
CHAPTER 7

NOISE

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7.1 ENVIRONMENTAL SETTING

This section describes the existing noise environment in and around the project site and identifies noise levels expected to be generated by construction and operation of the proposed project. Receptors that may potentially be affected by noise are identified, as well as the criteria used to evaluate the effect of project generated noise upon the existing noise environment. The discussion also describes the fundamentals of acoustics, the results of a site reconnaissance, sound level measurements, acoustical calculations, and assessment of potential noise impacts from construction and concrete batch plant operations.

Characteristics of Environmental Noise

Fundamentals of Acoustics

Noise is generally defined as loud, unpleasant, unexpected, or undesired sound that disrupts or interferes with normal human activities. Although exposure to high noise levels over an extended period has been demonstrated to cause hearing loss, the principal human response to noise is annoyance. The response of individuals to similar noise events is diverse and influenced by the type of noise, the perceived importance of the noise, its appropriateness in the setting, the time of day, the type of activity during which the noise occurs, and the sensitivity of the individual.

Sound is a physical phenomenon consisting of minute vibrations that travel through a medium, such as air, and are sensed by the human ear. Sound is generally characterized by a number of variables including frequency and intensity. Frequency describes the sound's pitch and is measured in Hertz (Hz), while intensity describes the sound's loudness and is measured in decibels (dB). Decibels are measured using a logarithmic scale. A sound level of 0 dB is approximately the threshold of human hearing and is barely audible under extremely quiet listening conditions. Normal speech has a sound level of approximately 60 dB. Sound levels above approximately 120 dB begin to be felt inside the human ear as discomfort and eventually pain at still higher levels.

Human perception to changes in environmental noise levels varies. Studies have shown that, for similar noise sources, a 3 dB increase in noise is considered to be the threshold at which people commonly perceive that a change has occurred, and a 5 dB change is required before a clearly noticeable change has occurred (Bollard, 2007). Examples of similar noise sources would include the addition of ready mix trucks to a roadway which is already used by heavy trucks.

Because of the logarithmic nature of the decibel unit, sound levels cannot be added or subtracted directly and are somewhat cumbersome to handle mathematically. However, some simple rules of thumb are useful in dealing with sound levels. First, if a sound's intensity is doubled, the sound level increases by 3 dB, regardless of the initial sound level. Thus, for example:

$$60 \text{ dB} + 60 \text{ dB} = 63 \text{ dB, and}$$

$$80 \text{ dB} + 80 \text{ dB} = 83 \text{ dB}$$

Hertz is a measure of how many times each second the crest of a sound pressure wave passes a fixed point. For example, when a drummer beats a drum, the skin of the drum vibrates a number of times per second. A particular tone which makes the drum vibrate 100 times per second generates a sound pressure wave that is oscillating at 100 Hz; this pressure oscillation is perceived as a tonal pitch of 100 Hz. Sound frequencies between 20 Hz and 20,000 Hz are within the range of sensitivity of the human ear.

Sound from a tuning fork (a pure tone) contains a single frequency. In contrast, most sounds one hears in the environment consist of a broad band of frequencies differing in sound level. The method commonly used to quantify environmental sounds consists of evaluating all of the frequencies of a sound according to a weighting system that reflects the fact that human hearing is less sensitive at low frequencies and extremely high frequencies than at the mid-range frequencies. This is called "A" weighting, and the decibel level measured is called the A-weighted sound level (dBA). In practice, the level of a noise source is conveniently measured using a sound level meter that includes a filter corresponding to the dBA curve which de-emphasizes low and high frequencies of sound in a manner similar to the human ear.

Although the A-weighted sound level may adequately indicate the level of environmental noise at any instant in time, community noise levels vary continuously. Most environmental noise includes a conglomeration of noise from several sources that creates a relatively steady background noise in which no particular source is identifiable. A single descriptor called the equivalent sound level (L_{eq}) represents the "equivalent" constant sound level that would have to be produced by a given source to equal the fluctuating level measured. L_{eq} is the mean A-weighted sound level during a measured time interval. In addition, it is often desirable to know the acoustic range of the noise source being measured. This is accomplished through the L_{max} and L_{min} indicators. They represent the maximum and minimum noise levels measured.

