROCEDURES FOR AIRPORT LAND USE COMMISSIONS SET FORTH IN PUBLIC UTILITIES CODE SECTION 21670.1, SUBDIVISION (C)

WHEREAS, Public Utilities Code Section 21670 et seq. provides for the establishment of an airport land use commission (ALUC) in every county in which there is located an airport which is served by a scheduled airline; and

WHEREAS, prior to passage of Senate Bill 443 (enacted and effective June 30, 1993), Section 21670(b) of the Public Utilities Code provided that each county "shall" establish a commission in such circumstances; and

WHEREAS, Senate Bill 443 amended Section 21670(b) to .change the term "shall" to "may" in order to relieve local entities such as the County of the duty to incur unnecessary expenses in certain aspects of airport land use; and

WHEREAS, the City Council, by adoption of Resolution No. 93-122 on October 26, 1993, withdrew from the Joint Powers Agreement (JPA) which established the East, West, and Mountain/Desert Planning Agencies - Airport Land Use Commission; and

WHEREAS, the State of California no longer reimburses San Bernardino County for administration of the ALUC program; and

WHEREAS, Assembly Bill No. 2831 (effective January 1, 1995) amended Section 21670(b) to change the term "may" to "shall" in order to reinstate the requirement that local entities establish an ALUC; and

WHEREAS, Assembly Bill No. 2831 amended Public Utilities Code Section 21670.1 to provide an alternative procedure to the requirement for the establishment of an ALUC which allow local jurisdictions to make land use decisions for areas within a public use airport sphere of influence as designated by the Comprehensive Airport Land Use Plan (CALUP); and

WHEREAS, use of the alternative procedure set forth in Section 21670.1 rather than re-establishment of the County ALUCs will eliminate redundant reviews and streamline processes; NOW,

THEREFORE, BE IT RESOLVED that the City Council hereby adopts the alternative procedure set forth in Public Utilities Code Section 21670.1, subdivision (c).

RESOLVED, FURTHER that the City Council hereby determines that proper land use planning pursuant to Article 3.5 of Chapter 4 of Part 1 of Division 9 of the Public Utilities Code can be accomplished pursuant to Public Utilities Code Section 21670.1, subdivision (c).

RESOLVED, FURTHER that the City Council hereby determines that proper land use planning may be accomplished within areas around public airports through local planning laws and ordinances which will address the preparation, adoption and amendment of the comprehensive airport land use plan.

RESOLVED, FURTHER that the City Council hereby determines that the planning efforts of the city around public airports will involve notification of the general public, landowners, interested groups, and other public agencies regarding the preparation, adoption, and amendment of the comprehensive airport land use plan.

RESOLVED, FURTHER that, the City Council hereby determines that the Airport Mediation Board .will serve as the mediator of disputes arising from the preparation, adoption, and amendment of the comprehensive airport land use plan.

RESOLVED, FURTHER that the City Council hereby determines that its general and specific plans will be amended, where necessary, to be consistent with the adopted comprehensive airport land use plan.

RESOLVED, FURTHER that the City Council hereby determines that the Planning Department shall be the agency responsible for the preparation, adoption, and amendment of the comprehensive airport land use plan within the City boundaries in cooperation with adjacent impacted jurisdictions.

RESOLVED, FURTHER that the City Council hereby determines that the adoption of the alternative procedure is exempt from the provisions of the California Environmental Quality Act (CEQA) per Public Resources Code Section 2100 et seq.

PASSED, APPROVED AND ADOPTED this 4th day of April, 1995.

MAYOR OF THE CITY OF VICTORVILLE
(PRO TEM)

I, CAROLEE STOTKO, City Clerk of the City of Victorville and ex-officio Clerk to the City Council of said. City, DO HEREBY CERTIFY that the foregoing is a true and correct copy of Resolution No. 95-46 which was adopted at a meeting held on the 4th day of April, 1995 by the following roll call vote, to wit:

AYES:	Councilmembers Almond, Busby, Caldwell, Diaz and Rothschild
NOES:	None
ABSENT:	None
ABSTAIN:	None

CITY CLERK OF THE CITY OF VICTORVILLE

CITY OF VICTORVILLE GENERAL PLAN, UPDATED 1997

Land Use Element

Goal 1: Victorville as a balanced community with residential, commercial, and industrial development.

Policy 1.5 – The City will manage development in a manner that does not conflict with the operations of Southern California Logistics Airport.

Imp. 1: The City will coordinate with the County of San Bernardino and the City of Adelanto to ensure land uses surrounding Southern California Logistics Airport are compatible.

Imp. 2: The City will adopt the Comprehensive Land Use Plan and coordinate its adoption by the County of San Bernardino and the City of Adelanto.

Imp. 3: The City will continue to implement the Southern California Logistics Airport Specific Plan.

Noise Element

Goal 1: Victorville as a community which is sensitive to and identifies significant noise sources.

Policy 1.2 – The City will continue implementation of its land use policies and recommendations to ensure that there is no conflict or inconsistency between the operation of the Southern California Logistics Airport and future land uses within the City of Victorville. For more discussion see the Southern California Logistics Airport Community Plan Element.

Imp. 1: The City will continue to assess projects through the subdivision, site plan, conditional use permit, and other development review processes to create conditions of approval which ensure noise compatibility where appropriate.

Imp. 2: The City will continue to monitor Southern California Logistics Airport operations.

Goal 2: Victorville as a community which manages the effects of noise emissions to help ensure noise reduction of adverse effects.

Policy 2.1 – The City will continue to implement acceptable standards for noise for various land uses throughout the City.

Imp. 1: The City will continue to assess projects through the subdivision, site plan, conditional use permit, and other development review processes to create conditions of approval which ensure noise compatibility where appropriate.

Imp. 2: New residential development in those areas identified as having a CNEL of 65 dB or greater will have to have a noise study performed to determine what level of sound insulation, if any, is required to meet the acceptable interior noise levels as established by the City.

Policy 2.2 – The City will continue implementation of its land use policies and recommendations to ensure that there is no conflict or inconsistency between the operation of the Southern California Logistics Airport and the future land uses within the City of Victorville. For more discussion see the Southern California Logistics Airport Community Plan Element.

Imp. 1: The City will continue to assess projects through the subdivision, site plan, conditional use permit, and other development review processes to create conditions of approval which ensure noise compatibility where appropriate.

Policy 2.4 – Establish and maintain coordination, where applicable, among City, State, and Federal agencies involved in noise abatement.

Imp. 1: City will continue to monitor Southern California Logistics Airport operations.

Imp. 2: The City will continue to review and comment, when appropriate, upon discretionary projects from adjacent local jurisdictions.

Policy 2.5 – The City will continue, at the earliest stage possible in the planning process, to assess land use designations as they are proposed in relationship to noise generators.

Imp. 1: The City will continue to assess, at the time of general plan amendment, the appropriateness of land use changes allowing for future development projects to determine their compatibility with the existing and/or future noise environment.

Policy 2.6 – The City will continue to consider development and adoption of a comprehensive noise ordinance based upon quantitative rather than qualitative noise standards.

Imp. 1: The City will continue to monitor noise complaints and determine the need for increased noise enforcement based upon new standards.

Safety Element

Goal 1: Victorville as a community which identifies, establishes, and maintains standards for public health and safety

Policy 1.5 – The City will continue to apply appropriate safety regulations to land use and development decisions in those portions of the City that are affected by the aviation operations at Southern California Logistics Airport.

Imp. 1: The City will implement the Comprehensive Airport Land Use Plan which contains safety measures such as height restrictions and density limitations and use it to ensure land use compatibility of a proposed use or development with SCLA.

Imp. 2: The City will continue to implement the SCLA Specific Plan which provides land use designations and regulations compatible with airport operations.

Goal 2: Victorville as a community which integrates public health and safety issues into its planning and development policies.

Policy 2.2 – The City will apply appropriate regulations to land use and development decisions in those portions of the City that are affected by the aviation operations of SCLA.

Imp. 1: The City will implement the Comprehensive Airport Land Use Plan which will be used to determine/ensure land use compatibility of a proposed use or development with SCLA.

Imp. 2: The City will continue to implement the SCLA Specific Plan which provides land use designations and regulations based on the effect of aviation operations.

Goal 3: Victorville as a community which shares its public health and safety concerns with other public agencies, local, regional, state, and federal.

Imp. 6: The City will continue to hold periodic meetings with the Victor Valley Economic Development Authority (VVEDA) to ensure emergency preparedness and other issues related to public health and safety (such as ensuring aircraft operations comply with established flight patterns and procedures, improve roadways to benefit public safety, and properly dispose of hazardous waste generated at the airport) at SCLA are maintained.

Southern California Logistics Airport Community Plan Element

Goal 1: Southern California Logistics Airport as a commercial air facility with associated uses integrated into, compatible with, and supportive of its operation.

Policy 1.1 – The City will promote the development of compatible land uses in the area affected by airport operations to ensure that there is no conflict or inconsistency between the operation of SCLA as a civilian airport and future land uses within the City and surrounding area.

Imp. 1: The City will adopt the Comprehensive Airport Land Use Plan and coordinate its adoption by the County of San Bernardino and the City of Adelanto.

Imp. 2: The City will coordinate with the County of San Bernardino and the City of Adelanto to ensure land uses surrounding Southern California Logistics Airport are compatible.

Imp. 3: The City will continue to implement the Southern California Logistics Airport Specific Plan.

Goal 3: Southern California Logistics Airport with minimal risk to public health and safety.

Policy 3.1 – The City will make efforts to safeguard the general welfare of the inhabitants within the vicinity of the airport by minimizing exposure to crash hazards associated with aircraft operations.

Imp. 1: The City will utilize the Comprehensive Airport Land Use Plan which identifies object free areas and safety review areas which provides height, density and use restrictions.

Imp. 2: The City will review projects within the areas covered by the Comprehensive Airport Land Use Plan to ensure that the use or development is compatible with airport operations.

Policy 3.2 – The City will make efforts to safeguard the general welfare of the inhabitants within the vicinity of the airport by minimizing the average noise levels deemed to be excessive.

Imp. 1: The City will utilize the Comprehensive Airport Land Use Plan to determine if a proposed use would be negatively impacted by excessive noise levels.

Imp. 2: The City will implement the Southern California Logistics Airport Specific Plan which separates land uses based on, among other criteria, noise sensitivity.

Imp. 3: The City will periodically reevaluate the noise model by using the type of aircraft and number of events to ensure that land uses are separated based on noise sensitivity.

Imp. 4: The City will continue to separate noise sensitive land uses from the 65 CNEL contour.

Policy 3.3 – The City will continue dialogue with the Victor Valley Economic Development Authority on Southern California Logistics Airport to discuss issues related to public health and safety.

Imp. 1: The City will continue to hold periodic meetings with the airport operator to ensure that aircraft operations comply with established flight patterns and procedures.

Imp. 2: The City will continue to request data collection on airport operations, such as type of aircraft and number of events, to be used for noise modeling.

CITY OF ADELANTO GENERAL PLAN UPDATE, ADOPTED 1994

Land Use Element

Goal LU 4: To promote the transformation of George Air Force Base (now Southern California Logistics Airport) into a major airport.

Policies:

LU 4.2: Coordinate all planning and design of Airport with the FAA, assuring that Federal, State, and local requirements are met.

Implementation Strategies:

LU 4.1.2: Require the preparation of a Master Development Plan for the long range operation of the airport facility and the surrounding Airport Development District.

LU 4.1.3: Require that all proposed development within the Airport Development District Zone be in conformance with the Master Development Plan for the Airport.

LU 4.1.4: Require that all land uses around the airport be in conformance with the plans, rules and regulations contained in a Master Development Plan for the Airport.

LU 4.1.5: Require all new and existing development to conform to policies and regulations established for uses occurring within the 65 CNEL and overflight areas of the proposed airport facility.

Part IV. Land Use Descriptions, Goals and Policies

C. Airport Development District Designation (ADD)

The primary purpose of the Airport Development District land use designation is to guide the planning, design, development and operation of a major airport, and the complimentary surrounding uses contained therein. Within the ADD, the primary uses will be specifically oriented around airport operation, services, industries, and businesses. The ADD will be restrictive of uses that are incompatible with aircraft noise and aviation-related activity.

The Airport Development District land use designation identifies uses which are compatible with the operation of a major civilian aviation facility. Projects or development that occurs within the ADD must be in coordination with approved zoning regulations for the ADD and the aviation operations portion of the airport specific plan area.

ADD Goals, Policies and Implementation Strategies

The following goals and policies help define the parameters for development that will be allowed to take place within the ADD:

Goal ADD 1: Assure that the ADD is capable of containing and supporting the development of a major airport facility that will accommodate Southern California's current and future unmet air transportation demand.

Policies:

ADD 1.2: Assure that incompatible developments will not encroach on the ADD, reducing its ability to provide service to accommodate a major airport.

Implementation Strategies:

ADD 1.1.1: Assist, as funds become available, in the relocation of residents and businesses currently located in areas designated as ADD which are not consistent with the ADD zoning designation/code.

ADD 1.1.2: Require that projects within the ADD area be "master planned" according to the ADD section of the zoning code and Specific Plan area assuring the highest and best use of the district.

Goal ADD 3: Assure that the ADD can function properly and effectively without creating severe adverse impacts on the surrounding community.

ADD 3.1: Restrict residential development within the boundaries of the ADD and within the 65 CNEL noise contour.

Implementation Strategies:

ADD 3.1.1: Require that all developments within the potential 65 CNEL noise contour conform to the construction standards set forth in this document and according to local, state and federal guidelines.

Noise Element

The following are specific mitigation/implementation strategies incorporated into the General Plan that will lessen the significance of airport noise impacts to residents and businesses in the Adelanto Planning Area:

1. Require the preparation of a Master Development Plan specific plan for the long range operational requirements of the airport facility and the surrounding Airport Development District.

2. Require that all proposed development within the Airport Development District be in conformance with the Master Development Plan/Specific Plan

3. Require all new existing development to conform to policies and regulations established for uses occurring within the 65 CNEL and overflight areas of the proposed airport facility.

Other strategies which are controlled by the operational characteristics of the airport to lessen the severity of noise impacts include:

1. Operational measures: Change take-off, climb-out, or landing procedures; change flight tracks, limit or rotate primary runway usage, enforce prescribed flight track use and fan out departure flight tracks. Prohibit or limit Stage II aircraft operations.

2. Preventative measures: Acquire undeveloped land adjacent to the runways that are exposed to aircraft noise levels of 65 dB or greater. Restrict new residential and hospital development to areas outside the 65 CNEL contour.

3. Management measures: Develop a noise monitoring system and establish a community relations office.

4. Remedial measures: Acquire mobile home sites and single family homes exposed to aircraft noise of 65 CNEL or greater. Redevelop such uses to other more compatible uses related to the operations of the airport. Establish and

conduct a sound attenuation program for single family residences, schools, hospitals, and churches in areas exposed to aircraft noise of 65 dB or greater.

C. Goals and Policies

NS 1: To reduce the number of persons and land uses exposed to excessive noise within the Planning Area.

NS 2: To provide a safe and comfortable living environment for new residential, business, and commercial developments in Adelanto which are minimally affected by noise.

NS 1.3: Ensure through the General Plan provisions and the objectives and policies contained therein, a compatible noise environment for all existing and future land uses within the City.

NS 1.4: Encourage the School District to design and locate schools so that the exterior noise exposures do not exceed 65 CNEL and interior peak levels do not exceed 60 DBA as a result of exterior noise.

