

12.1 Introduction

This chapter describes the environmental and regulatory setting for noise, as well as background information on environmental acoustics and additional information on the terms used in noise analysis. The following sources of information were reviewed to prepare this chapter:

- Sacramento County General Plan (Sacramento County 1993)
- Draft 2030 Sacramento County General Plan (Sacramento County 2009)
- El Dorado County General Plan (El Dorado County 2004)
- Elk Grove General Plan (City of Elk Grove 2009)
- Folsom General Plan (City of Folsom 1993)
- Rancho Cordova General Plan (City of Rancho Cordova 2006a)

12.1.1 Noise Terminology and Background

Sound is mechanical energy transmitted by pressure waves in a compressible medium such as air. Noise can be defined as unwanted sound. Sound is characterized by various parameters that include the rate of oscillation of sound waves (frequency), speed of propagation, and pressure level or energy content (amplitude). In particular, the sound pressure level is the most common descriptor used to characterize the loudness of an ambient sound level. The decibel (dB) scale is used to quantify sound intensity. Because sound pressure can vary enormously within the range of human hearing, a logarithmic loudness scale is used to keep sound intensity numbers at a convenient and manageable level. The human ear is not equally sensitive to all frequencies in the entire spectrum, so noise measurements are weighted more heavily for frequencies to which humans are sensitive in a process called *A-weighting*, written dBA. In general, human sound perception is such that a change in sound level of 3 dB is just noticeable, a change of 5 dB is clearly noticeable, and a change of 10 dB is perceived as doubling or halving sound level.

Different types of measurements are used to characterize the time-varying nature of sound. These measurements include the equivalent sound level (L_{eq}), minimum and maximum sound levels (L_{min} and L_{max}), percentile-exceeded sound levels (L_{xx}), day-night sound level (L_{dn}), and community noise equivalent level (CNEL). Below are brief definitions of these measurements and other terminology used in this chapter:

- **Sound:** A vibratory disturbance created by a vibrating object, which, when transmitted by pressure waves through a medium such as air, is capable of being detected by a receiving mechanism, such as the human ear or a microphone.
- **Noise:** Sound that is loud, unpleasant, unexpected, or otherwise undesirable.
- **Ambient noise:** The composite of noise from all sources near and far in a given environment exclusive of particular noise sources to be measured.

- **Decibel (dB):** A unitless measure of sound on a logarithmic scale, which indicates the squared ratio of sound pressure amplitude to a reference sound pressure amplitude. The reference pressure is 20 micro-pascals.
- **A-weighted decibel (dBA):** An overall frequency-weighted sound level in decibels that approximates the frequency response of the human ear.
- **Equivalent sound level (L_{eq}):** The average of sound energy occurring over a specified period. In effect, L_{eq} is the steady-state sound level that in a stated period would contain the same acoustical energy as the time-varying sound that actually occurs during the same period.
- **Exceedance sound level (L_{xx}):** The sound level exceeded XX% of the time during a sound level measurement period. For example L_{90} is the sound level exceeded 90% of the time and L_{10} is the sound level exceeded 10% of the time.
- **Maximum and minimum sound levels (L_{max} and L_{min}):** The maximum or minimum sound level measured during a period of time.
- **Day-night level (L_{dn}):** The energy average of the A-weighted sound levels occurring during a 24-hour period, with 10 dB added to the A-weighted sound levels occurring during the period from 10 p.m. to 7 a.m.
- **Community noise equivalent level (CNEL):** The energy average of the A-weighted sound levels occurring during a 24-hour period with 5 dB added to the A-weighted sound levels occurring during the period from 7 p.m. to 10 p.m. and 10 dB added to the A-weighted sound levels occurring during the period from 10 p.m. to 7 a.m.

L_{dn} and CNEL values rarely differ by more than 1 dB. As a matter of practice, L_{dn} and CNEL values are considered equivalent and are treated as such in this assessment.

12.2 Environmental Setting

12.2.1 Existing Conditions

12.2.1.1 Existing Noise Sources

The noise environment in the study area comprises two major categories of noise sources: transportation and non-transportation noise sources. Transportation noise sources include surface traffic on public roadways, railroad line operations, and aircraft in flight. Non-transportation (or fixed) noise sources commonly consist of industrial activities, railroad yard activities, small mechanical devices (e.g., lawnmowers, leaf blowers, air conditioners, radios), and other sources not included in the traffic, railroad, and aircraft category.

Transportation Noise

Traffic noise exposure is mainly a function of the number of vehicles on a given roadway per day, the speed of those vehicles, the percentage of medium and heavy trucks in the traffic volume, and the receiver's proximity to the roadway. The project limits extend from the I-5/Hood Franklin Road interchange in southwest Sacramento County east and north approximately 35 miles, terminating at

US 50. Within this area, SR 99 and SR 16 transect portions of the project corridor. These highways are the predominant source of existing traffic noise in the area.

