This section discusses and analyzes the environmental noise characteristics of the County. This analysis addresses Countywide and regional noise impacts and identifies mitigation measures to lessen those impacts based on technical analysis conducted by Illingworth & Rodkin, Inc.

4.7.1 SETTING

BACKGROUND AND TERMINOLOGY

Noise is often described as unwanted sound. Sound is defined as any pressure variation in air that the human ear can detect. If the pressure variations occur frequently enough (at least 20 times per second) they can be heard and are called sound. The number of pressure variations per second is called the frequency of sound, and is expressed as cycles per second, called Hertz (Hz).

Measuring sound directly in terms of pressure would require a very large and awkward range of numbers. To avoid this, the decibel scale was devised. The decibel scale uses the hearing threshold (20 micropascals of pressure), as a point of reference, defined as 0 dB. Other sound pressures are then compared to the reference pressure, and the logarithm is taken to keep the numbers in a practical range. The decibel scale allows a million-fold increase in pressure to be expressed as 120 dB. Another useful aspect of the decibel scale is that changes in levels (dB) correspond closely to human perception of relative loudness. **Table 4.7-1** shows examples of noise levels for several common noise sources and environments.

TABLE 4.7-1
TYPICAL A-WEIGHTED SOUND LEVELS OF COMMON NOISE SOURCES

Decibels	Description
130	Threshold of pain
120	Jet aircraft take-off at 100 feet
110	Riveting machine at operators position
100	Shotgun at 200 feet
90	Bulldozer at 50 feet
80	Diesel locomotive at 300 feet
70	Commercial jet aircraft interior during flight
60	Normal conversation speech at 5 - 10 feet
50	Open office background level
40	Background level within a residence
30	Soft whisper at 2 feet
20	Interior of recording studio

Source: Illingworth & Rodkin, 2006.

Effects of Noise on People

The perceived loudness of sounds is dependent upon many factors, including sound pressure level, time of day, and frequency content. However, within the usual range of environmental noise levels, perception of loudness is relatively predictable, and can be approximated by

weighing the frequency response of a sound level meter by means of the standardized A-weighing network. There is a strong correlation between A-weighted sound levels (expressed as dBA) and community response to noise. For this reason, the A-weighted sound level has become the standard tool of environmental noise assessment. All noise levels reported in this section are in terms of A-weighted levels in decibels.

Community noise is commonly described in terms of the "ambient" noise level, which is defined as the all-encompassing noise level associated with a given noise environment. A common statistical tool to measure the ambient noise level is the average, or equivalent, sound level (Leq) over a given time period (usually one hour). The Leq is the foundation of the Day-Night Average Level noise descriptor, Ldn, and shows very good correlation with community response to noise.

The Day-Night Average Level (Ldn) is based upon the average noise level over a 24-hour day, with a +10 decibel weighing applied to noise occurring during nighttime (10:00 p.m. to 7:00 a.m.) hours. The nighttime penalty is based upon the assumption that people react to nighttime noise exposures as though they were twice as loud as daytime exposures.

Noise in the community has been cited as being a health problem, not in terms of actual physiological damages such as hearing impairment, but in terms of inhibiting general well-being and contributing to undue stress and annoyance. The health effects of noise in the community arise from interference with human activities such as sleep, speech, recreation and tasks demanding concentration or coordination. When community noise interferes with human activities or contributes to stress, public annoyance with the noise source increases, and the acceptability of the environment for people decreases. This decrease in acceptability and the threat to public well-being are the bases for policies preventing exposures to excessive community noise levels.

To control noise from fixed sources, many jurisdictions have adopted community noise control ordinances. Such ordinances are intended to abate noise nuisances and to control noise from existing sources. They may also be used as performance standards to judge the creation of a potential nuisance, or potential encroachment of sensitive uses upon noise-producing facilities. Community noise control ordinances are generally designed to resolve noise problems on a short-term basis (usually by means of hourly noise level criteria), rather than on the basis of 24-hour or annual cumulative noise exposures.

In addition to the A-weighted noise level, other factors should be considered in establishing criteria for noise sensitive land uses. For example, sounds with noticeable tonal content such as whistles, horns, droning or high-pitched sounds may be more annoying than the A-weighted sound level alone suggests. Many noise standards apply a penalty, or correction, or 5 dBA to such sounds. The effects of unusual tonal content are generally more of a concern at nighttime, when residents may notice the sound in contrast to low levels of background noise.

Because many rural residential areas experience very low noise levels, residents may express concern about the loss of "peace and quiet" due to the introduction of a sound, which was not audible previously (In very quiet environments, the introduction of virtually any change in local activities will cause an increase in noise levels.). A change in noise level and the loss of "peace and quiet" is the inevitable result of land use or activity changes in such areas. Audibility of a new noise source and/or increases in noise levels within recognized acceptable limits are not usually considered to be significant noise impacts, but these concerns should be addressed and considered in the planning and environmental review processes.

TRANSPORTATION NOISE SOURCES

Roadway Traffic Noise Levels

State Route 12 (SR 12), SR 29, SR 121, SR 128, and Silverado Trail are major sources of traffic noise in the County. Some County roads, primarily those that serve as collectors and arterials, are also significant sources of traffic noise. Existing traffic noise levels for major county roads and freeways that currently have traffic volumes in excess of 3,000 vehicles per day are listed in **Table 4.7-2**.

Future (2030) Ldn noise levels were calculated based on a comparison of traffic volume data provided by Dowling Associates, Inc. and existing traffic noise contours provided in the BDR (Jones and Stokes/EDAW, 2005). Peak hour traffic volumes were estimated to be 10% of the total Average Daily Traffic (ADT) traffic volumes along each roadway segment. Vehicle speeds, roadway geometries, and traffic mixes were assumed to be the same under existing and future conditions, except where noted in Section 4.4 (Transportation and Circulation). A comparison of calculated Ldn traffic noise levels under each alternative is shown in **Table 4.7-12.**

Railroads

The California Northern Railroad (CFNR) operates 216.3 miles of ex-Southern Pacific track and part of the ex-Northwestern Pacific trackage. CFNR is headquartered at the Lombard Yard in American Canyon and operates trains in Napa and Vallejo and east to Davis, California. This headquarters in American Canyon is also known as the Napa Junction. CFNR issues train-orders from Napa Junction and currently moves 50,000 cars per year. All of the trains operated by CFNR are local. In the City of Napa, the CFNR connects to the Napa Valley Railroad.

One of the primary products carried by the CFNR is pumice. The pumice is shipped from the Owens Corning stone veneer manufacturing facility located on Tower Road in American Canyon. The shipment of pumice has increased significantly over the past several years. The Napa Pipe Corporation used to be a primary customer of CFNR. However, the Napa Pipe Corporation closed, eliminating 2,500 to 8,000 carloads per year of steel pipe. The increase in pumice carloads has helped to offset the steel pipe traffic loss.

The Napa Valley Wine Train is a diesel locomotive operating on the old Southern Pacific Railroad line. The 36-mile rail line runs from the City of Napa to the City of St. Helena daily for lunch and dinner trips and between the City of Napa and the City of Rutherford for weekend lunch trips. The daily lunch and dinner trips are 3-hour trips, while the weekend brunch trips are 2-hour trips.

A 1992 EIR prepared for the Napa Valley Wine Train indicates that noise from the train approximates 85 to 90 dBA as the locomotive approaches a receiver and then drops to 80 to 85 dBA as the passenger coaches pass by. The total pass-by event typically occurs for approximately 1.5 minutes, and modeling conducted for that study indicates noise levels increase to approximately 59 dBA, Ldn in the residential areas of the City of Napa. Noise exposure from the Napa Valley Wine Train is primarily limited to the first row of homes or buildings along the railroad right-of-way because these houses shield the houses further away from the tracks from train noise.

In addition to pass-by noise from train operations, the train also generates noise during idling and when it uses its public warning/safety devices (i.e., train horn) at roadway crossings. Data from the 1992 EIR prepared for the Napa Valley Wine Train indicates that an idling Napa Valley Wine Train locomotive generates a noise level of approximately 78 dBA at 50 feet, while a locomotive

horn is approximately 100 dBA at 100 feet. It is anticipated that a train approaching a roadway crossing would sound its horn four to six times within approximately 500 feet of each crossing.

Estimates of future railroad operations are unavailable and future noise contours were not prepared. Existing noise data are the best available data to describe the existing and future noise environments along the rail corridors.

Aircraft

Aircraft operations in the vicinity of airports can be a significant source of noise. There are several airports in the County, but the two main airports in operation in the County are the Napa County Airport in Napa and Angwin-Virgil O Parrett Field in Angwin. There are also a number of local landing strips located in the proximity of the County. The following airports and airstrips are located in the County.

Public Airports

- Napa County Airport, Airport Industrial Park, Napa.
- Angwin-Virgil O Parrett Field, Angwin.

Private Airstrips

- Calistoga Gliderport, 1546 Lincoln Ave, Calistoga. (Closed)
- Inglenook Ranch Airport, Rutherford.
- Moskowite Airport, Capell Valley.
- Mysterious Valley Airport, Walter Springs.
- Pope Valley Airport, St. Helena.
- River Meadow Farm Heliport, Rutherford.
- Lake Berryessa Seaplane Base, Chiles Valley.

The existing (2002) 55-, 60-, and 65-dBA CNEL contours for the Napa County Airport are depicted in **Figure 4.7-1**. The contours indicated in the figures are based on the aircraft activity forecast from the airport's ongoing update of the Napa County Airport Master Plan. The latest year for which noise contours are available for Angwin-Virgil O Parrett Field is 1996; those contours are presented in **Figure 4.7-2**. The general trend at Napa County Airport has been one of slow continuing growth, although there have been periods when there has been decline, most recently from 1994 to 2002. From 2001 to 2003, the number of based aircraft rebounded, showing a slight increase (Napa County 2003). Overall, air traffic has been relatively constant, in terms of traffic patterns and volumes since 1996, so these noise contours are representative of existing conditions.

Activity at small private landing strips is highly variable. In cases where the strip is used primarily for crop-dusting (sulfur application), which occurred on approximately 4,500 acres of vineyards throughout the County in 2005, the use will vary with the farming season. Because use of these strips is highly variable, it is not practical to develop CNEL contours. However, data are available on typical sound levels generated by small aircraft as a function of distance. These data are summarized in **Table 4.7-3**.