NS 1.5: Ensure through the design review process that library facilities are designed and located so that interior noise levels do not exceed 65 CNEL and average interior noise levels during business hours do not exceed 40 dB.

NS 1.6: Ensure through the design review process that interior noise levels for hospital and convalescent homes do not exceed 55 CNEL in interior living areas and 45 CNEL in interior sleeping areas.

NS 1.7: Ensure through the design review process that recreational areas intended for quiet or passive activities are designed and located so that noise levels do not exceed 70 dB.

NS 1.8: Ensure through the design review process that recreational areas intended for noise or active uses are buffered from passive use areas and from surrounding noise sensitive land uses.

NS 1.9: Ensure through the design review process that business and professional offices, where effective communication is essential, mitigate interior noise to 50 CNEL.

NS 1.10: Ensure through the design review process that exterior noise levels at commercial and industrial areas do not exceed 75 dB.

NS 1.11: Ensure through the design review process that noise tolerant land uses are located in areas irrevocably committed to noise producing land uses, such as transportation corridors or railroads.

NS 1.14: Consider the following uses noise sensitive and discourage them in areas where exterior noise levels exceed 65 CNEL unless measures are implemented which reduce the noise exposure below this level: single and multiple family residential uses, group homes, hospitals, schools, and other learning institutions, parks and open space areas where quiet is a basis for use.

NS 1.17: The application of noise insulation and other noise control techniques in new schools, hospitals, and convalescent homes shall be consistent with State and Federal regulations.

D. Implementation Strategies

2. Long Term

NS 1.2.5: Enforce the California Noise Insulation Standards (Title 25 California Administrative Code) for multi-family dwellings to ensure an acceptable maximum interior noise level of 45 CNEL in habitable rooms and maintain adequate noise insulation.

NS 1.2.6: Incorporate measures into future residential projects which attenuate exterior noise levels in outdoor activity areas to a maximum of 65 CNEL.

NS 1.2.7: Future projects approved within the City shall reflect adopted policies regarding the reduction of unnecessary noise near sensitive receptors such as parks, hospitals, libraries, schools and convalescent homes.

NS 1.2.8: The City shall periodically review County and regional plans for land use, transportation, airport operation, etc. to identify any potential noise impacts and develop strategies for the control of major noise sources on a county wide and regional basis.

SAN BERNARDINO COUNTY GENERAL PLAN, ADOPTED 1989

Noise Element

The overall purpose of the San Bernardino County Noise Element is to protect the citizens of the County from the harmful and annoying effects of exposure to excessive noise, and to protect the economic base of the County by preventing the encroachment of incompatible land uses within areas affected by existing noise-producing uses.

The general goals of the San Bernardino County Noise Element are to:

B-5: Develop and adopt specific policies and an effective implementation program to abate and avoid excessive noise exposures in the County by requiring that effective noise mitigation measures be incorporated into the design of new noise-generating and new noise-sensitive land uses.

B-6: Provide sufficient noise exposure information so that existing and potential noise impacts may be effectively addressed in the land use planning and project review processes.

B-7: Protect areas within the County where the present noise environment is within acceptable limits.

Policies

The following specific policies have been adopted to accomplish the goals of the Noise Element.

NO-1 Because excessive noise can interfere with sleep, speech and health, yet can be mitigated to acceptable levels through land use design requirements:

a. Areas within San Bernardino County shall be designated as "noise impacted" if exposed to projected future exterior noise levels from mobile or stationary sources exceeding the standards listed in Figures II-8 and II-9.

b. New development of residential or other noise-sensitive land uses will not be permitted in noise-impacted areas unless effective mitigation measures are incorporated into the project design to reduce noise levels to the standards of Figures II-8 and II-9. Noise-sensitive land uses include residential uses, schools, hospitals, nursing homes, churches and libraries.

c. When industrial, commercial or other land uses, including locally-regulated noise sources, are proposed for areas containing noise-sensitive land uses,

noise levels generated by the proposed use shall not exceed the performance standards of Figure II-9 within outdoor activity areas. If outdoor activity areas have not yet been determined, noise levels shall not exceed the performance standards of Figure II-9 at the boundary of areas planned or zoned for residential or other noise-sensitive land uses.

d. Prior to approval of proposed development of new residential or other noise-sensitive land uses in noise-impacted areas or a new noise generating use in an area which could affect existing noise-sensitive land uses, an acoustical analysis shall be required. The appropriate time for requiring an acoustical analysis is during the environmental review process so that noise mitigation may be an integral part of the project design. The acoustical analysis shall:

   i) Be the responsibility of the applicant.
   ii) Be prepared by a qualified person experienced in the fields of environmental noise assessment and architectural acoustics.
   iii) Include representative noise level measurements with sufficient sampling periods and locations to adequately describe local conditions.
   iv) Include estimated noise levels in terms of the descriptors shown in Figures II-8 and II-9 for existing and projected future (20 years hence) conditions, with a comparison made to the adopted policies of the Noise Element.
   v) Include recommendations for appropriate mitigation to achieve compliance with the adopted policies and standards of the Noise Element. Where the noise source in question consists of intermittent single events, the report must address the effects of maximum noise levels in sleeping rooms in terms of possible sleep disturbance.
   vi) Include estimated noise exposure after the prescribed mitigation measures have been implemented. If compliance with the adopted standards and policies of the Noise Elements will not be achieved, acoustical information to support a statement of overriding considerations for the project must be provided.

e. The County shall develop and employ procedures to ensure that requirements imposed pursuant to the finding of an acoustical analysis are implemented as part of the project review and building permit processes.

f. The County shall enforce the State Noise Insulation Standards (California Administrative Code, Title 24) and Chapter 35 of the Uniform Building Code (UBC). Title 24 requires that an acoustical analysis be prepared for all new developments of multi-family dwellings, condominiums, hotels and motels proposed for areas within the 60 dB Ldn (or CNEL) contour of a major noise source for the purpose of documenting that an acceptable interior noise level of 45 dB Ldn (or CNEL) or below will be achieved with the windows and doors closed. UBC Chapter 35 requires that common wall and floor/ceiling

assemblies within multi-family dwellings comply with minimum standards for the transmission of airborne sound and structure-borne impact noise.

Safety Element

Policies

AV-1 Because airports do not own or control all of the land necessary to ensure the safety of their operations and adjacent land uses, the County shall:

a. Adopt the following Land Use Compatibility/Aviation chart (Figure II-10) as applicable to all discretionary and ministerial actions for **Safety Overlay Districts** delineated of the Hazards Overlay Maps. Safety Areas are defined as follows:

   i) That area which is defined within an adopted Airport Comprehensive Land Use Plan.
   ii) That area which is defined within an adopted Interim Airport Land Use Plan (where there is no adopted Airport Comprehensive Land Use Plan.
   iii) That area which is defined within a low altitude/high speed corridor designated for military aircraft operations.

b. Airport Safety Review Areas are categorized within an adopted Airport Comprehensive Land Use Plan

   i) The area which is de defined within an adopted Airport Comprehensive Land Use Plan
   ii) Where there is no adopted Airport Comprehensive Land Use Plan they are generally categorized as follows:

      (1) Airport Safety Review Area 1 (AR1) shall be those areas at either end of the runway, outside the airport boundaries, that corresponds with the FAA Runway Protection Zone (per FAR Part 152) for each runway end. Also it is any area identified by the Interim Airport Land Use Plan as a crash hazard zone or as a touchdown pad and peripheral area for a heliport.

      (2) Airport Safety Review Area 2 (AR2) shall be those areas within the adopted 65 CNEL (Community Noise Equivalency Level) or Ldn (Day-Night Average Sound Level) noise contours.

      (3) Airport Safety Review Area 3 (AR3) shall be one of the following areas:

- The area outside the 65 Ldn noise contour within one mile of that line for those non-military airports with adopted noise contours. In such areas, Airport Safety Review Area 3 shall encompass the boundaries prescribed in Federal Aviation Regulations Part 77 which depicts imaginary surfaces for "objects affecting navigable airspace," as applicable to the specific FAA approved Airport Layout and Approach Plan. The imaginary surfaces are:

    - Approach Surface – Extending outward and upward from the end of the primary runway surface along a slope of 20 to 1 (20:1) and extending for a horizontal distance of five thousand (5,000) feet. (Slope and distances increase depending on precise approach existing or planned for the particular runway.)

    - Horizontal Surface – A horizontal plane one hundred fifty (150) feet above the established airport elevation. The perimeter is constructed by swinging arcs of five thousand (5,000) feet, [the thousand (10,000) feet for runways other than utility or visual] radii from the center of each of the primary runway surfaces (i.e., beginning points of Safety Review Area I) and connecting the adjacent arcs by lines tangent to those arcs.

    - Conical Surface – a surface extending outward and upward from the periphery of the horizontal surface at a slope of 20 to 1 (20:1) for a horizontal distance of four thousand (4,000) feet. (Distances increase for military airports)

- The area within one mile of the outer boundaries of the airport ownership, for those non-military airports without adopted noise contours (e.g. 65 Ldn).

- The area outside the 65 Ldn noise contour for a heliport but within one half (1/2) mile of such line.

c. Evaluate existing land uses for compatibility and amend through the General Plan Amendment process if an unmitigatable, unacceptable situation exists.

d. Continue Airport Safety Reviews of all land uses proposed within any Airport Safety Area in the County; updating existing and initiating new Comprehensive Land Use Plan studies for each public use airport in the County. The following review standards shall be included:

i) Safety areas shall be designated and mapped.

ii) Airport Safety reviews shall be required for all discretionary projects (as defined by CEQA) proposed in the County within an Airport Safety Area, to include:
   - All airport creation or expansion proposals.
   - Projects and land use recommendations outside designated Safety Areas when statistical analysis of accidents from an airport facility suggests this need.
   - All procedures for proposed development around heliports in the County.

iii) All projects within Safety Areas I, II, and III shall be referred to the affected airport facility.

iv) Regulations of Federal Aviation Regulations (FAR) Part 77 shall be applied including height restrictions.

v) Smoke, glare, and electronic interference shall be restricted.

vi) Storage of fuel and other explosive and/or flammable materials in a manner which may be hazardous to aviation operations shall not be above ground in Safety Areas I, II, and III.

vii) Standards for development of all conditionally approved projects may be derived from any or all of the following:
   - Applicable, adopted Airport Comprehensive Land Use Plans and Interim Airport Land Use Plans
   - California State Airport Land Use Planning Handbook
   - The San Bernardino County Development Code
   - Regulations and development standards of local jurisdictions

e. Adopt the land use compatibility charts in this section, as well as those contained in the applicable, adopted Airport Comprehensive Land Use Plans, to promote consistent review of these materials in the land use planning process.

f. Any requirements resulting from the Airport Safety Review shall be incorporated into the project design and/or conditions of approval.

Appendix B
LAND USE COMPATIBILITY CRITERIA

INTRODUCTION

There are four major land use compatibility issues that this Comprehensive Land Use Plan attempts to address: safety, airspace protection, noise, and overflight. The following sections identify the objectives and provide a discussion of each of these issues. The following chapter provides specific policies directed at mitigating the adverse consequences of these compatibility issues.

CRITERIA FOR DETERMINING LAND USE COMPATIBILITY – SAFETY

Compatibility Objective

The overall objective of safety compatibility criteria is simply to minimize the risks associated with potential aircraft accidents. To work towards this objective, there are two necessary components: safety on the ground and safety for aircraft occupants.

Safety Discussion

Because aircraft accidents happen infrequently and the time, place, and consequences of their occurrence cannot be predicted, the concept of risk is central to the assessment of safety compatibility. From the standpoint of land use planning, two variables determine the degree of risk posed by potential aircraft accidents: accident frequency and accident consequences. Accident frequency is the *where* and *when* information of an aviation accident. Accident consequences involve the land use characteristics which af-

fect the severity of an accident when it occurs.

Safety compatibility strategies aim to reduce the severity of the consequences of an aircraft accident. Although it is not feasible to eliminate all development near an airport in the name of safety, land use planning measures can be taken to reduce the severity of an accident if one should occur. These measures should take into account the safety of both those on board the aircraft, as well as those on the ground. There are at least three land use planning measures that can be used to limit the concentration of people on a given site: density and intensity limitations, open land requirements, and limitation of high-risk sensitive uses.

Density and intensity limitations establish the maximum number of dwellings that can be built on land near an airport, thereby reducing the number of people living in areas of greater accident risk, and thereby decreasing the potential severity of an accident. Density refers to the number of structures allowed per unit of land, while intensity refers to the amount of people using the land at any given time. Density limitations are typically used for residential land uses and intensity limitations are used for non-residential uses. Density and intensity limitations can be implemented through the local jurisdictions by adopting new land use designations that restrict density and intensity.

Open land requirements can be used that require open areas near airports to provide alternate landing locations in the event of an emergency. These lands would need to have characteristics similar to those of a standard runway. This approach could prove to be difficult to implement because land with the appropriate characteristics could be costly to acquire.

Limiting the development of highly risk-sensitive land uses can reduce the severity of accidents. Land uses such as hospitals, schools, and nursing homes, where the mobility of the occupants is effectively limited, should not be constructed in an area at risk for aviation accidents. Additionally, the aboveground storage of large quantities of highly flammable or hazardous materials should be avoided in safety areas. This strategy could be administered through the local jurisdictions, by adopting the appropriate limitations on the construction of highly risk-sensitive land uses.

Safety Zones

To minimize the risk and reduce the severity of aviation accidents, a combination of safety zones and associated policies are needed. This section outlines the safety zones and policies for Southern California Logistics Airport (SCLA).

The *California Airport Land Use Planning Handbook* provides guidance on delineating airport safety zones. The shapes of the zones are based on historic data and analyses from previous aircraft accidents. Each zone has specific land use compatibility guidelines formulated in response to

the risk associated with that area. The areas at greater risk of accidents have more restrictive land use policies.

Safety zones are established according to the type of aircraft using the runways. SCLA experiences a wide variety of operations from commercial jets, military aircraft, and general aviation aircraft. To accommodate this mix of aircraft, the safety zones created for the SCLA environs are a combination of the Handbook's example of the *Military Runway for Large Aircraft* scheme and the *Long General Aviation Runway* scheme. The composite safety zones have incorporated the more conservative elements of each example. The safety zones are illustrated in **Exhibit B1**.

Safety Zone Description

Following is a discussion of each of the safety zones, including their function and their land use compatibility characteristics.

Zone 1 is the Runway Protection Zone (RPZ). For airports with no military operations, this zone is defined by FAA criteria. Because SCLA has military operations, this zone is established using the military's Air Installations Compatible Use Zones (AICUZ) criteria. The resulting zone covers a larger portion of land at each runway end.

Ideally, land in Zone 1 is owned and controlled by the airport to ensure that no new buildings are constructed in this area. Residential uses should be prohibited and nonresidential uses should be low intensity and located on the extreme edges of the zone.

Zone 2 is the Inner Approach/Departure Zone. This zone extends beyond the RPZ and includes land that is overflown at low altitudes, typically on approach or departure. This element is also taken from the military safety zone diagram. According to the Handbook, the Inner Approach/Departure Zone and the RPZ together encompass the location of 30-50 percent of near-airport aviation accidents.

Residential use should only be allowed on large, agricultural parcels, and nonresidential use should be low intensity. Several land uses should be avoided in this area such as schools, daycare centers, hospitals, and nursing homes. Additionally, aboveground storage of fuel should be prohibited in this area.

Zone 3 is the Inner Turning Zone. This zone primarily applies to general aviation airports. Because SCLA experiences general aviation operations, this element from the Long General Aviation safety diagram was incorporated. For approaches, this zone covers lands where general aviation aircraft typically turn from the base to final approach legs of the standard traffic pattern, and continue their descent from the traffic pattern altitude. For departures, this safety zone includes the lands where aircraft are typically turning towards their enroute heading.

