

SELECTED SECTIONS

REVISED DRAFT

**SUPPLEMENTAL ENVIRONMENTAL IMPACT
REPORT**

SILVA VALLEY PARKWAY INTERCHANGE PROJECT

(SCH NO. 1988050215)

EL DORADO COUNTY, CALIFORNIA

LSA

May 9, 2011

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EL DORADO COUNTY, CALIFORNIA

Submitted to:

County Of El Dorado
Department of Transportataion
2850 Fairlane Court, Building C
Placerville, California
(530) 621-5988

Prepared by:

LSA Associates, Inc.
4200 Rocklin Road, Suite 11B
Rocklin, California 95677
(916) 630-4600

LSA Project No. MKT530

LSA

May 9, 2011

1.0 INTRODUCTION

1.1. REQUIREMENTS FOR A RECIRCULATED DRAFT EIR

The County of El Dorado prepared and publicly circulated for review a Draft Supplemental Environmental Impact Report (Draft SEIR) for the Silva Valley Parkway Interchange with U.S. Highway 50 Project from January 21, 2011, to March 7, 2011. Pursuant to the Guidelines for California Environmental Quality Act (CEQA Guidelines) Section 15088.5 (a), a lead agency is required to recirculate an EIR when significant new information is added to the EIR after public notice is given of the availability of the EIR for public review under Section 15087 but before certification. New “information” can include changes in the project or environmental setting as well as additional data or other information. New information added to an EIR is not “significant” unless the EIR is changed in a way that deprives the public of a meaningful opportunity to comment upon a substantial adverse environmental effect of the project or a feasible way to mitigate or avoid such an effect (including a feasible project alternative) that the project’s proponent have declined to implement. “Significant new information” requiring recirculation is defined to include disclosures of any of the following (Section 15088.5 (a)[1] through [4]):

- (1) A new significant environmental impact would result from the project or from a new mitigation measure proposed to be implemented.
- (2) A substantial increase in the severity of an environmental impact would result unless mitigation measures are adopted that reduce the impact to a level of insignificance.
- (3) A feasible project alternative or mitigation measure considerably different from others previously analyzed would clearly lessen the environmental impacts of the project, but the project’s proponents decline to adopt it.
- (4) The draft EIR was so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded.

1.2. SUMMARY OF REVISIONS TO THE EIR

The Draft SEIR Mitigation Measure NOI-1 on p. 148 previously stated “Noise producing construction activities shall be limited to between the hours of 7:00 a.m. and 7:00 p.m. Monday through Friday, and between 8:00 a.m. and 5:00 p.m. on weekends and federal holidays.”

This mitigation measure had intended to include the provision for limited work for construction activities necessarily performed at night to avoid safety hazards and traffic congestions. Such work may include but is not necessarily limited to activities that necessitate full or partial closure of U.S. 50 or full closure of Clarksville Road (Old Silva Valley Parkway) as follows: Falsework erection, adjustment, or removal; k-rail placement or removal, installation of overhead signs; installation of lighting; construction of freeway ramps where ramps connect to mainline; installation, maintenance,

or removal of temporary or permanent striping; roadway excavation or rock excavation on or adjacent to the mainline; or construction of metal beam guardrail. These activities are anticipated to occur over, but are not restricted to, 60 individual nights spread over the duration of the construction project.

The term, "falsework" generally refers to any temporary structure used to support or construct a permanent structure, such as a scaffold. Falsework is necessary when the permanent a structure is not self supporting, either in construction or refurbishment. There are times when falsework activities for the construction of a freeway interchange may require lane closures to remove live traffic from under or adjacent to movable, or unsecured structural members.

The County's General Plan Policy 6.5.1.11 allows nighttime construction work within the hours and noise levels shown in General Plan Table 6-3:

TABLE 6-3: MAXIMUM ALLOWABLE NOISE EXPOSURE FOR NONTRANSPORTATION NOISE SOURCES IN COMMUNITY REGIONS AND ADOPTED PLAN AREAS – CONSTRUCTION NOISE			
Land use Designation¹	Time Period	Noise Level (dB)	
		L_{eq}	L_{max}
Higher-Density Residential (MFR, HDR, MDR)	7am-7pm	55	75
	7pm-10pm	50	65
	10pm-7am	45	60
Commercial and Public Facilities (C, R&D, PF)	7am-7pm	70	90
	7pm-7am	65	75
Industrial (I)	Any Time	80	90

¹ Adopted Plan areas should refer to those land use designations that most closely correspond to the similar General Plan land use designations for similar development.

Policy 6.5.1.11 states:

“The Standards outlined in Table 6-3... shall apply to those activities associated with actual construction of a project as long as such construction occurs 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 on federally-recognized holidays. *Exceptions are allowed if it can be shown that construction beyond these times is necessary to alleviate congestion and safety hazards.*”(emphasis added.).

The Draft SEIR omitted the last sentence of the above policy and its full definition.

During construction, it is possible that noise levels will occasionally exceed the noise level thresholds listed above, which is permitted under General Plan Policy 6.5.1.11. Construction activities will be temporary; however, nighttime operations or use of unusually noisy equipment could result in annoyance or sleep disruption for nearby residents.

1.3. FORMAT FOR THE RECIRCULATED DRAFT EIR

In accordance with CEQA Guidelines Section 15088.5 (c), if the revision is limited to a few chapters or portions of the EIR, the lead agency need only recirculate the chapters or portions that have been modified.