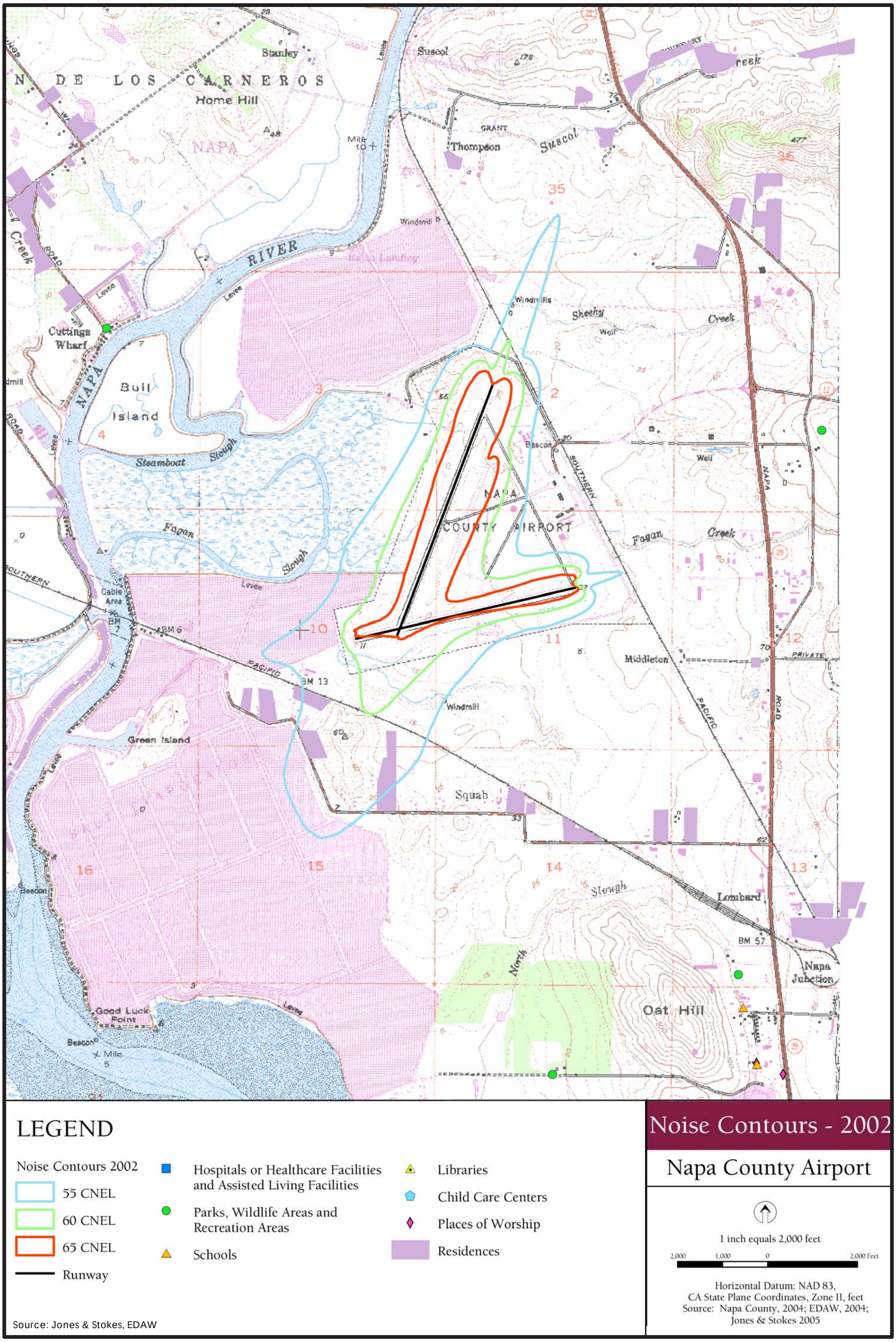

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FIGURE 4.7-1
NAPA COUNTY AIRPORT NOISE CONTOURS 2002

PMC

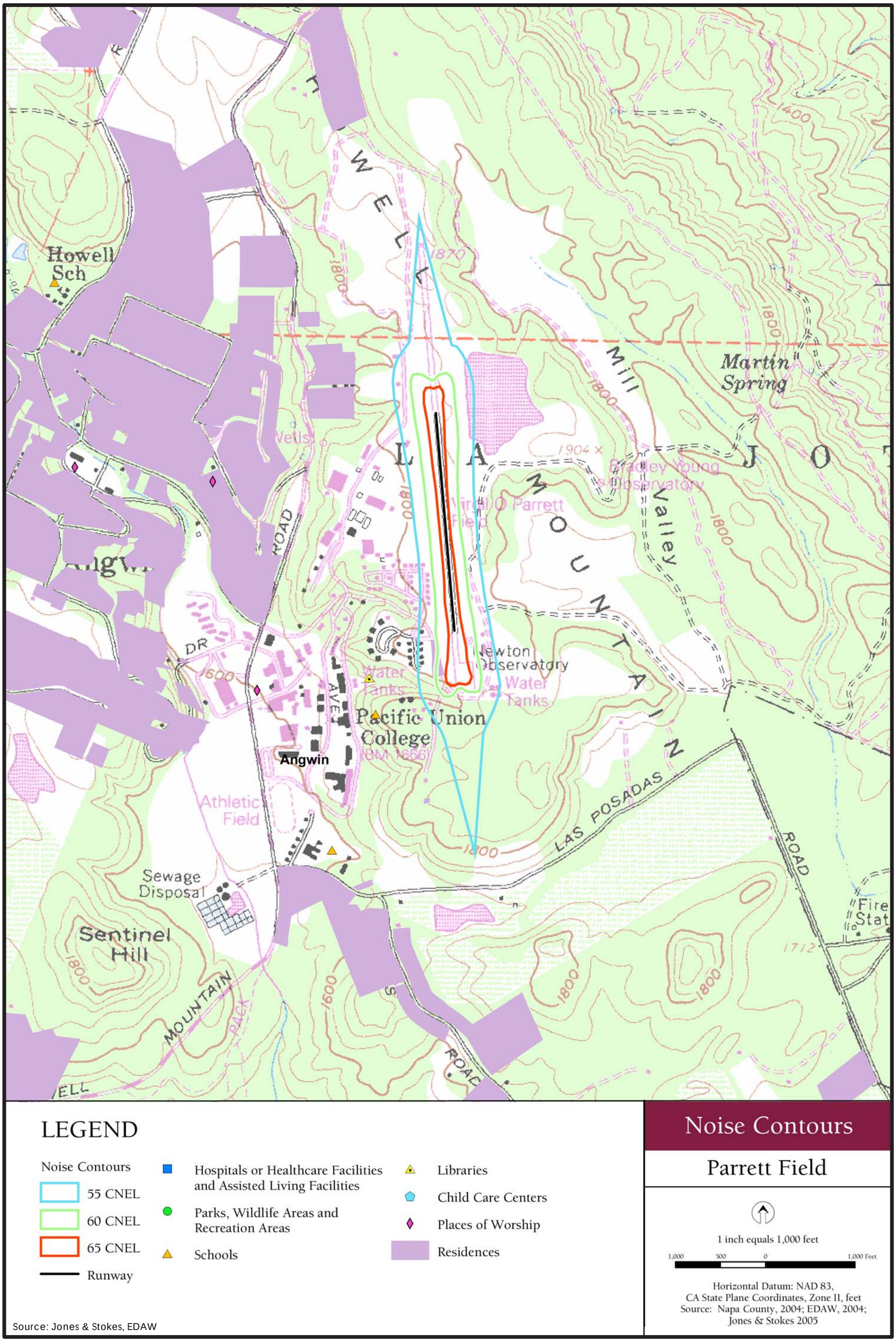

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FIGURE 4.7-2
NOISE CONTOURS FOR ANGWIN-VIRGIL O PARRETT FIELD

PMC

TABLE 4.7-2
COUNTY ROADS AND HIGHWAYS NOISE MODELING EXISTING CONDITIONS

Roadway	Segment Limit North/East	Segment Limit South/West	Number of Lanes	Existing Daily Traffic Volume	Speed (mph)	Ldn at 100 Feet	Distance to 70 Ldn contour (feet)	Distance to 65 Ldn contour (feet)	Distance to 60 Ldn contour (feet)
State Highway 29	American Canyon Rd	Napa/Solano Co Line	4	35,695	55	72	140	300	650
State Highway 29	Green Island Rd	American Canyon Rd	4	47,664	55	73	170	370	790
State Highway 29	South Kelly Rd	Green Island Rd	4	44,391	50	72	140	310	660
State Highway 29	Jamieson Cyn Rd (SR 12)	South Kelly Rd	4	44,566	60	74	190	410	890
State Highway 29	Kelly Rd	Jamieson Cyn Rd (SR 12)	4	65,211	60	76	250	530	1150
State Highway 29	Napa-Vallejo Hwy (SR 221)	Kelly Rd	5	27,288	60	72	140	300	640
State Highway 29	Napa-Vallejo Hwy (SR 221)	Cameros Hwy (SR 121/12)	4	43,159	60	74	200	420	900
State Highway 29	Imole Ave (SR 121)	Cameros Hwy (SR 121/12)	4	34,199	60	73	150	330	710
State Highway 29	Old Sonoma Rd	Imola Ave	4	52,855	60	74	200	420	910
State Highway 29	Lincoln Ave	Old Sonoma Rd	4	52,380	60	74	190	400	860
State Highway 29	Trancas St	Lincoln Ave	4	45,105	60	73	170	360	780
State Highway 29	Salvador Ave	Trances St	4	37,676	55	72	130	280	610
State Highway 29	Oak Knoll Ave	Salvador Ave	4	28,677	60	71	120	270	580
State Highway 29	California Dr	Oak Knoll Ave	4	29,321	65	72	140	310	660
State Highway 29	Madison St	California Dr	4/2	29,321	50	70	100	210	450
State Highway 29	Oakville Grade	Madison St	2	23,417	55	70	100	210	440
State Highway 29	Rutherford Cross Rd (SR 128)	Oakville Grade	2	22,892	55	70	100	220	480
State Highway 29	Zinfandel Ln	Rutherford Cross Rd	2	20,944	50	70	100	210	450

Roadway	Segment Limit North/East	Segment Limit South/West	Number of Lanes	Existing Daily Traffic Volume	Speed (mph)	Ldn at 100 Feet	Distance to 70 Ldn contour (feet)	Distance to 65 Ldn contour (feet)	Distance to 60 Ldn contour (feet)
State Highway 29	Chaix Ln	Zinfandel Ln	2	23,154	50	70	100	220	480
State Highway 29	Pope St	Chaix Ln	2	20,070	35	67	60	140	290
State Highway 29	Madrona St	Pope St	2	18,099	20	65	[2]	100	200
State Highway 29	Deer Park Rd	Madrona St	2	17,700	45	68	70	160	330
State Highway 29	Lodi Lane	Deer Park Rd	2	15,257	50	68	70	160	340
State Highway 29	Dunaweal Ln	Lodi Ln	2	14,865	50	68	70	160	340
State Highway 29	Lincoln Ave (SR 29)	Dunaweal Ln	2	11,456	50	67	60	130	280
State Highway 29	Silverado Trail	Foothill Blvd (SR 128)	2	9,914	20	59	[2]	[2]	90
State Highway 29	Tubbs Ln	Silverado Trail	2	4,358	45	61	[2]	60	120
State Highway 29	Napa/Lake Co Line	Tubbs Ln	2	7,458	30	62	[2]	60	130
Napa Vallejo Hwy	Kaiser Rd	Highway 29(SR 29/12)	4	30,857	60	72	140	310	660
Napa Vallejo Hwy	Silverado Trail	Streblow Dr	4	37,438	30	69	80	180	390
State Highway 121	Coombsville Rd	Soscol Ave	2	13,146	40	65	[2]	100	210
State Highway 121	Lincoln Ave	Coombsville Rd	2	14,812	35	64	[2]	90	190
State Highway 121	Hagen Rd	Lincoln Ave	2	18,030	40	66	60	120	260
State Highway 121	Monticello Rd	Hagen Rd	2	13,757	40	65	[2]	100	220
State Highway 121	Vichy Ave	Trancas St	2	13,166	45	66	60	120	260
State Highway 121	Wooden Valley Rd	Vichy Ave	2	4,107	30	58	[2]	[2]	70
Silverado Trl	Hardman Ave	Trances St	2	9,723	60	67	70	140	310
Silverado Trl	Oak Knoll Ave	Hardman Ave	2	11,365	60	68	70	160	340
Silverado Trl	Yountville Cross Rd	Oak Knoll Ave	2	12,743	60	68	80	170	370
Silverado Trl	Sage Canyon Rd (SR 128)	Yountville Cross Rd	2	13,524	60	69	80	180	380

