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SANTA SUSANA FIELD LABORATORY
AREA IV TRAFFIC NOISE ANALYSIS
COUNTY OF LOS ANGELES, CALIFORNIA

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SANTA SUSANA FIELD LABORATORY AREA IV
NOISE IMPACT ANALYSIS
COUNTY OF LOS ANGELES, CALIFORNIA

1.0 EXECUTIVE SUMMARY

This noise study has been completed to determine the haul truck off-site transportation related noise impacts associated with the demolition and clean-up of the Santa Susana Field Laboratory Area IV (Project) located southwest of Facility Road and Woolsey Canyon Road in the County of Ventura. While the existing laboratory is located within the County of Ventura, the off-site noise sensitive receptors that will be subject to potential transportation related noise level increases are located within the County of Los Angeles, and therefore, this noise analysis was completed to satisfy the County of Los Angles exterior noise level standards.

The demolition and clean-up project proposes to generate approximately 144 truck trips per day, 12 per hour between 7:00 a.m. and 7:00 p.m. for an estimated period of two to three years. The purpose of this noise assessment is to evaluate the existing noise levels within the nearby off-site noise sensitive land uses located along the potential truck haul routes and to estimate the expected noise level impacts associated with the proposed project. If necessary, to minimize any potential significant project impacts, mitigation measures will be recommended to reduce noise level impacts to less than significant.

To assess the off-site noise level impacts associated with operation of the proposed project, noise level contours were developed for existing and future traffic conditons. The analysis completed shows that existing noise levels along potential haul truck routes range from 52.2 to 60.5 dBA CNEL. Noise levels currently experience at noise sensitive receptors at a distance greater than 100 feet from roadway centerline are substantially below 65 dBA CNEL. With the added haul truck trips, noise levels are expected to range from 54.8 to 61.1 dBA CNEL and continue to remain below the 65 dBA CNEL exterior noise level standard for transportation related sources.

To be considered a substantial noise impact, the off-site project traffic must either cause an exceedance of the local jurisdiction's exterior noise threshold; or, if ambient conditions exceed the jurisdiction's Standards guideline, project traffic must create a "barely perceptible" 3.0 dBA or greater permanent increase in ambient exterior noise levels.

The analysis shows that for the future analysis, the development of the proposed project will increase the off-site noise levels by up to 2.6 dBA CNEL. An increase of less than 3.0 dBA CNEL is not considered substantial in terms of community noise impacts. Therefore, the proposed project's contributions to off-site roadway noise level increases will not cause any significant impacts to any existing or future sensitive noise receptors. In summary, the project will not generate a substantial permanent increase in transportation-related noise levels, nor cause exposure of persons to noise levels in excess of the standards established in the County of Los Angeles Noise Elements.

To help assure that noise level impacts created by the haul truck remain less than significant, it is recommended that the Lead Agency require the following as project Conditions of Approval:

- All trucks shall be operated with proper operating and well maintained mufflers.
- Maintain quality pavement conditions that are free of bumps to minimize truck noise.
- Provide notification to residents along the haul routes of expected truck activity.

2.0 INTRODUCTION

This noise study has been completed to determine the noise impacts associated with the off-site heavy truck pass-bys events related to the demolition and site clean-up activities at the Santa Susana Field Laboratory Area IV located in the County of Ventura, California.

2.1 Purpose of Report

This noise study briefly describes the proposed project, provides information regarding noise fundamentals, describes the local noise guidelines, and presents an analysis of the potential off-site project-related noise impacts. This study has been prepared to satisfy the County of Los Angeles transportation related off-site exterior noise level standards

2.2 Site Location

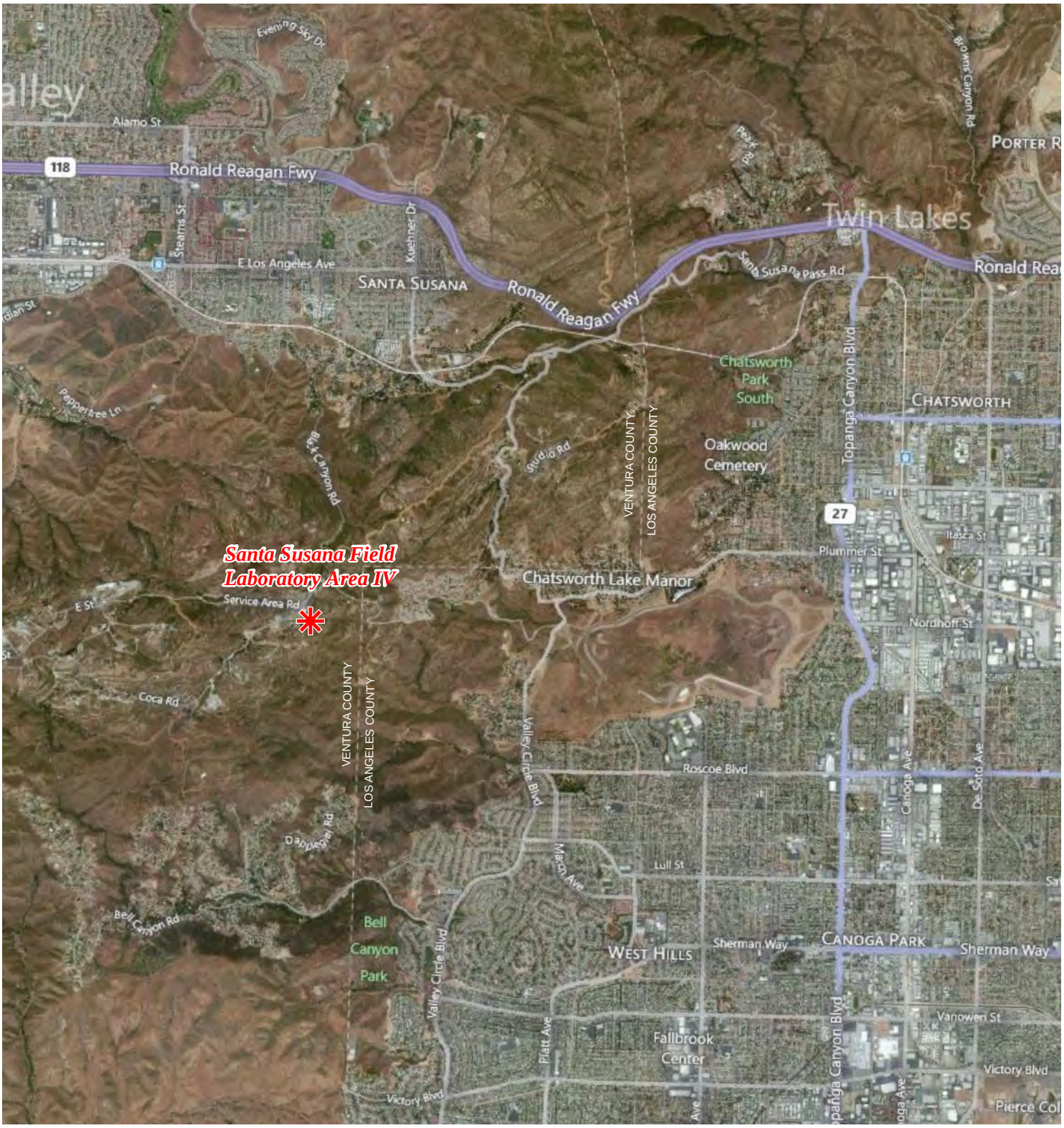
The Santa Susana Field Laboratory Area IV is located southwest of Facility Road and Woolsey Canyon Road in the County of Ventura. However the off-site noise sensitive receptors that will be subject to potential transportation related noise level increases are located within the County of Los Angeles, and therefore, this noise analysis was completed to satisfy the County of Los Angles exterior noise level standards. The location of the project site and roadways within the study area are presented at Exhibit 2-A.