Since Section 4.10, Noise, is the only topical section of the SEIR that is affected by changes required, El Dorado County decided to recirculate only the applicable sections of the SEIR. Therefore, this Recirculated DSEIR includes the following sections:

- 1.0 Introduction
- 2.0 Table 1: Summary of Environmental Impacts (Noise Section Only)
- 3.0 Section 4.10, Noise

With the exception of this introduction chapter, each chapter of this Recirculated Draft SEIR is prepared to indicate changes from the original Draft SEIR in strikethrough and underlined format. Previous text that has been eliminated is shown in strikethrough and new text is shown as underlined. This format is intended to provide clear identification of the changes since the circulation of the Draft SEIR and will simplify the reader's review of the revisions.

1.4. COMMENTING ON THE RECIRCULATED DRAFT EIR

This Recirculated Draft SEIR will be circulated for public comment for a period of 30 days. Pursuant to CEQA Guidelines Section 15088.5 (f)(2), reviewers of this document are requested to limit their comments to the new material that has been included in the revised chapters or portions of the recirculated draft SEIR. The County of El Dorado need only respond to:

- Comments received during the initial circulation period for the Draft SEIR that relate to chapters or portions of the document that were not revised and recirculated, and;
- Comments received during the recirculation period that relate to the chapters or portions of the SEIR that were revised and recirculated.

Therefore, agencies, organizations, and individuals who wish to comment on this document should limit their comments to the revised chapters or portions of this Recirculated Draft SEIR and the analysis contained herein.

2.0 TABLE 1: SUMMARY OF IMPACTS

NOISE			
<i>Impact NOI-1: Would the project result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?</i>			
<i>Impact NOI-1a: Peak hour L_{eq} noise levels in excess of 60 dBA within approximately 300 feet of the centerline of Silva Valley Parkway.</i>	LTS	No mitigation required.	LTS
<i>Impact NOI-2: Would the project result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?</i>			
<i>Impact NOI-2a: Possible vibration-induced annoyance to residents or vibration-induced damage to structures on adjacent properties.</i>	PS	<p><u>No feasible mitigation is currently available.</u></p> <p>Mitigation Measure NOI-1: To reduce construction noise impacts to a less than significant level, the project sponsor shall ensure the contractor complies with the County's hours of construction, as outlined below, as well as the other following measures:</p> <ul style="list-style-type: none"> • Noise producing construction activities shall be limited to between the hours of 7:00 a.m. and 7:00 p.m. Monday through Friday, and between 8:00 a.m. and 5:00 p.m. on weekends and federal holidays. In addition, in community regions and adopted plan areas, maximum noise levels from construction activities during these hours shall not exceed 90 dBA L_{max} at commercial, public facility, or industrial land uses. • The project contractors shall equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers consistent with manufacturers' standards; • The project contractor shall place all stationary construction equipment so that emitted noise is 	<u>LTS SU</u>

		<p>directed away from sensitive receptors nearest the project site; and</p> <ul style="list-style-type: none"> The construction contractor shall locate equipment staging in areas that will create the greatest possible distance between construction-related noise sources and noise-sensitive receptors nearest the project site during all project construction. 	
<i>Impact NOI-3: Would the project result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?</i>	LTS	No mitigation required.	LTS
<i>Impact NOI-4: Would the project result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above or groundborne noise levels?</i>			
<i>Impact NOI-4a: Temporary construction-related noise in proximity to existing residential land uses north and south of the project site.</i>	PS	<p>Mitigation Measure NOI-1: To reduce construction noise impacts to the maximum extent feasible a less than-significant level, the project sponsor shall ensure the contractor complies with the County's hours of construction, as outlined below, as well as the other <u>implement the</u> following measures:</p> <ul style="list-style-type: none"> Noise-producing construction activities shall be limited to between the hours of 7:00 a.m. and 7:00 p.m. Monday through Friday, and between 8:00 a.m. and 5:00 p.m. on weekends and federal holidays. In addition, in community regions and adopted plan areas, maximum noise levels from construction activities during these hours shall not exceed 90 dBA Lmax at commercial, public facility, or industrial land uses. The project contractors shall equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers consistent with manufacturers' standards; 	<u>LTS SU</u>

		<ul style="list-style-type: none"> • The project contractor shall place all stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest the project site; and • <u>For construction of the interchange, the County will prohibit the construction contractor from undertaking construction activities on Sunday, legal holidays, or between the hours of 7 p.m. and 7 a.m. on other days except when the County determines that work must be performed at night to mitigate traffic congestion or safety hazards;</u> • <u>Detour routes shall conform to Caltrans and County standards; and</u> • The construction contractor shall locate equipment staging in areas that will create the greatest possible distance between construction-related noise sources and noise-sensitive receptors nearest the project site during all project construction <u>per the County's standards.</u> 	
<p><i>Impact NOI-5: For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?</i></p>	LTS	No mitigation required.	LTS
<p><i>Impact NOI-6: For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?</i></p>	LTS	No mitigation required.	LTS

3.0 ENVIRONMENTAL ANALYSIS

4.10 NOISE

Noise monitoring and modeling was performed for the proposed project by LSA Associates in 2010. Modeling data, detailed analysis of noise sources and noise abatement options, and mitigation measures are presented in Appendix H.