Roadway	Segment Limit North/East	Segment Limit South/West	Number of Lanes	Existing Daily Traffic Volume	Speed (mph)	Ldn at 100 Feet	Distance to 70 Ldn contour (feet)	Distance to 65 Ldn contour (feet)	Distance to 60 Ldn contour (feet)
Silverado Trl	Zinfandel Ln	Sage Canyon Rd (SR 128)	2	11,049	60	68	70	160	340
Silverado Trl	Pope St	Zinfandel Ln	2	9,282	60	67	60	140	300
Silverado Trl	Deer Park Rd	Pope St	2	8,640	60	67	60	130	280
Silverado Trl	Bale Ln	Deer Park Rd	2	5,591	50	63	[2]	80	170
Silverado Trl	Calistoga City Limits	Bale Ln	2	4,735	50	63	[2]	70	150
Silverado Trl	Calistoga City Limits	Lincoln Ave (SR 29)	2	5,149	55	64	[2]	80	180
State Highway 128	Napa/Sonoma Co Line	Tubbs Ln	2	3,402	30	59	[2]	[2]	90
State Highway 128	Tubbs Ln	Petrified Forest Rd	2	11,727	40	66	50	110	240
State Highway 128	Petrified Forest Rd	Lincoln Ave (SR 29)	2	12,928	35	65	[2]	100	220
State Highway 128	Napa River	St Helena Hwy (SR 29)	2	3,262	35	58	[2]	[2]	80
State Highway 12	Old Sonoma Rd	Napa/Sonoma Co Line	2	30,793	50	71	120	270	580
State Highway 12	Highway 29 (SR 29/12)	Old Sonoma Rd	4	31,517	55	72	140	310	660
State Highway 12	Kelly Rd	Napa-Vallejo Hwy (SR 29)	4	29,022	40	70	90	200	430
State Highway 12	Lynch Rd	Kelly Rd	4	28,597	55	72	130	290	620
State Highway 12	Napa/Solana Co Line	Lynch Rd	2	31,861	55	72	140	310	660
Flosden Rd	American Canyon Rd	Napa/Solano Co Line	2	15,855	45	67	60	140	290
Interstate 80	American Canyon Rd	Napa/Solano Co Line	4	128,000	65[1]	79	400	860	1850
American Canyon Rd	Napa-Vallejo Hwy (SR 29)	Wetlands Edge Dr	4	7,150	35[1]	61	[2]	50	110
American Canyon Rd	Flosden Rd	Napa-Vallejo Hwy (SR 29)	2	29,956	35	68	70	160	330
American Canyon Rd	1-80	Flosden Rd	2	22,381	55	70	100	220	480

Roadway	Segment Limit North/East	Segment Limit South/West	Number of Lanes	Existing Daily Traffic Volume	Speed (mph)	Ldn at 100 Feet	Distance to 70 Ldn contour (feet)	Distance to 65 Ldn contour (feet)	Distance to 60 Ldn contour (feet)
Eucalyptus Dr	Napa-Vallejo Hwy (SR 29)	Wetlands Edge Dr	2	7,137	25	57	[2]	[2]	70
Washington St	Madison St	California Dr	2	5,208	25	56	[2]	[2]	50
Green Island Rd	Napa-Vallejo Hwy (SR 29)	American Canyon City Limits	2	6,527	35	59	[2]	[2]	90
S Kelly Rd	Jamieson Canyon Rd (SR12)	Highway 29	2	3,430	50	60	[2]	[2]	100
N Kelly Rd	Napa-Vallejo Hwy (SR 29)	Jamieson Canyon Rd (SR12)	2	11,870	60	68	70	150	320
Airport Blvd	Napa-Vallejo Hwy (SR 29)	End	4	5,574	35[1]	59	[2]	[2]	80
Vista Point Dr	Napa-Vallejo Hwy (SR 221)	Napa-Vallejo Hwy (SR 29)	2	3,541	45	59	[2]	[2]	90
Cuttings Wharf Rd	Carneros Hwy (SR 121/12)	End	2	3,002	55	61	[2]	50	110
Old Sonoma Rd	Buhman Ave	Cameros Hwy (SR 121/12)	2	3,981	55	63	[2]	70	150
Old Sonoma Rd	Congress Valley Rd	Buhman Ave	2	3,163	50	61	[2]	50	110
Old Sonoma Rd	Napa City Limits	Congress Valley Rd	2	7,494	55	65	[2]	110	230
Old Sonoma Rd	Freeway Dr	Napa City Limits	2	8,990	35	63	[2]	70	150
Buhman Ave	Browns Valley Rd	Napa City Limits	2	7,780	30	59	[2]	[2]	90
State Highway 121	Napa-Vallejo Hwy (SR 221)	Highway 29	4	26,007	35[1]	67	70	140	300
Imola Ave	Napa City Limits	Soscol Ave (SR121)	2	4,947	35[1]	60	[2]	[2]	100
Soscol Ave	First St	Silverado Trail	4	31,900	35[1]	68	80	160	350
Soscol Ave	Lincoln Ave	First St	4	21,571	35[1]	66	60	120	270
Soscol Ave	Trances St	Lincoln Ave	4	23,321	35[1]	67	60	130	280

Roadway	Segment Limit North/East	Segment Limit South/West	Number of Lanes	Existing Daily Traffic Volume	Speed (mph)	Ldn at 100 Feet	Distance to 70 Ldn contour (feet)	Distance to 65 Ldn contour (feet)	Distance to 60 Ldn contour (feet)
Patrick Rd	Napa City Limit	Highway 29	2	24,635	35[1]	65	[2]	100	220
1st St	Silverado Trail (SR 121)	Highway 29	2	6,243	25[1]	57	[2]	[2]	60
2nd St	Silverado Trail (SR 121)	Highway 29	2	11,457	25[1]	59	[2]	[2]	90
Coombsville Rd	First St	Silverado Trail (SR 121)	2	9,244	40[1]	64	[2]	80	180
Coombsville Rd	Fourth Ave	First St	2	4,327	40	60	[2]	50	110
Lincoln Ave	Silverado Trail (SR 121)	Highway 29	4	23,363	35[1]	67	60	130	280
Redwood Rd	Browns Valley Rd	Dry Creek Rd	2	8,118	35	62	[2]	70	140
Redwood Rd	Highway 29	Dry Creek Rd	4	9,273	35[r]	63	[2]	70	150
Trancas St	Soscol Ave	Highway 29	4	25,826	45[1]	69	90	190	400
Trancas St	Monticello Rd (SR 121)	Soscol Ave	4	14,649	45	67	60	130	280
Hagen Rd	Vichy Ave	Napa City Limits	2	4,471	45	60	[2]	[2]	100
Dry Creek Rd	Napa City Limit	Redwood Rd	2	9,688	40	62	[2]	90	140
Salvador Ave	Napa City Limit	Highway 29	2	3,479	35	59	[2]	[2]	80
Salvador Ave	Big Ranch Rd	Napa City Limit	2	4,178	40	59	[2]	[2]	80
Big Ranch Rd	Salvador Ave	Trancas St	2	9,323	55	66	60	120	270
Big Ranch Rd	Oak Knoll Ave	Salvador Ave	2	4,791	60	64	[2]	90	190
Vichy Ave	Monticello Rd (SR 121)	Hagen Rd	2	3,136	40	57	[2]	[2]	70
Atlas Peak Rd	Old Soda Springs Rd	Monticello Rd (SR 121)	2	6,214	45	62	[2]	60	130
Oak Knoll Ave	Big Ranch Rd	Highway 29	2	3,869	50	61	[2]	50	110
Oak Knoll Ave	Silverado Trail	Big Ranch Rd	2	3,082	50	60	[2]	[2]	100
Yountville Cross Rd	Silverado Trail	Yountville Town Limits	2	3,875	50	61	[2]	50	110
Zinfandel Ln	Silverado Trail	St Helena Hwy (SR 29&128)	2	3,071	55	62	[2]	60	130
Pope St	Silverado Trail	Main St (SR 29/128)	2	5,210	30	60	[2]	[2]	100

Roadway	Segment Limit North/East	Segment Limit South/West	Number of Lanes	Existing Daily Traffic Volume	Speed (mph)	Ldn at 100 Feet	Distance to 70 Ldn contour (feet)	Distance to 65 Ldn contour (feet)	Distance to 60 Ldn contour (feet)
Howell Mountain Rd	Cold Springs Rd	Deer Park Rd	2	5,515	45	61	[2]	60	120
Spring Mountain Rd	Main St (SR 29/128)	St Helena City Limit	2	5,250	25	56	[2]	[2]	60
Deer Park Rd	Silverado Trail	St Helena Hwy (SR 29/128)	2	4,956	60	64	[2]	80	180
Deer Park Rd	Sanitarium Rd (North)	Silverado Trail	2	7,551	45	62	[2]	70	150
Deer Park Rd	Howell Mountain Rd	Sanitarium Rd (North)	2	11,025	45	64	[2]	90	190
Sanitarium Rd	Deer Park Rd	Deer Park Rd	2	5,379	35	58	[2]	[2]	80
Petrified Forest Rd	Franz Valley Rd	Napa/Sonoma Co Line	2	7,995	45	63	[2]	70	150
Petrified Forest Rd	Foothill Blvd (SR 128)	Franz Valley School Rd	2	10,890	35	62	[2]	60	130
Tubbs Ln	Highway 29	Highway 128	2	5,638	55	64	[2]	90	190
Solano Ave	Napa City Limits	Redwood Rd	2	4,895	50	62	[2]	60	130

Notes:
Vehicle mix for all roadways are assumed to be 90% automobiles, 5% medium trucks, and 5% heavy trucks.2
[1] *Roadway speeds unavailable; assumed speed.*
[2] *Contour distance is within 50 feet of the roadway centerline.*
Source: Napa County, BDR 2005.

TABLE 4.7-3
TYPICAL SOUND LEVELS GENERATED BY SMALL AIRCRAFT (dBA)

Slant Distance (feet)	Single Engine Takeoff	Single Engine Landing	Twin Engine Takeoff	Twin Engine Landing
500	74	66	80	72
1,000	71	63	77	69
2,000	67	59	73	65
4,000	63	55	69	61
8,000	58	50	64	56

Source: Napa County, BDR 2005.

NON-TRANSPORTATION NOISE SOURCES

Descriptions of the following uses are intended to be representative of the relative noise generation of such uses. The following examples are not intended to be a comprehensive list of noise sources within the County or a determination of whether there are current exceedances of County noise standards.