2.3 Project Activities

The project proposes to export materials from the existing Santa Susana Field Laboratory Area IV after demolition and clean-up activities. It is assumed that during peak activities up to 12 trucks, approximately one truck every five minutes, will leave the existing facility. The proposed truck haul routes are shown on Exhibit 2-B.

EXHIBIT 2-A

LOCATION MAP



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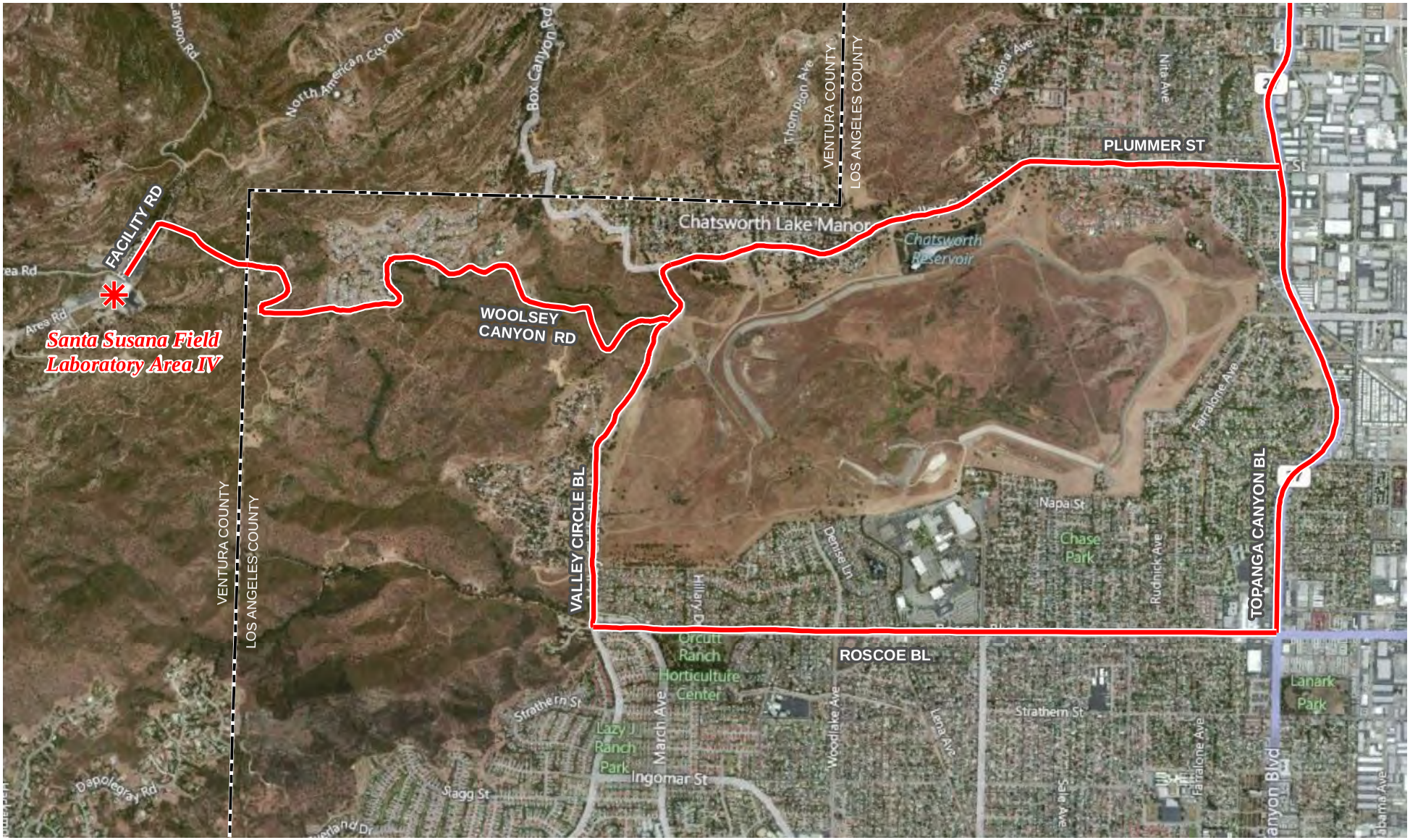
URBAN CROSSROADS

EXHIBIT 2-B

TRUCK HAUL ROUTES



3.0 NOISE FUNDAMENTALS

Noise has been simply defined as "unwanted sound." Sound becomes unwanted when it interferes with normal activities, when it causes actual physical harm or when it has adverse effects on health.

3.1 Range of Noise

Since the range of sound that the human ear can detect is so large, the scale used to measure sound intensity is a scale based on multiples of 10, the logarithmic scale. The unit of measure in which a sound intensity is described is the decibel (dB). Each interval of 10 decibels indicates a sound energy ten times greater than before, which is perceived by the human ear as being roughly twice as loud. However, due to the internal mechanism of the human ear and how it receives and processes noise, when two sound sources of equal intensity or power are measured together, their combined effect (intensity level) is 3 dBA higher than the level of either separately. Thus, two 72 dBA cars together measure 75 dBA under ideal conditions.