Traffic on local roadways within the study area also is a source of noise. Based on existing (2008) traffic conditions, existing traffic noise levels along the project corridor are in the range of about 52 to 65 dB L_{dn} at 100 feet from the roadway. Several project options and alternatives involve construction of completely new roadways that are distant from existing sources of traffic noise. The existing ambient noise at these rural locations can be expected to be less than 50 dB L_{dn} .

Sunset Sky ranch Airport, a private air strip located east of Elk Grove and south of the project, is expected to close in the near future. At the northern end of the project area, aircraft operations at Mather Airport are a predominant source of transportation noise.

Non-Transportation Noise

A wide variety of industrial and other non-transportation noise sources are located with the study area, but are most prevalent near the cities of Sacramento, Rancho Cordova, and Folsom. Agricultural activities may be present along the southern edge of the project corridor and could generate noise from stationary generators or farming equipment. Although non-transportation noise sources can define the ambient noise environment within a given distance of the noise source, the regional ambient noise environment is, nonetheless, defined primarily by traffic.

12.2.1.2 Noise-Sensitive Land Uses

Noise-sensitive land uses and receptors are those locations where noise can interfere with primary activities. These include places where people sleep, such as residences and hospitals. Other noise-sensitive uses include schools, places of worship, and areas of recreation during hours of normal use. Figure 12-1 depicts the noise-sensitive land uses within 500 feet of the project alignment. In addition to the residential areas depicted in Figure 12-1, there are scattered single-family homes throughout the project area. There is also a residential subdivision south of Mather Air Force Base, along Excelsior Road/Mather Road. The Bradshaw Road Alignment Alternative would come as close as 500 feet to the nearest residence in this subdivision.

12.2.2 Regulatory Setting

The proposed alignments would run adjacent to or within the following five jurisdictions: the Cities of Elk Grove, Rancho Cordova, and Folsom, and Sacramento and El Dorado Counties. This section presents relevant information from the noise elements and ordinances for each jurisdiction. In general, noise ordinances apply to noise sources that can be regulated at the local level such as air conditioners and construction operations. Noise from vehicles traveling on a public road is not regulated at the local level. However, general plans typically identify land use compatibility standards for noise so that development adjacent to roadways is compatible with the noise generated by traffic on the roadway.

12.2.2.1 Sacramento County General Plan Noise Element

Policy NO-1 in the adopted Sacramento County General Plan Noise Element relates to noise created by transportation sources such as roadways. Policy NO-1 states:

Noise created by new transportation noise sources should be mitigated so as not to exceed 60 dB L_{dn} /CNEL at the outdoor activity areas of any affected residential lands or land use situated in the unincorporated areas. When a practical application of the best available noise-reduction technology cannot achieve the 60dB L_{dn} /CNEL standard, then an exterior noise level of 65dB L_{dn} CNEL may be allowed in outdoor activity areas. Mitigation measures such as soundwalls, berms or other attenuation must achieve a 60dB to 65dB L_{dn} /CNEL in the outdoor area for the project to be consistent with this policy.

The Sacramento County General Plan, including the Noise Element, is currently being updated and is in draft form. The land use compatibility standard for residential uses in the draft Noise Element is identified as 65 dB L_{dn} . This is generally consistent with the existing Noise Element, which allows noise up to 65 dB L_{dn} /CNEL when best available noise-reduction technology cannot achieve 60 dB L_{dn} /CNEL. The draft Noise Element provides a policy that relates to capacity-enhancing roadway projects. This policy states that if pre-project traffic noise levels already exceed a noise standards and the increase is significant as defined below, noise mitigation measures should be considered to reduce traffic and noise levels to a state of compliance with the standard. A significant increase is defined as follows:

Pre-Project Noise Environment (L_{dn})	Significant Increase
Less than 60 dB	5+ dB
60–65 dB	3+ dB
Greater than 65 dB	1.5+ dB

12.2.2.2 Sacramento County Noise Ordinance

The Sacramento County Noise Ordinance is codified in Chapter 6.68 (Noise Control) of the Sacramento County Code. The Sacramento County Noise Ordinance states that exterior noise limits cannot exceed 50 dBA between 10 p.m. and 7 a.m. and 55 dBA between 7 a.m. and 10 p.m. for residential and agricultural areas. However, construction activities between 6 a.m. and 8 p.m., Monday through Friday, and 7 a.m. and 8 p.m. on weekends are exempt from this ordinance.

12.2.2.3 El Dorado County General Plan Noise Element

The El Dorado County General Plan Noise Element states that noise created by new transportation sources should be mitigated so as not to exceed the levels specified in Table 12-1 at existing noise-sensitive land uses.

