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ARANTINE HILLS
EIR NOISE ANALYSIS
CITY OF CORONA, CALIFORNIA

May 13, 2011 (Revised)
March 29, 2011 (Revised)
December 7, 2009

JN:06897-06
BL:JS

TABLE OF CONTENTS

Section Page

1.0 EXECUTIVE SUMMARY 1
- 1.1 Off-Site Traffic Noise Analysis
- 1.2 On-Site Traffic Noise Impact Analysis
- 1.3 On-Site Stationary Noise Impacts
- 1.4 Construction Noise Impact Analysis

2.0 INTRODUCTION 6
- 2.1 Site Location and Study Area
- 2.2 Project Description and Phasing

3.0 NOISE FUNDAMENTALS 8
- 3.1 Range of Noise
- 3.2 Noise Descriptors
- 3.3 Traffic Noise Prediction
- 3.4 Noise Control
- 3.5 Ground Absorption
- 3.6 Noise Barrier Attenuation
- 3.7 Community Response to Noise
- 3.8 Land Use Compatibility With Noise

4.0 NOISE STANDARDS 14
- 4.1 Transportation Noise Standards
- 4.2 Stationary Noise Standards
- 4.3 Construction Noise Standards
- 4.4 Community Noise Assessment Criteria
- 4.5 Thresholds of Significance

5.0 EXISTING NOISE LEVEL MEASUREMENTS 19
- 5.1 Measurement Procedure and Criteria
- 5.2 Noise Measurement Locations
- 5.3 Noise Measurement Results

6.0 METHODS AND PROCEDURES 25
- 6.1 FHWA Traffic Noise Prediction Model
- 6.2 Traffic Noise Prediction Model Inputs

7.0 OFF-SITE TRANSPORTATION NOISE IMPACTS 30
- 7.1 Traffic Noise Contour Boundaries
- 7.2 Existing Roadway Noise Levels
- 7.3 Opening Year Phase 1 (Year 2014) Project Traffic Noise Level Contributions
- 7.4 Opening Year Phase 2 (Year 2019) Project Traffic Noise Level Contributions
- 7.5 Year 2035 Project Traffic Noise Level Contributions
- 7.6 Off-Site Transportation Related Project Noise Impacts

Section Page

8.0 ON-SITE NOISE IMPACTS 43
8.1 On-Site Transportation Related Noise Impacts
8.2 Stationary Noise Impacts

9.0 SHORT-TERM CONSTRUCTION NOISE IMPACTS 48
9.1 Noise Sensitive Uses and Construction Noise Standards
9.2 Construction Noise Levels and Impacts
9.3 Mitigation Measures

APPENDICES

City of Corona Noise Element 4.1

City of Corona Development Code 4.2

Study Area Photos 5.1

Noise Monitoring Data Printouts 5.2

Leq To CNEL Conversion Printouts 5.3

Off-Site FHWA Traffic Noise Model Contours 7.1

On-Site FHWA Traffic Noise Model Contours 8.1

LIST OF EXHIBITS

Section Page

2-A Location Map 7

2-B Land Use Plan 8

3-A Typical Noise Levels and Their Subjective Loudness and Effects 10

5-A Noise Monitoring Locations 20

8-A City of Corona General Plan Freeway Noise Levels 46

9-A Typical Construction Noise Levels 49

LIST OF TABLES

Section		Page
5-1	Existing Year 2009 Long-Term (Ambient) Noise Level Measurements	22
5-2	Existing Year 2009 Short-Term (Ambient) Noise Level Measurements	23
6-1	Off-Site Roadway Parameters	26
6-2	Average Daily Traffic for Existing, Phase 1, Phase 2, and Year 2035 Conditions	27
6-3	Hourly Traffic Flow Distribution	29
7-1	Existing Conditions Noise Contours	31
7-2	Phase 1 (Year 2014) Without Project Conditions Noise Contours	32
7-3	Phase 1 (Year 2014) With Project Conditions Noise Contours	33
7-4	Phase 2 (Year 2019) Without Project Conditions Noise Contours	34
7-5	Phase 2 (Year 2019) With Project Conditions Noise Contours	35
7-6	Year 2035 Without Project Conditions Noise Contours	36
7-7	Year 2035 With Project Conditions Noise Contours	37
7-8	Phase 1 (Year 2014) Off-Site Project Related Traffic Noise Impacts	39
7-9	Phase 2 (Year 2019) Off-Site Project Related Traffic Noise Impacts	40
7-10	Year 2035 Off-Site Project Related Traffic Noise Impacts	41
8-1	On-Site Roadway Parameters	44
8-2	Year 2035 Conditions On-Site Noise Contours	45

ARANTINE HILLS
EIR NOISE IMPACT ANALYSIS
CITY OF CORONA, CALIFORNIA

1.0 EXECUTIVE SUMMARY

This noise analysis has been completed to determine the noise impacts associated with the development of the proposed Arantine Hills development. The project is generally located south of Eagle Glen Parkway and west of the I-15 Freeway in the City of Corona. The Arantine Hills project allows for the development of 549 single-family detached dwelling units, 1,072 multi-family attached dwelling units, 4 acres of passive park, 11 acres of active park, 59,000 square feet of general office use, 230,900 square feet of business park use, 59,000 square feet of specialty retail use, and 396,400 square feet of shopping center use.

The purpose of this noise assessment is to evaluate the potential noise impacts associated with the development of the proposed project and to recommend noise mitigation measures to minimize the potential project impacts.

1.1 Off-Site Traffic Noise Analysis

To assess the off-site noise levels impact associated with development of the proposed development, noise level contour boundaries for the 55, 60, 65 and 70 dBA CNEL noise levels were developed for each of the alternatives included in the Arantine Hills Traffic Impact Analysis. For noise impacts to be considered significant, the project traffic volumes must create a noise level increase of greater than 3 dBA on the study area roadway segments AND the resulting noise level MUST exceed the City of Corona 65 dBA CNEL exterior noise level standard.

For the Phase 2 (Year 2019) and Year 2035 scenarios, one roadway segment on Cajalco Road may experience a noise increase slightly above 3.0 dBA CNEL which is considered a "potentially significant" noise impact, however there are no current or planned noise sensitive uses on the Caljalco Road roadway segment. For all other roadway segments, the Project's incremental off-site traffic noise level contributions will be considered "barely

perceptible" (less than 3.0 dBA CNEL) and therefore, no off-site traffic mitigation is required.

1.2 On-Site Traffic Noise Impact Analysis

Currently the portions of the project site are exposed to significant traffic noise levels from Eagle Glen Parkway and the I-15 Freeway. The future traffic related noise impacts to the noise sensitive areas of the project site will be caused by traffic on the internal roads such as Street "A", Street "B", and Street "C" as well as traffic on Eagle Glen Parkway and the I-15 Freeway.

For the purpose of this preliminary noise analysis, the site and its surrounding roadways were considered flat. Based on the FHWA traffic noise prediction model, the future unmitigated 65 dBA CNEL contours are within the right-of-way for Street "B", Street "C" and do not reach the Planning Area 7 and 10 boundary lines along Eagle Glen Parkway from Bennett Avenue to Masters Drive. For Eagle Glen Parkway from Masters Drive to Bedford Canyon Road and Street "A", the 65 dBA CNEL contours extend slightly into the adjacent planning areas. Since the location of the nearest homes in PA 13 and 14 are not yet known, any potential mitigation measures should be made once a final site plan is provided. Should any noise sensitive exterior living areas be located within the 65 dBA CNEL contour, exterior mitigation such as noise barriers may be required. Based on the location of the traffic noise contours produced by the I-15 Freeway, portions of PA 16 will be located within both the 65 dBA CNEL and 70 dBA CNEL traffic noise contours. For all noise-sensitive residential units that are located between the 65 dBA CNEL traffic noise contour and the I-15 Freeway, exterior mitigation at private exterior living areas including private patios and balconies may be necessary depending on the site layout, grading information, and location of intervening buildings. A final noise analysis shall be completed at the tract map level for each residential area when the precise grading and the architectural plans are available to ensure that all residential areas will meet the City of Corona noise standards.

1.3 On-Site Stationary Noise Impacts

Currently, the Eagle Glen Golf Club Maintenance Area is located south of PA 1 which contains low-density, single-family residences. After speaking with Jason Burkhart, superintendant of the Eagle Glen Golf Club, it was learned that the maintenance area is open from 5 a.m. to 2 p.m. daily. Based on their cooperation with the existing homes located near the project site, they try to keep activities from occurring before 7 a.m. when at all possible. The noise measurement taken show that in fact operations at the maintenance area were kept to a minimum until 7 a.m. as not to disturb residents during the noise-sensitive nighttime hours. Noise levels recorded during the normal operational hours produced hourly Leq's ranging from 54.5 to 60.5 dBA Leq. These levels currently exceed the City of Corona daytime noise standard for 55 dBA Leq for non-transportation related noise impacts. It is expected that once final tract maps are provided, exterior mitigation around the noise-sensitive exterior yards in Planning Area 1 such as property line noise walls will be necessary in order to meet the City of Corona daytime noise standards. The height and location of any necessary noise barriers shall be determined once specific grading information is available in order to provide proper barrier heights.

The operation of the commercial center areas may create noise impacts to the adjacent residential areas. Typical noise impacts associated with the operation of the commercial center include truck maneuvering and unloading, air conditioning units, trash compactors and speakerphones. It is not possible to calculate the specific noise impacts at the specific plan level without grading plans and the location of the potential noise sources. A detailed noise analysis should be completed to evaluate the specific noise impacts associated with the operation of the commercial areas to the noise-sensitive land uses.

1.4 Construction Noise Impact Analysis

Existing surrounding land uses include single-family homes and Eagle Glen Parkway to the northwest, the I-15 Freeway to the northeast and vacant land to the south. The City of Corona prohibits construction related activities between the hours of 8:00 p.m. to 7:00 a.m., Monday through Saturday and 6:00 p.m. to 10:00 a.m. on Sundays and federal holidays.

The nearest homes are located adjacent to the west of the project site site and across Eagle Glen Parkway, at distances ranging from 150 to 420 feet. Using a drop-off rate of 6 dBA Lmax per doubling of distance, noise levels at 100 feet are estimated at 83 dBA Lmax, at 200 feet 77 dBA Lmax, and at 400 feet 71 dBA Lmax. This noise level impact is a worst-case scenario when grading equipment is located nearest to these homes. To reduce the noise impacts to the adjacent noise sensitive homes, several mitigation measures are included below.

Construction noise is of short-term duration and will not present any long-term impacts on the project site or surrounding area. To reduce the potential short-term noise impacts during construction activities for the proposed project, the following construction noise mitigation measures are recommended:

- The most effective method of controlling construction noise is through local control of construction hours determined by City staff. The City of Corona Development Code Section 17.84.040 limits construction activity to the hours of 7:00 a.m. to 8:00 p.m. from Monday to Saturday and from 10:00 a.m. to 6:00 p.m. on Sundays and federal holidays.

- During all project site excavation and grading on-site, construction contractors shall equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers, consistent with manufacturers' standards. The construction contractor shall place all stationary construction equipment so that emitted noise is directed away from the noise sensitive receptors nearest the project site.

- The construction contractor shall locate equipment staging in areas that will create the greatest distance between construction-related noise sources and noise sensitive receptors nearest the project site during all project construction.

- The construction contractor shall limit haul truck deliveries to the same hours specified for construction equipment. To the extent feasible, haul routes shall not pass sensitive land uses or residential dwellings.

- Implement a construction noise mitigation program. This program shall include noise monitoring at selected noise sensitive locations, monitoring complaints, and identification and mitigation of the major sources of noise.

- Homeowners shall be notified via postings on the construction site 24-hours before major construction-related noise impacts such as grading which may affect them.

2.0 INTRODUCTION

This noise analysis has been completed to determine the noise impacts associated with the development of the proposed Arantine Hills project. This noise study briefly describes the proposed project, provides information regarding noise fundamentals, describes the local noise guidelines, provides the study methods and procedures for traffic noise analysis, and evaluates the future off-site and on-site exterior noise environment. Included in this study is an analysis of the potential off-site and on-site project-related noise impacts during construction activities and the predicted future noise environment that can be expected within the noise sensitive residential community.

2.1 Site Location and Study Area

The project site is generally located south of Eagle Glen Parkway and west of the I-15 Freeway in the City of Corona. Exhibit 2-A illustrates the project's location.

2.2 Project Description and Phasing

The proposed Arantine Hills Specific Plan project consists of the following land uses as shown on in Exhibit 2-B:

- 549 single-family detached dwelling units
- 1,072 multi-family attached dwelling units
- 4 acres of passive park
- 11 acres of active park
- 59,000 square feet of general office use
- 230,900 square feet of business park use
- 59,000 square feet of specialty retail use
- 396,400 square feet of shopping center use

EXHIBIT 2-A

LOCATION MAP

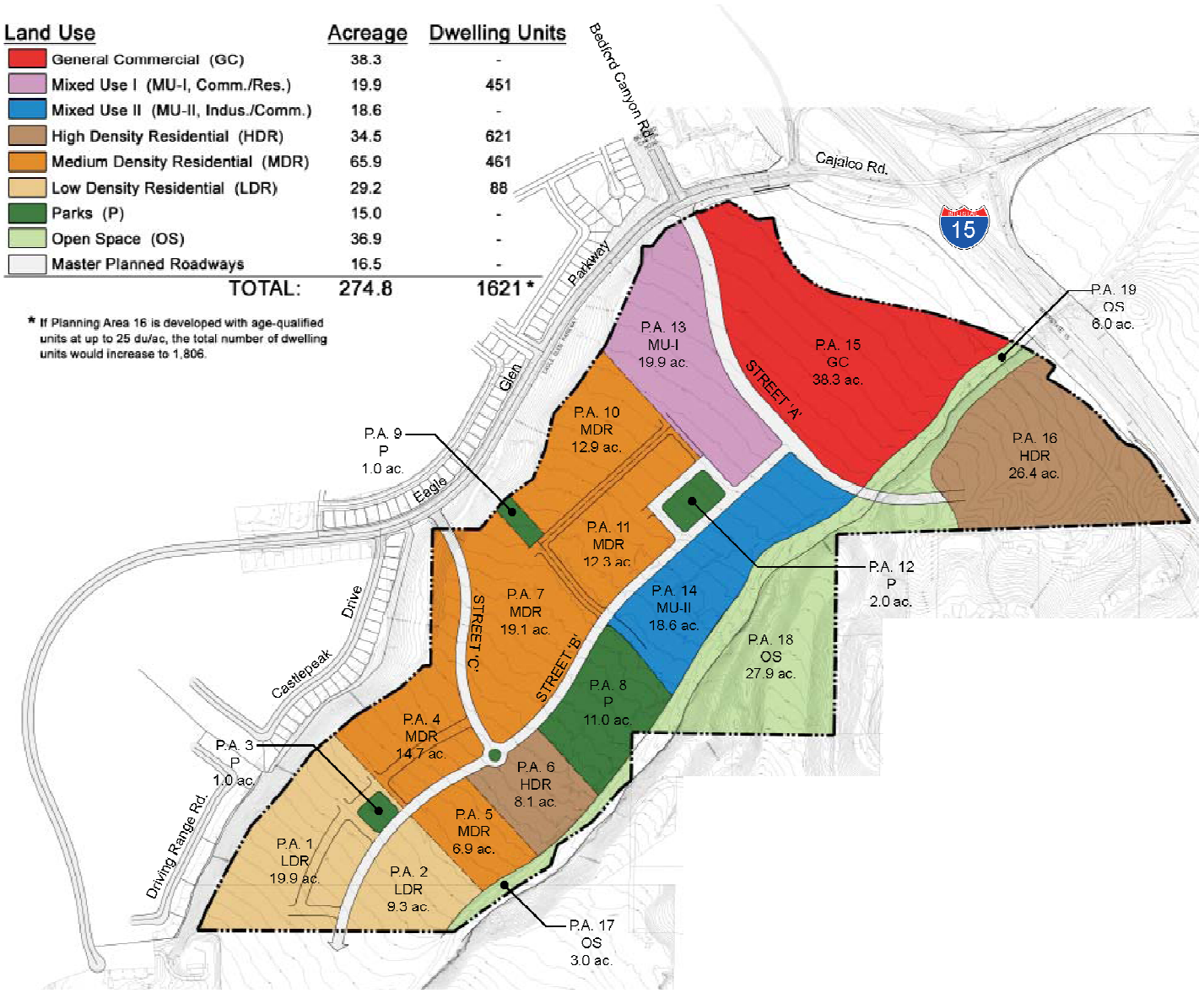
N

EXHIBIT 2-B

LAND USE PLAN

Land Use	Acreage	Dwelling Units
General Commercial (GC)	38.3	-
Mixed Use I (MU-I, Comm./Res.)	19.9	451
Mixed Use II (MU-II, Indus./Comm.)	18.6	-
High Density Residential (HDR)	34.5	621
Medium Density Residential (MDR)	65.9	461
Low Density Residential (LDR)	29.2	88
Parks (P)	15.0	-
Open Space (OS)	36.9	-
Master Planned Roadways	16.5	-
TOTAL:	274.8	1621 *

* If Planning Area 16 is developed with age-qualified units at up to 25 du/ac, the total number of dwelling units would increase to 1,806.



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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. Noise is measured on a logarithmic scale of sound pressure level known as a decibel (dB). A-weighted decibels (dBA) approximate the subjective response of the human ear to broad frequency noise source by discriminating against very low and very high frequencies of the audible spectrum. They are adjusted to reflect only those frequencies which are audible to the human ear. Exhibit 3-A presents a summary of the typical noise levels and their subjective loudness and effects that are described in more detail below.

3.1 Range of Noise

Since the range of intensities that the human ear can detect is so large, the scale frequently used to measure intensity is a scale based on multiples of 10, the logarithmic scale. The scale for measuring intensity is the decibel scale. 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. 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.

3.2 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). Equivalent sound levels are not measured directly but are calculated from sound pressure levels typically measured in A-weighted decibels (dBA). The equivalent sound level (Leq) represents a steady state sound level containing the same total energy as a time varying signal over a given sample period. In addition, the hourly Leq is the noise metric used to collect short-term noise level measurement samples and to estimate the 24-hour Community Noise Equivalent Levels (CNEL).

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	
QUIET URBAN NIGHTTIME	THEATER, LARGE CONFERENCE ROOM (BACKGROUND)	40		SLEEP DISTURBANCE
QUIET SUBURBAN NIGHTTIME	LIBRARY	30	FAINT	NO EFFECT
QUITE 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

The 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 5 decibels to dBA Leq sound levels in the evening from 7 p.m. to 10 p.m., and the addition of 10 decibels to dBA Leq 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. CNEL does not represent the actual sound level heard at any particular time, but rather represents the total sound exposure.

3.3 Traffic Noise Prediction

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

3.4 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.

3.5 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. Based on our experience, soft site conditions better reflect the predicted noise levels. In addition, 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 Barrier Attenuation

Effective noise barriers can reduce noise levels by 10 to 15 dBA, cutting the loudness of traffic noise in half. A noise barrier is most effective when placed close to the noise source or receptor. Noise barriers, however, do have limitations. For a noise barrier to work, it must be high enough and long enough to block the view of the noise source.

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 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 3.0 dBA increase may be perceptible outside of the laboratory. An increase of 5.0 dBA is often necessary before any noticeable change in community response (i.e., complaints) would be expected.

Community responses to noise may range from registering a complaint by telephone or letter, to initiating court action, depending upon each individual's susceptibility to noise and personal attitudes about noise. Several factors are related to the level of community annoyance including:

- Fear associated with noise producing activities;
- Socio-economic status and educational level of the receptor;
- Noise receptor's perception that they are being unfairly treated;
- Attitudes regarding the usefulness of the noise-producing activity;
- Receptor's belief that the noise source can be controlled.

Recent studies have shown that changes in long-term noise levels are noticeable, and are responded to by people. For example, about ten (10) percent of the people exposed to traffic noise of 60 dBA will report being highly annoyed with the noise, and each increase of one (1) dBA is associated with approximately two (2) percent more people being highly annoyed. When traffic noise exceeds 60 dBA or aircraft noise exceeds 55 dBA, people begin complaining. Group or legal actions to stop the noise should be expected to begin at traffic noise levels near 70 dBA and aircraft noise levels near 65 dBA.

3.8 Land Use Compatibility With Noise

Some land uses are more tolerant of noise than others. For example, schools, hospitals, churches and residences are more sensitive to noise intrusion than are commercial or industrial activities. As ambient noise levels affect the perceived amenity or livability of a development, so too can the mismanagement of noise impacts impair the economic health and growth potential of a community by reducing the area's desirability as a place to live, shop and work. For this reason, land use compatibility with the noise environment is an important consideration in the planning and design process.

4.0 NOISE STANDARDS

The City of Corona addresses two separate types of noise sources through the CEQA process: (1) mobile, and (2) stationary. The mobile, or transportation related, noise impacts are analyzed using the 24-hour Community Noise Equivalent Level (CNEL) to assess the land use compatibility for community noise exposure. To analyze community noise impacts from stationary (non-transportation) noise sources (such as truck deliveries, speakerphones, trash compactors, etc.) the City of Corona has identified the worst-case noise levels for daytime and nighttime activities. In the context of this noise analysis, the noise impacts associated with the commercial / office land use activities found in the proposed Arantine Hills Development are governed by the City noise standards for stationary sources. The off-site Project-related vehicular traffic is governed by the CNEL noise level standards.

4.1 Transportation Noise Standards

For noise sensitive residential uses, the City noise element requires an exterior noise level of 65 dBA CNEL or lower for the outdoor living areas including outdoor patio areas and an interior noise level of 45 dBA CNEL or lower. The City of Corona Noise Element is included in Appendix "4.1". In the context of this noise analysis, the traffic noise impacts associated with the project are governed by the City noise element.

4.2 Stationary Noise Standards

Section 17.84.040 of City of Corona Development Code outlines performance standards to control stationary source / non-transportation related noise impacts in residential areas. The standards establish a maximum allowable noise levels for a cumulative period of more than thirty minutes in any hour of 55 dBA in the exterior residential living areas during typical daytime hours of 7 a.m. to 10 p.m. To account for the increased noise sensitivity during the nighttime peak noise sensitive time period between 10 p.m. and 7 a.m. the noise standards are reduced to 50 dBA.

Additionally, the Development Code states that the allowed exterior noise levels should not be exceeded for a cumulative period of 30 minutes in any hour; or the standard plus 5 dBA for a cumulative period of 15 minutes in any hour; or the standard plus 10 dBA for a

cumulative period of 5 minutes in any hour; or the standard plus 15 dBA for a cumulative period of 1 minute in any hour; and shall not exceed the standard plus 20 dBA at any time. In addition, if the ambient noise level exceeds any of the noise limits, the cumulative period shall be increased to reflect such ambient noise level.

For the purpose of this analysis, the noise impacts from the commercial areas within the project site are governed by the City's Development presented in Appendix "4.2".

4.3 Construction Noise Standards

Section 17.84.040 of City of Corona Development Code defines limits for construction-related noise at different time intervals. Construction noise is prohibited between the hours of 8:00 p.m. to 7:00 a.m., Monday through Saturday and 6:00 p.m. to 10:00 a.m. on Sundays and federal holidays.

4.4 Community Noise Assessment Criteria

The noise criteria presented in this section is based on well documented criteria and research into human response to community noise. In community noise assessment, changes in noise levels greater than 3 dBA are often identified as "barely perceptible," while changes of 5 dBA are "readily perceptible." Studies show that a relative noise impact of 5 dBA triggers community reaction (sporadic complaints to widespread complaints to several legal threats to vigorous action). In the range of 1 dBA to 3 dBA, people who are very sensitive to noise may perceive a slight change in noise level. In laboratory testing situations, humans are able to detect noise level changes of slightly less than 1 dBA. However, in a community situation the noise exposure is extended over a long time period, and changes in noise levels occur over years rather than the immediate comparison made in a laboratory situation. Therefore, 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. While a 1dBA increase may be perceptible to a minority of very noise sensitive people, noise increases of up to 3dBA are "barely perceptible" to most people. The 3 dBA increase criteria represents a balance of community benefits and reasonableness.

4.5 Thresholds of Significance

In accordance with Appendix G to the State CEQA Guidelines, a Project may be deemed to have a significant adverse noise impact if it would result in:

a) Exposure of persons to or generation of noise levels on-site in excess of the standards established in the local General Plan or noise ordinance or applicable standards of other agencies.

   For the purpose of this study, Project noise impacts in the context of General Plan or "other standards" would be potentially significant if transportation related noise impacts cause an exterior noise level impact at a private exterior living area greater than 65 dBA CNEL per the City's Noise Element, or applicable City of Corona Development Code Standards at private residential living areas are exceeded, as follows:

   a. 50 dBA Leq between 10:00 p.m. and 7:00 a.m. for more than 30 minutes.
   b. 55 dBA Leq between 7:00 a.m. and 10:00 p.m. for more than 30 minutes.

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

   Project-related temporary or periodic operational noise increases would be considered potentially significant if:

   - Ambient conditions are within applicable standards established by the City of Corona *and* the Project impacts increase noise levels at any sensitive receptor to exceed the applicable standard for more than 30 minutes (cumulatively) during a one-hour period; or

   - Ambient conditions exceed the applicable standards established by the City of Corona *and* the Project impacts increase noise levels at any sensitive receptor by an audible amount (3 dB or more) for more than 30 minutes (cumulatively) during a one-hour period.

c) A substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project.

For the purpose of this study, the permanent noise increases attributable to the Project would be considered potentially significant if:

- Ambient conditions are within the normally acceptable community noise exposure levels identified above and the Project impacts increase noise levels such that the combined noise level would exceed the normally acceptable community noise exposure at any sensitive receptor; or

- Ambient conditions exceed the normally acceptable community noise exposure level identified above and the mitigated Project impacts increase noise levels such that the combined noise level would increase the ambient noise at any sensitive receptor by an audible amount (3 dB or more).

Off-site cumulative noise impacts describes how much noise levels are projected to increase over existing conditions with the development of the proposed Project and all other traffic growth Projected with buildout of the General Plan. Long-term cumulative off-site impacts from traffic noise are also measured against two criteria. Both criteria must be met for a significant impact to be identified:

- Future traffic noise levels must create a "readily perceptible" increase of 5 dBA CNEL or more compared to existing conditions on a roadway segment adjacent to a noise sensitive land use.

- The resulting future with Project noise level must exceed the criteria level for the noise sensitive land use. In this case, the criteria level is 65 dBA CNEL for residential land uses. The Project would considerably contribute to this increase if it contributes a "barely perceptible" 3 dBA CNEL or more to the increase.

d) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.

The City of Corona Development Code states that the perception threshold shall be presumed to be more than 0.05 inches per second RMS. Commercial uses typically do not operate machines that generate significant vibrations levels. For the purpose of this analysis, the construction vibration impacts to the homes northwest of the site are expected to remain below 0.05 inches per second RMS.

5.0 EXISTING NOISE LEVEL MEASUREMENTS

To determine the existing noise level environment, five (5) long-term 24-hour measurements and five (5) short-term noise measurements were taken at locations in the Project study area. Exhibit 5-A provides the boundaries of the Project study area and the noise level measurement locations. The noise level measurements were recorded by Urban Crossroads, Inc. on October 21 and 22, 2009. Appendix "5.1" includes a photo index and study area photos.

5.1 Measurement Procedure and Criteria

Short-term noise measurements were taken using a Larson-Davis Model 824 Type 1 precision sound level meter. The 24-hour noise readings were recorded using three Quest DL Pro data logging Type 2 noise dosimeters. All noise meters were programmed in "fast" mode to record noise levels in "A" weighted form. The sound level meters and microphone were mounted on a tripod, five feet above the ground and equipped with a windscreen during all measurements. The Larson Davis Model 824 sound level meter was calibrated before the monitoring using a Larson-Davis calibrator, Model CAL 150 and 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 Project site is currently vacant and located within the City of Corona. The site is bounded by single-family homes and Eagle Glen Parkway to the northwest, the I-15 Freeway to the northeast and vacant land to the south. Exhibit 5-A shows the noise monitoring locations.

Long-Term noise level measurement locations L1 through L5 were monitored for a period of 24 hours.

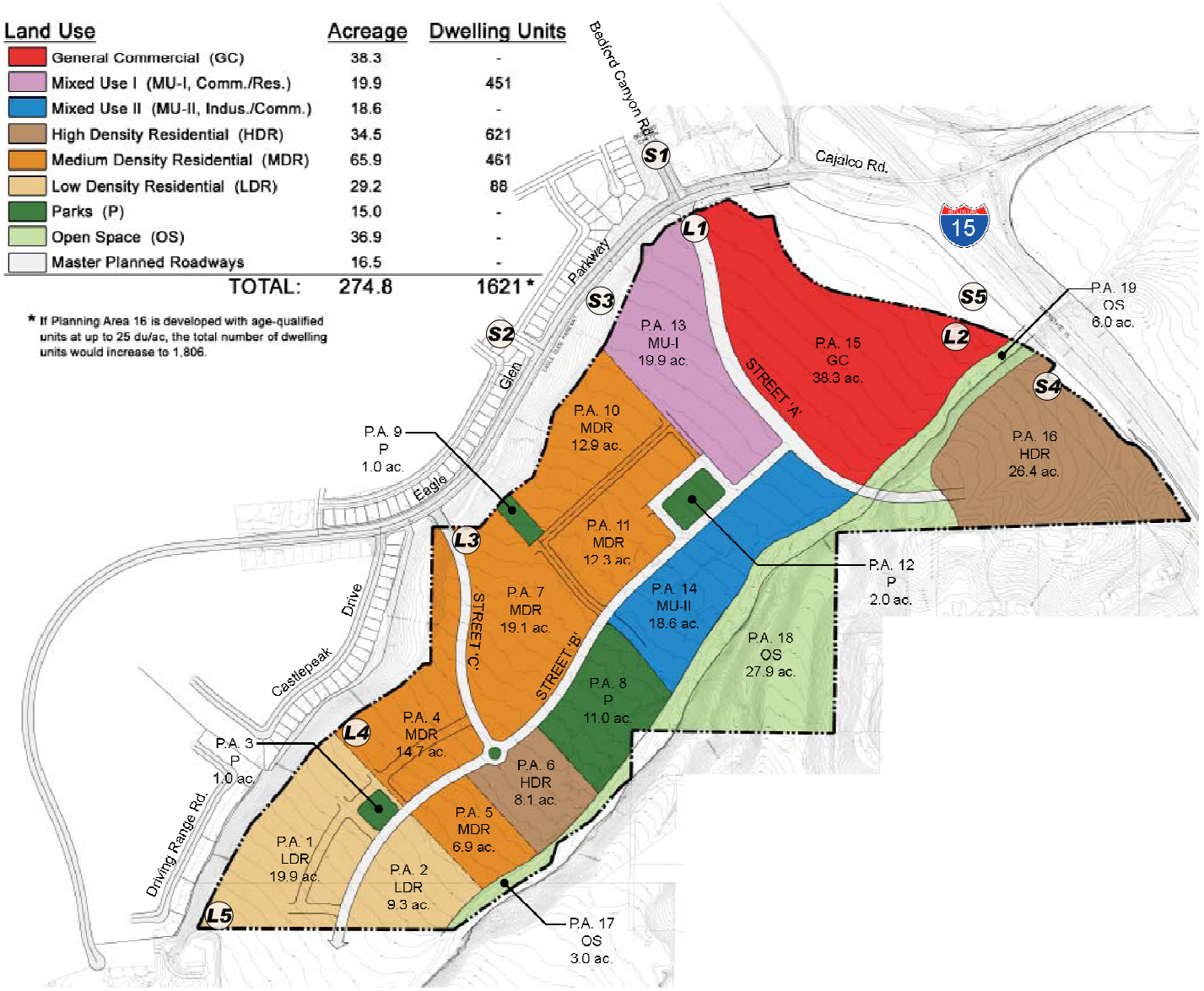
- Site L1 is located on the northern portion of the proposed project near the Cajalco Road and Bedford Canyon Road intersection.

EXHIBIT 5-A

NOISE MONITORING LOCATIONS

Land Use	Acreage	Dwelling Units
General Commercial (GC)	38.3	-
Mixed Use I (MU-I, Comm./Res.)	19.9	451
Mixed Use II (MU-II, Indus./Comm.)	18.6	-
High Density Residential (HDR)	34.5	621
Medium Density Residential (MDR)	65.9	461
Low Density Residential (LDR)	29.2	88
Parks (P)	15.0	-
Open Space (OS)	36.9	-
Master Planned Roadways	16.5	-
TOTAL:	274.8	1621 *

* If Planning Area 16 is developed with age-qualified units at up to 25 du/ac, the total number of dwelling units would increase to 1,806.



LEGEND:

(L1) = LONG-TERM NOISE MONITORING LOCATION

(S1) = SHORT-TERM NOISE MONITORING LOCATION

N

- Site L2 is located on the northeast portion of the proposed project site approximately 300 feet from the fence line adjacent to the I-15 Freeway.
- Site L3 is located on the western portion of the project site near the Eagle Glen Parkway and Castlepeak Drive intersection.
- Site L4 is located on the southwestern portion of the proposed project site near the existing terminus of Bennett Avenue.
- Site L5 is located on the southern portion of the proposed project site near the Eagle Glen Golf Club Maintenance area.

Short-Term noise measurement locations S1 through S5 were monitored for a time period of 10 minutes.

- Site S1 is located 50 feet west of the Bedford Canyon Avenue centerline near the rear-yards of the existing single-family homes north of the proposed project site.
- Site S2 is located 50 feet west of the Masters Drive centerline near the rear-yards of the existing single-family homes north of the proposed project site.
- Site S3 is located 50 feet south of the Eagle Glen Parkway centerline north of the proposed project site.
- Site S4 is located approximately 200 feet west of the I-15 Freeway centerline at the elevated property on the eastern portion of the proposed project site.
- Site S5 is located 100 feet west of the I-15 Freeway fence line on the northwest portion of the proposed project site.

5.3 Noise Measurement Results

The results of the noise level measurements are presented in Tables 5-1 and 5-2. All measurements monitored for a period of 24 hours are presented in Table 5-1 and all noise measurements monitored for a period of 10 minutes are presented in Table 5-2. The hourly noise levels at Site L1 range from 54.0 to 60.7 dBA Leq and produce a 24-hour Community Noise Equivalent Level (CNEL) of 64.2 dBA. The hourly noise levels at Site L2 range from 65.3 to 71.0 dBA Leq and produce a noise level of 73.8 dBA CNEL. The hourly noise levels at Site L3 range from 45.8 to 59.1 dBA Leq and produce a noise level of 56.6

Table 5-1

Existing Year 2009 Long-Term (Ambient) Noise Level Measurements[1]

Receptor Location[2]	Description	Time Of Measurement[3]	Primary Noise Source	Daytime Hourly Noise Levels (Leq dBA)[4]	Nighttime Hourly Noise Levels (Leq dBA)[4]	Daily Noise Levels (dBA CNEL)[4]
L1	Located on the northern portion of the proposed project near the Cajalco Road and Bedford Canyon Road intersection.	October 21-22, 2009	Traffic on Cajalco Road and the I-15 Freeway	54.8 - 60.0	54.0 - 60.7	64.2
L2	Located on the northeastern portion of the proposed project site approximately 300 feet from the fenceline adjacent to the I-15 Freeway.	October 21-22, 2009	Traffic on the I-15 Freeway	65.7 - 68.3	65.3 - 71.0	73.8
L3	Located on the western portion of the proposed project near the Eagle Glen Parkway and Castlepeak Drive intersection.	October 21-22, 2009	Traffic on Eagle Glen Parkway / Ambient	48.4 - 59.1	45.8 - 50.0	56.6
L4	Located on the southwestern portion of the proposed project near the existing terminus of Bennett Avenue.	October 21-22, 2009	Ambient / Traffic on Eagle Glen Parkway	47.2 - 55.8	47.8 - 50.3	55.8
L5	Located on the southern portion of the proposed project near the Eagle Glen Golf Club maintenance area.	October 21-22, 2009	Activities at the golf club maintenance area / Ambient	49.8 - 60.5	49.3 - 51.5	58.7

[1] Noise measurements taken by Urban Crossroads, Inc. on October 21-22, 2009.

[2] See Exhibit 5-A for the location of the monitoring sites, and Appendix "5.1" 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 "5.2".