Farming

Primary sources of noise related to farming activity in Napa County are tractors, harvesters, pesticide/herbicide application equipment, crushers, and frost protection equipment (wind turbines). Typical noise levels from tractors, as measured at a distance of 50 feet, range from approximately 75 dBA to 95 dBA, with an average of approximately 84 dBA (Napa County, BDR 2005). These noise levels should be reasonably representative of noise levels from other wheeled and tracked farm equipment. Using a source level of 84 dBA at 50 feet and assuming normal geometric and ground attenuation, the distance to the 75-, 70-, 65-, 60-, 55-, and 50-dBA contours are indicated in **Table 4.7-4.**

TABLE 4.7-4
ESTIMATED DISTANCE TO dBA CONTOURS FROM FARMING ACTIVITIES

Calculated noise level	Distance from noise source
84 dBA	50 feet
75 dBA	115 feet
70 dBA	175 feet
65 dBA	275 feet
60 dBA	400 feet
55 dBA	650 feet
50 dBA	1,000 feet

Source: Napa County, BDR 2005.

Wineries

Wineries are the predominant non-residential land uses within the County. Noise from winery operations is generally intermittent, meaning that sound levels vary over the course of the year, depending on activities at the winery. Sound levels can also vary greatly depending on the location of the noise source, type of enclosure or screening, and distance to the nearest receptor. The primary noise-generating activities and equipment associated with wineries include refrigeration equipment, bottling equipment, barrel washing, destemmer and press activities occurring during the harvest crush season, and delivery trucks and other vehicles. Sound level measurements for winery activities were conducted for the proposed Tom Eddy Winery in 2001 as part of a permit review and application process (Napa County, BDR 2005) (see **Table 4.7-5**).

TABLE 4.7-5
REPRESENTATIVE SOUND LEVELS FOR WINERY ACTIVITIES

Date	Time	Sound Sources and Measurement Locations	Sound Level Descriptors (dBA)					
			Leq	L_{50}	L_{25}	$L_{8.33}$	$L_{1.67}$	L_0
8/29/01	10:00 a.m.	Ambient	51	37	49	56	61	65
9/27/01	2:39 p.m.	Ambient	41	37	40	45	49	56
-	-	Three flat-bed diesel trucks over 1-hour, 105 feet to path	-	-	-	-	65	76
9/14/01	10:00 a.m.	Press activities at 60 feet to center of activity area	60	58	60	64	69	81
9/14/01	10:00 a.m.	De-stemmer at 70 feet	67	58	60	64	69	81
9/14/01	10:00 a.m.	Plastic bin washing at 60 feet	54	52	55	58	62	65
9/14/01	10:00 a.m.	Condenser/chiller at 11 feet to one side	70	70	70	71	72	72
-	-	Inside refrigeration equipment room	85	85	85	86	87	87
9/7/01	1:00 p.m.	Mobile bottling line, left side of truck, 30 feet to center	82	82	73	75	77	78
9/7/01	1:00 p.m.	Mobile bottling line, right side of truck, 30 feet to center	73	73	74	75	76	76

Source: Napa County, BDR 2005.
Note: The data presented in the Table includes several wineries, not one specific place.

Quarries

Noise associated with quarries is intermittent and variable depending on the activities that are occurring, and sources of the noise such as forklifts and other equipment activity, delivery trucks, and other facility operations. The following quarries are located within the County. Only one of the quarries—Syar Quarry—is currently a significant mining operation (California Office of Mine Reclamation 2005):

- Syar Quarry—Syar Industries, Inc., Napa 2301 Napa/Vallejo Highway, Napa.
- Homestake Mining Company—26775 Morgan Valley Road, Lower Lake, 95457 (in reclamation, no longer active).
- American Canyon Quarry—Syar Industries, Inc., 2301 Napa/Vallejo Highway, Napa (idle, not active).
- Pope Creek Quarry—Don Wesner, Inc., 7193 Pope Valley Road, Pope Valley.
- Oat Hill Quarry—Napa Vallejo Waste Management Authority, City of American Canyon (not active).

With the exception of Syar Quarry, which is adjacent to Skyline Park and the Napa State Hospital, these facilities are located in areas distant from noise-sensitive land uses and noise from facility operations is typically not audible in areas where noise-sensitive land uses are located.

Construction

Table 4.7-6 illustrates noise levels produced by various types of construction equipment. The types of construction equipment used for a typical construction project usually generate noise levels of 80–90 dBA at a distance of 50 feet while the equipment is operating (Napa County, BDR 2005). Specific noise levels depend on the type of activity, the type and number of pieces of equipment in use; the noise level generated by the various pieces of equipment; the duration of the activity; the distance between the activity and any noise-sensitive receivers; and possible shielding effects that might result from local topography, vegetation, or buildings.

Construction equipment operations can vary from intermittent to fairly continuous, and multiple pieces of equipment often operate concurrently. As an example, assuming that a bulldozer (85 dBA), backhoe (80 dBA), grader (85 dBA), and loader (85 dBA) are operating concurrently in the same area, peak construction-period noise could be as high as approximately 90 dBA at 50 feet from a construction site.

TABLE 4.7-6
CONSTRUCTION EQUIPMENT NOISE EMISSION LEVELS

Equipment	Typical Noise Level (dBA) 50 feet from Source	Equipment	Typical Noise Level (dBA) 50 feet from Source
Air Compressor	81	Paver	89
Backhoe	80	Pile Driver (Impact)	101
Ballast equalizer	82	Pile Driver (Sonic)	96
Ballast tamper	83	Pneumatic Tool	85
Bulldozer	85	Pump	76
Chainsaw	86	Rail saw	90
Compactor	82	Rock Drill	98
Concrete Mixer	85	Roller/Sheep's Foot	74
Concrete Pump	82	Saw	76
Concrete Vibrator	76	Scarifier	83
Crane, Derrick	88	Scraper	89
Crane, Mobile	83	Shovel	82
Excavator/Shovel	82	Spike driver	77
Generator	81	Tie cutter	84
Grader	85	Tie handler	80
Impact wrench	85	Tie inserter	85
Jack Hammer	88	Truck	88
Loader	85	Wood Chipper	89

Source: Napa County, BDR 2005.

Using a source level of 90 dBA at 50 feet and assuming normal geometric and ground attenuation, the distance to the 75-, 70-, 65-, 60-, 55-, and 50-dBA contours are indicated in **Table 4.7-7.**

TABLE 4.7-7
REDUCTIONS IN NOISE LEVELS IN RELATION TO DISTANCE FROM CONSTRUCTION ACTIVITIES

Calculated Noise Level	Distance From Construction Source
90 dBA	50 feet
75 dBA	180 feet
70 dBA	300 feet
65 dBA	450 feet
60 dBA	700 feet
55 dBA	1,100 feet
50 dBA	1,700 feet

Source: Napa County, BDR 2005.

4.7.2 REGULATORY FRAMEWORK

FEDERAL

In 1974, in response to the requirements of the Federal Noise Control Act of 1972 (Public Law 92-574), the EPA identified indoor and outdoor noise limits to protect public health and welfare. Ldn limits of 55 db outdoors and 45 db indoors are identified as desirable to protect against speech interference and sleep disturbance for residential, educational, and healthcare areas. Sound-level criteria identified to protect against hearing damage in commercial and industrial areas are 24-hour Leq values of 70 dB (both indoors and outdoors).

STATE

California Building Code

Environmental noise intrusion into new multi-family housing is regulated by Appendix Chapter 12, Section 1208, Sound Transmission Control in the 2001 California Building Code. Interior noise levels attributable to exterior sources shall not exceed 45 dBA Ldn in any habitable room. Multi-family residential proposed in noise environments exceeding 60 dBA Ldn require an acoustical analysis showing that the proposed design will limit exterior noise to the prescribed allowable interior level.

Division of Aeronautics Noise Standards

Title 21 Chapter 5000 of the CCR identifies noise compatibility standards for airport operations. Section 5014 of the code states that the standard for the acceptable level of aircraft noise for persons living in the vicinity of airports is established to be a community noise equivalent level (CNEL) of 65 decibels. Land uses such as residences, schools, hospitals, or places of worship exposed to aircraft noise exceeding 65 dB CNEL are deemed to be in a noise impact area.

LOCAL

County of Napa Noise Ordinance

Napa County's Noise Ordinance, Chapter 8.16 from the County's Code, prohibits "any loud, unnecessary or unusual noise which disturbs the peace and quiet of any neighborhood or which causes any discomfort or annoyance to any reasonable person of normal sensitiveness residing in the area." To help establish what constitutes a violation of the County's Noise Ordinance, the County has established maximum exterior noise limits, summarized in **Table 4.7-8**.

To control noise from construction activities, the County has established noise limits for construction activities (see **Table 4.7-9**). The County's ordinance further prohibits the use of any tools or equipment used in construction, drilling, repair, alteration, or demolition work between the hours of 7:00 p.m. and 7:00 a.m. to prevent construction activity-related noise from creating a noise disturbance across a residential or commercial real property line.

TABLE 4.7-8
COUNTY NOISE ORDINANCE EXTERIOR NOISE LIMITS

Receiving Land Use Category[3]	Time Period	Noise Level (dBA) Noise Zone Classification[2]		
		Rural	Suburban	Urban
Residential single and double[4]	10 p.m. – 7 a.m.	45	45	50
	7 a.m. – 10 p.m.	50	55	60
Residential multiple and country[4]	10 p.m. – 7 a.m.	45	50	55
	7 a.m. – 10 p.m.	50	55	60
Commercial[4]	10 p.m. – 7 a.m.		60	
	7 a.m. – 10 p.m.		65	
Industrial, including wineries	Anytime		75	

Notes:
If the measurement location is on a boundary between two different zones, the sound level limit applicable to the quieter noise zone shall apply.
The standard limits set forth in this table shall be reduced by 5 dB, but not to lower than 45 dB, for any offensive noise that contains a steady, audible tone such as a whine, screech or hum, or that is a repetitive noise such as hammering or riveting, or that contains music or speech.

1 Applies to unincorporated areas of the County, as measured on any other property, either incorporated or unincorporated.

2 The following noise standards apply to the maximum allowable noise level:
- *For cumulative periods longer than 30 minutes in any hour, 0 dB shall be added to the standards above.*
- *For cumulative periods longer than 15 minutes in any hour, 5 dB shall be added to the standards above.*
- *For cumulative periods longer than 5 minutes in any hour, 10 dB shall be added to the standards above.*
- *For cumulative periods longer than 1 minute in any hour, 15 dB shall be added to the standards above.*
- *For any period of time, 20 dB shall be added to the standards above.*

3 These standards apply to all properties within a designated zone.

4 If the measured ambient noise level differs from that identified as permissible by this table, the allowable noise exposure standard shall be the ambient noise level.

Source: Napa County Department of Environmental Management; Napa County Code Section 8.16.070.

TABLE 4.7-9
NOISE LIMITS FOR CONSTRUCTION ACTIVITIES

Time Period	Noise Level (dBA)		
	Residential	Commercial	Industrial
Daily: 7 a.m. to 7 p.m.	75	80	85
Daily: 7 p.m. to 7 a.m.	60	65	70

Source: Napa County Code Section 8.16.070.

