4.7 NOISE

The effects of noise are considered in two ways: 1) how a proposed project may increase existing noise levels and affect surrounding land uses, and 2) how a proposed land use may be affected by noise from existing and surrounding land uses. This section of the EIR addresses: the existing noise environment of the project area; federal, state, and local noise guidelines and policies; potential impacts resulting from implementing the proposed project; and potential noise impacts that would be encountered throughout the area. Preparation of this section of the EIR is based on the *Noise Study Dana Adobe Master Plan* (David Dubbink Associates, February 17, 2012), and the technical analysis is incorporated by reference. The report is available for public review at the County Department of Planning and Building.

4.7.1 Existing Conditions

Noise is generally defined as unwanted sound. Noise meters are instruments that detect small changes in atmospheric pressure. These meters cannot distinguish between noise that is wanted (e.g., birds singing, waves on a beach, etc.) and noise that is not (e.g., traffic or railroad noise). Thus, measurements of noise are more accurately described as measurements of sound pressure.

Noise sources and sound intensities can vary significantly over an urban area. Motor vehicles are usually the primary noise source in California cities. Variables that affect traffic noise include traffic volumes, proximity to the noise source, time of day, speed, and pavement condition. Topography also plays a significant role in the perception of traffic-related noise emissions. Road segments that are cut below or significantly elevated above the grade at which noise is measured (or heard) will generally produce a quieter noise environment.

Sites that have abundant vegetation and an undulating profile (soft sites) will absorb sound pressure waves more fully than an area that is predominantly asphalt or concrete (hard site). Under normal conditions on hard sites, noise will attenuate (drop-off) at an approximate rate of 3.0 dBA (A-weighted decibel [dB]) per doubling of distance (DD) for a line source (i.e., traffic sources) and about 6.0 dBA/DD for a point (stationary) source. An excess ground attenuation value of 1.5 dBA/DD over standard conditions would be assumed for undeveloped areas.

The only way to ascertain the noise level at a given site is to actually measure it. Qualified persons, using laboratory-certified sound meters, conduct noise studies. Often noise studies gather measurements for several days, and this data is used to calculate the Day/Night Sound Level (Ldn) and/or the Community Noise Exposure Level (CNEL). These two metrics penalize nighttime noise to reflect normal sleep patterns. Having noise exposure information allows better site planning and architectural treatments (e.g., quiet windows) as needed.

The project site is located approximately 0.15 mile east of US 101, which is the primary source of noise in the area. Based on review of the County General Plan Noise Element, the project site is located within the 60 to 65 Ldn noise contour. Surrounding uses include agricultural and residential land uses.

The Dana Adobe is currently open to the public and has hosted non-profit events including educational series, school bus tours, concerts, open house and member events, art shows, cultural celebrations, and scheduled and unscheduled tours. Approximately 3,000 visitors are hosted each year.

4.7.2 Regulatory Setting

Noise is regulated at the federal, state, and local levels through regulations, policies, and/or local ordinances. Local policies are commonly adaptations of federal and state guidelines based on prevailing local conditions or special requirements.

4.7.2.1 Federal Policies and Regulations

Congressional: The Federal Noise Control Act of 1972

This law states that controlling noise protects the health and welfare of the Nation's population. It recognizes that transportation vehicles, machinery, and appliances are noise sources, and responsibility for controlling these noise sources rests with state and local governments. Moreover, the federal government will coordinate and adopt standards for inter-state commerce projects (e.g., airports).

Federal Highway Administration: 23 CFR 772

Federal code provides uniform procedures to evaluate highway noise and implement abatement measures. Interpretation of what constitutes 'substantial noise' is left to individual states.

4.7.2.2 State and Local Policies and Regulations

California Government Code

The State General Plan Guidelines require that local governments identify major noise sources and areas containing noise-sensitive land uses. Noise must be quantified by preparing generalized noise exposure contours for current and projected conditions. Contours may be prepared in terms of either the CNEL or Ldn. The State's version of the compatibility standards identified in the Guidelines for the Preparation and Content of the Noise Element of the General Plan (2003) indicate that "detailed studies" may be required for outdoor activity areas when levels exceed 50 dB. The Guidelines indicate that mitigations may be appropriate under such conditions and accordingly, this analysis will recommend steps that can be taken to lessen impact. The State's compatibility guidelines for exposure to transportation noise exposure suggest that noise becomes a problem for outdoor activity areas when levels are in excess of 50 decibels (Ldn/Leq).