Existing Setting

A field investigation was conducted to identify land uses that could be subject to traffic and construction noise impacts from the proposed project. Caltrans outlines their requirements for noise impact analysis transportation projects in the *Traffic Noise Analysis Protocol* (Protocol). As stated in the Protocol, noise abatement is only considered for areas of frequent human use that would benefit from a lowered noise level. Although all developed land uses are evaluated in this analysis, the focus is on locations of frequent human use that would benefit from a lowered noise level. Accordingly, this impact analysis focuses on locations with defined outdoor activity areas, such as residential backyards and exterior common use areas of church and day care land uses in the project vicinity. Subsequent to the approval of the 1991 EIR, new noise sensitive land uses (receptors) now exist on properties adjacent to the project alignment including the Capital Korean Presbyterian Church on Tong Road and the Kindercare day care facility on Park Drive. The updated noise analysis considers the noise effects of the proposed project (including re-alignment of Tong Road) on these uses (receptors).

Short-term noise measurement locations were selected to represent the primary noise sensitive land uses within the project area. The noise monitoring physical locations and the primary noise sources at each site are described in Table 24. Table 25 shows the meteorological conditions at the monitoring locations during the short-term noise monitoring. Table 26 contains the results of these measurements. The noise monitoring locations are shown in Figure 12. The sound level measurement documentation sheets, traffic counts, and documented meteorological data are provided in Appendix H.

Table 24: Physical Locations of Noise Level Measurements

Monitor No.	Corresponding Modeled Receptor No.	Location	Noise Sources
M-1	R4, R5, R6	3959 Park Drive – next to Kindercare day-care center	Traffic on U.S. 50
M-2	R-2, R3	1250 Joerger Cutoff Road – in front of house used as law office, near adjacent cemetery property	Traffic on U.S. 50
M-3	R1	1441 Tong Road – by play area next to Capital Korean Presbyterian Church	Traffic on U.S. 50

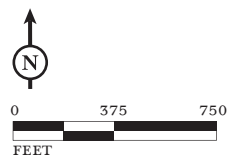
Source: LSA Associates, Inc., 2010.

Note: Refer to Figure 12 for noise measurement locations.



FIGURE 12

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- ! NOISE MONITORING LOCATIONS
- MODELED RECEPTOR LOCATIONS
- S MODELED SOUND WALL LOCATIONS

Table 25: Meteorological Conditions During Noise Monitoring

Date	Maximum Wind Speed (mph)	Average Wind Speed (mph)	Temperature (F)	Relative Humidity (%)
4/13/2010	3.2	2.2	59.4	55
4/13/2010	5.4	2.7	61.8	47
4/13/2010	4.5	24	63.1	51

Source: LSA Associates, Inc., 2010.

mph = miles per hour F = degrees Fahrenheit

Table 26: Short-Term Ambient Noise Monitoring Results

Monitor No.	Date	Start Time	Duration	dBA L_{eq}
M-1	4/13/2010	12:05	15 minutes	73.3
M-2	4/13/2010	12:45	15 minutes	63.8
M-3	4/13/2010	1:20	15 minutes	62.5

Source: LSA Associates, Inc., 2010.

dBA = A-weighted decibel L_{eq} = Equivalent Sound Level

Existing Traffic Noise Model Results

Traffic noise levels were predicted using the FHWA Traffic Noise Model Version 2.5 (TNM 2.5). TNM 2.5 is a computer model based on two FHWA reports: FHWA-PD-96-009 and FHWA-PD-96-010 (FHWA 1998a, 1998b). Key inputs to the traffic noise model were the locations of roadways, shielding features (e.g., topography and intervening structures), existing noise barriers, ground type, and receivers. Three-dimensional representations of these inputs were developed using computer-aided design (CAD) drawings, aerials, and topographic contours provided by Mark Thomas & Company, Inc.

TNM 2.5 is sensitive to the volume of trucks on the roadway because trucks contribute disproportionately to the traffic noise. Truck percentages on U.S. 50 were obtained from the most recent available data on Caltrans website, the 2008 Annual Average Daily Truck Traffic on the California State Highway System.¹ Based on this report, the annual average daily traffic on this segment of U.S. 50 includes 93.6 percent automobiles, 2.7 percent medium trucks (two-axle with six wheels but not including dually pick-up trucks), and 3.7 percent heavy trucks (three- or more axle vehicles).

Because the constrained PM peak-hour traffic volumes for existing conditions were used in modeling the existing traffic noise levels, the modeled existing traffic noise levels were not adjusted for peak-hour noise levels using the long-term monitoring results, otherwise existing traffic noise levels would be overestimated. The vehicle percentage calculations for the existing conditions are provided in Appendix H.

¹ Caltrans, 2009. *2008 Annual Average Daily Truck Traffic on the California State Highway System*. September. <http://www.dot.ca.gov/hq/traffops/saferestr/trafdata/>

The generalized land use data and location of particular sensitive receptors were the basis for the selection of the noise monitoring and analysis sites. A total of eleven (11) receptor locations were modeled, representing one church, one day care, and multiple commercial land uses in the project vicinity.

Short-term noise monitoring was conducted at three locations on Tuesday, April 13, 2010 between 11:00 a.m. and 2:00 p.m. when traffic was free flowing. All measurements were made using a Larson Davis Model 720 Type 2 sound level meter (Serial No. 0519). Measurements were taken over a 15-minute period at each site.

