

Background Data: Riverside Municipal Airport and Environs

INTRODUCTION

Owned and operated by the City of Riverside, Riverside Municipal Airport is situated inside the western portion of the city limits. The airport occupies some 441 acres on the flat lands of the Santa Ana River plain. It has two intersecting runways—the primary runway running roughly east/west and a shorter, crosswind runway aligned north/south. A precision instrument approach procedure is established from the west, although most of the aircraft operations are in the opposite direction. An air traffic control tower serves the airport. Exhibit RI-1 lists other major features of the airport. From a land use compatibility standpoint, the most significant improvement planned for the airport is a 750-foot easterly extension of the runway. Establishment of a nonprecision instrument approach procedure from the east also is planned. These modifications are reflected on the airport layout plan approved by the city in 2001 (Exhibit RI-2).

Updated airport activity forecasts prepared for the city anticipate some 160,000 annual operations in 2025 compared to just over 110,000 in 2002/03 (Exhibit RI-3). Beyond this time frame, the already evident trend toward more use of the airport by turboprop aircraft, business jets, and helicopters is expected to be much stronger. A corresponding “ultimate” forecast of 220,000 annual operations (included in Exhibit RI-3) reflects this trend. The noise impacts associated with each of these activity levels are depicted in Exhibits RI-4, RI-5, and RI-6. Because the noisiest aircraft will be eliminated from the fleet over time, the future noise impact area is about the same as at present even with the projected activity increases. However, the substantially higher jet aircraft activity indicated in the ultimate forecast results in the ultimate noise contours being significantly larger than the other two contour sets. The ultimate activity levels and noise impact area is used as the basis for the Riverside Municipal Airport compatibility map included in Volume 1. These noise contours and other compatibility factors contributing to the compatibility map delineation are depicted in Exhibit RI-7.

The surrounding area is heavily urbanized, especially to the east and south. Much of this development is not in conformance with either the former or new compatibility criteria. The opportunities for additional development in the airport environs are limited, however. Most such development can occur only as either infill or redevelopment. Information regarding local land uses and land use compatibility policies of the City of Riverside and Riverside County is summarized in Exhibit RI-8 and current general plan designations of the two jurisdictions are mapped in Exhibit RI-9. The final exhibit (RI-10) contains a preliminary assessment of inconsistencies between the city and county general plans and the *Compatibility Plan*.

GENERAL INFORMATION

- ▶ *Airport Ownership:* City of Riverside
- ▶ *Year Opened:* c. 1930
- ▶ *Property Size*
 - ▶ Fee Title: 441 acres
 - ▶ Avigation Easements: Required for all development in airport influence area; acreage uncertain
- ▶ *Airport Classification:* General Aviation
- ▶ *Airport Elevation:* 818 feet MSL

AIRPORT PLANNING DOCUMENTS

- ▶ *Airport Master Plan*
 - ▶ Adopted by Riverside City Council, November 1999
- ▶ *Airport Layout Plan Drawing*
 - ▶ Last updated January 2001
- ▶ *FAR Part 150 Airport Noise Compatibility Program*
 - ▶ Approved by FAA, March 1995

RUNWAY/TAXIWAY DESIGN

Runway 9-27

- ▶ *Critical Aircraft:* Small business jet
- ▶ *Airport Reference Code:* B-II
- ▶ *Dimensions:* 5,401 ft. long, 100 ft. wide
- ▶ *Pavement Strength (main landing gear configuration)*
 - ▶ 48,000 lbs (single wheel)
 - ▶ 70,000 lbs (dual wheel)
 - ▶ 110,000 lbs (dual-tandem wheel)
- ▶ *Average Gradient:* 1.1% (rising to east)
- ▶ *Runway Lighting*
 - ▶ Medium-intensity edge lights (MIRL)
 - ▶ Runway 9: Approach lights (MALSR)
 - ▶ Runway 27: Runway End Identifier Lights (REILs)
- ▶ *Primary Taxiways:* Full-length parallel on south

Runway 16-34

- ▶ *Critical Aircraft:* Single-engine, piston
- ▶ *Airport Reference Code:* B-I
- ▶ *Dimensions:* 2,851 ft. long, 48 ft. wide
- ▶ *Pavement Strength (main landing gear configuration)*
 - ▶ 40,000 lbs (single wheel)
 - ▶ 50,000 lbs (dual wheel)
 - ▶ 80,000 lbs (dual-tandem wheel)
- ▶ *Average Gradient:* 0.8% (rising to north)
- ▶ *Runway Lighting*
 - ▶ Medium-intensity edge lights (MIRL)
- ▶ *Primary Taxiways:* Full-length parallel taxiway on west

TRAFFIC PATTERNS AND APPROACH PROCEDURES

- ▶ *Airplane Traffic Patterns*
 - ▶ Runways 9, 27, 34: Left traffic
 - ▶ Runway 16: Right traffic
 - ▶ Pattern altitude: 1,000 ft. AGL light aircraft; 1,500 ft. AGL jets and others
- ▶ *Instrument Approach Procedures (lowest minimums)*
 - ▶ Runway 9 ILS:
 - Straight-in (½-mile visibility; 200 ft. descent height)
 - Circling (1-mile visibility, 442 ft. descent height); no circling north of Runway 9-27
 - ▶ Runway 9 VOR or GPS
 - Straight-in (½-mile visibility; 466 ft. descent height)
 - Circling (1-mile visibility, 442 ft. descent height)
 - ▶ Two additional procedures provide circling only
- ▶ *Standard Inst. Departure Procedures:* None
- ▶ *Visual Approach Aids*
 - ▶ Airport: Rotating beacon
 - ▶ Runway 27: Visual Approach Slope Indicator (3.0°)
 - ▶ Runway 34: Precision Approach Slope Indicator
- ▶ *Operational Restrictions / Noise Abatement Procedures*
 - ▶ Runway 16-34 usage limited to 12,500-lb aircraft