The most common sounds vary between 40 dBA (very quiet) to 100 dBA (very loud). Normal conversation at three feet is roughly at 60 dBA, while loud jet engine noises equate to 110 dBA at approximately 100 feet, which can cause serious discomfort. Exhibit 3-A presents a summary of the typical noise levels and their subjective loudness and effects that are described in more detail below.

3.2 Effects of Noise

Harmful effects of noise can include speech interference; sleep disruption and loss of hearing. High background noise levels can affect performance and learning processes through distraction, reduced accuracy, increased fatigue, annoyance and irritability, the inability to concentrate, and sleep prevention.

Several factors determine whether a particular noise will interfere with sleep. These factors include the noise level and characteristics, the stage of sleep, the individual's age and motivation to waken.

EXHIBIT 3-A

TYPICAL NOISE LEVELS AND THEIR SUBJECTIVE LOUDNESS AND EFFECTS

COMMON OUTDOOR ACTIVITIES	COMMON INDOOR ACTIVITIES	A - WEIGHTED SOUND LEVEL dBA	SUBJECTIVE LOUDNESS	EFFECTS OF NOISE
THRESHOLD OF PAIN		140	INTOLERABLE OR DEAFENING	HEARING LOSS
NEAR JET ENGINE		130		
		120		
JET FLY-OVER AT 300m (1000 ft)	ROCK BAND	110		
LOUD AUTO HORN		100	VERY NOISY	
GAS LAWN MOWER AT 1m (3 ft)		90		
DIESEL TRUCK AT 15m (50 ft), at 80 km/hr (50 mph)	FOOD BLENDER AT 1m (3 ft)	80		SPEECH INTERFERENCE
NOISY URBAN AREA, DAYTIME	VACUUM CLEANER AT 3m (10 ft)	70	LOUD	
HEAVY TRAFFIC AT 90m (300 ft)	NORMAL SPEECH AT 1m (3 ft)	60		
QUIET URBAN DAYTIME	LARGE BUSINESS OFFICE	50	MODERATE	SLEEP DISTURBANCE
QUIET URBAN NIGHTTIME	THEATER, LARGE CONFERENCE ROOM (BACKGROUND)	40		
QUIET SUBURBAN NIGHTTIME	LIBRARY	30	FAINT	NO EFFECT
QUIET RURAL NIGHTTIME	BEDROOM AT NIGHT, CONCERT HALL (BACKGROUND)	20		
	BROADCAST/RECORDING STUDIO	10	VERY FAINT	
LOWEST THRESHOLD OF HUMAN HEARING	LOWEST THRESHOLD OF HUMAN HEARING	0		

SOURCE: NOISE TECHNICAL SUPPLEMENT BY CALTRANS

3.3 Noise Descriptors

Environmental noise descriptors are generally based on averages, rather than instantaneous, noise levels. The most commonly used figure is the equivalent level (Leq). Leq represents a steady sound level containing the same total energy as a time-varying level over a given measurement interval. Leq's may represent any desired length of time; however, one hour is the most commonly used in environmental work. Consequently, Leq's can vary depending upon the time of day. In traffic noise measurements, the noisiest hour of the day is considered the benchmark of a road's noise emissions; therefore, the peak hour Leq is the noise metric used by Caltrans for all traffic noise impact analyses.

Peak hour noise levels, while useful, do not completely describe a given noise environment. Noise levels lower than peak hour levels may be disturbing if they occur during times when quiet is most desirable, namely evening and nighttime (sleeping) hours. To account for this, the Community Noise Equivalent Level (CNEL), representing a composite twenty-four hour noise level, is utilized.

The Community Noise Equivalent Level (CNEL) is the weighted average of the intensity of a sound, with corrections for time of day, and averaged over 24 hours. The time of day corrections require the addition of five decibels to sound levels in the evening from 7 p.m. to 10 p.m., and the addition of ten decibels to sound levels at night between 10 p.m. and 7 a.m. These additions are made to account for the noise sensitive time periods during the evening and night hours when sound appears louder and it is weighted accordingly. CNEL does not represent the actual sound level heard at any particular time, but rather represents the total sound exposure. The County of Los Angeles relies on the CNEL noise standard to assess transportation related impacts on noise sensitive land uses.

3.4 Traffic Noise Prediction

According to the *Highway Traffic Noise Analysis and Abatement Policy and Guidance,* provided by the Federal Highway Administration, the level of traffic noise depends on three primary factors: (1) the volume of the traffic, (2) the speed of the traffic, and (3) the vehicle mix within the flow of traffic. Generally, the loudness of traffic noise is increased by heavier traffic volumes, higher speeds, and a greater number of trucks. A doubling of the traffic volume, assuming that

the speed and vehicle mix do not change, results in a noise level increase of 3 dBA. The vehicle mix on a given roadway may also have an effect on community noise levels. As the number of medium and heavy trucks increases and becomes a larger percentage of the vehicle mix, adjacent noise level impacts will increase. Vehicle noise is a combination of the noise produced by the engine, exhaust, and tires on the roadway**.**

3.5 Ground Absorption

To account for the ground-effect attenuation (absorption), two types of site conditions are commonly used in traffic noise models, soft site and hard site conditions. Soft site conditions account for the sound propagation loss over natural surfaces such as normal earth and ground vegetation. A drop-off rate of 4.5 dBA per doubling of distance is typically observed over soft ground with landscaping, as compared with a 3.0 dBA drop-off rate over hard ground such as asphalt, concrete, stone and very hard packed earth. Caltrans research has shown that the use of soft site conditions is more appropriate for the application of the FHWA traffic noise prediction model used in this analysis.

3.6 Noise Control

Noise control is the process of obtaining an acceptable noise environment for a particular observation point or receptor by controlling the noise source, transmission path, receptor, or all three. This concept is known as the source-path-receptor concept. In general, noise control measures can be applied to any and all of these three elements.

3.7 Community Response to Noise

Approximately ten (10) percent of the population has a very low tolerance for noise and will object to any noise not of their own making. Consequently, even in the quietest environment, some complaints will occur. Another 25 percent of the population will not complain even in very severe noise environments. Thus, a variety of reactions can be expected from people exposed to any given noise environment.

Despite this variability in behavior on an individual level, the population as a whole can be expected to exhibit the following responses to changes in noise levels. An increase or decrease

of 1.0 dBA cannot be perceived except in carefully controlled laboratory experiments, a change of 3.0 dBA are considered "barely perceptible," and changes of 5 dBA are considered "readily perceptible."