Traffic on U.S. 50 and roadways adjacent to each monitoring location was classified and counted during each short-term (15-minute) noise measurement. Vehicles were classified as automobiles, medium-duty trucks, or heavy-duty trucks. An automobile was defined as a vehicle with two axles and four tires that are designed primarily to carry passengers. Small vans and light trucks were included in this category. Medium-duty trucks included all cargo vehicles with two axles and six tires. Heavy-duty trucks included all vehicles with three or more axles. The posted speeds on U.S. 50 and adjacent roadways, as well as the observed average travel speeds during each short-term noise measurement, were documented.

A total of three separate calibration model runs were performed using the traffic numbers collected during the short-term noise monitoring. The results of these model runs were compared to the measured ambient noise levels to ensure the accuracy of the TNM 2.5 model outputs. Correction factors, known as K-factors, are calculated as measured sound levels minus the modeled sound levels. Table 27 shows the measured ambient noise level, the modeled existing noise levels using the concurrent traffic counts taken during the noise monitoring, and the resulting K-factor at each of the three monitoring locations. Based on the TeNS, K-factors within 2 dBA are considered to be in reasonable agreement with the measured sound levels and no calibration of the model is required. Therefore, only the K-factor for monitor location M3 was applied to the predicted traffic noise model results.

Table 27: Comparison of Measured to Predicted Sound Levels in the TNM Model

Monitor No.	Corresponding Modeled Receptor No.	Measured Sound Level L_{eq} (dBA)	Predicted Sound Level $L_{eq}(h)$ (dBA)	K-Factor (Measured minus Predicted) (dBA)
M1	R4, R5, R6	73.3	73.2	0.1
M2	R2, R3	63.8	63.3	0.5
M3	R1	62.5	65.6	-3.1

Source: LSA Associates, Inc. 2010.

dBA = A-weighted decibel L_{eq} = Equivalent Sound Level $L_{eq}(h)$ = Equivalent Sound Level per Hour

The existing traffic noise levels at all 11 modeled receptor locations are shown in Table 28. Of the 11 modeled receptor locations, none currently “approach or exceed” the NAC (see Table 29 for NAC criteria). As shown in Table 28, sensitive land uses (including church and day care properties) with

outdoor active use areas were evaluated against the Activity Category B at 67 dBA L_{eq} NAC for exterior noise levels (see Table 29 for breakdown of categories/criteria). The modeling input and output data for the existing conditions is provided in Appendix H.

Table 28: Existing Traffic Noise Levels

Rec I.D.	Location	Type of Land Use	No. of Units Represented ¹	Noise Abatement Category	Existing Noise Level, dBA $L_{eq}(h)$
R1	Tong Road	Church	4	B(67)	65
R2	Joerger Cutoff Road	Commercial	1	C(72)	64
R3	Joerger Cutoff Road	Cemetery	2	B(67)	61
R4	Saratoga Way	Day Care	1	B(67)	61
R5	Saratoga Way	Day Care	1	B(67)	62
R6	Saratoga Way	Commercial	1	C(72)	62
R7	Mercedes Lane	Commercial	2	C(72)	63
R8	Mercedes Lane	Commercial	2	C(72)	53
R9	Mercedes Lane	Commercial	2	C(72)	49
R10	Mercedes Lane	Commercial	2	C(72)	51
R11	Mercedes Lane	Commercial	4	C(72)	65

Source: LSA Associates, Inc. 2010.

¹ Based on the number of 100-foot frontage units, as defined in the TeNS, since all receptors represent non-residential land uses.

dBA = A-weighted decibel $L_{eq}(h)$ = Hourly Equivalent Sound Level NAC = Noise Abatement Criteria

Regulatory Setting

A project would have a significant noise effect if it would substantially increase the ambient noise levels in the vicinity, exceed noise abatement criteria, or conflict with adopted plans and goals of the community in which it is located. The applicable noise standards governing the project site are the State's noise criteria (as outlined in the *Traffic Noise Analysis Protocol*), El Dorado County's Noise Element of the General Plan,¹ and applicable sections of the El Dorado County Code.²

Caltrans Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects

Caltrans outlines their requirements for noise impact analysis transportation projects in the *Traffic Noise Analysis Protocol* (Protocol).³ The Protocol specifies the policies, procedures, and practices to be used by agencies that sponsor new construction or reconstruction of State or federal-aid highway projects. Traffic noise impacts result from one or more of the following occurrences: (1) an increase of 12 A-weighted decibels (dBA) or more over existing noise levels, or (2) predicted noise levels approach or exceed the Noise Abatement Criteria (NAC). A sound level is considered to approach an

¹ El Dorado County. 2004. *El Dorado County General Plan, Public Health, Safety, and Noise Element*. July 19.

² El Dorado County, 2009. *El Dorado, California, County Code*. December 10.

³ Caltrans, 2006. *Traffic Noise Analysis Protocol*, August.

NAC level when the sound level is within 1 dB of the NAC (e.g., 66 dBA is considered to approach the NAC of 67 dBA, but 65 dBA is not). Table 29 summarizes the State’s adopted Noise Abatement Criteria (NAC) corresponding to various land use activity categories.

Table 29: Activity Categories and Noise Abatement Criteria

Activity Category	Noise Abatement Criteria, A-weighted Noise Level, Average Decibels Over One Hour	Description of Activities
A	57 Exterior	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose
B	67 Exterior	Picnic areas, recreation areas, playgrounds, active sport areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals
C	72 Exterior	Developed lands, properties, or activities not included in Categories A or B above
D	--	Undeveloped lands
E	52 Interior	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums

Source: Caltrans, 2006. *Traffic Noise Analysis Protocol*.