Residential uses should be limited to very low density, unless they are not

acceptable due to excessive noise. Nonresidential uses should be limited to low intensity uses. Children's schools, daycare centers, hospitals, and nursing homes are some of the land uses that should be avoided, as well as aboveground storage of bulk fuel.

Zone 4 is the Outer Approach/ Departure Zone. This zone is extended beyond Zone 3 along the centerline of the runway. This zone is a component of the military runway safety diagram from the Handbook. It is generally used for runways with straight-in approaches, such as the one for Runway 17.

Residential uses should be limited to very low density, unless they are not acceptable due to excessive noise. Nonresidential uses should be limited to low intensity uses. Children's schools, daycare centers, hospitals, and nursing homes are some of the land uses that should be avoided, as well as aboveground storage of bulk fuel.

Zone 5 is the Sideline Zone. This safety zone is parallel to the runway and is established for general aviation aircraft in case directional control is lost on takeoff. Typically, this area is part of the airport property.

Aviation-related structures should be allowed provided they meet the height limit restrictions. Residential uses should be avoided unless they are related to aviation, such as pilots' quarters. Nonresidential uses should be low intensity and structures such as children's schools, daycare centers, hospitals, and nursing homes should be avoided.

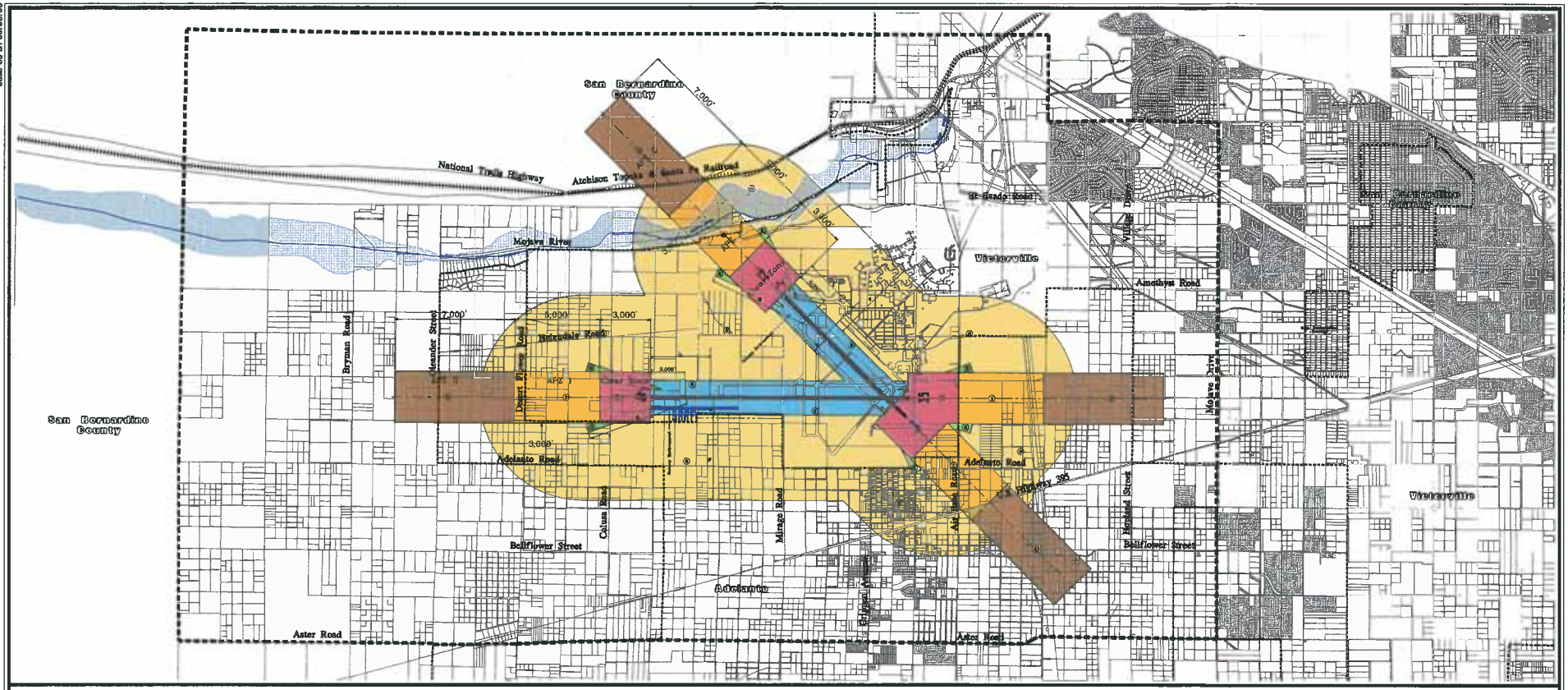
Zone 6 is the Traffic Pattern Zone. It includes all other parts of the regular traffic patterns and pattern entry routes. Generally, there is a low likelihood of an accident in this zone.

Residential uses of all densities are allowed, as well as most nonresidential uses. Uses with very high intensity, such as outdoor stadiums or amphitheatres, should be avoided. Children's schools, daycare centers, hospitals, and nursing homes are among the uses that should also be avoided.

Comparison to 1999 Plan

The 1999 revision of the Comprehensive Airport Land Use Plan includes Safety Review Areas to identify areas where aviation accidents are most likely to occur. These safety zones are based on information from studies of aircraft accidents by the National Transportation Safety Board using data from 1974-1981. The previous plan includes three separate Safety Review Areas that have policies formulated to address the specific safety concerns of those areas. These safety areas are illustrated on **Exhibit B2**. Following is a description of each safety area. **Table B1** defines the compatible land uses for each Safety Review Area.

Safety Review Area 1 is meant to protect the area immediately surrounding the runways. Development in this area is limited to aviation-related structures or agricultural use.



LEGEND

- Detailed Land Use Planning Area
- Municipal Boundary
- Airport Property
- Railroad Tracks
- Short Austere Airfield (SAAF)/ Runway Extension

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

Source: Safety Zones:
California Airport Land Use Planning handbook, Prepared by Shutt Moen Associates, in association with Brown-Buntin Associates and Gatzke, Dillon & Ballance, (January 2002)

Noise Contours:
Coffman Associates Analysis.

NORTH

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SCALE IN FEET

GLOBAL ACCESS
@ SOUTHERN CALIFORNIA LOGISTICS AIRPORT

Exhibit B1
CALTRANS SUGGESTED SAFETY AREAS

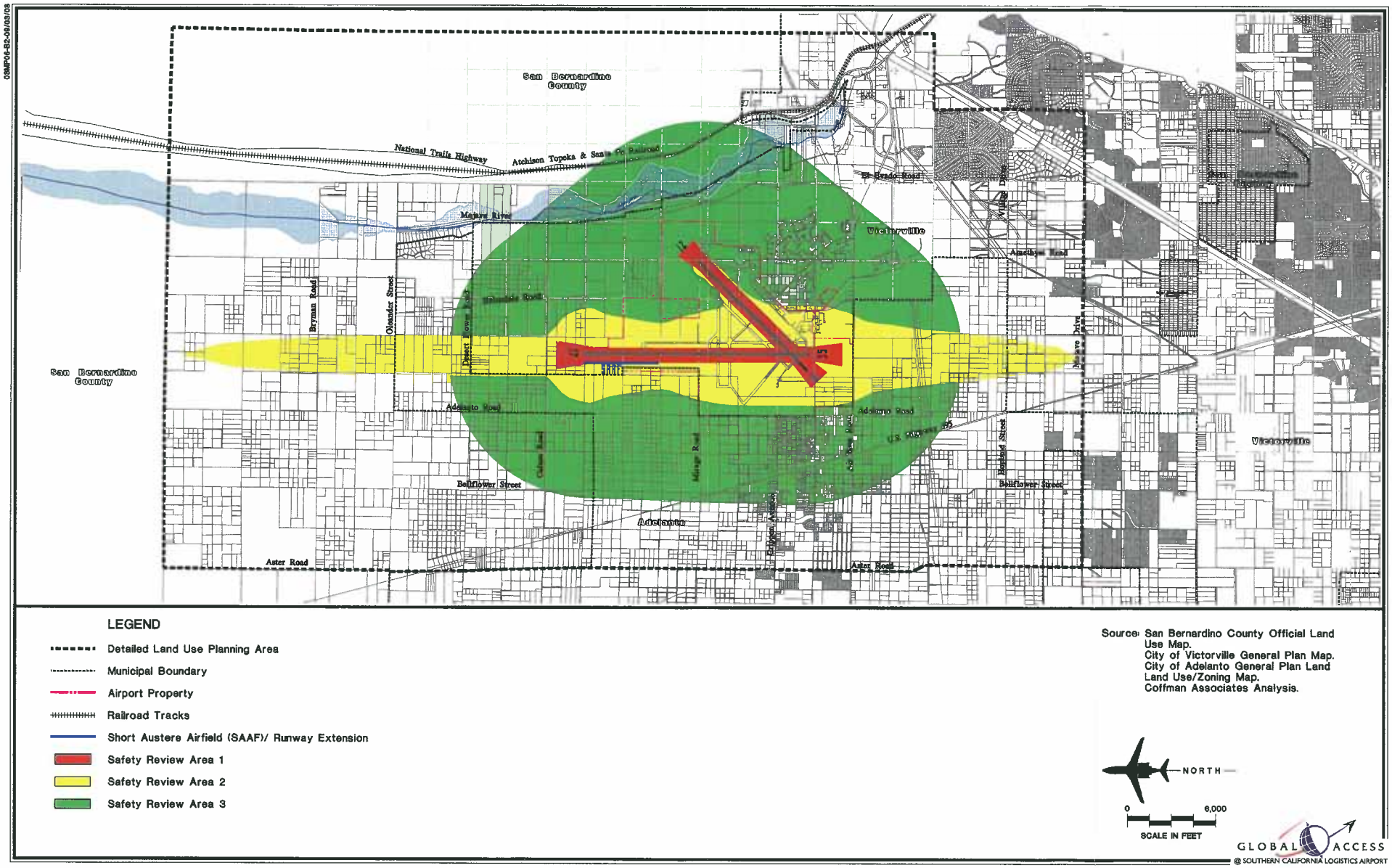
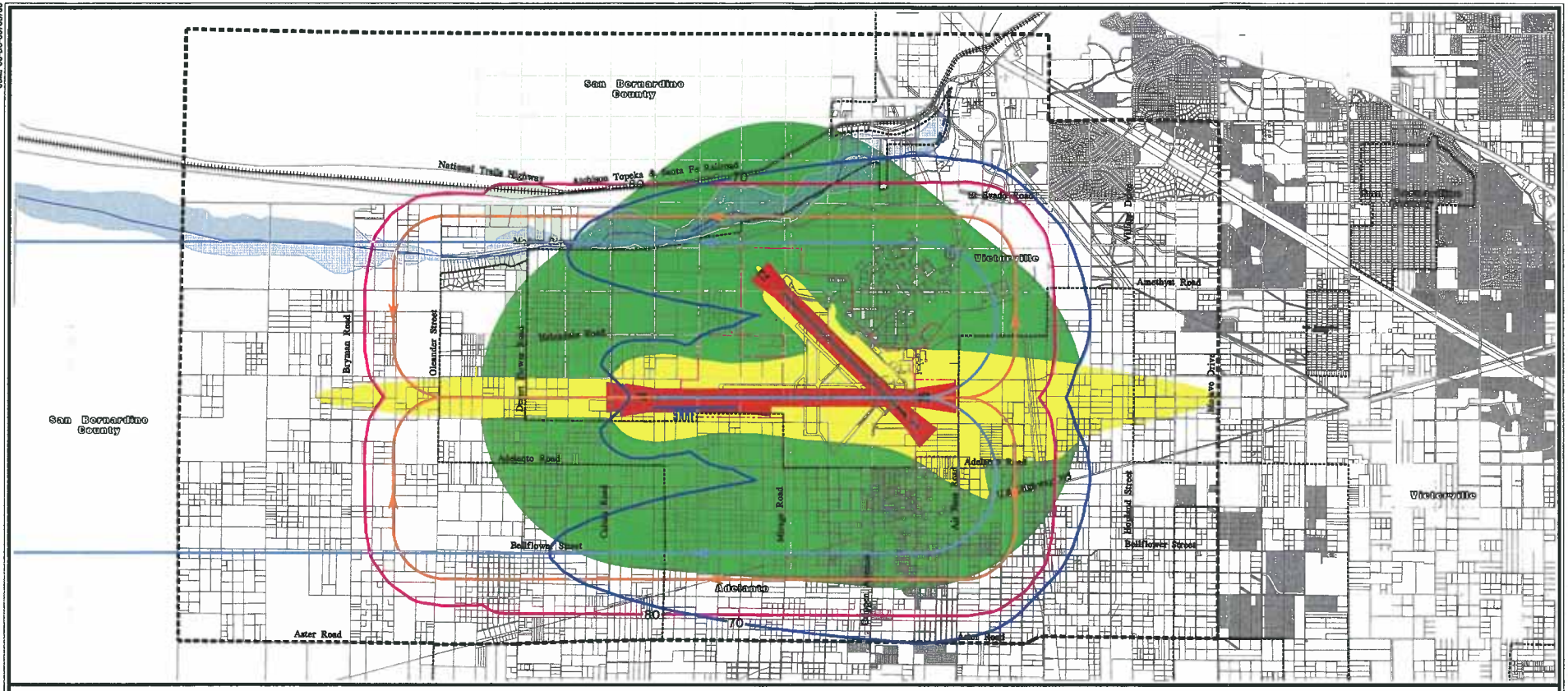


Exhibit B2
SAFETY REVIEW AREAS FROM PREVIOUS COMPREHENSIVE AIRPORT LAND USE PLAN



LEGEND

- Municipal Boundary
- Airport Property
- Railroad Tracks
- Short Austere Airfield (SAAF)/ Runway Extension
- Compatibility Review Area 1
- Compatibility Review Area 2
- Compatibility Review Area 3
- Compatibility Review Area 4 (Airport Planning Area)
- Water
- 747 LMax 70 CNEL Noise Exposure Contour
- 747 LMax Departure Track
- C17 LMax 80 CNEL Noise Exposure Contour
- C17 LMax Touch-and-Go Track

Source: San Bernardino County Official Land Use Map.
City of Victorville General Plan Map.
City of Adelanto General Plan Land Land Use/Zoning Map.
Coffman Associates Analysis.