4.0 REGULATORY SETTING AND SIGNIFICANCE CRITERIA

Local noise guidelines are often based on the broader guidelines established by state and federal agencies. This section describes the regulatory setting for the proposed off-site truck haul activities during the Santa Susana Field Laboratory Area IV demolition and site clean-up.

4.1 County of Los Angeles Noise Element

The County of Los Angeles is currently updating the existing General Plan adopted in October 11, 1974. The adopted General Plan Noise Element is included in Appendix 4.1. The noise objectives provided in the General Plan were developed over 35 years ago and do not provide specific noise level standards which are currently adopted in most Cities and Counties in Southern California. For the purposes of this project, the noise compatibility matrix was used to evaluate the compatibility of the proposed land uses with the existing and predicted noise environment. The noise compatibility matrix, shown in Exhibit 4-A, is derived from the General Plan Guidelines, a publication of the California Office of Planning and Research. The noise compatibility matrix is used by many California cities and Counties to evaluate the compatibility of proposed land uses with the existing and predicted noise environment. For single family residential areas, a community noise exposure level below 65 dBA CNEL is considered ”normally acceptable”, which means the development of an residential area is satisfactory with normal conventional construction without any special noise insulation requirements. For residential areas, the interior noise levels should remain below 45 dBA CNEL.

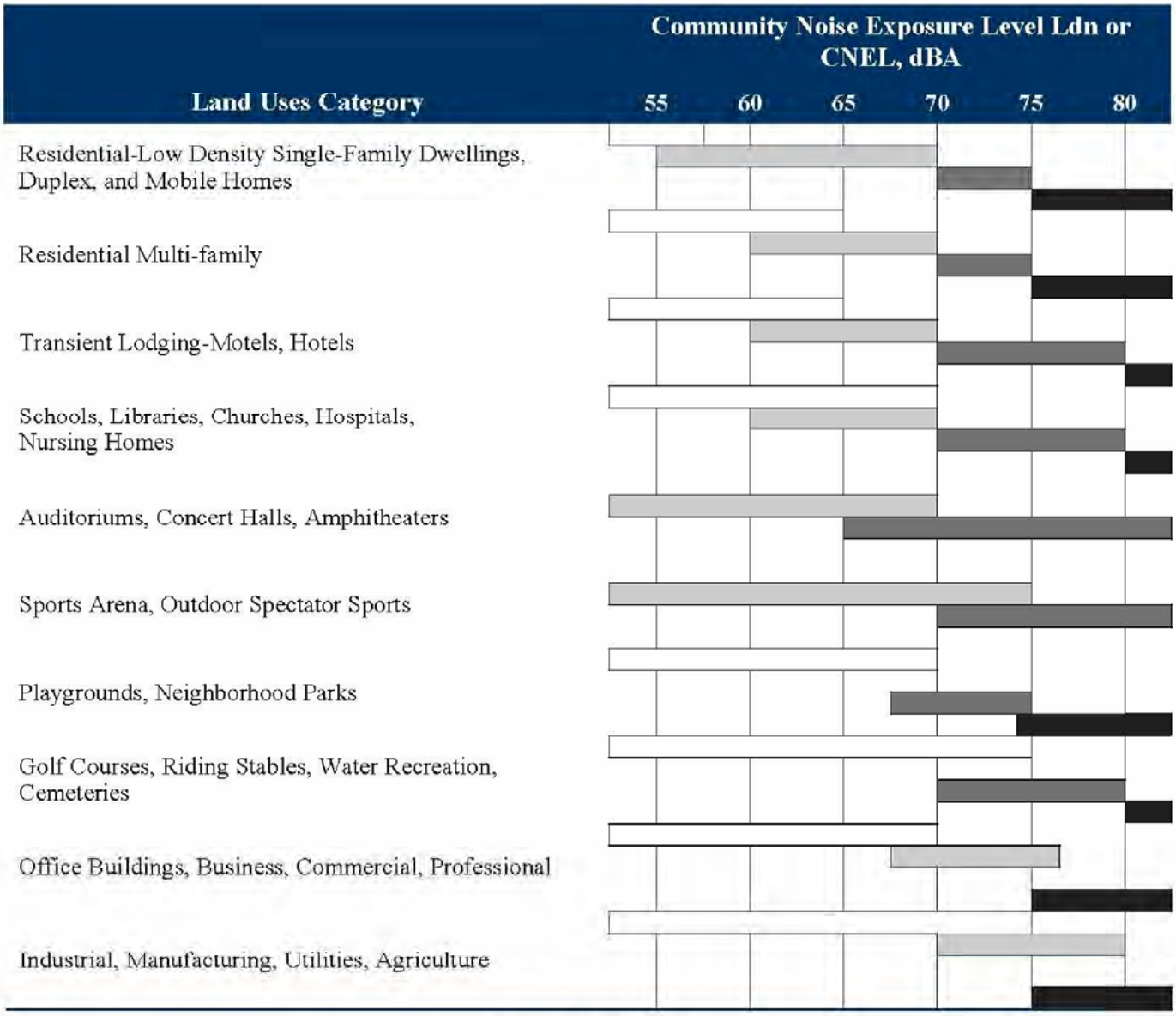
4.2 Significance Criteria

The following significance criteria are based on guidance provided by Appendix G of the California Environmental Quality Act (CEQA) Guidelines. For the purposes of this report, noise impacts would be potentially significant if the Modified Project is determined to result in or cause:

- 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;
- A substantial permanent increase in ambient noise levels in the Project vicinity above existing levels without the proposed Project; or

EXHIBIT 4-A

LAND USE AND NOISE COMPATIBILITY MATRIX



Explanatory Notes

Normally Acceptable:
Specified land use is satisfactory based upon the assumption that any buildings involved are of normal conventional construction without any special noise insulation requirements.

Conditionally Acceptable:
New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply system or air conditioning will normally suffice. Outdoor environment will seem noisy.

Normally Unacceptable:
New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made with needed noise insulation features included in the design. Outdoor areas must be shielded.

Clearly Unacceptable:
New construction or development should generally not be undertaken. Construction cost to make the indoor environment acceptable would be prohibitive and the outdoor environment would not be usable.

SOURCE: California Office of Noise Control

- A substantial temporary or periodic increase in ambient noise levels in the Project vicinity above noise levels existing without the proposed Project.

While the CEQA Guidelines and the County of Los Angeles noise standards provide direction on noise compatibility and establish noise standards by land use type that are sufficient to assess the significance of noise impacts under the first threshold, they do not define the levels at which increases are considered substantial for use under the second and third threshold. Under CEQA, consideration must be given to the magnitude of the increase, the existing ambient noise levels and the location of noise-sensitive receptors in order to determine if a noise increase represents a significant adverse environmental effect.