4.7.2.3 County of San Luis Obispo Noise Element

The Noise Element of the County General Plan provides a policy framework for addressing potential and existing noise impacts during the planning process. Its purpose is to minimize future and existing noise conflicts. Among the most significant polices found in the Noise Element are numerical noise standards that limit noise exposure within noise-sensitive land uses resulting from transportation sources. An increase in the ambient stationary noise level surrounding the project site would result from the addition of the new facility, which could potentially result in a stationary noise impact that would exceed the thresholds defined in the County Noise Element. Specific thresholds are discussed in the section below.

4.7.3 Thresholds of Significance

In accordance with Appendix G of the CEQA Guidelines, the County thresholds state that noise impacts would be considered significant if the proposed project would:

a. Expose people to noise levels that exceed the County Noise Element thresholds;

b. Generate increases in the ambient noise levels for adjoining areas;
c. Cause a temporary or periodic increase in ambient noise in the project vicinity;
d. Expose people to severe noise or vibration;
e. Expose people residing or working in the project area to severe noise levels as a result of an airport or private airstrip.

Transportation Noise Sources

Policy 3.3.2 of the Noise Element states that "new development of noise-sensitive land uses shall not be permitted in areas exposed to existing or projected future levels of noise from transportation noise sources which exceed 60 dB Ldn or CNEL for outdoor activity areas and 45 Ldn or CNEL for interior spaces unless the project includes effective mitigation measures to reduce noise in outdoor activity areas and interior spaces to or below the levels for the given land use" (refer to Tables 4.7-1 and 4.7-2).

Policy 3.3.3 of the Noise Element states that "noise created by new transportation noise sources, including roadway improvement projects, shall be mitigated so as not to exceed the levels specified in [Table 4.7-1] within the outdoor activity areas and interior spaces of existing noise sensitive land uses."

Table 4.7-1. Maximum Allowable Noise Exposure Transportation Noise Sources

Land Use	Outdoor Activity Areas[1] Ldn/CNEL, dB	Interior Spaces	
		Ldn/CNEL, dB	L_{EQ}, dB[2]
Residential (Except Temporary)	60[3]	45	–
Bed and Breakfast, Hotels, Motels	60[3]	45	–
Hospitals, Nursing and Personal Care	60[3]	45	–
Public Assembly and Entertainment	–	–	35
Offices	60[3]	–	45
Churches, Meeting Halls	–	–	45
Schools, Libraries, Museums	–	–	45
Outdoor Sports and Recreation	70	–	–

[1] Where the location of outdoor activity areas is unknown, the exterior noise level standard shall be applied to the property line of the receiving land use.
[2] As determined for a typical worst-case hour during periods of use.
[3] For other than residential uses, where an outdoor activity area is not proposed, the standard shall not apply. Where it is not possible to reduce noise in outdoor activity areas to 60 dB Ldn/CNEL or less using a practical application of the best-available noise reduction measures, an exterior noise level of up to 65 dB Ldn/CNEL may be allowed.

Source: Noise Element, County of San Luis Obispo, General Plan

Table 4.7-2. Land Use Compatibility for New Development near Transportation Sources

Land Use	Exterior Noise Exposure Threshold Ldn or CNEL, dB					
	55	60	65	70	75	80
Residential, Public Assembly, Entertainment						
Bed and Breakfast, Hotel, Motel						
Schools, Libraries, Museums, Hospitals						
Outdoor Sports and Recreation						
Offices						

	Acceptable, no mitigation required
	Conditionally Acceptable, mitigation required
	Unacceptable, mitigation may not be feasible

Source: Noise Element, County of San Luis Obispo, General Plan

Stationary Noise Sources

Policy 3.3.4 of the Noise Element states that "new development of noise-sensitive land uses shall not be permitted where the noise level due to existing stationary noise sources would exceed the noise level standards included in the Noise Element unless effective noise mitigation measures have been incorporated into the design of the development to reduce noise exposure to or below the levels specified." The hourly daytime stationary noise standard for a residential development is 50 dBA, while the maximum is 70 dBA. The hourly nighttime stationary noise standard for a residential development is 45 dBA, while the maximum is 60 dBA (refer to Table 4.7-3).