To describe the time-varying character of environmental noise, the statistical noise descriptors L_{10} , L_{50} , and L_{90} are commonly used. They are the noise levels equaled or exceeded during 10 percent, 50 percent, and 90 percent of a stated time. Sound levels associated with the L_{10} typically describe transient or short-term events, while levels associated with the L_{90} describe the steady-state (or most prevalent) noise conditions.

Another sound measure known as the Day-Night Average Noise Level (L_{dn}) is defined as the A-weighted average sound level for a 24-hour day. It is calculated by adding a 10 dBA penalty to sound levels in the night (10:00 p.m. to 7:00 a.m.) to compensate for the increased sensitivity to noise during the quieter nighttime and early morning hours. The L_{dn} is used by agencies such as the U.S. Department of Housing and Urban Development (HUD), the State of California, the City of Auburn, and Placer County to define acceptable noise levels. Sound levels of typical noise sources and environments are provided in *Table 8.1* to provide a frame of reference.

Table 7.1
Sound Levels of Typical Noise Sources and Noise Environments
(A-Weighted Sound Levels)

Example Noise Source (at a Given Distance)	Scale of A-Weighted Sound Level in Decibels	Example Noise Environment	Human Judgment of Noise Loudness (Relative to a Reference Loudness of 70 Decibels*)
Military Jet Take-off with After-burner (50 ft)	140	Carrier Flight Deck	
Civil Defense Siren (100 ft)	130		
Commercial Jet Take-off (200 ft)	120		Threshold of Pain *32 times as loud
Pile Driver (50 ft)	110	Rock Music Concert	*16 times as loud
Ambulance Siren (100 ft)	100		Very Loud
Newspaper Press (5 ft)			*8 times as loud
Power Lawn Mower (3 ft)			
Motorcycle (25 ft)	90	Boiler Room	*4 times as loud
Propeller Plane Flyover (1,000 ft)		Printing Press Plant	
Diesel Truck, 40 mph (50 ft)			
Garbage Disposal (3 ft)	80	High Urban Ambient Sound	*2 times as loud
Passenger Car, 65 mph (25 ft)			Moderately Loud
Living Room Stereo (15 ft)			*70 decibels
Vacuum Cleaner (3 ft)	70		(Reference Loudness)
Electronic Typewriter (10 ft)			
Normal Conversation (5 ft)	60	Data Processing Center	*1/2 as loud
Air Conditioning Unit (100 ft)		Department Store	
Light Traffic (100 ft)	50	Private Business Office	*1/4 as loud
Bird Calls (distant)	40	Lower Limit of Urban Ambient Sound	Quiet *1/8 as loud
Soft Whisper (5 ft)	30	Quiet Bedroom	
	20	Recording Studio	Just Audible
	10		Threshold of Hearing

Existing Noise Conditions in Project Area

The existing noise environment in the immediate project area is dominated by noise generated by traffic on Interstate 80 (I-80). In addition, noise generated by commercial and industrial uses to the west of the project site and by vehicle travel on Ophir Road contributes to the noise environment in the project vicinity.

Ambient Noise Assessment Methodology

An acoustical noise analysis was prepared for the project by Bollard Acoustical Consultants (Bollard). The acoustical noise analysis is included as Appendix E to this EIR. The acoustical analysis employed a combination of visual and noise level measurement surveys, use of

existing acoustical literature, and application of accepted noise prediction methodologies to quantify the existing and anticipated future ambient noise environment in the project area. Acoustical surveys are subject to the requirements of *Placer County General Plan Table 9.2 Requirements for Acoustical Analysis*.

To quantify ambient noise levels at the residences closest to the project site, a continuous noise level measurement survey was conducted at three locations between August 21 and August 23, 2004, for a consecutive period of 72 hours at each site. The survey measurements were made using a Larson Davis Laboratories (LDL) Model 820 precision integrating sound level meters meeting all specifications of the American National Standards Institute requirements for Type 1 sound level meters. The locations where noise level measurements were obtained are indicated on *Figure 7-1*.

The measurements revealed that daytime noise levels averaged approximately 60 dB L_{eq} at locations A and B, and 65 dB L_{eq} at site C. Although sites A, B, and C are located approximately the same distance from I-80, the noise levels at site C were higher because it is elevated in relation to I-80 and has a direct view down to the freeway. Similar to site C, residences south of I-80 from the project site are generally situated above the roadway and are exposed to substantial noise from I-80 traffic. Additionally, many of these residences are exposed to noise from trains traveling on the Union Pacific Railroad tracks located behind them. The ambient noise measurement results at sites A, B, and C are shown in *Table 7.2*.