The Federal Highway Administration and Caltrans both identify changes in noise levels of greater than 3 dBA as "barely perceptible," while changes of 5 dBA are considered "readily perceptible." In a community situation, the noise exposure is extended over a long time period, and changes in noise levels occur over a period of years. For the purpose of this analysis, the level at which changes in community noise levels become discernible is likely to be some value greater than 1 dBA, and 3 dBA appears to be appropriate for most people.

On this basis, and for the purposes of this study, a substantial permanent increase in noise levels attributable to Project would occur if the projected noise levels generated by the haul truck activities would create a project-related traffic noise level increase of greater than 3.0 dBA within off-site noise-sensitive areas and exceed the 65 dBA CNEL exterior noise level standard.

5.0 EXISTING NOISE LEVEL MEASUREMENTS

To evaluate the existing noise level environment, five (5) long-term 24-hour measurements were taken at locations throughout the project study area. Exhibit 5-A shows the haul truck routes within the project study area and the noise level measurement locations. The noise level measurements were recorded by Urban Crossroads, Inc. between August 24th and 29th, 2011. The projected haul truck routes will pass through noise-sensitive residential zones with receptors located at varying distances from roadway centerlines. Most homes are positioned such that the noise-sensitive rear-yards facing the adjacent roadway are protected by existing noise barriers located along the property line.

5.1 Measurement Procedure and Criteria

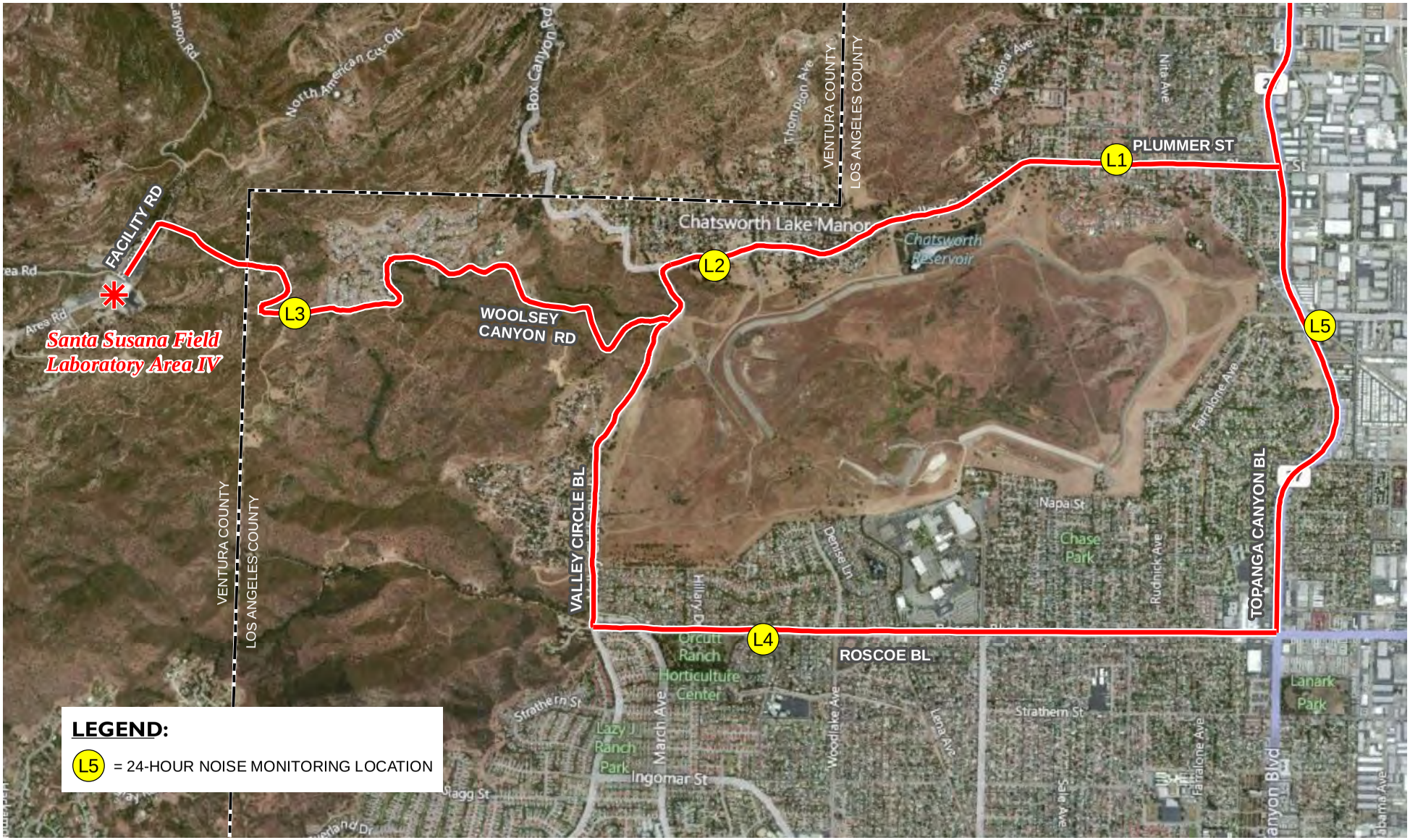
The 24-hour noise readings were recorded using a Quest DL Pro data logging Type 2 noise dosimeter. All noise meters were programmed in "fast" mode to record noise levels in "A" weighted form. The sound level meters and microphone were equipped with a windscreen during all measurements. The Quest DL noise dosimeters were calibrated using a Quest QC-10 calibrator. All noise level measurement equipment meets American National Standards Institute (ANSI) specifications for sound level meters (Standard S1.4-1983).

5.2 Noise Measurement Locations

The haul truck routes associated with the demolition and clean-up of Santa Susana Field Laboratory Area IV are shown as well on exhibit 5-A. The first option includes traveling east along Woolsey Canyon Road and then northeast through Chatsworth Lake Manor along Plummer Street and finally, north on Topanga Canyon Boulevard. The second option includes traveling east along Woolsey Canyon Road and then south on Valley Circle Boulevard, east on Roscoe Boulevard, and finally, north on Topanga Canyon Boulevard. Both haul routes will pass through residential areas with mainly single-family homes and general commercial uses. The existing noise environment is dominated by traffic noise from Woolsey Canyon Road, Plummer Street, Valley Circle Boulevard, Roscoe Boulevard, and Topanga Canyon Boulevard.