Policy 3.3.5 of the Noise Element states that "new proposed stationary noise sources or existing stationary noise sources that undergo modifications that may increase noise levels shall be mitigated as follows and shall be the responsibility of the developer of the stationary noise source. Policy 3.3.5 can be found in its entirety on page 3-3 of the County Noise Element, applicable standards from Policy 3.3.5 are provided below as follows:

b. Noise levels shall be reduced to or below the noise level standards in [Table 4.7-3] where the stationary noise source will expose an existing noise-sensitive land use (which is listed in the Land Use Element as an allowable use within its existing land use category) to noise levels that exceed the standards in [Table 4.7-3].

c. Noise levels shall be reduced to or below the noise level standards in [Table 4.7-3] where the stationary noise source will expose vacant land in the Agriculture, Rural Lands, Residential Rural, Residential Suburban, Residential Single Family, Residential Multi-Family, Recreation, Office and Professional, and Commercial Retail land use categories to noise levels that exceed the standards in [Table 4.7-3] (note: This policy may be waived when the Director of Planning and Building determines that such vacant land is not likely to be developed with a noise sensitive land-use).

Table 4.7-3. Maximum Allowable Noise Exposure-Stationary Noise Sources[1]

Level	Daytime (7 am – 9 pm)	Nighttime (9 pm – 7 am)
Hourly Average Sound Level (Leq), dbA[2]	50	45
Maximum Level, dbA[2]	70	60
Maximum Level, Impulsive Noise, dbA[3]	65	60

[1] As determined at the property line of the of the receiving land use.
[2] Sound level measurements shall be made with slow meter response.
[3] Sound level measurements shall be made with fast meter response.

Source: Noise Element, County of San Luis Obispo, General Plan

In addition to these standards, the County Winery Ordinance (LUO §22.30.070) identifies noise thresholds for special events, which can be used as a reference threshold of significance for this project:

> *"Any special event proposing outdoor amplified music shall only be allowed from 10 a.m. to 5 p.m. No outside amplified sound shall occur before 10 a.m. or after 5 p.m. The standard relating to amplified music may only be waived or modified where a finding can be made by the Review Authority that the noise at the property line will not exceed 65dB."*

4.7.4 Impact Assessment and Methodology

The noise investigation was conducted taking noise measurements in four locations at the project site. These measurements were compared to the maximum allowable noise exposure levels set forth in the County Noise Element to determine if a significant change in the noise environment would occur and if an exceedance of the threshold value would be expected. The 1-hour average sound level (Leq) threshold outlined in the Noise Element is 50 dBA at the property line of the nearest sensitive receptor location, with a maximum noise level of 70 dBA allowed for short periods of time so long as the hourly average is maintained at 50 dBA Leq. The analysis also includes an assessment of surrounding land uses and their sensitivity to noise exposure. The compatibility of the proposed project with surrounding sensitive noise receptors was analyzed.

General guidelines for determining community noise impacts typically include:

- A 3-dB change is barely perceptible, and is the minimum most people will notice in most environments.

- A 5-dB change is a readily perceptible increase or decrease in sound level.
- A 10-dB increase in sound level is perceived as an approximate doubling of the loudness of the sound and represents a substantial change in loudness.

4.7.5 Project Specific Impacts and Mitigation Measures

4.7.5.1 Land Use Ordinance Amendment

The proposed amendments do not include language that would result in an adverse effect related to noise. Any future development may be affected by transportation-related noise, and may generate noise, potentially affecting nearby noise sensitive land uses. Pursuant to the amendment, future development would require a Master Plan and issuance of a CUP, which would trigger CEQA and project specific analysis of noise impacts.

In order to ensure that future projects, such as the proposed Master Plan and CUP, address project-specific noise impacts, a planning area standard is recommended that requires the project to include measures to reduce potential noise impacts, such as limitations on maximum noise level, duration of special events, noise monitoring, and remediation for complaints (refer to Chapter 4, Environmental Impacts Analysis, Exhibit A).

4.7.5.2 Conditional Use Permit

<u>Expose People to Noise Levels that Exceed County Thresholds</u>

Due to the presence of a major noise source in the area (US 101), and sensitive noise receptors in the immediate area (i.e., residential uses), the applicant provided a *Noise Study* (Dubbink 2012). The results of the noise study are incorporated by reference in the discussion below.

