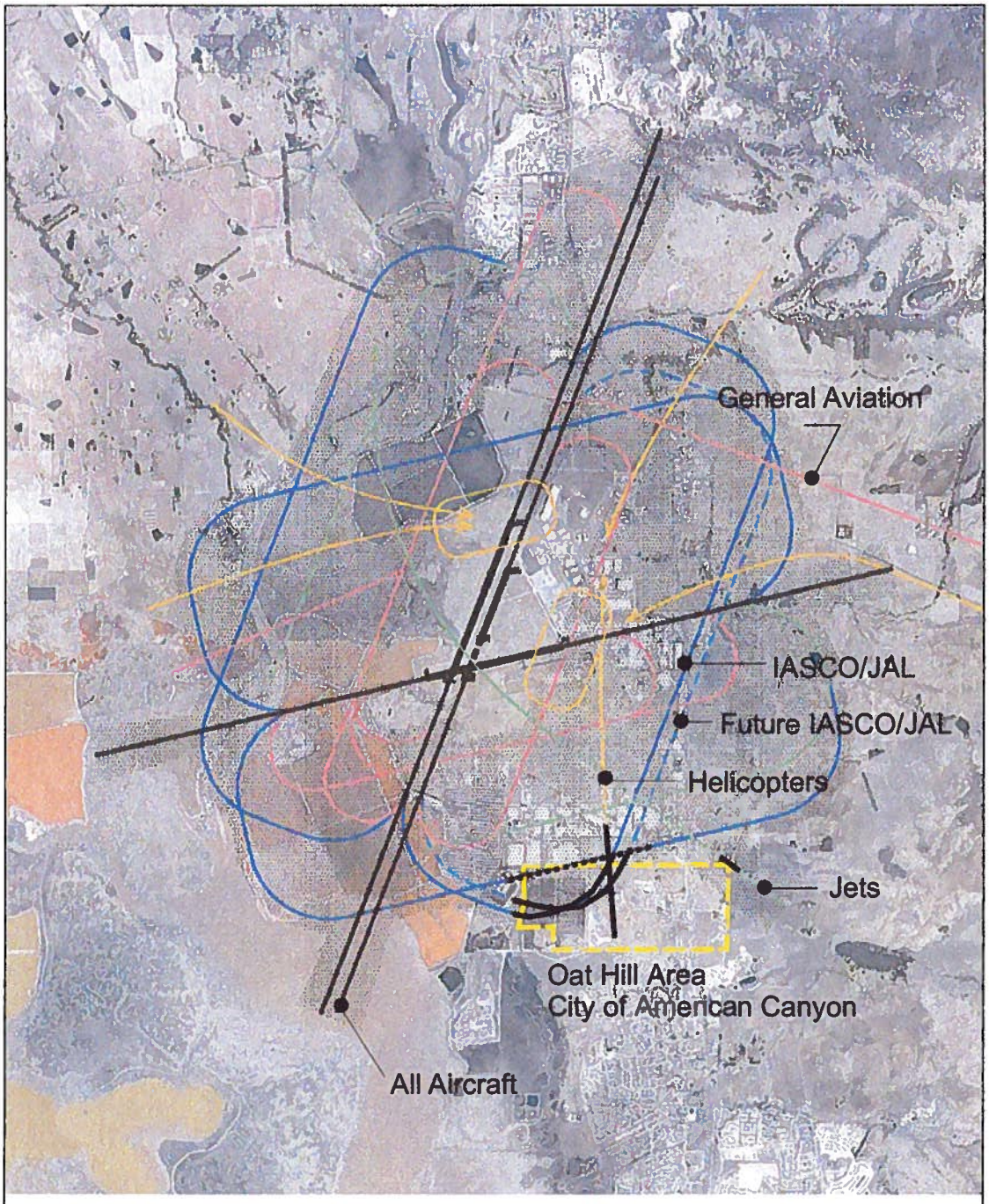


Preliminary Flight Tracks
Napa County Airport

Figure 4.1-1

Napa County Airport Master Plan
Draft Environmental Assessment
December 2007

NORTH

Scale: 1" = 3,000'

Source: Mead & Hunt, Inc. (July 2005)

07MP08-1D-11/2/08

Hard surface runways greater than 8,069 ft. or some multiple runways less than 8,069 ft.

Airport with hard-surfaced runways 1,500' to 8,069' in length

VOR-DME

VORTAC

Compass Rose

Prohibited, Restricted, Warning and Alert Areas

Class B Airspace

Class D Airspace

Class C Airspace (Mode C)

Class E Airspace with floor 700 ft. above surface

Victor Airways

Military Training Routes

Wilderness Area

Source: San Francisco North Sectional Chart, Federal Aviation Administration, Sectional Raster Aeronautical Charts July 03, 2008

San Francisco South Sectional Chart, Federal Aviation Administration, Sectional Raster Aeronautical Charts July 03, 2008

NORTH

NOT TO SCALE

Department of Public Works

Master Plan Feasibility and Alternate Site Selection Study

Angwin Airport/Parrett Field

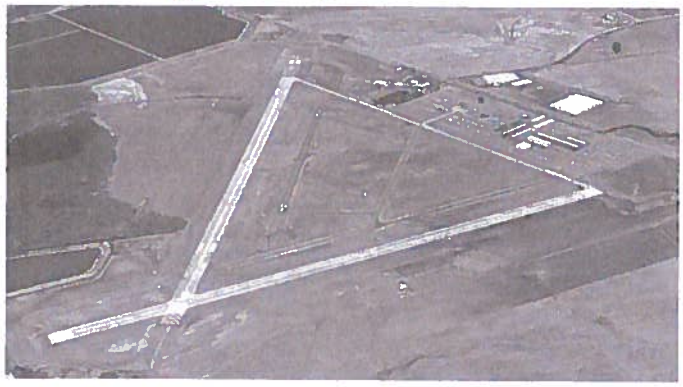
Exhibit 1D
VICINITY AIRSPACE

Napa County Airport

LOCATION

6 nmi S of Napa.

On San Francisco Sectional & L1-L2 charts.



From other airports:	From VORs:		(✔=DME)	
17 nmi NW of Concord	SGD	112.1✔	048°	5 nmi
18 nmi SW of Nut Tree	OAK	116.8✔	338°	29 nmi
29 nmi NW of Oakland International	STS	113.0✔	108°	31 nmi

FREQUENCIES AND ARRIVAL INFORMATION

ATIS - 124.05	Monitor ATIS prior to calling Approach Control, Tower or Ground.
TRAVIS APPROACH - 119.9 N-E **OAKLAND CENTER - 127.8** or **- 125.85** E-N	Monitor ATIS first, then call at least 20 nmi out for VFR traffic advisories. (See Approach Note, opposite page.)
NAPA TOWER - 118.7 (0700–2000 local time)	Call Tower prior to entering Class D Airspace (below 2,500 ft. MSL & within 4.2 nmi.) (See Tower Notes on opposite page.)

Winds at Napa generally favor the use of either Runways 18 or 24. Frequently, landings and takeoffs are conducted simultaneously from several runways so pilots should be alert for other traffic. The instructions below are based on the normal wind condition.

COMING FROM:	EXPECT INSTRUCTIONS TO:
Southeast (Vallejo)	Make LEFT traffic Rwy 18L, report downwind, *or* enter LEFT base Rwy 24, report 2 mile LEFT base.
North (Napa, Silverado Golf Course)	Make straight-in Rwy 18L or 18R. Report 2 mile final.
Northeast (Solano College)	Make straight-in Rwy 24, report the Water Tanks, *or* enter LEFT base Rwy 18L, report 2 mile LEFT base.
West (Sonoma Skypark)	Make RIGHT traffic Rwy 18R, report downwind.

NAPA GROUND – 121.7	Remain on Tower frequency until instructed to change to Ground.

MISCELLANEOUS APPROACH FREQUENCIES

ILS Localizer: I-APC 111.3; Rwy 36L. Final approach course 005°.

APPROACH NOTE

Radar Approach and Departure Control services are available from Oakland Center on 127.8 or 125.85, and to the NE from Travis Approach on 119.9.

TOWER NOTES

1. Do not confuse Oakland Center Departure Control frequencies–127.8 or 125.85 with Napa Tower frequency–127.85.
2. Aircraft will be cleared for RIGHT or LEFT traffic depending upon which side of the field they are approaching from. Listen to the Tower carefully. If the controller does not specify RIGHT traffic, then LEFT traffic is intended (since LEFT traffic is standard–*exception*: Runways 18R and 36R where RIGHT traffic is considered standard).
3. To expedite clearing the runway after landing, pilots should plan landings to make use of the mid-field taxiways. Approximately 2,300 feet of runway is available on the larger runways from threshold to taxiways and 1,200 feet on Runway 18L/36R.
4. During periods of heavy traffic the Tower may use additional frequency of 127.85, as announced on ATIS.

GROUND NOTE

CAUTION–If departing Rwy 18R from taxiway A, hold short of Rwy 18L approach area (on taxiway A at taxiway K).

RUNWAY AND PATTERN INFORMATION

FIELD ELEVATION:	PATTERN ALTITUDE:
35 feet MSL	1,033 feet MSL (1,000 feet AGL)

RUNWAYS:

18R/36L; 5,931 X 150 feet, paved, lighted. PAPI on Rwy 18R. Medium Intensity Approach Light System on Rwy 36L.

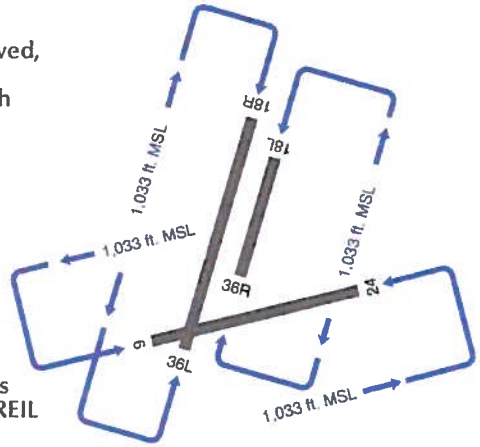
RIGHT traffic Rwy 18R.

18L/36R; 2,510 X 75 feet, paved, *NOT* lighted. *CLOSED, hours of darkness.*

RIGHT traffic Rwy 36R.

6/24; 5,007 X 150 feet, paved, lighted. REIL Rwy 6.

PCL: for rwy lights, apch lights Rwy 36L, PAPI Rwy 18R & REIL Rwy 6 when Tower is closed–118.7.



PARKING AND FUELING INFORMATION

TRANSIENT PARKING is available northwest of the Terminal Building. Jet aircraft in rear row (closest to runways).

FUELING is from trucks at the tie-down locations. AirBP (100LL, Jet A). Call Bridgeford Flying Service on Unicom 122.95 for service.

DEPARTURE INFORMATION

ATIS - 124.05	Monitor ATIS, then call Ground.
NAPA GROUND - 121.7	When ready to taxi.
NAPA TOWER - 118.7	When ready for take-off.
DepCon–OAKLAND CENTER - 127.8 or 125.85 TRAVIS DEPARTURE - 119.9 NE	For VFR traffic advisories.
OAKLAND RADIO - 122.5	To open flight plan after take-off.

NORMAL DEPARTURE ROUTE is a RIGHT 45° turn from Rwy 18R and 36R, and a LEFT 45° turn from all other runways. Other departure routes will generally be approved, traffic permitting, but should be requested from the tower on initial call prior to take-off.

GENERAL INFORMATION

SERVICES Fuel: AirBP (100LL, Jet A). Major repairs, including avionics. Restaurant.

FOOD/LODGING/TRANSPORTATION

Jonesy's Steak House (255-2003) in Terminal Building. Coffee shop open 10am to 2:30pm. Dining Room open 11:30am to 8pm (till 9pm Friday & Saturday). Both closed Mondays./ **Best Western at the Vines** (257-1930) restaurant nearby. **Best Western at Marine World** (554-9655). **Holiday Inn at Marine World** (644-1200) restaurant. **The Chablis Inn** (257-1944) restaurant nearby. **Wine Valley Lodge** (224-7911) restaurant nearby./ Taxi: **Evans Transportation** (255-1559) shuttle, limousine, wine tours. **Yellow Cab** (226-3731). Car rentals: **Budget*** (224-7846). **Enterprise*** (253-8000).

FEES Overnight tie-down fee: $5 singles; $8 twins; $10 turboprops; $20 and up jets.

PHONES FAA Tower: (707) 255-1533 ATIS: (707) 255-2847
Airport Office: (707) 253-4300 ASOS: (707) 252-7916
Oakland AFSS: (866) 469-7828

INTERNET http://www.mynapa.info

MISCELLANEOUS

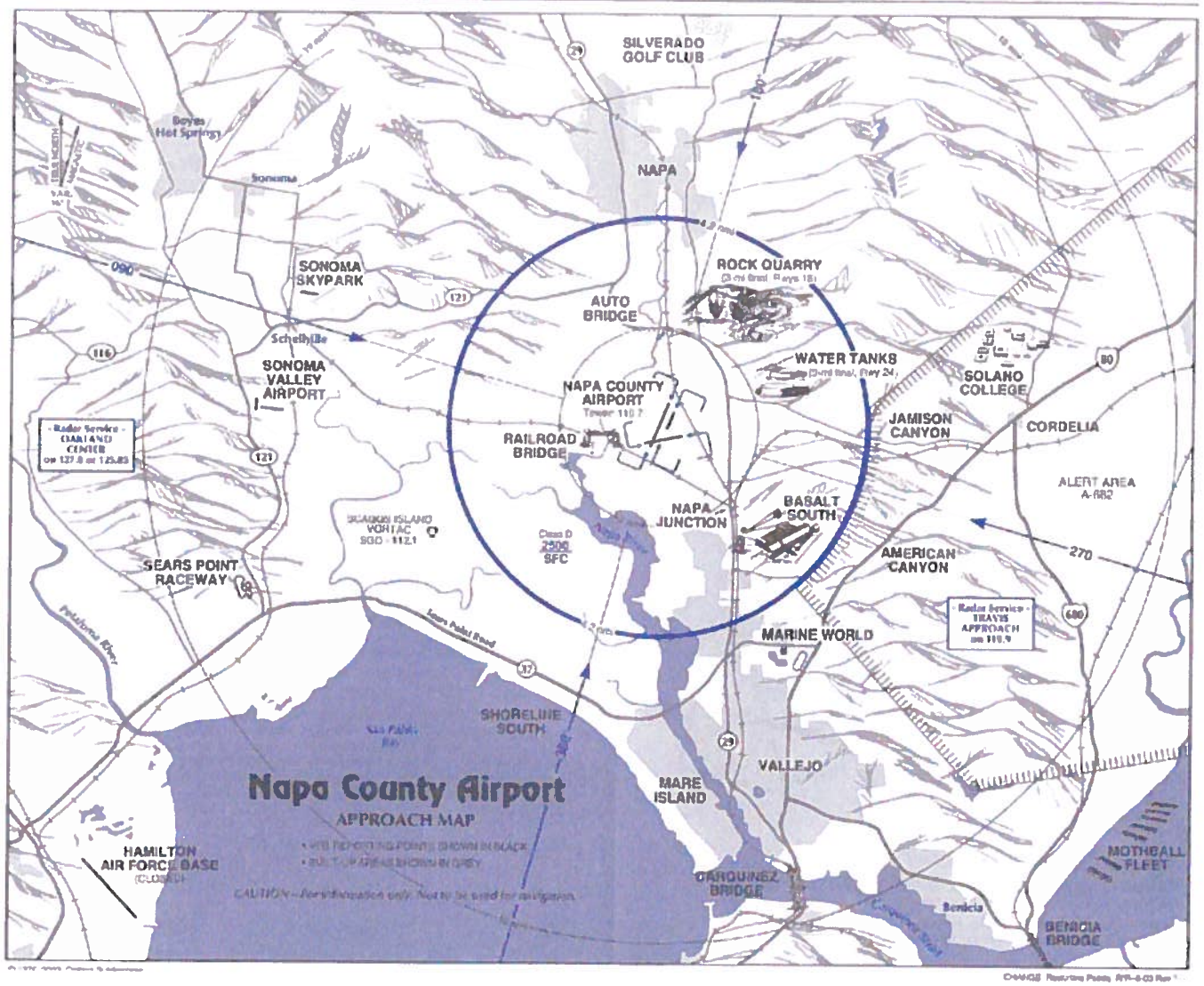
Special VFR clearances available.