Napa County "Right to Farm" Policy

The County Code contains a Right to Farm (Chapter 2.94, County Code) provision, which states that the County has determined that the highest and best use for agricultural land is to develop or preserve lands for the purposes of agricultural operations (See Section 4.1 Agriculture for comprehensive text.) Based on this policy, residents that are affected by noise from agricultural sources are not allowed to compromise agricultural activities if reasonable measures have been put in place to minimize noise.

County General Plan

The County's currently adopted Noise Element (amended on August 1, 1990, and reformatted in December 1996) establishes policies and regulations concerning the generation and control of noise that could adversely affect its citizens and noise-sensitive land uses. The County has established guidelines to assist in determining compatibility with surrounding land uses. These land use compatibility guidelines are summarized in **Table 4.7-10**.

The County's current Noise Element further establishes noise level criteria for intermittent noise, under which "intermittent noise standards should receive special attention when projects are considered in 'Tentatively Compatible' or 'Normally Incompatible' areas as determined by the Ldn criteria, but, ideally, they would be considered in all cases". **Table 4.7-11** identifies interior noise standards in the current General Plan.

TABLE 4.7-10
NAPA COUNTY LAND USE COMPATIBILITY GUIDELINES (DBA, L_{DN})

Land use	Completely Compatible	Tentatively Compatible	Normally Incompatible	Completely Incompatible
Residential	<55	55–60	60–75	>75
Commercial	<65	65–75	75–80	>80
Industrial	<70	70–80	80–85	>85

Notes:
Completely compatible: *The noise exposure is such that both the indoor and outdoor environments are pleasant.*
Tentatively compatible: *The noise exposure is great enough to be of some concern, but common building construction practices will make the living indoor environment acceptable, even for sleeping quarters, and the outdoor environment will be reasonably pleasant for recreation and play.*
Normally incompatible: *The noise exposure is so severe that unusual and costly building construction is necessary to ensure some tranquility inside one's home, and barriers must be erected between the site and prominent noise sources to make the outdoor environment tolerable.*
Completely incompatible: *The noise exposure at the site is so severe that construction costs to make the indoor living environment acceptable would be prohibitive and the outdoor environment would still be intolerable.*
Source: Napa County General Plan, Noise Element, 1990 (reformatted 1996).

TABLE 4.7-11
NAPA COUNTY RECOMMENDED MAXIMUM INTERIOR NOISE LEVEL CRITERIA FOR INTERMITTENT NOISE

Generalized Land Use	Maximum Interior Intermittent Noise (dBA)
A. Residential	
1. Living Areas	
a. Daytime (7 a.m. to 7 p.m.)	60
b. Nighttime (7 p.m. to 7 a.m.)	55
2. Sleeping Areas	50
B. Residential	
1. Multi Family Apartments	Same as A
C. Educational Facilities, etc.	
1. Concert Hall	25
2. Legitimate Theater	30
3. School Auditorium	35
4. School Classroom	55
5. School Laboratory	60
6. Church Sanctuary	45
7. Library	55
D. Recreational Facilities	
1. Motion Picture Theater	45
2. Sports Arena	75
3. Bowling Alley	75
E. Commercial, misc.	
1. Hotel, Motel, Sleeping	50
2. Hospital Sleeping	50
3. Executive Offices, Conference Rooms	55
4. Staff Offices	60
5. Sales, Secretarial	65
6. Restaurants	65
7. Markets, Retail Stores	65
F. Light Industrial	
1. Office Areas	See E-3, 4, 5
2. Laboratory	60
3. Machine Shop	75
4. Assembly, Construction	75
G. Heavy Industrial	
1. Office Areas	See E-3, 4, 5
2. Machine Shop	75
3. Assembly, Construction	75

Source: Napa County General Plan, Noise Element, 1990 (reformatted 1996).

4.7.3 IMPACTS AND MITIGATION MEASURES

STANDARDS OF SIGNIFICANCE

A noise or vibration impact would be considered significant if implementation of the General Plan would result in any of the following (based on State CEQA Guidelines Appendix G);

a) Expose people to or generate noise levels in excess of standards established in the current Napa County General Plan, (see **Table 4.7-10** and **4.7-11**) or the Napa County Noise Ordinance (see **Table 4.7-8**) or applicable noise standards of the incorporated cities of the County and adjoining communities.

b) Expose people to or generate excessive groundborne vibration or groundborne noise levels.

c) Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.

   Because CEQA does not define the noise level increase that is considered substantial, and because traffic noise is likely to be the primary source of changes in ambient noise levels over time, this Draft EIR utilizes thresholds for the traffic impact noise analysis that were developed by the Federal Interagency Committee on Noise (FICON). The FICON thresholds and are based on noise levels at which people typically become increasingly annoyed. These recommendations have since been recognized by various local, state and federal agencies and are typically used for the analysis of transportation noise impacts (FAA, 2000):

   - Increases in predicted traffic noise levels of 5 dBA, or greater, would be considered significant in areas where the ambient noise environment is less than 60 dBA.

   - In areas where the ambient noise environment is between 60 and 65 dBA, exceeds applicable noise standards, increases of 3.0 dBA, or greater, would be considered significant.

   - In areas where the ambient noise environment equals or exceeds 65 dBA, a predicted increase of 1.5 dBA, or greater, would be considered significant.

   - For areas equal to or greater than 70 dBA, increases of greater than 1 dBA would be considered significant.

d) Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity in excess of Napa County's Noise Ordinance standards (see **Table 4.7-9**).

e) For projects within an area covered by an airport land use plan or within two miles of a public airport or public use airport when such an airport land use plan has not been adopted, or within the vicinity of a private airstrip, expose people residing or working in the project area to excessive aircraft noise levels.

METHODOLOGY

The environmental noise analysis is based on field review of the County; review of the BDR (Napa County, BDR 2005); and review of the Napa County General Plan Update alternatives and their anticipated traffic conditions. The noise standards of the County (current Napa County General Plan and Noise Ordinance) as well as the applicable noise standards of the incorporated cities are compared to the anticipated noise impacts of year 2030 conditions associated with the alternatives under consideration. Technical information from the Napa County Baseline Data Report (Napa County, BDR 2005) was used to quantify the existing noise conditions in the County. Traffic noise increases were calculated based on a comparison between current conditions associated with traffic volumes (see **Table 4.7-2**) and the year 2030 traffic analysis conducted for the Draft EIR. It should be noted that anticipated traffic noise protected for the year 2030 is associated with traffic volumes generated from the combined effects of the unincorporated area of Napa County, the incorporated cities and regional traffic patterns. Thus, much of the anticipated traffic noise impacts would occur with or without the update of the General Plan. Anticipated changes in noise levels and/or compatibility associated with changes in land uses and development were predicted based on the land use maps for Alternatives A, B, and C as well as proposed provision of the General Plan Update policy document. The technical noise level analysis was prepared by Illingworth & Rodkin and involved calculating future County traffic noise levels. Future traffic noise levels were based on traffic analysis conducted for the General Plan Update by Dowling Associates. The noise level data is included in **Appendix E**.

PROJECT IMPACTS AND MITIGATION MEASURES

Noise and Land Use Compatibility

Impact 4.7.1 **The implementation of the General Plan Update would permit continued growth and development consistent with the existing General Plan (Alternative A) or in somewhat different locations and intensities (Alternatives B and C). This growth could place new noise sensitive uses (e.g. residences) in areas which could exceed the current Napa County Noise and Land Use Compatibility Standards or the Napa County Noise Ordinance limits. (Significant and Mitigable – All Alternatives).**

Implementation of the proposed General Plan Update would place new noise sensitive uses adjacent to areas that could be exposed to noise generating sources. For example, all alternatives would permit continued construction of dwelling units within agricultural areas and/or adjacent to major roads, and Alternatives B and C would permit a second unit on parcels on the valley floor. Further details of each alternative are described below.

Alternative A

With the implementation of Alternative A, the development of new residential uses would occur in areas currently designated for residential use. Specifically, slow growth would add to existing, urbanized areas, and individual houses could be placed on parcels throughout the County where no residences are currently located. Generally one residence per parcel is permitted, along with a smaller, second unit. Consistent with County setback requirements, builders would generally site houses away from roads, and compliance with building code standards would ensure an acceptable level of noise insulation. However, noise sensitive uses could still be located in areas exceeding the standards. This impact would be considered a **significant and mitigable**. Pursuant to the County's "Right to Farm" Policy, the occasional conflicts that could

arise between residences and agricultural uses would not be considered significant. Maintenance and application of existing General Plan noise policy provisions would reduce the likelihood of large scale noise-related land use conflicts, and is recommended as mitigation below.

Alternative B

Similar to Alternative A, this alternative would result in the development of new residential uses would occur in areas currently designated for residential use. Alternative B would also re-designate some areas to include residential land uses (such as County owned properties in the City of Napa) as well as provide for expanded development opportunities for second units. Under Alternative B, additional residences would be developed at the Pacific Coast/Boca site, which lie in proximity to the Syar Quarry, Imola Avenue and Soscol Avenue. In addition, some live/work units could be located at the Napa Pipe site, which is traversed by a freight railroad line with low operations. At all of these sites, residential land uses would be located in proximity to noise generating uses. This could result in significant noise-related land use conflicts, requiring mitigation as outlined below. Thus, this impact would be considered a **significant and mitigable**.

Alternative C

Similar to Alternatives A, this alternative would result in the development of new residential uses would occur in areas currently designated for residential use. Alternative C would also allow similar new residential development as Alternative B. In addition, new residential development could occur in areas adjacent to the Angwin with the potential expansion of the so-called "urban bubble" as well as potential expansion of residential development associated with the establishment of a new RUL for the City of American Canyon. Similar to Alternative B, Alternative C would potentially expose new residents to local noise sources resulting in significant noise-related land use conflicts. Mitigation measures to address this impact are provided below. Thus, this impact would be considered a **significant and mitigable**.

Mitigation Measures

The following mitigation measures shall apply to all alternatives:

MM 4.7.1a The County shall (at a minimum) retain noise policies in the current General Plan requiring land use decisions to conform to noise-related compatibility criteria and noise standards as shown in **Draft EIR Tables 4.7-8 and 4.7-10**, and establishing recommended interior noise levels for sensitive land uses (e.g., residences, schools, daycares, hospitals and other similar uses) as shown in **Draft EIR Table 4.7-11**. County shall (through retention of these current noise policies) not approve the placement of residential or other noise-sensitive land uses in areas that exceed these noise standards without the provision of noise attenuation features that result in noise levels meeting the current standards of the County for exterior and interior noise exposure.

MM 4.7.1b The County shall continue to incorporate a policy in the General Plan that requires that prospective residents be notified of agricultural-related noises and the County's "Right to Farm" Ordinance in each parcel map approved for locations in or adjacent to designated agricultural areas.