There are two issues of noise exposure: 1) transportation noise generated by US 101 affecting the proposed project; and 2) proposed on-site activities that include amplified sound, generation of traffic and use of busses, and other uses that would generate noise, potentially affecting sensitive receptors in the immediate area.

Transportation Noise. The acceptable threshold of exposure to transportation noise source is 60 Ldn for residential uses and schools (including museums) and 70 Ldn for outdoor sports and recreation (County Noise Element 1992). In addition to County standards, the State guidelines identify a threshold of 50 dB for outdoor exposure to transportation-related noise. For the purposes of this analysis, the County standards are applied as the threshold of significance, and the State standards are considered advisory only, because they are guidelines and not regulated.

The County Noise Element and Ordinance identify thresholds of exposure to stationary noise as measured at the property boundary of the receiving noise sensitive use. The hourly noise level threshold is 50 Leq between the hours of 7:00 a.m. and 10:00 p.m. (daytime hours) and 45 Leq between the hours of 10:00 p.m. and 7:00 a.m. (nighttime hours). Noise associated with construction is exempted by the County Noise Ordinance between the hours of 7:00 a.m. and 9:00 p.m. (weekdays) and 8:00 a.m. to 5:00 p.m. (weekends). The nearest sensitive receptors (residences) are located approximately 450 feet south and 2,200 feet to the northeast of the proposed visitor center area.

Noise measurements were taken in four locations at the project site, and distances ranging from 592 to 1,233 feet from US 101. The average noise level ranged from 46 to 55 dB Leq. Noise

measurements showed that the area proposed for the Chumash interpretive area, and adjacent properties to the south of the project site are subjected to highway noise exceeding 45 dB. Based on the noise study, the project site would not be exposed to transportation-related noise from US 101 exceeding allowable County thresholds. The noise level would exceed advised State guidelines in the southern portion of the site. Incorporation of a vegetated berm would attenuate noise exposure by approximately 4 dB within State-advised guidelines; however, mitigation is not required because the project would not be exposed to noise levels exceeding the identified and regulated threshold of significance (County standards).

Generally speaking, doubling the traffic volume will produce a 3 dB increase in the ambient noise environment. Based on the traffic study prepared for the project (Rick Engineering 2012), the project would not generate traffic resulting in a substantial increase above existing conditions, and would therefore not result in a noticeable increase in transportation-related noise (refer to Table 4.7-4 below).

Table 4.7-4. Estimated Traffic Increase (Baseline Plus Project)

Location	Baseline ADT	Baseline Plus Project ADT	ADT Increase (%)
West Tefft Street w/o Mary Avenue	18,300	18,320	0.11
West Tefft Street, Mary Avenue, US 101 SB Ramp	19,700	19,722	0.11
West Tefft Street, US 101 SB Ramp to NB Ramp	18,500	18,556	0.30
West Tefft Street, US 101 NB Ramp – South Oakglen Avenue	12,400	12,494	0.76
West Tefft Street, South Oakglen Avenue to Thompson Avenue	9,200	9,210	0.11
Mary Avenue n/o West Tefft Street	7,600	7,600	0
Mary Avenue s/o West Tefft Street	7,100	7,102	0.03
North Oakglen Avenue n/o West Tefft Street	800	800	0
South Oakglen Avenue s/o West Tefft Street	2,400	2,504	4.33
North Thompson Avenue, n/o West Tefft Street	5,300	5,308	0.15
South Thompson Avenue s/o West Tefft Street	5,700	5,702	0.04

Stationary and Amplified Sound. The noise study includes use of amplified equipment to simulate sound as it may be produced during a special event at the project site. The sound was directed at the closest property line and noise levels were measured along the property boundary. Sound attenuation was approximately 6 dB with each doubling of distance: 83 dBA at 50 feet from the source; 75 dBA at 100 feet; and, 60 dBA at 200 feet.

Sources of noise generated by the project would include: amplified commentary during operation of the arena; amplified sound during events and use of the amphitheater at the

visitor's center; demonstrations and other uses at the Chumash interpretive area; and other special events and concerts at the project site.