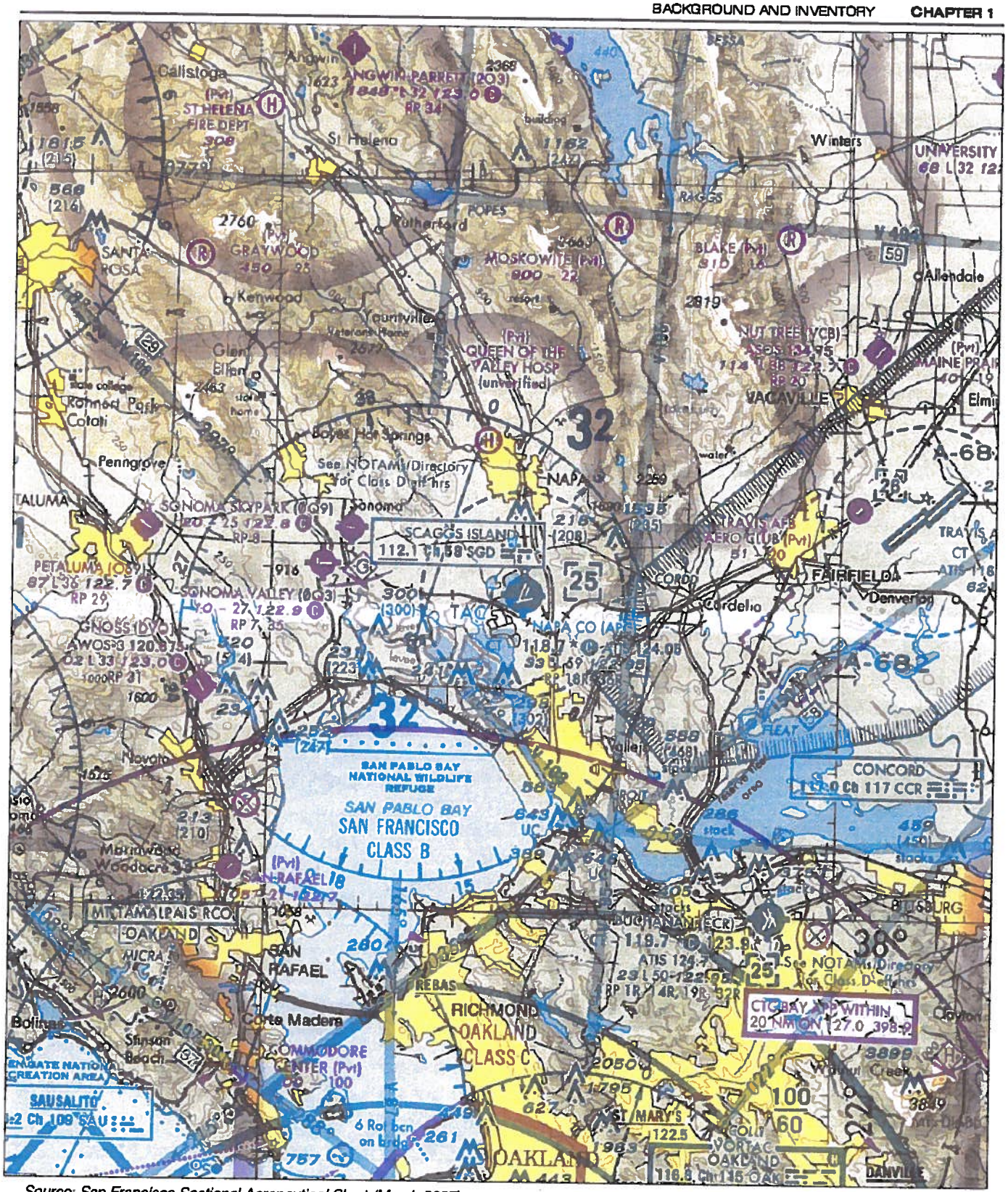
VOR Receiver Check Point:
Airborne at 1,000 feet over the beacon. (SGD - 112.1 - 047° - 5.4 nmi).

Tower Enroute clearances into the Bay Area are NOT available.

FLY-IN INFO

Jonesy's Steak House is a very popular fly-in spot for lunch or dinner. Established in 1946. Counter service available in Terminal Lobby for quick meals. Dining room overlooks runways–features excellent steaks, chicken. Closed Mondays. Six Flags Marine World (707-643-6722) amusement park located 5mi southeast. Call for park hours and admission information.


SILVERADO GOLF CLUB
Boyes Hot Springs
Sonoma
NAPA
SONOMA SKYPARK
090
ROCK QUARRY
AUTO BRIDGE
Schellville
SONOMA VALLEY AIRPORT
WATER TANKS
SOLANO COLLEGE
NAPA COUNTY AIRPORT
JAMISON CANYON
CORDELIA
RAILROAD BRIDGE
ALERT AREA A-682
NAPA JUNCTION
BASALT SOUTH
SEARS POINT RACEWAY
AMERICAN CANYON
270
MARINE WORLD
SHORELINE SOUTH
Napa County Airport
APPROACH MAP
VALLEJO
MARE ISLAND
HAMILTON AIR FORCE BASE
CARQUINEZ BRIDGE
MOTHBALL FLEET
Benicia
BENICIA BRIDGE

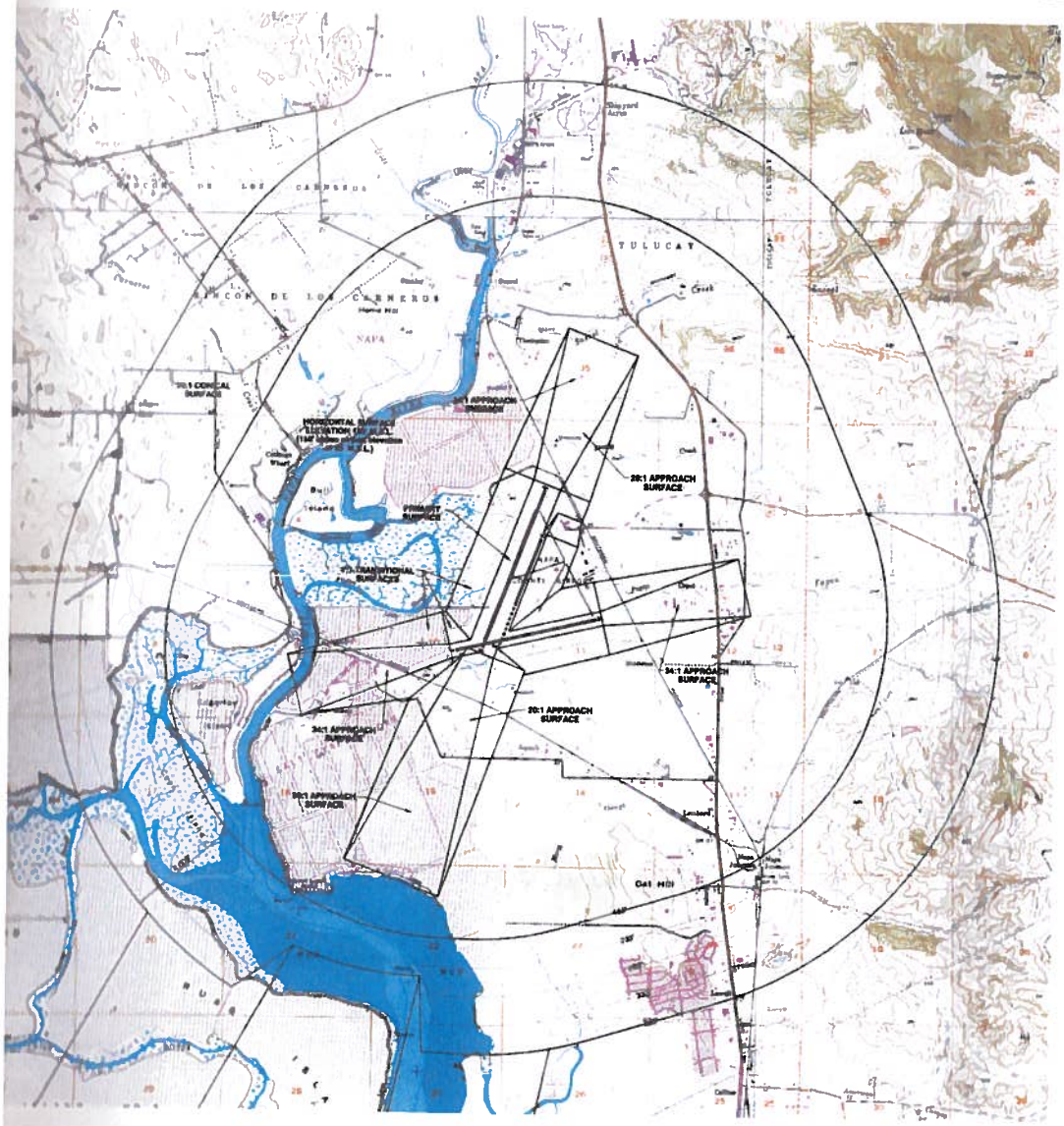


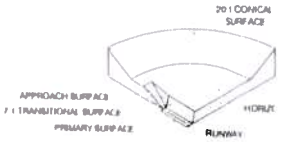
Source: San Francisco Sectional Aeronautical Chart (March 2007)

Figure 1B

Area Airports

Napa County Airport





TYPICAL FAR PART 77 SURF

NOTES

All elevations in feet above mean sea level (MSL) and NAVD88
See Approach Surface Detail Sheet (8 of 8) for obstruction data

SOURCES

Napa County Airport Classification Report No. (2011)
USGS Topographic Maps

NO

MEAI
HU

DESIGN

Noise Model Calculation Data

Napa County Airport

AIRCRAFT MIX (Estimated 2001 Activity Level)			
Aircraft Type	*Total Operations*		
	Annual	*Average Day*	*Percentage*
Single-Engine, Propeller, Fixed Pitch	54,000	147.95	42.83%
Single-Engine, Propeller, Variable Pitch	32,040	87.78	25.41%
Twin-Engine, Propeller, Piston	15,640	42.85	12.40%
Twin-Engine, Turboprop	13,140	36.00	10.42%
Small Business Jet (e.g., Citation)	5,630	15.42	4.47%
Medium Business Jet (e.g., Falcon 900)	1.250	3.42	1.00%
Large Business Jet (e.g., Gulfstream)	1,880	5.15	1.49%
Helicopter	2,500	6.85	1.98%
Total	126,080	345.42	100.00%

AIRCRAFT MIX (Forecast 2021 Activity Level)			
Aircraft Type	*Total Operations*		
	Annual	*Average Day*	*Percentage*
Single-Engine, Propeller, Fixed Pitch	97,000	265.75	37.31%
Single-Engine, Propeller, Variable Pitch	78,000	213.7	30.00%
Twin-Engine, Propeller, Piston	33,500	91.78	12.88%
Twin-Engine, Turboprop	27,000	73.97	10.38%
Small Business Jet (e.g., Citation)	12,500	34.25	4.81%
Medium Business Jet (e.g., Falcon 900)	4.500	12.33	1.73%
Large Business Jet (e.g., Gulfstream)	3,500	9.59	1.35%
Helicopter	4,000	10.96	1.54%
Total	260,000	712.33	100.00%

TIME OF DAY
(Estimated 2001 and 2021)

Aircraft Type		*Percentage of Operations by Aircraft Type*		
		Day 7:00 a.m. 7:00 p.m.	*Evening 7:00 p.m. 10:00 p.m.*	*Night 10:00 p.m. 7:00 a.m.*
Single-Engine, Propeller, Fixed Pitch	Takeoff Landing	95.0% 95.0%	4.0% 4.0%	1.0% 1.0%
Single-Engine, Propeller, Variable Pitch	Takeoff Landing	95.0% 95.0%	4.0% 4.0%	1.0% 1.0%
Twin-Engine, Propeller, Piston	Takeoff Landing	97.0% 97.0%	2.0% 2.0%	1.0% 1.0%
Twin-Engine, Turboprop	Takeoff Landing	97.0% 97.0%	2.0% 2.0%	1.0% 1.0%
All Business Jets	Takeoff Landing	99.0% 99.0%	1.0% 1.0%	—
Helicopter	Takeoff Landing	75.0% 75.0%	16.0% 16.0%	9.0% 9.0%

RUNWAY UTILIZATION
(Estimated 2001 and 2021)

Aircraft Type		*Percentage of Takeoffs and Landings*						
		Runway 18R	*Runway 36L*	*Runway 18L*	*Runway 36R*	*Runway 6*	*Runway 24*	Helipad
Single-Engine, Propeller, Fixed and Variable Pitch	Day Evening Night	60.0 60.0 60.0	2.5 2.5 2.5	20.0 20.0 20.0	0.5 0.5 0.5	2.0 2.0 2.0	15.0 15.0 15.0	–
Twin-Engine, Propeller, Piston	Day Evening Night	60.0 60.0 60.0	2.5 2.5 2.5	20.0 20.0 20.0	0.5 0.5 0.5	20.0 20.0 20.0	15.0 15.0 15.0	–
Twin-Engine, Turboprop	Day Evening Night	75.0 75.0 75.0	5.0 5.0 5.0	–	–	5.0 5.0 5.0	15.0 15.0 15.0	–
All Business Jets	Day Evening Night	75.0 75.0 75.0	5.0 5.0 5.0	–	–	5.0 5.0 5.0	15.0 15.0 15.0	–
Helicopter	Day Evening Night	–	–	–	–	–	–	100.0 100.0 100.0

FLIGHT TRACKS – TAKEOFFS
(Estimated 2001 and 2021)

Aircraft Type	Percentage of Track Usage by Runway														
	Runway 18R			Runway 36L		Runway 18L			Runway 36R	Runway 6			Runway 24			Helipad
	Straight Out	45° Right Turn	45° Left Turn	Straight Out	45° Left Turn	Straight Out	45° Right Turn	45° Left Turn	Straight Out	Straight Out	45° Right Turn	45° Left Turn	Straight Out	45° Right Turn	45° Left Turn	Straight Out
Single-Engine, Propeller, Fixed and Variable Pitch	50.0	30.0	20.0	20.0	80.0	50.0	30.0	20.0	100.0	70.0	15.0	15.0	40.0	20.0	40.0	–
Twin-Engine, Propeller, Piston	50.0	30.0	20.0	20.0	80.0	50.0	30.0	20.0	100.0	70.0	15.0	15.0	40.0	20.0	40.0	–
Twin-Engine, Turboprop	20.0	60.0	20.0	30.0	70.0	20.0	60.0	20.0	100.0	70.0	15.0	15.0	40.0	20.0	40.0	–
All Business Jets	100.0	–	–	100.0	–	–	–	–	–	100.0	–	–	100.0	–	–	–
Helicopters	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	100.0

FLIGHT TRACKS – LANDINGS
(Estimated 2001 and 2021)

Aircraft Type	Percentage of Track Usage by Runway											
	Runway 18R			Runway 36L	Runway 18L		Runway 36R	Runway 6	Runway 24			Helipad
	Straight In	Close-in Right Turn	Right Turn	Straight In	Straight In	Left Turn	Straight In	Straight In	Straight In	Close-in Right Turn	Right Turn	Straight In
Single-Engine, Propeller, Fixed and Variable Pitch	20.0	40.0	40.0	100.0	20.0	80.0	100.0	100.0	20.0	40.0	40.0	–
Twin-Engine, Propeller, Piston	10.0	50.0	40.0	100.0	20.0	80.0	100.0	100.0	10.0	50.0	40.0	–
Twin-Engine, Turboprop	20.0	20.0	60.0	100.0	–	–	–	100.0	20.0	20.0	60.0	–
All Business Jets	100.0	–	–	100.0	–	–	–	100.0	100.0	–	–	–
Helicopter	–	–	–	–	–	–	–	–	–	–	–	100.0

Source: Data compiled by Mead & Hunt (July 2003)

NAPA COUNTY AIRPORT LAND USE COMMISSION

Jeffrey Redding
Executive Officer

1195 Third Street, Room 210 • Napa, CA 94559-3092
Telephone 707/253-4416 FAX 707/253-4336

December 17, 1998

John Yost
Planning Director
City of Napa
P.O. Box 660
Napa, CA 94559

RE: ALUC Review of Stanly Ranch Specific Plan
ALU-122

Dear Mr. Yost:

The Napa County Airport Land Use Commission considered the City of Napa's November 3, 1998 referral of the Draft Stanly Ranch Specific Plan, pursuant to the requirements of Section 21676(d) of the California Public Utilities Code, at hearings on December 2 and December 16, 1998. After review of written materials, consideration of public testimony, and discussions, the Commission unanimously found the Specific Plan to be **INCONSISTENT** with the Napa County Airport Land Use Compatibility Plan ("ALUP"), adopted in April 1991.