Table 12-1. El Dorado County General Plan Noise Standards

Land Use	Outdoor Activity Areas L _{dn} /CNEL, dB	Interior Spaces	
		L _{dn} /CNEL, dB	L _{eq} , dB
Residential	60	45	–
Transient lodging	60	45	–
Hospitals, nursing homes	60	45	–
Theaters, auditoriums, music halls	–	–	35
Churches, meeting halls, schools	60	–	40
Office buildings	–	–	45
Libraries, museums	–	–	45
Playgrounds, neighborhood parks	70	–	–

The Noise Element also established construction noise limits, which apply to construction activity occurring between the hours of 7 a.m. and 7 p.m., Monday through Friday, and 8 a.m. and 5 p.m. on weekends and federally recognized holidays. These standards range from 45 to 90 dB L_{eq}, with the most stringent levels in community regions and adopted plan areas (El Dorado County 2004).

12.2.2.4 El Dorado County Noise Ordinance

The El Dorado County Noise Ordinance states that it is unlawful for any person to create a loud or raucous noise to such an extent that it unreasonably interferes with the peace and quiet of another's private property.

12.2.2.5 Elk Grove General Plan Noise Element

The Elk Grove General Plan Noise Element sets the same criteria as the Sacramento County General Plan (see above) to determine whether transportation projects would generate a significant increase in noise levels. The element also establishes noise limits for the construction of new roadways. These standards are similar to those presented in Table 12-1. Finally, the Elk Grove General Plan contains goals that seek to limit construction activity to the hours of 7 a.m. to 7 p.m. whenever such activity is adjacent to residential uses (City of Elk Grove 2009).

12.2.2.6 Elk Grove Noise Ordinance

The Elk Grove Noise Ordinance requires that activities adhere to the noise standards set in the city general plan. Additionally, the ordinance prohibits the use of construction equipment between the hours of 7 p.m. and 7 a.m. if that activity creates a noise disturbance across a residential property line.

12.2.2.7 Folsom General Plan Noise Element

The Folsom General Plan Noise Element considers areas as noise-impacted if they are exposed to existing or projected exterior noise levels exceeding 60 dBA L_{dn}/CNEL or the performance standards summarized in Table 12-2 (City of Folsom 1993).

Table 12-2. Folsom General Plan Noise Standards

Category	Exceedance of Exterior Noise Level Standard (dBA) (minutes)		
	Average during Any 1-Hour Period	Daytime (7 a.m. to 10 p.m.)	Nighttime (10 p.m. to 7 a.m.)
1	30	50	45
2	15	55	50
3	5	60	55
4	1	65	60
5	0	70	65

12.2.2.8 Folsom Noise Ordinance

The exterior noise level standards set out in the Folsom Noise Ordinance are the same as the noise-level performance standards summarized in Table 12-2. Noise associated with construction activity occurring between the hours of 7 a.m. to 6 p.m., Monday through Friday, and 8 a.m. to 5 p.m., Saturday and Sunday, is exempted from the provisions of the noise ordinance.

12.2.2.9 Rancho Cordova General Plan Noise Element

The Rancho Cordova General Plan Noise Element sets the same criteria as the Sacramento County General Plan (see above) to determine whether transportation projects would generate a significant increase in noise levels. The element also establishes noise limits for the construction of new roadways. These standards are similar to those presented in Table 12-1.

The general plan contains goals that seek to limit construction activity to the hours of 7 a.m. to 7 p.m. on weekdays and 8 p.m. to 6 p.m. on weekends when construction is conducted near residential uses (City of Rancho Cordova 2006a). The plan further requires that noise created by the construction of new roadways be mitigated to the maximum extent feasible.

12.2.2.10 Rancho Cordova Noise Ordinance

The Rancho Cordova Noise Ordinance is based on the Sacramento County Noise Ordinance, and establishes maximum allowable exterior and interior noise levels for land uses. The ordinance limits exterior noise levels to 50 dBA between 10 p.m. and 7 a.m. and 55 dBA between 7 a.m. and 10 p.m. for residential and agricultural areas. However, construction activities between 7 a.m. and 6 p.m., Monday through Saturday, and 9 a.m. and 6 p.m. on Sunday are exempt from this ordinance.

12.3 Impact and Mitigation Discussion

This section describes potential noise impacts that could result from implementation of the proposed project and project options. This evaluation of impacts is at a program level. Components of the proposed project and project options may require further project-level environmental review at a later time.

12.3.1 Thresholds of Significance

CEQA thresholds of significance used in this noise analysis are based on the Appendix G of the State CEQA Guidelines (14 CCR 15000 et seq.). The guidelines indicate that a significant noise impact can occur if the proposed project would:

- expose persons to or generate noise levels in excess of standards established in a local general plan or noise ordinance or applicable standards of other agencies;
- expose persons to or generate excessive groundborne vibration or groundborne noise levels;
- result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;
- result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project;
- be located within an airport land use plan area or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport and expose people residing or working in the project area to excessive noise levels; or
- be located in the vicinity of a private airstrip and expose people residing or working in the project area to excessive noise levels.