The following mitigation measures shall apply to Alternatives B and C:

MM 4.7.1c The County shall provide a policy in the General Plan that requires that property owners proposing new noise-sensitive uses in proximity to existing industrial activities and railroad corridors (such as subsequent development of the Pacific Coast/Boca and the Napa Pipe sites) retain the services of a qualified noise expert to evaluate the potential for noise-related land use conflicts and to recommend methods to ensure that noise standards referenced in Mitigation Measure MM 4.7.1a are met. In the case of potential residential development of County-owned sites within the City of Napa, the County shall ensure that residential development of these sites meets the noise standards of the City prior to approval of the redevelopment of the sites. In both instances, methods may include, but are not limited to, noise barriers, building orientation and building design (such as additional insulation). As a condition of building permit issuance, the County shall require the property owners to demonstrate implementation of the recommended methods.

Implementation of the Napa County Noise Ordinance and mitigation measures identified above would ensure that current noise standards intend to protect noise-sensitive land uses from excessive noise levels are being met. Thus, implementation of mitigation measures MM 4.7.1a through c would reduce this impact to **less than significant** for all alternatives.

New Development Exposure to Groundborne Vibration

Impact 4.7.2 **Implementation of Alternatives A, B, and C of the General Plan Update could result in the development of residential land uses in proximity to significant known sources of groundborne vibration. (Less than Significant – Alternative A, Significant and Mitigable – Alternatives B and C).**

The U.S. Department of Transportation has developed vibration impact assessment criteria for evaluating impacts associated with rapid transit projects.[1] Vibration impact criteria, based on maximum overall levels for a single event, have been proposed by the Federal Transit Administration (FTA). There are criteria for frequent events (more than 70 events per day) and infrequent events (less than 70 events per day).

Alternative A

Alternative A would not result in any new residential or vibration sensitive development in the vicinity of any known sources of groundborne vibration in the County, nor would they introduce any new sources of groundborne vibration, although cave excavation could occur, as it has in the past, in association with winery development in dispersed locations throughout agricultural areas of the County. Cave excavation is a temporary (rather than ambient) source of vibration. Significant sources of regular groundborne vibration would include railroads and blasting among other sources. Because Alternative A would not introduce new residents or other sensitive land uses to areas known to experience regular vibration under existing conditions, this impact is considered **less than significant**.

[1] U.S. Department of Transportation, Federal Transit Administration, Transit Noise and Vibration Impact Assessment, April 1995, DOT-T-95-16.

Alternative B

Similar to Alternative A, Alternative B would generally not place new residential or vibration sensitive development in the vicinity of any known sources of groundborne vibration in the County. However, potential development of residential uses associated with the Napa Pipe site would be developed adjacent to an existing railroad line, while the Pacific Coast/Boca site is adjacent to the Syar Quarry. The only significant source of ground vibration associated with quarry activities is blasting, which has the potential to generate levels of vibration that would be perceptible to adjacent vibration sensitive uses. Ground vibrations from such activities rarely reaches levels that can damage structures and attenuates rapidly with distance from the source of the vibration, but could cause annoyance of vibration sensitive receptors. The potential placement of vibration-sensitive uses in proximity to known vibration sources would be considered **significant and mitigable**.

Alternative C

Alternative C would result the same potential vibration impacts as Alternative B. This impact would be considered **significant and mitigable**.

Mitigation Measures

The following mitigation measures shall apply to Alternatives B and C.

MM 4.7.2a The County shall include a policy in the General Plan that requires that new vibration sensitive development, such as residences, shall be avoided within 100 feet of all railroad tracks and other identified sources of strong ground vibration to the extent feasible. For residences proposed within 100 feet of any significant source of groundborne vibration, a vibration study shall be conducted prior to construction by a qualified consultant to ensure that residents would not be exposed to excessive vibration levels that be disruptive (e.g., potential to interrupt sleep) or cause structural damage. The results of the study shall include performance standards to fully mitigate vibration impacts, which may take the form of building setbacks, site design, soil compaction/grouting, and other appropriate methods.

MM 4.7.2b The County shall include a policy in the General Plan that requires new vibration sensitive development, such as residences, within proximity of the Syar Quarry or haul roads leading to the Syar Quarry shall be buffered and constructed to avoid significant disturbance related to ground borne vibration (e.g., potential to interrupt sleep or cause structural damage). A vibration study shall be conducted by a qualified consultant prior to construction to determine the extent of the buffer and other required measures related to building/foundation design. Prior to issuance of a building permit, the property owner shall demonstrate how study recommendations will be implemented to fully mitigate vibration impacts.

Implementation of the above mitigation measures would ensure potential exposure to sources of ground borne vibration would be minimized through setbacks and/or construction design to avoid structural damage as well as significant disturbance of future residents. Thus, implementation of mitigation measures MM 4.7.2a and b would reduce this impact to **less than significant** for Alternatives B and C.

Project Generated Traffic Noise Volume Increases

Impact 4.7.3 Traffic-related noise would increase along County roadways with projected increases in traffic volumes under all future scenarios. (Significant and Unavoidable – All Alternatives)

Calculated Ldn traffic noise levels and significance determinations for each alternative are shown in **Table 4.7-12**. Year 2000 and Future 2030 Ldn noise levels were calculated by comparing future traffic volumes provided by Dowling Associates, Inc. to existing traffic noise contours provided in the BDR and to existing traffic volumes provided by Dowling Associates. To assist with comparison to BDR noise levels, which are specified for ADT traffic volumes, ADT traffic volumes were calculated to be 10 times the peak hour traffic volumes supplied by Dowling Associates, Inc. for each roadway segment. Vehicle speeds, roadway geometries, and traffic mixes were assumed to be the same under existing and future conditions.

Table 4.7-12 summarizes the calculated Ldn traffic noise levels under each alternative at a distance of 100 feet from the center of the roadway. This table also compares traffic noise conditions associated with two roadway networks scenarios for the County for year 2030:

- Year 2030 roadway network that includes improvement of Jamieson Canyon (State Route 12) to four lanes; extend Newell/Flosden Road to Green Island Road, and other transportation improvements identified in the proposed General Plan Update Circulation Element (Alternatives B and C).

- Year 2030 roadway network without the improvements identified in the proposed General Plan Update Circulation Element (All Alternatives).

Many projected traffic noise increases would occur whether or not the Napa County General Plan Update is implemented, since they are attributable to increases in traffic volumes that would occur even if there are no substantive changes in General Plan policy (represented by Alternative A). Based on projected vehicle trips for 2030 from the General Plan traffic study, approximately 25% of all trips would be directly related to the unincorporated area (start and end). In addition, of the 34 segments analyzed for weekend versus weekday traffic, only six road segments had an increase in traffic on weekends. A further discussion of the comparison of traffic noise impacts between alternatives is provided below.

Alternative A

As shown in **Table 4.7-12,** Alternative A together with anticipated growth of the incorporated cities and regional traffic growth would result in traffic noise increases ranging from 1 dB to 13 dB on County roadways over existing conditions. These increased traffic noise levels would exceed current County General Plan and Noise Ordinance standards and/or result in a substantial increase in existing noise traffic noise levels on 27 roadway segments (as noted in shaded cells of **Table 4.7-12**). In addition to traffic noise impacts to the unincorporated portion of the County, this increase in traffic noise would also be significant on roadways within and adjacent to the cities of American Canyon, St. Helena, Calistoga, Napa and the Town of Yountville as well as Yolo, Solano and Sonoma counties (associated with increase traffic noise on State Routes 29, 121, and 128). However, this alternative would significantly impact the least number of roadway segments of the three alternatives evaluated. This impact is considered **significant and unavoidable** since identified mitigation measures would reduce the impact, but not to a level of less than significant.

Alternative B

Table 4.7-12, identifies traffic noise impacts associated with Alternative B with and without proposed General Plan Update Circulation Element roadway improvements. Similar to Alternative A, the anticipated traffic noise increase would range from 1 dB to 13 dB on County roadways over existing conditions. **Table 4.7-12** identifies that Alternative B (along with associated growth of the incorporated cities and regional traffic growth) would significantly impact 28 roadway segments without the proposed General Plan Update Circulation Element roadway improvements and 29 roadway segments with these improvements. However, the noise level difference between these roadway improvement scenarios only ranges from 1 dB to 4 dB along the roadway segments evaluated.

Increased traffic noise levels associated with Alternative B would exceed current County General Plan and Noise Ordinance standards and/or result in a substantial increase in existing noise traffic noise levels (as noted in shaded cells of **Table 4.7-12**). In addition to traffic noise impacts to the unincorporated portion of the County, this increase in traffic noise would also be significant on roadways within and adjacent to the cities of American Canyon, St. Helena, Calistoga, Napa and the Town of Yountville as well as Yolo, Solano and Sonoma counties (associated with increase traffic noise on State Routes 29, 121, and 128) (under both roadway improvement assumptions). This impact is considered **significant and unavoidable** since identified mitigation measures would reduce the impact, but not to a level of less than significant.

Alternative C

Table 4.7-12, identifies traffic noise impacts associated with Alternative C with and without proposed General Plan Update Circulation Element roadway improvements. Similar to Alternative A, the anticipated traffic noise increase would range from 1 dB to 13 dB on County roadways over existing conditions. **Table 4.7-12** identifies that Alternative C (along with associated growth of the incorporated cities and regional traffic growth) would significantly impact 27 roadway segments without the proposed General Plan Update Circulation Element roadway improvements and 30 roadway segments with these improvements (which would be the highest of any of the alternatives evaluated). However, the noise level difference between these roadway improvement scenarios only ranges from 1 dB to 4 dB along roadway segments evaluated.

Similar to Alternative B, increased traffic noise levels associated with this alternative would exceed current County General Plan and Noise Ordinance standards and/or result in a substantial increase existing noise traffic noise levels (as noted in shaded cells of **Table 4.7-12**). In addition to traffic noise impacts to the unincorporated portion of the County, this increase in traffic noise would also be significant on roadways within and adjacent to the cities of American Canyon, St. Helena, Calistoga, Napa and the Town of Yountville as well as Yolo, Solano and Sonoma counties (associated with increase traffic noise on State Routes 29, 121, and 128) (under both roadway improvement assumptions). This impact is considered **significant and unavoidable** since identified mitigation measures would reduce the impact, but not to a level of less than significant.

Mitigation Measures

Implementation of mitigation measures MM 4.7.1a and MM 4.7.4 would assist in reducing traffic noise exposure impacts. However, mitigation in all circumstances may not be reasonable or feasible due to considerations such as roadway access, cost, terrain and the needs of local

property owner. Also, the County does not have the ability to require, improve or construct traffic noise attenuation features outside of the unincorporated area. Placement of noise barriers (e.g., walls and berming) may be considered inconsistent with the fundamental principles of the General Plan Update of retaining the current character of the County and thus considered infeasible. Therefore, despite mitigation measures described in this section, potential traffic noise increases would be considered a **significant and unavoidable** impact under all alternatives.