APPROACH PROTECTION

- ▶ *Runway Protection Zones (RPZs)*
 - ▶ Runway 9: 2,500 ft. long; >¾ on airport or road r.o.w.
 - ▶ Runway 27: 1,000 ft. long; all on airport property
 - ▶ Runway 16: 1,000 ft. long; ¾ on airport property
 - ▶ Runway 34: 1,000-ft. long; <¼ on airport property
- ▶ *Approach Obstacles:* None

BUILDING AREA

- ▶ *Location:* Southeast quadrant of airport
- ▶ *Aircraft Parking Capacity*
 - ▶ Hangar spaces: 137 indiv. units; add'l in large hangars
 - ▶ Tiedowns: Uncertain
- ▶ *Other Major Facilities*
 - ▶ Air traffic control tower
 - ▶ Lighted helipad southeast of runway intersection
 - ▶ Terminal building with pilots' lounge, restaurant
- ▶ *Services*
 - ▶ Fuel: Jet A, 100LL (by truck)
 - ▶ Other: Aircraft rental & charter; flight instruction

PLANNED FACILITY IMPROVEMENTS

- ▶ *Airfield*
 - ▶ Extend Rwy 9-27 eastward to 6,153 ft. length
 - ▶ Establish Rwy 27 straight-in nonprecision approach
- ▶ *Building Area*
 - ▶ Increase based aircraft parking
- ▶ *Property*
 - ▶ None

Exhibit RI-1

Airport Features Summary

Riverside Municipal Airport

BASED AIRCRAFT				TIME OF DAY DISTRIBUTION ^c		
	Current ^a 2002 data	Future ^a 2025	Ultimate		Current	Future & Ultimate
<i>Aircraft Type</i>				<i>Single-Engine</i>		
Single-Engine	205	250		Day	80%	no change
Twin-Engine Piston & Turboprop	24	100	data not available	Evening	18%	
Business Jets	1	50		Night	2%	
Helicopters / Others	10	50		<i>Other Aircraft</i>		
<i>Total</i>	<i>240</i>	<i>450</i>		Day	90%	no change
				Evening	9%	change
				Night	1%	

AIRCRAFT OPERATIONS				RUNWAY USE DISTRIBUTION ^c		
	Current ^a 2002 data	Future ^a 2025	Ultimate ^c		Current	Future & Ultimate
<i>Total</i>				<i>Business Jets & Turbo Props</i>		
Annual	114,100 ^b	160,800	220,000	Day/Evening/Night		
Average Day	312	441	603	Takeoffs		
<i>Distribution by Aircraft Type</i>				Runway 9	10%	10%
Single-Engine	84%	62%	41%	Runway 27	90%	90%
Twin-Engine Piston	10%	8%	5%	Runway 16	0%	0%
Twin-Engine, Turboprop	2%	11%	23%	Runway 34	0%	0%
Business Jet	1%	17%	20%	Landings		
Helicopters / Other	3%	2%	11%	Runway 9	10%	50%
				Runway 27	90%	50%
<i>Distribution by Type of Operation ^c</i>				Runway 16	0%	0%
Local (incl. touch-and-goes)				Runway 34	0%	0%
Single-Engine			45%	<i>Other Airplanes – Day/Evening/Night</i>		
Twin-Engine Piston			20%	Takeoffs & Landings		
Helicopter			45%	Runway 9	9%	no change
All Others			0%	Runway 27	88%	
<i>Total</i>	<i>43%</i>	<i>45%</i>	<i>24%</i>	Runway 16	1%	
Itinerant				Runway 34	2%	
Single-Engine			55%			
Twin-Engine Piston			80%			
Helicopter			55%			
All Others			100%			
<i>Total</i>	<i>57%</i>	<i>55%</i>	<i>76%</i>			