The Caltrans’ Technical Noise Supplement (TeNS) and the Protocol provides detailed technical guidance for the evaluation of highway traffic noise. This includes field measurement methods, noise modeling methods, and report preparation guidance.

In identifying noise impacts, primary consideration is given to exterior areas of frequent human use. In situations where there are no exterior activities, or where the exterior activities are far from the roadway or physically shielded in a manner that prevents an impact on exterior activities, the interior criterion is used as the basis for consideration of noise abatement.

Section 216 of the California Street and Highways Code

Section 216 of the California Streets and Highways Code relates to the noise effects of a proposed freeway project on public and private elementary and secondary schools. Under this code, a noise impact occurs if, as a result of a proposed freeway project, noise levels exceed 52 dBA- $L_{eq}(h)$ in the interior of public or private elementary or secondary classrooms, libraries, multipurpose rooms, or spaces. This requirement does not replace the “approach or exceed” NAC criterion for FHWA Activity Category E for classroom interiors, but it is a requirement that must be addressed in addition to the requirements of 23 CFR 772.

If a project results in a noise impact under this code, noise abatement must be provided to reduce classroom noise to a level that is at or below 52 dBA- $L_{eq}(h)$. If the noise levels generated from

freeway and nonfreeway sources exceed 52 dBA- $L_{eq}(h)$ prior to the construction of the proposed freeway project, then noise abatement must be provided to reduce the noise to the level that existed prior to construction of the project.

The County of El Dorado Noise Standards

The County of El Dorado addresses noise in the Noise Element of the General Plan and the County's Ordinances. The Noise Element includes maximum allowable noise exposure standards for new transportation noise sources. These standards are shown in Table 30. According to the Noise Element, noise created by new transportation noise sources shall be mitigated so as not to exceed the levels specified in Table 30 at existing noise-sensitive land uses.

Table 30: Maximum Allowable Noise Exposure for Transportation Noise Sources

Land Use	Outdoor Activity Areas ¹ $L_{dn}/CNEL$, dB	Interior Spaces	
		$L_{dn}/CNEL$, dB	L_{eq} , dB ²
Residential	60 ³	45	--
Transient Lodging	60 ³	45	--
Hospitals, Nursing Homes	60 ³	45	--
Theaters, Auditoriums, Music Halls	--	--	35
Churches, Meeting Halls, Schools	60 ³	--	40
Office Buildings	--	--	45
Libraries, Museums	--	--	45
Playgrounds, Neighborhood Parks	70	--	--

¹ In Communities and Rural Centers, where the location of outdoor activity areas is not clearly defined, the exterior noise level standard shall be applied to the property line of the receiving land use. For residential uses with front yards facing the identified noise source, an exterior noise level criterion of 65 dB Ldn shall be applied at the building facade, in addition to a 60 dB Ldn criterion at the outdoor activity area. In Rural Regions, an exterior noise level criterion of 60 dB Ldn shall be applied at a 100 foot radius from the residence unless it is within Platted Lands where the underlying land use designation is consistent with Community Region densities in which case the 65 dB Ldn may apply. The 100-foot radius applies to properties which are five acres and larger; the balance will fall under the property line requirement.

² As determined for a typical worst-case hour during periods of use.

³ 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 provided that available exterior noise level reduction measures have been implemented and interior noise levels are in compliance with this table.

Source: El Dorado County. 2004. *El Dorado County General Plan, Public Health, Safety, and Noise Element*. July 19.

The County further establishes significance criteria for noise impacts as being an increase of more than 5 dBA L_{dn} caused by new transportation noise sources where existing or project noise levels are less than 60 dBA L_{dn} ; or an increase of more than 3 dBA L_{dn} where existing or project noise levels range between 60 dBA and 65 dBA L_{dn} ; or an increase of more than 1.5 dBA L_{dn} caused by new transportation noise sources where existing or project noise levels are greater than 65 dBA L_{dn} at the outdoor activity areas of residential uses.

The County has also established noise standards for activities associated with actual construction of a project and restricts major noise producing activities to the hours of 7:00 a.m. to 7:00 p.m., Monday through Friday, and to the hours of 8:00 a.m. to 5:00 p.m. on weekends and federal holidays. Exceptions are allowed if it can be shown that construction beyond these times is necessary to alleviate congestion and safety hazards. In community regions and adopted plan areas, maximum noise levels from construction activities during these hours shall not exceed 75 dBA L_{max} at residential land uses, and shall not exceed 90 dBA L_{max} at commercial, public facility, or industrial land uses.

The County Ordinance establishes that it is unlawful for any person to willfully make, emit, or transmit or cause to be made, emitted, or transmitted any loud and raucous noise upon or from any public highway or public thoroughfare, or from any public or private property to such an extent that it unreasonably interferes with the peace and quiet of another's private property.

Future Traffic Noise Environment and Impacts

Table 31 summarizes the traffic noise modeling results for existing and design-year conditions with and without the project. Predicted design-year traffic noise levels with the project are compared to existing conditions and to design-year no-project conditions. The comparison to existing conditions is included in the analysis to determine whether a substantial noise increase would occur. The modeled future noise levels for each of the project build alternatives were also compared to the NAC to determine whether a traffic noise impact would occur. The comparison to no-build conditions indicates the direct effect of the project.