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SCALE IN FEET

GLOBAL ACCESS
@ SOUTHERN CALIFORNIA LOGISTICS AIRPORT

Exhibit B3
COMPATIBILITY REVIEW AREAS

TABLE B1
Land Use Compatibility – Airport Safety Review Areas

Land Use Category	Safety Review Area 1	Safety Review Area 2	Safety Review Area 3
Residential – Single Family, Duplex, Mobile home	CLU	CA[1]	NA[3]
Residential – Multi-Family	CLU	NU	NA[3]
Transient Lodging – Motels, Hotels	CLU	NU[4]	NA[2]
Schools, Libraries, Churches, Hospitals, Nursing Homes	CLU	NU[2]	CA[2]
Auditoriums, Concert Halls, Amphi-theatres	CLU	CLU	NA[2]
Sports Arenas, Outdoor Spectator Sports	CLU	CLU	NA[2]
Playgrounds, Neighborhood Parks	CLU	CA[2,4]	NA[2]
Golf Courses, Riding Stables, Water Recreation, Cemetery	CLU	CA[2,4]	CLA
Office Buildings, Business Commercial, Professional	CLU	CA[2,4]	NA[2]
Manufacturing, Transportation Servic-es, Contract Construction	CLU	CA[2,4]	NA[2]
Wholesale/Warehouse Operations, Sal-vage Operations	CLU	CA[2,4]	NA[2]
Utilities	CLU	NU	NA[2]
Agriculture	NA[2]	NA[2]	CLA
Livestock, Animal Breeding	NU	NA[2]	NA[2]
Retail Trade/Commercial Services	CLU	CA[2,4]	NA[2]
Density Criteria			
Maximum Gross Density (dwelling units/acre)	0	0.5	6
Maximum Assembly	10	100	No Limit[5]

Clearly Unacceptable (CLU): New construction/development should not occur. Existing uses should be relocated.
Normally Unacceptable (NU): New construction/development should not occur.
Conditionally Acceptable (CA): New construction/development may be permitted. Community character and/or unique development patterns may justify approval. Uses subject to restrictions and mitigation for purposes of public safety.
Normally Acceptable (NA): New construction/development permitted. Uses subject to restrictions and mitigation for purposes of public safety.
Clearly Acceptable (CLA): New construction/development permitted. No public safety restrictions envisioned.

Notes:
[1]– Residential development underneath airport VFR traffic patterns including approach surfaces shall be discouraged. If development occurs, maximum density shall be one dwelling unit per two acres, and noise attenuation at or below 45 dB shall be required within habitable structures.
[2]– Land uses are considered acceptable provided no structures are proposed/developed or if structures are in locations outside approach surfaces, and are conditionally acceptable if located within transitional surfaces. The development of schools, libraries, churches, hospitals, and nursing homes below the transitional surfaces is normally unacceptable.
[3]– Residential development outside approach surfaces shall not exceed six dwelling units per acre; residential development within approach surfaces shall not exceed one dwelling unit per two acres.
[4]– Land uses satisfying density criteria may be acceptable.
[5]– Non-residential land uses within approach surfaces shall not exceed 100 persons per acre.

Safety Review Area 2 coincides with the 65 CNEL noise contour developed for the 1999 revised plan. This zone extends beyond Safety Review Area 1. Land uses permitted in this zone are primarily aviation-related, as well as low-density residential, commercial, and industrial.

Safety Review Area 3 primarily extends beyond Area 2, except for portions in the north and south. This area is typically referred to as the Traffic Pattern Zone. Land uses with use intensity of greater than 100 people per acre are considered unacceptable within this zone.

Summary

A total of six safety zones are outlined in the *California Airport Land Use Planning Handbook*, with specific policies for each of these areas. These safety zones, modeled after the *California Airport Land Use Planning Handbook* recommended zones, are intended to limit uses with higher-use intensity (people per acre) from being developed in high-risk areas. The existing safety review areas provide a larger coverage area than the CALTRANS suggested zones. The safety review area concept will be used to prepare the updated review areas for this plan. The chief differences will be the adjustment of the Part 77 horizontal surface based on the ultimate runway configuration outlined in the airport master plan and the revised noise exposure contours based on updated forecast information in the airport master plan. An additional area, Safety Review Area 4, will be added to this concept for an additional area of review. This area, based on the detail land use study area for this plan, will be used for implementing fair disclosure requirements within the airport vicinity.

CRITERIA FOR DETERMINING LAND USE COMPATIBILITY – AIRSPACE PROTECTION

Compatibility Objective

Because airspace protection is in effect a safety factor, its objective can likewise be thought of in terms of risk. Specifically, the objective is to avoid development of land use conditions which, by posing hazards to flight, can increase the risk of an accident occurring. The practical hazards of concern are:

- Airspace obstructions in areas required for flight to, from, and around the airport;
- Wildlife hazards; and
- Land use characteristics which pose other potential hazards to flight by creating visual or electronic interference with air navigation.

Airspace Obstructions

Defining the height limits according to Title 14, Part 77 of the Code of Federal Regulations (CFR) provides an ample margin of safety for aircraft operations. Part 77 establishes the standards and notification requirements

for objects affecting navigable airspace. Employing Part 77 regulations helps to prevent the construction of buildings or other structures that may interfere with the safe operation of aircraft near the airport. Establishing maximum height standards within airport influence areas that are tied to the Part 77 restrictions can be an effective means of avoiding airspace obstructions.

Wildlife Hazards

Birds are the most common wildlife hazard near airports. Both migratory and non-migratory species may pose problems. Although the risk of bird strikes is most serious along the corridors required for takeoffs and landings, the concern extends to elsewhere in the airport vicinity. Any land uses which can attract birds should be avoided, but those which are artificial attractors are particularly inappropriate because they generally need not be located near airports. The FAA recommends that such uses be kept at least 10,000 feet away from any runway used by turbine-powered aircraft. Wildlife other than birds can also be a concern. Deer are the most common problem. However, coyotes and other species may also become hazards.

Other Flight Hazards

In addition to the physical hazards to flight posed by tall objects and wildlife, other land use characteristics can present visual or electronic hazards. Visual hazards include distracting lights, especially those that could be confused with airfield lights. Land uses which create glare or emit substantial amounts of smoke can also be distracting. Electronic hazards include any uses which interfere with aircraft instruments and communication equipment.

There are no specific FAA standards for visual or electronic aviation hazards. Each potential hazard is evaluated on a case-by-case basis. Potential hazards can be submitted to the FAA for further review.

Comparison to 1999 Plan

The 1999 Comprehensive Airport Land Use Plan Revision includes airspace protection by incorporating references to the Part 77 surfaces and also including them as part of the safety zones. Height restrictions are outlined for the safety areas to prohibit airspace obstructions. Wildlife hazards, such as bird attractants and other flight hazards, such as distracting lights, are also address in this plan revision.

Summary

This update will continue to guard against airspace obstructions as prescribed by the *California Airport Land Use Planning Handbook*. It will include policies targeted at limiting wildlife hazards and other flight hazards.

CRITERIA FOR DETERMINING LAND USE COMPATIBILITY – NOISE

Compatibility Objective

The primary objective of noise compatibility criteria is to minimize the number of people exposed to high levels of airport noise and/or frequent overflights capable of disrupting noise-sensitive activities.

Noise Discussion

Noise is often defined as unwanted sound. The characterization of sound as noise depends on many factors, including the information content of the sound, familiarity with the sound, a person's control over the sound, and a person's activity during which the sound is heard.

Airport noise can be measured in several different ways. For airport planning purposes, the California Department of Transportation, Aeronautics Division has adopted the Community Noise Equivalent Level (CNEL). CNEL is a cumulative noise metric that provides a single measure for multiple noise events over an extended period of time. This metric accounts for the community's increased sensitivity to noise during the evening and nighttime by adding additional weight to aircraft operations that occur between the hours of 7 p.m. and 7 a.m. For additional information on the calculation of CNEL, refer to **Appendix C**.

To determine the geographic extent of the noise impacts generated by an aviation facility, airport noise contours are developed. The noise contours are created with complex computer models that take into account the characteristics of the airport under study, such as the annual operations by various aircraft, the flight paths the aircraft follow, runway utilization, and the time of day during which the operations occur. The most commonly used model in airport planning is the Federal Aviation Administration's Integrated Noise Model (INM). INM Version 6.1 is the most current release and was used in this analysis.

The output from the noise model can be used to determine which areas will be affected and to what extent they will be affected by airport noise. The spatial representation of the aircraft noise can be overlaid on the community's land use maps to determine where certain types of land uses should occur.

The locations of CNEL noise contours are among the factors used to determine land use compatibility. The depicted noise contour boundaries, however, are not absolute determinants of the compatibility. The inherent variability of aircraft flight paths, unusual flight testing, and pilot training that occur at the airport all influence noise emissions in the vicinity of SCLA. Since the previous SCLA CLUP was developed, General Electric has built a facility at the airport for aircraft engine testing. General Electric uses a Boeing 747 as a test bed for engine tests that sometimes require this aircraft to depart to the south at full engine thrust and do a climbing 180-degree turn to the north at an altitude of 1,500 feet above ground level (AGL). In addition, the military still does

training at SCLA. The military frequently does tactical assault landing training at SCLA with C-17 aircraft.

This testing and training activity creates a significant single event noise level that can be disruptive to noise-sensitive land uses. **Exhibit B3** depicts the single event noise contours for the Boeing 747 testing and C-17 training operations plotted over the existing compatibility zones. The blue contour represents the Boeing 747 aircraft L_{max} of 70 decibels (dBA). The magenta contour represents the C-17 aircraft L_{max} of 80 decibels (dBA). Given exterior-to-interior sound attenuation of 15 dBA for typical homes with windows open and 20 to 25 dBA for windows closed, 55 dBA and 65 dBA translate into interior levels ranging from 45 to 65 dBA. These levels generally represent the middle of the sleep disturbance spectrum (Newman and Beattie 1985, pp. 51-58; Kryter 1984, pp. 422-431) up to noise conversation interference between two individuals three feet apart.

Comparison to 1999 Plan

The 1999 revision to the Comprehensive Land Use Plan used 65 CNEL as the standard for acceptable noise exposure for residential development. This is the most often implemented threshold for urban residential areas that have used typical California construction methods. Other land uses that are less sensitive to aircraft noise, such as manufacturing facilities or commercial buildings, are allowed within the 65 CNEL contour.

This update applies the same 65 CNEL restrictions to residential development as prescribed by the *California Airport Land Use Planning Handbook*. Regulations for non-residential uses have changed somewhat in this updated plan. In all cases where the regulations have changed, they have become more restrictive.

The noise contours for SCLA have changed significantly since the previous plan. The primary reason for the change is the significant drop in military operations, due to the deactivation of the Air Force base. Some military aircraft, such as fighter jets, can be extremely noisy, thereby extending the contours farther from the airport. With the absence of these operations, the size of the contours is reduced.

Existing Noise Contours

The noise contours incorporated within the current Comprehensive Land Use Plan for SCLA were developed using the Integrated Noise Model using operation forecast data published within RMJ & Associates' report titled, "Southern California International Airport SCIA Aircraft Operations Forecast," (January 28, 1998). The 65 CNEL noise contour illustrates the projected 2010 noise exposure for the airport. Runway 17-35 was modeled at its present length of 15,050 feet and Runway 3-21 was modeled at 9,116 feet long. These runway lengths reflect the current conditions at the air-port. **Exhibit B3** illustrates the 65 CNEL noise contour as included in

the *Revised 1999 Comprehensive Airport Land Use Plan*. This is depicted by the boundary for Safety Review Area 2. The land use compatibility criteria described for Safety Review Area 2 in **Table B1** represents the criteria for the 65 CNEL contour.

Long-Term Noise Contours

Exhibit B4 illustrates the differences between the previous plan's projected 2010 noise contour and the long-term contours developed as part of the comprehensive land use plan update. The 2010 65 CNEL noise contour, depicted in green, covers a greater area than the forecast 2025 noise contour, the outermost contour depicted in blue. The contours are similar in shape at the southern end; each contour nearly reaches Mojave Drive. North of the intersection of the two runways, the 2010 noise contour is somewhat wider than the projected contour. Additionally, the 2010 noise contour extends approximately 1.5 miles farther to the north than the 2025 noise contour. The reduced size of the noise contour can be attributed to the gradual phase-out of older, louder aircraft. The 2025 noise contour is somewhat larger than the 2010 noise contour at both ends of Runway 3-21. This results from an increase in operations on the crosswind runway.

Summary

Reducing the effects of aircraft noise exposure is a primary objective of the *1999 Comprehensive Airport Land Use Plan*. The new Handbook continues to focus on this same objective. Given the nature of the aircraft testing and training at SCLA, additional compatibility criteria beyond the CNEL noise metric should be considered.

CRITERIA FOR DETERMINING LAND USE COMPATIBILITY – OVERFLIGHT

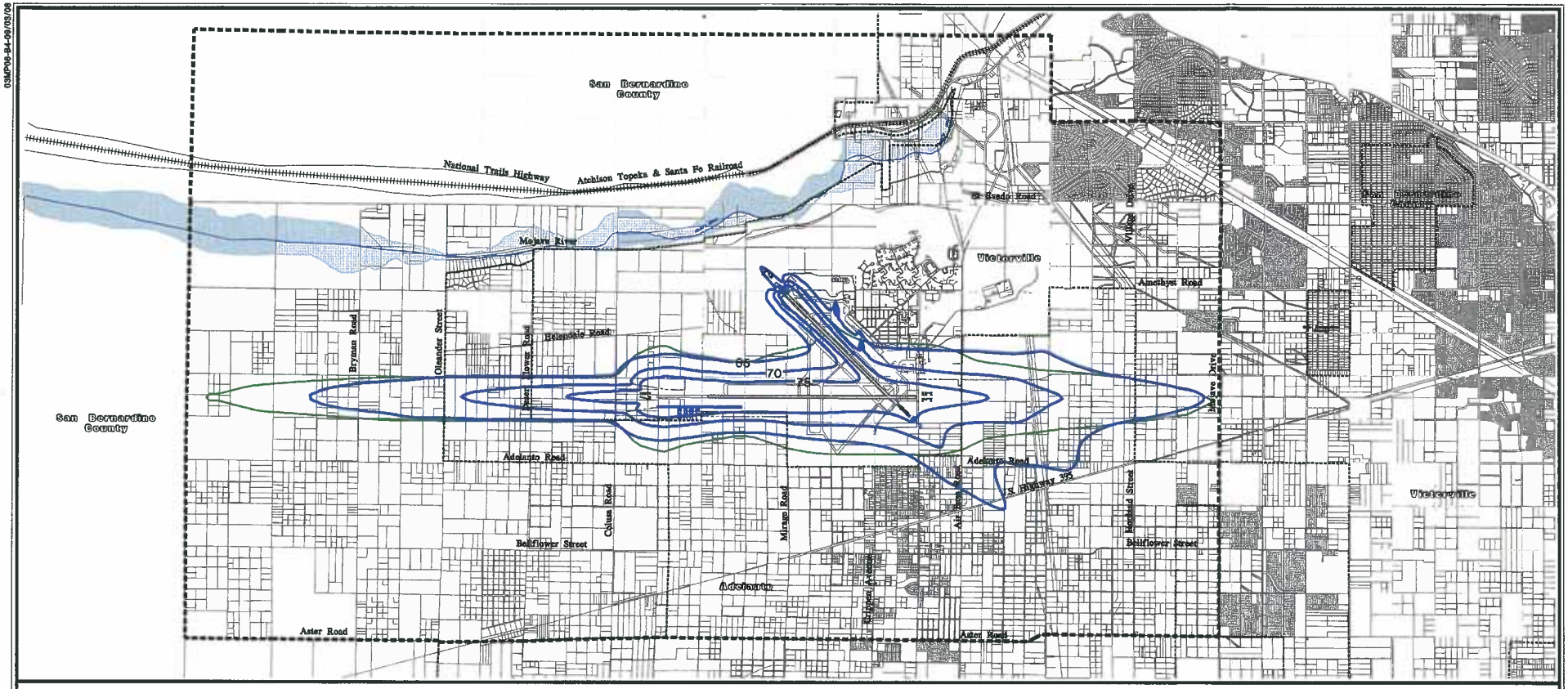
Compatibility Objective

The primary objective of overflight compatibility is to promote conditions under which airport noise-related annoyance is minimized.

Overflight Discussion

Frequently, noise complaints extend beyond the outermost mapped noise contour. Many people are sensitive to the frequent presence of aircraft overhead, even at low noise levels. Heavily traveled air traffic routes have been known to produce noise complaints up to 50 miles from the associated airport.