The Commission found as follows:

1. Design Guidelines of the Specific Plan (page A-25) propose certain *uplighting* of landscaping, signage, walls, and sculpture. Policy 3.3.5 of the ALUP prohibits the establishment of glare in any airport planning area. The Commission finds that the proposed uplighting may produce glare that may be distracting to the operators of aircraft, and therefore the Specific Plan is **INCONSISTENT** with the ALUP.

2. The Specific Plan proposes to locate four of five residential neighborhoods, and the employee housing complex, in Compatibility Zone E beneath overflight patterns published by IASCO/JAL for twin engine and Bonanza A-36 aircraft operating at Napa County Airport. Pursuant to Note 7 of Table 3-2 of the ALUP, the location of residential land uses should consider the proximity of flight patterns, frequency of overflight, terrain conditions and types of aircraft. The Commission found that federally mandated flight altitudes applicable to Napa County Airport as an "uncongested area" may be as low as 500 ft. above the ground in the location of Stanly Ranch, and that no altitude standards are mandated for aircraft engaged in instrument landings. The Commission finds that because Specific Plan residential locations do not appear to consider flight patterns or the frequency of overflight, that the Specific Plan is therefore **INCONSISTENT** with the ALUP.

3. The Specific Plan proposes clustered residential development within Compatibility Zone E, as close as approximately 100 ft. from that zone's boundary with Compatibility Zone D, with 550 of the Plan's proposed 594 residential units within Zone E, and only 44 residential units, a winery/wine center, and a resort hotel located within Zone F. Pursuant to Policy 3.1.2 of the ALUP, the designation of land uses with respect to noise exposure should evaluate site conditions, terrain, flight patterns, and flight frequency. The Commission finds that the location and density of the Stanly Ranch employee housing complex is too close to Zone D in view of the noise produced by climbing patterns and full-power overflights above that area, and that consideration of relative noise exposure would suggest that all residential uses be located *farther* from the airport, and commercial/resort uses be located *closer* to the airport than proposed. For these reasons, the Commission finds the Stanly Ranch Specific Plan **INCONSISTENT** with the ALUP.

4. The Specific Plan proposes to locate 594 permanent residential units at the Stanly Ranch. ALUP discussion of Overflight Compatibility concerns (page 2-7) indicates that "*the most effective means of achieving compatibility is to prevent the encroachment of residential uses beneath the flight patterns,*" while it is possible that "*community goals [may] dictate the need for residential uses within an airport's traffic area.*" Since the City of Napa has failed to demonstrate a need for residential development on the Stanly Ranch where Napa County Airport aircraft are routinely engaged in overflight, the Commission finds the Specific Plan to be **INCONSISTENT** with the ALUP.

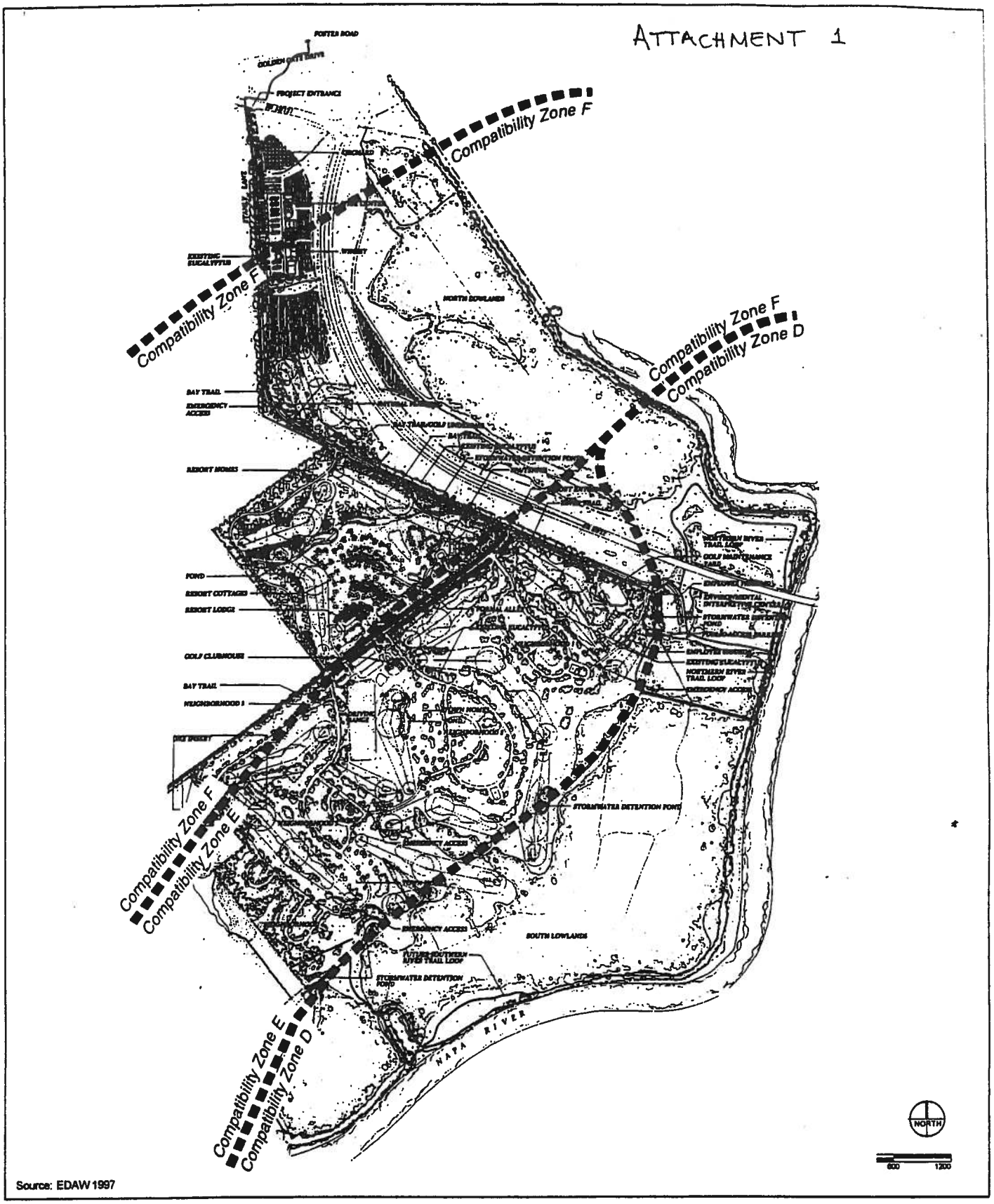
ALUC staff and further Commission review will be available should the City seek to amend the Specific Plan in substantial ways affecting issues of ALUP Compatibility. Pursuant to Public Utilities Code Section 21676(b), the City Council may, following a public hearing and if it is able to make findings of consistency with the State Aeronautics Act (P.U.C. Sec. 21670 *et seq.*), override this determination by a supermajority vote.

Very truly yours,

Michael Miller
ALUC Staff

cc. ALUC Commissioners
Jeffrey Redding, Executive Officer
Laura Anderson, Deputy County Counsel
Christa Engle, CalTrans Aeronautics Program
Lawrence Thelen, Counsel, CalTrans Aeronautics Program
Jean Hasser, Associate Planner, City of Napa
Barbara Lichman, Counsel, Stanly Ranch

ATTACHMENT 1

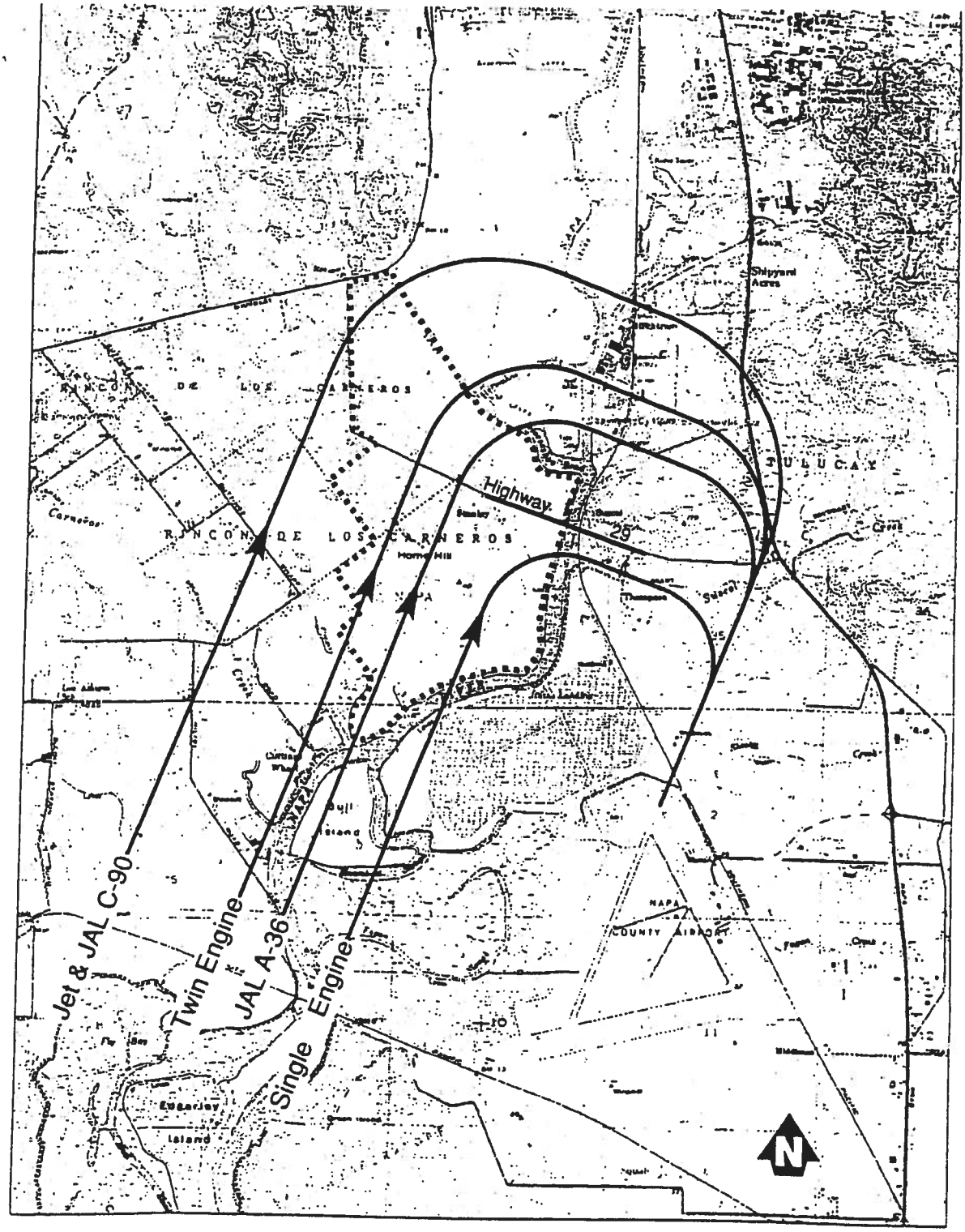


Source: EDAW 1997

STANLY RANCH

SPECIFIC PLAN ENVIRONMENTAL IMPACT REPORT

Figure IV.B-5
Airport Land Use Compatibility Analysis



Runway 18R

Common Flight Paths

Project Site

FEET

0 4000 8000

1" = 4000'