It is noted that I-80 has been repaved since the time the ambient survey was conducted. It is not known if noise-reducing paving materials were used for the project, but such materials would be expected to provide a reduction in traffic noise of approximately 3 dB. Over the life of the paving material, and with increases in traffic volume which have occurred since the traffic noise measurements, and which will continue to occur over time, the effects of the repaving on the conclusions of this analysis are believed to be negligible (Bollard, 2007).

Table 7.2
Summary of Ambient Noise Measurement Results August 21-23, 2004

Site1	Date	L_{dn} , dB	Average (L_{eq} , dB) ²		Maximum (L_{max} , dB) ³	
			Day	Night	Day	Night
A	Saturday, Aug. 21	64	62	56	97	85
	Sunday, Aug. 22	63	61	55	83	91
	Monday, Aug. 23	65	63	57	87	84
B	Saturday, Aug. 21	65	57	59	87	67
	Sunday, Aug. 22	57	55	49	86	71
	Monday, Aug. 23	57	53	50	80	69
C	Saturday, Aug. 21	68	65	61	84	81
	Sunday, Aug 22	67	64	59	89	86
	Monday, Aug 23	68	65	61	87	87

Source: Bollard, 2007



△# - Noise Measurement Locations

⊙# - Nearest Residential Locations



Source: Bollard Acoustical Consultants

Figure 7-1

NOISE MEASUREMENT AND NEAREST RESIDENTIAL LOCATIONS
Livingston Concrete Batch Plant
 Placer County, California

Existing Noise Sensitive Land Uses in Project Area

Based on a review of aerial photographs and onsite observations, the acoustic analysis identified the following noise sensitive land uses in the immediate project vicinity. Impacts to these receptors are evaluated under Impacts 7.4 and 7.5 below.

- Receiver #1 is a residence on commercially zoned land immediately north of the project site across Ophir Road. This receiver's nearest property line is approximately 300 feet north of the effective noise-center of the plant, while the residence is approximately 600 feet north of the noise-center. This is the nearest residence to the Livingston's project site.
- Receiver #2 is a dilapidated and vacant residential structure located on the same commercially-zoned property as residence #1 described above. The nearest property line of the receiver is located approximately 200 feet north of the effective plant noise center, and is owned by the same owner of residence #1. According to that owner, Placer County has declared the structure uninhabitable, and the owner stated to BAC staff that he has no plans to make the extensive and costly improvements which would be required to render this structure inhabitable. Given the commercial zoning of the parcel, and the fact that this structure is uninhabitable at this time, it is not considered a noise-sensitive receptor in this analysis.
- Receiver #3 is a mobile home park located on the south side of Ophir Road, just west of Werner Road. The nearest property line is approximately 800 feet east of the effective plant noise center.
- Receiver #4 represents a series of residences located on the south side of I-80. The nearest residential property lines are approximately 300 feet from the effective noise-center of the proposed plant and the residences are located approximately 700 feet from the noise-center on a hillside which overlooks I-80 and the project site.
- Receiver #5 represents residences located near Geraldson Road. The nearest property line is approximately 1,000 feet from the effective noise center of the proposed plant. These residences are located just north of existing commercial and industrial land uses located on Ophir Road.

7.2 REGULATORY SETTING

Federal and State Regulations

The 1992 findings of the Federal Interagency Committee on Noise (FICON), which assessed the annoyance effects of changes in ambient noise levels resulting from aircraft operations, provide some guidance as to the significance of changes in ambient noise levels due to transportation noise sources. The FICON recommendations are based on studies that relate aircraft and traffic noise levels to the percentage of persons highly annoyed by the noise. Annoyance is a summary measure of the general adverse reaction of people to noise that interferes with speech and conversation, sleep, or the desire for a tranquil environment.

The rationale for the FICON recommendations is that it is possible to consistently describe the annoyance of people exposed to transportation noise in terms of L_{dn} . The changes in noise exposure relative to existing noise levels, as shown in *Table 7.3*, are considered to be noticeable changes that result in increased annoyance experienced at sensitive land uses. Although the FICON recommendations were specifically developed to address aircraft noise impacts, they are used in this analysis for traffic noise described in terms of L_{dn} .