Table 5-2

Existing Year 2009 Short-Term (Ambient) Noise Level Measurements[1]

Receptor Location[2]	Description	Time Of Measurement[3]	Primary Noise Source	Noise Level (Leq dBA)
S1	Located 50 feet west of the Bedford Canyon Avenue centerline near the rear-yards of existing single-family homes north of the proposed project.	11:33 AM	Traffic on Bedford Canyon Avenue	60.5
S2	Located 50 feet west of the Masters Drive centerline near the rear-yards of existing single-family homes north of the proposed project.	11:52 AM	Traffic on Masters Drive	60.6
S3	Located 50 feet south of the Eagle Glen Parkway centerline north of the proposed project.	12:07 PM	Traffic on Eagle Glen Parkway	64.7
S4	Located approximately 200 feet west of the I-15 Freeway centerline at the elevated property on the eastern portion of the proposed project.	1:50 PM	Traffic on I-15 Freeway	71.5
S5	Located 100 feet west of the I-15 Freeway fenceline on the northwest portion of the project site.	2:14 PM	Traffic on I-15 Freeway	70.1

[1] Noise measurements taken by Urban Crossroads, Inc. on October 22, 2009.

[2] See Exhibit 5-A for the location of the monitoring sites.

[3] All measurement at locations S1-S5 were monitored for a minimum period of 10 minutes.

dBA CNEL. The hourly noise levels at Site L4 range from 47.2 to 55.8 dBA Leq and produce a noise level of 55.8 dBA CNEL. The hourly noise levels at Site L5 range from 49.3 to 60.5 dBA Leq and produce a noise level of 58.7 dBA CNEL.The long-term noise monitoring results printouts are included in Appendix "5.2".

The five (5) short-term, 10-minute noise measurements taken near the proposed Project site ranged from 60.5 to 71.5 dBA Leq. The short-term noise monitoring results printouts are included in Appendix "5.2".

The results of the noise level monitoring shows that the ambient noise levels in the study area currently exceed the City of Corona exterior noise levels for residential uses. Based on the City of Corona noise compatibility matrix, the existing ambient noise at the Project site is considered "normally compatible" for the development of proposed project.

6.0 METHODS AND PROCEDURES

The following section outlines the methods and procedures used to model and analyze the future traffic noise environment.

6.1 FHWA Traffic Noise Prediction Model

The 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). Adjustments are then made to the REMEL to 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. Soft site conditions account for the sound propagation loss over natural surfaces such as normal earth and ground vegetation. Based on our experience, soft site conditions better represent the noise level contours.

The existing, Project Phase 1 (Year 2014), Project Phase 2 (Year 2019), and Year 2035 average daily traffic volumes used for this study and presented in Table 6-2 were provided by the Arantine Hills Traffic Impact Analysis prepared by Urban Crossroads, Inc. in March 2011.

Table 6-1

Off-Site Roadway Parameters

Roadway	Segment	Roadway Classification[1]	Vehicle Speed (MPH)	Site Conditions
California Drive	w/o Masters Drive	Collector	40	Soft
California Drive	e/o Masters Drive	Collector	40	Soft
El Cerrito Road	w/o Bedford Cayon	Seconday	40	Soft
El Cerrito Road	Bedford Cayon to I-15 Freeway	Seconday	40	Soft
El Cerrito Road	I-15 Freeway to Temescal Canyon Road	Seconday	40	Soft
Bennett Avenue	Eagle Glen Parkway to Masters Drive	Collector	40	Soft
Bennett Avenue	n/o Masters Drive	Collector	40	Soft
Georgetown Drive	w/o Bedford Cayon	Collector	40	Soft
Eagle Glen Parkway	Bennett Avenue to Masters Drive	Seconday	40	Soft
Eagle Glen Parkway	Masters Drive to Bedford Canyon	Seconday	40	Soft
Cajalco Road	Bedford Canyon to I-15 Freeway	Major Arterial	40	Soft
Cajalco Road	I-15 Freeway to Grand Oaks	Major Arterial	45	Soft
Cajalco Road	Grand Oaks to Temescal Canyon Road	Major Arterial	45	Soft
Cajalco Road	e/o Temescal Canyon Road	Major Arterial	45	Soft
Masters Drive	n/o California Drive	Collector	45	Soft
Masters Drive	California Drive to Bennett Avenue	Collector	40	Soft
Masters Drive	Bennett Avenue to Eagle Glen Parkway	Collector	40	Soft
Bedford Canyon	El Cerrito Road to Georgetown Drive	Divided Collector	40	Soft
Bedford Canyon	Georgetown Drive to Eagle Glen Parkway	Divided Collector	40	Soft
Temescal Canyon Road	n/o Cajalco Road	Major	45	Soft
Temescal Canyon Road	s/o Cajalco Road	Major	45	Soft

[1] According to the City of Corona General Plan Circulation Element.

Table 6-2

Average Daily Traffic For Existing, Phase 1, Phase 2, And Year 2035 Conditions

Roadway	Segment	Average Daily Traffic (1,000's)						
			Phase 1 (Year 2014)		Phase 2 (Year 2019)		Year 2035	
		Existing	No Project	With Project	No Project	With Project	No Project	With Project
California Drive	w/o Masters Drive	4.1	4.7	5.1	5.4	6.6	8.3	9.5
California Drive	e/o Masters Drive	8.3	8.7	9.5	9.2	10.4	10.8	12.0
El Cerrito Road	w/o Bedford Cayon	19.2	20.7	21.1	22.3	23.9	28.4	30.0
El Cerrito Road	Bedford Cayon to I-15 Freeway	19.4	21.7	22.1	24.4	25.3	35.1	36.0
El Cerrito Road	I-15 Freeway to Temescal Canyon Road	8.5	9.7	10.1	11.2	12.1	17.2	18.1
Bennett Avenue	Eagle Glen Parkway to Masters Drive	1.4	1.5	1.5	1.5	1.5	1.8	1.8
Bennett Avenue	n/o Masters Drive	0.9	1.0	1.0	1.1	1.1	1.4	1.4
Georgetown Drive	w/o Bedford Cayon	2.2	2.3	2.5	2.4	2.7	2.8	3.1
Eagle Glen Parkway	Bennett Avenue to Masters Drive	7.7	9.2	14.3	11.1	16.2	19.9	25.0
Eagle Glen Parkway	Masters Drive to Bedford Canyon	11.0	12.0	16.7	13.1	21.3	17.3	25.5
Cajalco Road	Bedford Canyon to I-15 Freeway	17.3	18.9	25.3	19.2	39.6	20.4	40.6
Cajalco Road	I-15 Freeway to Grand Oaks	12.3	14.1	15.8	16.2	20.0	25.2	29.0
Cajalco Road	Grand Oaks to Temescal Canyon Road	11.5	12.7	14.2	14.0	17.5	19.0	22.5
Cajalco Road	e/o Temescal Canyon Road	10.9	13.2	14.0	16.1	18.1	30.0	32.0
Masters Drive	n/o California Drive	4.5	5.0	5.4	5.6	6.1	8.0	8.5
Masters Drive	California Drive to Bennett Avenue	7.8	8.5	10.1	9.2	12.1	12.1	15.0
Masters Drive	Bennett Avenue to Eagle Glen Parkway	5.9	6.3	8.1	6.8	10.2	8.6	12.0
Bedford Canyon	El Cerrito Road to Georgetown Drive	6.0	7.1	7.9	8.4	10.9	14.5	17.0
Bedford Canyon	Georgetown Drive to Eagle Glen Parkway	6.0	7.1	8.0	8.4	11.2	14.2	17.0
Temescal Canyon Road	n/o Cajalco Road	10.4	12.5	12.7	14.9	15.4	26.5	27.0
Temescal Canyon Road	s/o Cajalco Road	13.0	14.3	14.8	15.6	16.6	21.0	22.0

[1] According to the Arantine Hills Traffic Impact Analysis by Urban Crossroads, Inc. in March 2011.

Table 6-3 presents the hourly traffic flow distribution (vehicle mix) used for this analysis. The mix for the city roads are based on a typical Southern California vehicle mix. The vehicle mix provides the hourly distribution percentages of automobile, medium trucks and heavy trucks for input into the FHWA Model.

Table 6-3

Hourly Traffic Flow Distribution [1]

Motor-Vehicle Type	Daytime (7 am to 7 pm)	Evening (7 pm to 10 pm)	Night (10 pm to 7 am)	Total % Traffic Flow
City of Corona Roadways[1]				
Automobiles	77.5%	12.9%	9.6%	97.42%
Medium Trucks	84.8%	4.9%	10.3%	1.84%
Heavy Trucks	86.5%	2.7%	10.8%	0.74%

[1] Typical Southern California vehicle mix.

7.0 OFF-SITE TRANSPORTATION NOISE IMPACTS

To assess the unmitigated reference off-site noise level impacts associated with development of the proposed Project, noise contours were developed for the following traffic scenarios:

Existing: This scenario refers to the existing traffic noise conditions, without the proposed Project.

Opening Year Phase 1 (Year 2014) Without / With Project: This scenario refers to the background noise conditions at Opening Year Phase 1 (Year 2014) without and with the proposed Project.

Opening Year Phase 2 (Year 2019) Without / With Project: This scenario refers to the background noise conditions at Opening Year Phase 2 (Year 2019) without and with the proposed Project.

Year 2035 Without / With Project: This scenario refers to the background noise conditions at Year 2035 without and with the proposed Project.

7.1 Traffic Noise Contour Boundaries

Traffic noise contour boundaries are often desired by local land planning and zoning authorities to represent sound level exposures on land that is being considered for development and is adjacent to highways. Noise contour boundaries represent the equal levels of noise exposure and are measured from the center of the roadway. Traffic noise contour boundaries are typically calculated at distances of 100 feet from a roadway centerline. CNEL noise contour boundaries are also determined below for the 55, 60, 65 and 70 dBA noise levels.

The distance from the centerline of the roadway to the CNEL contour boundaries for roadways in the proposed Project's vicinity are presented in Tables 7-1 through 7-7. The noise contour boundaries do not take into account the effect of any existing or proposed noise barriers or topography that may affect noise levels.

Table 7-1

Existing Conditions Noise Contours

Road	Segment	CNEL at 100 Feet (dBA)	Distance to Contour (Feet)			
			70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	55 dBA CNEL
California Drive	w/o Masters Drive	56.8	RW	RW	61	132
California Drive	e/o Masters Drive	59.9	21	46	98	212
El Cerrito Road	w/o Bedford Cayon	63.6	38	81	174	375
El Cerrito Road	Bedford Cayon to I-15 Freeway	63.7	RW	RW	RW	RW
El Cerrito Road	I-15 Freeway to Temescal Canyon Road	60.1	RW	47	101	218
Bennett Avenue	Eagle Glen Parkway to Masters Drive	52.2	RW	RW	RW	65
Bennett Avenue	n/o Masters Drive	50.2	RW	RW	RW	48
Georgetown Drive	w/o Bedford Cayon	54.1	RW	RW	RW	87
Eagle Glen Parkway	Bennett Avenue to Masters Drive	59.6	RW	RW	95	204
Eagle Glen Parkway	Masters Drive to Bedford Canyon	61.2	RW	56	120	259
Cajalco Road	Bedford Canyon to I-15 Freeway	64.8	45	98	211	454
Cajalco Road	I-15 Freeway to Grand Oaks	63.4	36	78	168	361
Cajalco Road	Grand Oaks to Temescal Canyon Road	63.1	RW	74	160	345
Cajalco Road	e/o Temescal Canyon Road	62.8	RW	72	155	333
Masters Drive	n/o California Drive	57.2	RW	RW	RW	141
Masters Drive	California Drive to Bennett Avenue	59.6	RW	RW	94	203
Masters Drive	Bennett Avenue to Eagle Glen Parkway	58.4	RW	RW	78	169
Bedford Canyon	El Cerrito Road to Georgetown Drive	58.5	RW	RW	80	171
Bedford Canyon	Georgetown Drive to Eagle Glen Parkway	58.5	RW	37	80	171
Temescal Canyon Road	n/o Cajalco Road	62.4	RW	67	144	309
Temescal Canyon Road	s/o Cajalco Road	63.3	36	77	167	359

[1] "RW" = Location of the respective noise contour falls within the right-of-way of the road

Table 7-2

Phase 1 (Year 2014) Without Project Conditions Noise Contours

Road	Segment	CNEL at 100 Feet (dBA)	Distance to Contour (Feet)			
			70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	55 dBA CNEL
California Drive	w/o Masters Drive	57.4	RW	RW	67	145
California Drive	e/o Masters Drive	60.1	22	47	101	218
El Cerrito Road	w/o Bedford Cayon	63.9	39	85	183	395
El Cerrito Road	Bedford Cayon to I-15 Freeway	64.1	RW	RW	RW	RW
El Cerrito Road	I-15 Freeway to Temescal Canyon Road	60.7	RW	51	111	238
Bennett Avenue	Eagle Glen Parkway to Masters Drive	52.5	RW	RW	RW	68
Bennett Avenue	n/o Masters Drive	50.7	RW	RW	RW	52
Georgetown Drive	w/o Bedford Cayon	54.3	RW	RW	RW	90
Eagle Glen Parkway	Bennett Avenue to Masters Drive	60.4	RW	50	107	230
Eagle Glen Parkway	Masters Drive to Bedford Canyon	61.6	RW	59	127	274
Cajalco Road	Bedford Canyon to I-15 Freeway	65.2	48	104	223	481
Cajalco Road	I-15 Freeway to Grand Oaks	64.0	40	85	184	396
Cajalco Road	Grand Oaks to Temescal Canyon Road	63.5	RW	80	171	369
Cajalco Road	e/o Temescal Canyon Road	63.7	RW	82	176	379
Masters Drive	n/o California Drive	57.7	RW	RW	70	151
Masters Drive	California Drive to Bennett Avenue	60.0	RW	RW	100	215
Masters Drive	Bennett Avenue to Eagle Glen Parkway	58.7	RW	RW	82	176
Bedford Canyon	El Cerrito Road to Georgetown Drive	59.2	RW	RW	89	192
Bedford Canyon	Georgetown Drive to Eagle Glen Parkway	59.2	RW	41	89	192
Temescal Canyon Road	n/o Cajalco Road	63.2	35	75	162	350
Temescal Canyon Road	s/o Cajalco Road	63.7	38	82	177	382

[1] "RW" = Location of the respective noise contour falls within the right-of-way of the road

Table 7-3

Phase 1 (Year 2014) With Project Conditions Noise Contours

Road	Segment	CNEL at 100 Feet (dBA)	Distance to Contour (Feet)			
			70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	55 dBA CNEL
California Drive	w/o Masters Drive	57.8	RW	RW	71	153
California Drive	e/o Masters Drive	60.5	23	50	107	232
El Cerrito Road	w/o Bedford Cayon	64.0	40	86	186	400
El Cerrito Road	Bedford Cayon to I-15 Freeway	64.2	RW	RW	RW	RW
El Cerrito Road	I-15 Freeway to Temescal Canyon Road	60.8	RW	53	114	245
Bennett Avenue	Eagle Glen Parkway to Masters Drive	52.5	RW	RW	RW	68
Bennett Avenue	n/o Masters Drive	50.7	RW	RW	RW	52
Georgetown Drive	w/o Bedford Cayon	54.7	RW	RW	RW	95
Eagle Glen Parkway	Bennett Avenue to Masters Drive	62.3	RW	66	143	308
Eagle Glen Parkway	Masters Drive to Bedford Canyon	63.0	RW	74	159	342
Cajalco Road	Bedford Canyon to I-15 Freeway	66.5	58	126	271	584
Cajalco Road	I-15 Freeway to Grand Oaks	64.5	43	92	198	427
Cajalco Road	Grand Oaks to Temescal Canyon Road	64.0	RW	86	185	398
Cajalco Road	e/o Temescal Canyon Road	63.9	RW	85	183	394
Masters Drive	n/o California Drive	58.0	RW	RW	74	159
Masters Drive	California Drive to Bennett Avenue	60.7	RW	RW	112	241
Masters Drive	Bennett Avenue to Eagle Glen Parkway	59.8	RW	RW	97	208
Bedford Canyon	El Cerrito Road to Georgetown Drive	59.7	RW	RW	96	206
Bedford Canyon	Georgetown Drive to Eagle Glen Parkway	59.8	RW	45	96	207
Temescal Canyon Road	n/o Cajalco Road	63.2	35	76	164	353
Temescal Canyon Road	s/o Cajalco Road	63.9	39	84	182	391

[1] "RW" = Location of the respective noise contour falls within the right-of-way of the road

Table 7-4

Phase 2 (Year 2019) Without Project Conditions Noise Contours

Road	Segment	CNEL at 100 Feet (dBA)	Distance to Contour (Feet)			
			70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	55 dBA CNEL
California Drive	w/o Masters Drive	58.0	RW	RW	74	159
California Drive	e/o Masters Drive	60.3	23	49	105	227
El Cerrito Road	w/o Bedford Cayon	64.3	41	89	193	415
El Cerrito Road	Bedford Cayon to I-15 Freeway	64.7	RW	RW	RW	RW
El Cerrito Road	I-15 Freeway to Temescal Canyon Road	61.3	RW	56	122	262
Bennett Avenue	Eagle Glen Parkway to Masters Drive	52.5	RW	RW	RW	68
Bennett Avenue	n/o Masters Drive	51.1	RW	RW	RW	55
Georgetown Drive	w/o Bedford Cayon	54.5	RW	RW	RW	93
Eagle Glen Parkway	Bennett Avenue to Masters Drive	61.2	RW	56	121	261
Eagle Glen Parkway	Masters Drive to Bedford Canyon	62.0	RW	63	135	291
Cajalco Road	Bedford Canyon to I-15 Freeway	65.3	49	105	226	486
Cajalco Road	I-15 Freeway to Grand Oaks	64.6	43	94	202	434
Cajalco Road	Grand Oaks to Temescal Canyon Road	63.9	RW	85	183	394
Cajalco Road	e/o Temescal Canyon Road	64.5	RW	93	201	432
Masters Drive	n/o California Drive	58.2	RW	RW	76	163
Masters Drive	California Drive to Bennett Avenue	60.3	RW	RW	105	227
Masters Drive	Bennett Avenue to Eagle Glen Parkway	59.0	RW	RW	86	185
Bedford Canyon	El Cerrito Road to Georgetown Drive	60.0	RW	RW	99	214
Bedford Canyon	Georgetown Drive to Eagle Glen Parkway	60.0	RW	46	99	214
Temescal Canyon Road	n/o Cajalco Road	63.9	39	85	182	393
Temescal Canyon Road	s/o Cajalco Road	64.1	41	87	188	405

[1] "RW" = Location of the respective noise contour falls within the right-of-way of the road

Table 7-5

Phase 2 (Year 2019) With Project Conditions Noise Contours

Road	Segment	CNEL at 100 Feet (dBA)	Distance to Contour (Feet)			
			70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	55 dBA CNEL
California Drive	w/o Masters Drive	58.9	RW	39	84	182
California Drive	e/o Masters Drive	60.9	25	53	114	246
El Cerrito Road	w/o Bedford Cayon	64.6	43	94	202	434
El Cerrito Road	Bedford Cayon to I-15 Freeway	64.8	RW	RW	RW	RW
El Cerrito Road	I-15 Freeway to Temescal Canyon Road	61.6	RW	59	128	276
Bennett Avenue	Eagle Glen Parkway to Masters Drive	52.5	RW	RW	RW	68
Bennett Avenue	n/o Masters Drive	51.1	RW	RW	RW	55
Georgetown Drive	w/o Bedford Cayon	55.0	RW	RW	46	100
Eagle Glen Parkway	Bennett Avenue to Masters Drive	62.9	RW	72	156	335
Eagle Glen Parkway	Masters Drive to Bedford Canyon	64.1	40	87	187	402
Cajalco Road	Bedford Canyon to I-15 Freeway	68.4	79	170	366	788
Cajalco Road	I-15 Freeway to Grand Oaks	65.5	50	108	232	500
Cajalco Road	Grand Oaks to Temescal Canyon Road	64.9	46	98	212	457
Cajalco Road	e/o Temescal Canyon Road	65.0	47	101	217	467
Masters Drive	n/o California Drive	58.5	RW	RW	80	172
Masters Drive	California Drive to Bennett Avenue	61.5	RW	RW	126	272
Masters Drive	Bennett Avenue to Eagle Glen Parkway	60.8	RW	RW	113	243
Bedford Canyon	El Cerrito Road to Georgetown Drive	61.1	RW	RW	118	255
Bedford Canyon	Georgetown Drive to Eagle Glen Parkway	61.2	RW	56	121	260
Temescal Canyon Road	n/o Cajalco Road	64.1	40	87	186	402
Temescal Canyon Road	s/o Cajalco Road	64.4	42	91	196	422

[1] "RW" = Location of the respective noise contour falls within the right-of-way of the road

Table 7-6

Year 2035 Without Project Conditions Noise Contours

Road	Segment	CNEL at 100 Feet (dBA)	Distance to Contour (Feet)			
			70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	55 dBA CNEL
California Drive	w/o Masters Drive	59.9	RW	46	98	212
California Drive	e/o Masters Drive	61.0	25	54	117	252
El Cerrito Road	w/o Bedford Cayon	65.3	49	105	226	487
El Cerrito Road	Bedford Cayon to I-15 Freeway	66.2	RW	RW	RW	RW
El Cerrito Road	I-15 Freeway to Temescal Canyon Road	63.1	35	75	162	349
Bennett Avenue	Eagle Glen Parkway to Masters Drive	53.2	RW	RW	35	76
Bennett Avenue	n/o Masters Drive	52.2	RW	RW	RW	65
Georgetown Drive	w/o Bedford Cayon	55.2	RW	RW	48	103
Eagle Glen Parkway	Bennett Avenue to Masters Drive	63.8	RW	83	178	384
Eagle Glen Parkway	Masters Drive to Bedford Canyon	63.2	35	75	163	350
Cajalco Road	Bedford Canyon to I-15 Freeway	65.6	51	109	235	506
Cajalco Road	I-15 Freeway to Grand Oaks	66.5	58	126	271	583
Cajalco Road	Grand Oaks to Temescal Canyon Road	65.3	48	104	224	483
Cajalco Road	e/o Temescal Canyon Road	67.2	65	141	304	655
Masters Drive	n/o California Drive	59.7	RW	RW	96	207
Masters Drive	California Drive to Bennett Avenue	61.5	RW	RW	126	272
Masters Drive	Bennett Avenue to Eagle Glen Parkway	60.0	RW	RW	101	217
Bedford Canyon	El Cerrito Road to Georgetown Drive	62.3	RW	66	143	308
Bedford Canyon	Georgetown Drive to Eagle Glen Parkway	62.2	RW	66	141	304
Temescal Canyon Road	n/o Cajalco Road	66.4	58	124	268	577
Temescal Canyon Road	s/o Cajalco Road	65.4	49	106	229	494

[1] "RW" = Location of the respective noise contour falls within the right-of-way of the road

Table 7-7

Year 2035 With Project Conditions Noise Contours

Road	Segment	CNEL at 100 Feet (dBA)	Distance to Contour (Feet)			
			70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	55 dBA CNEL
California Drive	w/o Masters Drive	60.5	RW	50	107	232
California Drive	e/o Masters Drive	61.5	27	58	126	271
El Cerrito Road	w/o Bedford Cayon	65.6	51	109	235	505
El Cerrito Road	Bedford Cayon to I-15 Freeway	66.3	RW	RW	RW	RW
El Cerrito Road	I-15 Freeway to Temescal Canyon Road	63.4	36	78	168	361
Bennett Avenue	Eagle Glen Parkway to Masters Drive	53.2	RW	RW	35	76
Bennett Avenue	n/o Masters Drive	52.2	RW	RW	RW	65
Georgetown Drive	w/o Bedford Cayon	55.6	RW	RW	51	110
Eagle Glen Parkway	Bennett Avenue to Masters Drive	64.8	45	96	208	448
Eagle Glen Parkway	Masters Drive to Bedford Canyon	64.8	45	98	211	454
Cajalco Road	Bedford Canyon to I-15 Freeway	68.6	80	173	372	801
Cajalco Road	I-15 Freeway to Grand Oaks	67.1	64	138	297	640
Cajalco Road	Grand Oaks to Temescal Canyon Road	66.0	54	116	251	540
Cajalco Road	e/o Temescal Canyon Road	67.5	68	147	317	683
Masters Drive	n/o California Drive	60.0	RW	RW	100	215
Masters Drive	California Drive to Bennett Avenue	62.5	RW	68	146	314
Masters Drive	Bennett Avenue to Eagle Glen Parkway	61.5	RW	RW	126	271
Bedford Canyon	El Cerrito Road to Georgetown Drive	63.0	RW	74	159	343
Bedford Canyon	Georgetown Drive to Eagle Glen Parkway	63.0	RW	74	159	343
Temescal Canyon Road	n/o Cajalco Road	66.5	58	126	271	584
Temescal Canyon Road	s/o Cajalco Road	65.6	51	110	237	510

[1] "RW" = Location of the respective noise contour falls within the right-of-way of the road

7.2 Existing Roadway Noise Levels

Table 7-1 presents the existing noise contour boundaries. Table 7-1 shows for existing traffic volumes all segments currently do not exceed the City of Corona 65 dBA CNEL standard for noise sensitive residential areas at 100 feet from each roadway's centerline.

7.3 Opening Year Phase 1 (Year 2014) Project Traffic Noise Level Contributions

Table 7-8 presents a comparison of the Opening Year Phase 1 (Year 2014) without and with the proposed Project noise levels shown in Tables 7-2 and 7-3. The roadway noise impacts will increase on all segments from 0.0 dBA CNEL to 1.9 dBA CNEL with the development of the proposed Project.

7.4 Opening Year Phase 2 (Year 2019) Project Traffic Noise Level Contributions

Table 7-9 presents a comparison of the Opening Year Phase 2 (Year 2019) without and with the proposed Project noise levels shown in Tables 7-4 and 7-5. The roadway noise impacts will increase on all segments from 0.0 dBA CNEL to 3.1 dBA CNEL with the development of the proposed Project.

7.5 Year 2035 Project Traffic Noise Level Contributions

Table 7-10 presents a comparison of the Year 2035 without and with the proposed Project noise levels shown in Tables 7-6 and 7-7. The roadway noise impacts will increase on all segments from 0.0 dBA CNEL to 3.0 dBA CNEL with the development of the proposed Project.

7.6 Off-Site Transportation Related Project Noise Impacts

Project-related vehicular source noise may affect permanent and on-going ambient noise conditions and would not be considered a temporary or periodic noise source. Applying the Thresholds of Significance discussed in Section 4 of this report, unmitigated potentially permanent increases in the ambient noise levels generated by Project traffic will be considered potentially significant if:

a) Vehicular source noise exceeds applicable City standards;

Table 7-8

Phase 1 (Year 2014) Off-Site Project Related Traffic Noise Impacts

Roadway	Segment	CNEL at 100 Feet (dBA)			Potential Significant Impact?[1]
		No Project	With Project	Project Contribution	
California Drive	w/o Masters Drive	57.4	57.8	0.4	NO
California Drive	e/o Masters Drive	60.1	60.5	0.4	NO
El Cerrito Road	w/o Bedford Cayon	63.9	64.0	0.1	NO
El Cerrito Road	Bedford Cayon to I-15 Freeway	64.1	64.2	0.1	NO
El Cerrito Road	I-15 Freeway to Temescal Canyon Road	60.7	60.8	0.2	NO
Bennett Avenue	Eagle Glen Parkway to Masters Drive	52.5	52.5	0.0	NO
Bennett Avenue	n/o Masters Drive	50.7	50.7	0.0	NO
Georgetown Drive	w/o Bedford Cayon	54.3	54.7	0.4	NO
Eagle Glen Parkway	Bennett Avenue to Masters Drive	60.4	62.3	1.9	NO
Eagle Glen Parkway	Masters Drive to Bedford Canyon	61.6	63.0	1.4	NO
Cajalco Road	Bedford Canyon to I-15 Freeway	65.2	66.5	1.3	NO
Cajalco Road	I-15 Freeway to Grand Oaks	64.0	64.5	0.5	NO
Cajalco Road	Grand Oaks to Temescal Canyon Road	63.5	64.0	0.5	NO
Cajalco Road	e/o Temescal Canyon Road	63.7	63.9	0.3	NO
Masters Drive	n/o California Drive	57.7	58.0	0.3	NO
Masters Drive	California Drive to Bennett Avenue	60.0	60.7	0.7	NO
Masters Drive	Bennett Avenue to Eagle Glen Parkway	58.7	59.8	1.1	NO
Bedford Canyon	El Cerrito Road to Georgetown Drive	59.2	59.7	0.5	NO
Bedford Canyon	Georgetown Drive to Eagle Glen Parkway	59.2	59.8	0.5	NO
Temescal Canyon Road	n/o Cajalco Road	63.2	63.2	0.1	NO
Temescal Canyon Road	s/o Cajalco Road	63.7	63.9	0.1	NO

[1] A significant impact is considered both a level above 65 dBA CNEL and an increase of 3.0 dBA CNEL or greater.

Table 7-9

Phase 2 (Year 2019) Off-Site Project Related Traffic Noise Impacts

Roadway	Segment	CNEL at 100 Feet (dBA)			Potential Significant Impact?[1]
		No Project	With Project	Project Contribution	
California Drive	w/o Masters Drive	58.0	58.9	0.9	NO
California Drive	e/o Masters Drive	60.3	60.9	0.5	NO
El Cerrito Road	w/o Bedford Cayon	64.3	64.6	0.3	NO
El Cerrito Road	Bedford Cayon to I-15 Freeway	64.7	64.8	0.2	NO
El Cerrito Road	I-15 Freeway to Temescal Canyon Road	61.3	61.6	0.3	NO
Bennett Avenue	Eagle Glen Parkway to Masters Drive	52.5	52.5	0.0	NO
Bennett Avenue	n/o Masters Drive	51.1	51.1	0.0	NO
Georgetown Drive	w/o Bedford Cayon	54.5	55.0	0.5	NO
Eagle Glen Parkway	Bennett Avenue to Masters Drive	61.2	62.9	1.6	NO
Eagle Glen Parkway	Masters Drive to Bedford Canyon	62.0	64.1	2.1	NO
Cajalco Road	Bedford Canyon to I-15 Freeway	65.3	68.4	3.1	YES
Cajalco Road	I-15 Freeway to Grand Oaks	64.6	65.5	0.9	NO
Cajalco Road	Grand Oaks to Temescal Canyon Road	63.9	64.9	1.0	NO
Cajalco Road	e/o Temescal Canyon Road	64.5	65.0	0.5	NO
Masters Drive	n/o California Drive	58.2	58.5	0.4	NO
Masters Drive	California Drive to Bennett Avenue	60.3	61.5	1.2	NO
Masters Drive	Bennett Avenue to Eagle Glen Parkway	59.0	60.8	1.8	NO
Bedford Canyon	El Cerrito Road to Georgetown Drive	60.0	61.1	1.1	NO
Bedford Canyon	Georgetown Drive to Eagle Glen Parkway	60.0	61.2	1.2	NO
Temescal Canyon Road	n/o Cajalco Road	63.9	64.1	0.1	NO
Temescal Canyon Road	s/o Cajalco Road	64.1	64.4	0.3	NO

[1] A significant impact is considered both a level above 65 dBA CNEL and an increase of 3.0 dBA CNEL or greater.

Table 7-10

Year 2035 Off-Site Project Related Traffic Noise Impacts

Roadway	Segment	CNEL at 100 Feet (dBA)			Potential Significant Impact?[1]
		No Project	With Project	Project Contribution	
California Drive	w/o Masters Drive	59.9	60.5	0.6	NO
California Drive	e/o Masters Drive	61.0	61.5	0.5	NO
El Cerrito Road	w/o Bedford Cayon	65.3	65.6	0.2	NO
El Cerrito Road	Bedford Cayon to I-15 Freeway	66.2	66.3	0.1	NO
El Cerrito Road	I-15 Freeway to Temescal Canyon Road	63.1	63.4	0.2	NO
Bennett Avenue	Eagle Glen Parkway to Masters Drive	53.2	53.2	0.0	NO
Bennett Avenue	n/o Masters Drive	52.2	52.2	0.0	NO
Georgetown Drive	w/o Bedford Cayon	55.2	55.6	0.4	NO
Eagle Glen Parkway	Bennett Avenue to Masters Drive	63.8	64.8	1.0	NO
Eagle Glen Parkway	Masters Drive to Bedford Canyon	63.2	64.8	1.7	NO
Cajalco Road	Bedford Canyon to I-15 Freeway	65.6	68.6	3.0	NO
Cajalco Road	I-15 Freeway to Grand Oaks	66.5	67.1	0.6	NO
Cajalco Road	Grand Oaks to Temescal Canyon Road	65.3	66.0	0.7	NO
Cajalco Road	e/o Temescal Canyon Road	67.2	67.5	0.3	NO
Masters Drive	n/o California Drive	59.7	60.0	0.3	NO
Masters Drive	California Drive to Bennett Avenue	61.5	62.5	0.9	NO
Masters Drive	Bennett Avenue to Eagle Glen Parkway	60.0	61.5	1.4	NO
Bedford Canyon	El Cerrito Road to Georgetown Drive	62.3	63.0	0.7	NO
Bedford Canyon	Georgetown Drive to Eagle Glen Parkway	62.2	63.0	0.8	NO
Temescal Canyon Road	n/o Cajalco Road	66.4	66.5	0.1	NO
Temescal Canyon Road	s/o Cajalco Road	65.4	65.6	0.2	NO

[1] A significant impact is considered both a level above 65 dBA CNEL and an increase of 3.0 dBA CNEL or greater.

b) Ambient conditions are within the normally acceptable community noise exposure levels identified in the Noise Element, and the Project increases the noise to levels above the normally acceptable community noise exposure at any sensitive receptor; or

c) Ambient conditions exceed the normally acceptable community noise exposure level identified in the Noise Element, *and* the Project increases the ambient noise at any sensitive receptor by an audible amount (3 dB or more).

As indicated above, for the Phase 2 (Year 2019) and Year 2035 scenarios, two roadway segments on Cajalco Road may experience an unmitigated noise increase greater than 3.0 dBA CNEL at a distance of 100 feet from roadway centerline or the project related transportation noise level impacts may cause ambient noise levels that are below the City of Corona exterior noise level standard for transportation of 65 dBA CNEL to increase above the acceptable noise level standard. These levels are calculated to show the potential transportation related noise increase with the addition of the proposed project and are not meant to provide specific noise level impacts at any noise sensitive private living area. In order to provide a proper assessment of the significance of the expected transportation noise increase, an analysis shall be completed at the specific noise sensitive uses along each segment expected to have a "potentially significant" impact, however there are no current or planned noise sensitive uses along Cajalco Road from Bedford Canyon to the I-15 Freeway and from the I-15 Freeway to Grand Oaks. For all other roadway segments, the Project's incremental vehicular-source noise contributions will be considered "barely perceptible" (less than 3.0 dBA CNEL) or impacts will remain below the City of Corona exterior noise level standard of 65 dBA CNEL with the proposed project and therefore, no mitigation is required.

8.0 ON-SITE NOISE IMPACTS

The project site will be subjected to transportation and non-transportation related noise impacts. This section discusses the potential noise impacts from the adjacent streets and the potential stationary noise impacts associated with the operation of the proposed commercial properties.

8.1 On-Site Transportation Related Noise Impacts

Currently the portions of the project site are exposed to significant traffic noise levels from Eagle Glen Parkway and the I-15 Freeway.

The future traffic related noise impacts to the noise sensitive portions of the project site will be caused by traffic on the internal roads such as Street "A", Street "B", and Street "C" as well as traffic on Eagle Glen Parkway and the I-15 Freeway. Using the FHWA traffic noise prediction model and the parameters outlined in Table 8-1, calculations of the expected future noise impacts were completed. Table 8-2 presents a summary of future on-site noise contours from the future major internal streets. For the purpose of this preliminary analysis, the site and its surrounding roadways were considered flat.