The first four guidelines are applicable to the proposed project and are considered in the analysis below. The latter two are not applicable because the project would not introduce new noise-sensitive land uses into the project area.

All of the jurisdictions involved use 60 L_{dn} as the residential land use compatibility standard for noise. As stated in Section 12.2.2, "Regulatory Environment," the Draft 2030 Sacramento County General Plan Noise Element contains a sliding scale to evaluate the significance of increases in noise. This scale is designed specifically for roadway impacts, and is reasonable to apply to all jurisdictions involved in this project. Therefore, a significant increase in traffic noise is defined as:

Baseline Noise Environment (L_{dn})	Significant Increase
Less than 60 dB	5+ dB
60–65 dB	3+ dB
Greater than 65 dB	1.5+ dB

Noise from construction activity is considered significant if noise would exceed applicant local noise standards for construction noise.

12.3.2 Approach and Methods

Noise from construction activity and noise from traffic are expected to be the primary sources of noise impacts associated with the proposed project. Detailed information on construction approaches and equipment is not available at this time. Therefore, the assessment of construction noise is based on typical construction noise levels associated with various phases of construction.

Traffic noise impacts associated with project-related traffic were evaluated using the FHWA Traffic Noise Model (TNM) Version 2.5 and forecasted average daily traffic volumes, speed, and heavy truck percentages. There are several options to the proposed project. Each option has not been evaluated

in detail. Rather, the highest traffic volume (and thus highest noise level) on any given roadway segment associated with any of the options was evaluated.

Section 15125(a) of the State CEQA Guidelines provides that the environmental setting “will normally constitute the baseline physical conditions by which a lead agency determines whether an impact is significant.” The environmental setting consists of existing physical conditions at the time the NOP is released or CEQA analysis is begun.

In 2010, the California Supreme Court clarified that “[n]either CEQA nor the CEQA Guidelines mandates a uniform, inflexible rule for determination of the existing conditions baseline. Rather, an agency enjoys the discretion to decide, in the first instance, exactly how the existing physical conditions without the project can most realistically be measured, subject to review, as with all CEQA factual determinations, for support by substantial evidence. (citation)” (*Communities for a Better Environment v. South Coast Air Quality Management District* (2010) 48 Cal.4th 310). The Court limited this flexibility by further stating that “[a]n approach using hypothetical allowable conditions as the baseline results in ‘illusory’ comparisons that ‘can only mislead the public as to the reality of the impacts and subvert full consideration of the actual environmental impacts,’ a result at direct odds with CEQA’s intent. (citation)”]

Past practice in traffic impact analysis undertaken to help determine the significance of a project’s noise impact has often relied upon a “future no-project” scenario as its CEQA baseline. The project’s impact is derived from the difference between “future with-project” and “future no-project” scenarios. This approach has been used in the past because it offers a means of comparing with- and without-project scenarios that share common assumptions for future growth and improvements. It may not, however, conform to the *Communities for a Better Environment* decision. In fact, that very approach was invalidated late last year in the Sixth District Court of Appeal’s decision in *Sunnyvale West Neighborhood Assn. v. City of Sunnyvale* (2010) __ Cal.App.4th __.

In recognition of the *Communities for a Better Environment* and *Sunnyvale West* decisions, the program EIR for the Southeast Connector has not followed this past practice. For purposes of determining the significance of noise impacts in this EIR, the baseline is physical conditions along the Southeast Connector alignment as they existed in 2008, the CEQA baseline condition. This is the most recent year for which comprehensive traffic data is available. The data on existing traffic levels has been used to estimate existing noise conditions based on standard modeling techniques. 2008 baseline plus project traffic noise conditions are compared to the 2008 baseline conditions to determine the significance of the project’s noise impacts. This approach complies with the intent of the *Communities for a Better Environment*, by providing a significance determination based on the change from existing conditions and avoiding the use of a hypothetical baseline condition.

Determining the significance of an impact by comparing anticipated project conditions to existing conditions in the area affected by the project is a relatively straightforward analysis for most impacts. However, the noise impact of a project that will not be operational for years is not easily compared to existing conditions. By the time the Project is operational there will be new infrastructure and background growth in the region unrelated to the project that will impact area roads.

The traffic conditions modeled for the existing plus proposed project conditions and used as the basis for the noise analysis do not include reasonable assumptions about new infrastructure and background growth within the region because this infrastructure and growth would not occur under existing conditions. As a result, although this provides a comparison between existing conditions

and conditions with the Project in place, the resultant significance determination will likely overstate the extent of change in noise conditions that is a direct result of the Project.