While these impacts may be of concern to the community, it is important to explore what, if anything, can be done from a land use standpoint to mitigate the impacts of aircraft overflight. Because the modification of flight tracks is outside the authority of local jurisdictions, other avenues must be pursued to mitigate overflight annoyance. There are land use and regulatory measures that can be implemented to reduce overflight impacts.



LEGEND

- Detailed Land Use Planning Area
- Municipal Boundary
- Airport Property
- Railroad Tracks
- Short Austere Airfield (SAAF)/ Runway Extension
- Long Range CNEL Contour - Significant Effect
- Projected 65 CNEL from 1999 CLUP

Source: San Bernardino County Official Land Use Map.
City of Victorville General Plan Map.
City of Adelanto General Plan Land Land Use/Zoning Map.
Coffman Associates Analysis.

NORTH

0 6,000

SCALE IN FEET

GLOBAL ACCESS
@ SOUTHERN CALIFORNIA LOGISTICS AIRPORT

Exhibit B4
NOISE CONTOUR COMPARISON

Buyer awareness measures can be implemented to inform potential residents of the possibility of aircraft noise. This would involve making the public aware of the airport's location and its current and potential aircraft noise impacts. Additionally, avigation easements, recorded deed notices, and real estate disclosure statements can be effective means of notifying the public of aviation-related noise.

An alternative approach to residential development would be to promote land uses with higher noise levels such as commercial and industrial.

Comparison to the 1999 Plan

The 1999 revision to the Comprehensive Land Use Plan does not have policies regarding the application of avigation easements or other buyer awareness measures, as a way of notifying potential buyers of aircraft overflight. The updated version of the plan includes policies intended to notify potential buyers of the possibility of aircraft overflight.

Summary

Ensuring that the public is aware of the potential for aircraft overflight is essential to limiting complaints to the airport. Buyer awareness measures and avigation easements are tools that can be implemented at the local level. These measures can be included as part of the Comprehensive Land Use Plan Update to ensure fair disclosure about the airport and its operations.

COMPATIBILITY SUMMARY

This chapter has provided an overview of the four compatibility objectives for airport land use compatibility planning. **Table B2** summarizes the comparisons made between the *1999 Comprehensive Airport Land Use Plan* and the recommendations outlined in the *2002 California Airport Land Use Planning Handbook*.

References

Kryter, K.D. 1984. *Physiological, Psychological, and Social Effects of Noise*, NASA Reference Publication 1115.

Newman, Steven J. and Kristy R. Beattie, 1985. *Aviation Noise Effects*. Prepared for the U.S. Department of Transportation, Federal Aviation Administration, Office of Environment and Energy, Washington, D.C., Report No. FAA-EE-85-2, March 1985.

TABLE B2
Compatibility Objective Summary

Compatibility Objective	1999 Comprehensive Airport Land Use Plan	CALTRANS Handbook Recommendation	Summary
Safety	The three safety zones are based on Part 77 surfaces and projected 2010 65 CNEL noise contour.	CALTRANS suggests the use of six compatibility zones based on accident location information.	Existing zones cover a larger area, but are not based on actual aircraft accident data. Noise contours may not be suitable for delineating safety areas.
Airspace Protection	Airspace obstructions, wildlife hazards, visual distractions, and electronic interference are addressed in the 1999 plan.	CALTRANS recommends protecting against airspace obstructions, wildlife hazards, visual distractions, and electronic interference.	The existing plan follows guidance set forth in the handbook.
Noise	The existing plan provides compatibility policies for land uses within the 65 CNEL noise contour.	65 CNEL is the standard threshold for noise compatibility. However, the CALTRANS handbook states that in quieter settings, 65 CNEL is too high a threshold for noise compatibility planning.	The noise criteria established in the existing plan meet the established standards for residential development. Some of the established non-residential criteria are less restrictive than those outlined in the CALTRANS handbook. Given the nature of the aircraft testing and training at SCLA, additional compatibility criteria beyond the CNEL noise metric should be considered.
Overflight	Overflights are not addressed in the 1999 plan.	CALTRANS recommends increasing public awareness of overflights by securing avigation easements or distributing disclosure notices to inform potential buyers of aircraft overflight.	Fair disclosure notices or avigation easements are low-cost methods of ensuring that potential property owners are aware of airport operations near the subject property.

APPENDIX C

THE MEASUREMENT AND ANALYSIS OF SOUND

Rock-and-roll on the stereo of the resident of apartment 3A is music to her ears, but it is intolerable racket to the next door neighbor in 3B.

Sound is energy — energy that conveys information to the listener. Although measuring this energy is a straightforward technical exercise, describing sound energy in ways that are meaningful to people is complex. This TIP explains some of the basic principles of sound measurement and analysis.

NOISE - UNWANTED SOUND

Noise is often defined as unwanted sound. For example, rock-and-roll on the stereo of the resident of apartment 3A is music to her ears, but it is intolerable racket to the next door neighbor in 3B. One might think that the louder the sound, the more likely it is to be considered noise. This is not necessarily true. In our example, the resident of apartment 3A is surely exposed to higher sound levels than her neighbor in 3B, yet she considers the sound as pleasant while the neighbor considers it "noise." While it is possible to measure the sound level objectively, characterizing it as "noise" is a subjective judgement.

The characterization of a sound as "noise" depends on many factors, including the information content of the sound, the familiarity of the sound, a person's control over the sound, and a person's activity at the time the sound is heard.

A person's ability to hear a sound depends on its character as compared with all other sounds in the environment.

MEASUREMENT OF SOUND

A person's ability to hear a sound depends on its character as compared with all other sounds in the environment. Three characteristics of sound to which people respond are subject to objective measurement: magnitude or loudness; the frequency spectrum; and the time variation of the sound.

LOUDNESS

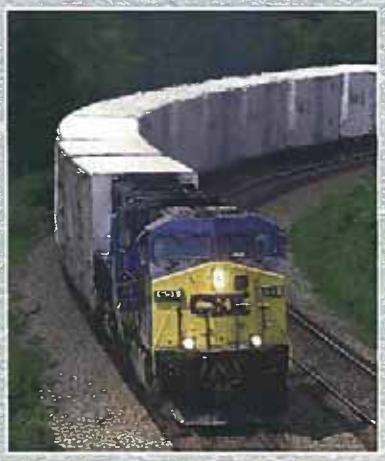
The unit used to measure the magnitude of sound is the decibel. Decibels are used to measure loudness in the same way that "inches" and "degrees" are used to measure length and temperature. Unlike the linear length and temperature scales, the decibel scale is logarithmic. By definition, a sound which has ten times the mean square sound pressure of the reference sound is 10 decibels (dB) greater than the reference sound. A sound which has 100 times (10 x 10 or 10^2) the mean square sound pressure of the reference sound is 20 dB greater (10 x 2).

The logarithmic scale is convenient because the mean square sound pressures of normal interest extend over a range of 11 trillion to one. This huge number (a "1" followed by 14 zeros or 10^{14}) is much more conveniently represented on the logarithmic scale as 140 dB (10 x 14).

The use of the logarithmic decibel scale requires different arithmetic than we use with linear scales. For example, if two equally loud but independent noise sources operate simultaneously, the measured mean square sound pressure from both sources will be twice as great as either source operating alone. When expressed on the decibel scale, however, the sound pressure level from the combined sources is only 3 dB higher than the level produced by either source alone. Furthermore, if we have two sounds of different magnitude from independent sources, then the level of the sum will never be more than 3 dB above the level produced by the greater source alone.

This equation describes the mathematics of sound level summation:

$$S_t = 10 \log \sum_i 10^{S_i/10}$$



The loudest sound levels are the dominant influence in the averaging process.

where S_t is the total sound level, in decibels, and S_i is the sound level of the individual sources.

A simpler process of summation is also available and often used where a level of accuracy of less than one decibel is not required. Table 1 lists additive factors applicable to the difference between the sound levels of two sources.

TABLE 1

ADDITIVE FACTORS FOR SUMMATION OF TWO SOUND TYPES

DIFFERENCE IN SOUND LEVEL (DB)	ADD TO LARGER LEVEL (DB)	DIFFERENCE IN SOUND LEVEL (DB)	ADD TO LARGER LEVEL (DB)
0	3.0	8	0.6
1	2.5	9	0.5
2	2.1	10	0.4
3	1.8	12	0.3
4	1.5	14	0.2
5	1.2	16	0.1
6	1.0	Greater than 16	0
7	0.8		

Source: HUD 1985, p. 51.

The noise values to be added should be arrayed from lowest to highest. The additive factor derived from the difference between the lowest and next highest noise level should be added to the higher level. An example is shown below.

EXAMPLE OF SOUND LEVEL SUMMATION

59.0 dB
60.0 dB } Add 2.5 to 60 = 62.5
66.5 dB } Add 1.5 to 66.5 = 68

59 dB + 60 dB + 66.5 dB = 68 dB

Logarithmic math also produces interesting results when averaging sound levels. As the following example shows, the loudest sound levels are the dominant influence in the averaging process. In the example, two sound levels of equal duration are averaged. One is 100 dB; the other 50 dB. The result is not 75 as it would be with linear math but 97 dB. This is because 100 dB contains 100,000 times the sound energy as 50 dB.

EXAMPLE OF SOUND LEVEL SUMMATION

59.0 dB
60.0 dB } Add 2.5 to 60 = 62.5
66.5 dB } Add 1.5 to 66.5 = 68

59 dB + 60 dB + 66.5 dB = 68 dB

Scientists researching human hearing have determined that most people perceive a 10 dB increase in sound energy over a given frequency range as roughly a doubling of the loudness.

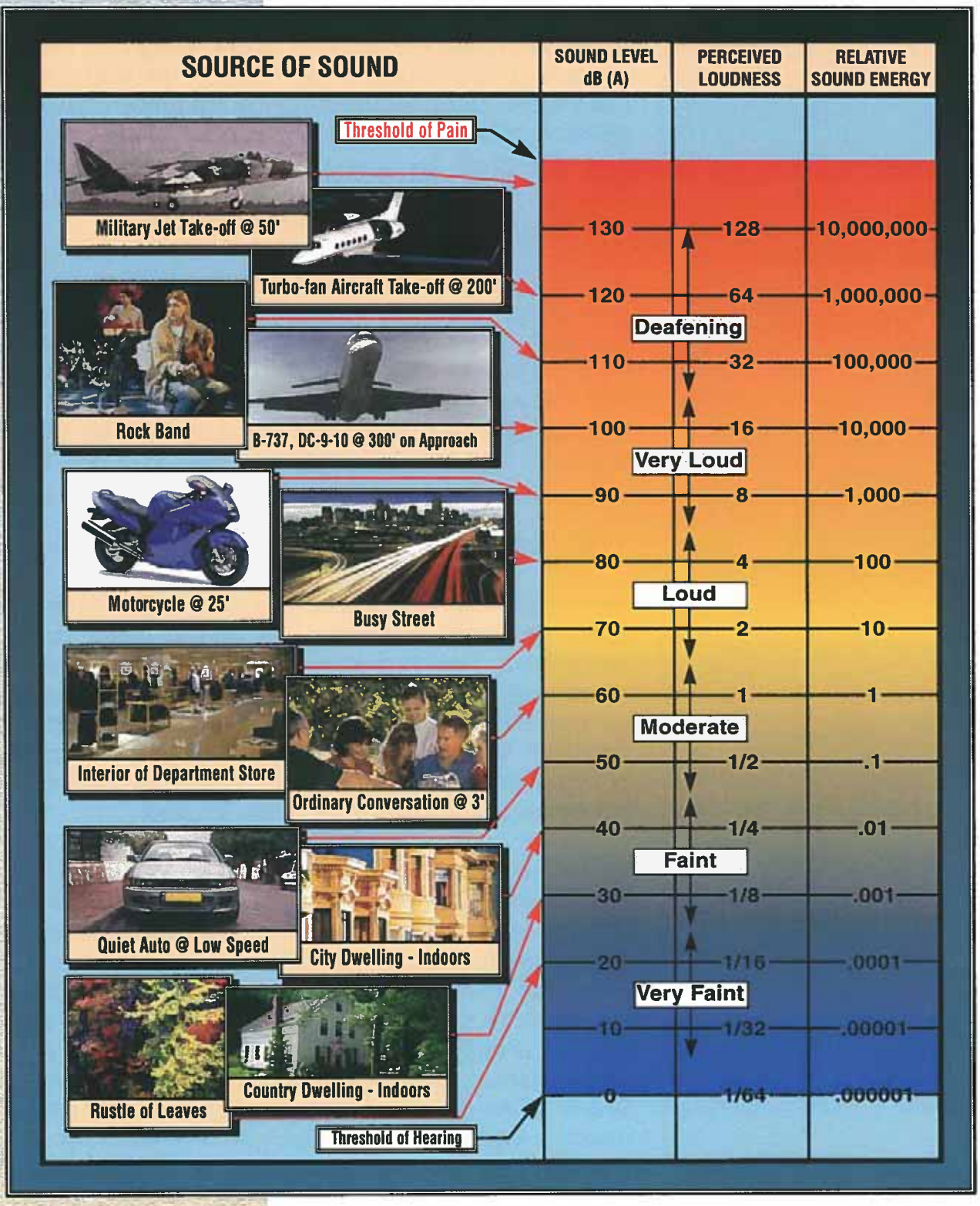
Another interesting attribute of sound is the human perception of loudness. Scientists researching human hearing have determined that most people perceive a 10 dB increase in sound energy over a given frequency range as, roughly, a doubling of the loudness. Recalling the logarithmic nature of the decibel scale, this means that most people perceive a ten-fold increase in sound energy as a two-fold increase in loudness (Kryter 1984, p. 188). Furthermore, when comparing sounds over the same frequency range, most people cannot distinguish between sounds varying by less than two or three decibels.

Exhibit A presents examples of various noise sources at different noise levels, comparing the decibel scale with the relative sound energy and the human perception of loudness. In the exhibit, 60 dB is taken as the reference or "normal" sound level. A sound of 70 dB, involving ten times the sound energy, is perceived as twice as loud. A sound of 80 dB contains 100 times the sound energy and is perceived as four times as loud as 60 dB. Similarly, a sound of 50 dB contains ten times less sound energy than 60 dB and is perceived as half as loud.

FREQUENCY WEIGHTING

Two sounds with the same sound pressure level may "sound" quite different (e.g., a rumble versus a hiss) because of differing distributions of sound energy in the audible frequency range. The distribution of sound energy as a function of frequency is known as the "frequency spectrum." The spectrum is important to the measurement of sound because the human ear is more sensitive to sounds at some frequencies than others.

TYPICAL SOUND LEVELS



People hear best in the frequency range of 1,000 to 5,000 cycles per second (Hertz) than at very much lower or higher frequencies. If the magnitude of a sound is to be measured so that it is proportional to its perception by a human, it is necessary to weight more heavily that part of the sound energy spectrum humans hear most easily.

An important advantage of the Leq metric is that it correlates well with the effects of noise on humans.

Over the years, many different sound measurement scales have been developed, including the A-weighted scale (and also the B, C, D, and E-weighted scales). A-weighting, developed in the 1930s, is the most commonly used scale for approximating the frequency spectrum to which humans are sensitive. Because of its universality, it was adopted by the U.S. Environmental Protection Agency and other government agencies for the description of sound in the environment.