TABLE 4.7-12
COUNTY ROADS AND HIGHWAYS NOISE MODELING FOR ALTERNATIVES A, B AND C FOR YEAR 2030

Roadway	Segment Limit North/East	Segment Limit South/West	Ldn at 100 feet, dBA					
			Existing*	Alt. A[1] 2030 minus GP impr. PM	Alt. B[1] 2030 minus GP impr. PM	Alt. C[1] 2030 minus GP impr. PM	Alt. B[2] 2030 with GP impr. PM	Alt. C[2] 2030 with GP impr. PM
American Canyon Road	I-80	Flosden Road	70	72	72	72	72	72
Chiles Pope Valley Road	Pope Canyon Road	Lower Chiles Valley Road	55	56	57	56	59	59
Deer Park Road	Sanitarium Rd (North)	Silverado Trail	62	64	64	64	64	65
Deer Park Road	Silverado Trail	St. Helena Highway (SR 29/128)	64	69	69	69	68	68
Flosden Road	American Canyon Road	Napa/Solano County Line	67	67	67	67	70	70
Howell Mountain Road	Pope Valley Rd	N White Cottage Rd	54	58	58	58	59	59
Napa Vallejo Highway	Kaiser Rd	Highway 29(SR 29/12)	72	74	74	75	75	76
Oak Knoll Avenue	Big Ranch Rd	Highway 29	61	62	62	62	62	62
Oakville Cross Road	Napa River	Highway 29	59	66	66	65	62	62
Old Sonoma Road	Buhman Avenue	Carneros Highway (SR 121/12)	63	68	68	68	64	64
Petrified Forest Road	Foothill Boulevard (SR 128)	Franz Valley School Road	62	65	65	65	65	65
Pope Canyon Rd	Berryessa-Knoxville Rd	Chiles-Pope Valley Rd	60	65	66	66	66	66
Silverado Trail	0ak Knoll Ave	Hardman Ave	68	70	70	70	71	71
Silverado Trail	Sage Canyon Rd (SR 128)	Yountville Cross Rd	69	71	71	71	71	71
Silverado Trail	Pope St	Zinfandel Ln	67	70	70	70	71	71
Silverado Trail	Bale Lane	Deer Park Rd	63	66	66	66	67	67

Roadway	Segment Limit North/East	Segment Limit South/West	Ldn at 100 feet, dBA					
			Existing*	Alt. A[1] 2030 minus GP impr. PM	Alt. B[1] 2030 minus GP impr. PM	Alt. C[1] 2030 minus GP impr. PM	Alt. B[2] 2030 with GP impr. PM	Alt. C[2] 2030 with GP impr. PM
Silverado Trail	Calistoga City Limits	Lincoln Ave (SR 29)	64	68	68	68	68	68
Soscol Avenue	First St	Silverado Trail	68	69	69	69	68	68
Spring Mountain Road	St. Helena City Limit	Langtry Road	56	58	58	58	60	60
State Highway 12/121	Cuttings Wharf Road	Stanely Road	72	73	73	73	73	73
State Highway 12	Lynch Road	Kelly Road	72	73	73	72	73	73
State Highway 121	Wooden Valley Rd	Vichy Ave	58	64	64	64	64	64
State Highway 121	Circle Oaks Dr	Wooden Valley Rd	57	64	64	63	62	62
State Highway 121	Napa/Sonoma County Line	Old Sonoma Rd	71	73	73	73	72	72
State Highway 128	Napa/Sonoma County Line	Tubbs Lane	59	65	65	66	66	66
State Highway 128	Tubbs Ln	Petrified Forest Rd	66	66	66	66	67	67
State Highway 128	Petrified Forest Rd	Lincoln Ave (SR 29)	65	67	67	67	67	67
State Highway 128	Napa River	St Helena Hwy (SR 29)	58	62	62	61	62	63
State Highway 128	Chiles-Pope Valley Road	Silverado Trail	60	68	68	68	68	68
State Highway 128	Monticello Road (SR 121)	Berryessa-Knoxville Road	59	68	68	68	68	68
State Highway 128	Napa/Yolo County Line	State Highway 121	56	69	69	69	69	69
State Highway 29	Napa/Lake County Line	Tubbs Lane	62	63	63	63	62	62
State Highway 29	Green Island Rd	American Canyon Rd	73	75	75	75	74	74
State Highway 29	California Dr	Oak Knoll Ave	70	71	71	71	72	72
State Highway 29	Oakville Grade	Madison St	70	71	72	72	72	72

Roadway	Segment Limit North/East	Segment Limit South/West	Ldn at 100 feet, dBA					
			Existing*	Alt. A[1] 2030 minus GP impr. PM	Alt. B[1] 2030 minus GP impr. PM	Alt. C[1] 2030 minus GP impr. PM	Alt. B[2] 2030 with GP impr. PM	Alt. C[2] 2030 with GP impr. PM
State Highway 29	Rutherford Cross Rd (SR 128)	Oakville Grade	70	72	72	72	72	72
State Highway 29	Chaix Ln	Zinfandel Ln	70	72	72	72	72	72
State Highway 29	Lodi Lane	Deer Park Rd	68	70	71	71	71	70
State Highway 29	Kelly Rd	Jamieson Cyn Rd (SR 12)	76	77	77	77	77	77
State Highway 29	Napa-Vallejo Hwy (SR 221)	Kelly Rd	72	76	76	76	76	76
State Highway 29	Napa-Vallejo Hwy (SR 221)	Carneros Hwy (SR 121/12)	74	75	76	75	76	76
State Highway 29	Imola Ave (SR 121)	Carneros Hwy (SR 121/12)	73	74	74	74	74	74
Tubbs Lane	Highway 29	Highway 128	64	69	69	69	70	70
Wooden Valley Road	Monticello Rd (SR 121)	Napa/Solano Co Line	58	64	64	64	64	64
Yountville Cross Road	Silverado Trail	Yountville Town Limits	61	62	62	61	61	61
Zinfandel Lane	Silverado Trail	Helena Hwy (SR 29 & 128	62	66	64	66	64	65

Note:
**Existing traffic noise levels calculated using base year data (2000)*
Existing levels based on BDR data. Alternatives A, B, C 2000 and 2030 were calculated based on a logarithmic comparison to BDR data.
Shaded cells note where a significant impact or a substantial change in noise levels was identified based on the significance standards (a) and (c) identified above.

[1] *These traffic noise modeling runs assumed the anticipated year 2030 roadway network in the County without the improvements identified in the proposed General Plan Update Circulation Element.*

[2] *These traffic noise modeling runs assumed the anticipated year 2030 roadway network in the County with the improvements identified in the proposed General Plan Update Circulation Element.*

Source: Illingworth & Rodkin 2006

Roadway Improvement Impacts to Noise-Sensitive Uses

Impact 4.7.4 **Proposed General Plan Update Circulation Element roadway improvements associated with Alternatives B and C could move traffic noise closer to noise-sensitive uses. (Less than Significant – Alternative A, Significant and Unavoidable – Alternatives B and C)**

In addition to increases in traffic volumes along existing roadways, Alternatives B and C would include proposed General Plan Update Circulation Element roadway improvements, which include widening of Jamieson Canyon (State Route 12) to four lanes and the extension of Newell/Flosden Road. Along these roadway segments, additional noise increases could occur as traffic is moved closer to existing noise-sensitive uses. This impact is further discussed below under each alternative.

Alternative A

Alternative A would not include these roadway improvements. Thus, Alternative A's impact is **less than significant**.

Alternative B

As noted in Section 3.0 (Project Description), this alternative includes roadway improvements such as widening of Jamieson Canyon to four lanes and extension of Newel/Flosden Road to Green Island Road. There are approximately seven residences in close proximity to State Route 12 in Jamieson Canyon that would be exposed to further traffic noise increases from potential placement of the roadway in closer proximity (in addition to the traffic noise increases expected from year 2030 traffic volumes), as well as increased traffic. Similar noise impacts may also occur as a result of proposed General Plan Update Circulation Element roadway improvements. This impact would be considered **significant and unavoidable** since identified mitigation measures would reduce the impact, but not to a level of less than significant.

Alternative C

Alternative C would result in similar impacts as Alternative B. This impact would also be considered **significant and unavoidable** since identified mitigation measures would reduce the impact, but not to a level of less than significant.

Mitigation Measures

The following mitigation measure would apply to Alternatives B and C.

MM 4.7.4 The County shall include as a policy to the General Plan that a detailed noise analysis be conducted by a qualified noise consultant as part of roadway improvement project design where it is determined that a proposed roadway widening or extension may expose existing noise-sensitive land uses to traffic noise in excess of County noise standards or (in the case where noise standards have already been exceeded) could result in a substantial increase in traffic noise levels. The noise analysis shall identify anticipated noise impact to noise-sensitive receptors and identify noise attenuation features to mitigate substantial noise increases to the extent feasible. Such features may include noise barriers, retrofitting buildings with additional noise insulation, use of specialized construction materials or other appropriate measures. These features shall be incorporated in the roadway improvement design and implemented as part of construction of roadway improvements.

Implementation of the above mitigation measure would assist in reducing potentially significant noise impacts associated with planned roadway widenings and capacity increases. However, mitigation may not be reasonable or feasible in some areas due to considerations such as roadway access (e.g., inability to place a noise barrier due to the need to maintain roadway access), cost, terrain and the needs of local property owner. Placement of noise barriers (e.g., walls and berming) may be considered inconsistent with the fundamental principles of the General Plan Update of retaining the current character of the County and thus considered infeasible. Therefore, this would be considered a **significant and unavoidable** impact for Alternatives B and C.

Project Generated Non-Transportation Noise Sources

Impact 4.7.5 **With the implementation of the General Plan Update, new significant noise increases at noise sensitive land uses could occur from the continued development of noise generating activities associated with existing or new agricultural, industrial and commercial land uses. (Less Than Significant - All Alternatives).**

For all alternatives, new industrial, commercial and agricultural uses may occur, and this development could expose existing residences to increased noise levels. This impact is further evaluated by alternative below.

Alternative A

As identified in Section 3.0 (Project Description), this alternative would retain current land use designations and patterns set forth in the current General Plan. Subsequent development would result in the development and operation of new agricultural, commercial and industrial uses that could become substantial new stationary noise sources and impact existing residential and other noise-sensitive land uses. Normal agricultural activities are considered under the County's Right-to-Farm Ordinance and the sounds they produce are not considered undesirable as long as reasonable steps are taken to avoid conflicts. Under the County's Right-to-Farm Ordinance, residents are notified that farming generates dust, noise, odors, sprays, and other aspects of agricultural activities. The Napa County Noise Ordinance would also be applicable to new non-transportation noise sources. As identified in **Table 4.7-8**, the Noise Ordinance includes noise performance standards that are intended to protect residential and other noise-sensitive land uses generally consistent with the noise-related compatibility of the current General Plan. Continued implementation of both the Right-to-Farm Ordinance and Noise Ordinance would ensure that potential noise conflicts with new non-residential uses are avoided. Thus, Alternative A's impact would be **less than significant**.

Alternative B

Similar to Alternative A, this alternative would retain current land use designations and patterns set forth in the current General Plan that could result in the development and operation of new agricultural, commercial and industrial uses that could become substantial new stationary noise sources. Alternative B would also retain the Right-to-Farm Ordinance and Noise Ordinance, which would ensure that potential noise conflicts with new non-residential uses are avoided. Thus, Alternative B's impact would be **less than significant**.

Alternative C

Alternative C would result in similar impacts as Alternative A (though its projected development of non-residential development by year 2030 would be less than Alternatives A and B [see **Appendix B**]). This impact would be **less than significant**.

Mitigation Measure

None required.