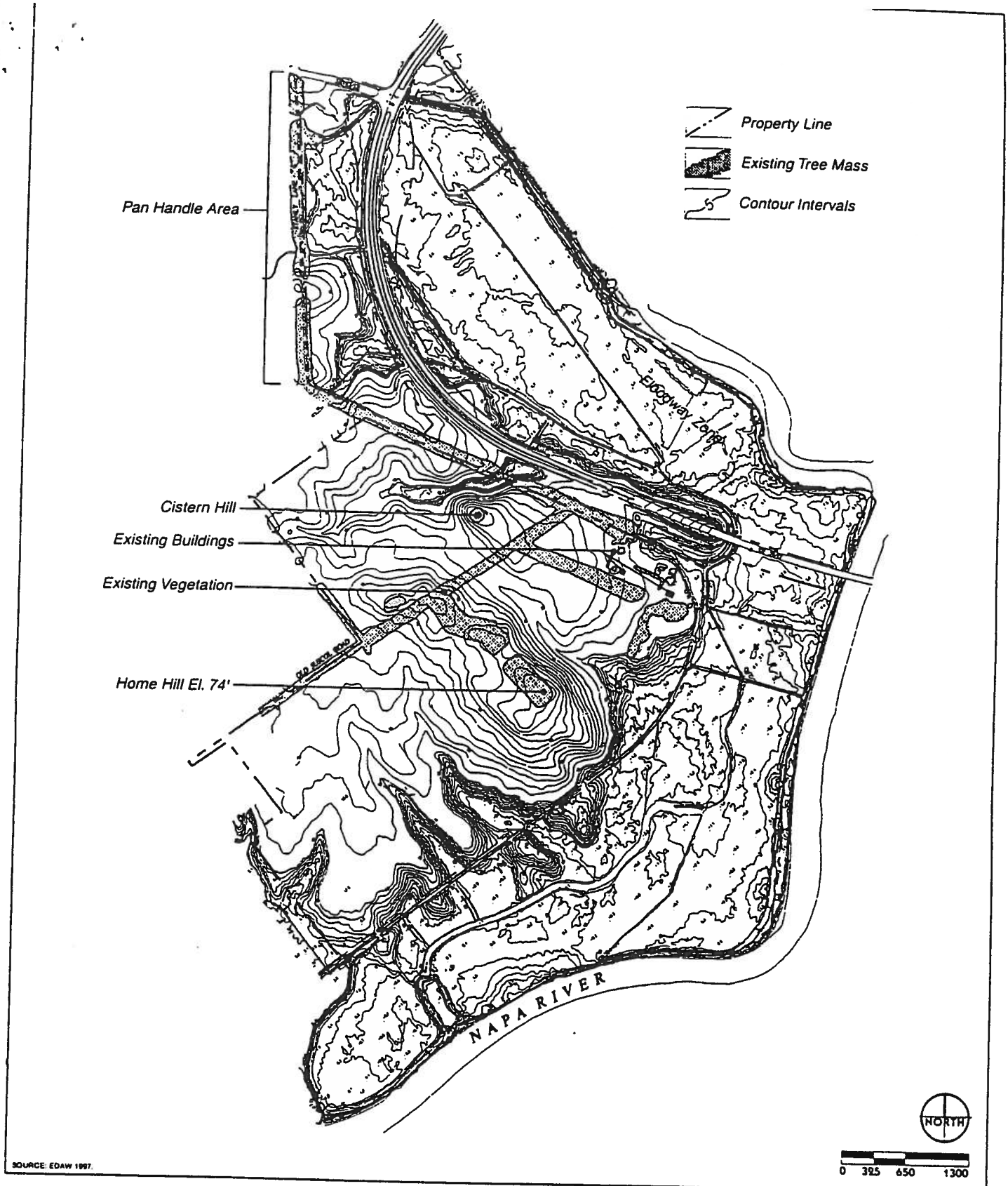
STANLY RANCH

SPECIFIC PLAN ENVIRONMENTAL IMPACT REPORT

Flight Paths Over Project Site

BRADY • LSA

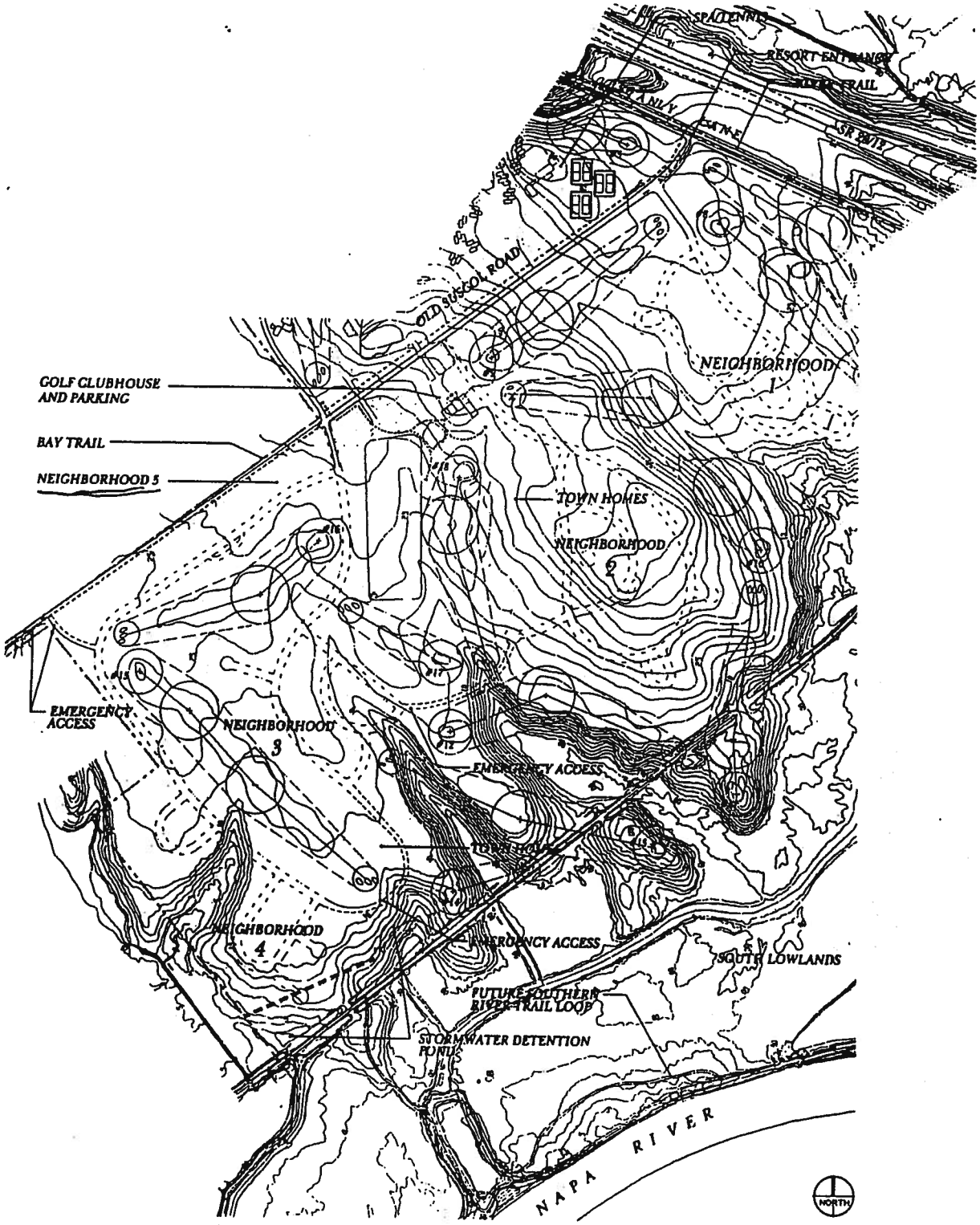
PLANNERS AND LANDSCAPE ARCHITECTS



STANLY RANCH

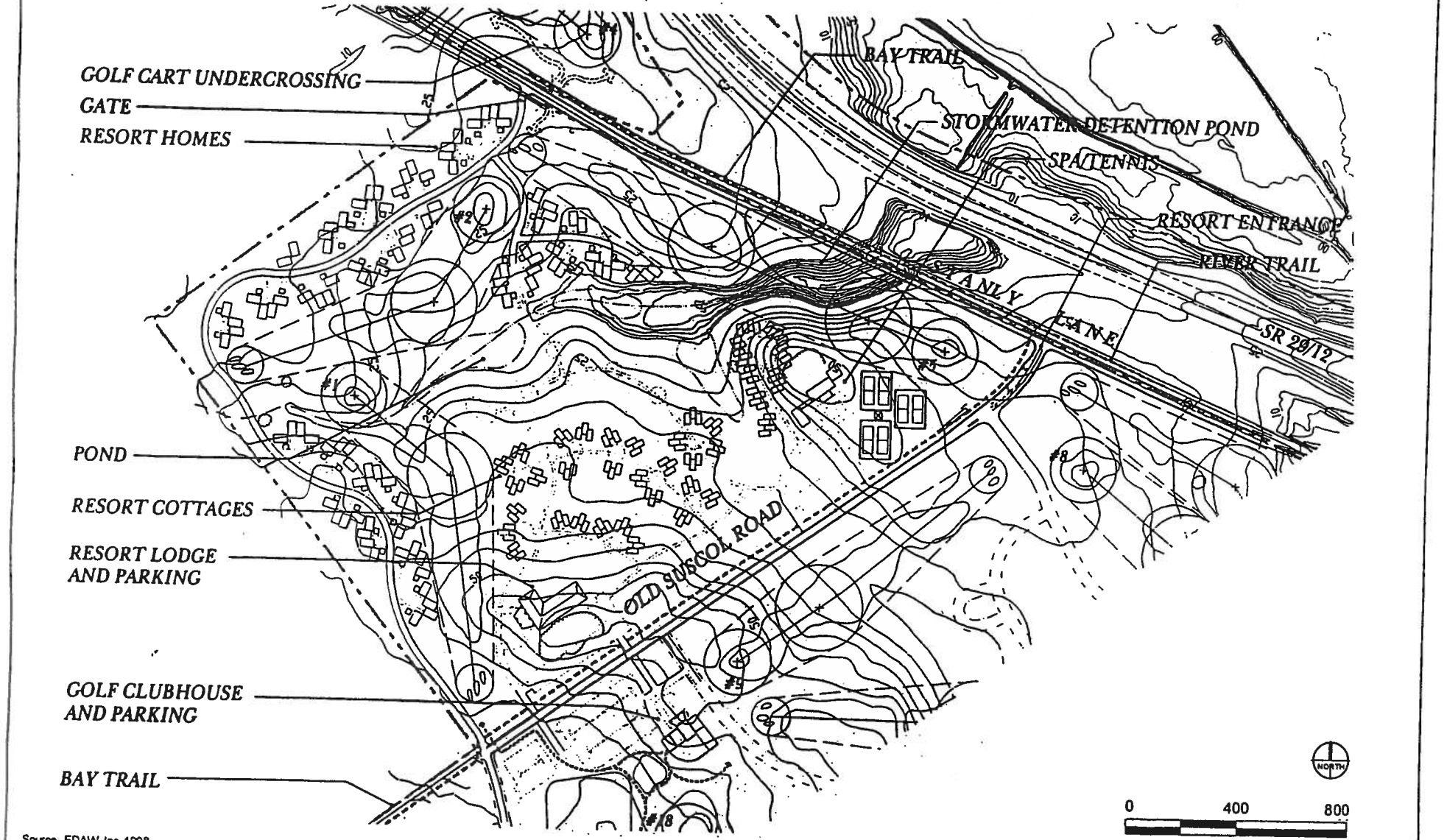
SPECIFIC PLAN ENVIRONMENTAL IMPACT REPORT

Figure III-1
Existing Site Conditions



Source: EDAW, 1998.

Figure III-12
Map of Residential Neighborhoods



STANLY RANCH

SPECIFIC PLAN ENVIRONMENTAL IMPACT REPORT

Figure III-5
Resort Area Layout

Airport Land Use Compatibility Excerpt from Land Use Section, Draft EIR for Stanly Ranch

Impact LU-2: Implementation of the project could result in airport-related land use compatibility impacts in the form of increased noise and overflight annoyance complaints. (S)

The consistency of the proposed project with the adopted Napa County Airport Land Use Commission *Airport Land Use Compatibility Plan* is assessed in Section IV.B, Public Policy. The intent of the *Airport Land Use Compatibility Plan*, when it was adopted in 1991, was to permit development on the Stanly Ranch, but to use site design and overflight easements to obtain an acceptable level of compatibility (Shutt Moen, 1997). Approval of the proposed project would require a consistency determination by the Napa County Airport Land Use Commission. The Council may approve the project, despite an adverse consistency determination from the Commission, with a two-thirds vote. The *Airport Land Use Compatibility Plan* identifies four land use compatibility concerns: safety on the ground, hazards to aircraft flight, noise and overflight annoyance.

(1) Safety on the Ground. The aviation compatibility analysis prepared by Shutt Moen Associates for this project (presented in Appendix J of this EIR) concludes that safety to those on the project site would be only a minor concern based on accident location data developed by the UC Berkeley Institute for Transportation. These data, which were prepared for Caltrans' *Airport Land Use Planning Handbook* published in 1993, included an examination of over 400 accidents at airports throughout the United States. As shown in Figures 2 and 3 of Appendix J , there were very few accidents lateral to the runway. The areas proposed for development by the *Draft SRSP* are more than 5,000 feet north or west of existing runways and approach zones. Figure 1 of Appendix J shows the relationship of the Stanly Ranch to the Napa County Airport runways and approach zones.

(2) Hazards to Aircraft Flight. Hazards to aircraft flight fall into two main categories: 1) physical obstructions within navigable airspace; and 2) specific land use types and activities that can affect flight safety such as distracting lights, sources of glare or smoke, land uses that produce electronic interference that can interfere with aircraft instruments or communications, and land uses that attract large flocks of birds. The *Airport Land Use Compatibility Plan* establishes land use compatibility zones that restrict the height of structures and the type and intensity of development and activities in areas surrounding the Napa County Airport. Section IV.B of this EIR, Public Policy, assesses the proposed project's consistency with the

adopted *Airport Land Use Compatibility Plan*. With implementation of the mitigation measures identified in Section IV.B, the proposed project would be consistent with the *Airport Land Use Compatibility Plan* and the potential for the introduction of hazards to flight as a result of the project would be less than significant.

(3) Noise. Aircraft-related noise impacts on the proposed development are addressed in detail in Section IV.L of this EIR, Noise. As shown in Figure 1 of Appendix I, the Community Noise Equivalent Level (CNEL) contours for the Napa County Airport, which are a cumulative noise metric, do not encompass the project site. Thus, the cumulative noise levels on the site from aircraft noise are within acceptable ranges for residential development; this is further described in Section IV.L. However, portions of the project site are within ALUC land use compatibility zones D, E, and F (see Figure IV.B-5). As described in Section IV.B, the *Airport Land Use Compatibility Plan* restricts the type and intensity of development in these areas accordingly.

(4) Overflight Annoyance. Consistency with the *Airport Land Use Compatibility Plan* does not mean that aircraft-related noise and overflight annoyance would not result in complaints by residents of the proposed project. As stated in the aviation compatibility analysis in Appendix I, noise complaints have come in the past from residences in the Milton Road area of Napa, which is located southwest of the Stanly Ranch.

The use of easements and disclosure statements reduces the probability of noise complaints from future property owners but is unlikely to prevent all noise complaints. These measures reduce the likelihood that individuals highly sensitive to aircraft noise will acquire a residence near an airport. However, aircraft noise that did not seem intrusive at the time a property was acquired can become a significant source of annoyance over time. If aircraft operations increase or there is an increase in the number of louder aircraft, residents may complain even if they were informed at the time of purchase that this could occur. Many people are inaccurate predictors of their sensitivity to aircraft noise.

While the principal purpose of avigation easements is to alert potential purchasers that a property is likely to be exposed to aircraft overflights, easements also confer certain rights to the airport. The various enumerated rights (e.g., right of overflight) enable normal aircraft operations to occur in the vicinity of the airport. The use of easements reduces the liability, if any, that may result from aircraft operations.

> Mitigation Measure LU-2: Implementation of the mitigation measures identified in the Public Policy section of the EIR related to easements and disclosure statements for on-site property owners shall be implemented to reduce potential airport-related land use incompatibilities, including noise and overflight annoyance. (LTS)

L. NOISE

■ ■ ■

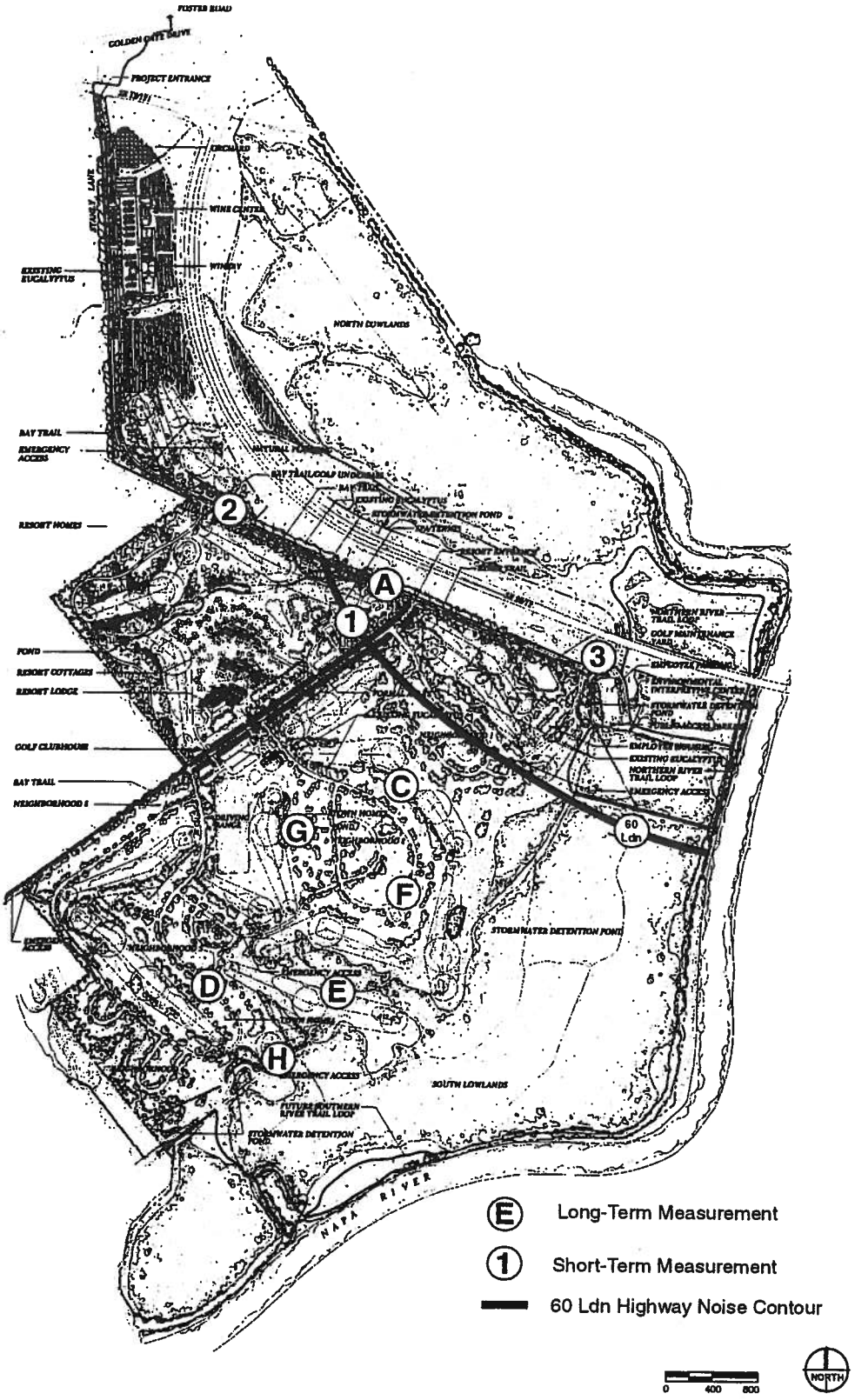
This section evaluates the noise impacts associated with implementation of the *Draft SRSP*. The existing and future noise exposure of the site is described; the compatibility of the proposed land uses with the on-site noise environment is evaluated; and the potential for off-site noise impacts is quantified.

