

BERMUDA DUNES AIRPORT
AIRPORT LAND USE PLAN

Formulated

by

RIVERSIDE COUNTY AIRPORT LAND USE COMMISSION

Adopted May 29, 1986

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RIVERSIDE COUNTY
AIRPORT LAND USE COMMISSION

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Airport Influenced Area Boundaries and Land Use Planning Areas.

A. Airport Influenced Area Boundaries

1. In accordance with the Riverside County Airport Land Use Plan, adopted April 26, 1984, the Commission has identified three distinct areas of influence. The boundaries for these areas have been determined by the Airport Land Use Commission on the basis of the type of airport, type of aircraft expected to use the airport, aircraft flight patterns and altitudes, noise levels, Federal Aviation Administration (FAA) criteria concerning objects affecting navigable airspace as established in Part 77 of the Federal Aviation Regulations (FAR Part 77) or a combination of these factors.
2. The boundaries have been adjusted in so far as possible to follow roads, section lines, canals, aqueducts, or other natural features that will provide for easy identification of the boundaries.

B. Airport Influenced Areas Defined

Area I

The imaginary approach surface defined by Federal Aviation Regulation Part 77, Objects Affecting Navigable Airspace, as the approach surfaces for the size and type of runways at each airport. These areas are always centered on the extended runway centerlines. The imaginary approach is drawn on Exhibit 1.

Area II

An area defined by the Airport Land Use Commission to be an area of Significant Safety Concern. These safety concerns are due to aircraft maneuvering, ascending, descending, turning, and changing power settings when landing or taking off from the airport. These areas may bend to accurately reflect actual flight paths. Area II is shown on Exhibit 2.

Area III

The outer boundary of the airport influenced area is based in part upon the outer radius of the imaginary horizontal surface of the airport as defined in

FAR Part 77. Also consideration is given to the type of airport it is, type of aircraft expected to use the airport, aircraft flight tracks, noise levels or a combination of these factors. The boundaries have been adjusted to follow roads, section lines, canals, aqueducts, or other natural features. This has been done to provide for easy identification of Airport Influenced Area Boundaries. This area is normally used to determine whether obstructions exist within the area where aircraft are most likely to be maneuvering. It was designated by the Airport Land Use Commission as the Airport Influenced Area due to the flight paths and aircraft noise which are present in the entire area. Area III is shown on Exhibit III.

C. Land Use Policies

1. Policy 1: The Bermuda Dunes Airport imaginary approach surface, as shown on Exhibit 1, shall be kept free of all high risk land uses. In general high risk land uses have one or more of the following characteristics.
 - a. High concentration of people.
 - b. Critical facilities, and
 - c. Flammable or explosive materials.

The following is a list of examples of land uses which have these high risk characteristics. This list is not complete and each land use application will be evaluated for its appropriateness given airport flight activities:

- a. Places of Assembly: Auditoriums; churches; schools; carnivals; drive-in theaters; etc.
- b. High Patronage Services: Bowling alleys; restaurants; theaters; motels; banks; etc.
- c. Large Retail Outlets: Department stores; supermarkets; drug stores; etc.
- d. Residential Uses: Lot sizes smaller than 2½ acres.

coincide, as much as possible, to areas where aircraft would be in the landing - take-off pattern and would be turning and applying or reducing power (again, higher risk of something happening).

D. Noise Considerations

1. Policy 3: Local jurisdictions will be encouraged to obtain aviation easements for all land uses within the Bermuda Dunes Airport Influenced Area, as indicated on Exhibit III. The height of these aviation easements should be from runway ground elevation (69 feet) within the imaginary approach surfaces and from 150 feet above runway ground level elevation throughout the Influenced Area Boundary.

In accordance with Section 21676(b) of the Public Utilities Code, proposed land uses which are subject to review by the Airport Land Use Commission (General Plan Amendments, Specific Plans, adoption or approval of a Zoning Ordinance or Building Regulations) that fall within the Bermuda Dunes Influenced Area, as indicated on Exhibit III, shall be reviewed by the Airport Land Use Commission for a determination of consistency. This determination shall then be forwarded to the requesting agency.