Project Generated Construction Noise

Impact 4.7.6 Implementation of the General Plan Update would generate construction noise and would temporarily increase noise levels at adjacent land uses. (Less Than Significant - All Alternatives).

The subsequent development in the unincorporated portion of the County would generate construction noise and would temporarily increase noise levels at land uses adjacent to development. Noise impacts resulting from construction depend on the noise generated by various pieces of construction equipment, the timing and duration of noise generating activities, and the distance between construction noise sources and noise sensitive receptors. This impact is further discussed below by alternative.

Alternative A

Typical construction equipment noise levels are shown in **Tables 4.7-6** and **-7**. Typically, small residential, commercial, or office construction projects do not generate significant noise impacts when standard construction noise control measures are enforced at the construction site and when the duration of the noise generating construction period is limited to one construction season (typically one year) or less. Construction noises associated with projects of this type are disturbances that are necessary for the construction or repair of buildings and structures in urban areas. Reasonable regulation of the hours of construction, as well as regulation of the arrival and operation of heavy equipment and the delivery of construction materials, are necessary to protect the health and safety of persons, promote the general welfare of the community, and maintain the quality of life.

Larger construction projects are typically built out over more than one construction season, and some construction methods, such as pile driving, generate higher noise levels and noise that would be considered intrusive. Construction noise impacts primarily result when construction activities occur during noise-sensitive times of the day (early morning, evening, or nighttime hours), the construction occurs in areas immediately adjoining noise sensitive land uses, or when construction durations last over extended periods of time. Limiting the hours when construction can occur to daytime hours is often a simple method to reduce the potential for noise impacts. In areas immediately adjacent to construction, controls such as constructing temporary noise barriers and utilizing "quiet" construction equipment can also reduce the potential for noise impacts.

The Napa County Noise Ordinance specifies noise limits (see **Table 4.7-9**) for construction activities and limits construction to within the hours of 7 a.m. and 7 p.m., which avoids temporary noise conflicts with noise-sensitive land uses by avoiding noise-sensitive hours (7:00 p.m. to 7:00 a.m. when sleep generally occurs). With the compliance of the Noise Ordinance and the temporary and intermittent nature of construction noise, this is considered a **less than significant** impact.

Alternative B

Alternative B would result in similar impacts as Alternative A (though its projected development of non-residential development by year 2030 and associated land use mix would be different than Alternative A). This impact would be **less than significant**.

Alternative C

Alternative C would result in similar impacts as Alternative A (though its projected development of non-residential development by year 2030 and associated land use mix would be different than Alternative A). This impact would be **less than significant**.

Mitigation Measure

None required.

Noise and Land Use Compatibility (Aircraft)

Impact 4.7.7 Implementation of the General Plan Update could result in the development of residential land uses in proximity to Napa Airport and Angwin-Virgil O Parrett Field. (Significant and Mitigable - All Alternatives).

Projected 55-, 60-, and 65-dBA contours for Napa County Airport in year 2022 are depicted in **Figure 4.7-3 (**2030 forecasts are not available). No future forecast for Angwin-Virgil O Parrett Field is available, although air traffic is expected to be relatively constant as the airport is owned by Pacific Union College and no significant capital improvements are proposed. Under all of the alternatives, new noise sensitive development could potentially occur in the vicinity of airports in the County. This impact is discussed further below by alternative.

Alternative A

As identified in Section 3.0 (Project Description), this alternative would retain current land use designations and patterns set forth in the current General Plan. Near Angwin-Virgil O Parrett Field in Angwin, there are parcels within proximity of the airport that would permit residential uses (one house per parcel plus a second unit), even though they are within land use compatibility zones that would normally preclude residential use. In addition, future residential uses could also be exposed to noise impacts from single event noise from individual aircraft. Near the Napa County Airport, Alternative A land use designations (Industrial and Public-Institutional) as well as current land use conditions (salt marshes to the southwest) would not allow residential uses within the land use compatibility zones or projected year 2022 noise contours. This impact would be **significant and mitigable**.

Alternative B

Alternative B could result in similar noise compatibility issues with aircraft operations at Angwin-Virgil O Parrett Field in Angwin as Alternative A, even though it would include some changes to the land use mix within the so-called urban "bubble" for Angwin (see Section 3.0, Project Description, for further discussion of possible land use designation changes). This is because the noise compatibility zones (which discourage residential uses because of flight patterns) are generally located to the east and outside of the "bubble." Alternative B includes proposed residential uses for the Napa Pipe site, as discussed in Section 4.1, Land Use. [PMC: Please add an additional sentence that is consistent with the Land Use Section!] This impact would be **significant and mitigable**.

Alternative C

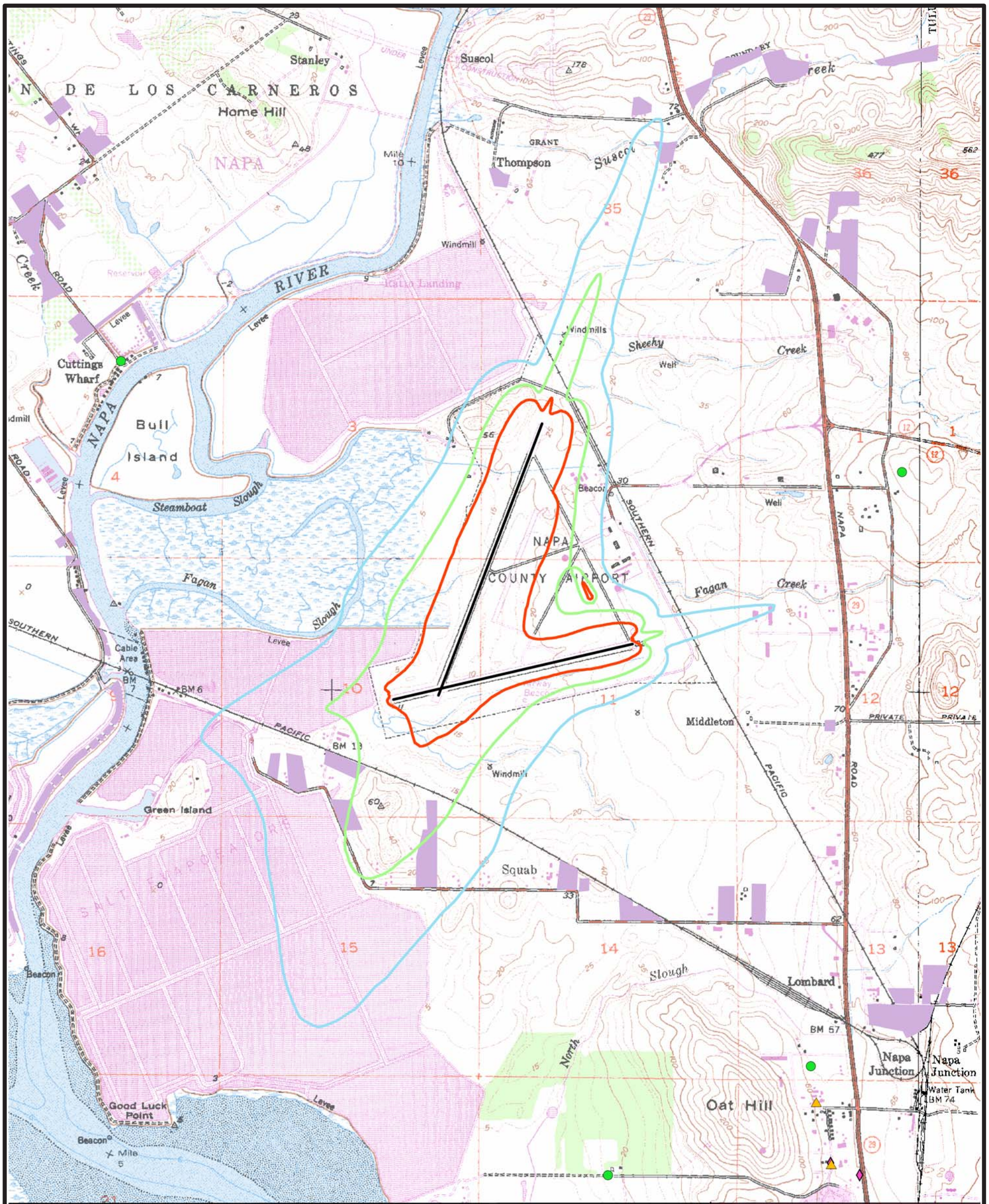
Alternative C could result in similar noise compatibility issues with aircraft operations at Angwin-Virgil O Parrett Field in Angwin as Alternative A and B, despite possible expansion of the so-called urban "bubble" for Angwin, since the potential expansion would occur to the west, away from the airfield (see Section 3.0, Project Description, for further discussion of possible land use designation changes). Alternative C includes proposed residential uses for the Napa Pipe site, as described in Section 4.1, Land Use. Urban development within the expanded City of American Canyon RUL could result in conflicts with the Napa County Airport Land Use Compatibility Plan; however, the potential extent of this impact is not known given the uncertainty of the future mix of land use. This impact would be **significant and mitigable**.

Mitigation Measure

The following mitigation measures would apply to all alternatives:

MM 4.7.7 The County shall include a policy in the General Plan that requires the use of aviation easements, disclosure statements or other appropriate disclosure measures to ensure that new development within any airport influence area are informed of the presence of the airport and its potential for creating current and future noise.

Implementation of the above mitigation measures as well as mitigation measure MM 4.2.2 and MM 4.7.1 would ensure that future development near Angwin-Virgil O Parrett Field in Angwin would either meet the noise restriction requirements of the airport and/or include noise attenuation features to meet current County noise standards. Thus, with the implementation of these mitigation measures would reduce this impact to **less than significant** for all of the alternatives.



LEGEND

Noise Contours 2022

- 55-CNEL
- 60-CNEL
- 65-CNEL
- Runway
- Hospitals or Healthcare Facilities and Assisted Living Facilities
- Parks, Wildlife Areas and Recreation Areas
- Schools
- Libraries
- Child Care Centers
- Places of Worship
- Residences

Source: Jones & Stokes, EDAW

Noise Contours - 2022

Napa County Airport

1 inch equals 2,000 feet

2,000 1,000 0 2,000 Feet

Horizontal Datum: NAD 83,
CA State Plane Coordinates, Zone II, feet
Source: Napa County, 2004; EDAW, 2004

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FIGURE 4.7-3
NAPA COUNTY AIRPORT NOISE CONTOURS 2022

PMC

REFERENCES

County of Napa. 1998. *Napa County General Plan*. Adopted June 7, 1983, revised December 3, 1998.

Napa County. 2003. *Draft Napa County Airport Master Plan*. August 2003.

Napa County Department of Environmental Management. 2004. *Napa County Noise Ordinance* (Ord. 777 § 1 (part), 1984: prior code § 5810).

County of Napa. 1983. *Napa County General Plan Noise Element*. Napa County, 1983.

County of Napa. 2006. Draft General Plan Update, Circulation Element.

County of Napa. 2006. Draft General Plan Update, Community Character Element.

Napa County, BDR. 2005. Napa County Baseline Data Report, Version 1. November. (J&S 03559.03)Oakland, CA.

FAA, 2000. Federal Aviation Administration (FAA). October 22, 2000. *Discussion of Methodologies of Measuring Noise Impact.*