As stated in the TeNS, modeling results are rounded to the nearest decibel before comparisons are made. In some cases, this can result in relative changes that may not appear intuitive. An example would be a comparison between sound levels of 64.4 and 64.5 dBA. The difference between these two values is 0.1 dB. However, after rounding, the difference is reported as 1 dB.

The predicted year 2030 traffic sound levels at the representative sensitive receptor locations along the project corridor were determined with existing terrain and barrier features modeled (including existing buildings, solid fences and walls) and using the future (2030) predicted peak-hour traffic volumes. The model input and output data for the predicted future (2030) no-project conditions (assuming existing roadway conditions but with year 2030 traffic volumes) are included in Appendix H. The model input and output data for the predicted future (2030) roadway conditions with the project are included in Appendix H.

If the predicted traffic noise level is 12 dBA or more higher than the corresponding existing modeled noise level at the sensitive receptor location analyzed, or if the peak-hour traffic noise level at a sensitive receptor location is predicted to “approach or exceed” the NAC, then noise abatement measures must be considered. As shown in Table 31, none of the modeled receptor locations would experience a substantial noise increase of 12 dBA or more. However, modeling results do indicate that of the 11 modeled receptor locations, predicted traffic noise levels for the future year 2030 with-project conditions would “approach or exceed” the NAC under the Activity Category B (67) for only one (1) of the modeled receptor locations, the church land use represented by modeled receptor location number **R1**. Therefore, traffic noise impacts are predicted to occur at Activity Category B land uses within the project area, and noise abatement must be considered.

Table 31: Predicted Traffic Noise Levels (dBA $L_{eq(h)}$)

Rec I.D.	Location	Type of Land Use	NAC	Existing Noise Level	Future (2030) No Build Noise Levels	Future Plus Build (2030) Noise Levels	Change from Existing Level	Change from No Build Level	Approach or Exceed NAC? Yes/No
R1	Joerger Cutoff Road	Church	B(67)	65	68	67	2	-1	YES
R2	Saratoga Way	Commercial	C(72)	64	67	67	3	0	No
R3	Joerger Cutoff Road	Cemetery	B(67)	61	63	64	3	1	No
R4	Saratoga Way	Day Care	B(67)	61	64	64	3	0	No
R5	Saratoga Way	Day Care	B(67)	62	65	65	3	0	No
R6	Mercedes Lane	Commercial	C(72)	62	66	66	4	0	No
R7	Mercedes Lane	Commercial	C(72)	63	66	66	3	0	No
R8	Mercedes Lane	Commercial	C(72)	53	57	57	4	0	No
R9	Mercedes Lane	Commercial	C(72)	49	52	52	3	0	No
R10	Mercedes Lane	Commercial	C(72)	51	53	53	2	0	No
R11	Mercedes Lane	Commercial	C(72)	65	69	70	5	1	No

Source: LSA Associates, Inc. 2010.

dBA = A-weighted decibel $L_{eq(h)}$ = Hourly Equivalent Sound Level NAC = Noise Abatement Criteria

Traffic Noise Impact Abatement Analysis

The outdoor active use area of the church land use, represented by modeled receptor location number R1, was the only modeled receptor location that would experience traffic noise levels that approach or exceed the NAC for Activity Category B. A single sound barrier, identified as **SB1**, was analyzed to protect this modeled impacted sensitive receptor location that would be exposed to traffic noise levels approaching or exceeding 67 dBA L_{eq} . The sound barrier was analyzed at the following heights: 6, 8, 10, 12 ft. This modeled sound barrier, as shown in Figure 12, would be located on the edge of the west-bound shoulder of U.S. 50 from approximately station marker 119+75 of the westbound off-ramp to station marker 108+25 of the westbound off-ramp. As portions of the sound barrier located along the proposed edge of shoulder would be located less than 13 feet of the edge of the travel lane, sound barrier heights greater than 12 feet were not considered feasible. The results of the traffic noise modeling with insertion of a sound barrier are shown in Table 32.

Table 32: Sound Barrier Modeling Results

Sound Barrier I.D.	Rec I.D.	Existing $L_{eq}(h)$	Future (2030) No Build Alternative $L_{eq}(h)$	Future (2030) Plus Build Alternative $L_{eq}(h)$	With 6 ft Barrier		With 8 ft Barrier		With 10 ft Barrier		With 12 ft Barrier	
					$L_{eq}(h)$	I. L.	$L_{eq}(h)$	I. L.	$L_{eq}(h)$	I. L.	$L_{eq}(h)$	I. L.
SB1	R1	65	68 ¹	67	67	0	67	0	65	2	64	3

Source: LSA Associates Inc., 2010.

I. L. = Insertion Loss, the decibel reduction with insertion of the modeled sound barrier

ft = feet $L_{eq}(h)$ = Equivalent Sound Level per Hour

NAC = Noise Abatement Criteria

This noise barrier was then evaluated for feasibility based on achievable noise reduction. Section 3 of the Protocol states a minimum noise reduction of 5 dBA must be achieved at the impacted receivers for the proposed noise abatement measure to be considered feasible. The feasibility criterion is not necessarily a noise abatement design goal. Greater noise reductions are encouraged if they can be reasonably achieved. Elements that may restrict feasibility include topography; access requirements for driveways, ramps, etc.; location of local streets in relation to the proposed project; other noise sources in the area; and safety considerations.

As shown in Table 26, none of the modeled sound barriers would result in at least a minimum reduction of 5 dBA at the impacted receptor location. The greatest insertion loss achieved by the modeled sound barrier was only 3 dBA. Therefore, none of the modeled sound barriers are considered feasible according to the State's noise impact analysis criteria as outlined in the TeNS and Protocol.