Based on the FHWA traffic noise prediction model, the future unmitigated 65 dBA CNEL contours are within the right-of-way for Street "B", Street "C" and do not reach the Planning Area 7 and 10 boundary lines along Eagle Glen Parkway from Bennett Avenue to Masters Drive. For Eagle Glen Parkway from Masters Drive to Bedford Canyon Road and Street "A", the 65 dBA CNEL contours extend slightly into the adjacent planning areas. Since the location of the nearest homes in PA 13 and 14 are not yet known, any potential mitigation measures should be made once a final site plan is provided. Should any noise sensitive exterior living areas be located within the 65 dBA CNEL contour, exterior mitigation such as noise barriers may be required. Based on the location of the traffic noise contours produced by the I-15 Freeway as shown in Exhibit 8-A, portions of PA 16 will be located within both the 65 dBA CNEL and 70 dBA CNEL traffic noise contours. For all noise-sensitive residential units that are located between the 65 dBA CNEL traffic noise contour and the I-15 Freeway, exterior mitigation at private exterior living areas including private patios and balconies may be necessary depending on the site layout, grading information, and location of intervening buildings. A final noise analysis shall be completed at the tract

Table 8-1

On-Site Roadway Parameters[1]

Roadway	Segment	Roadway Classification	Buildout Average Daily Traffic (1,000's)	Vehicle Speed (MPH)	Site Conditions
Eagle Glen Parkway	Bennett Avenue to Masters Drive	Seconday	25.0	40	Soft
Eagle Glen Parkway	Masters Drive to Bedford Canyon	Seconday	25.5	40	Soft
Street "A"	Eagle Glen Parkway to Street "B"	Divided Collector	21.9	40	Soft
Street "B"	Street "A" to Street "C"	Collector	4.9	40	Soft
Street "C"	Eagle Glen Parkway to Street "B"	Collector	7.3	40	Soft

[1] According to the Arantine Hills Traffic Impact Analysis by Urban Crossroads, Inc. in March 2011.

Table 8-2

Year 2035 Conditions On-Site Noise Contours

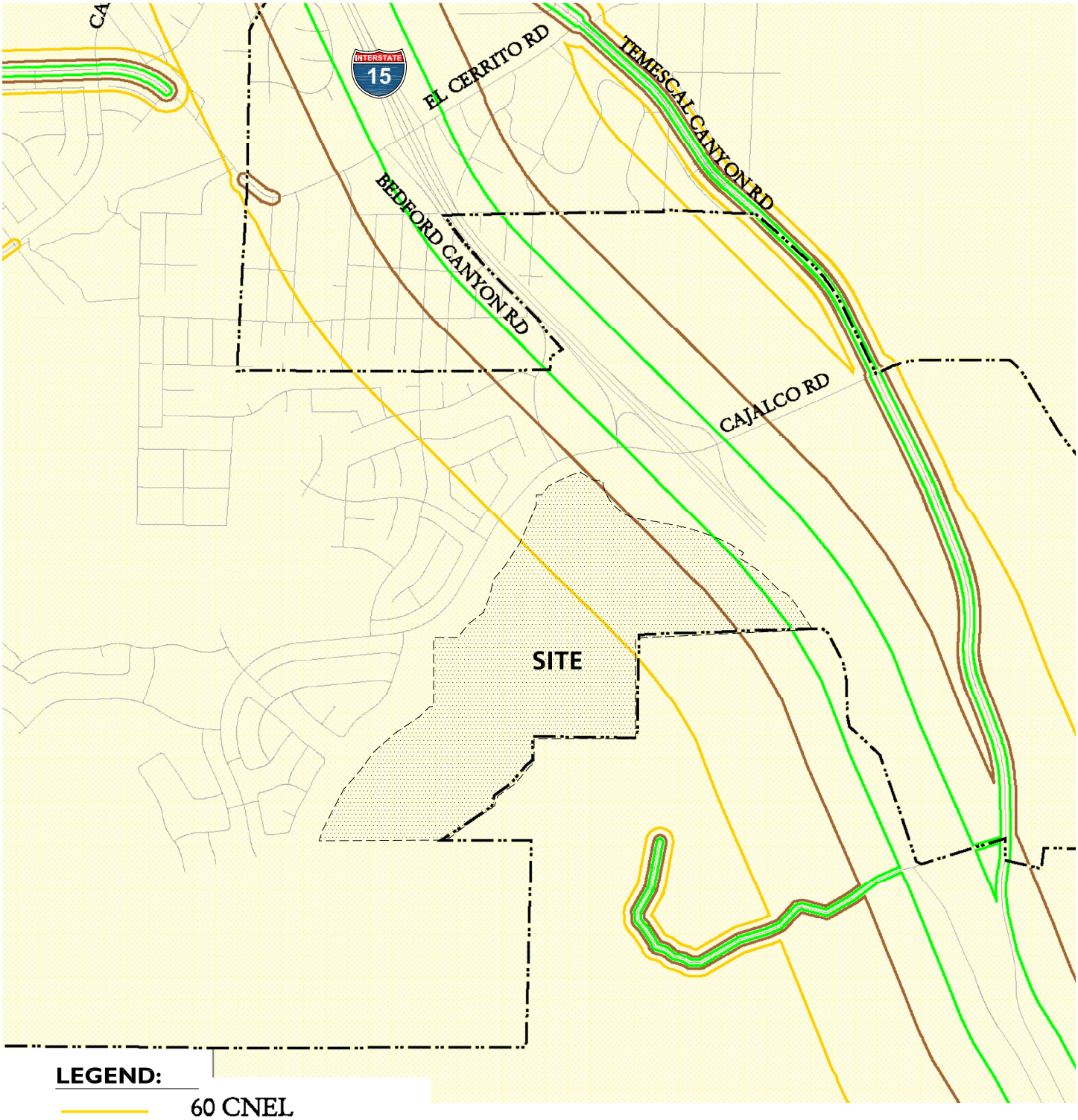
Roadway	Segment	CNEL @ 100 ft. (dBA)	Distance To Contour (Feet)			
			70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	55 dBA CNEL
Eagle Glen Parkway	Bennett Avenue to Masters Drive	64.8	45	96	208	448
Eagle Glen Parkway	Masters Drive to Bedford Canyon	64.8	45	98	211	454
Street "A"	Eagle Glen Parkway to Street "B"	64.1	41	87	188	406
Street "B"	Street "A" to Street "C"	57.6	RW	RW	69	149
Street "C"	Eagle Glen Parkway to Street "B"	59.3	RW	42	90	194
I-15 Freeway[2]	South of Cajalco Road	-	420	975	2,240	-

[1] "RW" = Location of the respective noise contour falls within the right-of-way of the road

[2] Location of the I-15 Freeway Noise Contours provided by Figure 18 (4) from the City of Corona General Plan.

EXHIBIT 8-A

CITY OF CORONA GENERAL PLAN FREEWAY NOISE LEVELS



Arantine Hills EIR Noise Impact Analysis
City of Corona, CA (JN - 06897:008.dwg)

URBAN CROSSROADS

map level for each residential area when the precise grading and the architectural plans are available to ensure that all residential areas will meet the City of Corona noise standards.

8.2 Stationary Noise Impacts

Currently, the Eagle Glen Golf Club Maintenance Area is located south of PA 1 which contains low-density, single-family residences. After speaking with Jason Burkhart, superintendant of the Eagle Glen Golf Club, it was learned that the maintenance area is open from 5 a.m. to 2 p.m. daily. Based on their cooperation with the existing homes located near the project site, they try to keep activities from occurring before 7 a.m. when at all possible. The noise measurement results at location L5 show that in fact operations at the maintenance area were kept to a minimum until 7 a.m. as not disturb residents during noise-sensitive nighttime hours. Noise levels recorded during the normal operational hours produced hourly Leq's ranging from 54.5 to 60.5 dBA Leq. These levels currently exceed the City of Corona daytime noise standard for 55 dBA Leq for non-transportation related noise impacts. It is expected that once final tract maps are provided, exterior mitigation around the noise-sensitive exterior yards of Planning Area 1 such as property line noise walls will be necessary in order to meet the City of Corona daytime noise standards. The height and location of any necessary noise barriers shall be determined once specific grading information is available in order to provide proper barrier heights.

The operation of the commercial center areas may create noise impacts to the adjacent residential areas. Typical noise impacts associated with the operation of the commercial center include truck maneuvering and unloading, air conditioning units, trash compactors and speakerphones. It is not possible to calculate the specific noise impacts at the specific plan level without grading plans and the location of the potential noise sources. A detailed noise analysis should be completed to evaluate the specific noise impacts associated with the operation of the commercial areas to the noise-sensitive land uses.

9.0 SHORT-TERM CONSTRUCTION NOISE IMPACTS

Construction noise represents a temporary impact on the ambient noise levels. Construction noise is primarily caused by diesel engines (trucks, dozers, backhoes), impacts (jackhammers, pile drivers, hoe rams); and backup alarms. Construction equipment can be stationary or mobile. Stationary equipment operates in one location for hours or days in a constant mode (generators, compressors) or generates variable noise operation (pile drivers, jackhammers) producing relatively constant noise for a period of time. Mobile equipment moves around the site and is characterized by variations in power and location, resulting in significant variations in noise levels over time. Grading activities typically generate the greatest noise impacts during construction. This section assesses the potential noise impacts to the existing noise sensitive uses during construction.

9.1 Noise Sensitive Uses and Construction Noise Standards

Existing surrounding land uses include single-family homes and Eagle Glen Parkway to the northwest, the I-15 Freeway to the northeast and vacant land to the south. The City of Corona prohibits construction related activities between the hours of 8:00 p.m. to 7:00 a.m., Monday through Saturday and 6:00 p.m. to 10:00 a.m. on Sundays and federal holidays.

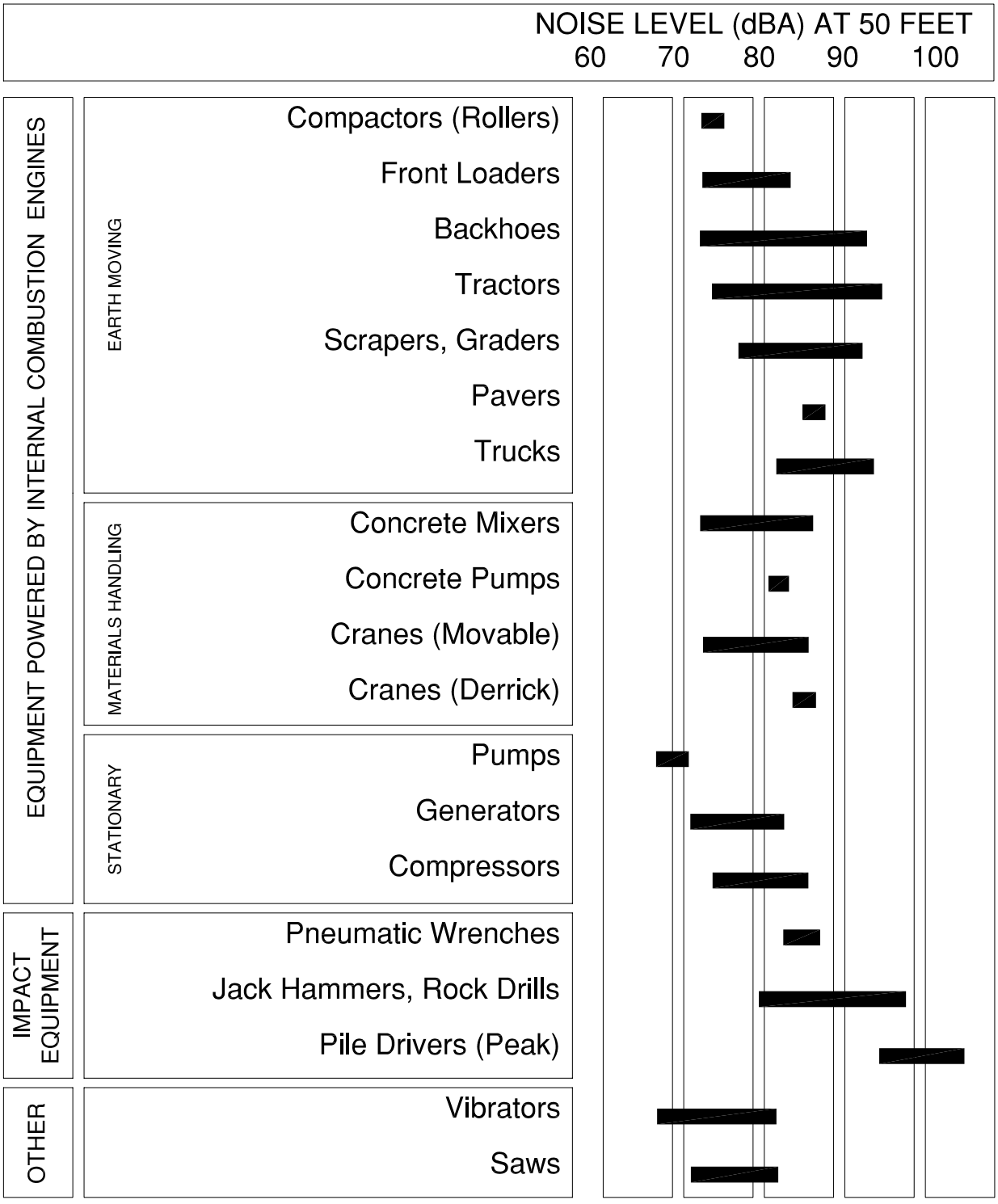
9.2 Construction Noise Levels and Impacts

Construction projects are accomplished in phases. Each phase uses a specific equipment mix depending on the tasks to be accomplished resulting in its own noise characteristics that vary daily and according to the construction phase. Grading typically represents the highest potential sources for noise impacts.

Site preparation and grading will include hauling and spoiling soil on-site as required to allow building pads to be created for the new buildings. The U.S. Environmental Protection Agency (U.S. EPA) had compiled data regarding the noise generating characteristics of specific types of construction equipment. These data are shown on Exhibit 9-A. As shown, noise levels generated by heavy construction equipment can range from approximately 68 dBA Lmax to noise levels in excess of 100 dBA Lmax when measured at 50 feet. However, these noise levels would diminish rapidly with distance from the

EXHIBIT 9-A

TYPICAL CONSTRUCTION NOISE LEVELS



NOTE: Based on limited available data samples.

SOURCE: United States Environmental Protection Agency, 1971, "Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances," NTID 300-1.

50 feet. However, these noise levels would diminish rapidly with distance from the construction site at a rate of approximately 6 dBA Lmax per doubling of distance. For example, a noise level of 68 dBA Lmax measured at 50 feet from the noise source to the receptor would be reduced to 62 dBA Lmax at 100 feet from the source to the receptor, and would be further reduced by another 6 dBA Lmax to 56 dBA Lmax at 200 feet from the source to the receptor. Field measurements show that construction noise levels generated by commonly used grading equipment (i.e. loaders, graders and trucks) generate noise levels that typically do not exceed the middle of the ranges shown on Exhibit 9-A.

While stationary equipment operates in one location for hours or days in a constant mode (generators, compressors), mobile equipment moves around the site and is characterized by variations in power and location, resulting in significant variations in noise levels over time. For the purpose of this analysis, an overall grading noise level of 89 dBA Lmax at 50 feet will be used as the worst-case maximum exterior noise level that is typical with the use of standard grading equipment. The nearest homes are located adjacent to the west of the project site site and across Eagle Glen Parkway, at distances ranging from 150 to 420 feet. Using a drop-off rate of 6 dBA Lmax per doubling of distance, noise levels at 100 feet are estimated at 83 dBA Lmax , at 200 feet 77 dBA Lmax, and at 400 feet 71 dBA Lmax. This noise level impact is a worst-case scenario when grading equipment is located nearest to these homes. To reduce the noise impacts to the adjacent noise sensitive homes, several mitigation measures are included in Section 9.3 of this report.

9.3 Mitigation Measures

Construction noise is of short-term duration and will not present any long-term impacts on the project site or the surrounding area. The following recommended mitigation measures will be employed as applicable and will serve to reduce the construction noise impacts to the nearby residential areas:

- The most effective method of controlling construction noise is through local control of construction hours determined by City staff. The City of Corona Development Code Section 17.84.040 limits construction activity to the hours of 7:00 a.m. to 8:00 p.m. from Monday to Saturday and from 10:00 a.m. to 6:00 p.m. on Sundays and federal holidays.

- During all project site excavation and grading on-site, construction contractors shall equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers, consistent with manufacturers' standards. The construction contractor shall place all stationary construction equipment so that emitted noise is directed away from the noise sensitive receptors nearest the project site.

- The construction contractor shall locate equipment staging in areas that will create the greatest distance between construction-related noise sources and noise sensitive receptors nearest the project site during all project construction.

- The construction contractor shall limit haul truck deliveries to the same hours specified for construction equipment. To the extent feasible, haul routes shall not pass sensitive land uses or residential dwellings.

- Implement a construction noise mitigation program. This program shall include noise monitoring at selected noise sensitive locations, monitoring complaints, and identification and mitigation of the major sources of noise.

- Homeowners shall be notified via postings on the construction site 24 hours before major construction related noise impacts, such as grading, which may affect them.

APPENDIX 4.1

City of Corona Noise Element

11.3.4

With the assistance of the Riverside County, determine Corona's long-term need for hazardous materials management facilities including the proper collection, transport, treatment, and disposal of such materials. *(Imp 15d)*

11.3.5

If it is determined that a hazardous materials management facility is required, develop and implement strict land use controls, performance standards, and structure and property design requirements on this facility including development setbacks from existing and planned schools, hospitals and medical offices, day care and elder care facilities, residential areas, and other sensitive land uses. *(Imp 2, 6)*

11.3.6

Require property owners of contaminated sites to develop and implement, at their expense, a site remediation plan to the satisfaction of Riverside County and the Department of Toxic Substances Control. *(Imp 6)*

11.3.7

Minimize the potential risk of contamination to surface water and groundwater resources and implement restoration efforts to resources adversely impacted by past urban and rural land use activities. *(Imp 6)*

NOISE

CONTEXT

This section identifies noise sensitive land uses, at-source noise generators, and the geographic extent of noise impacts for the purposes of protecting residents and businesses from excessive and persistent noise intrusions.

California State law, Government Code Section 65302(g), requires the preparation and adoption of a Noise Element, as follows:

> The General Plan shall include a Noise Element that shall identify and appraise noise problems in the community. The Noise Element shall recognize the guidelines adopted by the Office of Noise Control in the State Department of Health Services and shall analyze and quantify to the extent practicable, as determined by the legislative body, current and projected noise levels for all of the following sources:
>
> - Highways and freeways
> - Primary arterials and major local streets
> - Passenger and freight on-line railroad operations and ground rapid transit systems
> - Aviation and airport related operations
> - Local industrial plants
> - Other ground stationary noise sources contributing to community noise environment"

A local Noise Element should accurately reflect the noise environment, the stationary sources of noise, and the impacts of noise on local residents.

Freeways and Arterial Roadways

Throughout the City of Corona, the dominant noise sources are transportation related. Two major, region-serving freeways bisect Corona and numerous major surface streets carry vehicles throughout the developed portions of the City. Motor vehicle noise commonly causes sustained noise levels and often in close proximity of sensitive land uses.

The major sources of traffic noise in Corona are the Riverside Freeway (SR-91) and I-15 Freeway. Many of the residential uses built near the freeways include some level of noise attenuation, provided by either a sound barrier or grade separation. As highway projects are implemented on the freeways, Caltrans policies regarding environmental protection are implemented and noise mitigation strategies are developed as necessary to meet Caltrans and/or FHWA goals.

Railroad Traffic

The Burlington Northern/Santa Fe (BNSF) Railroad main line also bisects Corona. This rail line carries heavy east-west freight train traffic, and about fifteen daily Metrolink and Amtrak passenger trains, from Los Angeles and Orange Counties through Riverside County to points east. During any typical 24-hour period, 75 to 90 freight trains use this line. Because freight train traffic occurs around the clock, nighttime traffic on the railroad has the potential to be the most disruptive to the community noise environment.

Aircraft

The Corona Municipal Airport is a recreational airport that experiences more than 60,000 annual operations per year. Because the airport generally serves small aircraft and it is located in the Prado Flood Control Basin approximately one-half mile from the nearest residential neighborhoods to the north of Rincon Street, it is not a substantial source of noise at any sensitive land use, and noise from the airport does not affect most of the City.

Stationary Sources

Stationary sources of noise include common building or home mechanical equipment, such as air conditioners, ventilation systems, or pool pumps, and industrial facilities, such as manufacturing plants, power plants, or processing plants. Industry in Corona and near Corona city limits includes a variety of light manufacturing, rail and truck transportation-related businesses, some heavy manufacturing, and, in the eastern portion of the City, surface mining operations.

Sensitive Land Uses

Noise-sensitive land uses are defined in the Corona Municipal Code, Section 17.84.040. Sensitive land uses are those uses that have associated human activities that may be subject to stress or significant interference from noise. Sensitive land uses include single family residential, multiple family residential, churches, hospitals and similar health care institutions, convalescent homes, libraries, and school classroom areas.

Noise Standards

The Corona Municipal Code establishes standards for transportation noise sources in relation to sensitive uses. These standards are used by the City to guide project-level development to a

community noise environment that does not disrupt sensitive uses. New sensitive uses are prohibited from locating in areas where aircraft noise exceeds 65 CNEL, and mitigation is required for projects proposing to locate where roadway noise exceeds 65 CNEL.

The land use compatibility standards for community noise levels recommended in the guidelines established by the State of California, Governor's Office of Planning and Research. In addition, the California Noise Insulation Standards identify an interior noise standard of 45 dBA CNEL for new multi-family residential units.

2002 Noise Levels

Ambient noise levels were measured in the City of Corona to characterize existing daytime noise conditions caused by various noise sources. The locations were selected to characterize conditions caused by unique noise sources in the community (freeways, industry, the airport, and the railroad). Refer to Figure 18(1) through Figure 18(4).

SR-91 and I-15 are the greatest source of noise within the City. Yuma Drive located east of I-15 and Ontario Avenue located east of Rimpau Avenue also generate high levels of roadway noise. Existing residential uses in close proximity to these freeway and roadway segments could be exposed to high noise levels on a regular basis.

In addition to the noise levels identified above, there are currently several active surface aggregate mines within the City. Noise is generated by heavy vehicles within the mining sites, processing plant equipment, and transport trucks traveling to and from the mines. Most of the mines are located directly east of I-15 and SR-91.

As with locations in the City of Corona, motor vehicles are the primary source of noise within the SOI. Existing roadway noise levels in the Sphere of Influence Area are lower than within the City of Corona. As there are few existing residential uses in close proximity to the roadway segments, it is unlikely that these residents are exposed to high noise levels on a regular basis. There are currently several active surface aggregate mines within the South and East SOI areas. The noise generated by these mines is not known to adversely affect residential uses or other sensitive uses at the present time.

Comprehensive descriptions and maps of noise related issues in Corona are available in the *Corona General Plan Update Technical Background Report.* The following noise related policies are intended to be a comprehensive program that addresses noise control and mitigation in the planning and development process. The underlying purpose is to minimize exposure of excessive noise sources to the greatest number of residents and visitors of Corona as possible.

Goal 11.4

Ensure that appropriate actions are taken to protect residents, visitors, and noise sensitive land uses from adverse human health and environmental impacts created by excessive noise levels from ambient sources.

Policies

11.4.1

Provide for the reduction in noise impacts from transportation noise sources through the following actions:

- Implement noise mitigation measures in the design and daily operation of arterial road improvement projects consistent with funding capabilities.
- Require the use of site design and architectural design measures in the development of residential and other "noise-sensitive" land uses that are to be located adjacent to major roads or railroads. Measures that may be appropriate include increased building setbacks and dedicated noise easements, use of "noise-tolerant" land uses and buildings to serve as compatible buffers, landscaped earthen berms, walls, and clustering of buildings, to reduce interior open space noise levels.
- Encourage the enforcement of State Motor Vehicle noise standards for cars, vans, trucks, and motorcycles through coordination with the California Highway Patrol and the Corona Police Department.
- Ensure that the Zoning Ordinance, Circulation Element, and Land Use Element of the General Plan fully integrate the policies adopted as part of the Noise Element.

(Imp 1 to 9, 12, 13)

11.4.2

Minimize vehicle noise impacts from streets and freeways through proper route location and sensitive roadway design through the following strategies:

- Assess the impacts of truck routes, the effects of a variety of truck traffic, and future motor vehicle volumes on noise levels adjacent to roadways when improvements to the circulation system are being planned.
- Mitigate traffic volumes and vehicle speed through residential neighborhoods and school districts.
- Work closely with Caltrans in the early stages of highway improvements and design modifications to ensure that proper consideration is being given to potential noise impacts.

(Imp 15c, 17)

11.4.3

Encourage Caltrans to install and maintain mitigation (e.g., noise walls) and/or landscaping elements along highways under their jurisdiction that are adjacent to existing residential subdivisions or other noise-sensitive areas in order to reduce adverse noise impacts. *(Imp 15c, 17)*

11.4.4

Require municipal vehicles and noise-generating mechanical equipment purchased or used by the City of Corona to comply with noise performance standards consistent with the latest available noise reduction technology. *(Imp 19)*

11.4.5

Require local and regional public transit providers to ensure that equipment used does not create excessive noise impacts on the community. *(Imp 15d, 17)*

11.4.6

Require new nonresidential development to design and configure onsite ingress and egress points to divert traffic away from "noise-sensitive" land uses, to the greatest extent practicable. *(Imp 6)*

11.4.7

Provide for the development of alternate transportation modes, such as bicycle paths and pedestrian walkways, to minimize the number of noise generating automobile trips. *(Imp 2, 6)*

11.4.8

Restrict development of land uses located within the 65 dBA CNEL contour of the Corona Municipal Airport to industrial, agricultural, or other open space activities and that all development in the vicinity of the Corona Municipal Airport comply with the noise standards contained in the Corona Municipal Airport Master Plan. *(Imp 1, 2)*

11.4.9

Work closely with the Corona Municipal Airport to ensure that the airport's operations do not generate adverse noise conditions in the City of Corona. *(Imp 15d)*

Goal 11.5

Prevent and mitigate the adverse impacts of excessive ambient noise exposure on residents, employees, visitors, and "noise-sensitive" land uses within the City of Corona.

Policies

11.5.1

Require that in areas where existing or future ambient noise levels exceed an exterior noise level of 65 dB(A) L_{dn}, all development of new housing, health care facilities, schools, libraries, religious facilities, and other "noise sensitive" land uses shall include satisfactory buffering and/or construction mitigation measures to reduce noise exposure to levels within acceptable limits. *(Imp 2 to 6, 9, 12)*

11.5.2

Require new industrial and new commercial land uses or the major expansion of such uses to demonstrate that ambient noise levels will not exceed an exterior noise level of 65 dB(A) L_{dn} on areas containing "noise sensitive" land uses as depicted on Table 4. *(Imp 2 to 6, 9, 12)*

11.5.3

Require development in all areas where the existing or future ambient noise level exceeds 65 dB(A) L_{dn} to conduct an acoustical analysis and incorporate special design measures in their construction, thereby, reducing interior noise levels to the 45 dB(A) L_{dn} level, as depicted on Table 5. *(Imp 2 to 6, 9, 12)*

11.5.4

Encourage existing "noise sensitive uses," including schools, libraries, health care facilities, and residential uses in areas where existing or future noise levels exceed 65 dB(A) L_{dn} to incorporate fences, walls, landscaping, and/or other noise buffers and barriers, where appropriate and feasible. *(Imp 2 to 6, 9, 12)*

11.5.5

Require development that generates increased traffic and substantial increases in ambient noise levels adjacent to noise sensitive land uses, to provide appropriate mitigation measures in accordance with the acceptable limits of the City Noise Ordinance. *(Imp 2 to 6, 9, 12)*

11.5.6

Require construction activities that occur in close proximity to existing "noise sensitive" uses, including schools, libraries, health care facilities, and residential uses to limit the hours and days of operation in accordance with City Noise Ordinance. *(Imp 2–6, 9, 12)*

Table 4 Land Use Noise Compatibility Matrix

Land Use Categories		*Community Noise Equivalent Level CNEL*						
Categories	*Uses*	*<55*	*60*	*65*	*70*	*75*	*80>*	
RESIDENTIAL	Single Family, Duplex	A	A	B	B	D	D	D
	Multiple Family	A	A	B	B	C	D	D
RESIDENTIAL	Mobile Home	A	A	B	C	C	D	D
COMMERCIAL Regional, District	Hotel, Motel Transient Lodging	A	A	B	B	C	C	D
COMMERCIAL Regional, Village District, Special	Commercial Retail, Bank, Restaurant, Movie Theatre	A	A	A	A	B	B	C
COMMERCIAL OFFICE INSTITUTIONAL	Office Building, Research and Development, Professional Offices, City Office Building	A	A	A	B	B	C	D
COMMERCIAL Recreation INSTITUTIONAL Civic Center	Amphitheatre, Concert Hall Auditorium, Meeting Hall	B	B	C	C	D	D	D
COMMERCIAL Recreation	Children's Amusement Park, Miniature Golf Course, Go-cart Track, Equestrian Center, Sports Club	A	A	A	B	B	D	D
COMMERCIAL General, Special INDUSTIRAL, INSTITUTIONAL	Automobile Service Station, Auto Dealership, Manufacturing, Warehousing, Wholesale, Utilities	A	A	A	A	B	B	B
INSTITUTIONAL General	Hospital, Church, Library, Schools' Classroom	A	A	B	C	C	D	D
OPEN SPACE	Parks	A	A	A	B	C	D	D
OPEN SPACE	Golf Course, Cemeteries, Nature Centers Wildlife Reserves, Wildlife Reserves, Wildlife Habitat	A	A	A	A	B	C	C
AGRICULTURE	Agriculture	A	A	A	A	A	A	A

Interpretation

Zone A Clearly Compatible	Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction without any special noise insulation requirements.
Zone B Normally Compatible	New construction or development should be undertaken only after detailed analysis of the noise reduction requirements are made and needed noise insulation features in the design are determined. Conventional construction, with closed windows and fresh air supply systems or air conditioning, will normally suffice. Note that residential uses are prohibited with airport CNEL greater than 65.
Zone C Normally Incompatible	New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of noise reduction requirements must be made and needed noise insulation features included in the design.
Zone D Clearly Incompatible	New construction of development should generally not be undertaken.

Table 5 Interior and Exterior Noise Standards

Land Use Categories		*Energy Average CNEL*	
Categories	*Uses*	*Interior*[1]	*Exterior*[2]
RESIDENTIAL	Single Family, Duplex, Multiple Family	45[3]	65
	Mobile Home	NA	65[4]
COMMERCIAL INDUSTRIAL INSTITUTIONAL	Hotel, Motel, Transient Lodging	45	65[5]
	Commercial Retail, Bank, Restaurant	55	NA
	Office Building, Research and Development, Professional Offices, City Office Building	50	NA
	Amphitheatre, Concert Hall Auditorium, Meeting Hall	45	NA
	Gymnasium (Multipurpose)	50	NA
	Sports Club	55	NA
	Manufacturing, Warehousing, Wholesale, Utilities	65	NA
	Movie Theatres	45	NA
INSTITUTIONAL	Hospital, Schools' classroom	45	65
	Church, Library	45	NA
OPEN SPACE	Parks	NA	65

INTERPRETATION

1. Indoor environment excluding bathrooms, toilets, closets, corridors.
2. Outdoor environment limited to:
   - Private yard of single family
   - Multi-family private patio or balcony that is served by a means of exit from inside
   - Mobile home park
   - Hospital patio
   - Park's picnic area
   - School's playground
   - Hotel and motel recreation area
3. Noise level requirement with closed windows. Mechanical ventilating system or other means of natural ventilation shall be provided as of Chapter 12, Section 1205 of UBC.
4. Exterior noise level should be such that interior noise level will not exceed 45 CNEL.
5. Except those areas affected by aircraft noise.

Source: Mestre Greve Associates

Goal 11.6

Provide sufficient information concerning community noise levels to ensure that noise can be objectively considered and incorporated into land use planning.

Policies

11.6.1

Monitor and update available data regarding the City's existing and projected ambient and stationary noise levels. *(Imp 13)*

11.6.2

Undertake modifications and updates to the City's noise ordinances, regulations, and guidelines, on an ongoing basis, as required, in response to new Federal, State and County standards and guidelines. *(Imp 1 to 6)*

11.6.3

Incorporate noise considerations into land use planning decisions in order to prevent future noise and land use incompatibilities. Considerations may include, but not necessarily be limited to standards that specify acceptable noise limits for various land uses, noise reduction features, acoustical design in new construction, and enforcement of the State of California Uniform Building Code provisions for indoor and outdoor noise levels. *(Imp 2 to 6, 9, 12)*

Goal 11.7

Provide for the reduction of noise spillover or encroachment where the noise environment from commercial and industrial land uses is unacceptable; and protect and maintain adjoining residential areas and other "noise sensitive" areas having acceptable noise environments.

Policies

11.7.1

Provide for the reduction in noise impacts from commercial and industrial noise sources as controlled and enforced through the Community Noise Ordinance. *(Imp 2 to 6, 9, 12)*

11.7.2

Require that new commercial structures located adjacent to existing and planned residential areas shield HVAC units so as to limit adverse noise impacts to the greatest extent possible. *(Imp 6)*

11.7.3

Require that parking areas for commercial and industrial land operations be set back from adjacent residential areas to the maximum extent feasible or be buffered and shielded by walls, fences, berms, and/or adequate landscaping. *(Imp 6)*

11.7.4

Require that parking structures serving commercial or industrial land uses be designed to minimize potential noise impacts of vehicles using these structures to both on-site and adjacent properties. *(Imp 2, 6)*

11.7.5

Require that automobile and truck access to commercial or industrial land uses abutting existing or planned residential areas be located at the maximum practical distance from residential areas. *(Imp 2, 6)*

11.7.6

Prohibit the siting of loading and shipping facilities for commercial and industrial operations adjacent to existing or planned residential areas. *(Imp 2, 6)*

11.7.7

Require that restaurant/bar establishments take appropriate steps to control the activities of their patrons on-site and within a reasonable and legally justified distance from the establishment in order to minimize potential noise-related impacts on adjacent residential neighborhoods. *(Imp 2)*

Goal 11.8

Minimize potentially adverse noise impacts associated with the development of mixed-use structures in which residential dwelling units are proposed above ground floor commercial or institutional uses.

Policies

11.8.1

Require that mixed-use structures incorporating both commercial or institutional and residential uses minimize through design and construction technology, the transfer or transmission of noise and vibration from the commercial or institutional use to the residential land use. *(Imp 6)*

11.8.2

Prohibit the development of new nightclubs and other high noise-generating entertainment uses directly adjacent to existing and planned residential neighborhoods, residential dwelling units, schools, health care facilities, or other "noise-sensitive" land uses. Such uses may be permitted, at the direction of the City Council, if it can be satisfactorily demonstrated to the City through a noise analysis prepared by an

acoustical expert that effective measures can be installed and employed on an ongoing basis by the establishment to satisfactorily mitigate the potential impacts of onsite operations and/or offsite customer activities upon these areas. *(Imp 2)*

11.8.3

Prohibit the location of uses characterized by excessive noise, such as fast food restaurants with drive-through speakers, adjacent to existing and planned residential neighborhoods. *(Imp 2)*

Goal 11.9

Minimize noise impacts created by the Santa Fe railroad transit on residential areas and other "noise-sensitive" land use areas.

Policies

11.9.1

Continue to work closely with the Santa Fe Railroad operators to install and maintain noise mitigation features where operations impact existing and planned residential areas or other "noise-sensitive" areas. *(Imp 15d)*

11.9.2

Coordinate with rail planners to properly maintain lines within the municipal boundaries of the City of Corona and establish operational restrictions including hours of operation and speed limits during the early morning and late evening hours to reduce adverse noise impacts in residential areas and other "noise-sensitive" areas. *(Imp 15d)*

11.9.3

Require that all new development of new housing, health care facilities, schools, libraries, religious facilities, and other "noise sensitive" land uses in close proximity to the railroad line include satisfactory buffering and/or construction mitigation measures to reduce noise exposure to levels within acceptable limits (i.e., 65 dB(A) L_{dn} interior and 45 dB(A) L_{dn} exterior). *(Imp 2–6, 9, 12)*

EMERGENCY/DISASTER PREPAREDNESS

CONTEXT

Municipalities use emergency/disaster preparedness plans in order to identify planning processes, organizations, response, and recovery policies and procedures to address a range of emergencies/ disasters including seismic, flooding, urban and wildfires, and hazardous waste. These plans specify how preparedness and response activities and responsibilities are integrated and coordinated between local and county jurisdictions and with other government agencies, when required.