FLIGHT TRACK USAGE

Data summary not available

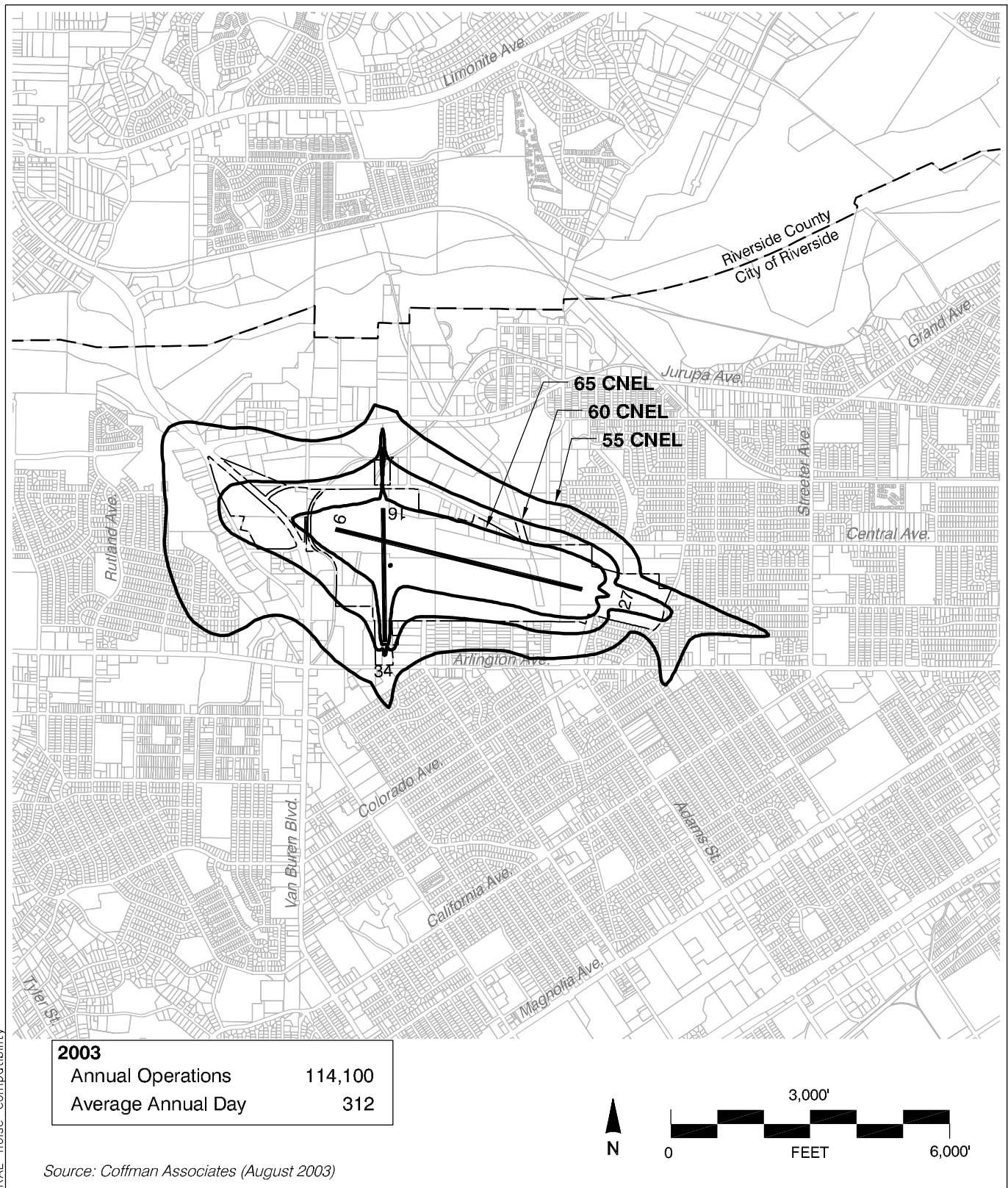
Notes

- ^a Source: *Riverside Municipal Airport Forecast Update (2002)*
- ^b Source: Air Traffic Control (ATC) tower counts plus estimated night operations
- ^c Source: Estimated/projected for compatibility planning purposes based on discussion with Airport Manager (February 2004)