Local jurisdictions are also encouraged to submit other proposed development (Tentative Tracts, Plot Plans) that fall within the Bermuda Dunes Airport Influenced Area Boundary for review and recommendation as to consistency with this Plan to help ensure land use compatibility with Bermuda Dunes Airport operations. Land uses that produce glare, direct illumination, vapor, smoke and dust which may affect airport operations shall be discouraged. Likewise, uses which would conflict or potentially conflict with the airport in terms of noise sensitivity and safety hazards are discouraged from locating in the vicinity of the airport.

2. Rationale For Policy 3: Activity directly related to the airport does not extend much beyond the area defined as the airport-influenced area. This

e. Critical Facilities: Telephone exchanges; radio/television studios; hospitals; etc.

f. Flammable Products: Bulk fuel storage; gasoline and liquid petroleum service stations; manufacture of plastics; breweries; feed and flour mills; etc.

2. Rationale for Policy 1: The approach surfaces are specifically defined by Federal Aviation Regulations. These areas carry the highest volume of air traffic due to the fact that all aircraft have to align with these areas to land or take-off on the runways. Aircraft have a higher tendency to have problems within these zones due to changing power settings to take-off or land. The convergence of all aircraft landing and taking-off within these narrow zones also means that the noise levels are highest in these zones. Due to these factors and the accepted Federal definition of the boundary of these surfaces, the area was deemed inappropriate for housing and high risk uses. Certain areas of approach zones may be deemed appropriate for large lot (dispersed) residential use because over this area aircraft have achieved higher altitude and may be turning out of the approach zone away from the area in question. Therefore, the relative risk is not as great as in other areas of the approach zone.
3. Policy 2: Area II, Area of Significant Safety Concern, shall have a minimum residential lot size of $2\frac{1}{2}$ acres. Agricultural, industrial and commercial uses are acceptable in this area.
4. Rationale for Policy 2: Area II illustrates the general flight paths of the various types of aircraft using the airport. The hazards in this area are similar to those in Area I, the approach zones, but the influence of the same factors of landing, take-off and noise are not as severe and the aircraft are higher in altitude. Therefore, the proposed policy is not as severe. The boundaries of the area have been established to

is the area influenced by airport operations and aircraft noise. Prospective buyers of land within the area should be notified that aircraft will be in the area and that some may be noisy or produce other ancillary effects such as glare or vibration. Avigation easements are a legal basis wherein the landowner basically acknowledges that aircraft and ancillary effects are present in the airspace overhead, and gives up any future right to sue regarding the acknowledge effects and their impact upon the enjoyment of his property or change in property value. Avigation easements are permitted and defined by the Public Utilities Code, Section 21652. An avigation easement allows property to be developed in the airport-influenced area for residential and other land uses, but offers constructive notice to future buyers; and protection to the airport in that people choosing to live and/or work in the influenced area will not have a legal basis for suit, which would jeopardize the airport operation and presence.