The California Emergency Services Act requires cities and counties to manage and coordinate emergency response and recovery activities within their jurisdictional boundaries. During disasters, the City of Corona coordinates its operations with the Riverside Operational Area. In the event of a disaster, the City and other involved agencies will implement the Incident Command System (ICS) at the field-response level to standardize response procedures. At the local government level, a designated Emergency Operations Center (EOC) is used as the central location to administer emergency operations.

APPENDIX 4.2

City of Corona Development Code

CHAPTER 17.84
PERFORMANCE STANDARDS

Sections

17.84.010 Compliance required.

17.84.020 Fire and explosion hazards.

17.84.030 Radio-frequency energy or electrical disturbance.

17.84.040 Noise.

17.84.050 Vibration.

17.84.060 Dust, smoke, glare – Emission.

17.84.070 Glare.

17.84.080 Underground storage tanks.

17.84.010 Compliance required.

All uses established or placed into operation after the effective date of the ordinance codified in this title shall comply at all times hereafter with the following limitations or performance standards. All uses actually established and in operation on the effective date of the ordinance codified in this title shall be made to comply with the limitations or performance standards set forth in this chapter on or before January 3, 1967 and shall comply at all times thereafter.

(`78 Code, § 17.84.010.) (Ord. 2161 § 1 (part), 1993.)

17.84.020 Fire and explosion hazards.

The storage and handling of flammable liquids, liquified petroleum, gases and explosives shall comply with the state rules and regulations and ordinances of the city.

(`78 Code, § 17.84.020.) (Ord. 2161 § 1 (part), 1993.)

17.84.030 Radio-frequency energy or electrical disturbance.

Devices which radiate radio-frequency energy shall be so operated as not to cause interference with any activity carried on beyond the boundary line of the property upon which the device is located.

Radio-frequency energy is electromagnetic energy at any frequency in the radio spectrum between ten kilocycles and three million megacycles.

(`78 Code, § 17.84.030.) (Ord. 2161 § 1 (part), 1993.)

17.84.040 Noise.

(A) **Purpose and intent.**

(1) The purpose of this section is to regulate noise and vibration in the interest of the public health, safety and general welfare. The city finds that certain noise levels and vibrations are detrimental to the public health, safety and general welfare and that the primary sources of noise in the city are freeways, highways, manufacturing uses, railroads, the airport and construction noise. The noise element of the General Plan contains the city's policies regarding noise and identifies noise contours for existing and future roadways and the Corona Municipal Airport, which are implemented by this chapter. The General Plan noise element shall govern all noise standards and policies.

(2) In order to control unnecessary, excessive and annoying noise and vibration in the city, it is hereby declared to be the policy of the city to prohibit such noise and vibration generated from or by all sources as specified in this chapter. It shall be the policy of the city to maintain quiet in those areas which exhibit low noise levels and to implement programs to reduce noise in those areas within the city where noise levels are above acceptable values. It is the intent of the city to minimize noise impacts to adjacent land uses pursuant to the standards identified herein.

(B) **Definitions**. Terms found in this chapter shall be defined as follows. Additional definitions are found in the noise element of the General Plan.

(1) "**A-weighted sound level**." The sound pressure level in decibels as measured on a sound level meter using the A-weighted filter network. The A-weighted filter network is designed to simulate the response of the human ear. The A-weighted sound level is expressed by the symbol dBA.

(2) "**Ambient noise**." The composite of noise from all existing sources near and far. The ambient noise level constitutes the normal or existing level of environmental noise at a given location, excluding any alleged offensive noise.

(3) "**Cumulative period**." An additive period of time composed of individual time segments which may be continuous or interrupted.

(4) "**Community noise equivalent level (CNEL)**." The average equivalent A-weighted sound level during a 24 hour day, obtained after addition of five decibels to sound levels between 7:00 p.m. and 10:00 p.m. and the addition of ten decibels to sound levels between 10:00 p.m. and 7:00 a.m.

(5) "**Decibel (dB)**." A unit for measuring the amplitude of a sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micropascals.

(6) "**Impulsive noise**." A noise of short duration, usually less than one second, and of high intensity, with an abrupt onset and rapid decay.

(7) "**Noise study**." An acoustical analysis performed by a qualified noise engineer which determines the potential noise impacts of a roadway, land use or operation of equipment. The noise study will generate noise contours and recommend mitigation for noise impacts which exceed the city's noise standards.

(8) "**Sensitive land uses**." Those specific land uses which have associated human activities that may be subject to stress or significant interference from noise. Sensitive land uses include single family residential, multiple family residential, churches, hospitals and similar health care institutions, convalescent homes, libraries and school classroom areas.

(9) "**Simple tone noise**." A noise characterized by a predominant frequency or frequencies so that other frequencies cannot be readily distinguished. When measured, a simple tone noise shall exist if the one-third octave band sound pressure levels in the band with the tone exceeds the arithmetic average of the sound pressure levels of the two continuous one-third octave bands as follows: 5 dB for frequencies of 500 hertz or above or by 15 dB for frequencies less than or equal to 125 hertz.

(C) **Noise standards**.

(1) The noise ordinance identifies two separate types of noise sources: transportation and stationary. Transportation related noise sources, such as freeways, airports and railroads, are identified within this chapter and are mainly for the planning stages of project development. The noise metrics used for this noise type is the Community Noise Equivalent Level (CNEL) which is a 24 hour time weighted average noise level. The other type of noise standard is for stationary noise sources, such as industrial or construction noise, that may be intrusive to a neighboring private property. The noise metric used for stationary sources is defined as noise levels that cannot be exceeded for certain percentages of time. The noise standards shown in Table 1 are for regulating the impact of stationary noise sources to a neighboring private property. Standards for transportation related noise are found in Table 2.

(2) Stationary noise sources.

TABLE 1
STATIONARY NOISE SOURCE STANDARDS

TYPE OF LAND USE	**MAXIMUM ALLOWABLE NOISE LEVELS**			
	Exterior Noise Level		**Interior Noise Level**	
	7 a.m. to 10 p.m.	10 p.m. to 7 a.m.	7 a.m. to 10 p.m.	10 p.m. to 7 a.m.
Single-, Double- and Multi- Family Residential	55 dBA	50 dBA	45 dBA	35 dBA
Other Sensitive Land Uses	55 dBA	50 dBA	45 dBA	35 dBA
Commercial Uses	65 dBA	60 dBA	Not applicable	Not applicable
Industrial, Manufacturing or Agricultural	75 dBA	70 dBA	Not applicable	Not applicable

(a) Each of the noise limits specified here shall be reduced by 5 dBA for impulse or simple tone noises; provided, however, that if the ambient noise level exceeds the resulting standards, the ambient shall be the standard.

(b) If the measurement location is on the boundary between two different zones, the lower noise level standard applicable to the zone shall apply.

(c) If the intruding noise is continuous and cannot be reasonably discontinued or stopped for a time period whereby the ambient noise level can be determined, the measured noise level obtained while the source is in operation shall be compared directly to the allowable noise level standards as specified respective to the measurement location's designated land use and for the time of the day the noise level is measured. The reasonableness of temporarily discontinuing the noise generation by an intruding noise source shall be determined by the Code Enforcement Officer for the purpose of establishing the existing ambient noise level at the measurement location.

(d) Exterior noise:

1. It shall be unlawful for any person, entity or operation at any location within the incorporated area of the city to create any noise, or to allow the creation of any noise on property owned, leased, occupied or otherwise controlled by such person, which causes the noise level when measured on any other property to exceed:

a. The noise standard for a cumulative period of more than 30 minutes in any hour;

b. The noise standard plus 5 dB for a cumulative period of more than 15 minutes in any hour;

c. The noise standard plus 10 dB for a cumulative period of more than five minutes in any hour;

d. The noise standard plus 15 dB for a cumulative period of more than one minute in any hour; or

e. The noise standard plus 20 dB for any period of time.

2. In the event the ambient noise level exceeds any of the first four noise limit categories above, the cumulative period applicable to the category shall be increased to reflect the ambient noise level. In the event the ambient noise level exceeds the fifth noise category, the maximum allowable noise level under said category shall be increased to reflect the maximum ambient noise level.

(e) Interior noise. It shall be unlawful for any person at any location within the incorporated area of the city to create any noise or to allow the creation of any noise on property owned, leased, occupied or otherwise controlled by such a person which causes the noise level when measured within any other residential dwelling unit or sensitive land use to exceed:

1. The noise standard for a cumulative period of more than five minutes in any hour;

2. The noise standard plus 5 dB for a cumulative period of more than one minute in any hour; or

3. The noise standard plus 10 dB, or the maximum measured ambient, for any period of time.

(3) Transportation noise sources.

TABLE 2 TRANSPORTATION NOISE SOURCE STANDARDS		
TYPE OF LAND USE	**EXTERIOR NOISE LEVEL**	**INTERIOR NOISE LEVEL**
	(Private Outdoor Living Areas)	
Residential (Roadway)	65 CNEL	45 CNEL
Residential (Airport)	65 CNEL	45 CNEL
Other sensitive land uses (Roadway)	65 CNEL	45 CNEL
Other sensitive land uses (Airport)	65 CNEL	45 CNEL
Hotels/Motels (Roadway)	65 CNEL	45 CNEL
Hotels/Motels (Airport)	65 CNEL	45 CNEL

(a) **Roadway noise**. A noise study shall be performed prior to the construction of new master planned roads, roadway improvements, rail lines and/or prior to the construction of residential or sensitive land uses adjacent to existing or master planned roads or railways. The noise study shall identify the existing and future noise contours for the roadway and propose mitigation measures to reduce the noise impacts to a maximum of 65 dBA CNEL in the private outdoor living area of residences and to a maximum interior noise level of 45 dBA CNEL for residential and sensitive land uses, as shown in Table 2.

(b) **Airport noise**. Sensitive land uses, site-built homes and institutional uses are prohibited in airport noise contours above 65 dBA CNEL. All subdivisions within two miles of the Corona Municipal Airport or within the 65 dBA CNEL contour shall show and record an avigation easement for the benefit of the airport. The avigation easement shall provide notification to potential buyers and occupants of the presence of the easement and the potential for over flights and aircraft noise.

(D) **Special provisions**.

(1) **Mechanical equipment in residential zones**. Upon application for a building permit to install mechanical equipment such as air conditioners and pool equipment in a residential zone, the equipment shall be setback at least ten feet from an adjoining property line except where a five foot block sound wall is maintained extending a distance of two feet on each side of such equipment and situated either between such equipment and the property line or on said property line.

(2) **Construction noise**. Construction noise is prohibited between the hours of 8:00 p.m. to 7:00 a.m., Monday through Saturday and 6:00 p.m. to 10:00 a.m. on Sundays and federal holidays. Construction noise is defined as noise which is disturbing, excessive or offensive and constitutes a nuisance involving discomfort or annoyance to persons of normal sensitivity residing in the area, which is generated by the use of any tools, machinery or equipment used in connection with construction operations.

(3) **Noise devices**. In accordance with Chapter 9.24, no loudspeaker, bells, gongs, buzzers, mechanical equipment or other sounds, attention-attracting or communication device associated with any use adjacent to residential or sensitive land uses shall be discernible beyond the boundary line of the parcel, except fire protection devices, burglar alarms and church bells. Noise generated by these sources shall be enforced by the Police Department.

(4) **Noisy animals**. Noise generated by animals shall be regulated by the Police Department in accordance with Chapter 6.11.

(E) **Exemptions**. The following activities shall be exempt from these noise standards:

(1) Special events pursuant to an approved special use permit. Noise impacts shall be evaluated and conditioned as part of the special use permit;

(2) Filming pursuant to a film permit. Noise impacts shall be evaluated and conditioned as part of the film permit;

(3) Activities conducted on public parks, public playgrounds and public or private school grounds, including school athletic and entertainment events that are conducted under the sanction of the school or which a license or permit has been duly issued pursuant to any provision of city code;

(4) Noise sources associated with the maintenance of real property, provided the activities take place between the hours of 7:00 a.m. to 8:00 p.m. on any day except Sunday or between the hours of 9:00 a.m. to 8:00 p.m. on Sunday;

(5) Any activity too the extent regulation thereof has been preempted by state or federal law;

(6) Repairs to and replacement of mechanical equipment in residential zones installed by permit prior to May 20, 1993 shall be exempt from the requirements in division (D) of this section;

(7) Noise variances granted pursuant to subsection (H)(1) below.

(F) **Noise level measurements**. All noise shall be measured in accordance with the following standards. Measurements shall be taken of the ambient noise level and any alleged offensive noise. If the measurement location is on the boundary of two different noise zones, the lower noise level standard shall apply.

(1) **Sound level meter**. A sound level meter shall mean an instrument meeting the American National Standards Institute's S1.4 - 1971 for Type 1 sound level meters or an instrument and the associated recording and analyzing equipment which will provide equivalent data.

(2) **Ambient noise**. A measurement of the ambient noise level shall be taken according to the procedures in this chapter. If the ambient noise level exceeds the standard, the ambient level shall be the standard. If an alleged intruding noise source is continuous and cannot be reasonably discontinued or stopped for a time period whereby the ambient noise level can be determined, the measured noise level obtained while the alleged intruding noise source is in operation shall be compared directly to the applicable noise level standard.

(G) **Noise studies required**. As referenced in division (C) of this section, there are essentially two different types of noise sources that have been identified in Corona and each has its own noise metrics as

well as its own required noise studies. The noise metrics used for transportation related noise sources is the CNEL which is a 24 hour time weighted average noise level. The noise metrics used for stationary sources are defined as noise levels that cannot be exceeded for certain percentages of time.

(1) **Predevelopment noise studies**. A predevelopment noise study is performed prior to development and is designed to project future noise levels and recommend mitigation measures to be implemented in project development. All noise studies shall be prepared by a registered noise engineer as approved by the city. Noise studies will be required for the construction of master planned roadways, for development adjacent to master planned roadways, when a noise generating use, such as a factory, is proposed in proximity to residential uses and when residential uses are proposed in proximity to an existing noise source. The need for a noise study will be determined at development plan review. Predevelopment noise studies shall project future noise levels based on proposed uses, traffic volumes and other relevant future conditions. Existing and projected noise shall be evaluated pursuant to the noise standards within this chapter and the noise element of the General Plan. Mitigation measures shall be proposed to bring noise levels into compliance with these standards. Mitigation measures may consist of walls, berms, setbacks, landscaping, building materials, construction methods and any other means whereby noise can be reduced to the maximum amounts within this chapter.

(2) **Studies of existing stationary noise**. At times it will be necessary to study the noise generated by an existing source, either due to alleged violations of the noise ordinance or for monitoring purposes. These noise studies shall be prepared by a registered noise engineer as approved by the city in accordance with the standards in Table 1.

(H) **Noise variance**.

(1) The owner or operator of a noise or vibration source which violates any of the provisions of this chapter may file an application with the Community Development Department for a variance from the provisions thereof wherein said owner or operator shall set forth all actions taken to comply with the provisions, the reasons why immediate compliance cannot be achieved, a proposed method of achieving compliance and a proposed time schedule for its accomplishment. The application shall be accompanied by a fee as determined by City Council resolution. A separate application shall be filed for each noise source; provided, however, that several fixed sources on a single property may be combined into one application. An application for a variance shall remain subject to prosecution under the terms of this chapter until a variance is granted.

(2) The Board of Zoning Adjustment shall evaluate all applications for variance from the requirements of this chapter and may grant the variances with respect to time for compliance, subject to such terms, conditions and requirements as it may deem reasonable to achieve maximum compliance with the provisions of this chapter. The terms, conditions and requirements may include, but shall not be limited to, limitations on noise levels and operating hours. Each such variance shall set forth in detail the approved method of achieving maximum compliance and a time schedule for its accomplishment. In its determinations, the Board shall consider the following:

(a) The magnitude of the nuisance caused by the offensive noise;

(b) The uses of property within the area of impingement by the noise;

(c) The time factors related to study, design, financing and construction of remedial work;

(d) The economic factors related to age and useful life of the equipment;

(e) The general public interest, welfare and safety.

(3) Any variance granted by the Board shall be by resolution and shall be transmitted to the Code Enforcement Officer for enforcement. Any violation of the terms of the variance shall be unlawful and enforced pursuant to division (I) of this section.

(I) **Enforcement**.

(1) It shall be unlawful for any person at any location within the City of Corona to create any exterior noise or to allow the creation of any noise on property owned, leased, occupied or otherwise controlled by such person, which causes the noise level when measured according to this chapter to exceed the maximum allowable noise levels in Table 1 of § 17.84.040(C).

(2) No person shall interfere with, oppose or resist any authorized person charged with the enforcement of this chapter while such person is engaged in the performance of his or her duty.

(3) Any person violating any provision of this chapter shall be deemed guilty of a misdemeanor.

(4) The operation or maintenance of any device, instrument, vehicle or machinery in violation of any noise standard identified in this chapter is declared to be a public nuisance and may be abated pursuant to the nuisance abatement procedure in Chapter 8.32 of this code.

(5) Pursuant to § 1.08.020(A) of this code, each person shall be deemed guilty of a separate offense for each and every day during any portion of which any violation of any provision of this chapter is committed, continued or permitted by such person and shall be punished accordingly.

(`78 Code, § 17.84.040.) (Ord. 2372 § 2, 1999; Ord. 2161 § 1 (part), 1993.)

17.84.050 Vibration.

It shall be unlawful for any person to create, maintain or cause any ground vibration which is perceptible without instruments at any point on any affected property adjoining the property on which the vibration source is located. For the purposes of this section, the perception threshold shall be presumed to be more than 0.05 inches per second RMS vertical velocity.

(`78 Code, § 17.84.050.) (Ord. 2161 § 1 (part), 1993.)

17.84.060 Dust, smoke, glare – Emission.

The emission of dust, odor, smoke and glare shall conform to the standards established by the South Coast Air Quality Management District. Every use shall be so operated that it does not emit dust, odor, heat or glare in such quantities or degree as to be readily detectable on any boundary line of the lot on which the use is located.

(`78 Code, § 17.84.060.) (Ord. 2161 § 1 (part), 1993.)

17.84.070 Glare.

Glare from arc welding, acetylene torch cutting or similar processes shall be performed so as not to be seen from any point beyond the boundary line of the property. All areas of exterior lighting shall be designed to direct light downward with minimal spillover onto adjacent residences, sensitive land uses and open space.

(`78 Code, § 17.84.070.) (Ord. 2161 § 1 (part), 1993.)

17.84.080 Underground storage tanks.

Notwithstanding any provision of this code to the contrary, no underground tank for the storage of any type of chemical, gasoline, fuel, oil or other petroleum product shall be constructed within 500 feet of a well owned or operated by the City of Corona which supplies drinking water. Reconstruction or replacement of any underground storage tank, basin, or skimming pond existing within 500 feet of a well supplying drinking water as of the effective date of this chapter shall be subject to the review and approval of the General Manager of the Department of Water and Power, or his or her designee. The General Manager shall require:

(A) Testing of the tank site to ascertain whether contamination exists, and at what depth;

(B) That all testing and analysis be performed in accordance with California Environmental Protection Agency and U.S. Environment Protection Agency standards and methods by a qualified person, with laboratory certification of the test results; and

(C) That the removal or reconstruction of the existing tank and installation of any new tank be undertaken in strict compliance with all applicable federal, state, and local statutes, regulations, standards, and requirements.

(Ord. 2971 § 1 (part), 2009.)

APPENDIX 5.1

Study Area Photos

Long Term Measurement L1

Long Term Measurement L1

Long Term Measurement L1

Long Term Measurement L1

Long Term Measurement L1

Long Term Measurement L1

Long Term Measurement L1

Long Term Measurement L1

Long Term Measurement L1

Long Term Measurement L1

Long Term Measurement L1

Long Term Measurement L2

Long Term Measurement L2

Long Term Measurement L2

Long Term Measurement L2

Long Term Measurement L2

Long Term Measurement L2

Long Term Measurement L3

Long Term Measurement L3

Long Term Measurement L3

Long Term Measurement L4

Long Term Measurement L4

Long Term Measurement L4

Long Term Measurement L4

Long Term Measurement L5

Long Term Measurement L5

Long Term Measurement L5

Long Term Measurement L5

Short Term Measurement S1

Short Term Measurement S1

Short Term Measurement S1

Short Term Measurement S1

Short Term Measurement S1

Short Term Measurement S1

Short Term Measurement S1

Short Term Measurement S1

Short Term Measurement S2

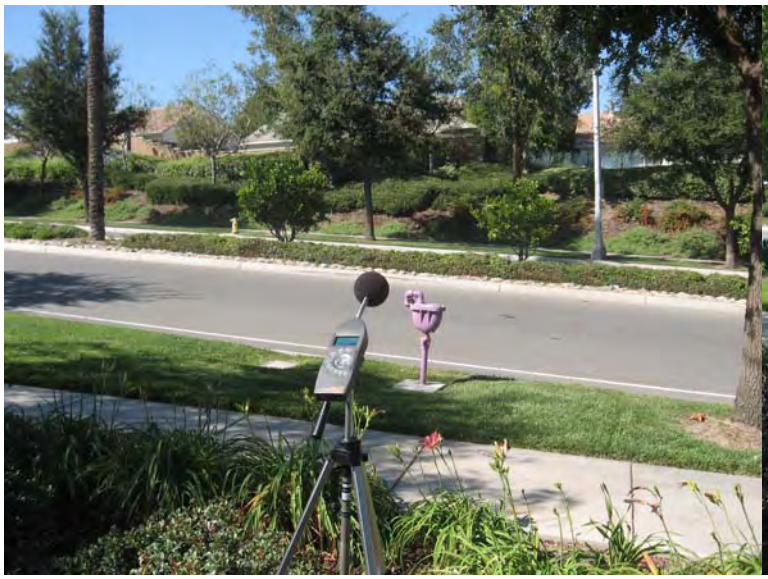
Short Term Measurement S2

Short Term Measurement S2

Short Term Measurement S2

Short Term Measurement S3

Short Term Measurement S3



Short Term Measurement S3

Short Term Measurement S3

Short Term Measurement S3

Short Term Measurement S4

Short Term Measurement S4

Short Term Measurement S4

Short Term Measurement S4

Short Term Measurement S4

Short Term Measurement S4

Short Term Measurement S4

Short Term Measurement S4

Short Term Measurement S4

Short Term Measurement S5

Short Term Measurement S5

Short Term Measurement S5

Short Term Measurement S5

Project Site

Project Site

Project Site

Project Site

Project Site

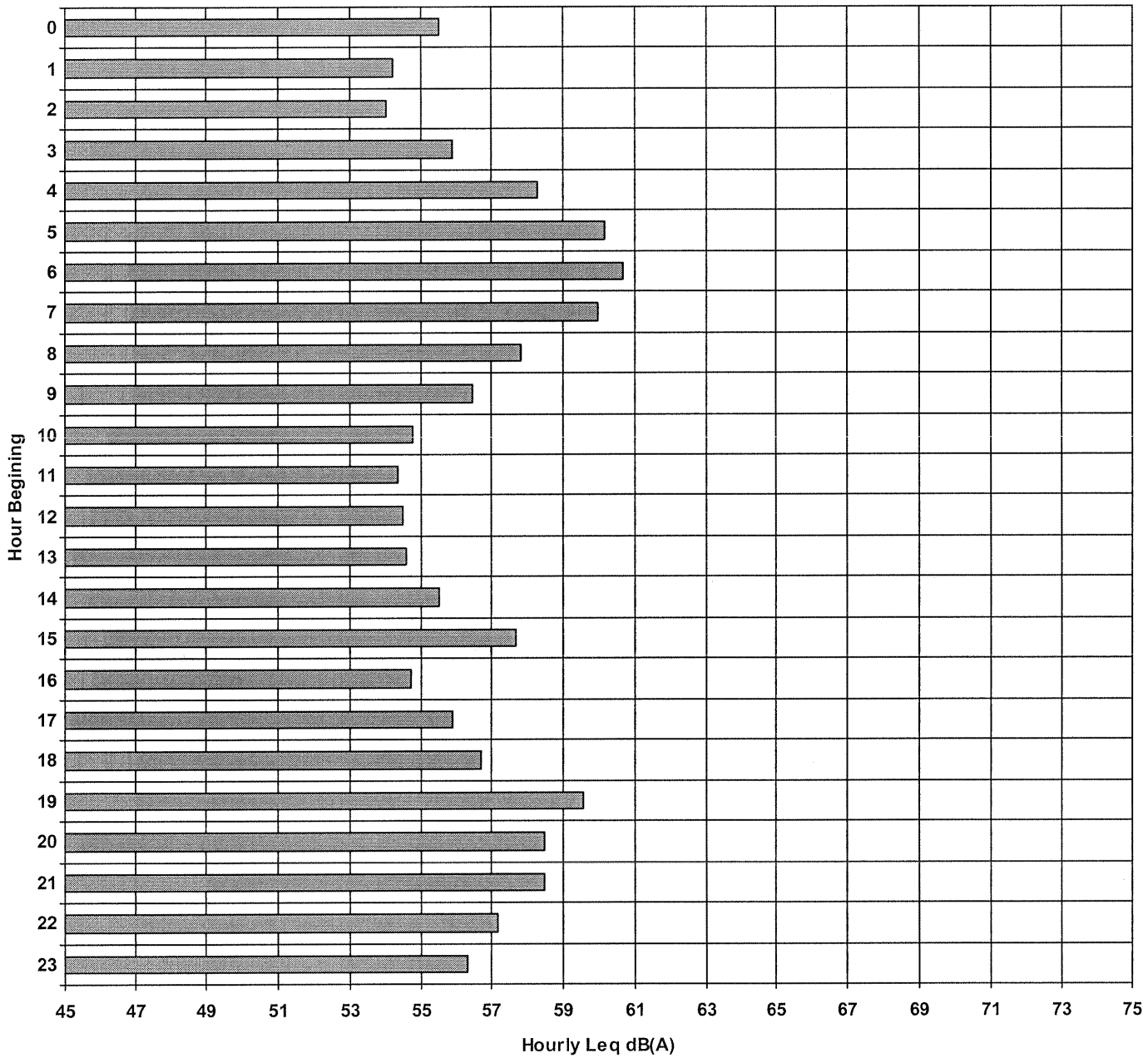
APPENDIX 5.2

Noise Monitoring Data Printouts

24-Hour Noise Level Measurement Summary

Project Name: Arantine Hills Noise Study
Job Number: 06897
Location #: L1
Analyst: J.T. Stephens
Description: Near Cajalco and Bedford Canyon Intersection
Start Date: Wednesday, October 21, 2009

Hourly Leq dB(A) Readings (unadjusted)



Measured Peak Noise Hour: 6

Measured Peak Hour dBA Leq: 60.7

24-Hour Noise Level Measurement Summary

Project Name: Arantine Hills Noise Study
Location #: L1
Description: Near Cajalco and Bedford Canyon Intersection
Start Date: Wednesday, October 21, 2009

Job Number: 06897
Analyst: J.T. Stephens

Leq To CNEL Noise Calculations

Noise Hour	*Hourly Leq*	*CNEL Penalty*	*Adjusted Hourly Leq*
0	55.5	10	65.5
1	54.2	10	64.2
2	54.0	10	64.0
3	55.9	10	65.9
4	58.3	10	68.3
5	60.2	10	70.2
6	60.7	10	70.7
7	60.0	0	60.0
8	57.8	0	57.8
9	56.5	0	56.5
10	54.8	0	54.8
11	54.3	0	54.3
12	54.5	0	54.5
13	54.6	0	54.6
14	55.5	0	55.5
15	57.7	0	57.7
16	54.8	0	54.8
17	55.9	0	55.9
18	56.7	0	56.7
19	59.6	5	64.6
20	58.5	5	63.5
21	58.5	5	63.5
22	57.2	10	67.2
23	56.3	10	66.3

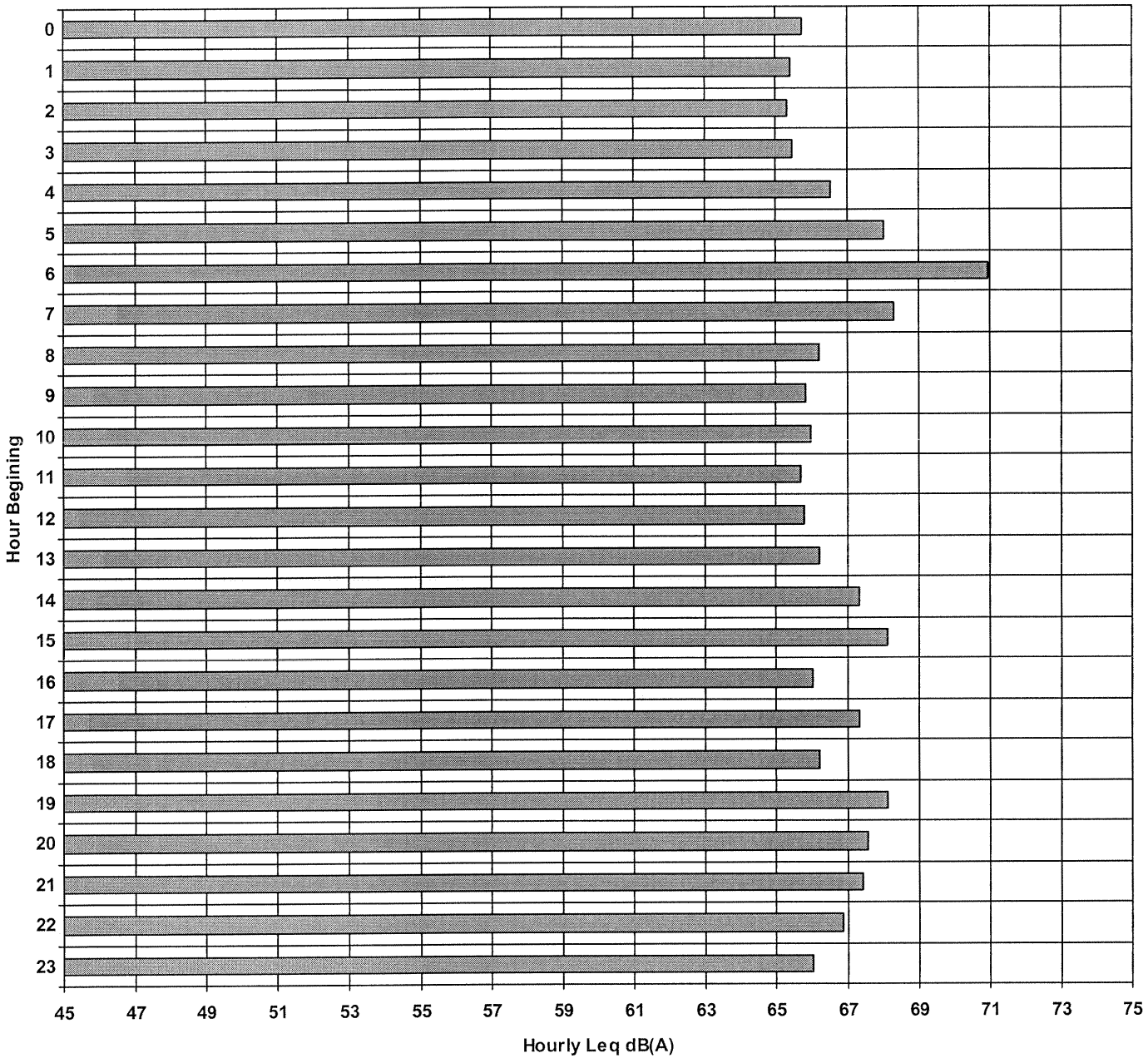
Calculated CNEL: 64.2

24-Hour Noise Level Measurement Summary

Project Name: Arantine Hills Noise Study
Location #: L2
Description: Northeast Portion of Project Site Near I-15
Start Date: Wednesday, October 21, 2009

Job Number: 06897
Analyst: J.T. Stephens

Hourly Leq dB(A) Readings (unadjusted)



Measured Peak Noise Hour: 6

Measured Peak Hour dBA Leq: 71.0

24-Hour Noise Level Measurement Summary

Project Name: Arantine Hills Noise Study
Job Number: 06897
Location #: L2
Analyst: J.T. Stephens
Description: Northeast Portion of Project Site Near I-15
Start Date: Wednesday, October 21, 2009

Leq To CNEL Noise Calculations

Noise Hour	Hourly Leq	CNEL Penalty	Adjusted Hourly Leq
0	65.7	10	75.7
1	65.4	10	75.4
2	65.3	10	75.3
3	65.5	10	75.5
4	66.5	10	76.5
5	68.0	10	78.0
6	71.0	10	81.0
7	68.3	0	68.3
8	66.2	0	66.2
9	65.8	0	65.8
10	66.0	0	66.0
11	65.7	0	65.7
12	65.8	0	65.8
13	66.2	0	66.2
14	67.3	0	67.3
15	68.1	0	68.1
16	66.0	0	66.0
17	67.3	0	67.3
18	66.2	0	66.2
19	68.1	5	73.1
20	67.6	5	72.6
21	67.4	5	72.4
22	66.9	10	76.9
23	66.0	10	76.0

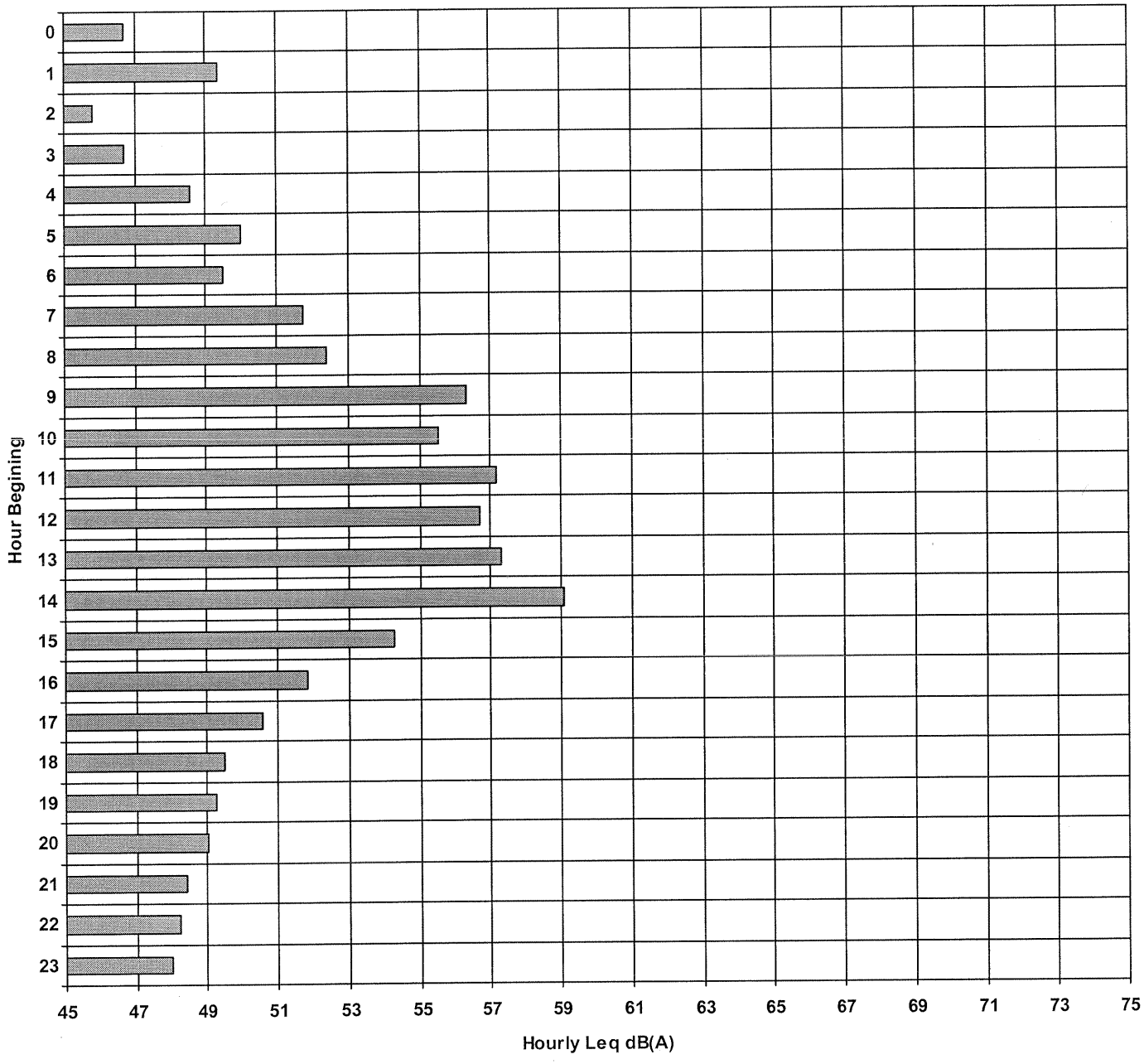
Calculated CNEL: 73.8

24-Hour Noise Level Measurement Summary

Project Name: Arantine Hills Noise Study
Location #: L3
Description: Near Eagle Glen and Castlepeak Intersection
Start Date: Wednesday, October 21, 2009