The zero value on the A-weighted scale is the reference pressure of 20 micro-newtons per square meter (or micro-pascals). This value approximates the smallest sound pressure that can be detected by a human. The average sound level of a whisper at a distance of 1 meter is 40 dB; the sound level of a normal voice at 1 meter is 57 dB; a shout at 1 meter is 85 dB; and the threshold of pain is 130 dB.

TIME VARIATION OF SOUND LEVEL

Generally, the magnitude of sound in the environment varies randomly over time. Of course, there are many exceptions. For example, the sound of a waterfall is steady with time, as is the sound of a room air conditioner or the sound inside a car or airplane cruising at a constant speed. But, in most places, the loudness of outdoor sound is constantly changing because it is influenced by sounds from many sources.

While the continuous variation of sound levels can be measured, recorded, and presented, comparisons of sounds at different times or at different places is very difficult without some way of reducing the time variation. One way of doing this is to calculate the value of a steady-state sound which contains the same amount of sound energy as the time-varying sound under consideration. This value is known as the Equivalent Sound Level (Leq). An important advantage of the Leq metric is that it correlates well with the effects of noise on humans. On the basis of research, scientists have formulated the "equal energy rule." It is the total sound energy perceived by a human that accounts for the effects of the sound on the person. In other words, a very loud noise lasting a short time will have the same effect as a quieter noise lasting a longer time if the total energy of both sound events (the Leq value) is the same.

The SEL is the quantity that best describes the total noise from an aircraft overflight.

KEY DESCRIPTORS OF SOUND

Four descriptors or metrics are useful for quantifying sound (Newman and Beattie 1985, pp. 9-15). All are based on the logarithmic decibel (dB) scale and incorporate A-weighting to account for the frequency response of the ear.

Sound Level

The sound level (L) in decibels is the quantity read on an ordinary sound level meter. It fluctuates with time following the fluctuations in magnitude of the sound. Its maximum value (Lmax) is one of the descriptors often used to characterize the sound of an airplane overflight. However, Lmax only gives the maximum magnitude of a sound — it does not convey any information about the duration of the sound. Clearly, if two sounds have the same maximum sound level, the sound which lasts longer will cause more interference with human activity.

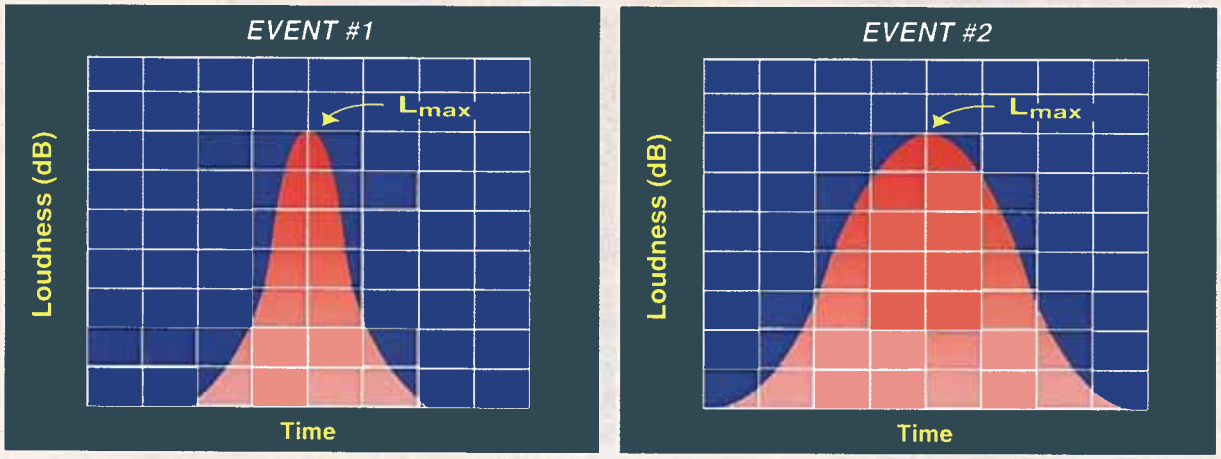
Sound Exposure Level

Both loudness and duration are included in the Sound Exposure Level (SEL), which adds up all sound occurring in a stated time period or during a specific event, integrating the total sound over a one-second duration. The SEL is the quantity that best describes the total noise from an aircraft overflight. Based on numerous sound measurements, the SEL from a typical aircraft overflight is usually four to seven decibels higher than the Lmax for the event.

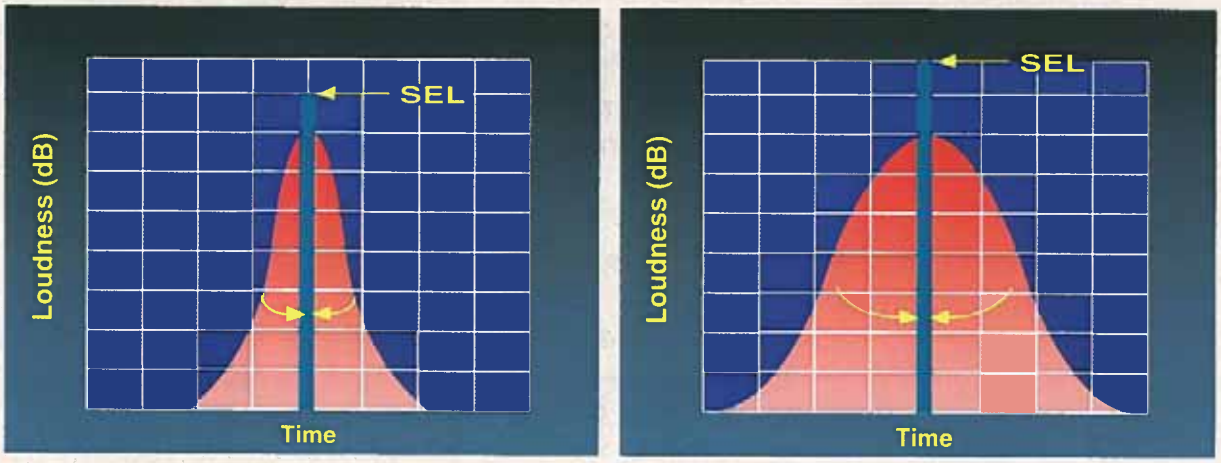
Exhibit B shows graphs of two different sound events. In the top half of the graph, we see that the two events have the same Lmax, but the second event lasts longer than the first. It is clear from the graph that the area under the noise curve is greater for the second event than the first. This means that the second event contains more total sound energy than the first, even though the peak levels for each event are the same. In the bottom half of the graph, the Sound Exposure Levels (SELs) for each event are compared. The SELs are computed by mathematically compressing the total sound energy into a one-second period. The SEL for the second event is

COMPARISON OF L_{max} AND SEL

Two sound events with the same maximum sound level (L_{max}).



Different sound exposure levels (SEL) for two sound events with the same L_{max}.



greater than the SEL for the first. Again, this simply means that the total sound energy for the second event is greater than for the first.

Equivalent Sound Level

The equivalent sound level (Leq) is simply the logarithm of the average value of the sound exposure during a stated time period. It is typically used for durations of one hour, eight hours, or 24 hours. In airport noise compatibility studies, use of the Leq term applies to 24-hour periods unless otherwise noted. It is often used to describe sounds with respect to their potential for interfering with human activity.

The multiplication factor of 10 applied to nighttime sound is often referred to as a 10 decibel penalty. It is intended to account for the increased annoyance attributable to noise during the night when ambient levels are lower and people are trying to sleep.

Day-Night Sound Level

A special form of Leq is the day-night sound level, abbreviated as DNL in discussions and Ldn in equations. DNL is calculated by summing the sound exposure during daytime hours (0700 - 2200) plus 10 times the sound exposure occurring during nighttime hours (2200 - 0700) and averaging this sum by the number of seconds during a 24-hour day. The multiplication factor of 10 applied to nighttime sound is often referred to as a 10 decibel penalty. It is intended to account for the increased annoyance attributable to noise during the night when ambient levels are lower and people are trying to sleep.

Community Noise Equivalent Level

In California, the Department of Transportation, Division of Aeronautics, has adopted the community noise equivalent level (CNEL) as its standard noise metric. The CNEL metric is required in all 14 CFR Part 150 studies performed in California. CNEL differs from DNL only by including a 4.77 decibel weight for evening noise (7 p.m. to 10 p.m.). As a practical matter, there is little difference between DNL and CNEL. Studies reviewed by the California Department of Transportation found that calculations of CNEL and DNL from the same monitoring data generally result in less than a 0.7 dB difference (Caltrans 1983, p. 37).

Where the basic element of sound measurement is Leq, CNEL is calculated from the following equation:

$$CNEL = 10\log \frac{1}{24}\left(\sum_{d=1}^{12} 10^{[Leq(d)]/10} + \sum_{e=1}^{3} 10^{[Leq(e)+4.77]/10} + \sum_{n=1}^{9} 10^{[Leq(n)+10]/10}\right)$$

Where Leq(d), Leq(e), and Leq(n) are the daytime, evening, and nighttime hourly Leq values. The hourly Leq values are summed for the 12 hours from 7 a.m. to 7 p.m. and added to the sum of the three evening hours with a 4.77 dB penalty and the nine nighttime hours with a 10 decibel penalty.

When the time of day weight is expressed in decibels it is called a decibel weight. This decibel weight is added to the noise level of each noise event. Thus a decibel

weight of 10 when added to a 60 dB nighttime event gives a value of 70 decibels to the event before it is transformed and added to the noise descriptor. The nighttime decibel weight of 10 is equivalent to a tenfold increase in nighttime sound events. The evening decibel weight of computing CNEL, evening events can be increased by 4.77 dB or multiplied by three. Nighttime events may be increased by 10 dB or multiplied by 10. CNEL may be calculated with the following equation:

$$\text{CNEL} = 10\log\left(1/24\left[\sum \text{antilog}\,(\text{HNLd}/10) + 3\sum \text{antilog}\,(\text{HNLe}/10) + 10\sum \text{antilog}\,(\text{HNLn}/10)\right]\right)$$

where HNLd, HNLe, and HNLn are the hourly noise levels for the daytime, evening, and nighttime hours. The sum of the evening noise levels is multiplied by three and the sum of the nighttime noise levels is multiplied by 10. Another way of computing the CNEL is described with this equation:

$$\text{CNEL} = 10\log\frac{1}{86400}\left(\int_{\text{day}} 10^{\text{LA}/10}\,dt + \int_{\text{evening}} 10^{(\text{LA}+4.77)}\,dt + \int_{\text{night}} 10^{(\text{LA}+10)/10}\,dt\right)$$

where LA is the A-weighted sound level, measured with equipment meeting the requirements for sound level meters (as specified in a standard such as ANSI s1.4-1971), and dt is the duration of time in seconds. The averaging constant of 86,400 is the number of seconds in a day. The integrals are taken over the daytime, evening, and nighttime periods.

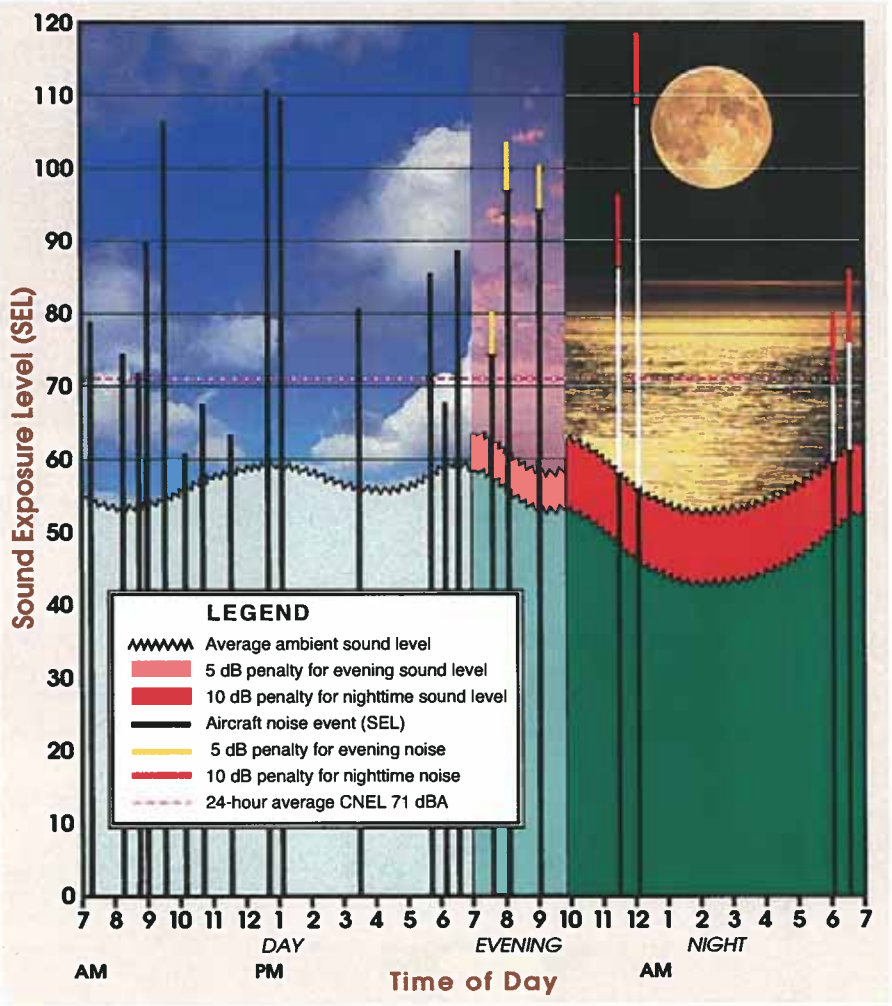
Exhibit C shows how the sound occurring during a 24-hour period is weighted and averaged by the CNEL descriptor (or metric). In that example, the sound occurring during the period, including aircraft noise and background sound, yields a CNEL value of 71. As a practical matter, this is a reasonably close estimate of the aircraft noise alone because, in this example, the background noise is low enough to contribute only a little to the overall DNL value during the period of observation.

One might think of the CNEL metric as a summary description of the "noise climate" of an area. DNL

EXHIBIT C

TYPICAL NOISE PATTERN AND CNEL SUMMATION

The DNL developed over a long period of time, for example one year, defines the noise environment of the area, allowing us to make predictions about the average response of people living in areas exposed to various DNL levels.