This EIR also includes an analysis of the potential impacts that would occur under the “future with-project” scenario. The impacts of the “future with-project” scenario in comparison to the “future without-project” scenario is analyzed and disclosed in the cumulative impact discussion in Chapter 18, Cumulative and Growth Inducing Impacts. More than 200 roadway segments in the project area were evaluated. The traffic noise analysis focuses on those segments where the project-related increase over the baseline conditions has potential to be 1.5 dB or greater.

12.3.3 Impacts of the Proposed Project

Impact NOI-1: Exposure of Noise-Sensitive Land Uses to Noise and Vibration from Project Construction

Construction activities associated with implementation of the project could result in temporary increases in noise in the vicinity of the site-specific activity. Where those increases result in noise in excess of adopted standards, the impact would be considered significant. The severity of construction noise impacts would depend on:

- types of construction activity in the given area,
- types of land uses in the area and their proximity to construction activity,
- construction phasing and equipment type,
- duration of proposed construction activities,
- distance between the noise source and receptors, and
- presence or absence of barriers between noise source and receptor.

Table 12-3 summarizes typical construction noise levels for various phases of typical highway and roadway construction projects utilizing vibratory hammers and pile drivers equipment, bulldozers, cranes, backhoes and graders, pumps, dump trucks, rollers and graders, asphalt/concrete trucks, paving machines, grinders, and similar construction equipment described in Chapter 2.

Table 12-3. Construction Noise Levels

Construction Phase	Typical Noise Level ^a (dBA)
Ground clearing	85
Excavation	88
Foundations	88
Superstructure	78
Finishing	84

Source: U.S. Environmental Protection Agency 1971.

^a Loudest equipment located 50 feet from observer; other equipment located 200 feet from the observer.

Noise from construction activity attenuates at a rate of about 6 dB per doubling of distance. This means that land uses located within about 1,000 feet of site-specific construction sites could be

exposed to noise that exceed applicable local construction noise standards depending on when activity occurs. Jurisdictions in the project area typically have more strict limits on construction noise during nighttime hours.

Non-impact construction activities such as the operation of bulldozers, scrapers, and trucks typically do not produce perceptible ground vibration beyond about 150 feet from the source (Federal Transit Administration 2006). Accordingly, the operation of non-impact equipment is not expected to expose people to excessive groundborne vibration or groundborne noise. Operation of impact pile drivers and similar highly dynamic equipment can, however, result in perceptible vibration within several hundred feet of the activity and potentially damaging vibration within about 50 to 100 feet.

Because of the potential for noise to exceed applicable local noise standards and the potential for construction vibration to result in perceptible and potentially damaging vibration, this impact is considered significant.

Implementation of Mitigation Measure NOI-1 would reduce the impact; however, it may not be feasible in all cases to reduce noise and vibration to a less-than-significant level as a result of the proximity of equipment to noise-sensitive uses, the need for nighttime work, and the physical limitations of noise reduction measures. Accordingly, the impact is considered significant and unavoidable.

Mitigation Measure NOI-1: Employ Noise- and Vibration-Reducing Construction Practices

Before final project design, the JPA or local agency will undertake a detailed evaluation of site-specific noise and vibration impacts and identify project-specific mitigation measures necessary to reduce construction noise and vibration to a level that is in compliance with local noise standards where feasible. This may be done as a part of the CEQA process when a later project is subject to CEQA. The JPA or local agency will ensure through contract provisions and specifications that the contractor adheres to the mitigation measures before and during construction and documents compliance with the adopted mitigation measures. Documentation will be provided to the JPA or local agency on a weekly basis. The contract provisions and specifications will authorize the JPA or local agency to sanction contractors for non-compliance.

The following measures will be implemented to reduce the effects of construction noise and vibration. Additional measures may be developed once project design has developed sufficiently to identify site-specific impacts.

- Comply with all local sound control and noise level rules, regulations, and ordinances of the pertinent city, county, or both.
- Limit the hours of noise-generating construction and related activity such as deliveries and staging activities to between 6 a.m. and 8 p.m. on Monday through Friday and between 7 a.m. and 8 p.m. on weekends, or as required by local noise ordinances in effect for site-specific projects.
- Require that equipment and trucks used for project construction use noise control techniques (including mufflers, intake silencers, ducts, engine enclosures, and acoustically attenuating shields or shrouds) as necessary to limit noise to compliance levels.
- Locate stationary noise sources such as generators or pumps as far from sensitive receptors as possible. Stationary noise sources that must be located near existing receptors will be

adequately muffled or an acoustic barrier will be installed to reduce their noise levels to comply with applicable local requirements.