Exhibit RI-3

Airport Activity Data Summary

Riverside Municipal Airport

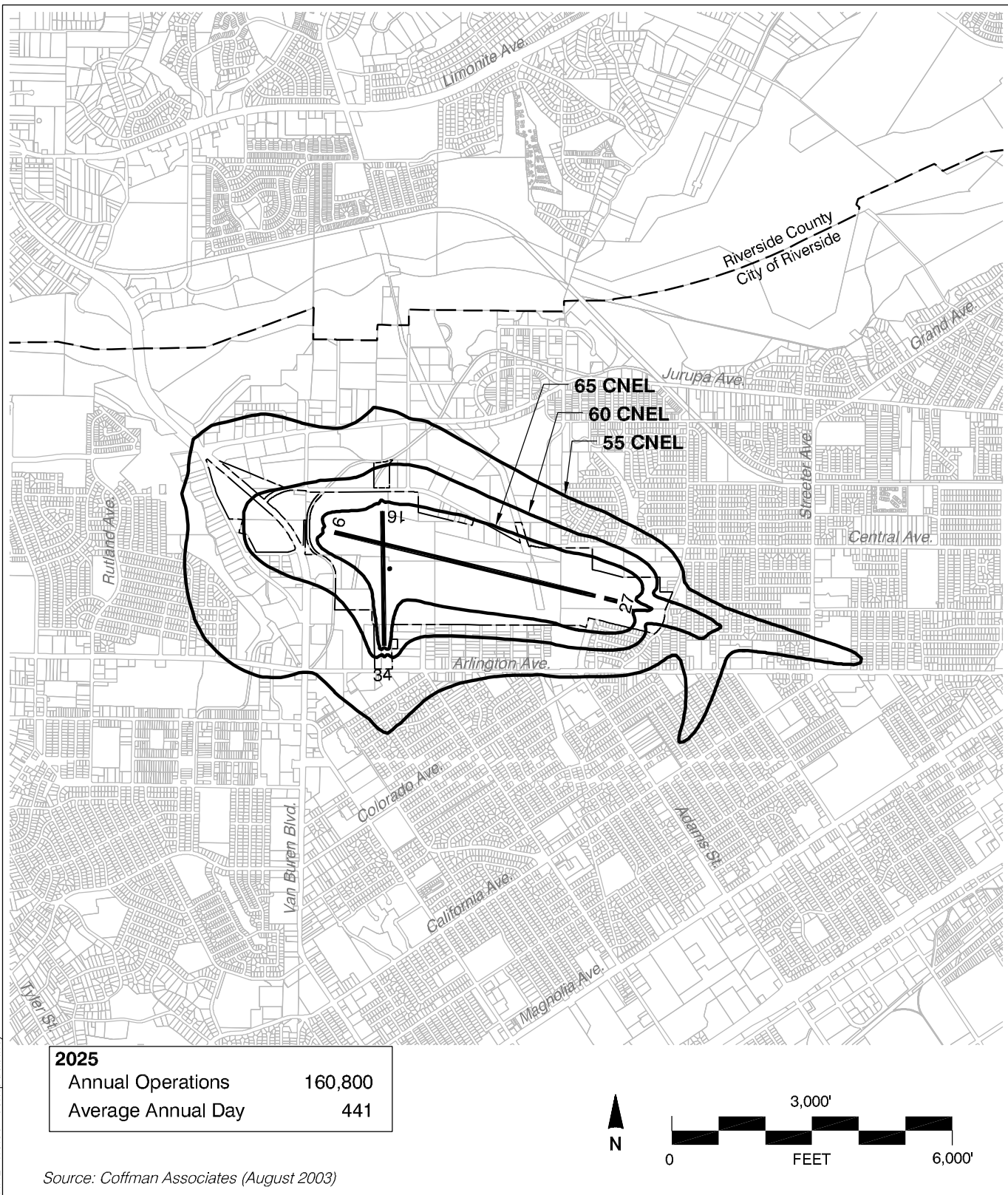


RAL-noise-compatibility

Exhibit RI-4

Existing Noise Impacts

Riverside Municipal Airport

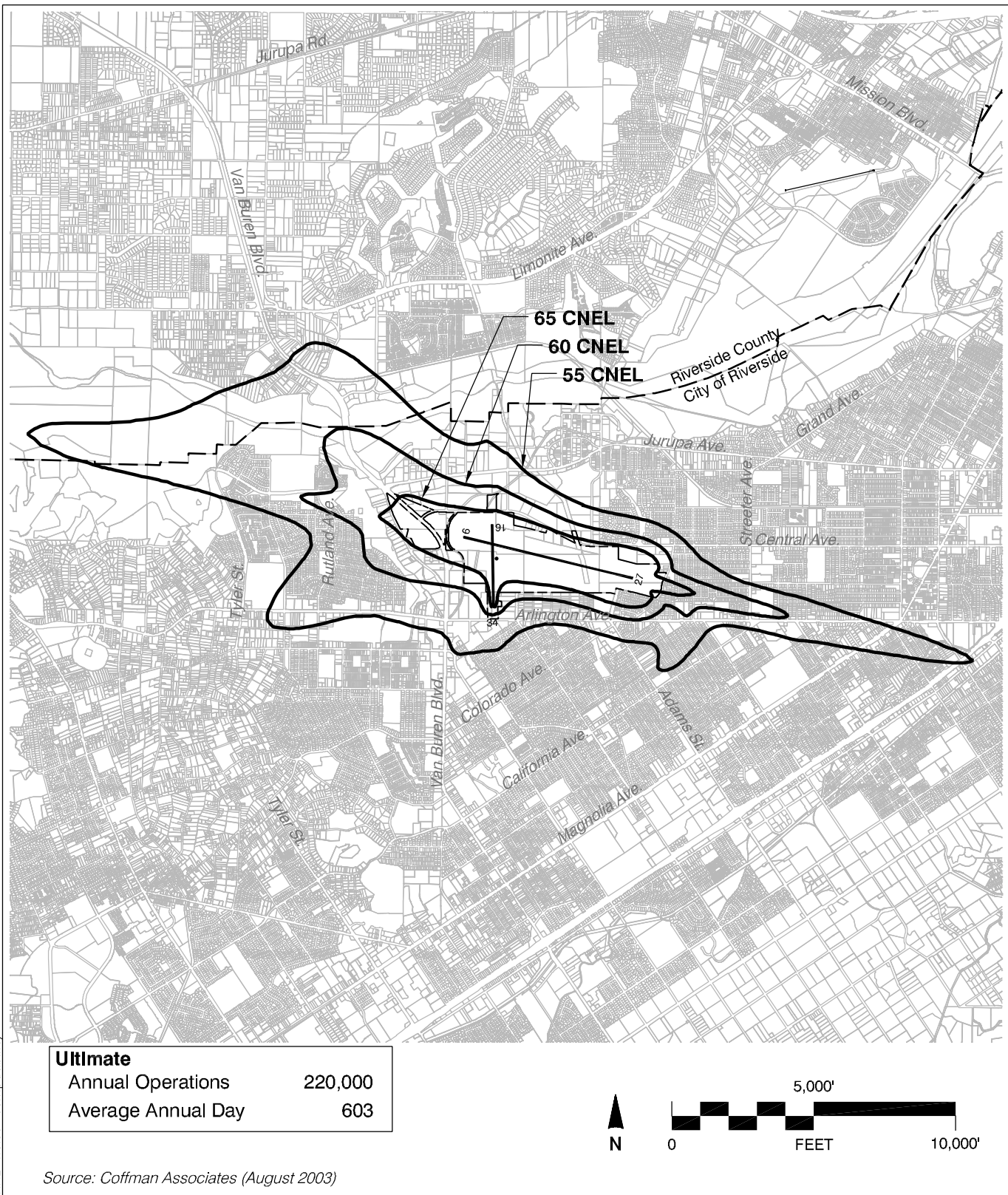


Source: Coffman Associates (August 2003)