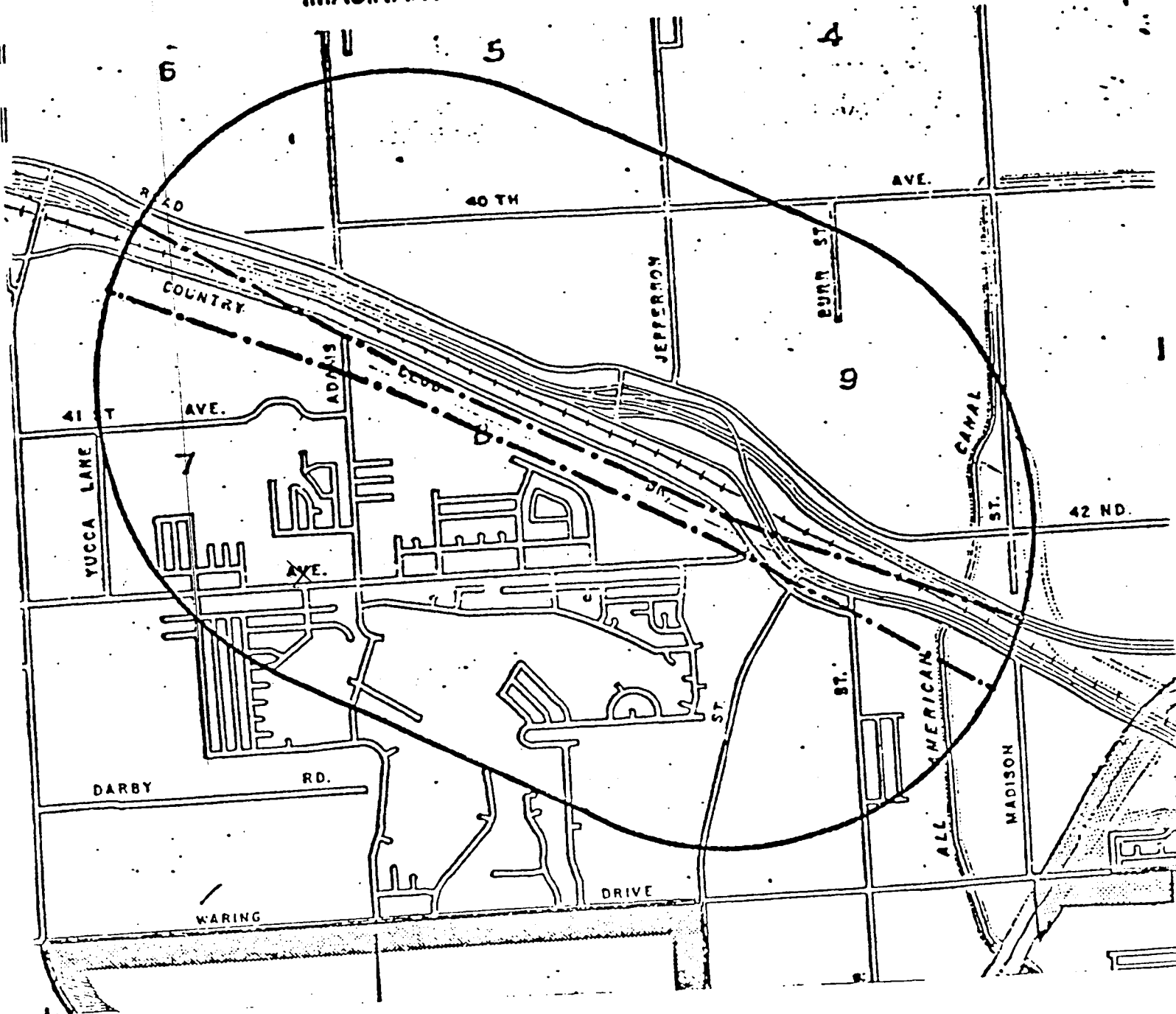
3. Policy 4: New housing to be constructed within the 60 CNEL noise level contour, as indicated on Exhibit IV, shall be provided with sound-proofing in order to achieve an interior annual noise level, attributal to exterior sources, not to exceed 45 CNEL.
4. Rationale for Policy 4: An important element of this plan is the selection of a noise standard determining residential land use compatibility. There is a great deal of information available on the subject. Not all of the information is consistent. The State of California Noise Standards for Airports established 65 CNEL as the long range (1986) criteria for excluding residential uses without sound-proofing. The Enviornmental Protection Agency uses 55 Ldn (equivalent to CNEL) as the minimum outdoor level of noise that they can predict with confidence will not be detrimental to health or welfare.

The County of Riverside General Plan establishes 60 Ldn or CNEL as the level above which residential uses should be discouraged. In addition to these various recommended standards, some references (See Appendix C) point out that the acceptable noise standard may vary according to location. These studies suggest that, because of the difference in background noise levels, the standard for quiet rural areas could be as much as 20 dB less than for established but very noisy urban residential communities near busy roads, industrial areas, or airports. These studies also suggest that the standard could be adjusted by as much as 15 dB from a community with no prior experience with the intruding noise (such as at a new airport) to those communities that have considerable previous exposure and are aware that the noise will not continue indefinitely (such as emergency or fire bomber operations).