- Designate a complaint coordinator at the JPA or local jurisdiction to be responsible for responding to noise complaints received during the construction phase. The name and phone number of the complaint coordinator will be conspicuously posted at construction areas and on all advanced notifications. This person will be responsible for taking steps required to resolve complaints, including periodic noise monitoring and changes to construction activities, if necessary to meet the required mitigation.
- Mitigate noise generated from any rock-crushing or screening operations performed within 3,000 feet of any occupied residence by strategic placement of material stockpiles between the operation and the affected dwelling or by other means such as temporary noise barriers approved by the local jurisdiction.
- Require contractors to implement appropriate additional noise mitigation measures including (but not limited to) shutting off equipment (including trucks transporting aggregate or other construction materials) so that idling time does not exceed 3 minutes, and notifying adjacent residents by mail not less than 1 week in advance of construction work.
- Prohibit pile-driving or blasting operations within 3,000 feet of an occupied residence on Sundays, legal holidays, and between 9 p.m. and 6 a.m. on other days, or as governed by local noise ordinances at site-specific locations.
- Use sonic or vibratory pile drivers instead of impact pile drivers (sonic pile drivers are only effective in some soils). If sonic or vibratory pile drivers are not feasible, install acoustical enclosures as necessary to ensure that pile-driving noise does not exceed applicable local noise standards at the closest sensitive receptor.
- Limit pile driving in residential areas to between 8 a.m. and 5 p.m.
- Use engine and pneumatic exhaust controls on pile drivers as necessary to ensure that exhaust noise from pile driver engines is minimized to the extent feasible.
- Where feasible, pre-drill pile holes to reduce potential noise and vibration impacts.

Impact NOI-2: Exposure of Noise-Sensitive Land Uses to Increased Noise from Project Operation

Table 12-4 summarizes worst-case increases in traffic noise associated with the proposed project and any of the related options. Direct noise impacts associated with the proposed project are considered to be significant along the following existing roadway segments.

- White Rock Rd Scott Rd (North) to Oak Ave Pkwy
- White Rock Rd Oak Ave Pkwy to Prairie City Rd
- White Rock Rd Prairie City Rd to Grant Line Rd
- Grant Line Rd Douglas Rd to Chrysanthy
- Grant Line Rd Chrysanthy to Kiefer Blvd
- Kammerer Rd SR-99 to W Stockton Blvd

- Kammerer Rd W Stockton Blvd to Lent Ranch Pkwy
- Kammerer Rd Lent Ranch Pkwy to Lotz Pkwy
- Kammerer Rd Lotz Pkwy to Big Horn Blvd
- Kammerer Rd Big Horn Blvd to Bruceville Rd

The Kammerer Road Bypass Option would involve shifting the project alignment south to reduce effects on existing residences. This would place a new roadway in the vicinity of existing isolated rural residences. This would result significant noise impact at residences located along the following segments Kammerer Road segments including the single-family rural residence located about 650 feet south of Kammerer Road along Rau Road.

- Kammerer Rd Extension Bruceville Rd to Willard Pkwy
- Kammerer Rd Extension Willard Pkwy to Franklin Blvd
- Kammerer Rd Extension Franklin Blvd to I-5

Similarly, the Deer Creek Causeway would involve placing a new roadway in the vicinity of existing rural residences. The roadway surface of the Deer Creek Causeway will be about 25 to 30 feet above the ground. Because of this, attenuation from ground absorption will be reduced, which will cause traffic noise to travel farther than if the roadway was at ground elevation. This is accounted for in the traffic noise modeling. Table 12-4 shows the predicted noise levels in the vicinity of the Deer Creek Causeway and indicates causeway options would result in significant traffic noise impacts at residences located along the causeway and along Grant Line Road, where the causeway joins the road. Most residences in the Wilton area are generally more than 1,000 feet from the causeway. At this distance, noise from traffic on the causeway is predicted to drop to about 49 dB L_{dn}.

Operation of the project would result in significant noise traffic noise impacts that could be mitigated by implementation of Mitigation Measure NOI-2, but not to a less than significant level at all locations, depending on the necessary reduction in noise. Guidance developed by Caltrans suggests that a 3-dB reduction in noise can be expected from the use of low noise pavement such as open-grade asphalt or rubberized asphalt (California Department of Transportation 2003). However, there are some locations where additional noise reduction would be needed. Implementation of noise barrier walls can be expected to reduce noise by at least 5 dB; however, there may be some locations where walls may not be feasible because of the need to maintain driveway access or because of other physical limitations such as drainage ditches or extensive underground utilities. In these situations, traffic noise impacts would remain significant and unavoidable.