Table 7.3
Measures of Substantial Increase for Transportation Noise Exposure

Ambient Noise Level Without Project	Significant Impact Assumed to Occur if the Project Increases Ambient Noise Levels by:
<60 dB	+ 5 dB or more
<60-65 dB	+ 3 dB or more
>65 dB	+ 1.5 dB or more

Source: FICON, 1992

Local Regulations

Placer County General Plan

The *Placer County General Plan* contains goals and policies governing development within Placer County. The goal listed below summarizes the priorities of the General Plan related to noise, and Appendix B of this EIR provides an evaluation of the project's consistency with applicable General Plan policies.

Goal 9.A To protect County residents from the harmful and annoying effects of exposure to excessive noise.

The maximum allowable noise exposure limits for non-transportation noise sources are identified in *Table 7.4*, which is Table 9-1 of the *Placer County General Plan*. The Noise Element of the *Placer County General Plan* does not specifically address construction noise level limits.

Table 7.4
Allowable L_{dn} Noise Levels from Non-Transportation Sources

Zone District of Receptor	Property Line of Receiving Use	Interior Spaces
Residential Adjacent to Industrial	60	45
Other Residential	50	45
General Commercial	70	45
Heavy Commercial	75	45
Industrial Park	75	45

Note: Where existing transportation noise levels exceed the standards of this table, the allowable L_{dn} shall be raised to the same level as that of the ambient level.

Source: *Placer County General Plan*

Placer County Code

Non-transportation related noise impacts are evaluated based on the noise exposure standards set by Article 9.36 of the Placer County Code. Section 9.36.060 sets sound limits for sensitive receptors, as shown in *Table 7.5* below. Section 9.36.030 identifies activities and land uses that are exempt from the sound limits. For example, temporary noise associated with construction is exempt. However, construction noise is regulated through the exemption conditions which restrict allowable hours of construction and requires that construction equipment be fitted with mufflers.

Unless exempted under Section 9.36.030, it is unlawful to create noise which exceeds the sound level standards in *Table 7.5*, as measured at the at the property line of any affected sensitive receptor, or to exceed the ambient sound level by five dBA; whichever is greater.

Table 7.5
Sound Level Standards

Sound Level Descriptor	Daytime (7 am to 10 pm)	Nighttime (10 pm to 7 am)
Hourly L_{eq} , dB	55	45
Maximum level, (L_{max}) dB	70	65

Each of the sound level standards shall be reduced by five dB for simple tone noises, consisting of speech and music. However, in no case shall the sound level standard be lower than the ambient sound level plus five dB.

If the intruding sound source is continuous and cannot reasonably be discontinued or stopped for a time period whereby the ambient sound level can be measured, the sound level measured while the source is in operation shall be compared directly to the sound level standards

Source: Placer County Code

The “Standard Construction Noise Conditions of Approval” required by the Placer County Environmental Health Division (EHD) would be applied during construction of the proposed project. These conditions are expressed in Placer County Minute Order 90-08, and include the following requirements:

Construction noise emanating from any construction activities for which a Grading or Building Permit is required is prohibited on Sundays and Federal Holidays, and shall only occur Monday through Friday, 6:00 am to 8:00 pm (during daylight savings); Monday through Friday, 7:00 am to 8:00 pm (during standard time); and Saturdays, 8:00 am to 6:00 pm. Construction equipment must be properly maintained, and vehicle staging areas shall be located as far as possible from existing noise-sensitive uses.

7.3 IMPACTS

Significance Criteria

The Placer County General Plan Noise Element establishes an exterior noise level standard 60 dB L_{dn} for residential land uses affected by industrial land uses and for residential land uses affected by traffic noise.

The Placer County Noise Ordinance establishes exterior noise level performance standards of 70 dB L_{max} during daytime hours (7 am - 10 pm) and 65 dB L_{max} during nighttime hours (10 pm - 7

am). In addition, the County Noise Ordinance establishes exterior noise level performance standards of 55 dB L_{eq} during daytime hours and 45 dB L_{eq} during nighttime hours. The County's exterior noise level standards are applied at the nearest property line of any affected sensitive receptor. However, as shown in *Table 7.2* above, existing noise levels in the project vicinity exceed these standards. In cases where the existing ambient noise environment exceeds the standards recommended by the County (such as with this project), a standard of significance of 3 dB over existing ambient noise levels is commonly applied to the project.