Exhibit RI-5

Future Noise Impacts Riverside Municipal Airport

RAI-noise-compatibility

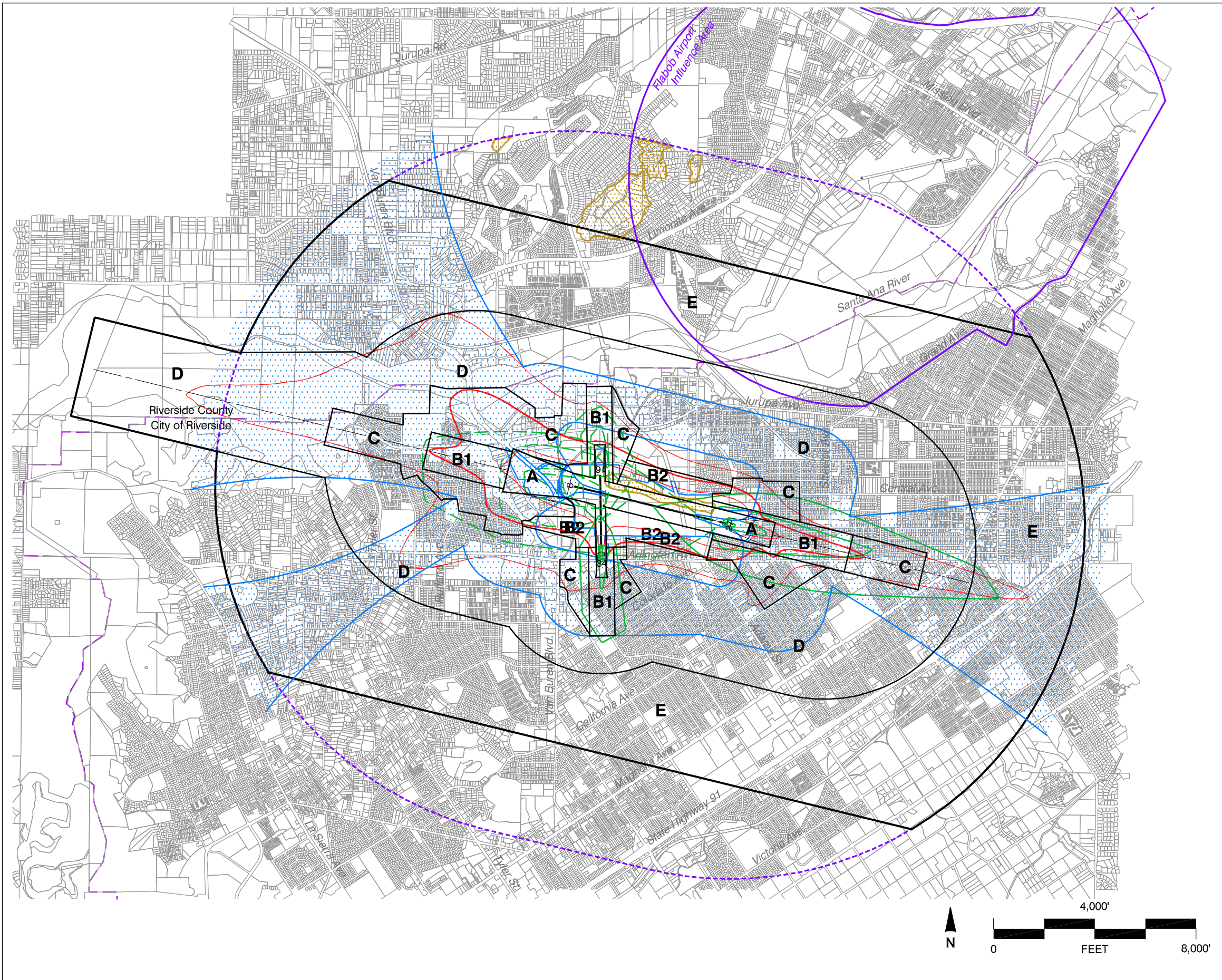


RAL-noise-compatibility

Source: Coffman Associates (August 2003)

Exhibit RI-6

Ultimate Noise Impacts
Riverside Municipal Airport



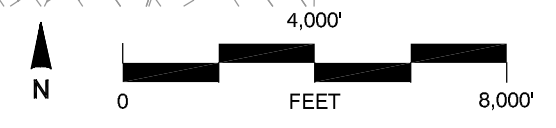
- Legend**
- Compatibility Zones**
- Airport Influence Area Boundary
 - ▭ Zone A
 - ▭ Zone B1
 - ▭ Zone B2
 - ▭ Zone C
 - ▭ Zone D
 - ▭ Zone E
- Noise and Overflight Compatibility Factors**
- 65 dB CNEL
 - 60 dB CNEL
 - 55 dB CNEL
- } Ultimate
- ▭ General Traffic Pattern Envelope (approximately 80% of aircraft overflights estimated to occur within these limits)
- Safety and Airspace Compatibility Factors**
- Aircraft Departure Accident Risk Intensity Contours* (Shown Only for Takeoffs to the West and North)
 - Aircraft Approach Accident Risk Intensity Contours* (Shown Only for Landings from the East and South)
 - FAR Part 77 Conical Surface Limits
 - ▭ FAR Part 77 Terrain Penetration
- Boundary Lines**
- Airport Property Line
 - City Limits

* Aircraft accident risk intensity contours are derived from nationwide accident location data in California Division of Aeronautics database. The contours show relative intensities (highest concentrations) of near-airport accidents in 20 % increments. The contour shapes represent a wide range of general aviation airports and have not been modified to reflect the flight tracks for this airport.