For purposes of the CEQA analysis required for this project, a comparison must also be made between the predicted traffic noise levels with the project and the future traffic noise levels that would be experienced without the project. As shown in Table 25, predicted traffic noise levels with the proposed project would actually be 1 dBA lower at the impacted sensitive receptor location represented by modeled receptor number R1, than would be experienced under the future (2030) conditions without the project (No Build). This is due to the fact that the proposed alignment of the off-ramp and the new overcrossing actually provides shielding from some of the mainline traffic noise. Therefore, predicted traffic noise levels with the project would result in a less-than-significant impact on noise sensitive land uses in the project vicinity compared to the predicted traffic noise levels that would be experienced without the project.

According to the County's Noise Element, noise created by new transportation noise sources shall be mitigated so as not to exceed the levels specified in Table 30 at existing noise-sensitive land uses. The County further establishes significance criteria for noise impacts as being an increase of more than 3 dBA L_{dn} where existing or project noise levels range between 60 dBA and 65 dBA L_{dn} ; or an increase of more than 1.5 dBA L_{dn} caused by new transportation noise sources where existing or project noise levels are greater than 65 dBA L_{dn} at the outdoor activity areas of residential uses. The closest residential land uses are located over 700 feet from the closest portion of the proposed project alignment. Although the County's project level impact criteria are stated in terms of the weighted 24-hour day-night average levels (L_{dn}) (and not in terms of the modeled peak hour traffic noise levels ($L_{eq}(h)$) shown in Tables 28, 31, and 32), in suburban/rural areas, such as the project area, where nighttime noise levels drop significantly compared to daytime noise levels, the 24-hour weighted average L_{dn} is typically equivalent to or lower than the peak hour traffic noise levels. Assuming a conservative estimate that the L_{dn} would be equivalent to the $L_{eq}(h)$, the project traffic noise levels

would drop to well below 50 dBA L_{dn} at the nearest residential land uses due to the distance from the freeway.

The County's Noise Element also states that, for church land uses, where it is not possible to reduce noise in outdoor activity areas to 60 dB L_{dn} or less using a practical application of the best-available noise reduction measures, an exterior noise level of up to 65 dB L_{dn} may be allowed provided that available exterior noise level reduction measures have been implemented and interior noise levels are in compliance with this table (Table 30). Future traffic noise levels without the project are predicted to range up to 68 dBA $L_{eq}(h)$ at the church property on Tong Road. However, as shown in the preceding abatement analysis, implementation of noise abatement in the form of a noise barrier would not be feasible. In addition, project related traffic noise levels would not contribute to the increase in future traffic noise levels at the modeled receptor location R1 representing the outdoor active use area of the church on Tong Road, but rather result in a 1 dBA decrease compared to traffic noise levels without the project (No Build Alternative). Therefore, project-related traffic noise levels would result in a less-than-significant impact on surrounding noise sensitive land uses based on the County's noise standards.

Construction Noise and Vibration Impacts

The closest sensitive receptor locations, which include the church land use on Tong Road and the day care use on Park Drive, are located approximately 160 feet from proposed project construction areas. The site preparation phase, which includes grading and paving, tends to generate the highest noise levels, because the noisiest construction equipment is earthmoving equipment. Typical operating cycles for these types of construction equipment may involve one or two minutes of full power operation followed by three or four minutes at lower power settings. During this phase of construction, these receptor locations may be subject to short-term noise reaching 81 dBA L_{max} generated by construction activities along the project alignment. To reduce construction noise impacts to a less-than-significant level, the project sponsor shall ensure the contractor complies with the County's hours of construction, as well as the other best practices measures for reducing construction noise impacts. In addition, the contractor shall comply with General Plan Policy 6.5.1.11 which states: "The Standards outlined in Table 6-3... shall apply to those activities associated with actual construction of a project as long as such construction occurs 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 on federally-recognized holidays. Exceptions are allowed if it can be shown that construction beyond these times is necessary to alleviate congestion and safety hazards."

Construction activities associated with implementation of the proposed project, including potential rock blasting activities, could temporarily expose persons in the vicinity of the project site to perceptible ground borne vibration or ground borne noise levels. The closest noise sensitive land uses to potential rock blasting areas is the church land use on Tong Road located approximately 600 feet from potential rock blasting areas. At this distance, groundborne vibration and noise would be barely perceptible. In addition, implementation of Mitigation Measure N-NOI-1 would further reduce any potential impacts from construction-related groundborne vibration or noise to less-than-significant levels. However, blasting may occur during early morning hours while residents are sleeping. Although distance will likely attenuate any vibration or noise impacts caused by blasting, this impact is still considered significant and unavoidable given that no feasible mitigation exists to offset potential impacts.

Impacts and Mitigation Measures

Impact NOI-1: Would the project result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

The 1991 EIR found one impact with the potential to expose people to noise levels in excess of County noise ordinance:

Impact NOI-1a: Peak hour L_{eq} noise levels in excess of 60 dBA within approximately 300 feet of the centerline of Silva Valley Parkway - Project-related traffic noise levels would exceed the NAC of 67 dBA $L_{eq}(h)$ at the outdoor active use area of the noise sensitive land use located on Tong Road (i.e. the church property represented by modeled receptor number R1). A sound barrier for this receptor (see Figure 12) was analyzed. However, no abatement was determined to be feasible. In addition, due to the proposed project off-ramp alignment, the future (2030) plus project traffic noise levels would actually be lower than predicted future (2030) traffic noise levels that would be experienced at that receptor location without the project (i.e., No Project alternative). Therefore, project related traffic noise levels would be considered less-than-significant and no mitigation is required.