Job Number: 06897
Analyst: J.T. Stephens

Hourly Leq dB(A) Readings (unadjusted)



Measured Peak Noise Hour: 14

Measured Peak Hour dBA Leq: 59.1

24-Hour Noise Level Measurement Summary

Project Name: Arantine Hills Noise Study
Job Number: 06897
Location #: L3
Analyst: J.T. Stephens
Description: Near Eagle Glen and Castlepeak Intersection
Start Date: Wednesday, October 21, 2009

Leq To CNEL Noise Calculations

Noise Hour	*Hourly Leq*	*CNEL Penalty*	*Adjusted Hourly Leq*
0	46.7	10	56.7
1	49.4	10	59.4
2	45.8	10	55.8
3	46.7	10	56.7
4	48.6	10	58.6
5	50.0	10	60.0
6	49.5	10	59.5
7	51.8	0	51.8
8	52.4	0	52.4
9	56.3	0	56.3
10	55.5	0	55.5
11	57.2	0	57.2
12	56.7	0	56.7
13	57.3	0	57.3
14	59.1	0	59.1
15	54.3	0	54.3
16	51.8	0	51.8
17	50.6	0	50.6
18	49.5	0	49.5
19	49.3	5	54.3
20	49.0	5	54.0
21	48.4	5	53.4
22	48.2	10	58.2
23	48.0	10	58.0

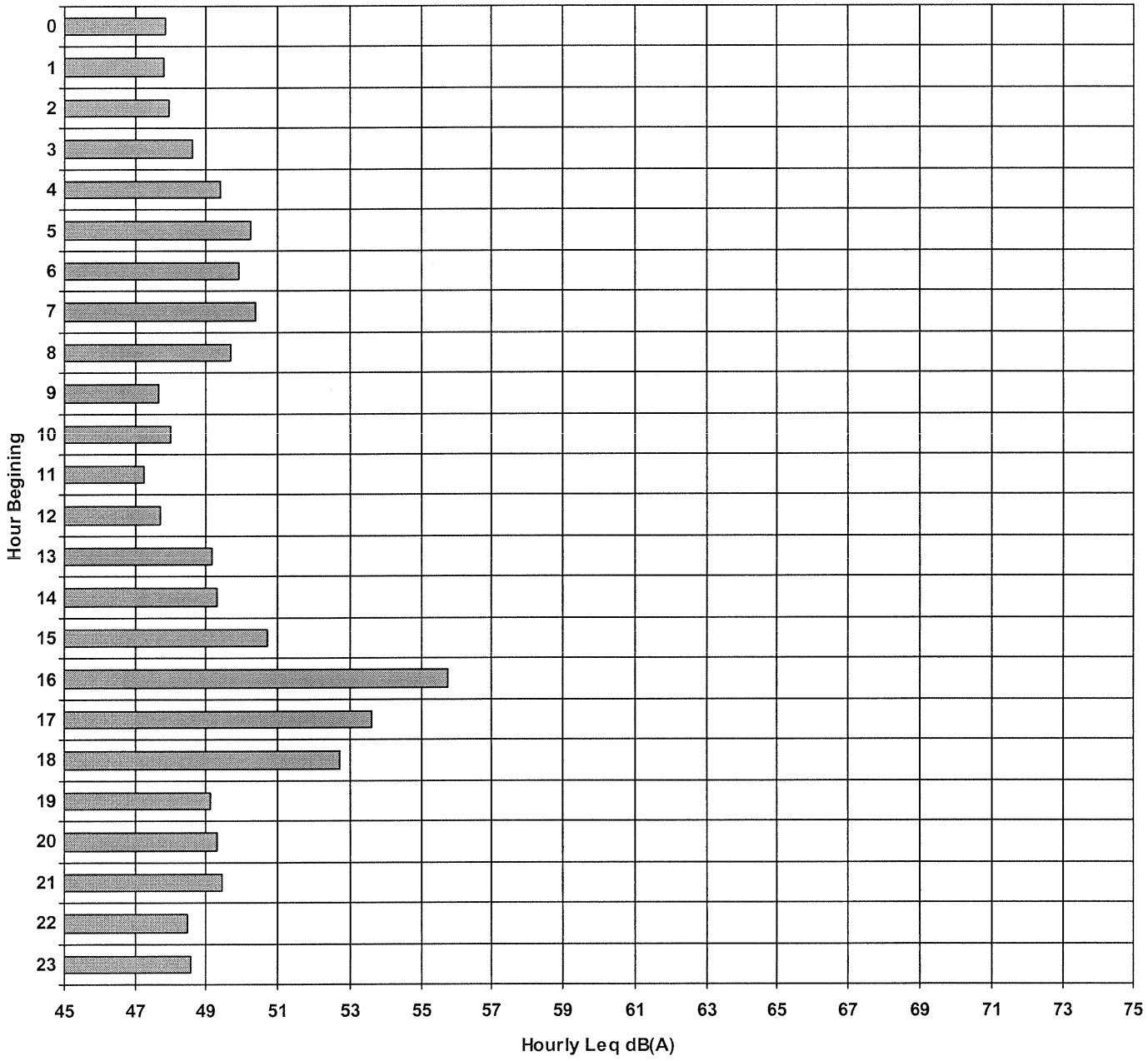
Calculated CNEL: 56.6

24-Hour Noise Level Measurement Summary

Project Name: Arantine Hills Noise Study
Location #: L4
Description: Existing Terminus of Bennett Avenue
Start Date: Wednesday, October 21, 2009

Job Number: 06897
Analyst: J.T. Stephens

Hourly Leq dB(A) Readings (unadjusted)



Measured Peak Noise Hour: 16

Measured Peak Hour dBA Leq: 55.8

24-Hour Noise Level Measurement Summary

Project Name: Arantine Hills Noise Study
Location #: L4
Description: Existing Terminus of Bennett Avenue
Start Date: Wednesday, October 21, 2009

Job Number: 06897
Analyst: J.T. Stephens

Leq To CNEL Noise Calculations

Noise Hour	Hourly Leq	CNEL Penalty	Adjusted Hourly Leq
0	47.9	10	57.9
1	47.8	10	57.8
2	48.0	10	58.0
3	48.6	10	58.6
4	49.4	10	59.4
5	50.3	10	60.3
6	49.9	10	59.9
7	50.4	0	50.4
8	49.7	0	49.7
9	47.7	0	47.7
10	48.0	0	48.0
11	47.2	0	47.2
12	47.7	0	47.7
13	49.2	0	49.2
14	49.3	0	49.3
15	50.7	0	50.7
16	55.8	0	55.8
17	53.6	0	53.6
18	52.7	0	52.7
19	49.1	5	54.1
20	49.3	5	54.3
21	49.5	5	54.5
22	48.5	10	58.5
23	48.5	10	58.5

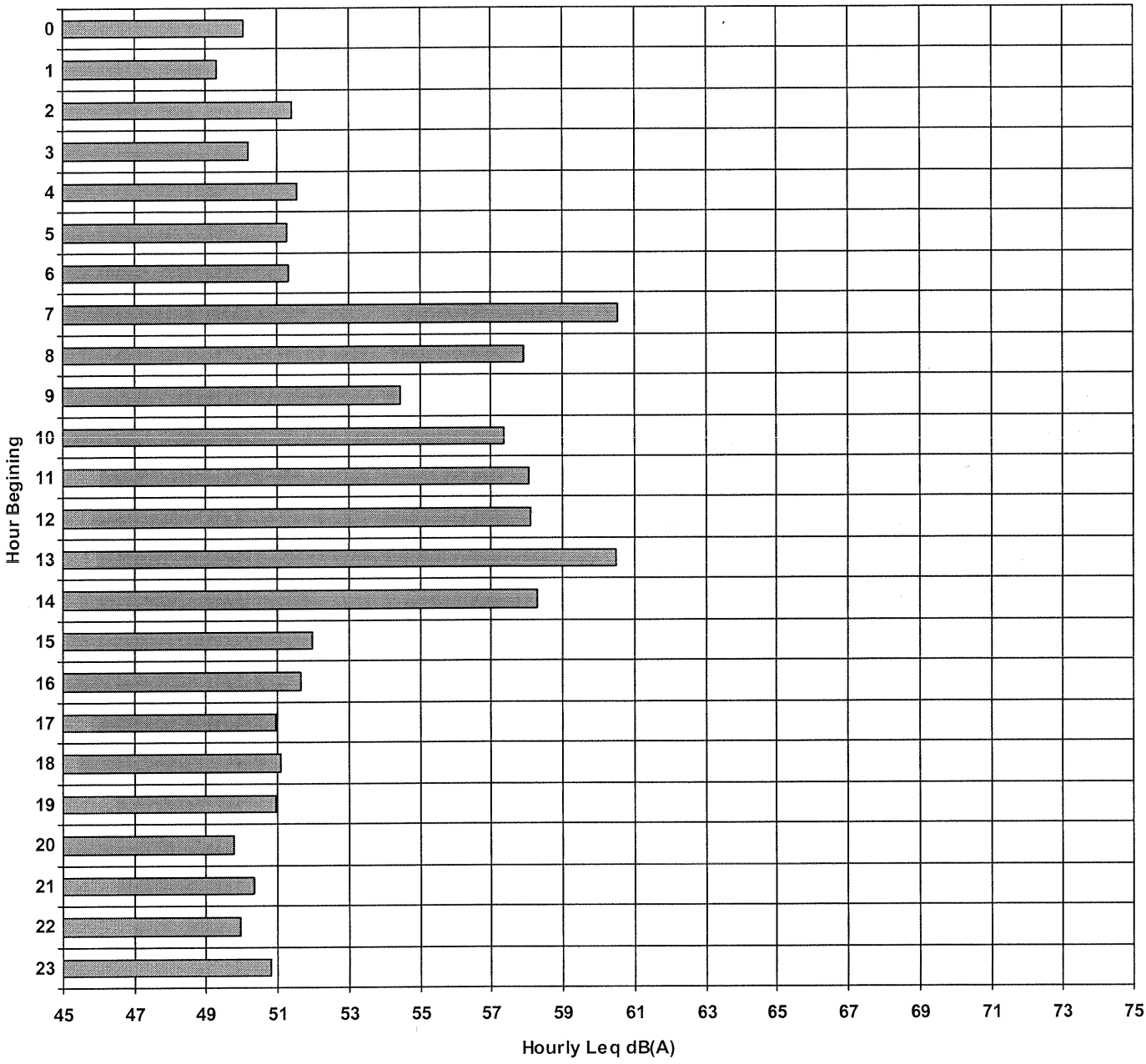
Calculated CNEL: 55.8

24-Hour Noise Level Measurement Summary

Project Name: Arantine Hills Noise Study
Location #: L5
Description: Southwest Corner Near Golf Course
Start Date: Wednesday, October 21, 2009

Job Number: 06897
Analyst: J.T. Stephens

Hourly Leq dB(A) Readings (unadjusted)



Measured Peak Noise Hour: 7

Measured Peak Hour dBA Leq: 60.5

24-Hour Noise Level Measurement Summary

Project Name: Arantine Hills Noise Study
Job Number: 06897
Location #: L5
Analyst: J.T. Stephens
Description: Southwest Corner Near Golf Course
Start Date: Wednesday, October 21, 2009

Leq To CNEL Noise Calculations

Noise Hour	*Hourly Leq*	*CNEL Penalty*	*Adjusted Hourly Leq*
0	50.0	10	60.0
1	49.3	10	59.3
2	51.4	10	61.4
3	50.2	10	60.2
4	51.5	10	61.5
5	51.3	10	61.3
6	51.3	10	61.3
7	60.5	0	60.5
8	57.9	0	57.9
9	54.5	0	54.5
10	57.4	0	57.4
11	58.1	0	58.1
12	58.1	0	58.1
13	60.5	0	60.5
14	58.3	0	58.3
15	52.0	0	52.0
16	51.6	0	51.6
17	50.9	0	50.9
18	51.1	0	51.1
19	50.9	5	55.9
20	49.8	5	54.8
21	50.3	5	55.3
22	49.9	10	59.9
23	50.8	10	60.8

Calculated CNEL: 58.7

File Translated: U:\UcJobs_06600-07000\06800\06897\Fieldwork\Measurements\Short Term\06897_01.slmdl
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Firmware/Software Revs: 4.272 / 3.120
Name: Urban Crossroads
Descr1: Enter Address Line 1
Descr2: Enter Address Line 2
Setup/Setup Descr: slm&rta.ssa / SLM & Real-Time Analyzer
Location:
Note1:
Note2:

Overall Any Data
Start Time: 22-Oct-2009 11:39:22
Elapsed Time: 00:10:00.3

	A Weight		C Weight		Flat	
Leq:	60.5 dBA		69.0 dBC		70.0 dBF	
SEL:	88.3 dBA		96.8 dBC		97.8 dBF	
Peak:	90.6 dBA		94.7 dBC		94.9 dBF	
	22-Oct-2009	11:43:54	22-Oct-2009	11:43:54	22-Oct-2009	11:43:54
Lmax (slow):	77.4 dBA		83.5 dBC		83.7 dBF	
	22-Oct-2009	11:47:47	22-Oct-2009	11:46:52	22-Oct-2009	11:46:52
Lmin (slow):	47.3 dBA		63.1 dBC		64.8 dBF	
	22-Oct-2009	11:48:17	22-Oct-2009	11:41:01	22-Oct-2009	11:45:52
Lmax (fast):	79.3 dBA		84.9 dBC		85.1 dBF	
	22-Oct-2009	11:47:44	22-Oct-2009	11:46:51	22-Oct-2009	11:46:51
Lmin (fast):	46.5 dBA		60.9 dBC		63.0 dBF	
	22-Oct-2009	11:48:17	22-Oct-2009	11:41:00	22-Oct-2009	11:41:00
Lmax (impulse):	79.7 dBA		85.7 dBC		86.0 dBF	
	22-Oct-2009	11:47:44	22-Oct-2009	11:46:51	22-Oct-2009	11:46:51
Lmin (impulse):	47.0 dBA		64.2 dBC		65.4 dBF	
	22-Oct-2009	11:41:00	22-Oct-2009	11:45:52	22-Oct-2009	11:45:52

Spectra

Date	Time	Run Time
22-Oct-2009	11:39:22	00:10:00.3

Hz	Leq1/3	Leq1/1	Max1/3	Max1/1	Min1/3	Min1/1	Hz	Leq1/3	Leq1/1	Max1/3	Max1/1	Min1/3	Min1/1
12.5	57.9		59.5		36.8		630	53.0		73.8		34.3	
16.0	59.2	63.2	64.1	69.8	44.7	47.1	800	52.1		72.5		35.5	
20.0	58.1		67.8		42.2		1000	52.9	56.9	72.7	76.5	35.3	40.0
25.0	58.5		65.3		44.2		1250	51.1		69.0		34.8	
31.5	59.1	63.8	63.5	71.2	46.3	51.3	1600	48.8		64.5		31.3	
40.0	59.5		68.7		48.1		2000	45.7	51.2	61.9	67.3	29.3	34.1
50.0	58.7		62.4		45.8		2500	42.8		60.2		25.5	
63.0	58.8	63.7	64.8	68.4	46.3	51.3	3150	40.9		58.6		23.0	
80.0	59.3		63.4		47.4		4000	38.4	43.7	55.2	61.1	22.8	27.0
100	60.3		72.8		47.8		5000	36.2		53.6		20.3	
125	59.4	63.8	72.7	76.5	47.5	51.4	6300	33.8		50.6		19.7	
160	56.6		68.5		43.6		8000	30.7	36.3	47.8	52.9	19.6	24.5
200	53.9		70.3		40.2		10000	28.2		42.8		20.0	
250	54.1	60.1	70.2	81.0	37.8	43.1	12500	25.5		41.5		20.4	
315	57.1		80.2		36.0		16000	26.4	30.4	35.7	42.8	21.9	26.8
400	51.8		74.1		35.1		20000	24.7		30.8		23.4	
500	50.6	56.7	68.2	77.5	35.8	39.9							

File Translated: U:\UcJobs_06600-07000\06800\06897\Fieldwork\Measurements\Short Term\06897_01.slmdl
Model/Serial Number: 824 / A2629

Overall Spectral Ln's

Hz	L2.00	L8.00	L25.00	L50.00	L90.00	L99.00	Hz	L2.00	L8.00	L25.00	L50.00	L90.00	L99.00
12.5	64.0	61.5	58.5	55.5	50.5	45.5	630	58.5	52.5	46.5	42.0	38.5	37.0
16.0	65.0	62.5	60.0	57.5	52.0	48.0	800	60.0	55.5	48.0	42.5	39.0	37.5
20.0	64.0	61.5	59.0	56.5	51.5	47.5	1000	66.5	57.0	49.5	43.5	40.0	38.0
25.0	64.0	61.5	59.0	56.5	52.5	48.5	1250	63.5	56.0	48.5	42.5	38.0	36.0
31.5	65.5	62.0	59.5	57.0	52.5	49.0	1600	58.0	53.5	46.5	39.5	34.5	33.0
40.0	65.5	62.5	60.0	58.0	54.0	51.0	2000	59.0	50.5	43.0	36.0	31.5	30.0
50.0	64.5	61.5	59.0	57.0	53.0	50.0	2500	51.5	46.5	39.5	33.5	27.5	26.5
63.0	64.0	61.5	59.0	57.0	53.5	50.5	3150	55.0	44.5	37.0	31.0	25.5	24.0
80.0	66.5	62.0	59.0	56.5	53.0	50.0	4000	48.5	41.0	34.5	28.5	24.0	23.0
100	66.5	60.5	57.0	55.0	51.5	49.5	5000	46.0	38.5	31.5	25.5	22.0	21.0
125	68.0	60.5	56.0	54.0	51.0	49.0	6300	43.5	36.0	28.5	23.0	20.5	20.0
160	65.5	57.0	52.5	50.5	47.0	45.0	8000	40.5	32.5	25.5	21.5	20.5	20.0
200	63.5	56.0	51.0	48.0	44.0	42.0	10000	36.5	29.5	23.0	21.0	20.5	20.0
250	64.0	55.0	49.5	46.0	42.0	39.5	12500	33.5	26.5	22.0	21.0	21.0	20.5
315	64.0	53.5	48.0	44.5	40.5	38.5	16000	30.0	25.0	22.5	22.5	22.0	22.0
400	61.0	53.0	46.5	42.5	38.5	36.5	20000	27.5	24.5	24.0	24.0	23.5	23.5
500	60.0	52.0	47.0	42.5	38.5	37.0							

Ln Start Level: 15 dB
L2.00 68.4 dBA L25.00 56.9 dBA L90.00 48.8 dBA
L8.00 63.7 dBA L50.00 52.3 dBA L99.00 47.4 dBA

Detector: Fast
Weighting: A
SPL Exceedance Level 1: 85.0 dB Exceeded: 0 times
SPL Exceedance level 2: 120 dB Exceeded: 0 times
Peak-1 Exceedance Level: 105 dB Exceeded: 0 times
Peak-2 Exceedance Level: 100 dB Exceeded: 0 times
Hysteresis: 2
Overloaded: 0 time(s)
Paused: 0 times for 00:00:00.0

Current Any Data
Start Time: 22-Oct-2009 11:39:22
Elapsed Time: 00:10:00.3

	A Weight		C Weight		Flat	
Leq:	60.5 dBA		69.0 dBC		70.0 dBF	
SEL:	88.3 dBA		96.8 dBC		97.8 dBF	
Peak:	90.6 dBA		94.7 dBC		94.9 dBF	
	22-Oct-2009	11:43:54	22-Oct-2009	11:43:54	22-Oct-2009	11:43:54
Lmax (slow):	77.4 dBA		83.5 dBC		83.7 dBF	
	22-Oct-2009	11:47:47	22-Oct-2009	11:46:52	22-Oct-2009	11:46:52
Lmin (slow):	47.3 dBA		63.1 dBC		64.8 dBF	
	22-Oct-2009	11:48:17	22-Oct-2009	11:41:01	22-Oct-2009	11:45:52
Lmax (fast):	79.3 dBA		84.9 dBC		85.1 dBF	
	22-Oct-2009	11:47:44	22-Oct-2009	11:46:51	22-Oct-2009	11:46:51
Lmin (fast):	46.5 dBA		60.9 dBC		63.0 dBF	
	22-Oct-2009	11:48:17	22-Oct-2009	11:41:00	22-Oct-2009	11:41:00
Lmax (impulse):	79.7 dBA		85.7 dBC		86.0 dBF	
	22-Oct-2009	11:47:44	22-Oct-2009	11:46:51	22-Oct-2009	11:46:51
Lmin (impulse):	47.0 dBA		64.2 dBC		65.4 dBF	
	22-Oct-2009	11:41:00	22-Oct-2009	11:45:52	22-Oct-2009	11:45:52

Calibrated: 22-Oct-2009 11:35:27 Offset: -44.9 dB
Checked: 22-Oct-2009 11:35:27 Level: 114.0 dB
Calibrator not set Level: 114.0 dB
Cal Records Count: 1

Interval Records: Disabled Number Interval Records: 0
History Records: Disabled Number History Records: 0
Run/Stop Records: Number Run/Stop Records: 2

File Translated: U:\UcJobs_06600-07000\06800\06897\Fieldwork\Measurements\Short Term\06897_02.slmdl
Model/Serial Number: 824 / A2629
Firmware/Software Revs: 4.272 / 3.120
Name: Urban Crossroads
Descr1: Enter Address Line 1
Descr2: Enter Address Line 2
Setup/Setup Descr: slm&rta.ssa / SLM & Real-Time Analyzer
Location:
Note1:
Note2:

Overall Any Data
Start Time: 22-Oct-2009 11:59:53
Elapsed Time: 00:10:00.1

	A Weight		C Weight		Flat	
Leq:	60.6 dBA		68.8 dBC		69.5 dBF	
SEL:	88.4 dBA		96.5 dBC		97.3 dBF	
Peak:	87.0 dBA		93.9 dBC		95.2 dBF	
	22-Oct-2009	12:06:42	22-Oct-2009	12:04:55	22-Oct-2009	12:04:55
Lmax (slow):	72.6 dBA		82.8 dBC		83.8 dBF	
	22-Oct-2009	12:03:55	22-Oct-2009	12:04:55	22-Oct-2009	12:04:55
Lmin (slow):	39.8 dBA		52.3 dBC		55.2 dBF	
	22-Oct-2009	12:07:37	22-Oct-2009	12:09:34	22-Oct-2009	12:09:35
Lmax (fast):	75.1 dBA		85.4 dBC		86.5 dBF	
	22-Oct-2009	12:03:55	22-Oct-2009	12:04:55	22-Oct-2009	12:04:55
Lmin (fast):	39.4 dBA		50.5 dBC		52.6 dBF	
	22-Oct-2009	12:07:37	22-Oct-2009	12:09:34	22-Oct-2009	12:09:34
Lmax (impulse):	75.4 dBA		87.1 dBC		88.3 dBF	
	22-Oct-2009	12:03:55	22-Oct-2009	12:04:55	22-Oct-2009	12:04:55
Lmin (impulse):	39.6 dBA		53.0 dBC		56.7 dBF	
	22-Oct-2009	12:07:36	22-Oct-2009	12:09:34	22-Oct-2009	12:09:35

Spectra

Date	Time	Run Time
22-Oct-2009	11:59:53	00:10:00.1

Hz	Leq1/3	Leq1/1	Max1/3	Max1/1	Min1/3	Min1/1	Hz	Leq1/3	Leq1/1	Max1/3	Max1/1	Min1/3	Min1/1
12.5	55.0		69.1		35.6		630	49.9		64.7		29.7	
16.0	56.7	60.4	66.9	72.2	37.6	41.5	800	52.8		65.2		30.7	
20.0	55.1		65.4		36.9		1000	52.4	57.2	65.9	71.0	29.6	34.1
25.0	54.6		63.2		37.7		1250	52.0		67.2		26.9	
31.5	56.4	61.1	68.8	72.2	36.1	40.9	1600	51.5		65.5		22.0	
40.0	57.6		68.5		33.9		2000	49.1	54.2	62.7	68.8	18.1	24.3
50.0	60.2		62.8		35.7		2500	46.0		63.4		16.5	
63.0	58.7	64.8	59.9	71.2	37.4	41.2	3150	42.8		60.2		16.7	
80.0	60.9		70.1		36.1		4000	39.3	45.1	56.2	62.4	18.4	22.6
100	60.1		66.5		35.1		5000	36.8		54.3		18.1	
125	59.6	64.6	71.4	74.4	33.0	38.3	6300	34.4		51.7		19.2	
160	59.7		69.7		31.9		8000	32.7	37.6	49.1	54.4	19.2	24.1
200	52.0		68.7		29.4		10000	30.8		46.4		19.6	
250	49.5	55.0	63.3	70.7	28.8	33.3	12500	28.0		43.9		20.0	
315	48.4		63.3		27.0		16000	26.7	31.7	38.5	45.2	21.3	26.4
400	49.4		65.1		27.5		20000	25.7		31.3		23.1	
500	50.8	54.8	64.7	69.6	28.5	33.4							

File Translated: U:\UcJobs_06600-07000\06800\06897\Fieldwork\Measurements\Short Term\06897_02.slmdl
Model/Serial Number: 824 / A2629

Overall Spectral Ln's

Hz	L2.00	L8.00	L25.00	L50.00	L90.00	L99.00	Hz	L2.00	L8.00	L25.00	L50.00	L90.00	L99.00
12.5	61.0	58.0	55.0	52.0	46.5	41.5	630	58.5	55.5	48.5	40.5	32.5	30.5
16.0	63.5	60.0	57.0	53.5	48.5	43.5	800	61.5	58.0	52.5	44.0	33.0	31.5
20.0	62.5	58.0	54.5	51.5	46.0	41.5	1000	60.5	58.0	52.5	44.5	32.0	30.5
25.0	62.0	57.0	53.0	50.5	45.0	42.0	1250	60.0	57.5	51.5	43.0	29.5	27.5
31.5	65.0	58.5	53.5	49.5	44.5	41.0	1600	60.0	57.0	51.0	42.0	25.0	23.0
40.0	67.0	60.5	55.5	51.0	44.5	41.0	2000	57.5	54.5	48.5	39.5	22.0	18.5
50.0	68.5	61.0	55.0	50.5	44.0	40.0	2500	54.5	51.0	44.5	36.0	19.5	17.0
63.0	68.0	62.0	55.0	50.5	44.0	40.0	3150	51.0	47.5	41.0	32.0	19.0	17.5
80.0	69.0	63.0	56.0	50.5	43.0	39.0	4000	47.5	43.5	37.0	28.5	21.0	19.5
100	70.0	62.5	55.5	50.0	41.5	37.5	5000	44.5	40.5	33.5	26.0	19.0	18.5
125	69.5	63.0	56.0	50.5	40.5	36.0	6300	42.0	37.5	30.5	24.0	20.0	19.5
160	70.0	61.5	54.0	48.5	38.5	34.5	8000	39.5	34.5	27.0	21.5	19.5	19.5
200	60.5	56.5	50.5	45.5	36.5	32.5	10000	35.5	30.5	23.5	20.5	20.0	19.5
250	58.5	54.0	48.0	42.0	34.0	31.0	12500	31.0	27.0	21.5	20.5	20.0	20.0
315	57.5	53.0	45.5	38.5	31.5	29.0	16000	28.5	25.0	22.5	22.0	21.5	21.5
400	59.0	54.0	46.5	37.5	30.0	28.0	20000	26.0	24.5	23.5	23.5	23.0	23.0
500	60.0	56.0	49.0	38.5	31.5	30.0							

Ln Start Level: 15 dB
L2.00 68.7 dBA L25.00 61.2 dBA L90.00 41.8 dBA
L8.00 66.0 dBA L50.00 53.7 dBA L99.00 40.0 dBA

Detector: Fast
Weighting: A
SPL Exceedance Level 1: 85.0 dB Exceeded: 0 times
SPL Exceedance level 2: 120 dB Exceeded: 0 times
Peak-1 Exceedance Level: 105 dB Exceeded: 0 times
Peak-2 Exceedance Level: 100 dB Exceeded: 0 times
Hysteresis: 2
Overloaded: 0 time(s)
Paused: 0 times for 00:00:00.0

Current Any Data
Start Time: 22-Oct-2009 11:59:53
Elapsed Time: 00:10:00.1

	A Weight		C Weight		Flat	
Leq:	60.6 dBA		68.8 dBC		69.5 dBF	
SEL:	88.4 dBA		96.5 dBC		97.3 dBF	
Peak:	87.0 dBA		93.9 dBC		95.2 dBF	
	22-Oct-2009	12:06:42	22-Oct-2009	12:04:55	22-Oct-2009	12:04:55
Lmax (slow):	72.6 dBA		82.8 dBC		83.8 dBF	
	22-Oct-2009	12:03:55	22-Oct-2009	12:04:55	22-Oct-2009	12:04:55
Lmin (slow):	39.8 dBA		52.3 dBC		55.2 dBF	
	22-Oct-2009	12:07:37	22-Oct-2009	12:09:34	22-Oct-2009	12:09:35
Lmax (fast):	75.1 dBA		85.4 dBC		86.5 dBF	
	22-Oct-2009	12:03:55	22-Oct-2009	12:04:55	22-Oct-2009	12:04:55
Lmin (fast):	39.4 dBA		50.5 dBC		52.6 dBF	
	22-Oct-2009	12:07:37	22-Oct-2009	12:09:34	22-Oct-2009	12:09:34
Lmax (impulse):	75.4 dBA		87.1 dBC		88.3 dBF	
	22-Oct-2009	12:03:55	22-Oct-2009	12:04:55	22-Oct-2009	12:04:55
Lmin (impulse):	39.6 dBA		53.0 dBC		56.7 dBF	
	22-Oct-2009	12:07:36	22-Oct-2009	12:09:34	22-Oct-2009	12:09:35

Calibrated: 22-Oct-2009 11:35:27 Offset: -44.9 dB
Checked: 22-Oct-2009 11:35:27 Level: 114.0 dB
Calibrator not set Level: 114.0 dB
Cal Records Count: 0

Interval Records: Disabled Number Interval Records: 0
History Records: Disabled Number History Records: 0
Run/Stop Records: Number Run/Stop Records: 2

File Translated: U:\UcJobs_06600-07000\06800\06897\Fieldwork\Measurements\Short Term\06897_03.slmdl
Model/Serial Number: 824 / A2629
Firmware/Software Revs: 4.272 / 3.120
Name: Urban Crossroads
Descr1: Enter Address Line 1
Descr2: Enter Address Line 2
Setup/Setup Descr: slm&rta.ssa / SLM & Real-Time Analyzer
Location:
Note1:
Note2:

Overall Any Data
Start Time: 22-Oct-2009 12:14:14
Elapsed Time: 00:10:00.1

	A Weight		C Weight		Flat	
Leq:	64.7 dBA		72.1 dBC		72.6 dBF	
SEL:	92.5 dBA		99.9 dBC		100.4 dBF	
Peak:	87.1 dBA		94.4 dBC		94.7 dBF	
	22-Oct-2009	12:23:35	22-Oct-2009	12:16:25	22-Oct-2009	12:16:25
Lmax (slow):	73.4 dBA		84.6 dBC		85.1 dBF	
	22-Oct-2009	12:23:36	22-Oct-2009	12:16:25	22-Oct-2009	12:16:25
Lmin (slow):	46.7 dBA		61.6 dBC		63.1 dBF	
	22-Oct-2009	12:14:38	22-Oct-2009	12:14:37	22-Oct-2009	12:15:44
Lmax (fast):	75.2 dBA		86.0 dBC		86.5 dBF	
	22-Oct-2009	12:23:35	22-Oct-2009	12:16:25	22-Oct-2009	12:16:25
Lmin (fast):	45.7 dBA		60.0 dBC		61.6 dBF	
	22-Oct-2009	12:14:36	22-Oct-2009	12:14:37	22-Oct-2009	12:15:42
Lmax (impulse):	75.9 dBA		87.5 dBC		87.9 dBF	
	22-Oct-2009	12:23:35	22-Oct-2009	12:16:25	22-Oct-2009	12:16:25
Lmin (impulse):	46.3 dBA		62.6 dBC		64.0 dBF	
	22-Oct-2009	12:14:36	22-Oct-2009	12:14:37	22-Oct-2009	12:21:20

Spectra

Date	Time	Run Time
22-Oct-2009	12:14:14	00:10:00.1

Hz	Leq1/3	Leq1/1	Max1/3	Max1/1	Min1/3	Min1/1	Hz	Leq1/3	Leq1/1	Max1/3	Max1/1	Min1/3	Min1/1
12.5	55.8		60.8		36.6		630	54.3		71.7		35.8	
16.0	57.8	61.7	63.8	67.2	37.5	41.9	800	54.7		66.7		37.7	
20.0	56.9		62.2		37.1		1000	56.0	60.6	64.3	70.1	36.8	41.3
25.0	57.1		62.6		43.3		1250	56.7		64.5		34.6	
31.5	57.9	63.0	64.4	68.0	44.9	49.4	1600	56.1		61.3		29.9	
40.0	59.4		62.4		45.5		2000	53.6	58.7	60.0	64.9	25.0	31.5
50.0	60.1		64.5		44.0		2500	50.3		58.8		20.7	
63.0	62.0	66.9	61.7	72.1	43.8	50.3	3150	46.9		55.6		17.6	
80.0	63.5		70.7		47.6		4000	43.4	49.2	49.8	57.4	19.1	23.1
100	65.0		71.0		45.7		5000	41.1		49.6		18.2	
125	64.2	68.4	66.1	73.0	43.5	48.6	6300	39.2		47.6		19.2	
160	60.6		65.4		41.3		8000	36.8	41.9	46.4	50.5	19.3	24.1
200	58.1		60.4		38.6		10000	33.8		40.2		19.5	
250	57.1	61.5	63.1	72.1	36.0	41.3	12500	29.6		36.5		19.8	
315	54.0		71.2		33.4		16000	26.7	32.3	31.8	38.2	21.4	26.4
400	53.6		63.0		32.9		20000	25.0		27.8		23.1	
500	54.4	58.9	71.9	75.1	36.3	40.0							

File Translated: U:\UcJobs_06600-07000\06800\06897\Fieldwork\Measurements\Short Term\06897_03.slmdl
Model/Serial Number: 824 / A2629

Overall Spectral Ln's

Hz	L2.00	L8.00	L25.00	L50.00	L90.00	L99.00	Hz	L2.00	L8.00	L25.00	L50.00	L90.00	L99.00
12.5	62.5	59.5	56.0	53.5	47.5	43.0	630	61.0	58.5	55.0	49.5	42.0	38.5
16.0	65.0	61.5	58.0	54.5	49.0	44.5	800	62.0	59.0	55.5	51.0	43.5	40.0
20.0	63.0	60.5	57.0	54.5	49.5	45.5	1000	63.0	60.5	56.5	52.5	43.5	39.5
25.0	62.5	60.5	57.5	55.0	50.5	47.5	1250	63.5	61.5	57.5	52.0	43.0	37.5
31.5	64.5	61.0	58.0	55.5	51.0	47.5	1600	63.0	61.0	57.5	50.5	40.5	32.5
40.0	65.5	62.5	59.0	56.5	52.5	49.0	2000	61.0	58.5	54.5	48.5	36.5	28.0
50.0	67.5	63.5	59.0	56.0	51.0	47.5	2500	57.5	55.0	51.0	45.5	32.0	22.0
63.0	69.0	63.5	59.5	56.5	51.5	48.0	3150	54.0	51.0	47.5	41.5	27.5	20.0
80.0	71.0	65.5	61.0	57.5	53.5	50.5	4000	50.0	47.0	44.0	37.5	24.5	20.0
100	75.0	67.5	61.0	57.0	52.0	48.5	5000	47.5	44.0	40.0	34.5	22.5	19.0
125	74.5	67.5	60.5	56.5	50.5	47.0	6300	45.5	41.0	36.5	30.5	20.5	19.5
160	69.5	64.0	59.0	55.0	48.5	44.5	8000	42.5	38.0	32.5	26.0	20.0	19.5
200	66.5	61.5	57.5	54.0	46.5	42.0	10000	38.0	34.0	28.5	23.0	20.0	19.5
250	64.5	59.5	55.0	51.0	43.0	38.5	12500	34.0	29.5	24.5	21.0	20.0	20.0
315	62.0	58.0	53.5	48.5	39.5	35.0	16000	31.0	26.5	23.0	22.0	21.5	21.5
400	61.5	58.0	54.0	49.0	39.5	36.0	20000	27.5	25.0	24.0	23.5	23.0	23.0
500	62.0	58.5	55.0	50.0	41.0	37.5							