1. Setting

a. Existing Conditions. The Stanly Ranch site is exposed to noise emanating from State Route 29/12, State Route 12/121, and aircraft overflight associated with activity from the Napa County Airport, located about 4,000 feet south of the *Draft SRSP* area. A detailed noise measurement survey was conducted on the site in February 1991 (ROMA, 1993a). These noise measurements were updated in 1993 and again in 1997 for this EIR. The noise measurements consisted of eight long-term measurements and three short-term measurements on the site. The noise measurement locations are shown on Figure IV.L-1. The measurement locations denoted with letters are the long-term measurements and the numbered locations are locations where short-term measurements were conducted. The advantage of conducting a long-term measurement is that it allows a direct measurement of the 24-hour day/night average noise level (L_{dn}) and the advantage of the short-term measurement is that an operator with a meter can write down the noise levels of individual events to allow, for example, aircraft noise levels to be separated from traffic noise levels. (Appendix H includes a discussion of terminology and fundamental concepts of environmental noise.)

The results of the measurements are summarized in Table IV.L-1. The data show that noise levels are highest near State Route 29/12. Traffic noise from State Route 29/12 penetrates furthest into the site at the easterly end where the roadway is elevated crossing the Napa River. The location of the existing 60 L_{dn} contour, based on the noise measurement data, is shown on Figure IV.L-1.

In the southern portions of the site, noise levels are dominated by aircraft flyovers. Noise measurements conducted at Sites F, G and H in November 1997 were done



Source: EDAW 1997 and Illingworth & Rodkin, Inc., 1997.

Figure IV.L-1
Noise Measurement Locations

Table IV.L-1
EXISTING DAY/NIGHT SOUND LEVEL (L_{dn})
ON THE STANLY RANCH PROPERTY

Site	Time and Date	L_{dn}[a]
A	2 pm, 2/10/91 to 12 pm, 2/13/91	69 dB
B	3 pm, 2/10/91 to 12 pm, 2/12/91	53 dB
C	2 pm, 2/12/91 to 11 am, 2/13/91	58 dB
D	2 pm, 2/10/91 to 12 pm, 2/13/91	50 dB
E	2:40 pm, 2/11/91 to 11 am, 2/12/91	53 dB
F	10 am, 11/20/97 to 2 pm, 11/22/97	51 dB
G	11 am, 11/20/97 to 2 pm, 11/22/97	56 dB
H	12 pm, 11/20/97 to 3 pm, 11/22/97	51 dB
1	1:50-2:00 pm, 2/10/91	60 dB
2	1:36-1:51 pm, 10/14/97	53 dB
3	1:04-1:19 pm, 10/14/97	63 dB

[a] L_{dn} established based on comparison of short-term measurement results with long-term measurement results.

Source: Illingworth & Rodkin, 1997 and ROMA, 1993a.

specifically to separate the contribution of aircraft flyover noise from the noise generated by traffic and other activity in the area. Noise measurements at these three locations were done in a manner that enabled individual events to be captured along with the overall level. Noise measurements were conducted for a period of about 52 hours at each of these locations running from early on Thursday morning, November 20, 1997, through Saturday afternoon, November 22, 1997, between storm systems. Over the course of the measurement period, 155 aircraft flyovers occurred. The highest aircraft noise levels measured on the site were attributable to the aircraft used by the airline training school. These are the A-36 Bonanza and the King Air C 90. The noise level output of the A-36 Bonanza is typically 3 decibels noisier than the King Air C 90. The noise levels generated by these aircraft as they flew over the site ranged from 65 to 75 dBA. The 24-hour average noise level (L_{dn}) at these three locations attributable to aircraft flyovers was 45 to 46 dB. The Community Noise Equivalent Level (CNEL) (the noise metric used by the Airport Land Use Commission to evaluate aircraft noise) was 46 to 47 dB. The overall L_{dn}[1] at Site F was 51 dB; at Site G it was 56 dB; and at Site H it was 51 dB. The noise levels at Site F were dominated by traffic on State Route 29/12. The meter at Site F was located behind a large tree trunk to shield it as much as possible from highway noise.

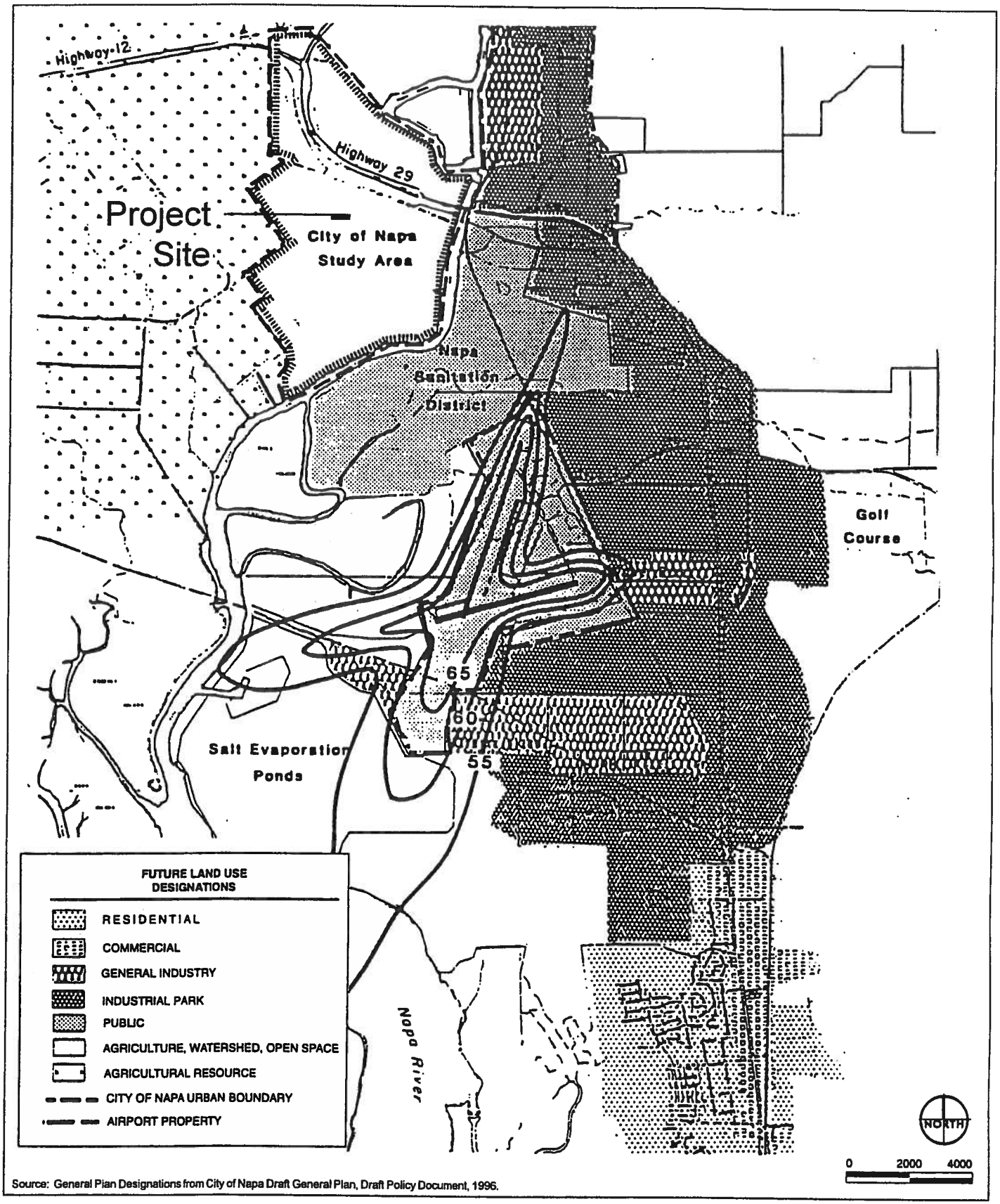
[1] Overall L_{dn} includes aircraft noise in combination with other sources of noise.

The measured L_{dn} for aircraft activity of 45 to 46 dB is consistent with the published noise contours for the Napa County Airport (see Figure IV.L-2 which shows that the site is well outside the projected year 2008 CNEL 55 contour for the airport).[2]

Aircraft activity tends to be confined to the daytime hours. The distribution of the aircraft flyover activity from midnight on Thursday, November 20, 1997 through midnight on Friday, November 21, 1997 is shown in Figure IV.L-3. During this 24-hour period, there were 78 identifiable aircraft flyovers on the site. Only two flyovers occurred between the hours of 10 PM and 7 AM, and these took place between 6 and 7 AM on Friday morning, November 21, 1997. Since this flight path is primarily used by the airline training center and their activity is confined to the daytime hours, this timing reduces the potential for nighttime noise disturbances at the project site and is a major reason why the L_{dn}, which is weighted significantly by nighttime activity, is low. This fact is confirmed by the Airport Master Plan (Napa County, 1991) which indicates that less than one percent of takeoffs and landings at Napa Airport occur between 10 PM and 7 AM.

The 78 operations counted on Thursday through Friday generated an L_{dn} of 45 dB and a CNEL of 46. The activity level for 1997 is 148,250 operations a year (Shutt Moen, 1997). Based on the frequency of use of the various flight tracks at Napa Airport, this is equivalent to 103 flights/day over the Stanly Ranch site. On the days of the measurements, the number of aircraft was slightly less than a typical day. This difference is equivalent to a 1.2 dB difference in the L_{dn} and CNEL. Therefore, based on the current annual average operations, the aircraft-generated L_{dn} on the site would be 47 dB and the CNEL would be 48 dB. The historical high point in operations was in 1994 when there were 231,000 operations per year. In 1994, about 161 overflights of the project site would have occurred which would result in an L_{dn} (or CNEL) 3.1 dB higher than measured in 1997, or an L_{dn} of 49 dB and a CNEL of 50 dB. By way of comparison, the number of operations could increase to 600 overflights at the project site per day before reaching a CNEL of 55 dB. This would be equivalent to about 861,000 operations at the airport per year. There has never been a projection that activity could reach this volume at Napa Airport. The current capacity of the airport is 270,000 operations per year and the forecast capacity with all planned airport improvements is 390,000 operations per year (Napa County, 1991). Therefore, it is safe to say that the CNEL on the site related to aircraft noise will remain below 55 dB and will probably remain below 50 dB.

[2] Site G includes highway noise as well as aircraft noise. Without highway noise, Site G would be under the projected 55 L_{dn} for the airport. Aircraft alone would be 45 to 46 L_{dn}.

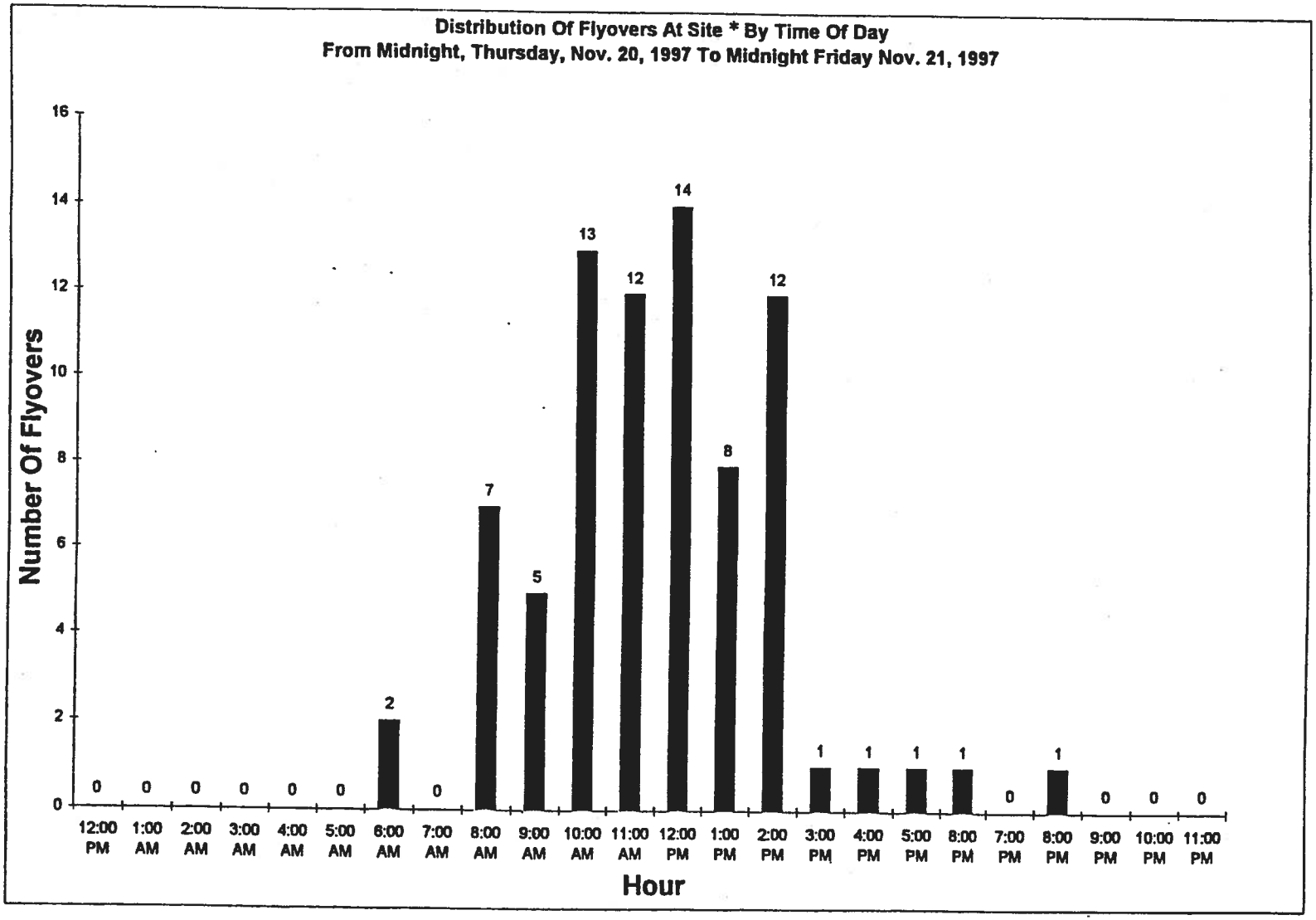


Source: General Plan Designations from City of Napa Draft General Plan, Draft Policy Document, 1996.

STANLY RANCH

SPECIFIC PLAN ENVIRONMENTAL IMPACT REPORT

Figure IV.L-2
Projected 2008 CNEL Noise Levels



SOURCE: ILLINGWORTH & RODKIN 1997

* Site 3 location is shown in Figure IV. L-1

Figure IV. L-3
Distribution of Flyovers of Site 3 by Time of Day

b. Regulatory Background. The City of Napa, through the Noise Element of the City's adopted *General Plan*, has the following goals and policies applicable to this project:

Goals

- Reduce the noise from traffic, through proper circulation and development planning, to a level that does not jeopardize public health, safety and welfare.
- Minimize noise impacts from possible future noise sources.