EXHIBIT 5-A

LONG TERM NOISE MONITORING LOCATIONS



Santa Susana Field Laboratory Area IV Noise Impact Study
County of Ventura, CA (JN - 07920:monitors.mxd)

URBAN CROSSROADS

Long- Term noise measurement locations L1 through L5 were monitored for a time period of 24 minutes for 5 consecutive days. A description of each location along with UTM (Universal Transverse Mercator) coordinates are presented below. UTM coordinates were taken to provide a more precise location of each noise meter.

- Site L1 is located at the property line of 22401 Plummer Street, west of Shoup Avenue, 55 feet from the roadway centerline. UTM coordinates: 351246ex3790263n.
- Site L2 is located across from 23541 Lake Manor Drive in the Chatsworth Lake area approximately 60 feet from roadway centerline. UTM coordinates: 348896ex3789706n.
- Site L3 is located 30 feet from the Woolsey Canyon Road centerline west of Bang Road intersection. UTM coordinates: 346562ex3789388n.
- Site L4 is located approximately 50 feet south of the Roscoe Boulevard centerline west of Jason Avenue. UTM coordinates: 349281ex3787658n.
- Site L5 is located 100 feet east of Topanga Canyon Boulevard at the existing Sunrise Assisted Living Complex. UTM coordinates: 352188ex3789267n.

5.3 Noise Measurement Results

The results of the noise level measurements are presented in Tables 5-1 and 5-2 with long-term noise monitoring results printouts included in Appendix 5.2. After reviewing the data gathered, a typical weekday, Thursday, August 25th and typical weekend day, Saturday, August 27th were used as existing baseline conditions. Data for all days are included in the Appendix 5.1, however, a summary of only the typical days are presented in this section.

For a typical weekday:

- Hourly noise levels at Site L1 ranged from 50.7 to 67.6 dBA Leq with an overall daily noise level of 68.1 dBA CNEL.
- Hourly noise levels at Site L2 ranged from 47.4 to 71.0 dBA Leq with an overall daily noise level of 64.8 dBA CNEL.
- Hourly noise levels at Site L3 ranged from 48.0 to 63.5 dBA Leq with an overall daily noise level of 61.7 dBA CNEL.

Table 5-1

Long-Term (Ambient) Noise Level Measurements[1]
Thursday, August 25th, 2011

Receptor Location[2]	Description	Time Of Measurement[3]	Primary Noise Source	Hourly Noise Levels (Leq dBA)[4]	Daily Noise Levels (dBA CNEL)[4]
L1	Located at the property line of 22401 Plummer Street, west of Shoup Avenue, 55 feet from the roadway centerline. UTM coordinates: 351246ex3790263n	8/25/2011	Traffic on Plummer Street	50.7 - 67.6	68.1
L2	Located across from 23541 Lake Manor Drive in the Chatsworth Lake area approximately 60 feet from roadway centerline. UTM coordinates: 348896ex3789706n	8/25/2011	Traffic on Lake Manor Drive	47.4 - 71.0	64.8
L3	Located 30 feet from the Woolsey Canyond Road centerline west of Bang Road intersection. UTM coordinates: 346562ex3789388n	8/25/2011	Traffic on Woolsey Canyon	48.0 - 63.5	61.7
L4	Located approximately 50 feet south of the Roscoe Boulevard centerline west of Jason Avenue. UTM coordinates: 349281ex3787658n	8/25/2011	Traffic on Roscoe Boulevard	52.9 - 68.8	68.2
L5	Located 100 feet east of Topanga Canyon Boulevard at the existing Sunrise Assisted Living Complex. UTM coordinates: 352188ex3789267n	8/25/2011	Traffic on Topanga Canyon Boulevard	52.1 - 63.7	65.7

[1] Noise measurements taken by Urban Crossroads, Inc. from August 24 to August 28th, 2011.

[2] See Exhibit 4-A for the location of the monitoring sites, and Appendix 4.1 for Study Area Photos.

[3] All measurement at locations L1-L5 were monitored for a period of 24 hours.

[4] The long-term noise level measurements printouts are included in Appendix 4.2.

Table 5-2

Long-Term (Ambient) Noise Level Measurements[1]
Saturday, August 27th, 2011

Receptor Location[2]	Description	Time Of Measurement[3]	Primary Noise Source	Hourly Noise Levels (Leq dBA)[4]	Daily Noise Levels (dBA CNEL)[4]
L1	Located at the property line of 22401 Plummer Street, west of Shoup Avenue, 55 feet from the roadway centerline. UTM coordinates: 351246ex3790263n	8/25/2011	Traffic on Plummer Street	50.5 - 68.3	68.4
L2	Located across from 23541 Lake Manor Drive in the Chatsworth Lake area approximately 60 feet from roadway centerline. UTM coordinates: 348896ex3789706n	8/25/2011	Traffic on Lake Manor Drive	47.5 - 72.1	64.9
L4	Located approximately 50 feet south of the Roscoe Boulevard centerline west of Jason Avenue. UTM coordinates: 349281ex3787658n	8/25/2011	Traffic on Roscoe Boulevard	52.1 - 65.7	66.9
L5	Located 100 feet east of Topanga Canyon Boulevard at the existing Sunrise Assisted Living Complex. UTM coordinates: 352188ex3789267n	8/25/2011	Traffic on Topanga Canyon Boulevard	52.9 - 62.0	64.6

[1] Noise measurements taken by Urban Crossroads, Inc. from August 24 to August 28th, 2011.

[2] See Exhibit 4-A for the location of the monitoring sites, and Appendix 4.1 for Study Area Photos.

Measurement location L3 was not monitored on Saturday and Sunday.

[3] All measurement at locations L1-L5 were monitored for a period of 24 hours.

[4] The long-term noise level measurements printouts are included in Appendix 4.2.

- Hourly noise levels at Site L4 ranged from 52.9 to 68.8 dBA Leq with an overall daily noise level of 68.2 dBA CNEL.
- Hourly noise levels at Site L5 ranged from 52.1 to 63.7 dBA Leq with an overall daily noise level of 65.7 dBA CNEL.