Because of these various considerations, the Airport Land Use Commission has established 60 CNEL as an appropriate noise standard for the Bermuda Dunes Airport. This standard is an integral part of this specific airport land use plan and delineates that area within which soundproofing of new housing shall be required.

BERMUDA DUNES AIRPORT LAND USE PLAN

BERMUDA DUNES AIRPORT IMAGINARY APPROACH SURFACES



LEGEND

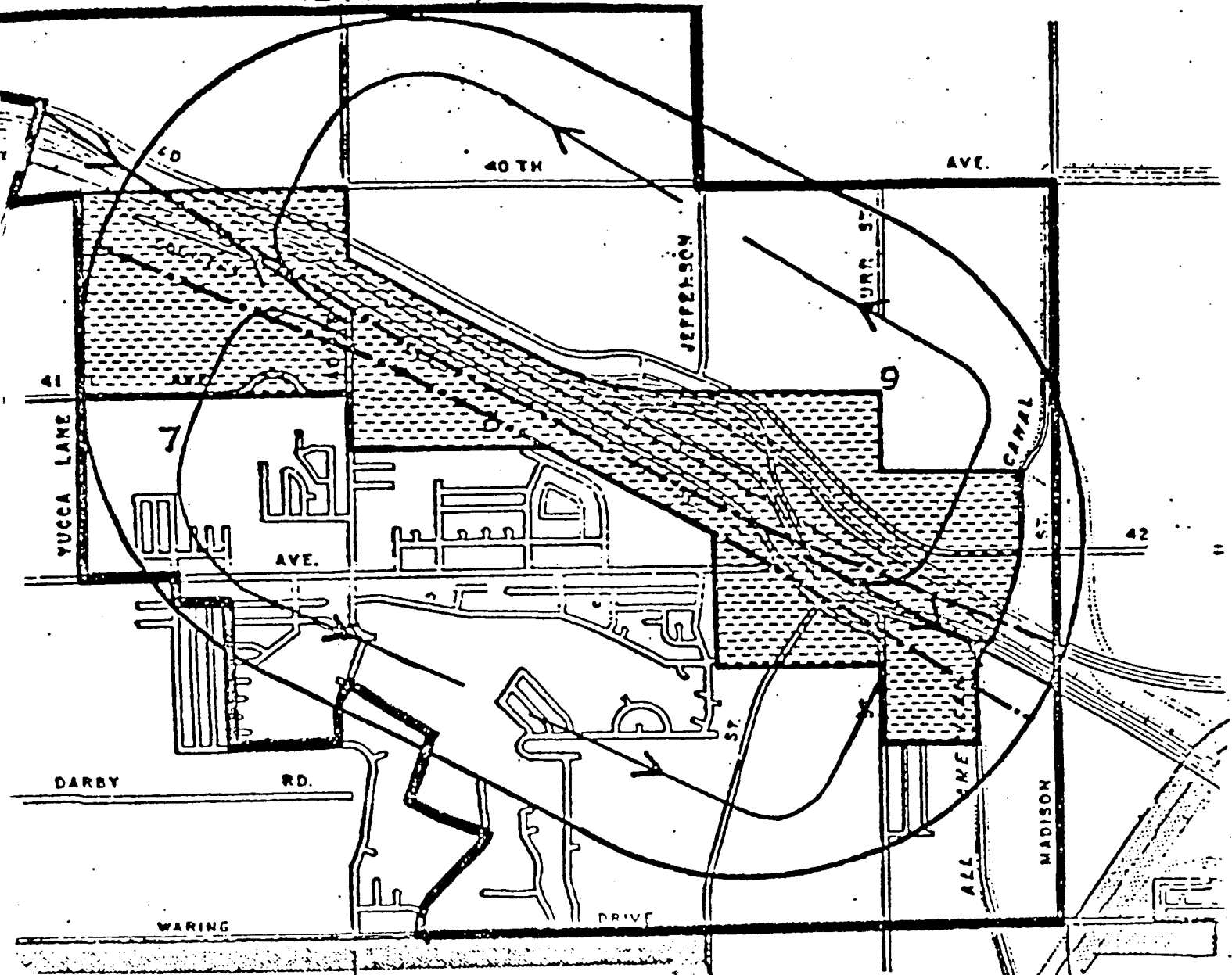
IMAGINARY APPROACH SURFACES

SOURCE: RIVERSIDE COUNTY AIRPORT
LAND USE COMMISSION
6-21-64






EXHIBIT I

BERMUDA DUNES AIRPORT
 LAND USE PLAN
 BERMUDA DUNES AIRPORT
 AREA OF SIGNIFICANT
 SAFETY CONCERN



LEGEND

-  AREA OF SIGNIFICANT SAFETY CONCERN
-  IDEALIZED FLIGHT PATHS
-  IMAGINARY APPROACH SURFACES

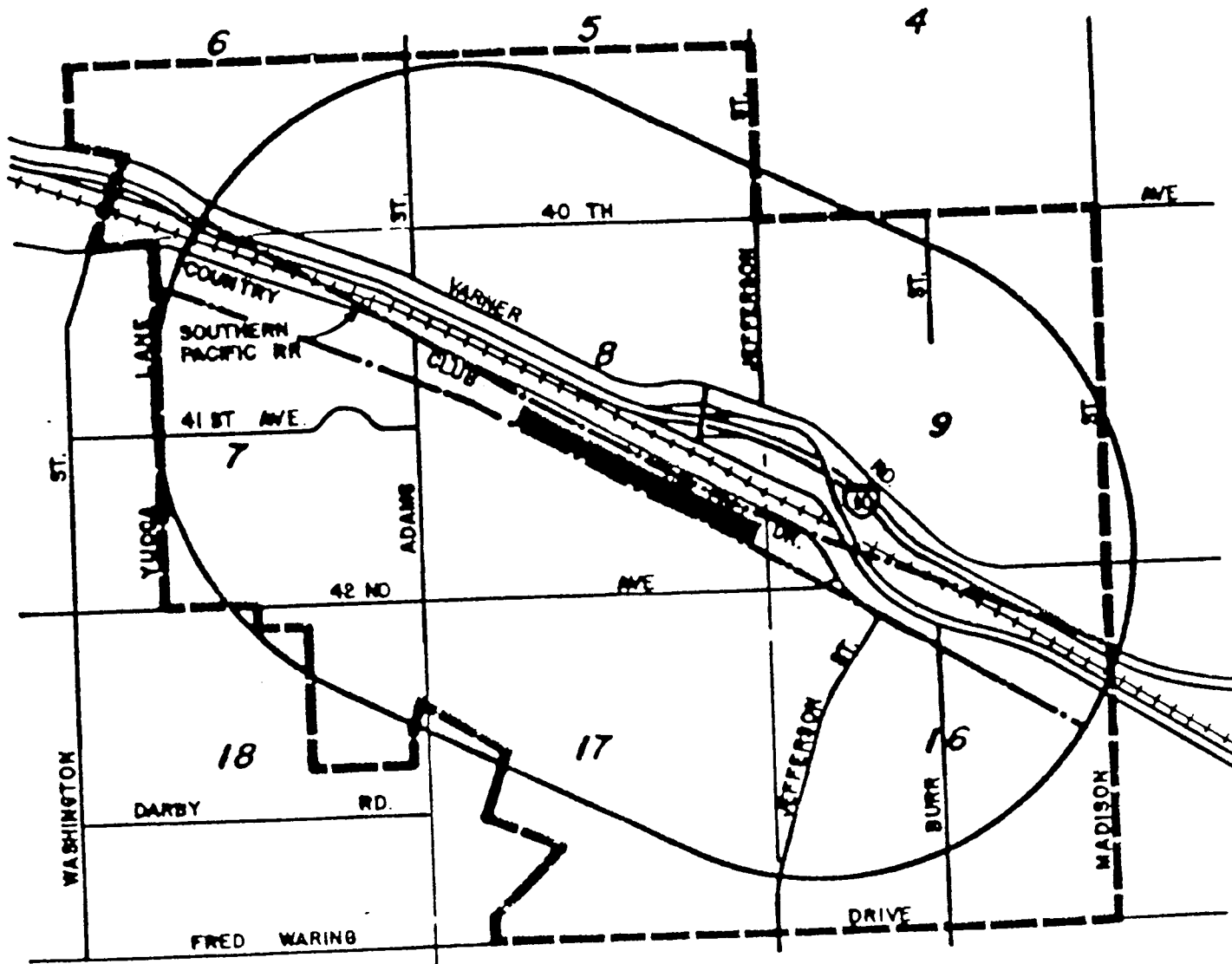
SOURCE: RIVERSIDE COUNTY AIRPORT
 LAND USE COMMISSION 6-21-84


 NORTH
 EXHIBIT II

BERMUDA DUNES AIRPORT

LAND USE PLAN

BERMUDA DUNES AIRPORT INFLUENCED AREA



LEGEND

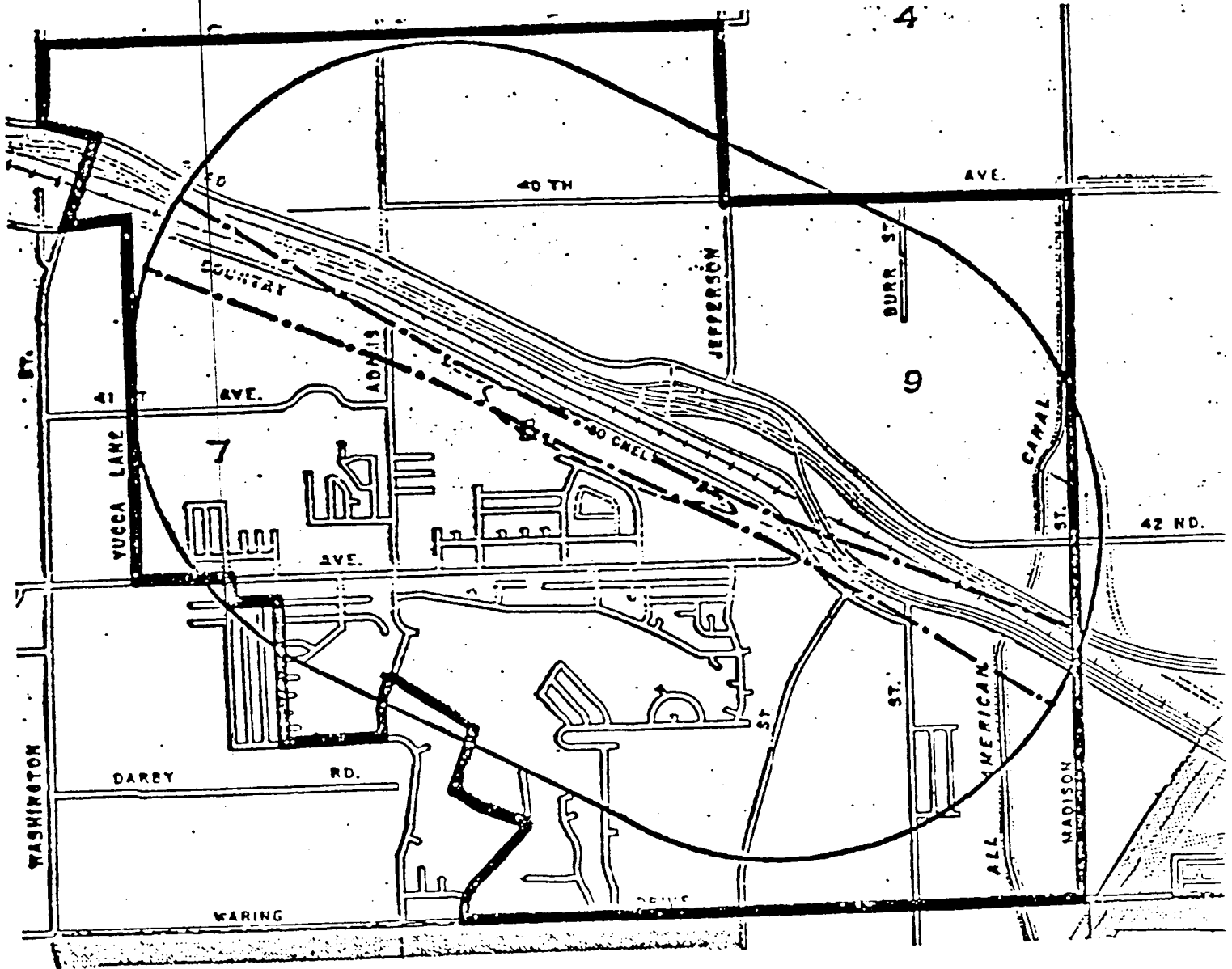