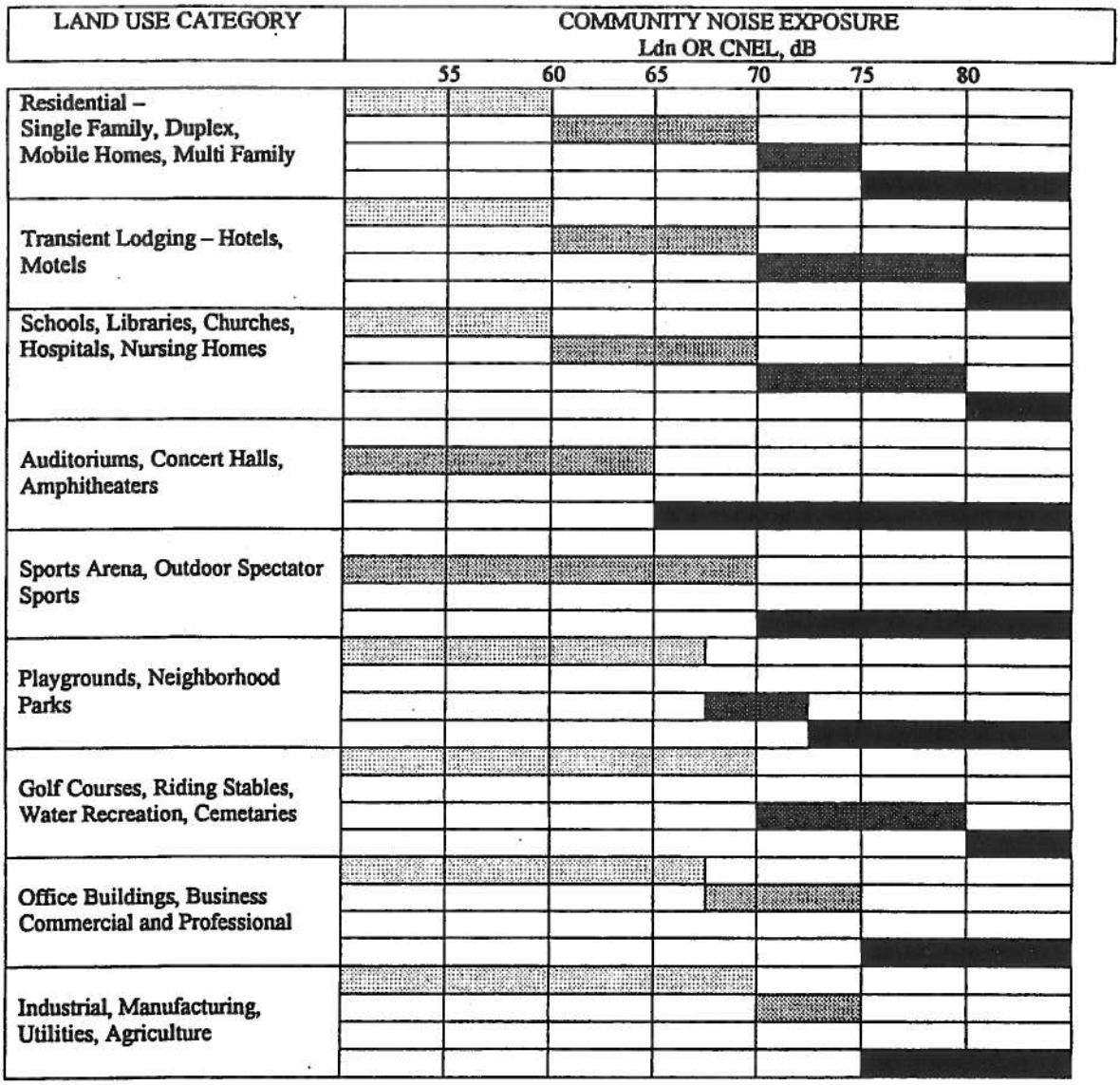
Policy

- *Noise sensitive uses, including residences, schools, hospitals, nursing homes, etc., should be located away from major noise sources unless significant mitigation steps are taken. Mitigation measures shall include noise barriers, walls or fences along busy streets, proper structural design, adequate setback, etc.*

Additionally, the Noise Element contains noise and land use compatibility guidelines for determining the acceptable noise level for noise sensitive uses. This chart is reproduced as Figure IV.L-4. Residential development is considered normally acceptable with an exterior L_{dn} of up to 60 dB. Normally acceptable is defined as meaning the specified land use is satisfactory assuming buildings are of conventional construction without special noise insulation. Between an L_{dn} of 60 and 70 dB, residential development is considered conditionally acceptable. This means that a detailed analysis shall be required for all construction and that noise insulation features shall be included in the building design. Generally, conventional construction will suffice but requires closed windows and fresh air supply systems or air conditioning. The text states for an L_{dn}/CNEL of 65 dB or greater, residential and commercial uses which give emphasis to outdoor activity should be discouraged.

The *Draft General Plan* uses a land use compatibility chart essentially the same as that in the existing *General Plan*, although compatibility categories overlap as shown in Figure IV.L-5. *Draft General Plan* policies state that new residential development is to meet exterior noise level standards in the table, which provides a "conditionally acceptable" range up to 70 dB L_{dn} for residential uses, although the accompanying text states the upper limit of exterior noise *should* be 60 dB L_{dn}. Other policies state that the City shall use CEQA to ensure that new development does not exceed City standards; that the development review process shall be used to site new construction in ways that reduce noise levels; that the City shall encourage clustering, where appropriate, of residential development in order to provide open space that can be used to distance residences from noise sources; and that new development shall maintain the ambient sound environment as much as possible.

Land Use Compatibility for Community Noise Environments
Napa General Plan (1983, Reprinted 1986)



LEGEND			
NORMALLY ACCEPTABLE		NORMALLY UNACCEPTABLE	
CONDITIONALLY ACCEPTABLE		CLEARLY UNACCEPTABLE	

NORMALLY ACCEPTABLE: Specified land use is satisfactory, assuming buildings are of conventional construction without special noise insulation

CONDITIONALLY ACCEPTABLE: Detailed analysis shall be required for all construction and noise insulation features shall be included in building design. Generally, conventional construction will suffice, but with closed windows and fresh air supply systems or air conditioning. This requiremenet shall be applied, irrespective of any projected decrease in CNEL for the area. Where the CNEL is 65dB or greater, residential and commercial uses which give emphasis to outdoor activity should be discouraged.

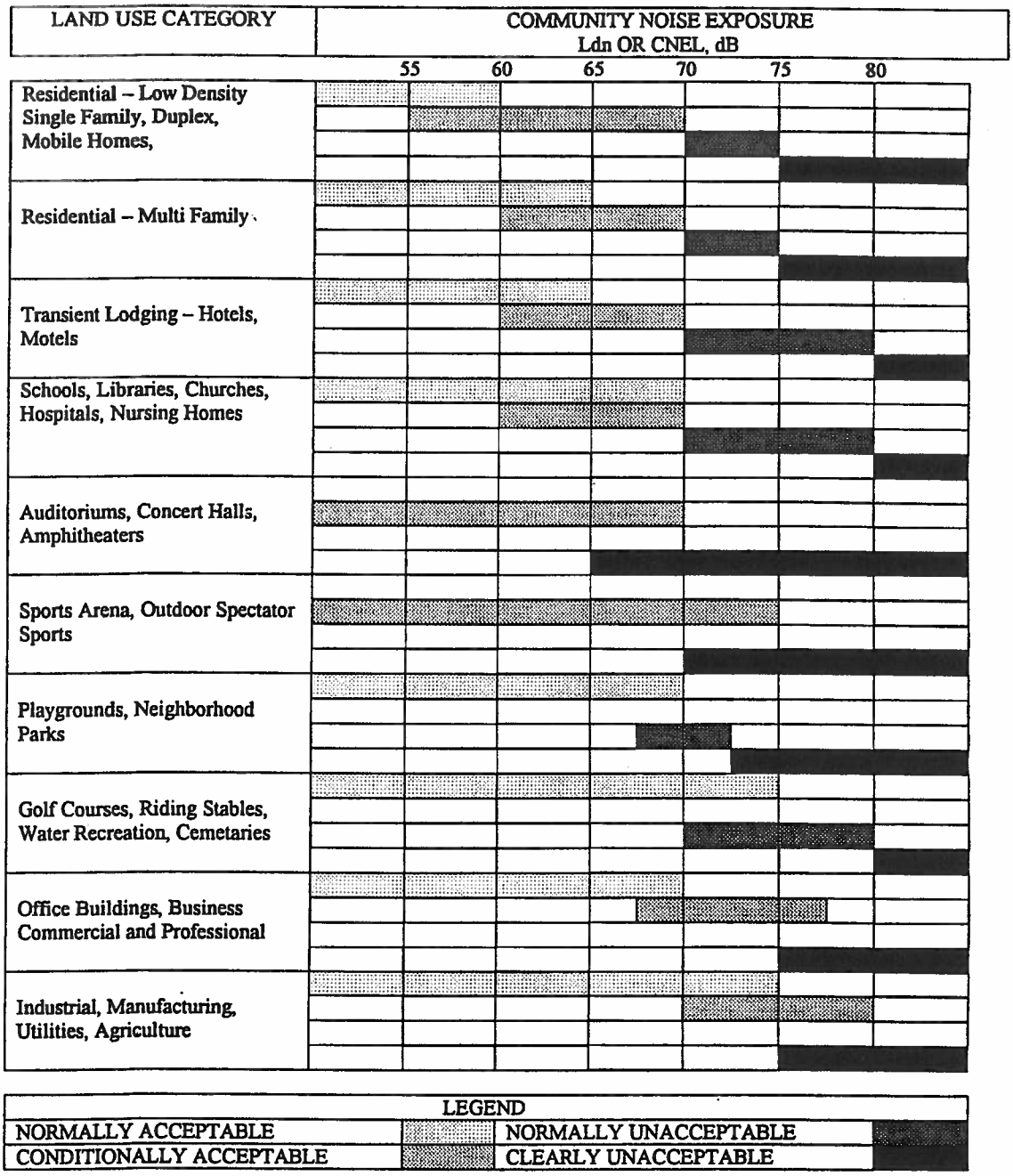
NORMALLY UNACCEPTABLE: New construction or development should generally be discouraged....

CLEARLY UNACCEPTABLE: New construction or development should generally not be permitted.

Source: Illingworth & Rodkin, 1997.

Figure IV.L-4
Land Use Compatability for Community Noise Environment (adopted General Plan)

Land Use Compatibility for Community Noise Environments
Draft Napa General Plan (1996 Policy Document)



NORMALLY ACCEPTABLE: Specified land use is satisfactory, assuming buildings are of conventional construction without special noise insulation
CONDITIONALLY ACCEPTABLE: New Construction or development should only be undertaken 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 included in the design.
NORMALLY UNACCEPTABLE: New construction or development should generally be discouraged....
CLEARLY UNACCEPTABLE: New construction or development should generally not be permitted.

Source: Illingworth & Rodkin, 1997.

Figure IV.L-5
Land Use Compatability for Community Noise Environment (Draft General Plan)

New transportation-related noise sources that cause the ambient sound levels to exceed compatibility standards in the table would be required to incorporate conditions of design modifications to reduce the potential increase in the noise environment. The City shall also regulate construction to allow for efficient construction activities while also protecting noise sensitive land uses. New residential projects must provide for an interior noise level of 45 dB CNEL; thus the City shall review all residential and other noise-sensitive land uses within the 60 dB L_{dn} contours of Highways 29 and 12 to ensure that adequate noise attenuation has been incorporated into the design of the project. Alternatives to the use of sound walls are encouraged.

In addition to the Noise Element guidelines, the Napa County Airport Land Use Commission's *Airport Land Use Compatibility Plan* (Napa County, 1991) applies to the noise generated by activity at Napa County Airport. The *Airport Land Use Compatibility Plan* requires that the airport/land use noise compatibility analysis consider the future CNEL contours of each airport. These contours are calculated based on aircraft activity forecasts which are set forth in adopted airport master plans or which are considered by the Commission to be plausible. The Plan states that the maximum CNEL considered "normally acceptable" for most residential uses in the vicinity of airports covered by the Plan is 55 dBA. The Plan states that this standard is appropriate for areas with low ambient noise levels. In areas with higher ambient noise levels, the maximum CNEL considered "normally acceptable" for residential uses shall be 60 dBA. Factors which determine whether to apply the higher standard include the presence of major highways, large concentrations of residences or large-scale commercial and industrial uses.

2. Impacts and Mitigation Measures

a. Criteria of Significance. A significant noise impact would be identified if a proposed use would be exposed to noise levels exceeding the City's noise and land use compatibility guidelines.

Project-generated noise would result in a significant impact on an existing land use (i.e., existing residences in the area) under the following conditions:

- Average noise levels (L_{dn}) increase by 5 dBA or more but remain below the normally acceptable level (60 L_{dn} for residences).
- Average noise levels (L_{dn}) increase by more than 3 dBA and existing noise levels increase from below the acceptability level to above the normally acceptable level (60 L_{dn} for residences).
- Average noise levels (L_{dn}) increase by more than 3 dBA where existing levels are already above the normally acceptable level (i.e., 60 L_{dn} for residences).

- Average noise levels (L_{dn}) increase by more than 2 dBA in residential areas where the L_{dn} currently exceeds 70 dB.

These significance criteria recognize: (a) the threshold levels of acceptability established by the local government; (b) that once the threshold level has been exceeded, any noticeable change above that level results in a significant degradation of the noise environment; and (c) that a clearly noticeable change in the noise environment (a 5 dBA increase), even though the acceptability threshold has not been reached, is considered a substantial increase and would result in a significant impact under CEQA.

Short-term impacts resulting during the construction phase are considered significant under the following conditions: construction equipment average noise levels exceed 60 dBA during the daytime or 55 dBA during the nighttime outside of residences and also exceed existing ambient noise levels. These noise limits are chosen to minimize the potential for speech interference during the daytime and sleep disturbance at night.

b. Less-Than-Significant Impacts.

Impact NOI-A: Aircraft noise exposure on the site is less than an L_{dn} of 55 dB. These noise levels would be compatible with residential activity. (LTS)

The existing and projected L_{dn} due to aircraft overflight is and would be expected to remain below an L_{dn} of 55 dB. Maximum instantaneous noise levels, however, often reach 75 dBA on the eastern portion of the site during the daytime. The Napa County Noise Element recommends that maximum instantaneous noise levels indoors during the daytime not exceed 60 dB. Although there is no similar City requirement, it is noted this level would be achieved in a typical building with the windows open. Therefore, housing anywhere as proposed on the site would be compatible with the aircraft noise.

Condition of Approval NOI-A: None required. (LTS)

Impact NOI-B: Traffic generated by the project would add to the noise generated by State Route 29/12. The additional traffic would result in an insignificant increase in the noise levels along SR 29/12 and other roads serving the site with the exception of Stanly Lane (see Impact NOI-4). (LTS)

Calculations were made to determine the change in noise level along the streets serving the site as a result of project-generated traffic and also as a result of cumulative conditions plus project-generated traffic in the year 2010. These calculations show that, for the worst case condition in the year 2010 of cumulative-

plus-project traffic, noise levels along the highway/streets serving the site (State Route 29/12, State Route 12/21, State Route 121, Old Sonoma Road, and Cuttings Wharf Road) would increase by less than 2 decibels at all locations and in all cases would increase by an immeasurable amount due to project-generated traffic alone. A 2-decibel increase in the average traffic noise level is not generally detectable, especially when it takes place over a ten- to 15-year period.

Condition of Approval NOI-B: None required. (LTS)

c. Significant Impacts. The following section describes the potential impacts associated with the project and presents mitigation measures necessary to minimize impacts to less than significant.

Impact NOI-1: Portions of the site proposed for employee housing and Neighborhood 1 would be exposed to noise levels that would be considered conditionally acceptable. The remainder of the site would be considered completely compatible. Noise levels in the conditionally acceptable area would require mitigation. (S)

The location of the 60 L_{dn} noise exposure contour on the Stanly Ranch site is shown in Figure IV.L-1. Housing between the 60 L_{dn} contour and State Route 29/12 would be considered conditionally acceptable with the onsite noise environment, and housing located outside the 60 L_{dn} contour would be considered normally acceptable. The Illustrative Master Plan for the Stanly Ranch site (Figure III-4) shows that the employee housing would be the closest housing to State Route 29/12. The L_{dn} in this area is 63 dB. A portion of Neighborhood 1 would be exposed to an L_{dn} of about 60 to 61 dB. This noise exposure is such that acceptable interior noise levels can be met with standard residential-grade windows as long as the buildings are mechanically ventilated to allow the windows to remain closed at the resident's option. Noise levels outdoors in the employee housing area and the closest portion of Neighborhood 1 to SR 29/12 would exceed an L_{dn} of 60 dB. Because State Route 29/12 is elevated in this area, it would not be possible to provide for outdoor noise reduction below 60 dB in these areas. If the homes were located between SR 29/12 and the backyards, some shielding would be provided, reducing the outdoor noise levels close to an L_{dn} of 60 dB. The Noise Element recommends that outdoor uses be discouraged where the L_{dn} exceeds 65 dB. Since noise levels at all locations on the site would be below an L_{dn} of 65 dB, there would be no conflict with current City policy. The *Draft General Plan* appears to place somewhat more emphasis on meeting an outdoor standard of 60 dB for residential areas. The Draft Noise Element text states that for residential areas in the City, the upper limit of "normally acceptable" on-site exterior noise should be 60 dB. Nonetheless, the noise and land use compatibility table in the Noise Element indicates that residential land uses are conditionally acceptable with an L_{dn} of up to 70 dB.