Riverside County
Airport Land Use Commission
Riverside County
Airport Land Use Compatibility Plan
West County Airports Background Data
 (March 2005)

Exhibit RI-7

Compatibility Factors Map
Riverside Municipal Airport



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AIRPORT SITE

- ▶ *Location*
 - › Western Riverside County
 - › Three miles west of Riverside city center
- ▶ *Nearby Terrain*
 - › Generally level terrain in immediate area
 - › Santa Ana River 1.0 mile north.
 - › Nearby high points include Twin Buttes 3 mi. south-west and Mt. Rubidoux (elev. 1,339 ft.) 4 mi. northeast

AIRPORT ENVIRONS LAND USE JURISDICTIONS

- ▶ *County of Riverside*
 - › Unincorporated area north of Santa Ana River
- ▶ *City of Riverside*
 - › Airport property and lands east, west, and south in city limits

STATUS OF COMMUNITY PLANS

- ▶ *Riverside County*
 - › General Plan, a portion of Riverside County Integrated Project, adopted by Board of Supervisors Oct. 2003
- ▶ *City of Riverside*
 - › General Plan adopted September 1993

EXISTING AIRPORT AREA LAND USES

- ▶ *General Character*
 - › Highly urbanized in all directions
- ▶ *Runway Approaches*
 - › West (Runway 9): Union Pacific rail line (600 ft. from runway end); Van Buren Blvd. (0.2 mi.); Sky Links Golf Course west of road; residential area (1.0 mile)
 - › East (Runway 27): Residential and commercial/business uses (0.4 mi. from runway end); continuous urban beyond
 - › North (Runway 16): Central Ave. (400 ft.); industrial area north of road; Santa Ana River (1.0 mi.)
 - › South (Runway 34): Arlington Ave. (500 ft.); mini storage south of road; residential area (0.2 miles)

PLANNED AIRPORT AREA LAND USES

- ▶ *Riverside County*
 - › North: Open space and industrial uses.
- ▶ *City of Riverside*
 - › North: Industrial uses
 - › East: Residential and commercial/business uses
 - › South: Industrial and commercial uses immediately south of the Airport. These areas are bordered by residential areas.
 - › West: Industrial and manufacturing uses bordering the airport. Open space and residential uses are located beyond these areas.