- APPROACH SURFACE
- HORIZONTAL SURFACE
- INFLUENCED AREA BOUNDARY

SOURCE: RIVERSIDE COUNTY AIRPORT LAND USE COMMISSION



BERMUDA DUNES AIRPORT LAND USE PLAN

BERMUDA DUNES AIRPORT NOISE CONTOUR



LEGEND

- APPROACH SURFACE
- HORIZONTAL SURFACE
- INFLUENCED AREA BOUNDARY
- 60 CNEL CONTOUR

SOURCE: RIVERSIDE COUNTY AIRPORT LAND USE COMMISSION



EXHIBIT IV

Appendix B

HIGH RISK LAND USE EXAMPLES

The following is a list of examples of high risk land uses. In general, high risk land uses have one or more of the following characteristics:

- (1) high concentration of people,
- (2) critical facilities, and
- (3) flammable or explosive materials.

The following are examples of uses which have these higher risk characteristics. This list is not complete and each land use application shall be evaluated for its appropriateness given airport flight activities:

Places of Assembly:

auditoriums, churches, schools, carnivals, drive-in theaters, etc.

High Patronage Services:

bowling alleys, restaurants, theaters, motels, banks, etc.

Large Retail Outlets:

department stores, supermarkets, drug stores, etc.

Residential:

smaller than 2-1/2 acre lot sizes.

Critical Facilities:

telephone exchanges, radio/t.v. studios, hospitals, etc.

Flammables:

bulk fuel storage, gasoline and liquid petroleum service stations, manufacture of plastics, breweries, feed and flour mills, etc.

Source: Hemet Ryan Airport Land Use Plan

APPENDIX C

Adjustments to the
Measured Community Noise Equivalent Level (CNEL)
to Obtain Normalized CNEL

Type of Correction	Description	Amount of Correction to be Added to Measure CNEL in dB
Seasonal Correction	Summer (or year-round operation).	0
	Winter only (or windows always closed).	-5
Correction for Outdoor Residual Noise Level	Quiet suburban or rural community (remote from large cities and from industrial activity and trucking).	+10
	Quiet suburban or rural community (not located near industrial activity).	+5
	Urban residential community (not immediately adjacent to heavily traveled roads and industrial areas).	0
	Noisy urban residential community (near relatively busy roads or industrial areas).	-5
	Very noisy urban residential community	-10
Correction for Previous Exposure and Community Attitudes	No prior experience with the intruding noise.	+5
	Community has had some previous exposure to intruding noise but little effort is being made to control the noise. This correction may also be applied in a situation where the community has not been exposed to noise previously, but the people are aware that bona fide efforts are being made to control the noise.	0
	Community has had considerable previous exposure to the intruding noise and the noise maker's relations with the community are good.	-5
	Community aware that operation causing noise is very necessary and it will not continue indefinitely. This correction can be applied for an operation of limited duration and under emergency circumstances	-10
Pure Tone or Impulse	No pure tone or impulsive character.	0
	Pure tone or impulsive character present.	+5