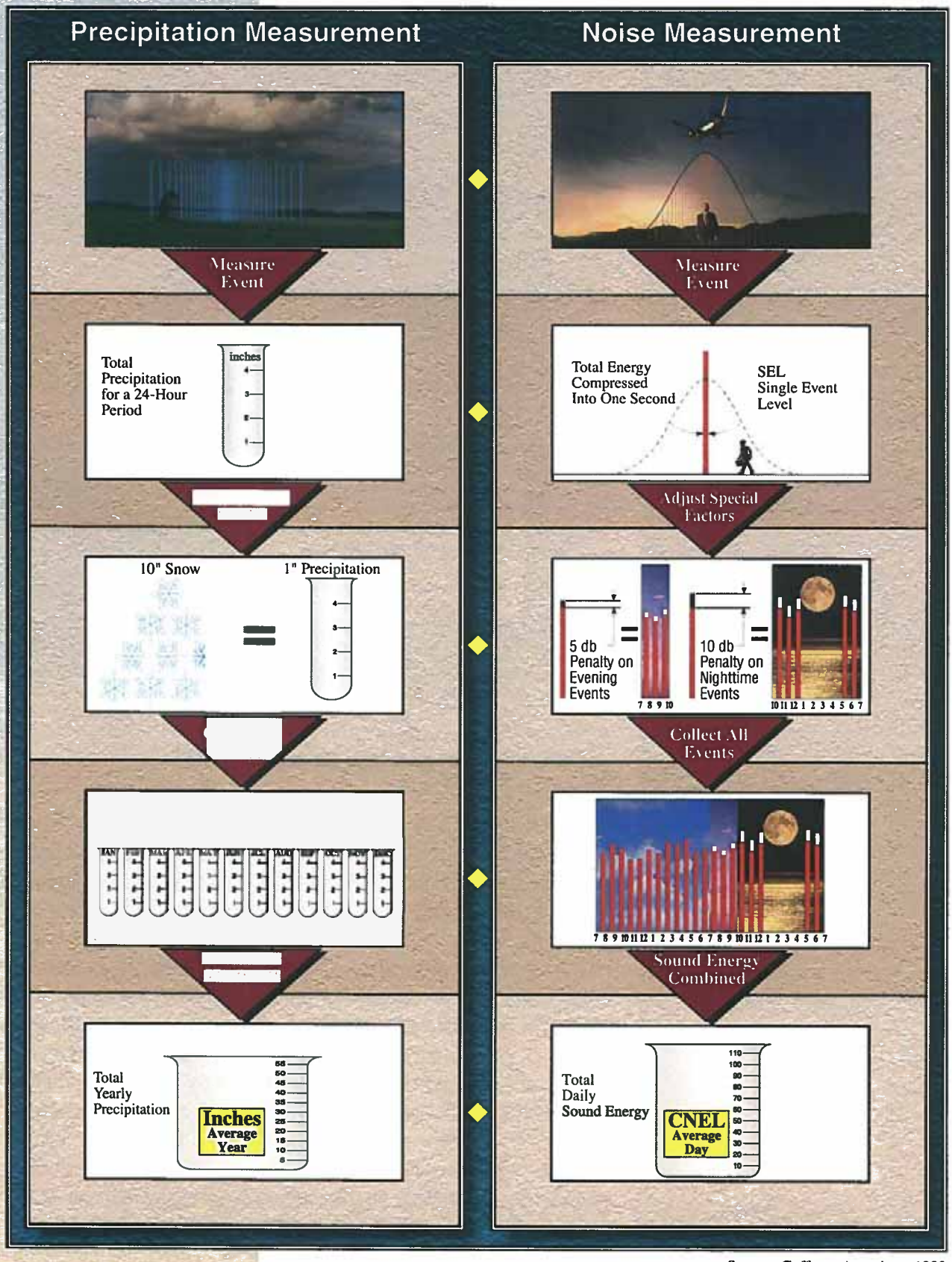


Source: Coffman Associates 2003

accumulates the noise energy from passing aircraft in the same way that a precipitation gauge accumulates rain from passing storms. This analogy is presented in **Exhibit D**. Rain usually starts as a light sprinkle, building in intensity as the squall line passes over, then diminishing as the squall moves on. At the end of a 24-hour period, a rain gauge indicates the total rainfall received for that day, although the rain fell only during brief, sometimes intense, showers. Over a year, total precipitation is summarized in inches. When snow falls, it is converted to its equivalent measure as water. Although the total volume of precipitation during the year may be billions or trillions of gallons of water, its volume is expressed in inches because it provides for easier summation and description. We have learned how to use total annual precipitation to describe the climate of an area and make predictions about the environment.

EXHIBIT D

PRECIPITATION AND NOISE MEASUREMENT COMPARISON



Source: Coffman Associates 1990

Aircraft noise is similar to precipitation. The noise level from a single overflight begins quietly and builds in intensity as the aircraft draws closer. The sound of the aircraft is loudest as it passes over the receiver, diminishing as it passes. The total noise occurring during the event is accumulated and described as a Sound Exposure Level (SEL). Over a 24-hour period, the SELs can be summed, adding a special 10-decibel factor for nighttime noise, yielding a CNEL value. The CNEL developed over a long period of time, for example one year, defines the noise environment of the area, allowing us to make predictions about the average response of people living in areas exposed to various DNL levels.

HELPFUL RULES-OF-THUMB

Despite the complex mathematics involved in noise analysis, several simple rules-of-thumb can help in understanding the noise evaluation process.

- *When sound events are averaged, the loud events dominate the calculation.*
- *A 10 decibel change in noise is equal to a tenfold change in sound energy. For example, the noise from ten aircraft is ten decibels louder than the noise from one aircraft of the same type, operated in the same way.*
- *Most people perceive an increase of 10 decibels as a relative doubling of the sound level.*
- The CNEL metric assumes one evening operation (between 7 p.m. and 10 p.m.) is equal in impact to three daytime operations by the same aircraft. It also assumes that one nighttime operation (10 p.m. to 7 a.m.) is equal in impact to 10 daytime operations by the same aircraft.
- *A doubling of aircraft operations results in a three decibel noise increase if done by the same aircraft operated in the same way.*

References

Kryter, K.D. 1984. *Physiological, Psychological, and Social Effects of Noise,* NASA Reference Publication 1115.

Newman, Steven J. and Kristy R. Beattie, 1985. *Aviation Noise Effects.* Prepared for U.S. Department of Transportation, Federal Aviation Administration, Office of Environment and Energy, Washington, D.C., Report No. FAA-EE-85-2, March 1985.

HUD (U.S. Department of Housing and Urban Development) 1985. *The Noise Guidebook,* HUD-953-CPD Washington, D.C., Superintendent of Documents, U.S. Government Printing Office, March 1985.

Appendix D
IMPLEMENTATION MATERIALS

This appendix includes the following materials for the implementation of the CLUP:

- Sample Avigation and Noise Easement
- Sample Fair Disclosure Statement

Figure 27.58.080
Model Avigation and Noise Easement

INDENTURE made this _____ day of _____ , 20__ , between _____ , hereinafter called "Grantor", and Airport Authority of the City of Lincoln, a public body corporate and politic, hereinafter called "Airport Authority":

WHEREAS, Grantor is the owner in fee simple of a certain tract of land situated in Lancaster County, State of Nebraska, more particularly described as:

See attached Exhibit "A",

said tract of land being hereinafter referred to as "Grantor's Land"; and

WHEREAS, Airport Authority, as an agency of the City of Lincoln, Nebraska, is the owner and operator of a public airport known as Lincoln Municipal Airport situated on land adjacent or in close proximity to the above-described property; and

WHEREAS, Grantor has agreed in consideration of _____ ($_____) and other valuable consideration, receipt of which is hereby acknowledged, to grant Airport Authority and City of Lincoln, Nebraska, the following Avigation and Noise Easement for the right of flight and consequent aircraft noise over Grantor's Land.

NOW THIS INDENTURE, WITNESSETH:

Grantor, for itself, its heirs, successors and assigns, for the said consideration, hereby grants and conveys to the City of Lincoln, Nebraska, the following Avigation and Noise Easement for the right of flight and consequent aircraft noise over Grantor's Land.

NOW THIS INDENTURE, WITNESSETH:

Grantor, for itself, its heirs, successors and assigns, for the said consideration, hereby grants and conveys to the City of Lincoln, Nebraska, for the use of Airport Authority, its successors and assigns, a perpetual easement and right-of-way for the unobstructed and unrestricted flight of aircraft in, through and across the airspace over and above Grantor's Land, at any legally permissible altitude, and the right, to the extent permitted by law, to make noise and cause fumes and disturbance arising from the ground and flight operations of all civil and military aircraft to, from and upon Lincoln Municipal Airport, regardless of the means of propulsion.

The Grantor, for itself, its heirs, successors, and assigns, does hereby waive all right to and interest in any claim or cause of action against the Airport Authority or the City of Lincoln, arising out of or from any legally permissible noise, vibration, avigations, pollution, light or noise generated from, above or on airport property, or sonic disturbance of any description, caused by flight operations of civil and military aircraft regardless of the means of propulsion, to, from and upon Lincoln Municipal Airport, which may result in damage to land or to any person, structure or other property located upon Grantor's Land, excepting, however, any claim or cause of action for any damage or injury to person or property resulting from any aircraft, or object therefrom, falling on, propelled into, or striking any person or property on Grantor's land.

The Grantor, for the said consideration, further agrees, that if Grantor or its heirs, successors or assigns, should sell or alienate any portion of Grantor's Land, Grantor, its heirs, successors or assigns shall include in every deed or conveyance evidencing such sale or alienation, a recitation that the grant is subject to all conditions contained within this Avigation and Noise Easement, and further as a condition of such transaction, Grantor shall require each Grantee to include such recitation in any subsequent deed or conveyance of any of the property herein above described as Grantor's Land.

In the event any condition or provision herein contained is held to be invalid by any court of competent jurisdiction, the invalidity of any such easement, condition or provision shall in no way affect any other condition or provision herein contained.

It is understood and agreed that this easement shall be binding upon the heirs, administrators, executors, and assigns of the Grantor, and that this easement shall run with Grantor's Land.

TO HAVE AND TO HOLD said Avigation and Noise Easement hereby granted unto the City of Lincoln for the use of the Airport Authority, its successors, and assigns, as appurtenant to the said Lincoln Municipal Airport and every part thereof.

IN WITNESS WHEREOF, the undersigned has caused its signature to be affixed this _____ day of _____ , 20__.

By: _____

STATE OF NEBRASKA)
) ss.
COUNTY OF LANCASTER)

On this _____ day of _____ , 20__, before me, a duly appointed and qualified notary public, personally appeared _____, to me personally known to be the same and identical person who signed the above and foregoing instrument and he did acknowledge the execution thereof to be his voluntary act and deed and that of _____.

WITNESS my hand and seal on the date last aforementioned.

_____
Notary Public

(Ord. 18408 §6; August 2, 2004).

SAMPLE AIRPORT DISCLOSURE FOR NEW RESIDENTIAL DEVELOPMENT AROUND SCOTTSDALE AIRPORT
June 1999

For inclusion into CC&R's or for disclosure notice:

Proximity to Airport. Each Owner, by accepting a deed to a Lot or Parcel, or by otherwise acquiring title to a Lot or Parcel, acknowledges (for such Owner and such Owner's family members, other Occupants, successors and assigns) that: **(a)** the Project is in close proximity to the Scottsdale Airport (the "Airport"), which is currently located generally between Frank Lloyd Wright Boulevard on the north, Pima Road on the east, Thunderbird Road on the south and Scottsdale Road on the west; **(b)** as of the date hereof, the airport is operated as a general aviation reliever/commercial service airport for Scottsdale and North Phoenix, used generally for single engine and twin engine airplanes, corporate jets, helicopters and scheduled service turbo prop and jet aircraft; **(c)** aircraft taking off from and landing at the Airport may fly over the Project and adjacent properties at altitudes which will vary with meteorological conditions, aircraft type, aircraft performance and pilot proficiency; **(d)** at the date hereof, the majority of aircraft takeoffs and landings occur daily between 6:00 a.m. and 11:00 p.m., but the Airport is open twenty-four (24) hours each day, so takeoffs and landings may occur at any hour of the day or night; **(e)** at the date hereof, the number of takeoffs and landings at the Airport average approximately 850 each day, but that number will vary and may increase with time if the number of its operations increases; **(f)** flights over the Project or adjacent properties by aircraft taking off from or landing at the Airport may generate noise, the volume, pitch, amount and frequency of occurrence of which will vary depending on a number of factors, including without limitation the altitudes at which the aircraft fly, wind direction and other meteorological conditions and aircraft number and type, and may be affected by future changes in Airport activity; **(g)** as of the date hereof, management of the Airport has policies in place intended to help reduce or minimize aircraft noise and its influence on owners and occupants of properties in the vicinity of the Airport, but those policies may change over time and in addition other aspects of such policies (including, without limitation, those intended to promote safety) may be given preference over policies relating to limiting noise; and **(h)** such Owner (for such Owner and such Owner's family members, other Occupants, successors and assigns) hereby accepts and assumes any and all risks, burdens and inconvenience caused by or associated with the Airport and its operations (including, without limitation, noise caused by or associated with aircraft flying over the Project and adjacent properties), and agrees not to assert or make and claim against the City of Scottsdale, its officers, directors, commissioners, representatives, agents, servants and employees, the Declarant, and Declarant Affiliate, or the Association, or any director, officer, employee, agent, representative or contractor of any of them, related thereto.

Appendix E
MEDIATION PROCEDURES

I. GENERAL

A. Per the Public Utilities Code section 21670.1(c)(2)(C) as amended by AB 2831(enacted January 1, 1995), the San Bernardino County Local Agency Formation Commission (LAFCO) is designated by the Board of Supervisors and local affected City Councils as the "mediator" of disputes arising from the preparation, adoption, and amendment of the Comprehensive Land Use Plan (CLUP). When a dispute arises between jurisdictions, the following procedures shall be utilized.

1. Affected County/City files with LAFCO a request for a "Mediation Hearing". A filing fee shall be paid by the jurisdiction requesting the hearing. Said fee shall be sufficient to pay for the level of service mandated by the PUC statute.

2. Hearing to be scheduled by LAFCO staff within 30-50 days from the date of filing.

3. The jurisdictions involved in the dispute are responsible in providing LAFCO staff all pertinent information. LAFCO staff will prepare a report utilizing the submitted information.

a. Option: A referral may be made to the County Airport Commission or County Airport Manager for additional information or technical support.

4. Report must contain an analysis, findings and recommendation. The following finding shall be made by the Commission:

a. The ___(preparation, adoption, or amendment _____of the __(airport name)__ CLUP will enhance the protection of public health, safety and welfare, will provide a community benefit and is compatible with airport operations because: (provide specific reasons)

5. Report must be distributed to jurisdictions involved in the dispute and LAFCO Commission at least ten (10) calendar days prior to the hearing date.

6. Mediation Hearing: LAFCO Commission must have a 2/3 quorum in order to conduct a hearing. LAFCO staff will present report. Representatives from both jurisdictions will present their arguments. LAFCO Commission will deliberate the issue and make their recommendation.

7. The Commission's written recommendation will be distributed to each jurisdiction after approval of the hearing minutes.

II. MEDIATION HEARING IMPACTS UPON LAFCO

A. Hearing Schedule.

1. Only Mediation Hearings in which the filing fee has been paid will be scheduled before the Commission.

2. Mediation Hearings will involve only disputes in the preparation, adoption or amendment of CLUPs.

B. LAFCO's Staff Workload.

1. LAFCO staff will accept mediation hearing filings, collect filing fees, schedule hearing, prepare report for Commission, distribute reports, present report and distribute written recommendation.

C. Commission Composition at Mediation Hearings

1. The new statutes do not require a person with aviation experience, background or education to be a member in the mediation process: However,

as an option, LAFCO staff may refer the matter to the County Airport Commission or County Airport Manager for addition information or technical support.

D. LAFCO's Budget.

1. A Mediation Hearing Filing Fee will be charged that will be sufficient to pay for the level of service mandated by the statute.

Appendix F
GLOSSARY

Air Carriers: The commercial system of air transportation, consisting of the certificated air carriers, air taxis (including commuters), supplemental air carriers, commercial operators of large aircraft, and air travel clubs.

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

Aircraft Accident: An occurrence incident to flight in which, as a result of the operation of an air craft, a person (occupant or non-occupant) receives fatal or serious injury or an aircraft receives substantial damage. Except as provided below, *substantial damage* means damage or structural failure which adversely affects the structural strength, performance, or flight characteristics of the aircraft, and which would normally require major repair or replacement of the affected component. Engine failure, damage limited to an engine, bent fairings or cowling, dented skin, small puncture holes in the skin or fabric, ground damage to rotor or propeller blades, damage to landing gear, wheels, tires, flaps, engine accessories, brakes, or wingtips are not considered substantial damage.