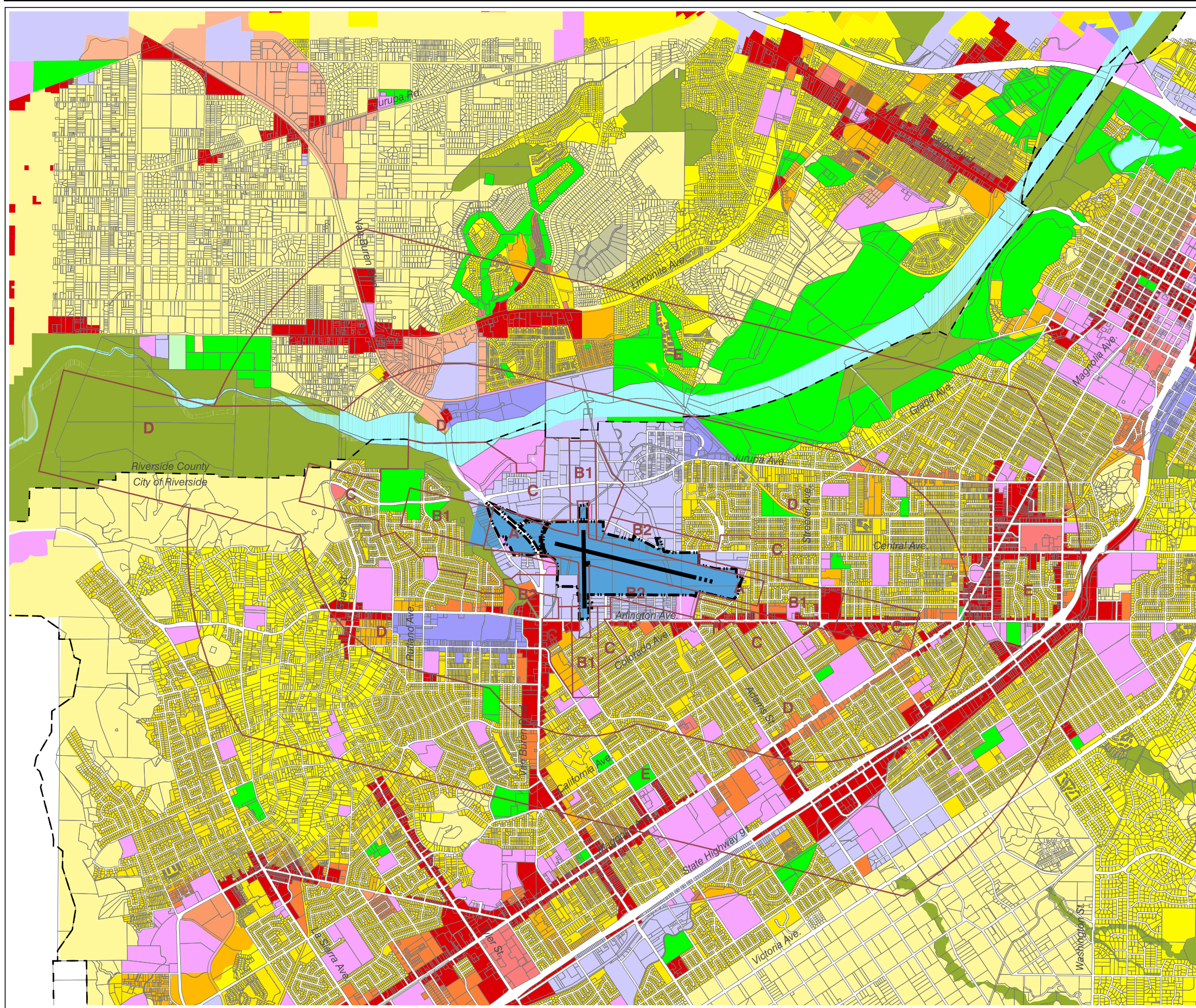
ESTABLISHED AIRPORT COMPATIBILITY MEASURES

- ▶ *Riverside County General Plan*
 - › Prohibit new residential uses, except single-family dwellings on legal residential lots of record, within airports' 60 dB CNEL contour as defined by ALUC (Policy N 7.4)
 - › Safety compatibility zones and criteria from previous compatibility plan incorporated into General Plan
 - › Review all proposed projects and require consistency with any applicable compatibility plan (LU 14.2)
 - › Submit proposed actions and projects to ALUC as required by state law (Policy LU 1.9); other actions may be submitted on voluntary and advisory basis (LU 14.8)
- ▶ *City of Riverside General Plan (1993)*
 - › Residential development deemed conditionally acceptable in 60–70 CNEL range; normally unacceptable at 70–75 CNEL; clearly unacceptable above 75 CNEL
 - › Transportation Element Policy T 3.8 states that city “should limit building heights and land use intensities beneath airport approach and departure paths to protect public safety”
- ▶ *City of Riverside Zoning Codes*
 - › Airport zone (AIR) and airport industrial (AI) zone restrict types of uses and heights of structures on and near airport
 - › No FAR Part 77 height limit zoning

Exhibit RI-8

Airport Environs Information

Riverside Municipal Airport



Legend

- City Limit
- Airport Property Line
- Runway
- Compatibility Zones**
- Very-High-Density Residential (>20 du/ac)
- High-Density Residential (14.1-20 du/ac)
- Medium-High-Density Residential (8.1-14.0 du/ac)
- Medium-Density Residential (5.1-8.0 du/ac)
- Low-Density Residential (2.1-5.0 du/ac)
- Very-Low-Density Residential (0.4-2.0 du/ac)
- Mobile Home Park
- High-Intensity Commercial/Office
- Low-Intensity Commercial /Office
- Office/Business Park
- Heavy Industrial
- Light Industrial/Warehousing
- Mixed Use
- Airport
- School
- Other Public/Institutional
- Parks & Recreation
- Rural Residential (2.5-10.0 ac parcels)
- Agriculture (>10.0 ac parcels)
- Open Space/Conservation
- Federal Lands
- State Lands
- Indian Lands
- Unclassified

Note:
 This map is combined and simplified from the maps in the following sources:
 Riverside County General Plan (October 2003)
 City of Riverside General Plan (September 1993)



Riverside County
Airport Land Use Commission
Riverside County
Airport Land Use Compatibility Plan
West County Airports Background Data
(March 2005)

Exhibit RI-9

General Plan Land Use Designations
Riverside Municipal Airport Environs

**COUNTY OF RIVERSIDE:
GENERAL PLAN (2003) AND JURUPA AREA PLAN**

Non-Residential Land Use

- ▶ *Compatibility Zone D*
 - › Potential Conflict: *Zone D* intensity limits (100 people/acre) apply to the areas designated as Heavy Industrial, Light Industrial/Warehousing, and Office/Business Park north of the airport [R1]
-

Other Policies

- ▶ *General Plan*
 - › Acknowledgement of ALUC policies—no conflict
 - › Established ALUC 60 dB CNEL noise contour policy for new residential development—no conflict
- ▶ *Zoning Codes*
 - No height limit zoning established

Note: This is an initial land use consistency review prepared for the purpose of identifying areas where a conflict exists or potentially exists with ALUC compatibility zone criteria. This review is based upon available general plan documents and does not take into account existing land use. When a conflict between the general plan and compatibility criteria exists, it is not deemed inconsistent when the general plan is merely representing existing development. A more comprehensive analysis is necessary at the time a general plan land modification is presented to the ALUC for review.