For a typical weekend day:

- Hourly noise levels at Site L1 ranged from 50.5 to 68.3 dBA Leq with an overall daily noise level of 68.4 dBA CNEL.
- Hourly noise levels at Site L2 ranged from 47.5 to 72.1 dBA Leq with an overall daily noise level of 64.9 dBA CNEL.
- Hourly noise levels at Site L3 were not gathered due to a malfunction of one of the noise dosimeters.
- Hourly noise levels at Site L4 ranged from 52.1 to 65.7 dBA Leq with an overall daily noise level of 66.9 dBA CNEL.
- Hourly noise levels at Site L5 ranged from 52.9 to 62.0 dBA Leq with an overall daily noise level of 64.6 dBA CNEL.

The results presented above show that noise levels are relatively similar for both weekday and weekend conditions along the roadways measured. Both truck haul route options are dominated by automobile traffic, however, based on traffic counts gathered and human observation, both medium sized truck and heavy trucks are present.

6.0 OFF-SITE TRAFFIC NOISE IMPACTS

To assess the off-site noise level impacts associated with the haul truck activities associated with the demolition and clean-up of Santa Susana Field Laboratory Area IV, existing traffic noise contours were developed based on the existing traffic counts gathered by Counts Unlimited between August 24th and August 29th. In order to assess the project related traffic noise level impacts, a future truck volume of 144 truck trips, 12 per hour between the hours of 7:00 a.m. and 7:00 p.m. were added per the direction of the project manager, John Wondolleck. In order to present a conservation analysis, it was assumed that all 144 trucks were added to both haul routes. Should both haul routes be used and trucks split, traffic noise level impacts would decrease.

6.1 FHWA Traffic Noise Prediction Model

The projected roadway noise impacts from vehicular traffic were projected using a computer program that replicates the Federal Highway Administration (FHWA) Traffic Noise Prediction Model- FHWA-RD-77-108 (the "FHWA Model"). The FHWA Model arrives at a predicted noise level through a series of adjustments to the Reference Energy Mean Emission Level (REMEL). The adjustments made to the REMEL account for: the roadway classification (e.g., collector, secondary, major or arterial), the roadway active width (i.e., the distance between the center of the outermost travel lanes on each side of the roadway), the total average daily traffic (ADT), the travel speed, the percentages of automobiles, medium trucks, and heavy trucks in the traffic volume, the roadway grade, the angle of view (e.g., whether the roadway view is blocked), the site conditions ("hard" or "soft" relates to the absorption of the ground, pavement, or landscaping), and the percentage of total ADT which flows each hour throughout a 24-hour period.

6.2 Traffic Noise Prediction Model Inputs

Table 6-1 presents the FHWA Traffic Noise Prediction Model roadway parameters used in this analysis. Soft site conditions were used to develop the noise contours to analyze the traffic noise impacts to the study area to take into account the varying ground surface types between the roadways and receiver locations. The current counted roadway volumes for each segment as well as future traffic volumes are also presented in Table 6-1.

Table 6-1

Roadway Parameters[1]

Thursday					
Roadway	Segment	Roadway Classification	Vehicle Speed (MPH)	Current Volume[2]	Future Volume[3]
Roscoe Boulevard	Valley Circle Blvd. - Topanga Canyon Blvd.	Secondary	40	7,996	8,141
Plummer Street	Valley Circle Blvd. - Topanga Canyon Blvd.	Collector	35	5,437	5,593
Woolsey Canyon Rd.	w/o Valley Circle Blvd.	Collector	35	2,002	2,147

Saturday					
Roadway	Segment	Roadway Classification	Vehicle Speed (MPH)	Current Volume[2]	Future Volume[3]
Roscoe Boulevard	Valley Circle Blvd. - Topanga Canyon Blvd.	Secondary	40	6,896	7,041
Plummer Street	Valley Circle Blvd. - Topanga Canyon Blvd.	Collector	35	4,076	4,232
Woolsey Canyon Rd.	w/o Valley Circle Blvd.	Collector	35	1,566	1,711

[1] According to the Los Angeles County Circulation Element.

[2] According to counts taken on August 24th-28th, 2011 by Counts Unlimited Inc.

Tables 6-2 through 6-7 present both the existing and predicted future hourly traffic flow distributions (vehicle mix) including the percentages of automobile, medium trucks and heavy trucks for input into the FHWA Model used for this analysis. The existing traffic counts, presented in Appendix 6.1, gathered by Counts Unlimited between August 24th and August 29th also provide vehicle classification information as well as showing the hourly distribution to assess daytime, evening, and nighttime mix.

6.3 Traffic Noise Contours

Noise contours represent the distance to noise levels of a constant value and are measured from the center of the roadway. The purpose of the off-site noise contours is to assess the incremental off-site transportation related noise impacts at land uses adjacent to roadways conveying project traffic. The noise contours conservatively do not take into account the effect of any existing noise barriers or topography that may affect ambient noise levels. In addition, in that the noise contours reflect modeling of vehicular noise along area roadways, they appropriately do not reflect noise contribution from the surrounding commercial uses to the study area. Due to the varying distances of noise sensitive uses to roadway centerline, a reference distance of 100 feet was used for each segment for both weekday and weekend conditions.

6.4 Future Conditions Roadway Noise Levels

Table 6-8 presents the existing without and future with project noise contours. The off-site FHWA model printouts are included in Appendix 6.2. The analysis completed shows that existing noise levels along potential haul truck routes range from 52.2 to 60.5 dBA CNEL. Noise levels currently experience at noise sensitive receptors at a distance greater than 100 feet from roadway centerline are substantially below 65 dBA CNEL. With the added haul truck trips, noise levels are expected to range from 54.8 to 61.1 dBA CNEL and continue to remain below the 65 dBA CNEL exterior noise level standard for transportation related sources.

6.5 Off-Site Transportation Related Project Noise Impacts

To be considered a substantial noise impact, the off-site project traffic must either cause an exceedance of the local jurisdiction's exterior noise threshold; or, if ambient conditions exceed the

Table 6-2

Existing Hourly Traffic Flow Distribution [1]
Roscoe Boulevard - Between Valley Circle Boulevard and Topanga Canyon Boulevard

Motor-Vehicle Type	Daytime (7 am to 7 pm)	Evening (7 pm to 10 pm)	Night (10 pm to 7 am)	Total % Traffic Flow
Thursday				
Automobiles	76.6%	15.2%	8.2%	95.62%
Medium Trucks	87.0%	5.1%	8.0%	3.45%
Heavy Trucks	75.7%	2.7%	21.6%	0.93%
Saturday				
Automobiles	73.1%	14.8%	12.1%	97.53%
Medium Trucks	86.1%	6.9%	6.9%	2.09%
Heavy Trucks	76.9%	15.4%	7.7%	0.38%

[1] Vehicle mixes based on axle counts taken on August 24th-28th, 2011 by Counts Unlimited Inc.