Aircraft Incident: A mishap associated with the operation of an aircraft in which neither fatal or serious injuries nor substantial damage to the aircraft occur.

Aircraft Mishap: The collective term for an aircraft accident or an incident.

Aircraft Operation: The airborne movement of aircraft at an airport or about an en route fix or at other point where counts can be made. There are two types of operations: local and itinerant. An operation is counted for each landing and each departure, such that a touch-and-go flight is counted as two operations.

Airport: An area of land or water that is used or intended to be used for the landing and taking off of aircraft, and includes its buildings and facilities, if any.

Airport Elevation: The highest point of an airport's usable runways, measured in feet above mean sea level.

Airport Influence Area: The area in which current or future airport-related noise, overflight, safety, and/or airspace protection factors may significantly affect land uses or necessitate restrictions on those uses. In most circumstances, the airport influence area is designated by the ALUC as its *planning area boundary* for the airport and the two terms can be considered synonymous.

Airport Land Use Commission (ALUC): A commission authorized under the provisions of California Public Utilities Code, Sections 21670 et seq. and established (in any county within which a public-use airport is located) for the purpose of promoting compatibility between airports and the land uses surrounding them.

Airport Layout Plan (ALP): A scale drawing of existing and proposed airport facilities, their location on an airport, and the pertinent clearance and dimensional information required to demonstrate conformance with applicable standards.

Airport Master Plan (AMP): A long-range plan for development of an airport, including descriptions of the data and analyses on which the plan is based.

Ambient Noise Level: The level of noise that is all-encompassing within a given environment for which a single source cannot be determined. It is usually a composite of sounds from many and varied sources near to and far from the receiver.

Approach Protection Easement: A form of easement which both conveys all of the rights of an avigation easement and sets specified limitations on the type of land uses allowed to be developed on the property.

Approach Speed: The recommended speed contained in aircraft manuals used by pilots when making an approach to landing. This speed will vary for different segments of an approach as well as for aircraft weight and configuration. (AIM)

Aviation-Related Use: Any facility or activity directly associated with the air transportation of persons or cargo or the operation, storage, or maintenance of aircraft at an airport or heliport. Such uses specifically include runways, taxiways, and their associated protected areas defined by the Federal Aviation Administration, together with aircraft aprons, hangars, fixed base operations facilities, terminal buildings, etc.

Avigation Easement: A type of easement which typically conveys the following rights:

A right-of-way for free and unobstructed passage of aircraft through the airspace over the property at any altitude above a surface specified in the easement (usually set in accordance with FAR Part 77 criteria).

A right to subject the property to noise, vibrations, fumes, dust, and fuel particle emissions associated with normal airport activity.

A right to prohibit the erection or growth of any structure, tree, or other object that would enter the acquired airspace.

A right-of-entry onto the property, with proper advance notice, for the purpose of removing, marking, or lighting any structure or other object that enters the acquired airspace.

A right to prohibit electrical interference, glare, misleading lights, visual impairments, and other hazards to aircraft flight from being created on the property.

Based Aircraft: Aircraft stationed at an airport on a long-term basis.

California Environmental Quality Act (CEQA): Statutes adopted by the state legislature for the purpose of maintaining a quality environment for the people of the state now and in the future. The Act establishes a process for state and local agency review of projects, as defined in the implementing guidelines, which may adversely affect the environment.

Ceiling: Height above the earth's surface to the lowest layer of clouds or obscuring phenomena.

Circling Approach/Circle-to-Land Maneuver: A maneuver initiated by the pilot to align the aircraft with a runway for landing when a straight-in landing from an instrument approach is not possible or not desirable.

Combining District: A zoning district which establishes development standards in areas of special concern over and above the standards applicable to basic underlying zoning districts.

Commercial Activities: Airport-related activities which may offer a facility, service or commodity for sale, hire or profit. Examples of commodities for sale are: food, lodging, entertainment, real estate, petroleum products, parts and equipment. Examples of services are: flight training, charter flights, maintenance, aircraft storage, and tiedown.

Commercial Operator: A person who, for compensation or hire, engages in the carriage by aircraft in air commerce of persons or property, other than as an air carrier.

Community Noise Equivalent Level (CNEL): The noise metric adopted by the State of California for evaluating airport noise. It represents the average daytime noise level during a 24-hour day, adjusted to an equivalent level to account for the lower tolerance of people to noise during evening and nighttime periods relative to the daytime period. (State Airport Noise Standards)

Compatibility Plan: As used herein, a plan, usually adopted by an Airport Land Use Commission, which sets forth policies for promoting compatibility between airports and the land uses which surround them. Often referred to as a *Comprehensive Land Use Plan (CLUP).*

Controlled Airspace: Any of several types of airspace within which some or all aircraft may be subject to air traffic control.

Day-Night Average Sound Level (DNL): The noise metric adopted by the U.S. Environmental Protection Agency for measurement of environmental noise. It represents the average daytime noise level during a 24-hour day, measured in decibels and adjusted to account for the lower tolerance of people to noise during nighttime periods. The mathematical symbol is Ldn.

Decibel (dB): A unit measuring the magnitude of a sound, equal to the logarithm of the ratio of the intensity of the sound to the intensity of an arbitrarily chosen standard sound, specifically a sound just barely audible to an unimpaired human ear. For environmental noise from aircraft and other transportation sources, an *A-weighted sound level* (abbreviated dBA) is normally used. The A-weighting scale adjusts the values of different sound frequencies to approximate the auditory sensitivity of the human ear.

Deed Notice: A formal statement added to the legal description of a deed to a property and on any subdivision map. As used in airport land use planning, a deed notice would state that the property is subject to aircraft overflights. Deed notices

are used as a form of buyer notification as a means of ensuring that those who are particularly sensitive to aircraft overflights can avoid moving to the affected areas.

Designated Body: A local government entity, such as a regional planning agency or a county planning commission, chosen by the county board of supervisors and the selection committee of city mayors to act in the capacity of an airport land use commission.

Displaced Threshold: A landing threshold that is located at a point on the runway other than the designated beginning of the runway (see *Threshold*).

Easement: A less-than-fee-title transfer of real property rights from the property owner to the holder of the easement.

Equivalent Sound Level (Leq): The level of constant sound which, in the given situation and time period, has the same average sound energy as does a time-varying sound.

FAR Part 77: The part of the Federal Aviation Regulations which deals with objects affecting navigable airspace.

FAR Part 77 Surfaces: Imaginary airspace surfaces established with relation to each runway of an airport. There are five types of surfaces: (1) primary; (2) approach; (3) transitional; (4) horizontal; and (5) conical.

Federal Aviation Administration (FAA): The U.S. government agency which is responsible for ensuring the safe and efficient use of the nation's airports and airspace.

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

Findings: Legally relevant subconclusions which expose a government agency's mode of analysis of facts, regulations, and policies, and which bridge the analytical gap between raw data and ultimate decision.

Fixed Base Operator (FBO): A business which operates at an airport and provides aircraft services to the general public including, but not limited to, sale of fuel and oil; aircraft sales, rental, maintenance, and repair; parking and tiedown or storage of aircraft; flight training; air taxi/charter operations; and specialty services, such as instrument and avionics maintenance, painting, overhaul, aerial application, aerial photography, aerial hoists, or pipeline patrol.

General Aviation: That portion of civil aviation which encompasses all facets of aviation except air carriers.

Glide Slope: An electronic signal radiated by a component of an ILS to provide vertical guidance for aircraft during approach and landing.

Global Positioning System (GPS): A navigational system which utilizes a network of satellites to determine a positional fix almost anywhere on or above the earth. Developed and operated by the U.S. Department of Defense, GPS has been made available to the civilian sector for surface, marine, and aerial navigational use. For aviation purposes, the current form of GPS guidance provides en route aerial navigation and selected types of nonprecision instrument approaches. Eventual application of GPS as the principal system of navigational guidance throughout the world is anticipated.

Helipad: A small, designated area, usually with a prepared surface, on a heliport, airport, landing/ takeoff area, apron/ramp, or movement area used for takeoff, landing, or parking of helicopters.

Heliport: A facility used for operating, basing, housing, and maintaining helicopters.

Infill: Development which takes place on vacant property largely surrounded by existing development, especially development which is similar in character.

Instrument Approach Procedure: A series of predetermined maneuvers for the orderly transfer of an aircraft under instrument flight conditions from the beginning of the initial approach to a landing or to a point from which a landing may be made visually. It is prescribed and approved for a specific airport by competent authority (refer to *Nonprecision Approach Procedure* and *Precision Approach Procedure*).

Instrument Flight Rules (IFR): Rules governing the procedures for conducting instrument flight. Generally, IFR applies when meteorological conditions with a ceiling below 1,000 feet and visibility less than 3 miles prevail.

Instrument Landing System (ILS): A precision instrument approach system which normally consists of the following electronic components and visual aids: (1) Localizer; (2) Glide Slope; (3) Outer Marker; (4) Middle Marker; (5) Approach Lights.

Instrument Operation: An aircraft operation in accordance with an IFR flight plan or an operation where IFR separation between aircraft is provided by a terminal control facility.

Instrument Runway: A runway equipped with electronic and visual navigation aids for which a precision or nonprecision approach procedure having straight-in landing minimums has been approved.

Inverse Condemnation: An action brought by a property owner seeking just compensation for land taken for a public use against a government or private entity having the power of eminent domain. It is a remedy peculiar to the property owner and is exercisable by that party where it appears that the taker of the property does not intend to bring eminent domain proceedings.

Land Use Density: A measure of the concentration of land use development in an area. Mostly the term is used with respect to residential development and refers to the number of dwelling units per acre. Unless otherwise noted, policies in this compatibility plan refer to *gross* rather than *net* acre age.

Land Use Intensity: A measure of the concentration of nonresidential land use development in an area. For the purposes of airport land use planning, the term indicates the number of people per acre attracted by the land use. Unless otherwise noted, policies in this compatibility plan refer to *gross* rather than *net* acreage.

Large Airplane: An airplane of more than 12,500 pounds maximum certificated takeoff weight.

Localizer (LOC): The component of an ILS which provides course guidance to the runway.

Minimum Descent Altitude (MDA): The lowest altitude, expressed in feet above mean sea level, to which descent is authorized on final approach or during circle-to-land maneuvering in execution of a standard instrument approach procedure where no electronic glide slope is provided.

Missed Approach: A maneuver conducted by a pilot when an instrument approach cannot be completed to a landing.

National Transportation Safety Board (NTSB): The U.S. government agency responsible for investigating transportation accidents and incidents.

Navigational Aid (Navaid): Any visual or electronic device airborne or on the surface which provides point-to-point guidance information or position data to aircraft in flight. (AIM)

Noise Contours: Continuous lines of equal noise level usually drawn around a noise source, such as an airport or highway. The lines are generally drawn in 5-decibel increments so that they resemble elevation contours in topographic maps.

Noise Level Reduction (NLR): A measure used to describe the reduction in sound level from environmental noise sources occurring between the outside and the inside of a structure.

Nonconforming Use: An existing land use which does not conform to subsequently adopted or amended zoning or other land use development standards.

Nonprecision Approach Procedure: A standard instrument approach procedure in which no electronic glide slope is provided.

Nonprecision Instrument Runway: A runway with an approved or planned straight-in instrument approach procedure which has no existing or planned precision instrument approach procedure.

Obstruction: Any object of natural growth, terrain, or permanent or temporary construction or alteration, including equipment or materials used therein, the height of which exceeds the standards established in Subpart C of Federal Aviation Regulations Part 77, *Objects Affecting Navigable Airspace*.

Overflight: Any distinctly visible and audible passage of an aircraft in flight, not necessarily directly overhead.

Overflight Easement: An easement which describes the right to overfly the property above a specified surface and includes the right to subject the property to noise, vibrations, fumes, and emissions. An overflight easement is used primarily as a form of buyer notification.

Overflight Zone: The area(s) where aircraft maneuver to enter or leave the traffic pattern, typically defined by the FAR Part 77 horizontal surface.

Overlay Zone: See *Combining District*.

Planning Area Boundary: An area surrounding an airport designated by an ALUC for the purpose of airport land use compatibility planning conducted in accordance with provisions of the State Aeronautics Act. Also see *Airport Influence Area.*

Precision Approach Procedure: A standard instrument approach procedure where an electronic glide slope is provided.

Precision Instrument Runway: A runway with an existing or planned precision instrument approach procedure.

Referral Area: The area around an airport defined by the planning area boundary adopted by an airport land use commission within which certain land use proposals are to be referred to the commission for review.

Runway Protection Zone (RPZ): An area (formerly called a *clear zone*) off the end of a runway used to enhance the protection of people and property on the ground.

Safety Zone: For the purpose of airport land use planning, an area near an airport in which land use restrictions are established to protect the safety of the public from potential aircraft accidents.

Single-Event Noise: As used in herein, the noise from an individual aircraft operation or overflight.

Single Event Noise Exposure Level (SENEL): A measure, in decibels, of the noise exposure level of a single event, such as an aircraft flyby, measured over the time interval between the initial and final times for which the noise level of the event exceeds a threshold noise level and normalized to a reference duration of one second. SENEL is a noise metric established for use in California by the state Airport Noise Standards and is essentially identical to *Sound Exposure Level (SEL).*

Site Approval Permit: A written approval issued by the California Department of Transportation authorizing construction of an airport in accordance with approved plans, specifications, and conditions. Both public use and special-use airports require a site approval permit.

Small Airplane: An airplane of 12,500 pounds or less maximum certificated takeoff weight.

Sound Exposure Level (SEL): A time-integrated metric (i.e., continuously summed over a time period) which quantifies the total energy in the A-weighted sound level measured during a transient noise event. The time period for this measurement is generally taken to be that between the moments when the A-weighted sound level is 10 dB below the maximum.

Straight-In Instrument Approach: An instrument approach wherein a final approach is begun without first having executed a procedure turn; it is not necessarily completed with a straight-in landing or made to straight-in landing weather minimums.

Taking: Government appropriation of private land for which compensation must be paid as required by the Fifth Amendment of the U.S. Constitution. It is not essential that there be physical seizure or appropriation for a *taking* to occur, only that the government action directly interferes with or substantially disturbs the owner's right to use and enjoyment of the property.

Terminal Instrument Procedures (TERPS): Procedures for instrument approach and departure of aircraft to and from civil and military airports. There are

four types of terminal instrument procedures: precision approach, nonprecision approach, circling, and departure.

Threshold: The beginning of that portion of the runway usable for landing (also see *Displaced Threshold*).

Touch-and-Go: An operation by an aircraft that lands and departs on a runway without stopping or exiting the runway.

Traffic Pattern: The traffic flow that is prescribed for aircraft landing at, taxiing on, or taking off from an airport. The components of a typical traffic pattern are upwind leg, crosswind leg, downwind leg, base leg, and final approach.

Visual Approach: An approach where the pilot must use visual reference to the runway for landing under VFR conditions.

Visual Flight Rules (VFR): Rules that govern the procedures for conducting flight under visual conditions. VFR applies when meteorological conditions are equal to or greater than the specified minimum-generally, a 1,000-foot ceiling and 3-mile visibility.

Visual Runway: A runway intended solely for the operation of aircraft using visual approach procedures, with no straight-in instrument approach procedure and no instrument designation indicated on an FAA-approved airport layout plan.

Zoning: A police power measure, enacted primarily by units of local government, in which the community is divided into districts or zones within which permitted and special uses are established, as are regulations governing lot size, building bulk, placement, and other development standards. Requirements vary from district to district, but they must be uniform within districts. A zoning ordinance consists of two parts: the text and a map.

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