Mitigation Measure NOI-2: Develop and Employ Site-Specific Measures to Reduce Traffic Noise

During project design, the JPA or local agency will incorporate feasible measures to reduce traffic noise related to the project such that traffic noise from new roadways does not exceed applicable land use compatibility standards at adjacent uses, and such that traffic noise increases along existing roadways does not exceed Sacramento County significance thresholds for traffic noise increases. This may be done as a part of the CEQA process when a later project is subject to CEQA and sufficient detail is available at the time of the CEQA process. Potential measures that can be implemented include (but are not limited to) construction of noise barrier walls between the roadway and noise-sensitive uses and installation of low noise pavement

Table 12-4. Traffic Noise Impact Summary

Roadway	Segment	2008 Existing Traffic Noise Baseline Level (L _{dn})	2008 Existing + Project Maximum Traffic Noise Level (L _{dn})	Increase in Noise Level Relative to Baseline (dB)	CEQA Significance Threshold (dB Increase) ^a	Is Impact Significant?	Cumulative 2035 No Build Traffic Noise Level (L _{dn})	Cumulative 2035 + Project Maximum Condition Sound Level (L _{dn})	Increase in Traffic Noise Level Relative to Cumulative 2035 No Build (dB)
White Rock Rd	Latrobe Rd to Windfield Way	55.7	57.8	2.1	5	No	59.1	59.2	0.2
White Rock Rd	Windfield Way to Four Seasons Dr	54.6	57.9	3.3	5	No	58.8	59.0	0.3
White Rock Rd	Four Seasons Dr to Empire Ranch Rd	58.6	62.5	3.9	5	No	63.2	63.6	0.4
White Rock Rd	Empire Ranch Rd to Scott Rd (North)	59.8	62.5	2.6	5	No	64.7	65.2	0.5
White Rock Rd	Scott Rd (North) to Oak Ave Pkwy	59.8	65.2	5.4	5	Yes	69.6	70.5	0.9
White Rock Rd	Oak Ave Pkwy to Prairie City Rd	59.8	65.2	5.4	5	Yes	69.5	70.5	1.0
White Rock Rd	Prairie City Rd to Grant Line Rd	62.1	65.9	3.7	3	Yes	70.1	71.6	1.5
Grant Line Rd	White Rock Rd to Douglas Rd	61.5	64.4	2.9	3	No	68.4	70.4	2.0
Grant Line Rd	Douglas Rd to Chrysanthy	61.1	64.5	3.4	3	Yes	69.2	70.1	0.9
Grant Line Rd	Chrysanthy to Kiefer Blvd	60.6	64.5	3.8	3	Yes	68.0	70.0	2.0
Grant Line Rd	Kiefer Blvd to Rancho Cordova Pkwy	60.6	62.8	2.3	3	No	66.8	68.2	1.5
Grant Line Rd	Rancho Cordova Pkwy to Jackson Rd	60.6	63.3	2.8	3	No	66.4	68.0	1.5
Grant Line Rd	Jackson Rd to Sunrise Blvd	59.2	63.1	3.9	5	No	65.0	66.6	1.6
Grant Line Rd	Sunrise Blvd to Eagles Nest Rd	63.3	65.1	1.8	3	No	66.5	67.7	1.2
Grant Line Rd	Eagles Nest Rd to Calvine Rd	63.3	65.2	1.8	3	No	66.9	68.0	1.2
Grant Line Rd	Calvine Rd to Sheldon Rd	60.2	61.6	1.4	3	No	63.6	64.5	0.9
Grant Line Rd	Sheldon Rd to Wilton Rd	59.5	61.0	1.5	5	No	62.7	63.4	0.6
Grant Line Rd	Wilton Rd to Bond Rd	59.0	60.5	1.5	5	No	62.1	63.0	0.9
Grant Line Rd	Bond Rd to Elk Grove Blvd	59.2	61.5	2.2	5	No	63.1	63.7	0.7
Grant Line Rd	Elk Grove Blvd to Bradshaw Rd	59.7	61.3	1.6	5	No	63.1	64.2	1.1
Grant Line Rd	Bradshaw Rd to Waterman Rd	61.4	63.5	2.1	3	No	66.7	67.4	0.7
Grant Line Rd	Waterman Rd to E Stockton Blvd	58.7	60.8	2.1	5	No	63.6	64.1	0.5
Grant Line Rd	E Stockton Blvd to SR-99	59.3	62.0	2.7	5	No	64.0	64.5	0.5
Deer Creek Causeway		<50 ^b	66.3	>12	5	Yes	<50 ^b	69.6	>15
Kammerer Rd	SR-99 to W Stockton Blvd	51.8	57.1	5.3	5	Yes	63.6	63.7	0.2
Kammerer Rd	W Stockton Blvd to Lent Ranch Pkwy	52.3	59.3	7.0	5	Yes	65.7	65.9	0.2
Kammerer Rd	Lent Ranch Pkwy to Lotz Pkwy	52.3	59.0	6.7	5	Yes	63.2	63.5	0.3
Kammerer Rd	Lotz Pkwy to Big Horn Blvd	52.3	58.9	6.6	5	Yes	62.5	62.9	0.4
Kammerer Rd	Big Horn Blvd to Bruceville Rd	52.3	58.9	6.6	5	Yes	62.5	62.9	0.4