Ln Start Level: 15 dB

L2.00	71.3 dBA	L25.00	66.2 dBA	L90.00	52.4 dBA
L8.00	69.6 dBA	L50.00	61.1 dBA	L99.00	48.5 dBA

Detector: Fast
Weighting: A
SPL Exceedance Level 1: 85.0 dB Exceeded: 0 times
SPL Exceedance level 2: 120 dB Exceeded: 0 times
Peak-1 Exceedance Level: 105 dB Exceeded: 0 times
Peak-2 Exceedance Level: 100 dB Exceeded: 0 times
Hysteresis: 2
Overloaded: 0 time(s)
Paused: 0 times for 00:00:00.0

Current Any Data
Start Time: 22-Oct-2009 12:14:14
Elapsed Time: 00:10:00.1

	A Weight		C Weight		Flat	
Leq:	64.7 dBA		72.1 dBC		72.6 dBF	
SEL:	92.5 dBA		99.9 dBC		100.4 dBF	
Peak:	87.1 dBA		94.4 dBC		94.7 dBF	
	22-Oct-2009	12:23:35	22-Oct-2009	12:16:25	22-Oct-2009	12:16:25
Lmax (slow):	73.4 dBA		84.6 dBC		85.1 dBF	
	22-Oct-2009	12:23:36	22-Oct-2009	12:16:25	22-Oct-2009	12:16:25
Lmin (slow):	46.7 dBA		61.6 dBC		63.1 dBF	
	22-Oct-2009	12:14:38	22-Oct-2009	12:14:37	22-Oct-2009	12:15:44
Lmax (fast):	75.2 dBA		86.0 dBC		86.5 dBF	
	22-Oct-2009	12:23:35	22-Oct-2009	12:16:25	22-Oct-2009	12:16:25
Lmin (fast):	45.7 dBA		60.0 dBC		61.6 dBF	
	22-Oct-2009	12:14:36	22-Oct-2009	12:14:37	22-Oct-2009	12:15:42
Lmax (impulse):	75.9 dBA		87.5 dBC		87.9 dBF	
	22-Oct-2009	12:23:35	22-Oct-2009	12:16:25	22-Oct-2009	12:16:25
Lmin (impulse):	46.3 dBA		62.6 dBC		64.0 dBF	
	22-Oct-2009	12:14:36	22-Oct-2009	12:14:37	22-Oct-2009	12:21:20

Calibrated: 22-Oct-2009 11:35:27 Offset: -44.9 dB
Checked: 22-Oct-2009 11:35:27 Level: 114.0 dB
Calibrator not set Level: 114.0 dB
Cal Records Count: 0

Interval Records: Disabled Number Interval Records: 0
History Records: Disabled Number History Records: 0
Run/Stop Records: Number Run/Stop Records: 2

File Translated: U:\UcJobs_06600-07000\06800\06897\Fieldwork\Measurements\Short Term\06897_04.slmdl
Model/Serial Number: 824 / A2629
Firmware/Software Revs: 4.272 / 3.120
Name: Urban Crossroads
Descr1: Enter Address Line 1
Descr2: Enter Address Line 2
Setup/Setup Descr: slm&rta.ssa / SLM & Real-Time Analyzer
Location:
Note1:
Note2:

Overall Any Data
Start Time: 22-Oct-2009 13:56:19
Elapsed Time: 00:10:00.2

	A Weight		C Weight		Flat	
Leq:	71.5 dBA		75.7 dBC		76.9 dBF	
SEL:	99.3 dBA		103.5 dBC		104.7 dBF	
Peak:	89.5 dBA		93.0 dBC		94.9 dBF	
	22-Oct-2009	13:59:06	22-Oct-2009	14:01:30	22-Oct-2009	14:00:42
Lmax (slow):	76.8 dBA		79.9 dBC		83.2 dBF	
	22-Oct-2009	13:56:19	22-Oct-2009	13:58:14	22-Oct-2009	14:05:11
Lmin (slow):	65.9 dBA		69.9 dBC		70.7 dBF	
	22-Oct-2009	13:57:20	22-Oct-2009	13:58:35	22-Oct-2009	13:58:35
Lmax (fast):	77.3 dBA		81.1 dBC		87.7 dBF	
	22-Oct-2009	14:03:36	22-Oct-2009	14:02:18	22-Oct-2009	14:00:42
Lmin (fast):	63.8 dBA		68.3 dBC		69.5 dBF	
	22-Oct-2009	13:58:41	22-Oct-2009	13:58:33	22-Oct-2009	13:58:33
Lmax (impulse):	78.9 dBA		84.6 dBC		90.4 dBF	
	22-Oct-2009	14:03:36	22-Oct-2009	14:01:30	22-Oct-2009	14:00:42
Lmin (impulse):	65.5 dBA		70.0 dBC		70.7 dBF	
	22-Oct-2009	13:57:20	22-Oct-2009	13:58:35	22-Oct-2009	13:58:35

Spectra

Date	Time	Run Time
22-Oct-2009	13:56:19	00:10:00.2

Hz	Leq1/3	Leq1/1	Max1/3	Max1/1	Min1/3	Min1/1	Hz	Leq1/3	Leq1/1	Max1/3	Max1/1	Min1/3	Min1/1
12.5	67.1		70.2		46.5		630	64.1		69.5		53.5	
16.0	66.6	71.5	68.6	74.4	48.7	52.1	800	65.4		72.8		55.0	
20.0	66.5		70.0		46.4		1000	65.1	69.5	71.4	75.9	55.5	60.0
25.0	65.4		69.5		50.9		1250	63.3		68.1		55.3	
31.5	63.6	68.7	67.6	72.5	49.8	55.1	1600	60.1		63.0		52.6	
40.0	62.4		65.0		50.1		2000	56.1	62.1	60.5	65.4	47.4	54.1
50.0	61.9		64.5		48.8		2500	52.4		55.7		42.4	
63.0	63.6	68.5	63.8	69.3	50.5	54.5	3150	48.7		51.9		36.8	
80.0	65.2		65.1		49.8		4000	43.6	50.2	47.5	53.6	30.9	38.0
100	63.9		67.1		52.7		5000	38.8		41.9		25.6	
125	63.2	67.9	65.0	70.6	53.6	57.5	6300	33.9		39.8		22.2	
160	62.1		65.1		51.6		8000	29.2	35.7	31.8	40.6	20.7	25.9
200	59.3		63.9		49.3		10000	26.5		25.9		20.4	
250	59.9	64.4	63.2	68.6	50.5	54.7	12500	25.1		24.4		20.4	
315	59.7		64.3		49.8		16000	24.9	29.8	24.3	29.6	21.8	26.8
400	60.3		64.1		50.9		20000	25.0		25.6		23.4	
500	62.8	67.4	67.8	72.4	52.8	57.3							

File Translated: U:\UcJobs_06600-07000\06800\06897\Fieldwork\Measurements\Short Term\06897_04.slmdl
Model/Serial Number: 824 / A2629

Overall Spectral Ln's

Hz	L2.00	L8.00	L25.00	L50.00	L90.00	L99.00	Hz	L2.00	L8.00	L25.00	L50.00	L90.00	L99.00
12.5	75.0	70.5	66.5	63.0	56.5	51.5	630	68.5	67.0	65.0	63.0	59.5	56.5
16.0	73.5	70.5	66.5	63.5	58.0	52.5	800	69.0	68.0	66.0	64.5	61.5	58.0
20.0	73.5	70.5	67.0	64.0	58.5	53.5	1000	68.5	67.0	66.0	64.5	61.5	58.0
25.0	72.0	69.0	65.5	63.0	58.0	54.0	1250	66.5	65.0	64.0	62.5	60.0	57.5
31.5	69.5	67.0	64.0	62.0	57.5	54.0	1600	63.0	62.0	60.5	59.5	57.0	54.0
40.0	68.0	65.5	63.0	60.5	56.5	53.5	2000	59.5	58.5	57.0	55.5	52.5	49.5
50.0	67.5	65.0	62.5	60.5	56.5	53.5	2500	56.5	54.5	53.0	51.5	48.5	45.0
63.0	70.0	67.5	64.0	61.5	57.5	54.0	3150	53.5	51.0	49.0	47.5	44.0	40.5
80.0	72.5	68.5	64.5	62.5	58.5	55.0	4000	49.0	46.0	44.0	42.0	38.5	34.0
100	70.0	67.5	64.5	62.0	58.0	55.5	5000	45.0	41.5	39.0	36.5	33.0	28.5
125	69.0	66.0	63.0	61.0	57.5	55.0	6300	40.5	36.5	34.0	32.0	27.5	24.0
160	69.5	65.0	62.0	59.5	56.0	53.5	8000	35.0	32.0	29.5	27.5	23.0	21.5
200	64.5	62.5	60.0	58.0	54.5	51.5	10000	31.5	29.0	26.5	24.5	21.5	20.5
250	64.5	62.5	60.5	58.5	55.0	52.5	12500	29.5	27.0	25.0	23.0	21.0	20.5
315	64.0	62.5	60.5	58.5	55.5	52.0	16000	28.0	26.5	24.5	23.0	22.0	22.0
400	64.5	63.0	61.0	59.5	55.5	52.5	20000	26.5	25.5	24.5	24.0	23.5	23.5
500	67.0	65.5	63.5	61.5	58.0	54.5							

Ln Start Level: 15 dB

L2.00	74.7 dBA	L25.00	72.4 dBA	L90.00	68.3 dBA
L8.00	73.7 dBA	L50.00	71.2 dBA	L99.00	65.5 dBA

Detector: Fast
Weighting: A
SPL Exceedance Level 1: 85.0 dB Exceeded: 0 times
SPL Exceedance level 2: 120 dB Exceeded: 0 times
Peak-1 Exceedance Level: 105 dB Exceeded: 0 times
Peak-2 Exceedance Level: 100 dB Exceeded: 0 times
Hysteresis: 2
Overloaded: 0 time(s)
Paused: 0 times for 00:00:00.0

Current Any Data
Start Time: 22-Oct-2009 13:56:19
Elapsed Time: 00:10:00.2

	A Weight		C Weight		Flat	
Leq:	71.5 dBA		75.7 dBC		76.9 dBF	
SEL:	99.3 dBA		103.5 dBC		104.7 dBF	
Peak:	89.5 dBA		93.0 dBC		94.9 dBF	
	22-Oct-2009	13:59:06	22-Oct-2009	14:01:30	22-Oct-2009	14:00:42
Lmax (slow):	76.8 dBA		79.9 dBC		83.2 dBF	
	22-Oct-2009	13:56:19	22-Oct-2009	13:58:14	22-Oct-2009	14:05:11
Lmin (slow):	65.9 dBA		69.9 dBC		70.7 dBF	
	22-Oct-2009	13:57:20	22-Oct-2009	13:58:35	22-Oct-2009	13:58:35
Lmax (fast):	77.3 dBA		81.1 dBC		87.7 dBF	
	22-Oct-2009	14:03:36	22-Oct-2009	14:02:18	22-Oct-2009	14:00:42
Lmin (fast):	63.8 dBA		68.3 dBC		69.5 dBF	
	22-Oct-2009	13:58:41	22-Oct-2009	13:58:33	22-Oct-2009	13:58:33
Lmax (impulse):	78.9 dBA		84.6 dBC		90.4 dBF	
	22-Oct-2009	14:03:36	22-Oct-2009	14:01:30	22-Oct-2009	14:00:42
Lmin (impulse):	65.5 dBA		70.0 dBC		70.7 dBF	
	22-Oct-2009	13:57:20	22-Oct-2009	13:58:35	22-Oct-2009	13:58:35

Calibrated: 22-Oct-2009 11:35:27 Offset: -44.9 dB
Checked: 22-Oct-2009 11:35:27 Level: 114.0 dB
Calibrator not set Level: 114.0 dB
Cal Records Count: 0

Interval Records: Disabled Number Interval Records: 0
History Records: Disabled Number History Records: 0
Run/Stop Records: Number Run/Stop Records: 2

File Translated: U:\UcJobs_06600-07000\06800\06897\Fieldwork\Measurements\Short Term\06897_05.slmdl
Model/Serial Number: 824 / A2629
Firmware/Software Revs: 4.272 / 3.120
Name: Urban Crossroads
Descr1: Enter Address Line 1
Descr2: Enter Address Line 2
Setup/Setup Descr: slm&rta.ssa / SLM & Real-Time Analyzer
Location:
Note1:
Note2:

Overall Any Data
Start Time: 22-Oct-2009 14:20:34
Elapsed Time: 00:10:00.2

	A Weight		C Weight		Flat	
Leq:	70.1 dBA		79.4 dBC		80.4 dBF	
SEL:	97.9 dBA		107.2 dBC		108.2 dBF	
Peak:	88.4 dBA		97.0 dBC		99.1 dBF	
	22-Oct-2009	14:28:00	22-Oct-2009	14:27:02	22-Oct-2009	14:27:46
Lmax (slow):	75.2 dBA		87.5 dBC		88.0 dBF	
	22-Oct-2009	14:28:02	22-Oct-2009	14:27:57	22-Oct-2009	14:27:57
Lmin (slow):	63.2 dBA		72.8 dBC		73.6 dBF	
	22-Oct-2009	14:29:31	22-Oct-2009	14:29:30	22-Oct-2009	14:26:00
Lmax (fast):	76.1 dBA		89.5 dBC		91.2 dBF	
	22-Oct-2009	14:28:02	22-Oct-2009	14:27:56	22-Oct-2009	14:27:46
Lmin (fast):	62.1 dBA		70.8 dBC		71.9 dBF	
	22-Oct-2009	14:29:30	22-Oct-2009	14:29:29	22-Oct-2009	14:29:29
Lmax (impulse):	76.9 dBA		90.2 dBC		93.1 dBF	
	22-Oct-2009	14:28:02	22-Oct-2009	14:27:56	22-Oct-2009	14:27:46
Lmin (impulse):	63.0 dBA		73.2 dBC		73.9 dBF	
	22-Oct-2009	14:29:31	22-Oct-2009	14:26:02	22-Oct-2009	14:26:00

Spectra

Date	Time	Run Time
22-Oct-2009	14:20:34	00:10:00.2

Hz	Leq1/3	Leq1/1	Max1/3	Max1/1	Min1/3	Min1/1	Hz	Leq1/3	Leq1/1	Max1/3	Max1/1	Min1/3	Min1/1
12.5	68.0		69.8		44.0		630	62.2		68.9		51.1	
16.0	68.4	72.8	71.1	77.1	47.4	53.4	800	63.2		67.8		53.9	
20.0	67.7		74.6		51.4		1000	63.2	67.4	68.3	72.0	54.3	58.8
25.0	66.8		75.6		49.6		1250	61.3		64.8		54.0	
31.5	66.7	72.0	79.0	81.5	52.0	56.4	1600	58.2		64.2		50.5	
40.0	68.0		74.2		52.6		2000	55.0	60.5	64.3	68.0	46.9	52.5
50.0	67.4		73.3		54.9		2500	51.9		59.8		42.5	
63.0	70.6	75.8	81.9	85.6	56.7	61.4	3150	48.8		57.7		37.7	
80.0	73.2		82.8		57.8		4000	45.4	51.0	54.7	60.4	32.5	39.1
100	71.3		74.8		57.5		5000	42.0		53.1		27.1	
125	69.9	74.6	73.3	78.2	56.1	61.4	6300	38.2		51.0		22.6	
160	67.6		71.4		56.1		8000	33.4	39.8	46.6	52.7	20.8	26.1
200	64.4		69.4		51.0		10000	28.9		41.8		20.4	
250	60.6	66.6	65.6	72.2	50.9	55.0	12500	24.6		33.5		20.3	
315	58.3		66.4		48.4		16000	23.1	28.7	31.9	36.1	21.5	26.6
400	58.2		65.0		46.7		20000	24.1		24.4		23.1	
500	60.6	65.4	67.4	72.2	49.6	54.3							

File Translated: U:\UcJobs_06600-07000\06800\06897\Fieldwork\Measurements\Short Term\06897_05.slmdl
Model/Serial Number: 824 / A2629

Overall Spectral Ln's

Hz	L2.00	L8.00	L25.00	L50.00	L90.00	L99.00	Hz	L2.00	L8.00	L25.00	L50.00	L90.00	L99.00
12.5	75.0	71.0	67.5	64.5	58.5	53.5	630	67.5	65.0	63.0	61.0	57.0	53.5
16.0	76.0	71.5	68.0	65.0	59.0	55.0	800	66.5	65.5	64.0	62.5	59.0	56.0
20.0	75.0	71.5	67.5	64.5	59.0	55.0	1000	66.5	65.0	64.0	62.5	59.5	57.0
25.0	73.5	70.5	67.0	64.0	59.0	55.0	1250	64.5	63.5	62.0	61.0	58.0	55.5
31.5	73.5	70.5	67.0	64.0	59.5	55.5	1600	62.0	60.5	59.0	57.5	55.0	52.5
40.0	75.5	71.5	67.5	64.5	60.0	56.5	2000	59.5	57.5	55.5	53.5	51.0	48.5
50.0	73.5	71.0	67.5	65.0	61.0	58.0	2500	57.5	55.0	52.5	50.0	47.0	44.5
63.0	79.0	74.5	70.0	67.0	62.5	60.0	3150	55.0	52.5	49.5	46.5	43.0	40.0
80.0	81.5	77.5	72.0	68.0	64.0	60.5	4000	52.0	49.0	45.5	43.0	39.0	35.0
100	79.0	75.0	71.0	68.0	63.5	60.5	5000	49.5	46.0	42.0	39.0	34.5	30.5
125	77.5	73.5	69.5	66.5	62.5	59.5	6300	46.0	42.0	38.0	35.0	30.5	26.0
160	74.5	70.5	67.5	65.0	61.0	58.5	8000	41.5	37.0	32.5	30.0	25.5	22.5
200	70.5	68.0	64.5	62.0	58.0	55.0	10000	37.0	32.0	27.5	25.0	22.0	20.5
250	66.5	63.5	61.0	58.5	55.0	52.5	12500	32.0	26.5	23.0	22.0	21.0	20.5
315	65.0	62.0	58.5	56.0	52.5	50.0	16000	25.5	23.0	22.5	22.0	21.5	21.5
400	64.0	61.5	58.5	56.0	52.5	49.5	20000	24.0	24.0	23.5	23.5	23.5	23.0
500	67.0	64.0	61.0	58.5	54.5	51.5							

Ln Start Level: 15 dB
L2.00 73.9 dBA L25.00 71.0 dBA L90.00 66.5 dBA
L8.00 72.5 dBA L50.00 69.5 dBA L99.00 64.2 dBA

Detector: Fast
Weighting: A
SPL Exceedance Level 1: 85.0 dB Exceeded: 0 times
SPL Exceedance level 2: 120 dB Exceeded: 0 times
Peak-1 Exceedance Level: 105 dB Exceeded: 0 times
Peak-2 Exceedance Level: 100 dB Exceeded: 0 times
Hysteresis: 2
Overloaded: 0 time(s)
Paused: 0 times for 00:00:00.0

Current Any Data
Start Time: 22-Oct-2009 14:20:34
Elapsed Time: 00:10:00.2

	A Weight	C Weight	Flat
Leq:	70.1 dBA	79.4 dBC	80.4 dBF
SEL:	97.9 dBA	107.2 dBC	108.2 dBF
Peak:	88.4 dBA	97.0 dBC	99.1 dBF
	22-Oct-2009 14:28:00	22-Oct-2009 14:27:02	22-Oct-2009 14:27:46
Lmax (slow):	75.2 dBA	87.5 dBC	88.0 dBF
	22-Oct-2009 14:28:02	22-Oct-2009 14:27:57	22-Oct-2009 14:27:57
Lmin (slow):	63.2 dBA	72.8 dBC	73.6 dBF
	22-Oct-2009 14:29:31	22-Oct-2009 14:29:30	22-Oct-2009 14:26:00
Lmax (fast):	76.1 dBA	89.5 dBC	91.2 dBF
	22-Oct-2009 14:28:02	22-Oct-2009 14:27:56	22-Oct-2009 14:27:46
Lmin (fast):	62.1 dBA	70.8 dBC	71.9 dBF
	22-Oct-2009 14:29:30	22-Oct-2009 14:29:29	22-Oct-2009 14:29:29
Lmax (impulse):	76.9 dBA	90.2 dBC	93.1 dBF
	22-Oct-2009 14:28:02	22-Oct-2009 14:27:56	22-Oct-2009 14:27:46
Lmin (impulse):	63.0 dBA	73.2 dBC	73.9 dBF
	22-Oct-2009 14:29:31	22-Oct-2009 14:26:02	22-Oct-2009 14:26:00

Calibrated: 22-Oct-2009 11:35:27 Offset: -44.9 dB
Checked: 22-Oct-2009 11:35:27 Level: 114.0 dB
Calibrator not set Level: 114.0 dB
Cal Records Count: 0

Interval Records: Disabled Number Interval Records: 0
History Records: Disabled Number History Records: 0
Run/Stop Records: Number Run/Stop Records: 2

APPENDIX 5.3

Leq To CNEL Conversion Printouts

MEASURED Leq TO CNEL CONVERSION

Reference 24h Measurement Location: L1
Noise Measurement location: S1
Measurement Time: 1100
Measurement Level (dBA Leq): 60.5

Project : Arantine Hills EIR
Job Number: 6897
Analyst: J. Stephens

Hour Beginning	*Adjusted Hourly Leq*		*CNEL Penalty*	*Hourly Leq With CNEL Penalty*
0000	61.7		10.0	71.7
0100	60.4		10.0	70.4
0200	60.2		10.0	70.2
0300	62.1		10.0	72.1
0400	64.5		10.0	74.5
0500	66.4		10.0	76.4
0600	66.9		10.0	76.9
0700	66.2		0.0	66.2
0800	64.0		0.0	64.0
0900	62.7		0.0	62.7
1000	61.0		0.0	61.0
1100	60.5	*	0.0	60.5
1200	60.7		0.0	60.7
1300	60.8		0.0	60.8
1400	61.7		0.0	61.7
1500	63.9		0.0	63.9
1600	61.0		0.0	61.0
1700	62.1		0.0	62.1
1800	62.9		0.0	62.9
1900	65.8		5.0	70.8
2000	64.7		5.0	69.7
2100	64.7		5.0	69.7
2200	63.4		10.0	73.4
2300	62.5		10.0	72.5

Resulting CNEL (dBA) : ***70.4***

U:\UcJobs_06600-07000\06800\06897\Fieldwork\Measurements\Short Term\[LeqCNEL-24hmeasurement_based.xls]S1

MEASURED Leq TO CNEL CONVERSION

Reference 24h Measurement Location: L1
Noise Measurement location: S2
Measurement Time: 1100
Measurement Level (dBA Leq): 60.6

Project : Arantine Hills EIR
Job Number: 6897
Analyst: J. Stephens

Hour Beginning	***Adjusted Hourly Leq***	***CNEL Penalty***	***Hourly Leq With CNEL Penalty***
0000	61.8	10.0	71.8
0100	60.5	10.0	70.5
0200	60.3	10.0	70.3
0300	62.2	10.0	72.2
0400	64.6	10.0	74.6
0500	66.5	10.0	76.5
0600	67.0	10.0	77.0
0700	66.3	0.0	66.3
0800	64.1	0.0	64.1
0900	62.8	0.0	62.8
1000	61.1	0.0	61.1
1100	60.6 *	0.0	60.6
1200	60.8	0.0	60.8
1300	60.9	0.0	60.9
1400	61.8	0.0	61.8
1500	64.0	0.0	64.0
1600	61.1	0.0	61.1
1700	62.2	0.0	62.2
1800	63.0	0.0	63.0
1900	65.9	5.0	70.9
2000	64.8	5.0	69.8
2100	64.8	5.0	69.8
2200	63.5	10.0	73.5
2300	62.6	10.0	72.6

Resulting CNEL (dBA) : ***70.5***

U:\UcJobs_06600-07000\06800\06897\Fieldwork\Measurements\Short Term\[LeqCNEL-24hmeasurement_based.xls]S2

MEASURED Leq TO CNEL CONVERSION

Reference 24h Measurement Location: L1
Noise Measurement location: S3
Measurement Time: 1200
Measurement Level (dBA Leq): 64.7

Project : Arantine Hills EIR
Job Number: 6897
Analyst: J. Stephens

Hour Beginning	***Adjusted Hourly Leq***	***CNEL Penalty***	***Hourly Leq With CNEL Penalty***
0000	65.7	10.0	75.7
0100	64.4	10.0	74.4
0200	64.2	10.0	74.2
0300	66.1	10.0	76.1
0400	68.5	10.0	78.5
0500	70.4	10.0	80.4
0600	70.9	10.0	80.9
0700	70.2	0.0	70.2
0800	68.0	0.0	68.0
0900	66.7	0.0	66.7
1000	65.0	0.0	65.0
1100	64.5	0.0	64.5
1200	64.7 *	0.0	64.7
1300	64.8	0.0	64.8
1400	65.7	0.0	65.7
1500	67.9	0.0	67.9
1600	65.0	0.0	65.0
1700	66.1	0.0	66.1
1800	66.9	0.0	66.9
1900	69.8	5.0	74.8
2000	68.7	5.0	73.7
2100	68.7	5.0	73.7
2200	67.4	10.0	77.4
2300	66.5	10.0	76.5

Resulting CNEL (dBA) : ***74.4***

U:\UcJobs_06600-07000\06800\06897\Fieldwork\Measurements\Short Term\[LeqCNEL-24hmeasurement_based.xls]S3

MEASURED Leq TO CNEL CONVERSION

Reference 24h Measurement Location: L2
Noise Measurement location: S4
Measurement Time: 1300
Measurement Level (dBA Leq): 71.5

Project : Arantine Hills EIR
Job Number: 6897
Analyst: J. Stephens

Hour Beginning	***Adjusted Hourly Leq***	***CNEL Penalty***	***Hourly Leq With CNEL Penalty***
0000	71.0	10.0	81.0
0100	70.7	10.0	80.7
0200	70.6	10.0	80.6
0300	70.8	10.0	80.8
0400	71.8	10.0	81.8
0500	73.3	10.0	83.3
0600	76.3	10.0	86.3
0700	73.6	0.0	73.6
0800	71.5	0.0	71.5
0900	71.1	0.0	71.1
1000	71.3	0.0	71.3
1100	71.0	0.0	71.0
1200	71.1	0.0	71.1
1300	71.5 *	0.0	71.5
1400	72.6	0.0	72.6
1500	73.4	0.0	73.4
1600	71.3	0.0	71.3
1700	72.6	0.0	72.6
1800	71.5	0.0	71.5
1900	73.4	5.0	78.4
2000	72.9	5.0	77.9
2100	72.7	5.0	77.7
2200	72.2	10.0	82.2
2300	71.3	10.0	81.3

Resulting CNEL (dBA) : ***79.1***

U:\UcJobs_06600-07000\06800\06897\Fieldwork\Measurements\Short Term\[LeqCNEL-24hmeasurement_based.xls]S4

MEASURED Leq TO CNEL CONVERSION

Reference 24h Measurement Location: L2
Noise Measurement location: S5
Measurement Time: 1400
Measurement Level (dBA Leq): 70.1

Project : Arantine Hills EIR
Job Number: 6897
Analyst: J. Stephens

Hour Beginning	***Adjusted Hourly Leq***	***CNEL Penalty***	***Hourly Leq With CNEL Penalty***
0000	68.5	10.0	78.5
0100	68.2	10.0	78.2
0200	68.1	10.0	78.1
0300	68.3	10.0	78.3
0400	69.3	10.0	79.3
0500	70.8	10.0	80.8
0600	73.8	10.0	83.8
0700	71.1	0.0	71.1
0800	69.0	0.0	69.0
0900	68.6	0.0	68.6
1000	68.8	0.0	68.8
1100	68.5	0.0	68.5
1200	68.6	0.0	68.6
1300	69.0	0.0	69.0
1400	70.1 *	0.0	70.1
1500	70.9	0.0	70.9
1600	68.8	0.0	68.8
1700	70.1	0.0	70.1
1800	69.0	0.0	69.0
1900	70.9	5.0	75.9
2000	70.4	5.0	75.4
2100	70.2	5.0	75.2
2200	69.7	10.0	79.7
2300	68.8	10.0	78.8

Resulting CNEL (dBA) : ***76.6***

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APPENDIX 7.1

Off-Site FHWA Traffic Noise Model Contours

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Conditions
Road Name: California Drive
Road Segment: w/o Masters Drive

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	4,100 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	410 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	14 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	99.880
Medium Trucks:	99.791
Heavy Trucks:	99.800

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-5.31	-4.61	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-22.55	-4.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-26.51	-4.61	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	55.4	53.5	51.7	45.7	54.3	54.9
Medium Trucks:	49.4	47.9	41.5	39.9	48.4	48.6
Heavy Trucks:	50.7	49.3	40.2	41.5	49.8	50.0
Vehicle Noise:	57.4	55.7	52.4	47.8	56.4	56.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	12	27	57	124
CNEL:	13	28	61	132

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Conditions
Road Name: California Drive
Road Segment: e/o Masters Drive

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	8,300 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	830 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	14 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	99.880
Medium Trucks:	99.791
Heavy Trucks:	99.800

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-2.25	-4.61	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-19.49	-4.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-23.44	-4.61	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	58.5	56.6	54.8	48.7	57.4	58.0
Medium Trucks:	52.4	50.9	44.6	43.0	51.5	51.7
Heavy Trucks:	53.7	52.3	43.3	44.5	52.9	53.0
Vehicle Noise:	60.5	58.7	55.5	50.9	59.4	59.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	20	43	92	198
CNEL:	21	46	98	212

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Conditions
Road Name: El Cerrito Road
Road Segment: w/o Bedford Cayon

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	19,200 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,920 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	98.494
Medium Trucks:	98.404
Heavy Trucks:	98.413

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	1.39	-4.52	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-15.84	-4.51	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-19.80	-4.51	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	62.2	60.3	58.5	52.5	61.1	61.7
Medium Trucks:	56.2	54.6	48.3	46.7	55.2	55.4
Heavy Trucks:	57.5	56.1	47.0	48.3	56.6	56.8
Vehicle Noise:	64.2	62.5	59.2	54.6	63.2	63.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	35	76	163	351
CNEL:	38	81	174	375

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Conditions
Road Name: El Cerrito Road
Road Segment: Bedford Cayon to I-15 Freeway

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	19,400 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,940 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	98.494
Medium Trucks:	98.404
Heavy Trucks:	98.413

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	1.44	-4.52	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-15.80	-4.51	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-19.76	-4.51	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	62.2	60.3	58.6	52.5	61.1	61.7
Medium Trucks:	56.2	54.7	48.3	46.8	55.2	55.5
Heavy Trucks:	57.5	56.1	47.1	48.3	56.7	56.8
Vehicle Noise:	64.2	62.5	59.2	54.7	63.2	63.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	35	76	164	353
CNEL:	38	81	175	378

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Conditions
Road Name: El Cerrito Road
Road Segment: I-15 Freeway to Temescal Canyo

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	8,500 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	850 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	98.494
Medium Trucks:	98.404
Heavy Trucks:	98.413

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-2.15	-4.52	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-19.38	-4.51	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-23.34	-4.51	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	58.6	56.7	55.0	48.9	57.5	58.2
Medium Trucks:	52.6	51.1	44.7	43.2	51.7	51.9
Heavy Trucks:	53.9	52.5	43.5	44.7	53.1	53.2
Vehicle Noise:	60.7	58.9	55.6	51.1	59.6	60.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	20	44	95	204
CNEL:	22	47	101	218

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Conditions
Road Name: Bennett Avenue
Road Segment: Eagle Glen Parkway to Masters D

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	1,400 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	140 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	14 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	99.880
Medium Trucks:	99.791
Heavy Trucks:	99.800

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-9.98	-4.61	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-27.22	-4.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-31.17	-4.61	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	50.7	48.8	47.1	41.0	49.6	50.2
Medium Trucks:	44.7	43.2	36.8	35.3	43.7	44.0
Heavy Trucks:	46.0	44.6	35.6	36.8	45.2	45.3
Vehicle Noise:	52.7	51.0	47.7	43.2	51.7	52.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	6	13	28	60
CNEL:	6	14	30	65

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Conditions
Road Name: Bennett Avenue
Road Segment: n/o Masters Drive

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	900 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	90 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	14 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	99.880
Medium Trucks:	99.791
Heavy Trucks:	99.800

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-11.90	-4.61	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-29.14	-4.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-33.09	-4.61	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	48.8	46.9	45.1	39.1	47.7	48.3
Medium Trucks:	42.8	41.3	34.9	33.4	41.8	42.1
Heavy Trucks:	44.1	42.7	33.6	34.9	43.2	43.4
Vehicle Noise:	50.8	49.1	45.8	41.3	49.8	50.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	4	10	21	45
CNEL:	5	10	22	48

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Conditions
Road Name: Georgetown Drive
Road Segment: w/o Bedford Cayon

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	2,200 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	220 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	14 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	99.880
Medium Trucks:	99.791
Heavy Trucks:	99.800

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-8.02	-4.61	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-25.25	-4.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-29.21	-4.61	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	52.7	50.8	49.0	43.0	51.6	52.2
Medium Trucks:	46.7	45.1	38.8	37.2	45.7	45.9
Heavy Trucks:	48.0	46.6	37.5	38.8	47.1	47.3
Vehicle Noise:	54.7	53.0	49.7	45.1	53.7	54.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	8	18	38	82
CNEL:	9	19	41	87

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Conditions
Road Name: Eagle Glen Parkway
Road Segment: Bennett Avenue to Masters Drive

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	7,700 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	770 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	98.494
Medium Trucks:	98.404
Heavy Trucks:	98.413

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-2.57	-4.52	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-19.81	-4.51	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-23.77	-4.51	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	58.2	56.3	54.6	48.5	57.1	57.7
Medium Trucks:	52.2	50.7	44.3	42.8	51.2	51.5
Heavy Trucks:	53.5	52.1	43.1	44.3	52.7	52.8
Vehicle Noise:	60.2	58.5	55.2	50.7	59.2	59.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	19	41	88	191
CNEL:	20	44	95	204

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Conditions
Road Name: Eagle Glen Parkway
Road Segment: Masters Drive to Bedford Canyon

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	11,000 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,100 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	98.494
Medium Trucks:	98.404
Heavy Trucks:	98.413

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-1.03	-4.52	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-18.26	-4.51	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-22.22	-4.51	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	59.8	57.9	56.1	50.0	58.7	59.3
Medium Trucks:	53.7	52.2	45.9	44.3	52.8	53.0
Heavy Trucks:	55.1	53.6	44.6	45.9	54.2	54.3
Vehicle Noise:	61.8	60.0	56.8	52.2	60.8	61.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	24	52	112	242
CNEL:	26	56	120	259

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Conditions
Road Name: Cajalco Road
Road Segment: Bedford Canyon to I-15 Freeway

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	17,300 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,730 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	77 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	92.427
Medium Trucks:	92.331
Heavy Trucks:	92.341

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	0.43	-4.11	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-16.81	-4.10	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-20.76	-4.10	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	63.6	61.7	59.9	53.9	62.5	63.1
Medium Trucks:	57.3	55.8	49.5	47.9	56.4	56.6
Heavy Trucks:	58.2	56.8	47.7	49.0	57.3	57.5
Vehicle Noise:	65.4	63.7	60.5	55.9	64.4	64.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	42	91	196	423
CNEL:	45	98	211	454

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Conditions
Road Name: Cajalco Road
Road Segment: I-15 Freeway to Grand Oaks

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	12,300 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,230 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	77 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	92.427
Medium Trucks:	92.331
Heavy Trucks:	92.341