Mitigation Measure NOI-1a: Homes within Neighborhood 1 shall be sited to include useable yard space on the south side of buildings to shield this space from highway noise. Alternatively, the feasibility of using fencing to shield outdoor areas shall be evaluated based on topography. Noise levels in the outdoor use areas associated with the employee housing shall be mitigated by orienting the homes such that the buildings themselves shield the outdoor use area. If the employee housing area, as shown in Figure III-13, is rotated so that the parking lot is parallel to SR 29/12 and the patios face the parking lot, noise levels in most of the yards would be reduced to 60 dB or less. In some of the yards, noise levels may exceed 60 dB and be as high as 63 dB, but these noise levels would be consistent with the intent of the both the current and Draft Noise Elements of the City's *General Plan*.

Mitigation Measure NOI-1b: Homes within the 60-63 dB L_{dn} contour shall be required to provide mechanical ventilation to assure that interior noise standards are met. (LTS)

Impact NOI-2: Noise generated by agricultural operations would occasionally generate significant noise levels in the new residential area. (S)

Agricultural operations in adjacent vineyards, and particularly the operation of wind machines, would generate noise levels that could be annoying to new residents. Studies of wind machines at similar vineyards indicate that noise levels at 400 feet from wind machines reach 74 dBA. Inside of a typical house with the windows closed, these noise levels would reach about 44 dBA in rooms with windows facing the wind machine, louder than would be acceptable for nighttime noise exposure. Since wind machines are typically used during late night/early mornings, there is a possibility for sleep disturbance for units within 1,300 feet of a wind machine. Studies for residential areas adjacent to other vineyards have indicated that the wind machines are used between 10 and 30 nights a year. Noise impacts would be expected to be highest for those homes closest to the agricultural operation. Shielding provided by these homes would reduce noise levels for subsequent rows of homes. In terms of the City's noise and land use compatibility guidelines (assuming that the wind machines are used 4 hours a night for 30 nights out of the year), the annual average exterior L_{dn} at the distance of 400 feet would be 55 dB, which would be compatible. However, there is a potential for sleep interference for homes within 1,300 feet on those nights when the wind machines are used.

The Napa City Zoning Code Section 17.60.09.02 states, "Sound/noise-reducing design and construction techniques shall be required (e.g., window/door orientation, use of double pane windows, etc.), to reduce noise levels to occupants from adjoining farm operations to acceptable levels as defined in the Noise Element of the General Plans) prior to building permit."

Mitigation Measure NOI-2: Bedroom windows in homes within 1,300 feet of a wind machine shall have an STC (Sound Transmission Class) rating approximately 10 decibels higher than standard windows (i.e., an STC rating of 40). Installation of such windows would provide for acceptable noise levels indoors with the windows closed, even during wind machine use not in excess of sleep disturbance levels. (LTS)

Impact NOI-3: During construction, noise levels would be temporarily elevated on the property surrounding the site. There are scattered farm houses in this area that would experience these increased noise levels. Generally, construction would take place far from these areas and, while noticeable, would not be significant. For short periods of time when construction is taking place within several hundred feet of these homes and near occupied new homes on the project site, noise levels may be significant. (S)

Construction activity, including grading, infrastructure, and home building, would result in increased noise levels in the area. However, there are only a few scattered farm houses in the area. Residents of these homes would be affected by construction noise. However, the vast majority of construction on the site would take place far from these homes. At 400 feet from the site, maximum instantaneous noise levels would be expected to be below 60 dBA and average noise levels would be expected to be about 55 dBA. This level would be about the same as the existing noise level in the area and would not be significant. Therefore, there would only be short periods of time when construction would be taking place within 400 feet of these homes and where noise levels would begin to exceed the background noise level. At the worst, this noise increase would be expected to be annoying for a short period of time.

Mitigation Measure NOI-3: The following combination of measures shall be required for project construction:

- Construction activities shall be limited pursuant to Napa Municipal Code (NMC) 8.08.025 to 7 AM to 7 PM, Monday through Friday and 8 AM to 4 PM on weekends or legal holidays, unless a permit is first secured from the City Manager (or his/her designee) for additional hours. The ordinance further states that there will be: no start up of machines nor equipment prior to 8 AM, Monday through Friday; no delivery of materials nor equipment prior to 7:30 AM nor past 5 PM Monday through Friday; no cleaning of machines nor equipment past 6 PM, Monday through Friday; no servicing of equipment past 6:45 PM Monday through Friday.

- All internal combustion engines for construction equipment used on the site shall have state-of-the-art muffler systems required by current law and be properly maintained.
- Unnecessary idling of internal combustion engines shall be strictly prohibited. Grading and construction equipment shall be shut down when not in use.
- All stationary noise-generating construction equipment, such as air compressors and portable power generators, shall be located as far as practical from existing residences and businesses and provided with acoustical shielding if necessary.
- Residential neighbors adjacent to the project shall be notified of the construction schedule in writing.
- A noise disturbance coordinator, responsible for responding to complaints about construction noise, shall be designated by the project contractor. The telephone number for the disturbance coordinator shall be posted at the construction site and shall also be included in the notice sent to neighbors regarding the construction schedule. (LTS)

Impact NOI-4: Project-generated traffic on Stanly Lane would significantly increase noise levels for the one existing residence adjacent to Stanly Lane near the bend in Stanly Lane. (S)

After Stanly Lane is relocated and the project is completed, the roadway would be more than 100 feet from an existing ranch home located at the bend in Stanly Lane. Based on the noise measurement survey, the existing L_{dn} at this location is about 50 dBA. The increase in traffic along Stanly lane would increase noise levels in this location by more than 5 dBA, exceeding the first significance criterion although L_{dn} noise levels would remain in the "normally acceptable" range.

Mitigation Measure NOI-4: During the final design phase of the road and Bay Trail, the applicant shall incorporate five-foot high solid fencing or berming to help shield yards, patios or other primary outdoor use areas associated with the existing home. (LTS)

ALUC 3-4-03 #11

Zone D and The Circling Approach to Runway 18R

Capt. Dwight Small (Ret.)

There are no *straight-in* instrument approaches to Runway 18R, the safest landing runway for jet operations when low clouds or reduced visibility exist along with south or west winds above 12 MPH. Because there are no instrument approaches to this runway, pilots are required to fly an approach to another runway and then do a circling maneuver to land on 18R. The pilot conducting this approach in a Category C airplane will fly his airplane solely in reference to instruments to a point about 2 miles from the airport where he will then fly a northerly course, within 1.5 nautical miles west of and parallel to runway 18R. This is called the downwind leg and is where the Circling Approach, a visual manuver, begins and is within Zone D. The downwind leg is flown at 620' above sea level which is 587' above airport elevation and, according to the Stanly Ranch contour map, is 550' above Home Hill.

Category C aircraft are considered for this explanation because most, business jets using Napa Airport are in this category. The categories are defined in the FAA TERPS Manual (see pg's 4 & 5). The Category C flight path boundary is shown on page 3. The block in the lower right corner of page 8 (Jeppesen Approach Plate) is where the pilot looks to find the applicable approach minimums for the category of airplane he's flying. Note Category C is highlighted and indicates that the minimums for the "CIRCLE-TO-LAND" part of the approach are 620' (587') and 1 ½.

Page 7 is a copy of the Jeppesen approach plate the pilot would reference when conducting this approach. This plate is constructed from FAR Part 95 regulations, TERPS criteria and from survey data.

Homes underlying the Circling Approach flight path would be in a high noise environment. In order to properly and safely execute this approach, the pilot must adhere very closely to the procedure and he/she has very little flexibility regarding speed, flight path, altitude and aircraft configuration (position of flaps and gear). Properly configured on the downwind leg, the airplane would be in a moderately high drag flight regime. High drag = high power= high noise = a high number of complaints. The safety risk to people underlying this approach would be low to moderate but, because of the noise and inevitable noise complaints, I do not think homes should be allowed in Zone D. If allowed, operations would be negatively impacted and could easily discourage corporations from basing biz jets at Napa Airport. Tax revenue on a single high-end jet could be as high as $350,000 per year! The airport is a gold mine, producing jobs and revenue for our county, city and for the all the people of the area. Let's not make a big mistake; keep the airport viable, now and into the future.

I'm an airplane owner and a user of the Napa Airport. I am a retired airline captain with world wide experience conducting all types of approaches to hundreds of airports world wide and am type rated in jets ranging from the Lear Jet to the Boeing 747.

Circling Approach to Runway 18R

- The circling approach to Runway 18R at Napa Airport is the visual portion of the VOR/GPS 06 or the LOC 36L instrument approach.

- The procedure's flight path, altitude and speed are specified by FAR Part 95 and the specific requirements of the aircraft type. Jets have little flexibility as to fligth path and altitude when conducting this procedure.

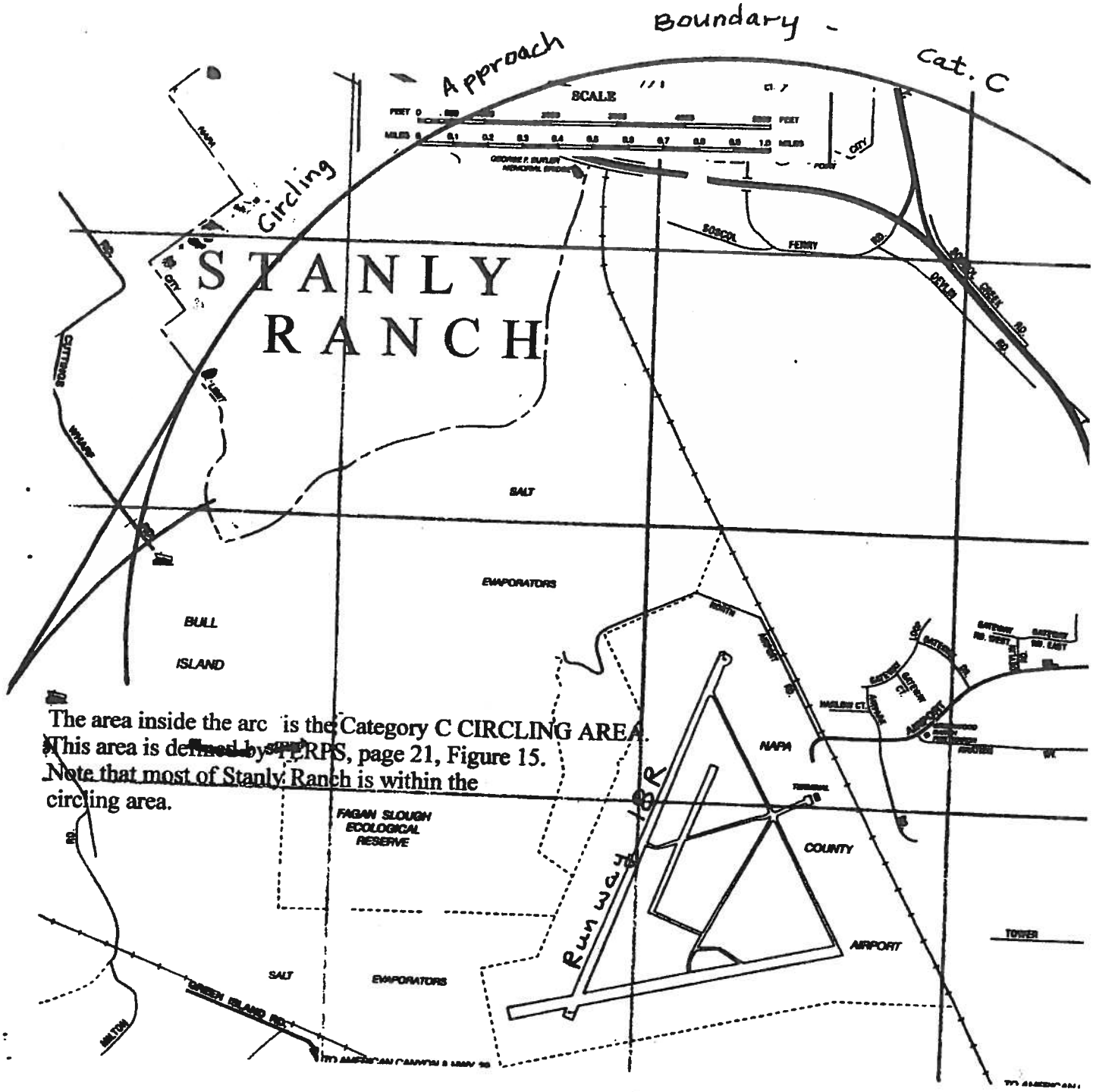
- It is used when dictated by winds, low cloud cover, limited visibility, darkness or anytime arriving pilots are not familiar with the airport.

- Proper execution would require passing directly over SR at 587' AGL (above ground level). This could be as low as 550' over Home Hill, less above the roof tops.

- Overhead SR, the aircraft would be configured with landing gear down, approach flaps and in level turning flight. This is a relatively high drag situation requiring moderately high power. High power equals high noise.

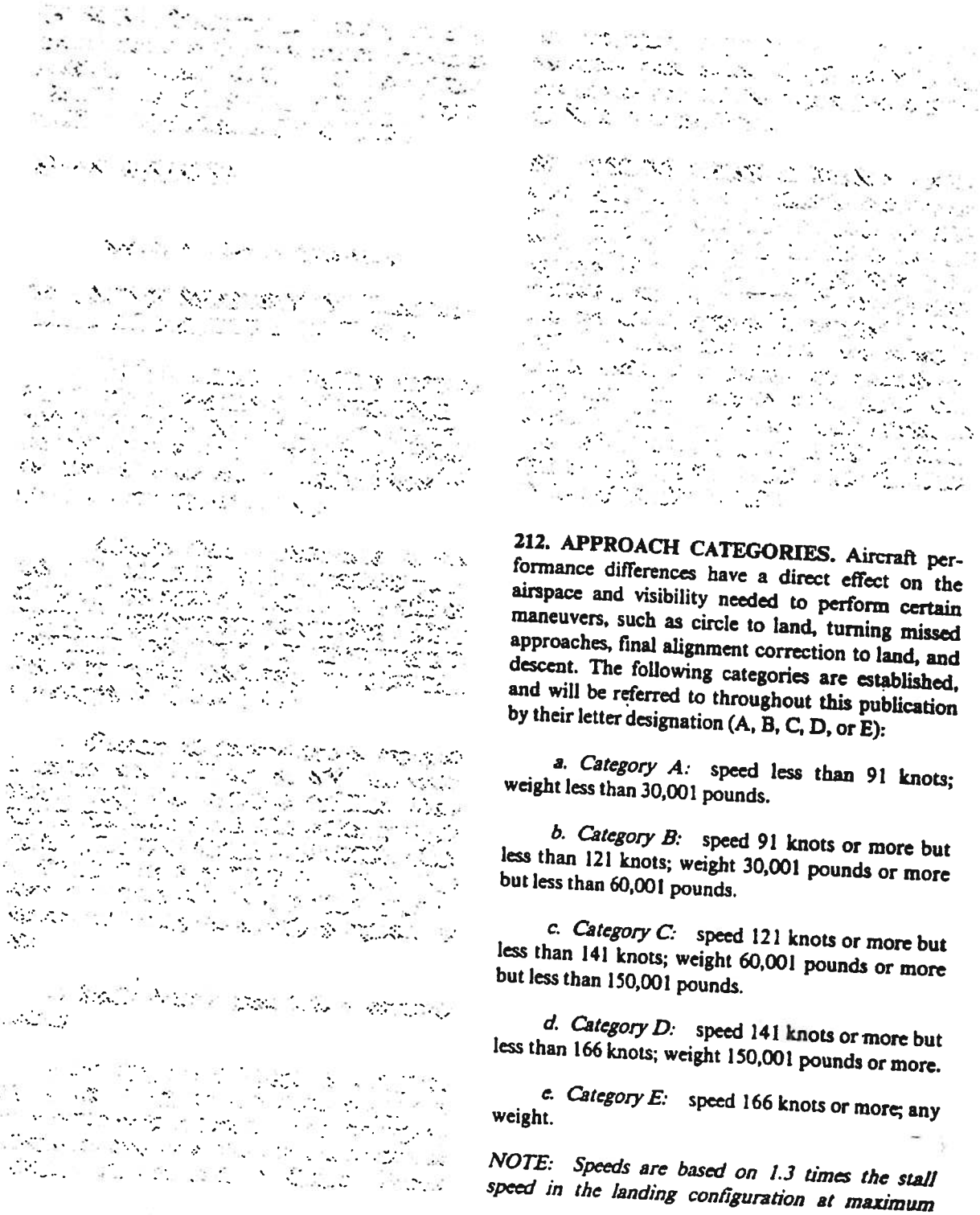
- Homes in zone D would be in a high noise area when weather conditions dictate the use of the circling approach to Runway 18R.