Typical sound from outdoor events (as measured 50 feet from the source) would include: 1) amplified music (outdoors), 74-80 dB maximum sound level (Lmax)/73-76 dB Leq, and 2) amplified live band (inside tent), 76 dB Lmax/64-67 dB Leq. The associated sound levels resulting from amplified outdoor music, as measured at the property line, are shown in Table 4.7-5 below. As shown in the table, noise levels would exceed identified thresholds, and mitigation will be required.

Amplified sound generated by uses on the visitor's center terrace would be blocked by the structure itself, and noise would attenuate to a level of 56 dB, which is below the County's 65 dB Lmax threshold. In the event amplified sound is used within the Chumash interpretive area, the anticipated sound level would be 63 dB Lmax, as measured from the southern property line. This is below the County threshold of 65 dB.

Table 4.7-5. Sound Levels at Property Line (Unmitigated)

Use	Distance to nearest property line	Forecast		Permitted	
		Lmax	Leq	Lmax	Leq
Arena	154	64-70	63-66	65	45
Adobe	305	58-64	57-60	65	45
Visitor Center	210	62-68	61-64	65	45
Chumash Interpretive Area	230	61-67	60-63	65	45

Source: Dubbink 2012

N Impact 1 **Amplified sound at special events proposed at the project site would exceed County thresholds, potentially affecting persons off-site, resulting in a significant, short-term and long-term impact.**

N/mm-1 *Upon application for construction permits, the applicant shall submit plans listing the following noise attenuation measures, which shall be implemented for the life of the project:*

a. *Outdoor events with amplified music or sound shall not be permitted to continue beyond 10:00 p.m.*

b. *All soundspeaker systems shall include dispersed speakers oriented away from residential properties.*

c. *Within the amphitheater, speakers shall be orientated downward or positioned below the stage.*

d. *The enforced amplified sound limit (excluding the amphitheater) shall be 85 dB maximum as measured 50 feet from the source.*

e. *The enforced amplified sound limit within the amphitheater shall be 80 dB maximum as measured 50 feet from the source.*

f. *An on-site manager shall be present during all events to verify the amplified sound limit using a noise meter (Type 2 or better) and address noise complaints (if received). All noise complaints and subsequent remediation actions (i.e., reducing the amplified noise level within acceptable limits, adjusting speaker locations) shall be recorded by the on-site manager and kept on file by DANA.*

g. *DANA shall provide a letter to all adjacent landowners including the name and contact information for the on-site manager.*

h. *All amplified noise attenuation measures shall be listed on any special event agreements issued by DANA.*

Residual Impacts

The maximum noise threshold is 65 dB as measured from the property line, similar to the threshold identified for special events at wineries. Considering the use of amplified sound during special events, implementation of design methods to reduce noise (i.e., locating event areas near proposed structures, away from residential property boundaries, and berm near the Chumash interpretive area), and incorporation of mitigation (85-80 dB maximum at the source, placement of speakers to face away from property boundaries) the noise level would not exceed 65db (maximum) at the property boundaries.

Table 4.7-6 shows the proposed mitigation and residual noise level as measured from the closest property boundary. This shows that noise would not exceed 65 dB (Lmax) upon implementation of mitigation. Based on implementation of mitigation measures identified above, residual noise impacts would be *less than significant with mitigation (Class II)*.

Table 4.7-6. Sound Levels at Property Line (Mitigated)

Use	Forecast		Permitted		Mitigation (Reduction)	Residual
	Lmax	Leq	Lmax	Leq	dB	Lmax
Arena	64-70	63-66	65	45	10-15	55-60
Adobe	58-64	57-60	65	45	N/A	58-64
Visitor Center[1]	62-68	61-64	65	45	10-15	53-58
Chumash Interpretive area[2]	61-67	60-63	65	45	3	63

[1] Visitor's Center is located approximately 210 feet from the western property line, 315 feet from the southwestern property line, 540 feet from the southern property line, and 825 feet from the northern property line.

[2] Noise generated by amplified sound attenuated by proposed vegetative berm.

Permanent, Temporary, Periodic Increases in Ambient Noise

The proposed project does not include any features that would generate a permanent or consistent source of noise. Construction of the project would result in a temporary source of noise due to the use of loud heavy equipment, machines, appliances, and hand tools. The applicant would be required to comply with the County Noise Ordinance, and limit construction to daytime hours. Based on the temporary nature of construction activities, potential temporary noise impacts would be *less than significant (Class III)*.