Table 12-4. Continued

Roadway	Segment	2008 Existing Traffic Noise Baseline Level (L _{dn})	2008 Existing + Project Maximum Condition Noise Level (L _{dn})	Increase in Traffic Noise Level Relative to Baseline (dB)	CEQA Significance Threshold (dB Increase) ^a	Is Impact Significant?	Cumulative 2035 No Build Traffic Noise Level (L _{dn})	Cumulative 2035 + Project Maximum Condition Sound Level (L _{dn})	Increase in Traffic Noise Level Relative to Cumulative 2035 No Build (dB)
Kammerer Rd Extension	Bruceville Rd to Willard Pkwy	<50 ^b	59.6	>9	5	Yes	64.5	64.9	0.4
Kammerer Rd Extension	Willard Pkwy to Franklin Blvd	<50 ^b	59.5	>9	5	Yes	65.2	65.5	0.3
Kammerer Rd Extension	Franklin Blvd to I-5	<50 ^b	58.7	>8	5	Yes	64.6	64.9	0.3
Prairie City Rd	US-50 to Easton Valley Pkwy	55.8	59.1	3.3	5	No	65.7	66.0	0.3
Prairie City Rd	Easton Valley Pkwy to White Rock Rd	57.8	61.0	3.2	5	No	66.2	67.5	1.3
Scott Rd	US-50 to Easton Valley Pkwy	55.5	56.8	1.3	5	No	65.2	65.5	0.3
Scott Rd	Easton Valley Pkwy to White Rock Rd	57.4	58.8	1.4	5	No	62.8	63.9	1.1
Bilby Rd	Franklin Blvd to Willard Pkwy	56.9	59.4	2.4	5	No	48.4	48.4	0.0
Eagles Nest Rd	Jackson Rd to Florin Rd	47.7	49.5	1.8	5	No	56.3	56.7	0.4
Franklin Blvd	Bilby Rd to Hood Franklin Rd	54.2	56.4	2.3	5	No	52.4	52.7	0.3
Hood Franklin Rd	Kammerer Rd Ext to Franklin Rd	56.1	58.2	2.2	5	No	63.5	63.8	0.3
White Rock Rd	Rancho Cordova Pkwy to Villagio Dr	53.5	55.7	2.1	5	No	56.2	56.5	0.3
White Rock Rd	Villagio Dr to Grant Line Rd	53.5	55.8	2.3	5	No	59.8	59.7	-0.1
Douglas Rd	Americanos to Grant Line Rd	51.8	53.3	1.6	5	No	58.3	57.0	-1.3

Note: All L_{dn} values at 100 feet from roadway centerline.

- ^a Threshold: 5 dB where existing or 2035 No-Build noise level is less than 60 L_{dn}.
3 dB where where existing or 2035 No-Build noise level is between 60 to 65 L_{dn}.
1.5. dB where existing or 2035 No-Build noise level is greater than 65 L_{dn}.

^b Estimate based on rural location that is not adjacent to an existing roadway.

such as open-grade asphalt or rubberized asphalt. Additional measures may be developed once project design has developed sufficiently to identify site-specific impacts and the specific reduction necessary to reduce the impact.

12.3.4 Impacts of the Off-Corridor Multi-Use Path Alternative

Impact NOI-1: Exposure of Noise-Sensitive Land Uses to Noise and Vibration from Project Construction

Construction of this alternative would require use of construction equipment for grading and paving. Construction noise and vibration impacts would be similar to those described for the proposed project. However, construction equipment will likely be limited to equipment associated with the grading and finishing phases listed in Table 12-3 and will not involve the use of large impact equipment such as pile drivers. There is still, however, potential for construction noise to exceed applicable local noise standards. For this reason, this impact is considered significant.

As described above, implementation of Mitigation Measure NOI-1 would reduce the impact; however, it may not be feasible in all cases to reduce noise and vibration to a less-than-significant level as a result of the proximity of equipment to noise-sensitive uses, need for nighttime work, and physical limitations of noise reduction measures. Accordingly, the impact is considered significant and unavoidable.

Impact NOI-2: Exposure of Noise-Sensitive Land Uses to Increased Noise from Project Operation

The use of the path will be limited to pedestrians and bicycles. As such, use of the path would not result in any substantial increase in the ambient noise level. This impact is considered less than significant.

12.3.5 Impacts of the Project Options

As described above in section 12.3.2, evaluation of noise impacts for each option was based on qualitative traffic data. The quantitative analysis, however, reflects the worst case noise conditions that could result from any option. Therefore, impacts related to noise generated as a result of project construction or implementation of the proposed Kammerer Road and Sheldon area Options would be similar to those described above for the proposed project.