As discussed in Section 7.1 above, studies have shown that with similar noise sources, a 3 dB increase in noise is the threshold at which people commonly perceive that a change has occurred, and a 5 dB change is required before a clearly noticeable change has occurred. The proposed project would generate broad-band noise that would be relatively similar to the existing broad-band noise generated by I-80, therefore a noise level increase of 5 dB would theoretically be required before nearby residents perceive a significant change in the ambient noise environment. Nonetheless, a 3 dB increase in ambient noise levels resulting from this project is conservatively used to assess the significance of project-related transportation noise impacts.

Potential significant impacts associated with noise have been evaluated using the following criteria, as identified in Appendix G of the CEQA Guidelines:

- 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,
- Exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels,
- A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project,
- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project,
- 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 to excessive noise levels, or
- 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.

Project Impacts

IMPACT 7.1:	Excessive Groundborne Vibration/Noise
SIGNIFICANCE:	No Impact
MITIGATION:	No Mitigation is Necessary
Proposed:	N/A
Significance After Proposed Mitigation:	N/A
Recommended:	N/A
RESIDUAL SIGNIFICANCE:	No Impact

Groundborne vibration and noise is typically caused by heavy construction, including deep excavations, blasting, and ripping. These activities are not anticipated in the construction of the proposed project, and no impact to existing land uses from groundborne vibration or noises is expected to occur.

IMPACT 7.2:	Airport/ Airstrip Noise
SIGNIFICANCE:	No Impact
MITIGATION:	No Mitigation is Necessary
Proposed:	N/A
Significance After Proposed Mitigation:	N/A
Recommended:	N/A
RESIDUAL SIGNIFICANCE:	No Impact

There are no airports or airstrips within two miles of the proposed project site. No impacts related to aircraft noise are expected to occur at the project site.

IMPACT 7.3:	Construction Noise Exceeding Established Noise Standards
SIGNIFICANCE:	Potentially Significant
MITIGATION:	
Proposed:	None
Significance After Proposed Mitigation:	Potentially Significant
Recommended:	Mitigation Measure 7.3a
RESIDUAL SIGNIFICANCE:	Less than Significant

Activities associated with construction of the project would generate temporary sounds from earthmoving equipment during grading and ripping of the project site, sound from trucks hauling materials to and from the site, and the sound of crews and equipment during construction of buildings and structures. The construction of the project is exempt from noise level thresholds established in *Placer County Code Article 9.36*, during certain times of the day and certain days of the week. The project will be required to limit construction activities to between the hours of 6:00 a.m. and 8:00 p.m. during daylight savings, and 7:00 a.m. to 8:00 p.m. during standard time, Monday through Friday, and between the hours of 8:00 a.m. and 6:00

p.m. Saturday. In addition, all construction equipment must be fitted with factory installed muffling devices and be maintained in good working order. With implementation of *Mitigation Measure 7.3a* requiring the project to comply with operational hours of construction and equipment muffler requirements, noise associated with construction of the project is expected to be reduced to less than significant levels.

IMPACT 7.4:	Batch Plant And Related Operational Noise Exceeding Established Noise Standards
SIGNIFICANCE:	Less than Significant
MITIGATION:	No Mitigation is Necessary
Proposed:	None
Significance After Proposed Mitigation:	Less than Significant
Recommended:	None
RESIDUAL SIGNIFICANCE:	Less than Significant

The acoustic analysis provides an assessment of the potential for project related operational activities to exceed Placer County noise thresholds. The analysis included quantification of existing and projected noise levels associated with operation of the plant.

Noise measurements and accepted noise modeling techniques were used to predict noise levels generated by the proposed batch plant facility operations. Operational information used in the acoustical analysis was obtained from Livingston's Concrete staff. The proposed site plan for the batch plant facility is shown on *Figure 3-4* in **CHAPTER 3 PROJECT DESCRIPTION**.

The acoustic analysis also used file data for similar batch plant facilities to quantify the proposed project's noise emissions. That noise level data indicate that a complete cycle of the batch plant would generate an average noise level of approximately 75 dB at a distance of 100 feet from the effective noise center of the plant. Noises generated onsite would include ready-mix truck passages, engine spool-up and feeding of the plant hoppers by front-loaders, mixing of concrete and departure of ready-mix trucks.