Special events are considered periodic and, as noted above, when amplified sound is used outdoors, mitigation would be necessary to reduce the noise level as measured from the property boundary.

The ambient noise level along South Oakglen Avenue (west of the project site) is estimated to be 57 dB during the peak traffic hour. Future traffic levels on the highway and South Oakglen Avenue may add at least 3 dB to the ambient noise level. During special events at the amphitheater, the noise level will range from 61 to 64 dB Leq at the neighboring residential property line to the west, resulting in a combined sound level ranging from 63.5 to 65.5 dB Leq.

Based on the LUO, where the existing ambient sound is above the permitted level (60 dB Leq), a significant impact would occur if the added sound increases this level by more than 1 dB. The use of amplified sound at the visitor's center would exceed the County's noise threshold (1 dB increase) by 2.5 to 4.5 dB (Dubbink 2012). The County Noise Element notes that sound level changes less than 3 dB are minimally detectable; however, mitigation is recommended to reduce sound generated by the project and minimize significant impacts to sensitive receptors (refer to N/mm-1).

N Impact 2 **Amplified sound at special events proposed at the project site would result in periodic increases in the ambient noise level in the project vicinity, resulting in a significant, long-term impact.**

Implement N/mm-1.

Residual Impacts

Although the noise generated by the project would increase the ambient noise level in the immediate area, in combination with existing baseline noise generated by surrounding uses and the US 101 transportation corridor, the increase would not be significantly noticeable and would only occur during special events. Mitigation is identified for amplified sound, which would reduce the noise level below adopted thresholds (as measured from the property boundary). Based on implementation of mitigation measures identified above, residual noise impacts would be *less than significant with mitigation (Class II)*.

Severe Noise or Vibration

Construction of the project would include use of large construction equipment. Construction would occur pursuant to the LUO, would be limited in duration, and would not generate severe noise levels or vibration. Based on compliance with the County Noise Ordinance, which limits construction activities to daytime hours, potential impacts are short-term and *less than significant (Class III)*.

Severe Noise or Vibration – Airport or Airstrip

The project site is not located in proximity to a public or private airport or airstrip, and visitors and employees would not be exposed to significant levels of aircraft-generated noise. No impact would occur.

4.7.6 Cumulative Impacts

There are no proposed or recently approved projects in the immediate area that would generate a significant level of stationary noise. As noted above, the primary source of noise generated by the project would occur during special events. Mitigation is identified that would address the project's contribution to the cumulative noise environment; therefore, cumulative noise impacts related to stationary noise would be *less than significant (Class III)*.

To determine the cumulative traffic noise level increase, the *Traffic Impact Analysis* (March 2012) was used in order to determine cumulative traffic conditions. Due to the relatively low number of expected additional trips (compared to cumulative conditions) estimated noise level increases due to project generated traffic are expected to be negligible (refer to Table 4.7-7). Based on the traffic and noise analysis, potential cumulative noise impacts related to transportation noise generated by the project would be *less than significant (Class III)* and no mitigation is necessary.

Table 4.7-7. Estimated Traffic Increase (Build-out Plus Project)

Location	Build-out ADT	Build-out Plus Project ADT	ADT Increase (%)
West Tefft Street w/o Mary Avenue	18,400	18,420	0.11
West Tefft Street, Mary Avenue, US 101 SB Ramp	19,800	19,822	0.11
West Tefft Street, US 101 SB Ramp to NB Ramp	18,600	18,656	0.30
West Tefft Street, US 101 NB Ramp – South Oakglen Avenue	12,700	12,794	0.74
West Tefft Street, South Oakglen Avenue to Thompson Avenue	9,300	9,310	0.11
Mary Avenue n/o West Tefft Street	7,700	7,700	0
Mary Avenue s/o West Tefft Street	7,200	7,202	0.28
North Oakglen Avenue n/o West Tefft Street	800	800	0
South Oakglen Avenue s/o West Tefft Street	2,400	2,504	4.33
North Thompson Avenue n/o West Tefft Street	5,400	5,408	0.15
South Thompson Avenue s/o West Tefft Street	5,800	5,802	0.03

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