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	-1.05	-4.11	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-18.29	-4.10	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-22.25	-4.10	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	62.1	60.2	58.4	52.4	61.0	61.6
Medium Trucks:	55.9	54.4	48.0	46.4	54.9	55.1
Heavy Trucks:	56.7	55.3	46.2	47.5	55.9	56.0
Vehicle Noise:	63.9	62.2	59.0	54.4	62.9	63.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	34	73	156	337
CNEL:	36	78	168	361

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Conditions
Road Name: Cajalco Road
Road Segment: Grand Oaks to Temescal Canyon

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	11,500 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,150 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	77 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	92.427
Medium Trucks:	92.331
Heavy Trucks:	92.341

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	-1.34	-4.11	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-18.58	-4.10	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-22.54	-4.10	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	61.8	59.9	58.1	52.1	60.7	61.3
Medium Trucks:	55.6	54.1	47.7	46.2	54.6	54.8
Heavy Trucks:	56.4	55.0	46.0	47.2	55.6	55.7
Vehicle Noise:	63.6	61.9	58.8	54.1	62.6	63.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	32	69	149	322
CNEL:	35	74	160	345

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Conditions
Road Name: Cajalco Road
Road Segment: e/o Temescal Canyon Road

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	10,900 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,090 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	77 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	92.427
Medium Trucks:	92.331
Heavy Trucks:	92.341

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	-1.58	-4.11	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-18.82	-4.10	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-22.77	-4.10	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	61.6	59.7	57.9	51.9	60.5	61.1
Medium Trucks:	55.3	53.8	47.5	45.9	54.4	54.6
Heavy Trucks:	56.2	54.8	45.7	47.0	55.3	55.5
Vehicle Noise:	63.4	61.7	58.5	53.8	62.4	62.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	31	67	144	311
CNEL:	33	72	155	333

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Conditions
Road Name: Masters Drive
Road Segment: n/o California Drive

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	4,500 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	450 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	14 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	99.880
Medium Trucks:	99.791
Heavy Trucks:	99.800

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-4.91	-4.61	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-22.15	-4.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-26.10	-4.61	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	55.8	53.9	52.1	46.1	54.7	55.3
Medium Trucks:	49.8	48.3	41.9	40.4	48.8	49.0
Heavy Trucks:	51.1	49.7	40.6	41.9	50.2	50.4
Vehicle Noise:	57.8	56.1	52.8	48.2	56.8	57.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	13	28	61	131
CNEL:	14	30	65	141

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Conditions
Road Name: Masters Drive
Road Segment: California Drive to Bennett Avenu

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	7,800 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	780 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	14 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	99.880
Medium Trucks:	99.791
Heavy Trucks:	99.800

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-2.52	-4.61	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-19.76	-4.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-23.71	-4.61	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	58.2	56.3	54.5	48.5	57.1	57.7
Medium Trucks:	52.2	50.6	44.3	42.7	51.2	51.4
Heavy Trucks:	53.5	52.1	43.0	44.3	52.6	52.7
Vehicle Noise:	60.2	58.5	55.2	50.6	59.2	59.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	19	41	88	190
CNEL:	20	44	94	203

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Conditions
Road Name: Masters Drive
Road Segment: Bennett Avenue to Eagle Glen Pa

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	5,900 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	590 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	14 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	99.880
Medium Trucks:	99.791
Heavy Trucks:	99.800

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-3.73	-4.61	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-20.97	-4.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-24.93	-4.61	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	57.0	55.1	53.3	47.3	55.9	56.5
Medium Trucks:	50.9	49.4	43.1	41.5	50.0	50.2
Heavy Trucks:	52.3	50.8	41.8	43.1	51.4	51.5
Vehicle Noise:	59.0	57.2	54.0	49.4	58.0	58.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	16	34	73	157
CNEL:	17	36	78	169

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Conditions
Road Name: Bedford Canyon
Road Segment: El Cerrito Road to Georgetown Dr

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	6,000 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	600 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	24 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	99.403
Medium Trucks:	99.314
Heavy Trucks:	99.323

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-3.66	-4.58	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-20.90	-4.57	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-24.85	-4.57	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	57.1	55.2	53.4	47.4	56.0	56.6
Medium Trucks:	51.0	49.5	43.2	41.6	50.1	50.3
Heavy Trucks:	52.4	50.9	41.9	43.2	51.5	51.6
Vehicle Noise:	59.1	57.4	54.1	49.5	58.1	58.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	16	34	74	160
CNEL:	17	37	80	171

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Conditions
Road Name: Bedford Canyon
Road Segment: Georgetown Drive to Eagle Glen

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	6,000 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	600 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	24 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	99.403
Medium Trucks:	99.314
Heavy Trucks:	99.323

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-3.66	-4.58	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-20.90	-4.57	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-24.85	-4.57	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	57.1	55.2	53.4	47.4	56.0	56.6
Medium Trucks:	51.0	49.5	43.2	41.6	50.1	50.3
Heavy Trucks:	52.4	50.9	41.9	43.2	51.5	51.6
Vehicle Noise:	59.1	57.4	54.1	49.5	58.1	58.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	16	34	74	160
CNEL:	17	37	80	171

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Conditions
Road Name: Temescal Canyon Road
Road Segment: n/o Cajalco Road

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	10,400 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,040 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	53 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	96.554
Medium Trucks:	96.463
Heavy Trucks:	96.472

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	-1.78	-4.39	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-19.02	-4.38	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-22.97	-4.38	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	61.1	59.2	57.4	51.4	60.0	60.6
Medium Trucks:	54.8	53.3	47.0	45.4	53.9	54.1
Heavy Trucks:	55.7	54.3	45.2	46.5	54.8	55.0
Vehicle Noise:	62.9	61.2	58.0	53.4	61.9	62.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	29	62	134	288
CNEL:	31	67	144	309

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Conditions
Road Name: Temescal Canyon Road
Road Segment: s/o Cajalco Road

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	13,000 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,300 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	53 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	96.554
Medium Trucks:	96.463
Heavy Trucks:	96.472

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	-0.81	-4.39	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-18.05	-4.38	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-22.01	-4.38	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	62.1	60.2	58.4	52.3	61.0	61.6
Medium Trucks:	55.8	54.3	47.9	46.4	54.9	55.1
Heavy Trucks:	56.7	55.2	46.2	47.5	55.8	55.9
Vehicle Noise:	63.9	62.2	59.0	54.3	62.9	63.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	33	72	155	335
CNEL:	36	77	167	359

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 No Project
Road Name: California Drive
Road Segment: w/o Masters Drive

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	4,700 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	470 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	14 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	99.880
Medium Trucks:	99.791
Heavy Trucks:	99.800

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-4.72	-4.61	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-21.96	-4.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-25.91	-4.61	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	56.0	54.1	52.3	46.3	54.9	55.5
Medium Trucks:	50.0	48.4	42.1	40.5	49.0	49.2
Heavy Trucks:	51.3	49.9	40.8	42.1	50.4	50.5
Vehicle Noise:	58.0	56.3	53.0	48.4	57.0	57.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	14	29	63	135
CNEL:	14	31	67	145

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 No Project
Road Name: California Drive
Road Segment: e/o Masters Drive

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	8,700 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	870 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	14 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	99.880
Medium Trucks:	99.791
Heavy Trucks:	99.800

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-2.04	-4.61	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-19.28	-4.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-23.24	-4.61	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	58.7	56.8	55.0	48.9	57.6	58.2
Medium Trucks:	52.6	51.1	44.8	43.2	51.7	51.9
Heavy Trucks:	53.9	52.5	43.5	44.7	53.1	53.2
Vehicle Noise:	60.7	58.9	55.7	51.1	59.6	60.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	20	44	95	204
CNEL:	22	47	101	218

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 No Project
Road Name: El Cerrito Road
Road Segment: w/o Bedford Cayon

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	20,700	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,070	vehicles
Vehicle Speed:	40	mph
Near/Far Lane Distance:	36	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	100.0	feet
Centerline Dist. to Observer:	100.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	98.494
Medium Trucks:	98.404
Heavy Trucks:	98.413

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	1.72	-4.52	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-15.52	-4.51	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-19.47	-4.51	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	62.5	60.6	58.8	52.8	61.4	62.0
Medium Trucks:	56.5	55.0	48.6	47.1	55.5	55.8
Heavy Trucks:	57.8	56.4	47.3	48.6	57.0	57.1
Vehicle Noise:	64.5	62.8	59.5	55.0	63.5	63.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	37	79	171	369
CNEL:	39	85	183	395

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 No Project
Road Name: El Cerrito Road
Road Segment: Bedford Cayon to I-15 Freeway

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	21,700	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,170	vehicles
Vehicle Speed:	40	mph
Near/Far Lane Distance:	36	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	100.0	feet
Centerline Dist. to Observer:	100.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	98.494
Medium Trucks:	98.404
Heavy Trucks:	98.413

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	1.93	-4.52	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-15.31	-4.51	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-19.27	-4.51	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	62.7	60.8	59.1	53.0	61.6	62.2
Medium Trucks:	56.7	55.2	48.8	47.3	55.7	56.0
Heavy Trucks:	58.0	56.6	47.6	48.8	57.2	57.3
Vehicle Noise:	64.7	63.0	59.7	55.2	63.7	64.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	38	82	177	380
CNEL:	41	88	189	407

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 No Project
Road Name: El Cerrito Road
Road Segment: I-15 Freeway to Temescal Canyo

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	9,700 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	970 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	98.494
Medium Trucks:	98.404
Heavy Trucks:	98.413

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-1.57	-4.52	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-18.81	-4.51	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-22.77	-4.51	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	59.2	57.3	55.6	49.5	58.1	58.7
Medium Trucks:	53.2	51.7	45.3	43.8	52.2	52.5
Heavy Trucks:	54.5	53.1	44.1	45.3	53.7	53.8
Vehicle Noise:	61.2	59.5	56.2	51.7	60.2	60.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	22	48	103	222
CNEL:	24	51	111	238

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 No Project
Road Name: Bennett Avenue
Road Segment: Eagle Glen Parkway to Masters D

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	1,500 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	150 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	14 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	99.880
Medium Trucks:	99.791
Heavy Trucks:	99.800

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-9.68	-4.61	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-26.92	-4.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-30.87	-4.61	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	51.0	49.1	47.4	41.3	49.9	50.5
Medium Trucks:	45.0	43.5	37.1	35.6	44.0	44.3
Heavy Trucks:	46.3	44.9	35.9	37.1	45.5	45.6
Vehicle Noise:	53.0	51.3	48.0	43.5	52.0	52.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	6	14	29	63
CNEL:	7	15	31	68

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 No Project
Road Name: Bennett Avenue
Road Segment: n/o Masters Drive

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	1,000 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	100 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	14 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	99.880
Medium Trucks:	99.791
Heavy Trucks:	99.800

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-11.44	-4.61	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-28.68	-4.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-32.63	-4.61	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	49.3	47.4	45.6	39.5	48.2	48.8
Medium Trucks:	43.2	41.7	35.4	33.8	42.3	42.5
Heavy Trucks:	44.6	43.1	34.1	35.3	43.7	43.8
Vehicle Noise:	51.3	49.5	46.3	41.7	50.2	50.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	5	10	22	48
CNEL:	5	11	24	52

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 No Project
Road Name: Georgetown Drive
Road Segment: w/o Bedford Cayon

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	2,300 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	230 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	14 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	99.880
Medium Trucks:	99.791
Heavy Trucks:	99.800

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-7.82	-4.61	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-25.06	-4.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-29.02	-4.61	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	52.9	51.0	49.2	43.2	51.8	52.4
Medium Trucks:	46.8	45.3	39.0	37.4	45.9	46.1
Heavy Trucks:	48.2	46.8	37.7	39.0	47.3	47.4
Vehicle Noise:	54.9	53.2	49.9	45.3	53.9	54.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	8	18	39	84
CNEL:	9	19	42	90

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 No Project
Road Name: Eagle Glen Parkway
Road Segment: Bennett Avenue to Masters Drive

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	9,200 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	920 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	98.494
Medium Trucks:	98.404
Heavy Trucks:	98.413

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-1.80	-4.52	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-19.04	-4.51	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-23.00	-4.51	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	59.0	57.1	55.3	49.3	57.9	58.5
Medium Trucks:	53.0	51.5	45.1	43.5	52.0	52.2
Heavy Trucks:	54.3	52.9	43.8	45.1	53.4	53.6
Vehicle Noise:	61.0	59.3	56.0	51.4	60.0	60.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	21	46	100	215
CNEL:	23	50	107	230

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 No Project
Road Name: Eagle Glen Parkway
Road Segment: Masters Drive to Bedford Canyon

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	12,000 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,200 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	98.494
Medium Trucks:	98.404
Heavy Trucks:	98.413

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-0.65	-4.52	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-17.89	-4.51	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-21.84	-4.51	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	60.1	58.2	56.5	50.4	59.0	59.7
Medium Trucks:	54.1	52.6	46.2	44.7	53.2	53.4
Heavy Trucks:	55.4	54.0	45.0	46.2	54.6	54.7
Vehicle Noise:	62.2	60.4	57.1	52.6	61.1	61.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	26	55	119	256
CNEL:	27	59	127	274

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 No Project
Road Name: Cajalco Road
Road Segment: Bedford Canyon to I-15 Freeway

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	18,900 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,890 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	77 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	92.427
Medium Trucks:	92.331
Heavy Trucks:	92.341

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	0.81	-4.11	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-16.42	-4.10	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-20.38	-4.10	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	64.0	62.1	60.3	54.2	62.9	63.5
Medium Trucks:	57.7	56.2	49.9	48.3	56.8	57.0
Heavy Trucks:	58.6	57.2	48.1	49.4	57.7	57.8
Vehicle Noise:	65.8	64.1	60.9	56.2	64.8	65.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	45	97	208	449
CNEL:	48	104	223	481

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 No Project
Road Name: Cajalco Road
Road Segment: I-15 Freeway to Grand Oaks

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	14,100 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,410 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	77 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	92.427
Medium Trucks:	92.331
Heavy Trucks:	92.341

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	-0.46	-4.11	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-17.70	-4.10	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-21.65	-4.10	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	62.7	60.8	59.0	53.0	61.6	62.2
Medium Trucks:	56.5	54.9	48.6	47.0	55.5	55.7
Heavy Trucks:	57.3	55.9	46.8	48.1	56.4	56.6
Vehicle Noise:	64.5	62.8	59.6	55.0	63.5	64.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	37	79	171	369
CNEL:	40	85	184	396

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 No Project
Road Name: Cajalco Road
Road Segment: Grand Oaks to Temescal Canyon

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	12,700	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	1,270	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	77	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	100.0	feet
Centerline Dist. to Observer:	100.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	92.427
Medium Trucks:	92.331
Heavy Trucks:	92.341

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	-0.91	-4.11	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-18.15	-4.10	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-22.11	-4.10	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	62.2	60.3	58.6	52.5	61.1	61.7
Medium Trucks:	56.0	54.5	48.1	46.6	55.0	55.3
Heavy Trucks:	56.8	55.4	46.4	47.6	56.0	56.1
Vehicle Noise:	64.1	62.3	59.2	54.5	63.1	63.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	34	74	160	344
CNEL:	37	80	171	369

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 No Project
Road Name: Cajalco Road
Road Segment: e/o Temescal Canyon Road

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	13,200 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,320 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	77 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	92.427
Medium Trucks:	92.331
Heavy Trucks:	92.341

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	-0.75	-4.11	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-17.98	-4.10	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-21.94	-4.10	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	62.4	60.5	58.7	52.7	61.3	61.9
Medium Trucks:	56.2	54.7	48.3	46.8	55.2	55.4
Heavy Trucks:	57.0	55.6	46.6	47.8	56.2	56.3
Vehicle Noise:	64.2	62.5	59.4	54.7	63.2	63.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	35	76	164	353
CNEL:	38	82	176	379

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 No Project
Road Name: Masters Drive
Road Segment: n/o California Drive

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	5,000 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	500 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	14 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	99.880
Medium Trucks:	99.791
Heavy Trucks:	99.800

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-4.45	-4.61	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-21.69	-4.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-25.64	-4.61	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	56.3	54.4	52.6	46.5	55.2	55.8
Medium Trucks:	50.2	48.7	42.4	40.8	49.3	49.5
Heavy Trucks:	51.5	50.1	41.1	42.3	50.7	50.8
Vehicle Noise:	58.3	56.5	53.3	48.7	57.2	57.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	14	30	65	141
CNEL:	15	33	70	151

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 No Project
Road Name: Masters Drive
Road Segment: California Drive to Bennett Avenu

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	8,500 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	850 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	14 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	99.880
Medium Trucks:	99.791
Heavy Trucks:	99.800

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-2.15	-4.61	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-19.38	-4.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-23.34	-4.61	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	58.6	56.7	54.9	48.8	57.5	58.1
Medium Trucks:	52.5	51.0	44.7	43.1	51.6	51.8
Heavy Trucks:	53.8	52.4	43.4	44.6	53.0	53.1
Vehicle Noise:	60.6	58.8	55.6	51.0	59.5	60.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	20	43	93	201
CNEL:	22	46	100	215

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 No Project
Road Name: Masters Drive
Road Segment: Bennett Avenue to Eagle Glen Pa

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	6,300 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	630 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	14 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	99.880
Medium Trucks:	99.791
Heavy Trucks:	99.800

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-3.45	-4.61	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-20.68	-4.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-24.64	-4.61	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	57.3	55.4	53.6	47.5	56.2	56.8
Medium Trucks:	51.2	49.7	43.4	41.8	50.3	50.5
Heavy Trucks:	52.5	51.1	42.1	43.3	51.7	51.8
Vehicle Noise:	59.3	57.5	54.3	49.7	58.2	58.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	16	35	76	164
CNEL:	18	38	82	176

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 No Project
Road Name: Bedford Canyon
Road Segment: El Cerrito Road to Georgetown Dr

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	7,100 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	710 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	24 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	99.403
Medium Trucks:	99.314
Heavy Trucks:	99.323

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-2.93	-4.58	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-20.17	-4.57	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-24.12	-4.57	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	57.8	55.9	54.1	48.1	56.7	57.3
Medium Trucks:	51.8	50.3	43.9	42.4	50.8	51.1
Heavy Trucks:	53.1	51.7	42.6	43.9	52.2	52.4
Vehicle Noise:	59.8	58.1	54.8	50.3	58.8	59.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	18	39	83	179
CNEL:	19	41	89	192

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 No Project
Road Name: Bedford Canyon
Road Segment: Georgetown Drive to Eagle Glen

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	7,100 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	710 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	24 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	99.403
Medium Trucks:	99.314
Heavy Trucks:	99.323

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-2.93	-4.58	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-20.17	-4.57	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-24.12	-4.57	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	57.8	55.9	54.1	48.1	56.7	57.3
Medium Trucks:	51.8	50.3	43.9	42.4	50.8	51.1
Heavy Trucks:	53.1	51.7	42.6	43.9	52.2	52.4
Vehicle Noise:	59.8	58.1	54.8	50.3	58.8	59.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	18	39	83	179
CNEL:	19	41	89	192

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 No Project
Road Name: Temescal Canyon Road
Road Segment: n/o Cajalco Road

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	12,500 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,250 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	53 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	96.554
Medium Trucks:	96.463
Heavy Trucks:	96.472

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	-0.98	-4.39	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-18.22	-4.38	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-22.18	-4.38	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	61.9	60.0	58.2	52.2	60.8	61.4
Medium Trucks:	55.6	54.1	47.8	46.2	54.7	54.9
Heavy Trucks:	56.5	55.1	46.0	47.3	55.6	55.8
Vehicle Noise:	63.7	62.0	58.8	54.2	62.7	63.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	33	70	151	326
CNEL:	35	75	162	350

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 No Project
Road Name: Temescal Canyon Road
Road Segment: s/o Cajalco Road

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	14,300 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,430 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	53 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	96.554
Medium Trucks:	96.463
Heavy Trucks:	96.472

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	-0.40	-4.39	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-17.64	-4.38	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-21.59	-4.38	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	62.5	60.6	58.8	52.8	61.4	62.0
Medium Trucks:	56.2	54.7	48.4	46.8	55.3	55.5
Heavy Trucks:	57.1	55.7	46.6	47.9	56.2	56.3
Vehicle Noise:	64.3	62.6	59.4	54.7	63.3	63.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	36	77	165	356
CNEL:	38	82	177	382

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 With Project
Road Name: California Drive
Road Segment: w/o Masters Drive

Project Name: Arantine Hills Noise Analysis
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	5,100 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	510 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	14 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	99.880
Medium Trucks:	99.791
Heavy Trucks:	99.800

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-4.36	-4.61	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-21.60	-4.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-25.56	-4.61	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	56.3	54.4	52.7	46.6	55.2	55.8
Medium Trucks:	50.3	48.8	42.4	40.9	49.4	49.6
Heavy Trucks:	51.6	50.2	41.2	42.4	50.8	50.9
Vehicle Noise:	58.3	56.6	53.3	48.8	57.3	57.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	14	31	66	143
CNEL:	15	33	71	153

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 With Project
Road Name: California Drive
Road Segment: e/o Masters Drive

Project Name: Arantine Hills Noise Analysis
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	9,500 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	950 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	14 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	99.880
Medium Trucks:	99.791
Heavy Trucks:	99.800

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-1.66	-4.61	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-18.90	-4.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-22.86	-4.61	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	59.0	57.1	55.4	49.3	57.9	58.5
Medium Trucks:	53.0	51.5	45.1	43.6	52.1	52.3
Heavy Trucks:	54.3	52.9	43.9	45.1	53.5	53.6
Vehicle Noise:	61.0	59.3	56.0	51.5	60.0	60.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	22	47	100	216
CNEL:	23	50	107	232

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 With Project
Road Name: El Cerrito Road
Road Segment: w/o Bedford Cayon

Project Name: Arantine Hills Noise Analysis
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	21,100 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,110 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	98.494
Medium Trucks:	98.404
Heavy Trucks:	98.413

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	1.80	-4.52	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-15.43	-4.51	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-19.39	-4.51	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	62.6	60.7	58.9	52.9	61.5	62.1
Medium Trucks:	56.6	55.1	48.7	47.2	55.6	55.8
Heavy Trucks:	57.9	56.5	47.4	48.7	57.0	57.2
Vehicle Noise:	64.6	62.9	59.6	55.0	63.6	64.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	37	80	173	373
CNEL:	40	86	186	400

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 With Project
Road Name: El Cerrito Road
Road Segment: Bedford Cayon to I-15 Freeway

Project Name: Arantine Hills Noise Analysis
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	22,100	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,210	vehicles
Vehicle Speed:	40	mph
Near/Far Lane Distance:	36	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	100.0	feet
Centerline Dist. to Observer:	100.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	98.494
Medium Trucks:	98.404
Heavy Trucks:	98.413

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	2.00	-4.52	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-15.23	-4.51	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-19.19	-4.51	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	62.8	60.9	59.1	53.1	61.7	62.3
Medium Trucks:	56.8	55.3	48.9	47.4	55.8	56.0
Heavy Trucks:	58.1	56.7	47.6	48.9	57.2	57.4
Vehicle Noise:	64.8	63.1	59.8	55.2	63.8	64.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	39	83	179	385
CNEL:	41	89	191	412

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 With Project
Road Name: El Cerrito Road
Road Segment: I-15 Freeway to Temescal Canyo

Project Name: Arantine Hills Noise Analysis
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	10,100 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,010 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	98.494
Medium Trucks:	98.404
Heavy Trucks:	98.413

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-1.40	-4.52	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-18.63	-4.51	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-22.59	-4.51	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	59.4	57.5	55.7	49.7	58.3	58.9
Medium Trucks:	53.4	51.9	45.5	44.0	52.4	52.6
Heavy Trucks:	54.7	53.3	44.2	45.5	53.8	54.0
Vehicle Noise:	61.4	59.7	56.4	51.8	60.4	60.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	23	49	106	228
CNEL:	24	53	114	245

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 With Project
Road Name: Bennett Avenue
Road Segment: Eagle Glen Parkway to Masters D

Project Name: Arantine Hills Noise Analysis
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	1,500 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	150 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	14 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	99.880
Medium Trucks:	99.791
Heavy Trucks:	99.800

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-9.68	-4.61	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-26.92	-4.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-30.87	-4.61	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	51.0	49.1	47.4	41.3	49.9	50.5
Medium Trucks:	45.0	43.5	37.1	35.6	44.0	44.3
Heavy Trucks:	46.3	44.9	35.9	37.1	45.5	45.6
Vehicle Noise:	53.0	51.3	48.0	43.5	52.0	52.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	6	14	29	63
CNEL:	7	15	31	68

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 With Project
Road Name: Bennett Avenue
Road Segment: n/o Masters Drive

Project Name: Arantine Hills Noise Analysis
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	1,000 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	100 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	14 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	99.880
Medium Trucks:	99.791
Heavy Trucks:	99.800

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-11.44	-4.61	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-28.68	-4.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-32.63	-4.61	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	49.3	47.4	45.6	39.5	48.2	48.8
Medium Trucks:	43.2	41.7	35.4	33.8	42.3	42.5
Heavy Trucks:	44.6	43.1	34.1	35.3	43.7	43.8
Vehicle Noise:	51.3	49.5	46.3	41.7	50.2	50.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	5	10	22	48
CNEL:	5	11	24	52

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 With Project
Road Name: Georgetown Drive
Road Segment: w/o Bedford Cayon

Project Name: Arantine Hills Noise Analysis
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	2,500 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	250 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	14 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	99.880
Medium Trucks:	99.791
Heavy Trucks:	99.800

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-7.46	-4.61	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-24.70	-4.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-28.65	-4.61	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	53.2	51.3	49.6	43.5	52.1	52.7
Medium Trucks:	47.2	45.7	39.3	37.8	46.3	46.5
Heavy Trucks:	48.5	47.1	38.1	39.3	47.7	47.8
Vehicle Noise:	55.2	53.5	50.2	45.7	54.2	54.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	9	19	41	89
CNEL:	10	20	44	95

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 With Project
Road Name: Eagle Glen Parkway
Road Segment: Bennett Avenue to Masters Drive

Project Name: Arantine Hills Noise Analysis
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	14,300 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,430 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	98.494
Medium Trucks:	98.404
Heavy Trucks:	98.413

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	0.11	-4.52	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-17.12	-4.51	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-21.08	-4.51	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	60.9	59.0	57.2	51.2	59.8	60.4
Medium Trucks:	54.9	53.4	47.0	45.5	53.9	54.2
Heavy Trucks:	56.2	54.8	45.7	47.0	55.3	55.5
Vehicle Noise:	62.9	61.2	57.9	53.4	61.9	62.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	29	62	134	288
CNEL:	31	66	143	308

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 With Project
Road Name: Eagle Glen Parkway
Road Segment: Masters Drive to Bedford Canyon

Project Name: Arantine Hills Noise Analysis
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	16,700 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,670 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	98.494
Medium Trucks:	98.404
Heavy Trucks:	98.413

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	0.79	-4.52	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-16.45	-4.51	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-20.41	-4.51	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	61.6	59.7	57.9	51.9	60.5	61.1
Medium Trucks:	55.6	54.0	47.7	46.1	54.6	54.8
Heavy Trucks:	56.9	55.5	46.4	47.7	56.0	56.1
Vehicle Noise:	63.6	61.9	58.6	54.0	62.6	63.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	32	69	148	319
CNEL:	34	74	159	342

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 With Project
Road Name: Cajalco Road
Road Segment: Bedford Canyon to I-15 Freeway
Project Name: Arantine Hills Noise Analysis
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,300 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,530 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	77 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	92.427
Medium Trucks:	92.331
Heavy Trucks:	92.341

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	2.08	-4.11	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-15.16	-4.10	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-19.11	-4.10	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	65.2	63.3	61.6	55.5	64.1	64.7
Medium Trucks:	59.0	57.5	51.1	49.6	58.0	58.3
Heavy Trucks:	59.8	58.4	49.4	50.6	59.0	59.1
Vehicle Noise:	67.1	65.3	62.2	57.5	66.0	66.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	54	117	253	545
CNEL:	58	126	271	584

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 With Project
Road Name: Cajalco Road
Road Segment: I-15 Freeway to Grand Oaks

Project Name: Arantine Hills Noise Analysis
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	15,800 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,580 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	77 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	92.427
Medium Trucks:	92.331
Heavy Trucks:	92.341

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	0.04	-4.11	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-17.20	-4.10	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-21.16	-4.10	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	63.2	61.3	59.5	53.5	62.1	62.7
Medium Trucks:	56.9	55.4	49.1	47.5	56.0	56.2
Heavy Trucks:	57.8	56.4	47.3	48.6	56.9	57.1
Vehicle Noise:	65.0	63.3	60.1	55.5	64.0	64.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	40	86	185	398
CNEL:	43	92	198	427

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 With Project
Road Name: Cajalco Road
Road Segment: Grand Oaks to Temescal Canyon

Project Name: Arantine Hills Noise Analysis
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	14,200 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,420 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	77 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	92.427
Medium Trucks:	92.331
Heavy Trucks:	92.341

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	-0.43	-4.11	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-17.67	-4.10	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-21.62	-4.10	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	62.7	60.8	59.1	53.0	61.6	62.2
Medium Trucks:	56.5	55.0	48.6	47.1	55.5	55.8
Heavy Trucks:	57.3	55.9	46.9	48.1	56.5	56.6
Vehicle Noise:	64.6	62.8	59.7	55.0	63.5	64.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	37	80	172	371
CNEL:	40	86	185	398

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 With Project
Road Name: Cajalco Road
Road Segment: e/o Temescal Canyon Road

Project Name: Arantine Hills Noise Analysis
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	14,000 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,400 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	77 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	92.427
Medium Trucks:	92.331
Heavy Trucks:	92.341

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	-0.49	-4.11	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-17.73	-4.10	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-21.68	-4.10	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	62.7	60.8	59.0	52.9	61.6	62.2
Medium Trucks:	56.4	54.9	48.6	47.0	55.5	55.7
Heavy Trucks:	57.3	55.8	46.8	48.1	56.4	56.5
Vehicle Noise:	64.5	62.8	59.6	54.9	63.5	63.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	37	79	170	367
CNEL:	39	85	183	394

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 With Project
Road Name: Masters Drive
Road Segment: n/o California Drive

Project Name: Arantine Hills Noise Analysis
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	5,400 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	540 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	14 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	99.880
Medium Trucks:	99.791
Heavy Trucks:	99.800

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-4.12	-4.61	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-21.35	-4.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-25.31	-4.61	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	56.6	54.7	52.9	46.9	55.5	56.1
Medium Trucks:	50.6	49.0	42.7	41.1	49.6	49.8
Heavy Trucks:	51.9	50.5	41.4	42.7	51.0	51.2
Vehicle Noise:	58.6	56.9	53.6	49.0	57.6	58.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	15	32	69	148
CNEL:	16	34	74	159

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 With Project
Road Name: Masters Drive
Road Segment: California Drive to Bennett Avenu

Project Name: Arantine Hills Noise Analysis
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	10,100 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,010 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	14 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	99.880
Medium Trucks:	99.791
Heavy Trucks:	99.800

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-1.40	-4.61	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-18.63	-4.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-22.59	-4.61	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	59.3	57.4	55.6	49.6	58.2	58.8
Medium Trucks:	53.3	51.8	45.4	43.9	52.3	52.6
Heavy Trucks:	54.6	53.2	44.1	45.4	53.7	53.9
Vehicle Noise:	61.3	59.6	56.3	51.8	60.3	60.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	23	49	105	225
CNEL:	24	52	112	241

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 With Project
Road Name: Masters Drive
Road Segment: Bennett Avenue to Eagle Glen Pa

Project Name: Arantine Hills Noise Analysis
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	8,100 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	810 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	14 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	99.880
Medium Trucks:	99.791
Heavy Trucks:	99.800

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-2.35	-4.61	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-19.59	-4.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-23.55	-4.61	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	58.3	56.4	54.7	48.6	57.2	57.9
Medium Trucks:	52.3	50.8	44.4	42.9	51.4	51.6
Heavy Trucks:	53.6	52.2	43.2	44.4	52.8	52.9
Vehicle Noise:	60.4	58.6	55.3	50.8	59.3	59.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	19	42	90	194
CNEL:	21	45	97	208

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 With Project
Road Name: Bedford Canyon
Road Segment: El Cerrito Road to Georgetown Dr

Project Name: Arantine Hills Noise Analysis
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	7,900 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	790 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	24 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	99.403
Medium Trucks:	99.314
Heavy Trucks:	99.323

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-2.46	-4.58	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-19.70	-4.57	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-23.66	-4.57	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	58.3	56.4	54.6	48.5	57.2	57.8
Medium Trucks:	52.2	50.7	44.4	42.8	51.3	51.5
Heavy Trucks:	53.6	52.1	43.1	44.4	52.7	52.8
Vehicle Noise:	60.3	58.5	55.3	50.7	59.3	59.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	19	41	89	192
CNEL:	21	44	96	206

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 With Project
Road Name: Bedford Canyon
Road Segment: Georgetown Drive to Eagle Glen

Project Name: Arantine Hills Noise Analysis
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	8,000 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	800 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	24 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	99.403
Medium Trucks:	99.314
Heavy Trucks:	99.323

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-2.41	-4.58	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-19.65	-4.57	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-23.60	-4.57	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	58.3	56.4	54.7	48.6	57.2	57.8
Medium Trucks:	52.3	50.8	44.4	42.9	51.3	51.6
Heavy Trucks:	53.6	52.2	43.2	44.4	52.8	52.9
Vehicle Noise:	60.3	58.6	55.3	50.8	59.3	59.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	19	42	90	194
CNEL:	21	45	96	207

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 With Project
Road Name: Temescal Canyon Road
Road Segment: n/o Cajalco Road

Project Name: Arantine Hills Noise Analysis
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	12,700 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,270 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	53 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	96.554
Medium Trucks:	96.463
Heavy Trucks:	96.472

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	-0.91	-4.39	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-18.15	-4.38	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-22.11	-4.38	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	62.0	60.1	58.3	52.2	60.9	61.5
Medium Trucks:	55.7	54.2	47.8	46.3	54.8	55.0
Heavy Trucks:	56.6	55.1	46.1	47.4	55.7	55.8
Vehicle Noise:	63.8	62.1	58.9	54.2	62.8	63.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	33	71	153	329
CNEL:	35	76	164	353

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 With Project
Road Name: Temescal Canyon Road
Road Segment: s/o Cajalco Road

Project Name: Arantine Hills Noise Analysis
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	14,800 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,480 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	53 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	96.554
Medium Trucks:	96.463
Heavy Trucks:	96.472

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	-0.25	-4.39	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-17.49	-4.38	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-21.44	-4.38	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	62.6	60.7	59.0	52.9	61.5	62.1
Medium Trucks:	56.4	54.9	48.5	47.0	55.4	55.7
Heavy Trucks:	57.2	55.8	46.8	48.0	56.4	56.5
Vehicle Noise:	64.5	62.7	59.6	54.9	63.4	63.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	36	79	169	365
CNEL:	39	84	182	391

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 No Project
Road Name: California Drive
Road Segment: w/o Masters Drive

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	5,400 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	540 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	14 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	99.880
Medium Trucks:	99.791
Heavy Trucks:	99.800

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-4.12	-4.61	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-21.35	-4.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-25.31	-4.61	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	56.6	54.7	52.9	46.9	55.5	56.1
Medium Trucks:	50.6	49.0	42.7	41.1	49.6	49.8
Heavy Trucks:	51.9	50.5	41.4	42.7	51.0	51.2
Vehicle Noise:	58.6	56.9	53.6	49.0	57.6	58.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	15	32	69	148
CNEL:	16	34	74	159

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 No Project
Road Name: California Drive
Road Segment: e/o Masters Drive

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	9,200 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	920 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	14 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	99.880
Medium Trucks:	99.791
Heavy Trucks:	99.800

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-1.80	-4.61	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-19.04	-4.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-23.00	-4.61	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	58.9	57.0	55.2	49.2	57.8	58.4
Medium Trucks:	52.9	51.4	45.0	43.5	51.9	52.1
Heavy Trucks:	54.2	52.8	43.7	45.0	53.3	53.5
Vehicle Noise:	60.9	59.2	55.9	51.3	59.9	60.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	21	46	98	212
CNEL:	23	49	105	227

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 No Project
Road Name: El Cerrito Road
Road Segment: w/o Bedford Cayon

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	22,300 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,230 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	98.494
Medium Trucks:	98.404
Heavy Trucks:	98.413