In order to account for peak production periods, the acoustic analysis assumed a production rate of 120 cubic yards per hour. The project is expected to produce a maximum of 300 cubic yards daily. At a rate of 120 cubic yards per hour, the plant would only need to operate for 2.2 hours to produce the maximum amount. As a practical matter, all of the concrete would not be mixed consecutively, so the total duration during which the plant would be operating would be longer than 2.2 hours and the average production rate would be much less than 120 cubic yards per hour. The anticipated operating hours are from 5:30 a.m. to 3:30 p.m. Monday through Saturday. If the plant equipment is in operation for a total duration conservatively estimated to be 6 hours out of a day (including one hour prior to 7:00 a.m.), the computed noise level for plant operations would be approximately 68 dB L_{dn} at a distance of 100 feet from the noise center of the plant. Plant operations that occur before 7 a.m. would be subject to the nighttime standards.

The property line of the nearest identified noise sensitive area (Receiver #1 described on page 7-6 above) is approximately 300 feet from the noise-center of the plant. At this distance, the plant

noise emissions are predicted to be approximately 60 dB L_{eq} and 65 dB L_{max} during a typical plant cycle producing 120 cubic yards per hour. This level is based on a decrease of 6 dB per doubling of distance from the plant, and does not include shielding of plant noise by intervening structures or additional attenuation of sound by the ground and atmosphere. These levels are in compliance with the 60 dB L_{eq} Placer County General Plan Noise Element standard and the Placer County Code 70 dB L_{max} daytime and 65 dB L_{max} nighttime performance standards. However, these levels exceed the 55 L_{eq} daytime and 45 L_{eq} nighttime standards of the Placer County Code, Section 9.36.060.

As shown in *Table 7.6* below, at the other sensitive receivers, Livingston's Concrete facility noise levels would be the same or lower than the noise levels at Receiver #1, and similar findings can be made. Specifically, the project would meet the Placer County General Plan Noise Element standard and the Placer County Code 70 dB L_{max} daytime and 65 dB L_{max} nighttime performance standards but would exceed the L_{eq} standards of the Placer County Code at some sensitive receptors: The daytime L_{eq} standard would be exceeded by 5 dB at the property lines of Receivers #1, 3, and 4; the nighttime L_{eq} standard would be exceeded by between 5 and 15 dB at all receivers. These violations could represent potentially significant noise impacts of the proposed project.

Table 7.6
Predicted Livingston's Concrete Batch Plant Noise Emissions at Nearest Residences

Receiver	Description	Distance (ft)	Project Generated Noise Levels		
			Leq, dB	Ldn, dB	Lmax, dB
1	Nearest Res. to North.				
	▪ Property Line	300	60	58	65
	▪ Residence	600	54	52	59
2	Uninhabited Res. To North.	N/A			
3	Mobile Home Park to Northeast	800	60	58	65
4	Residences on Opposite Side of I-80				
	▪ Property Line	300	60	58	65
	▪ Residences	700	53	51	58
5	Residences near Geraldson Road	1,000	50	48	55

Notes:

Receiver locations are described on page 7-6.

L_{dn} values for the project assume three full hours of Livingston's Concrete Batch Plant operation daily, with one of the hours occurring before 7 am.

Source: Bollard, 2007

Based on the data shown in *Table 7.2* above, the existing noise conditions in the project vicinity already exceed the L_{eq} standards of the Placer County Code. The daytime L_{eq} noise levels range from 53 to 65 dB, while the nighttime L_{eq} noise levels range from 49 to 61 dB. Additionally, average noise levels generated by traffic on I-80 were measured to be approximately 60 dB L_{eq} at Receiver #1, with computed L_{dn} values of 63 to 66 dB. The noise emissions from the proposed Livingston's Concrete facility are expected to be below existing traffic noise levels at the nearest residences, both in terms of hourly average (L_{eq}) and 24-hour average (L_{dn}) noise levels. Given the existing ambient noise level, the noise generated by the proposed batch plant is not expected

to result in a noticeable change in the background noise levels in the area. Thus the exceedance of the standards of the Placer County Code is not expected to result in a significant environmental impact.