Level of Significance before Mitigation: Less than Significant.

Mitigation Measure: No mitigation required.

Level of Significance after Mitigation: Less than Significant.

Impact NOI-2: Would the project result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

The 1991 EIR found one potential impact that could expose people to excessive groundborne vibration:

Impact NOI-2a: Possible vibration-induced annoyance to residents or vibration-induced damage to structures on adjacent properties - The change involves construction of new uses subsequent to approval of the 1991 EIR. The closest noise sensitive land uses to potential rock blasting areas is the church land use on Tong Road located approximately 600 feet from potential rock blasting areas. No vibration impacts at adjacent structures anticipated due to distance attenuation. However, blasting may occur during nighttime or early morning hours while residents are sleeping. Although distance will likely attenuate any vibration or noise impacts caused by blasting, this impact is still considered significant and unavoidable given that no feasible mitigation exists to offset potential impacts. Implementation of the mitigation measure listed below (NOI-1) will reduce this impact to a less than significant level.

Level of Significance before Mitigation: Potentially Significant.

~~**Mitigation Measure NOI-1:** To reduce construction noise impacts to a less than significant level, the project sponsor shall ensure the contractor complies with the County's hours of construction, as outlined below, as well as the other following measures:~~

- ~~• Noise producing construction activities shall be limited to between the hours of 7:00 a.m. and 7:00 p.m. Monday through Friday, and between 8:00 a.m. and 5:00 p.m. on weekends and federal holidays. In addition, in community regions and adopted plan areas, maximum noise levels from construction activities during these hours shall not exceed 90 dBA Lmax at commercial, public facility, or industrial land uses.~~
- ~~• The project contractors shall equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers consistent with manufacturers' standards;~~
- ~~• The project contractor shall place all stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest the project site; and~~
- ~~• The construction contractor shall locate equipment staging in areas that will create the greatest possible distance between construction related noise sources and noise sensitive receptors nearest the project site during all project construction.~~

~~**Mitigation Measure:** No feasible mitigation is currently available.~~

~~**Level of Significance after Mitigation:** Less than Significant. Significant and Unavoidable.~~

***Impact NOI-3:** Would the project result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?*

Please see discussion for Impact NOI-1.

Level of Significance before Mitigation: Less than Significant.

Mitigation Measure: No mitigation required.

Level of Significance after Mitigation: Less than Significant.

***Impact NOI-4:** Would the project result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above or groundborne noise levels?*

The 1991 EIR found one impact that could potentially result in temporary increases in groundborne noise levels:

Impact NOI-4a: Temporary construction-related noise in proximity to existing residential land uses north and south of the project site – This impact has changed with the proposed project. The change involves construction of new land uses (Korean Church and a daycare facility) subsequent to the approval of the 1991 EIR. The updated noise analysis considers the noise effects of the proposed project (including re-alignment of Tong Road) on this use (receptor). In addition, construction will

now occur periodically at night when required to avoid safety hazards and traffic congestion.
Nighttime construction is expected to occasionally exceed the General Plan threshold of 45 L_{eq}.
Implementation of Mitigation Measures NOI-1 will be required to mitigate for construction noise,
however, this impact is still considered Significant and Unavoidable

Level of Significance before Mitigation: Potentially Significant.

Mitigation Measure NOI-1: To reduce construction noise impacts to the maximum extent feasible a less than significant level, the project sponsor shall ensure the contractor complies with the County's hours of construction, as outlined below, as well as the other implement the following measures:

- ~~Noise producing construction activities shall be limited to between the hours of 7:00 a.m. and 7:00 p.m. Monday through Friday, and between 8:00 a.m. and 5:00 p.m. on weekends and federal holidays. In addition, in community regions and adopted plan areas, maximum noise levels from construction activities during these hours shall not exceed 90 dBA L_{max} at commercial, public facility, or industrial land uses.~~
- The project contractors shall equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers consistent with manufacturers' standards;
- The project contractor shall place all stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest the project site; ~~and~~
- For construction of the interchange, the County will prohibit the construction contractor from undertaking construction activities on Sunday, legal holidays, or between the hours of 7 p.m. and 7 a.m. on other days except when the County determines that work must be performed at night to mitigate traffic congestion or safety hazards;
- Detour routes shall conform to Caltrans and County standards; and
- The construction contractor shall locate equipment staging in areas that will create the greatest possible distance between construction-related noise sources and noise-sensitive receptors nearest the project site during all project construction per the County's standards.

Level of Significance after Mitigation: ~~Less than Significant~~ Significant and Unavoidable

Impact NOI-5: For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

The Cameron Airpark located in Cameron Park is the nearest airport or airstrip in the project area, and is situated approximately 4 miles to the east of the project site. Therefore, no noise impacts associated with an airport will occur.

Level of Significance before Mitigation: Less than Significant.

Mitigation Measure: No mitigation required.

Level of Significance after Mitigation: Less than Significant.

Impact NOI-6: For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

See discussion for Impact NOI-5.

Level of Significance before Mitigation: Less than Significant.

Mitigation Measure: No mitigation required.

Level of Significance after Mitigation: Less than Significant.