Table 6-3

Existing Hourly Traffic Flow Distribution [1]
Plummer Street - Between Valley Circle Boulevard and Topanga Canyon Boulevard

Motor-Vehicle Type	Daytime (7 am to 7 pm)	Evening (7 pm to 10 pm)	Night (10 pm to 7 am)	Total % Traffic Flow
Thursday				
Automobiles	77.3%	12.4%	10.2%	95.29%
Medium Trucks	80.3%	8.3%	11.5%	4.01%
Heavy Trucks	78.9%	7.9%	13.2%	0.70%
Saturday				
Automobiles	74.0%	14.0%	12.0%	96.39%
Medium Trucks	81.1%	9.4%	9.4%	3.12%
Heavy Trucks	75.0%	5.0%	20.0%	0.49%

[1] Vehicle mixes based on axle counts taken on August 24th-28th, 2011 by Counts Unlimited Inc.

Table 6-4

Existing Hourly Traffic Flow Distribution [1]
Woolsey Canyon Road - West of Valley Circle Boulevard

Motor-Vehicle Type	Daytime (7 am to 7 pm)	Evening (7 pm to 10 pm)	Night (10 pm to 7 am)	Total % Traffic Flow
Thursday				
Automobiles	69.1%	14.5%	16.4%	92.41%
Medium Trucks	84.4%	2.2%	13.3%	4.50%
Heavy Trucks	75.8%	6.5%	17.7%	3.10%
Saturday				
Automobiles	69.8%	14.7%	15.5%	97.13%
Medium Trucks	70.6%	17.6%	11.8%	2.17%
Heavy Trucks	81.8%	9.1%	9.1%	0.70%

[1] Vehicle mixes based on axle counts taken on August 24th-28th, 2011 by Counts Unlimited Inc.

Table 6-5

Future Hourly Traffic Flow Distribution [1]
Roscoe Boulevard - Between Valley Circle Boulevard and Topanga Canyon Boulevard

Motor-Vehicle Type	Daytime (7 am to 7 pm)	Evening (7 pm to 10 pm)	Night (10 pm to 7 am)	Total % Traffic Flow
Weekday				
Automobiles	77.4%	14.8%	7.8%	93.57%
Medium Trucks	82.1%	9.3%	8.6%	3.42%
Heavy Trucks	88.6%	4.9%	6.5%	3.01%
Weekend				
Automobiles	73.1%	14.8%	12.1%	95.38%
Medium Trucks	86.1%	6.9%	6.9%	2.04%
Heavy Trucks	90.1%	8.8%	1.1%	2.58%

[1] Vehicle mixes based on axle counts taken on August 24th-28th, 2011 by Counts Unlimited Inc. and the addition of operations associated with the proposed project.

Table 6-6

Future Hourly Traffic Flow Distribution [1]
Plummer Street - Between Valley Circle Boulevard and Topanga Canyon Boulevard

Motor-Vehicle Type	Daytime (7 am to 7 pm)	Evening (7 pm to 10 pm)	Night (10 pm to 7 am)	Total % Traffic Flow
Weekday				
Automobiles	77.5%	12.4%	10.1%	92.28%
Medium Trucks	80.0%	11.5%	8.5%	3.78%
Heavy Trucks	91.8%	6.3%	1.9%	3.93%
Weekend				
Automobiles	74.0%	14.0%	12.0%	92.84%
Medium Trucks	81.1%	9.4%	9.4%	3.00%
Heavy Trucks	90.3%	7.4%	2.3%	4.16%

[1] Vehicle mixes based on axle counts taken on August 24th-28th, 2011 by Counts Unlimited Inc. and the addition of operations associated with the proposed project.

Table 6-7

Future Hourly Traffic Flow Distribution [1]
Woolsey Canyon Road - West of Valley Circle Boulevard

Motor-Vehicle Type	Daytime (7 am to 7 pm)	Evening (7 pm to 10 pm)	Night (10 pm to 7 am)	Total % Traffic Flow
Weekday				
Automobiles	69.2%	15.4%	15.4%	85.33%
Medium Trucks	81.6%	2.6%	15.8%	3.68%
Heavy Trucks	89.9%	6.6%	3.5%	10.99%
Weekend				
Automobiles	69.8%	14.7%	15.5%	88.33%
Medium Trucks	70.6%	17.6%	11.8%	1.97%
Heavy Trucks	91.6%	7.8%	0.6%	9.70%

[1] Vehicle mixes based on axle counts taken on August 24th-28th, 2011 by Counts Unlimited Inc. and the addition of operations associated with the proposed project.

Table 6-8

Traffic Related Project Contributions

Roadway	Scenario	CNEL at 100 Feet (dBA)			
		Existing	Future With Project	Project Contribution	Potential Significant Impact[1]
Roscoe Boulevard	Thursday	60.5	61.1	0.6	NO
	Saturday	59.4	60.1	0.7	NO
Plummer Street	Thursday	57.5	58.4	0.9	NO
	Saturday	56.1	57.3	1.2	NO
Woolsey Canyon Road	Thursday	55.7	57.0	1.3	NO
	Saturday	52.2	54.8	2.6	NO

[1] Pontential significant impact occurs when project noise level contribution is greater than 3.0 dBA CNEL and the overall noise level exceeds 65 dBA CNEL.

jurisdiction's Standards guideline, project traffic must create a "barely perceptible" 3.0 dBA or greater permanent increase in ambient exterior noise levels.

Table 6-8 shows that for the future analysis, the development of the proposed project will increase the off-site noise levels by up to 2.6 dBA CNEL. An increase of less than 3.0 dBA CNEL is not considered substantial in terms of community noise impacts. Therefore, the proposed project's contributions to off-site roadway noise level increases will not cause any significant impacts to any existing or future sensitive noise receptors.

In summary, the project will not generate a substantial permanent increase in transportation-related noise levels, nor cause exposure of persons to noise levels in excess of the standards established in the County of Los Angeles Noise Elements.

6.6 Recommendations for Reduction of Potential Noise Impacts

As shown on Table 6-8, the operation of the project will not exceed the County's standards for transportation noise impacts. To help assure that noise level impacts created by the haul truck remain less than signification, it is recommended that the Lead Agency require the following as project Conditions of Approval:

- All trucks shall be operated with proper operating and well maintained mufflers.
- Maintain quality pavement conditions that are free of bumps to minimize truck noise.
- Provide notification to residents along the haul routes of expected truck activity.