IMPACT 7.5	Traffic Noise Exceeding Established Noise Standards
SIGNIFICANCE:	Less than Significant
MITIGATION:	No Mitigation is Necessary
Proposed:	None
Significance After Proposed Mitigation:	Less than Significant
Recommended:	None
RESIDUAL SIGNIFICANCE:	Less than Significant

The acoustic analysis employed the Federal Highway Administration (FHWA) Highway Traffic Noise Prediction Model (FHWA RD-77-108) for the prediction of traffic noise levels. The model is based upon the CALVENO noise emission factors for automobiles, medium trucks, and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site.

Modeling inputs for peak hour traffic volumes for Ophir Road were obtained from Kimley-Horn and Associates, Inc. and multiplied by a factor of ten to estimate daily traffic volumes as part of the evaluation of project-related traffic noise impacts on noise sensitive receivers along Ophir Road. Medium and heavy truck percentages, roadway speed, and distances used in the analysis are based on the acoustical consultant’s field observations.

With-Project and No-Project predicted traffic noise levels were compared for both existing and future (2025) conditions. *Table 7.7* summarizes the FHWA Traffic Noise Prediction Model results. A complete listing of the FHWA Model inputs is contained in Appendix C of the acoustic analysis in Appendix E to this Draft EIR.

Table 7.7
Predicted Traffic Noise Levels

Road Direction	L_{dn} @ 100 Feet					
	Year 2005 Conditions			Year 2025 Conditions		
	Existing	Plus Project	Change	Future (2025)	Plus Project	Change
East	57	57	0	61	61	0
West	57	58	+1	61	61	0

Source: *Bollard, 2007, FHWA RD-77-108 Traffic Noise Prediction Model and Kimley-Horn and Associates, Inc. data*

The data in *Table 7.7* indicates that the project is not expected to produce a significant increase in existing or future Ophir Road traffic noise levels. A significant impact would occur if the traffic noise level were to increase by 3 dB or more due to additional traffic from the project. The project is expected to increase noise levels by 1 dB. *Table 7.7* data also indicate that future Ophir Road traffic noise levels are predicted to exceed the County’s 60 dB L_{dn} exterior traffic noise

level standard. However, the traffic noise on Ophir Road would exceed the established threshold with or without the project, and the proposed project is not expected to increase the future noise level. Therefore, the project would have a less than significant impact on future noise levels. Additionally, the existing ambient noise measurement results presented in *Table 7.2* indicate that existing noise levels from I-80 traffic exceed the County's 60 dB L_{dn} exterior traffic noise level standard at sites A and C. Noise measurements at site B indicated located west of the project site exceeded the County's 60 dB L_{dn} threshold on one of the three days measurements were taken.

Due to the existing commercial zoning of the adjacent vacant parcels, development of new noise-sensitive land uses would be unlikely. Projected future-with project traffic related noise is not expected to either exceed the applicable County noise standards, or result in an appreciable (3 dB) increase in ambient noise levels at the nearest noise-sensitive areas, therefore the project would have a less than significant impact on future traffic noise levels.

7.4 MITIGATION MEASURES

Excessive Groundborne Vibration/Noise

No mitigation measures are required for this impact.

Airport/Airstrip Noise

No mitigation measures are required for this impact.

Construction Noise Exceeding Established Noise Standards

Proposed Mitigation

No mitigation measures are proposed.

Recommended Mitigation

Mitigation Measure 7.3a: Construction noise emanating from the project site is prohibited on Sundays and Federal Holidays, and shall only occur:

- a. Monday through Friday, 6:00 am to 8:00 pm (during daylight savings)
- b. Monday through Friday, 7:00 am to 8:00 pm (during standard time)
- c. Saturdays, 8:00 am to 6:00 pm
- d. In addition, temporary signs shall be located at key intersections and/or project site boundaries depicting the above construction hour limitations. Said signs shall be approximately four feet square and shall include a toll free public information phone number where surrounding residents can report violations and the developer/builder will response and resolve noise violations. This condition shall be included on the Improvement Plans.
- e. **Advisory Comment:** Essentially quiet activities which do not involve heavy equipment or machinery may occur at other times. Work occurring within an

enclosed building, such as a structure under construction with the rood and siding completed, may occur at other times as well.

- f. The Planning Director is authorized to waive the time frames based on special circumstances, such as adverse weather conditions.

Batch Plant And Related Operational Noise Exceeding Established Noise Standards

No mitigation measures are required for this impact.

Traffic Noise Exceeding Established Noise Standards

No mitigation measures are required for this impact.

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