Source: California Office of Noise Control

QUALITATIVE DESCRIPTIONS

CNEL DECIBELS

OUTDOOR LOCATIONS

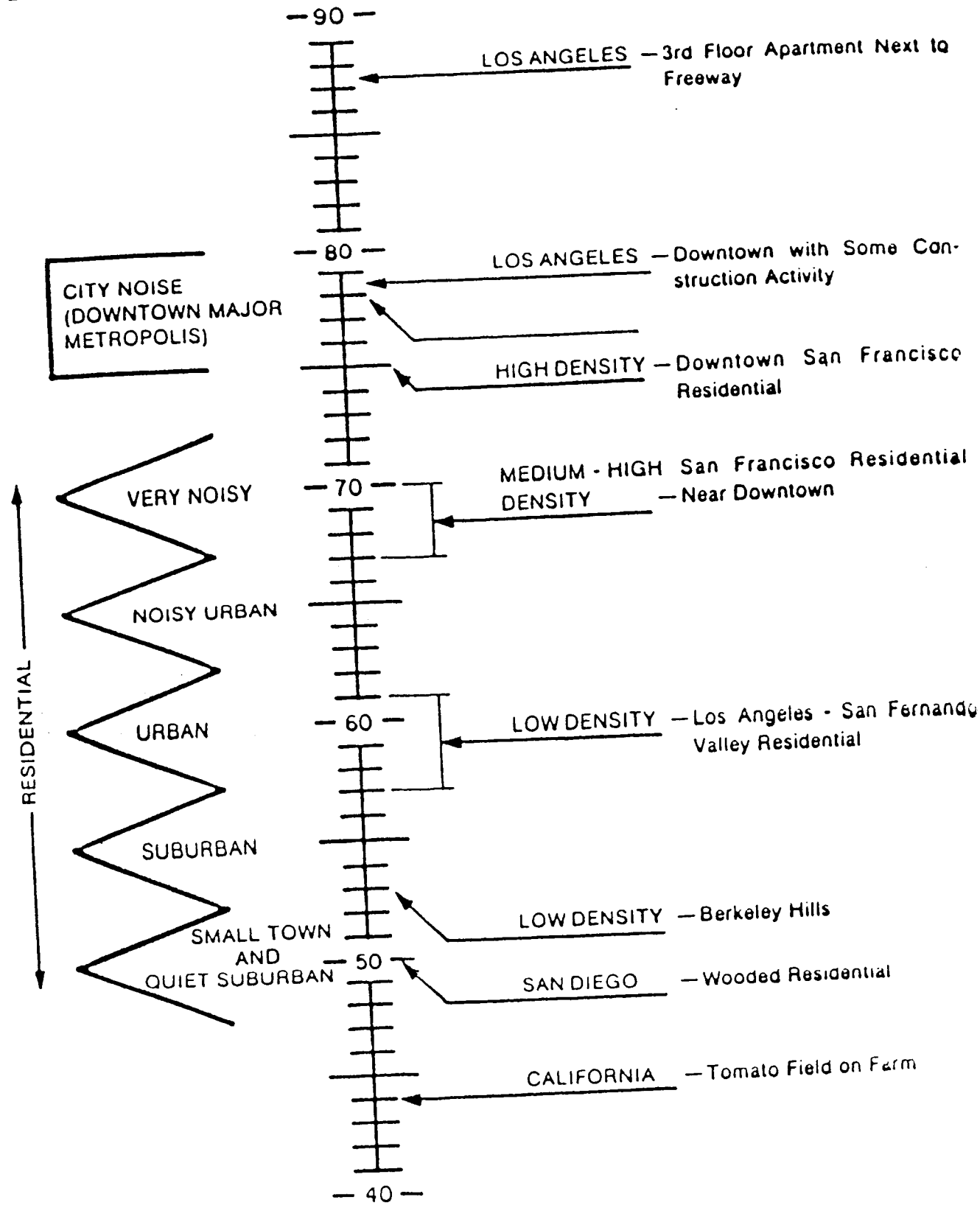


Figure III - 8

COMPARATIVE CNEL VALUES AT VARIOUS LOCATIONS