Exhibit RI-10

General Plan Consistency Review (Preliminary)
Riverside Municipal Airport Environs

**CITY OF RIVERSIDE:
GENERAL PLAN (1993), AND ZONING CODES**

Residential Land Use

- ▶ *Compatibility Zone C*
 - › Residential designations with densities ranging from 0.4 to 2.0 dwelling units/acre west of the airport [CIR1] conflict with *Zone C* compatibility criteria
- ▶ *Compatibility Zone D*
 - › In accordance with Policy RI.2.3(a), residential densities are unrestricted in this portion of *Zone D* [CIR2]

Other Policies

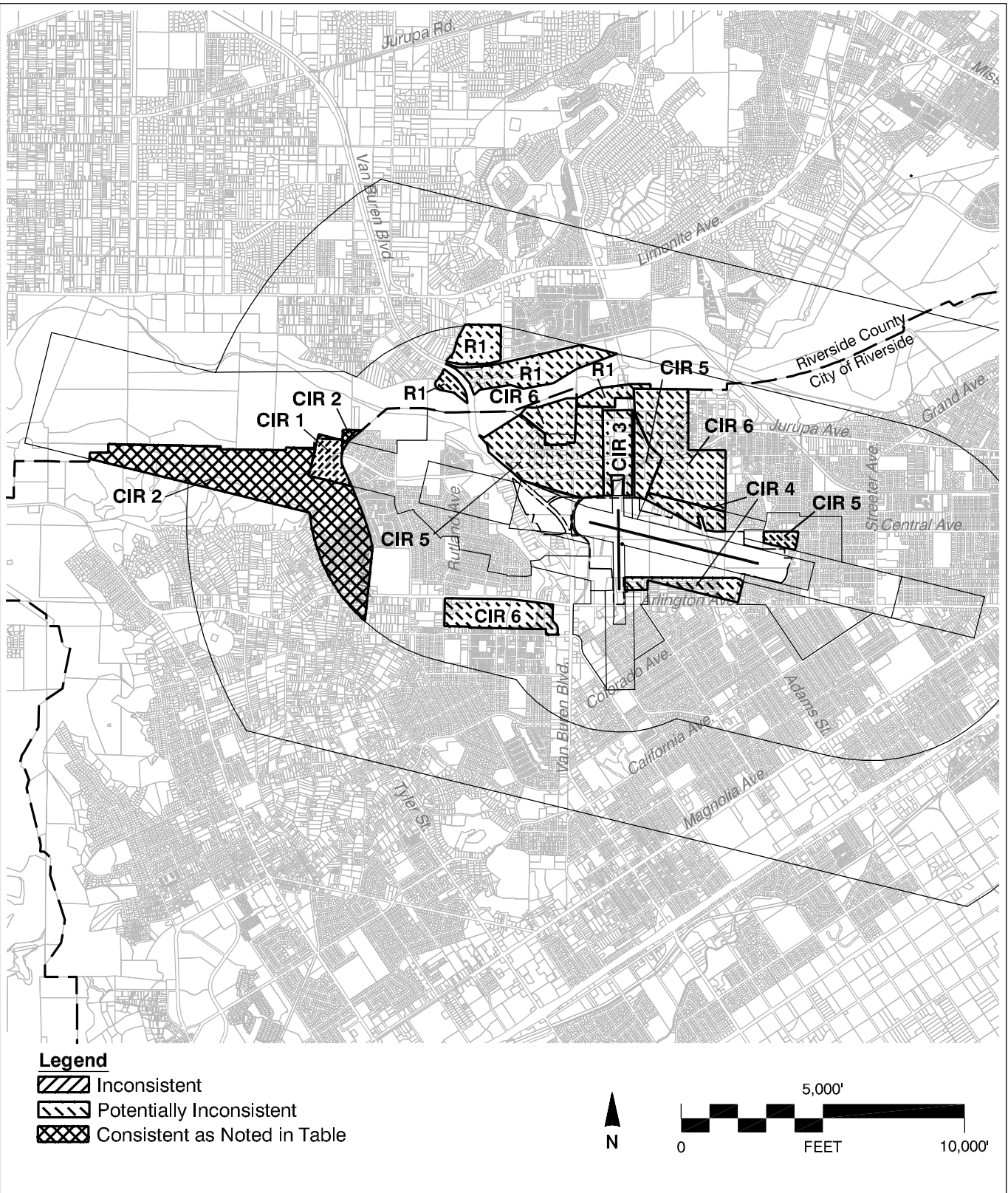
- ▶ *General Plan*
 - › No acknowledgment of ALUC coordination
 - › Noise policy conditionally allows residential development up to 70 dB CNEL conflicts with Compatibility Plan limit of 60 dB CNEL
- ▶ *Zoning Codes*
 - › Height limit zoning not established

Non-Residential Land Use

- ▶ *Compatibility Zone B1*
 - › Potential Conflict: *Zone B1* intensity limits (25 people/acre) apply to the area designated as Heavy Industrial north of the airport [CIR3]
- ▶ *Compatibility Zone B2*
 - › Potential Conflict: *Zone B2* Intensity limits (100 people/acre) apply to the areas designated as Light Industrial/Warehousing north, Light Industrial/Warehousing and Public/Institutional south of the airport [CIR4]
- ▶ *Compatibility Zone C*
 - › Potential Conflict: *Zone C* intensity limits (75 people/acre) apply to the areas designated as Other Public/Institutional and Light Industrial/Warehousing north of airport and Light Industrial east of the airport [CIR5]
- ▶ *Compatibility Zone D*
 - › Potential Conflict: *Zone D* intensity limits (100 people/acre) apply to the areas designated as Light Industrial and Other Public/Institutional north of airport and Heavy Industrial/Warehousing south of the airport [CIR6]

Note: This is an initial land use consistency review prepared for the purpose of identifying areas where a conflict exists or potentially exists with ALUC compatibility zone criteria. This review is based upon available general plan documents and does not take into account existing land use. When a conflict between the general plan and compatibility criteria exists, it is not deemed inconsistent when the general plan is merely representing existing development. A more comprehensive analysis is necessary at the time a general plan land modification is presented to the ALUC for review.

Exhibit RI-10, continued



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Exhibit RI-10, continued