- Runway 18R is the longest runway at Napa Airport and is favored for most jet operations during periods of fog, low clouds and poor visibility and is required when the winds are from the south or southwest at more than 12 MPH.



The area inside the arc is the Category C CIRCLING AREA.
This area is defined by TERPS, page 21, Figure 15.
Note that most of Stanly Ranch is within the circling area.

CHAPTER 2. GENERAL CRITERIA



212. APPROACH CATEGORIES. Aircraft performance differences have a direct effect on the airspace and visibility needed to perform certain maneuvers, such as circle to land, turning missed approaches, final alignment correction to land, and descent. The following categories are established, and will be referred to throughout this publication by their letter designation (A, B, C, D, or E):

a. Category A: speed less than 91 knots; weight less than 30,001 pounds.

b. Category B: speed 91 knots or more but less than 121 knots; weight 30,001 pounds or more but less than 60,001 pounds.

c. Category C: speed 121 knots or more but less than 141 knots; weight 60,001 pounds or more but less than 150,001 pounds.

d. Category D: speed 141 knots or more but less than 166 knots; weight 150,001 pounds or more.

e. Category E: speed 166 knots or more; any weight.

NOTE: Speeds are based on 1.3 times the stall speed in the landing configuration at maximum

aircraft maneuvering to land on a runway which is not aligned with the final approach course of the approach procedure.

a. Alignment and Area. The size of the circling area varies with the approach category of the aircraft, as shown in Table 4. To define the limits of the circling area for the appropriate category, draw an arc of suitable radius from the center of the threshold of each usable runway. Join the extremities of the adjacent arcs with lines drawn tangent to the arcs. The area thus enclosed is the circling approach area. See Figure 15.

b. Obstacle Clearance. A minimum of 300 feet of obstacle clearance shall be provided in the circling approach area. There is no secondary obstacle clearance for the circling approach. See Paragraph 322.

261. CIRCLING APPROACH AREA NOT CONSIDERED FOR OBSTACLE CLEARANCE. It will be permissible to eliminate from consideration a particular sector where prominent

Table 4. CIRCLING APPROACH AREA RADII.

Approach Category	Radius (Miles)
A	1.3
B	1.5
C	1.7
D	2.3
E	4.5

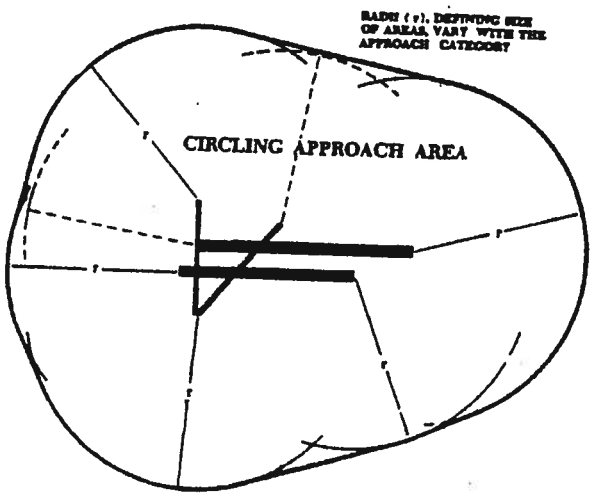


Figure 15. CONSTRUCTION OF CIRCLING APPROACH AREA. Par 260.

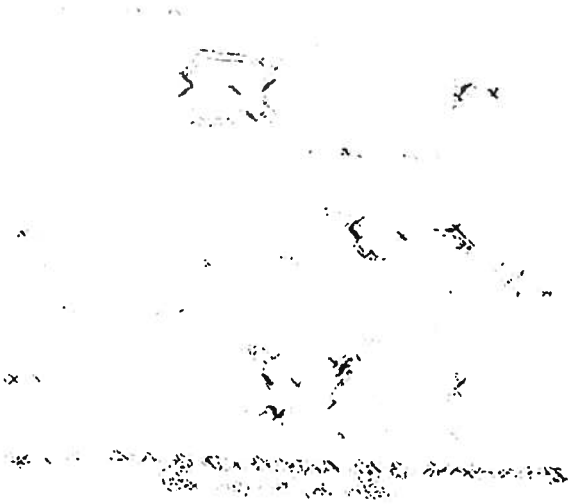
Section 6. Circling Approach

260. CIRCLING APPROACH AREA. This is the obstacle clearance area which shall be considered for

CHAPTER 5. TACAN, VOR/DME, AND VOR WITH FAF

(1) Off-Airport Facility.

(b) Circling Approach. When the final approach course alignment does not meet the criteria for a straight-in landing, only a circling approach shall be authorized, and the course alignment should be made to the center of the landing area. When an operational advantage can be achieved, the final approach course may be aligned to any portion of the usable landing surface. See Figure 47.



(2) Circling Approach. In addition to the minimum requirements specified in Paragraph 513.c.(1) above, obstacle clearance in the circling area shall be as prescribed in Chapter 2, Section 6.

d. Descent Gradient. The OPTIMUM descent gradient in the final approach segment should not exceed 300 feet per mile. Where a higher descent gradient is necessary, the MAXIMUM permissible gradient is 400 feet per mile. See also Paragraphs 251 & 288.a.

JEPPESEN 19 AUG 94 (13-1)

NAPA, CALIF

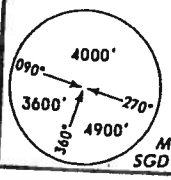
NAPA CO

VOR or GPS Rwy 6

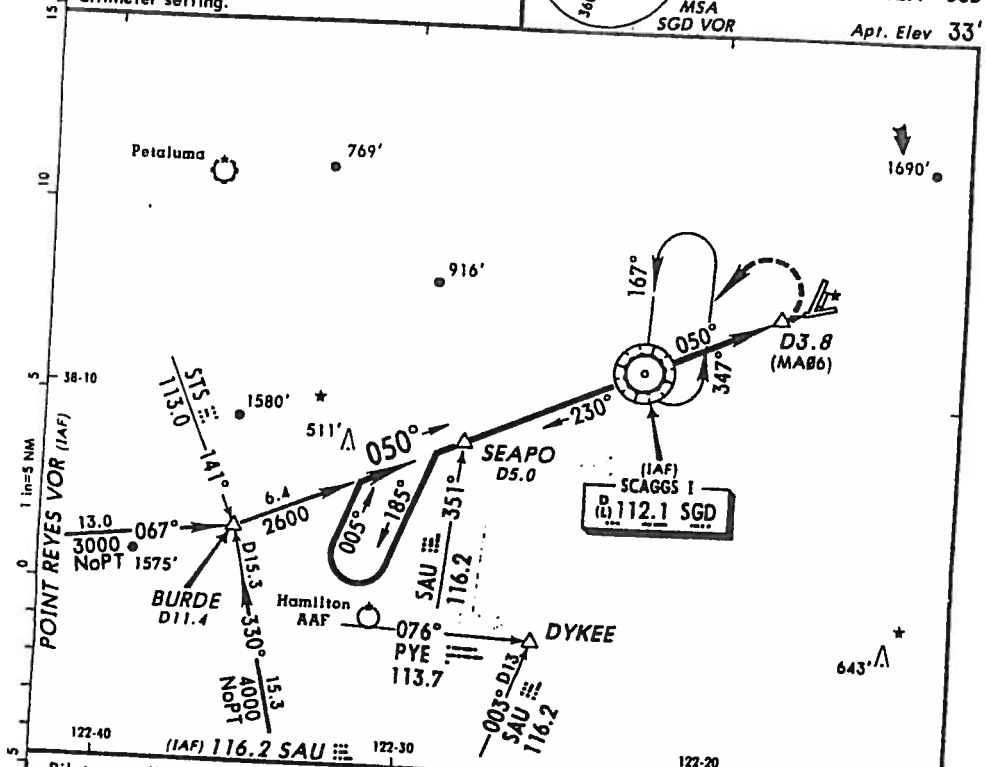
VOR 112.1 SGD

Apt. Elev 33'

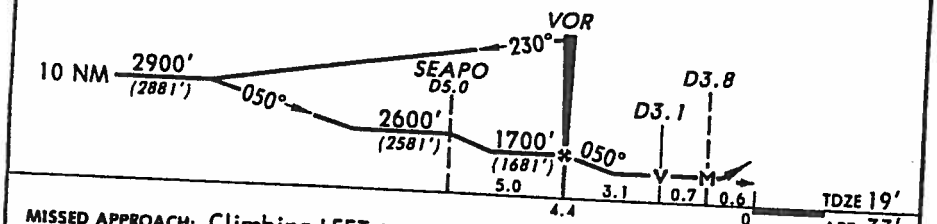
*ATIS 124.05
OAKLAND Center (R) 127.8
*NAPA Tower CTAF 118.7
*Ground 121.7
When Control Twr inop, use Travis AFB altimeter setting.



MSA SGD VOR



Pilot controlled lighting.



MISSED APPROACH: Climbing LEFT turn to 3000' direct SGD VOR and hold.

STRAIGHT-IN LANDING RWY 6			CIRCLE-TO-LAND Not Authorized Northeast of Rwys 18R & 24		
	MDA(H) 420'(401') Control Twr Operating	MDA(H) 480'(461') With Travis AFB Altimeter Setting	Max Kts	Control Twr Operating MDA(H)	With Travis AFB Altimeter Setting MDA(H)
A	1	1	90	600'(567')-1	660'(627')-1
B			120	620'(587')-1	680'(647')-1
C			140	620'(587')-1½	680'(647')-1½
D	1¼	1¼	165	1140'(1107')-3	1200'(1167')-3

Gnd speed-Kts	70	90	100	120	140	160
MAP at D3.8 or VOR to MAP 3.8	3:15	2:32	2:17	1:54	1:38	1:26

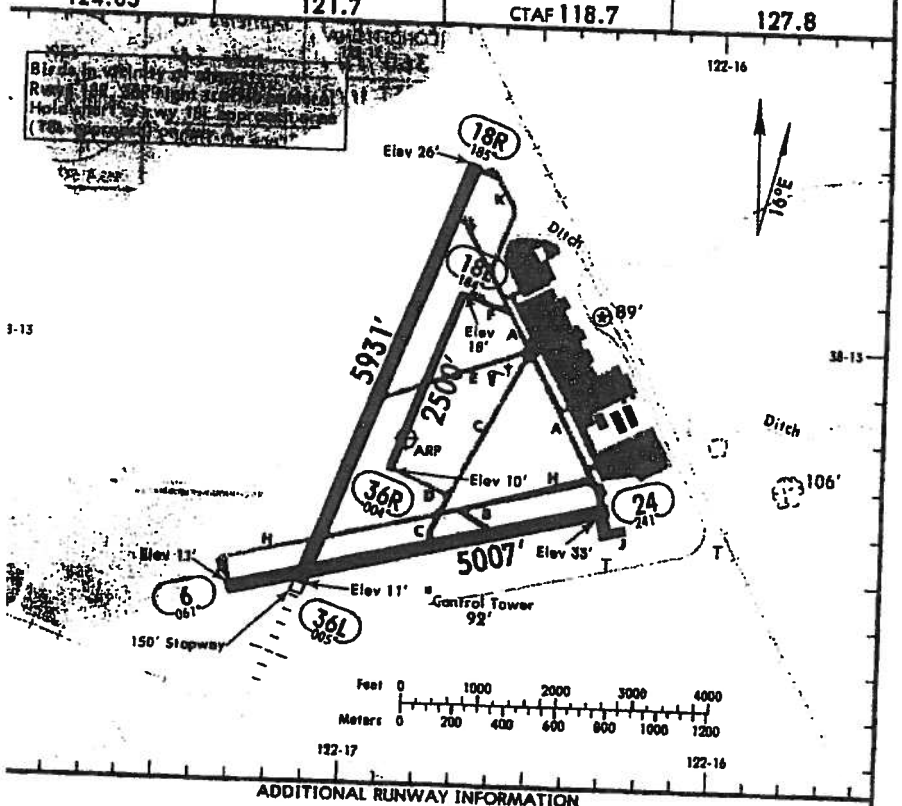
AMEND 11

Elev 33'
1.1°/4.8 From SGD

JEPPESEN
8 NOV 02 (11-1)

NAPA, CALIF
NAPA CO
N38 12.8 W122 16.8

ATIS	*NAPA Ground	*Tower	OAKLAND Center (R)
124.05	121.7	CTAF 118.7	127.8



ADDITIONAL RUNWAY INFORMATION

Y		USABLE LENGTHS: LANDING BEYOND Threshold	LANDING BEYOND Glide Slope	LAHSO Distance	TAKE-OFF	WIDTH
24	①MIRL ①REIL					
	①MIRL ①PAPI-L (angle 3.25°)			18R/36L 3700'		150'
6L	①MIRL ①MALS			6/24 5450'		150'
6R						75'

tivate on 118.7 when Twr inop.
ximum GWT 12,500 lbs.

TAKE-OFF & OBSTACLE DEPARTURE PROCEDURE

Rwys 18L/R, 24		Rwys 36L/R			Rwy 6			FOR FILING AS ALTERNATE: Authorized Only When Twr Operating	
Adequate Vis Ref	STD	With Min climb of 370'/NM to 1200' Adequate Vis Ref	STD	Other	With Min climb of 290'/NM to 1500' Adequate Vis Ref	STD	Other		
1¼	1	1¼	1	1000-2	1¼	1	1200-2	A, B	800-2
	1½		1½			1½		C, D	1200-3

CLE DP: Rwys 6, 18L/R turn right; Rwys 24, turn left, all aircraft climb direct SGD VOR. departing SGD VOR R-060 clockwise R-270 on course. All others continue climb via the SGD VOR R-165 to 2000', then climbing right turn direct SGD VOR, climb on course.

AMDT

FLUC 3-4-03 #1 Submitted by Yur I Karpa

JEPPESEN DEC 12-86 (10-3) EFF DEC 18

OAKLAND Center (R) 127.8

NAPA, CA
NAPA

LIZRD TWO DEPARTURE (LIZRD2.LIZRD)
THIS SID IS NOT USABLE FOR RUNWAY 6 DEPARTURES

TAKE-OFF
Rwys 18L/R: Maintain runway heading to intercept and proceed outbound via the Scaggs R-127 to Lizrd Int. Cross Lizrd Int at or above 3000'. Thence via (transition) or (assigned route).
Rwys 24 & 36L/R: LEFT turn within 1 nm, climb on a 180° heading to intercept and proceed outbound via the Scaggs I R-127 to Lizrd Int. Cross Lizrd Int at or above 3000'. Thence via (transition) or (assigned route).

TRANSITIONS
Croit (LIZRD2.CROIT): From Lizrd Int to Croit Int (3 nm): Via Point Reyes R-075.
Oakland (LIZRD2.OAK): From Lizrd Int to Oakland VORTAC (21 nm): Via Scaggs I R-12 and Oakland R-347.
Santa Rosa (LIZRD2.STS): From Lizrd Int t Santa Rosa VOR (43 nm): Via Point Reyes R-075 and Santa Rosa R-142.

Direct distance from Napa Co to: Lizrd Int 9 nm