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	2.04	-4.52	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-15.19	-4.51	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-19.15	-4.51	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	62.8	60.9	59.2	53.1	61.7	62.3
Medium Trucks:	56.8	55.3	48.9	47.4	55.9	56.1
Heavy Trucks:	58.1	56.7	47.7	48.9	57.3	57.4
Vehicle Noise:	64.8	63.1	59.8	55.3	63.8	64.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	39	83	180	387
CNEL:	41	89	193	415

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 No Project
Road Name: El Cerrito Road
Road Segment: Bedford Cayon to I-15 Freeway

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	24,400	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,440	vehicles
Vehicle Speed:	40	mph
Near/Far Lane Distance:	36	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	100.0	feet
Centerline Dist. to Observer:	100.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	98.494
Medium Trucks:	98.404
Heavy Trucks:	98.413

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	2.43	-4.52	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-14.80	-4.51	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-18.76	-4.51	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	63.2	61.3	59.6	53.5	62.1	62.7
Medium Trucks:	57.2	55.7	49.3	47.8	56.2	56.5
Heavy Trucks:	58.5	57.1	48.1	49.3	57.7	57.8
Vehicle Noise:	65.2	63.5	60.2	55.7	64.2	64.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	41	89	191	411
CNEL:	44	95	204	440

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 No Project
Road Name: El Cerrito Road
Road Segment: I-15 Freeway to Temescal Canyo

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	11,200	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	1,120	vehicles
Vehicle Speed:	40	mph
Near/Far Lane Distance:	36	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	100.0	feet
Centerline Dist. to Observer:	100.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	98.494
Medium Trucks:	98.404
Heavy Trucks:	98.413

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-0.95	-4.52	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-18.19	-4.51	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-22.14	-4.51	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	59.8	57.9	56.2	50.1	58.7	59.4
Medium Trucks:	53.8	52.3	45.9	44.4	52.9	53.1
Heavy Trucks:	55.1	53.7	44.7	45.9	54.3	54.4
Vehicle Noise:	61.9	60.1	56.8	52.3	60.8	61.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	24	53	114	245
CNEL:	26	56	122	262

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 No Project
Road Name: Bennett Avenue
Road Segment: Eagle Glen Parkway to Masters D

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	1,500 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	150 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	14 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	99.880
Medium Trucks:	99.791
Heavy Trucks:	99.800

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-9.68	-4.61	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-26.92	-4.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-30.87	-4.61	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	51.0	49.1	47.4	41.3	49.9	50.5
Medium Trucks:	45.0	43.5	37.1	35.6	44.0	44.3
Heavy Trucks:	46.3	44.9	35.9	37.1	45.5	45.6
Vehicle Noise:	53.0	51.3	48.0	43.5	52.0	52.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	6	14	29	63
CNEL:	7	15	31	68

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 No Project
Road Name: Bennett Avenue
Road Segment: n/o Masters Drive

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	1,100 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	110 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	14 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	99.880
Medium Trucks:	99.791
Heavy Trucks:	99.800

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-11.03	-4.61	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-28.26	-4.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-32.22	-4.61	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	49.7	47.8	46.0	40.0	48.6	49.2
Medium Trucks:	43.6	42.1	35.8	34.2	42.7	42.9
Heavy Trucks:	45.0	43.5	34.5	35.8	44.1	44.2
Vehicle Noise:	51.7	50.0	46.7	42.1	50.7	51.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	5	11	24	51
CNEL:	6	12	26	55

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 No Project
Road Name: Georgetown Drive
Road Segment: w/o Bedford Cayon

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	2,400 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	240 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	14 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	99.880
Medium Trucks:	99.791
Heavy Trucks:	99.800

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-7.64	-4.61	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-24.88	-4.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-28.83	-4.61	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	53.1	51.2	49.4	43.3	52.0	52.6
Medium Trucks:	47.0	45.5	39.2	37.6	46.1	46.3
Heavy Trucks:	48.4	46.9	37.9	39.1	47.5	47.6
Vehicle Noise:	55.1	53.3	50.1	45.5	54.0	54.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	9	19	40	86
CNEL:	9	20	43	93

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 No Project
Road Name: Eagle Glen Parkway
Road Segment: Bennett Avenue to Masters Drive

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	11,100 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,110 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	98.494
Medium Trucks:	98.404
Heavy Trucks:	98.413

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-0.99	-4.52	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-18.22	-4.51	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-22.18	-4.51	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	59.8	57.9	56.1	50.1	58.7	59.3
Medium Trucks:	53.8	52.3	45.9	44.4	52.8	53.1
Heavy Trucks:	55.1	53.7	44.6	45.9	54.2	54.4
Vehicle Noise:	61.8	60.1	56.8	52.3	60.8	61.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	24	52	113	243
CNEL:	26	56	121	261

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 No Project
Road Name: Eagle Glen Parkway
Road Segment: Masters Drive to Bedford Canyon

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	13,100	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	1,310	vehicles
Vehicle Speed:	40	mph
Near/Far Lane Distance:	36	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	100.0	feet
Centerline Dist. to Observer:	100.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	98.494
Medium Trucks:	98.404
Heavy Trucks:	98.413

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-0.27	-4.52	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-17.51	-4.51	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-21.46	-4.51	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	60.5	58.6	56.9	50.8	59.4	60.0
Medium Trucks:	54.5	53.0	46.6	45.1	53.5	53.8
Heavy Trucks:	55.8	54.4	45.4	46.6	55.0	55.1
Vehicle Noise:	62.5	60.8	57.5	53.0	61.5	62.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	27	59	126	272
CNEL:	29	63	135	291

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 No Project
Road Name: Cajalco Road
Road Segment: Bedford Canyon to I-15 Freeway

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	19,200	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	1,920	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	77	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	100.0	feet
Centerline Dist. to Observer:	100.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	92.427
Medium Trucks:	92.331
Heavy Trucks:	92.341

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	0.88	-4.11	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-16.36	-4.10	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-20.31	-4.10	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	64.0	62.1	60.4	54.3	62.9	63.5
Medium Trucks:	57.8	56.3	49.9	48.4	56.8	57.1
Heavy Trucks:	58.6	57.2	48.2	49.4	57.8	57.9
Vehicle Noise:	65.9	64.1	61.0	56.3	64.8	65.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	45	98	210	453
CNEL:	49	105	226	486

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 No Project
Road Name: Cajalco Road
Road Segment: I-15 Freeway to Grand Oaks

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	16,200	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	1,620	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	77	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	100.0	feet
Centerline Dist. to Observer:	100.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	92.427
Medium Trucks:	92.331
Heavy Trucks:	92.341

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	0.14	-4.11	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-17.09	-4.10	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-21.05	-4.10	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	63.3	61.4	59.6	53.6	62.2	62.8
Medium Trucks:	57.1	55.5	49.2	47.6	56.1	56.3
Heavy Trucks:	57.9	56.5	47.4	48.7	57.0	57.2
Vehicle Noise:	65.1	63.4	60.2	55.6	64.1	64.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	40	87	188	405
CNEL:	43	94	202	434

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 No Project
Road Name: Cajalco Road
Road Segment: Grand Oaks to Temescal Canyon

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	14,000 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,400 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	77 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	92.427
Medium Trucks:	92.331
Heavy Trucks:	92.341

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	-0.49	-4.11	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-17.73	-4.10	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-21.68	-4.10	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	62.7	60.8	59.0	52.9	61.6	62.2
Medium Trucks:	56.4	54.9	48.6	47.0	55.5	55.7
Heavy Trucks:	57.3	55.8	46.8	48.1	56.4	56.5
Vehicle Noise:	64.5	62.8	59.6	54.9	63.5	63.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	37	79	170	367
CNEL:	39	85	183	394

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 No Project
Road Name: Cajalco Road
Road Segment: e/o Temescal Canyon Road

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	16,100 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,610 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	77 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	92.427
Medium Trucks:	92.331
Heavy Trucks:	92.341

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	0.12	-4.11	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-17.12	-4.10	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-21.08	-4.10	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	63.3	61.4	59.6	53.6	62.2	62.8
Medium Trucks:	57.0	55.5	49.2	47.6	56.1	56.3
Heavy Trucks:	57.9	56.5	47.4	48.7	57.0	57.1
Vehicle Noise:	65.1	63.4	60.2	55.5	64.1	64.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	40	87	187	403
CNEL:	43	93	201	432

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 No Project
Road Name: Masters Drive
Road Segment: n/o California Drive

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	5,600 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	560 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	14 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	99.880
Medium Trucks:	99.791
Heavy Trucks:	99.800

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-3.96	-4.61	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-21.20	-4.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-25.15	-4.61	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	56.7	54.8	53.1	47.0	55.6	56.3
Medium Trucks:	50.7	49.2	42.8	41.3	49.8	50.0
Heavy Trucks:	52.0	50.6	41.6	42.8	51.2	51.3
Vehicle Noise:	58.8	57.0	53.7	49.2	57.7	58.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	15	33	71	152
CNEL:	16	35	76	163

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 No Project
Road Name: Masters Drive
Road Segment: California Drive to Bennett Avenu

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	9,200 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	920 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	14 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	99.880
Medium Trucks:	99.791
Heavy Trucks:	99.800

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-1.80	-4.61	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-19.04	-4.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-23.00	-4.61	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	58.9	57.0	55.2	49.2	57.8	58.4
Medium Trucks:	52.9	51.4	45.0	43.5	51.9	52.1
Heavy Trucks:	54.2	52.8	43.7	45.0	53.3	53.5
Vehicle Noise:	60.9	59.2	55.9	51.3	59.9	60.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	21	46	98	212
CNEL:	23	49	105	227

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 No Project
Road Name: Masters Drive
Road Segment: Bennett Avenue to Eagle Glen Pa

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	6,800 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	680 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	14 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	99.880
Medium Trucks:	99.791
Heavy Trucks:	99.800

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-3.11	-4.61	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-20.35	-4.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-24.31	-4.61	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	57.6	55.7	53.9	47.9	56.5	57.1
Medium Trucks:	51.6	50.0	43.7	42.1	50.6	50.8
Heavy Trucks:	52.9	51.5	42.4	43.7	52.0	52.2
Vehicle Noise:	59.6	57.9	54.6	50.0	58.6	59.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	17	37	80	173
CNEL:	19	40	86	185

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 No Project
Road Name: Bedford Canyon
Road Segment: El Cerrito Road to Georgetown Dr

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	8,400 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	840 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	24 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	99.403
Medium Trucks:	99.314
Heavy Trucks:	99.323

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-2.20	-4.58	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-19.44	-4.57	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-23.39	-4.57	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	58.5	56.6	54.9	48.8	57.4	58.0
Medium Trucks:	52.5	51.0	44.6	43.1	51.6	51.8
Heavy Trucks:	53.8	52.4	43.4	44.6	53.0	53.1
Vehicle Noise:	60.5	58.8	55.5	51.0	59.5	60.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	20	43	93	200
CNEL:	21	46	99	214

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 No Project
Road Name: Bedford Canyon
Road Segment: Georgetown Drive to Eagle Glen

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	8,400 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	840 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	24 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	99.403
Medium Trucks:	99.314
Heavy Trucks:	99.323

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-2.20	-4.58	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-19.44	-4.57	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-23.39	-4.57	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	58.5	56.6	54.9	48.8	57.4	58.0
Medium Trucks:	52.5	51.0	44.6	43.1	51.6	51.8
Heavy Trucks:	53.8	52.4	43.4	44.6	53.0	53.1
Vehicle Noise:	60.5	58.8	55.5	51.0	59.5	60.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	20	43	93	200
CNEL:	21	46	99	214

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 No Project
Road Name: Temescal Canyon Road
Road Segment: n/o Cajalco Road

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	14,900 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,490 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	53 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	96.554
Medium Trucks:	96.463
Heavy Trucks:	96.472

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	-0.22	-4.39	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-17.46	-4.38	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-21.41	-4.38	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	62.7	60.8	59.0	52.9	61.6	62.2
Medium Trucks:	56.4	54.9	48.5	47.0	55.5	55.7
Heavy Trucks:	57.3	55.8	46.8	48.0	56.4	56.5
Vehicle Noise:	64.5	62.7	59.6	54.9	63.5	63.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	37	79	170	366
CNEL:	39	85	182	393

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 No Project
Road Name: Temescal Canyon Road
Road Segment: s/o Cajalco Road

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	15,600 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,560 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	53 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	96.554
Medium Trucks:	96.463
Heavy Trucks:	96.472

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	-0.02	-4.39	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-17.26	-4.38	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-21.21	-4.38	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	62.9	61.0	59.2	53.1	61.8	62.4
Medium Trucks:	56.6	55.1	48.7	47.2	55.7	55.9
Heavy Trucks:	57.5	56.0	47.0	48.2	56.6	56.7
Vehicle Noise:	64.7	62.9	59.8	55.1	63.7	64.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	38	81	175	378
CNEL:	41	87	188	405

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 With Project
Road Name: California Drive
Road Segment: w/o Masters Drive

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	6,600 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	660 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	14 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	99.880
Medium Trucks:	99.791
Heavy Trucks:	99.800

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-3.24	-4.61	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-20.48	-4.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-24.44	-4.61	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	57.5	55.6	53.8	47.7	56.4	57.0
Medium Trucks:	51.4	49.9	43.6	42.0	50.5	50.7
Heavy Trucks:	52.8	51.3	42.3	43.5	51.9	52.0
Vehicle Noise:	59.5	57.7	54.5	49.9	58.4	58.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	17	37	79	170
CNEL:	18	39	84	182

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 With Project
Road Name: California Drive
Road Segment: e/o Masters Drive

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	10,400 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,040 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	14 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	99.880
Medium Trucks:	99.791
Heavy Trucks:	99.800

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-1.27	-4.61	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-18.51	-4.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-22.46	-4.61	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	59.4	57.5	55.8	49.7	58.3	58.9
Medium Trucks:	53.4	51.9	45.5	44.0	52.4	52.7
Heavy Trucks:	54.7	53.3	44.3	45.5	53.9	54.0
Vehicle Noise:	61.4	59.7	56.4	51.9	60.4	60.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	23	49	107	230
CNEL:	25	53	114	246

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 With Project
Road Name: El Cerrito Road
Road Segment: w/o Bedford Cayon

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	23,900	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,390	vehicles
Vehicle Speed:	40	mph
Near/Far Lane Distance:	36	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	100.0	feet
Centerline Dist. to Observer:	100.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	98.494
Medium Trucks:	98.404
Heavy Trucks:	98.413

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	2.34	-4.52	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-14.89	-4.51	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-18.85	-4.51	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	63.1	61.2	59.5	53.4	62.0	62.6
Medium Trucks:	57.1	55.6	49.2	47.7	56.2	56.4
Heavy Trucks:	58.4	57.0	48.0	49.2	57.6	57.7
Vehicle Noise:	65.1	63.4	60.1	55.6	64.1	64.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	41	87	188	406
CNEL:	43	94	202	434

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 With Project
Road Name: El Cerrito Road
Road Segment: Bedford Cayon to I-15 Freeway

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,300 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,530 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	98.494
Medium Trucks:	98.404
Heavy Trucks:	98.413

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	2.59	-4.52	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-14.65	-4.51	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-18.60	-4.51	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	63.4	61.5	59.7	53.7	62.3	62.9
Medium Trucks:	57.4	55.8	49.5	47.9	56.4	56.6
Heavy Trucks:	58.7	57.3	48.2	49.5	57.8	58.0
Vehicle Noise:	65.4	63.7	60.4	55.8	64.4	64.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	42	91	196	421
CNEL:	45	97	209	451

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 With Project
Road Name: El Cerrito Road
Road Segment: I-15 Freeway to Temescal Canyo

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	12,100 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,210 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	98.494
Medium Trucks:	98.404
Heavy Trucks:	98.413

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-0.61	-4.52	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-17.85	-4.51	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-21.81	-4.51	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	60.2	58.3	56.5	50.5	59.1	59.7
Medium Trucks:	54.2	52.6	46.3	44.7	53.2	53.4
Heavy Trucks:	55.5	54.1	45.0	46.3	54.6	54.7
Vehicle Noise:	62.2	60.5	57.2	52.6	61.2	61.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	26	56	120	258
CNEL:	28	59	128	276

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 With Project
Road Name: Bennett Avenue
Road Segment: Eagle Glen Parkway to Masters D

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	1,500 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	150 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	14 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	99.880
Medium Trucks:	99.791
Heavy Trucks:	99.800

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-9.68	-4.61	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-26.92	-4.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-30.87	-4.61	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	51.0	49.1	47.4	41.3	49.9	50.5
Medium Trucks:	45.0	43.5	37.1	35.6	44.0	44.3
Heavy Trucks:	46.3	44.9	35.9	37.1	45.5	45.6
Vehicle Noise:	53.0	51.3	48.0	43.5	52.0	52.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	6	14	29	63
CNEL:	7	15	31	68

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 With Project
Road Name: Bennett Avenue
Road Segment: n/o Masters Drive

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	1,100 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	110 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	14 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	99.880
Medium Trucks:	99.791
Heavy Trucks:	99.800

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-11.03	-4.61	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-28.26	-4.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-32.22	-4.61	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	49.7	47.8	46.0	40.0	48.6	49.2
Medium Trucks:	43.6	42.1	35.8	34.2	42.7	42.9
Heavy Trucks:	45.0	43.5	34.5	35.8	44.1	44.2
Vehicle Noise:	51.7	50.0	46.7	42.1	50.7	51.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	5	11	24	51
CNEL:	6	12	26	55

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 With Project
Road Name: Georgetown Drive
Road Segment: w/o Bedford Cayon

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	2,700 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	270 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	14 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	99.880
Medium Trucks:	99.791
Heavy Trucks:	99.800

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-7.13	-4.61	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-24.36	-4.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-28.32	-4.61	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	53.6	51.7	49.9	43.9	52.5	53.1
Medium Trucks:	47.5	46.0	39.7	38.1	46.6	46.8
Heavy Trucks:	48.9	47.4	38.4	39.7	48.0	48.1
Vehicle Noise:	55.6	53.9	50.6	46.0	54.6	55.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	9	20	43	93
CNEL:	10	22	46	100

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 With Project
Road Name: Eagle Glen Parkway
Road Segment: Bennett Avenue to Masters Drive

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	16,200	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	1,620	vehicles
Vehicle Speed:	40	mph
Near/Far Lane Distance:	36	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	100.0	feet
Centerline Dist. to Observer:	100.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	98.494
Medium Trucks:	98.404
Heavy Trucks:	98.413

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	0.66	-4.52	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-16.58	-4.51	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-20.54	-4.51	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	61.4	59.5	57.8	51.7	60.3	61.0
Medium Trucks:	55.4	53.9	47.5	46.0	54.5	54.7
Heavy Trucks:	56.7	55.3	46.3	47.5	55.9	56.0
Vehicle Noise:	63.5	61.7	58.4	53.9	62.4	62.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	31	67	145	313
CNEL:	34	72	156	335

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 With Project
Road Name: Eagle Glen Parkway
Road Segment: Masters Drive to Bedford Canyon

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	21,300	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,130	vehicles
Vehicle Speed:	40	mph
Near/Far Lane Distance:	36	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	100.0	feet
Centerline Dist. to Observer:	100.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	98.494
Medium Trucks:	98.404
Heavy Trucks:	98.413

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	1.84	-4.52	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-15.39	-4.51	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-19.35	-4.51	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	62.6	60.7	59.0	52.9	61.5	62.1
Medium Trucks:	56.6	55.1	48.7	47.2	55.7	55.9
Heavy Trucks:	57.9	56.5	47.5	48.7	57.1	57.2
Vehicle Noise:	64.6	62.9	59.6	55.1	63.6	64.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	38	81	174	376
CNEL:	40	87	187	402

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 With Project
Road Name: Cajalco Road
Road Segment: Bedford Canyon to I-15 Freeway

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	39,600	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,960	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	77	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	100.0	feet
Centerline Dist. to Observer:	100.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	92.427
Medium Trucks:	92.331
Heavy Trucks:	92.341

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	4.03	-4.11	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-13.21	-4.10	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-17.17	-4.10	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	67.2	65.3	63.5	57.5	66.1	66.7
Medium Trucks:	60.9	59.4	53.1	51.5	60.0	60.2
Heavy Trucks:	61.8	60.4	51.3	52.6	60.9	61.1
Vehicle Noise:	69.0	67.3	64.1	59.4	68.0	68.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	73	158	341	734
CNEL:	79	170	366	788

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 With Project
Road Name: Cajalco Road
Road Segment: I-15 Freeway to Grand Oaks

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	20,000 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,000 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	77 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	92.427
Medium Trucks:	92.331
Heavy Trucks:	92.341

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	1.06	-4.11	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-16.18	-4.10	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-20.13	-4.10	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	64.2	62.3	60.5	54.5	63.1	63.7
Medium Trucks:	58.0	56.5	50.1	48.6	57.0	57.3
Heavy Trucks:	58.8	57.4	48.4	49.6	58.0	58.1
Vehicle Noise:	66.1	64.3	61.2	56.5	65.0	65.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	47	100	216	466
CNEL:	50	108	232	500

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 With Project
Road Name: Cajalco Road
Road Segment: Grand Oaks to Temescal Canyon

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	17,500	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	1,750	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	77	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	100.0	feet
Centerline Dist. to Observer:	100.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	92.427
Medium Trucks:	92.331
Heavy Trucks:	92.341

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	0.48	-4.11	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-16.76	-4.10	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-20.71	-4.10	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	63.6	61.7	60.0	53.9	62.5	63.1
Medium Trucks:	57.4	55.9	49.5	48.0	56.4	56.7
Heavy Trucks:	58.2	56.8	47.8	49.0	57.4	57.5
Vehicle Noise:	65.5	63.7	60.6	55.9	64.4	64.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	43	92	198	426
CNEL:	46	98	212	457

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 With Project
Road Name: Cajalco Road
Road Segment: e/o Temescal Canyon Road

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	18,100 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,810 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	77 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	92.427
Medium Trucks:	92.331
Heavy Trucks:	92.341

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	0.63	-4.11	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-16.61	-4.10	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-20.57	-4.10	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	63.8	61.9	60.1	54.1	62.7	63.3
Medium Trucks:	57.5	56.0	49.7	48.1	56.6	56.8
Heavy Trucks:	58.4	57.0	47.9	49.2	57.5	57.7
Vehicle Noise:	65.6	63.9	60.7	56.0	64.6	65.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	44	94	202	436
CNEL:	47	101	217	467

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 With Project
Road Name: Masters Drive
Road Segment: n/o California Drive

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	6,100 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	610 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	14 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	99.880
Medium Trucks:	99.791
Heavy Trucks:	99.800

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-3.59	-4.61	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-20.82	-4.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-24.78	-4.61	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	57.1	55.2	53.4	47.4	56.0	56.6
Medium Trucks:	51.1	49.6	43.2	41.7	50.1	50.4
Heavy Trucks:	52.4	51.0	42.0	43.2	51.6	51.7
Vehicle Noise:	59.1	57.4	54.1	49.6	58.1	58.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	16	35	75	161
CNEL:	17	37	80	172

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 With Project
Road Name: Masters Drive
Road Segment: California Drive to Bennett Avenu

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	12,100 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,210 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	14 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	99.880
Medium Trucks:	99.791
Heavy Trucks:	99.800

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-0.61	-4.61	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-17.85	-4.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-21.81	-4.61	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	60.1	58.2	56.4	50.4	59.0	59.6
Medium Trucks:	54.1	52.6	46.2	44.6	53.1	53.3
Heavy Trucks:	55.4	54.0	44.9	46.2	54.5	54.7
Vehicle Noise:	62.1	60.4	57.1	52.5	61.1	61.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	25	55	118	254
CNEL:	27	59	126	272

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 With Project
Road Name: Masters Drive
Road Segment: Bennett Avenue to Eagle Glen Pa

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	10,200 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,020 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	14 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	99.880
Medium Trucks:	99.791
Heavy Trucks:	99.800

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-1.35	-4.61	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-18.59	-4.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-22.55	-4.61	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	59.3	57.4	55.7	49.6	58.2	58.9
Medium Trucks:	53.3	51.8	45.4	43.9	52.4	52.6
Heavy Trucks:	54.6	53.2	44.2	45.4	53.8	53.9
Vehicle Noise:	61.4	59.6	56.3	51.8	60.3	60.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	23	49	105	227
CNEL:	24	52	113	243

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 With Project
Road Name: Bedford Canyon
Road Segment: El Cerrito Road to Georgetown Dr

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	10,900 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,090 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	24 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	99.403
Medium Trucks:	99.314
Heavy Trucks:	99.323

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-1.07	-4.58	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-18.30	-4.57	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-22.26	-4.57	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	59.7	57.8	56.0	49.9	58.6	59.2
Medium Trucks:	53.6	52.1	45.8	44.2	52.7	52.9
Heavy Trucks:	55.0	53.5	44.5	45.8	54.1	54.2
Vehicle Noise:	61.7	59.9	56.7	52.1	60.7	61.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	24	51	111	238
CNEL:	26	55	118	255

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 With Project
Road Name: Bedford Canyon
Road Segment: Georgetown Drive to Eagle Glen

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	11,200	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	1,120	vehicles
Vehicle Speed:	40	mph
Near/Far Lane Distance:	24	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	100.0	feet
Centerline Dist. to Observer:	100.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	99.403
Medium Trucks:	99.314
Heavy Trucks:	99.323

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-0.95	-4.58	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-18.19	-4.57	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-22.14	-4.57	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	59.8	57.9	56.1	50.1	58.7	59.3
Medium Trucks:	53.8	52.2	45.9	44.3	52.8	53.0
Heavy Trucks:	55.1	53.7	44.6	45.9	54.2	54.4
Vehicle Noise:	61.8	60.1	56.8	52.2	60.8	61.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	24	52	113	243
CNEL:	26	56	121	260

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 With Project
Road Name: Temescal Canyon Road
Road Segment: n/o Cajalco Road

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	15,400 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,540 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	53 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	96.554
Medium Trucks:	96.463
Heavy Trucks:	96.472

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	-0.08	-4.39	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-17.31	-4.38	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-21.27	-4.38	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	62.8	60.9	59.1	53.1	61.7	62.3
Medium Trucks:	56.6	55.0	48.7	47.1	55.6	55.8
Heavy Trucks:	57.4	56.0	46.9	48.2	56.5	56.7
Vehicle Noise:	64.6	62.9	59.7	55.1	63.6	64.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	37	81	174	375
CNEL:	40	87	186	402

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2014 With Project
Road Name: Temescal Canyon Road
Road Segment: s/o Cajalco Road

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	16,600	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	1,660	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	53	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	100.0	feet
Centerline Dist. to Observer:	100.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	96.554
Medium Trucks:	96.463
Heavy Trucks:	96.472

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	0.25	-4.39	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-16.99	-4.38	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-20.94	-4.38	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	63.1	61.2	59.5	53.4	62.0	62.6
Medium Trucks:	56.9	55.4	49.0	47.5	55.9	56.2
Heavy Trucks:	57.7	56.3	47.3	48.5	56.9	57.0
Vehicle Noise:	65.0	63.2	60.1	55.4	63.9	64.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	39	85	183	394
CNEL:	42	91	196	422

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2035 No Project
Road Name: California Drive
Road Segment: w/o Masters Drive

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	8,300 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	830 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	14 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	99.880
Medium Trucks:	99.791
Heavy Trucks:	99.800

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-2.25	-4.61	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-19.49	-4.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-23.44	-4.61	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	58.5	56.6	54.8	48.7	57.4	58.0
Medium Trucks:	52.4	50.9	44.6	43.0	51.5	51.7
Heavy Trucks:	53.7	52.3	43.3	44.5	52.9	53.0
Vehicle Noise:	60.5	58.7	55.5	50.9	59.4	59.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	20	43	92	198
CNEL:	21	46	98	212

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2035 No Project
Road Name: California Drive
Road Segment: e/o Masters Drive

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	10,800 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,080 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	14 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	99.880
Medium Trucks:	99.791
Heavy Trucks:	99.800

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-1.11	-4.61	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-18.34	-4.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-22.30	-4.61	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	59.6	57.7	55.9	49.9	58.5	59.1
Medium Trucks:	53.6	52.1	45.7	44.2	52.6	52.8
Heavy Trucks:	54.9	53.5	44.4	45.7	54.0	54.2
Vehicle Noise:	61.6	59.9	56.6	52.0	60.6	61.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	24	51	109	236
CNEL:	25	54	117	252

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2035 No Project
Road Name: El Cerrito Road
Road Segment: w/o Bedford Cayon

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,400 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,840 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	98.494
Medium Trucks:	98.404
Heavy Trucks:	98.413

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	3.09	-4.52	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-14.14	-4.51	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-18.10	-4.51	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	63.9	62.0	60.2	54.2	62.8	63.4
Medium Trucks:	57.9	56.3	50.0	48.4	56.9	57.1
Heavy Trucks:	59.2	57.8	48.7	50.0	58.3	58.5
Vehicle Noise:	65.9	64.2	60.9	56.3	64.9	65.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	46	98	211	455
CNEL:	49	105	226	487

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2035 No Project
Road Name: El Cerrito Road
Road Segment: Bedford Cayon to I-15 Freeway

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	35,100 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,510 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	98.494
Medium Trucks:	98.404
Heavy Trucks:	98.413

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	4.01	-4.52	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-13.22	-4.51	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-17.18	-4.51	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	64.8	62.9	61.1	55.1	63.7	64.3
Medium Trucks:	58.8	57.3	50.9	49.4	57.8	58.1
Heavy Trucks:	60.1	58.7	49.6	50.9	59.2	59.4
Vehicle Noise:	66.8	65.1	61.8	57.3	65.8	66.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	52	113	243	524
CNEL:	56	121	260	561

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2035 No Project
Road Name: El Cerrito Road
Road Segment: I-15 Freeway to Temescal Canyo

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	17,200	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	1,720	vehicles
Vehicle Speed:	40	mph
Near/Far Lane Distance:	36	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	100.0	feet
Centerline Dist. to Observer:	100.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	98.494
Medium Trucks:	98.404
Heavy Trucks:	98.413

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	0.92	-4.52	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-16.32	-4.51	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-20.28	-4.51	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	61.7	59.8	58.0	52.0	60.6	61.2
Medium Trucks:	55.7	54.2	47.8	46.3	54.7	55.0
Heavy Trucks:	57.0	55.6	46.5	47.8	56.1	56.3
Vehicle Noise:	63.7	62.0	58.7	54.2	62.7	63.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	33	70	151	326
CNEL:	35	75	162	349

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2035 No Project
Road Name: Bennett Avenue
Road Segment: Eagle Glen Parkway to Masters D

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	1,800 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	180 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	14 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	99.880
Medium Trucks:	99.791
Heavy Trucks:	99.800

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-8.89	-4.61	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-26.13	-4.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-30.08	-4.61	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	51.8	49.9	48.1	42.1	50.7	51.3
Medium Trucks:	45.8	44.3	37.9	36.4	44.8	45.1
Heavy Trucks:	47.1	45.7	36.6	37.9	46.3	46.4
Vehicle Noise:	53.8	52.1	48.8	44.3	52.8	53.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	7	15	33	71
CNEL:	8	16	35	76

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2035 No Project
Road Name: Bennett Avenue
Road Segment: n/o Masters Drive

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	1,400 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	140 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	14 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	99.880
Medium Trucks:	99.791
Heavy Trucks:	99.800

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-9.98	-4.61	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-27.22	-4.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-31.17	-4.61	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	50.7	48.8	47.1	41.0	49.6	50.2
Medium Trucks:	44.7	43.2	36.8	35.3	43.7	44.0
Heavy Trucks:	46.0	44.6	35.6	36.8	45.2	45.3
Vehicle Noise:	52.7	51.0	47.7	43.2	51.7	52.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	6	13	28	60
CNEL:	6	14	30	65

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2035 No Project
Road Name: Georgetown Drive
Road Segment: w/o Bedford Cayon

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	2,800 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	280 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	14 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	99.880
Medium Trucks:	99.791
Heavy Trucks:	99.800

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-6.97	-4.61	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-24.21	-4.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-28.16	-4.61	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	53.7	51.8	50.1	44.0	52.6	53.2
Medium Trucks:	47.7	46.2	39.8	38.3	46.8	47.0
Heavy Trucks:	49.0	47.6	38.6	39.8	48.2	48.3
Vehicle Noise:	55.7	54.0	50.7	46.2	54.7	55.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	10	21	44	96
CNEL:	10	22	48	103

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2035 No Project
Road Name: Eagle Glen Parkway
Road Segment: Bennett Avenue to Masters Drive

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	19,900 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,990 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	98.494
Medium Trucks:	98.404
Heavy Trucks:	98.413

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	1.55	-4.52	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-15.69	-4.51	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-19.65	-4.51	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	62.3	60.4	58.7	52.6	61.2	61.8
Medium Trucks:	56.3	54.8	48.4	46.9	55.4	55.6
Heavy Trucks:	57.6	56.2	47.2	48.4	56.8	56.9
Vehicle Noise:	64.3	62.6	59.3	54.8	63.3	63.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	36	77	167	359
CNEL:	38	83	178	384

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2035 No Project
Road Name: Eagle Glen Parkway
Road Segment: Masters Drive to Bedford Canyon

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	17,300	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	1,730	vehicles
Vehicle Speed:	40	mph
Near/Far Lane Distance:	36	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	100.0	feet
Centerline Dist. to Observer:	100.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	98.494
Medium Trucks:	98.404
Heavy Trucks:	98.413

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	0.94	-4.52	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-16.30	-4.51	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-20.25	-4.51	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	61.7	59.8	58.1	52.0	60.6	61.2
Medium Trucks:	55.7	54.2	47.8	46.3	54.8	55.0
Heavy Trucks:	57.0	55.6	46.6	47.8	56.2	56.3
Vehicle Noise:	63.7	62.0	58.7	54.2	62.7	63.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	33	70	152	327
CNEL:	35	75	163	350

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2035 No Project
Road Name: Cajalco Road
Road Segment: Bedford Canyon to I-15 Freeway

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	20,400 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,040 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	77 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	92.427
Medium Trucks:	92.331
Heavy Trucks:	92.341

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	1.15	-4.11	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-16.09	-4.10	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-20.05	-4.10	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	64.3	62.4	60.6	54.6	63.2	63.8
Medium Trucks:	58.1	56.5	50.2	48.6	57.1	57.3
Heavy Trucks:	58.9	57.5	48.4	49.7	58.1	58.2
Vehicle Noise:	66.1	64.4	61.2	56.6	65.1	65.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	47	102	219	472
CNEL:	51	109	235	506

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2035 No Project
Road Name: Cajalco Road
Road Segment: I-15 Freeway to Grand Oaks

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,200	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,520	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	77	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	100.0	feet
Centerline Dist. to Observer:	100.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	92.427
Medium Trucks:	92.331
Heavy Trucks:	92.341

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	2.06	-4.11	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-15.18	-4.10	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-19.13	-4.10	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	65.2	63.3	61.6	55.5	64.1	64.7
Medium Trucks:	59.0	57.5	51.1	49.6	58.0	58.3
Heavy Trucks:	59.8	58.4	49.4	50.6	59.0	59.1
Vehicle Noise:	67.1	65.3	62.2	57.5	66.0	66.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	54	117	252	543
CNEL:	58	126	271	583

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2035 No Project
Road Name: Cajalco Road
Road Segment: Grand Oaks to Temescal Canyon

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	19,000	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	1,900	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	77	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	100.0	feet
Centerline Dist. to Observer:	100.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	92.427
Medium Trucks:	92.331
Heavy Trucks:	92.341

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	0.84	-4.11	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-16.40	-4.10	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-20.36	-4.10	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	64.0	62.1	60.3	54.3	62.9	63.5
Medium Trucks:	57.7	56.2	49.9	48.3	56.8	57.0
Heavy Trucks:	58.6	57.2	48.1	49.4	57.7	57.9
Vehicle Noise:	65.8	64.1	60.9	56.3	64.8	65.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	45	97	209	450
CNEL:	48	104	224	483

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2035 No Project
Road Name: Cajalco Road
Road Segment: e/o Temescal Canyon Road

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	30,000 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,000 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	77 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	92.427
Medium Trucks:	92.331
Heavy Trucks:	92.341

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	2.82	-4.11	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-14.42	-4.10	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-18.37	-4.10	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	66.0	64.1	62.3	56.3	64.9	65.5
Medium Trucks:	59.7	58.2	51.9	50.3	58.8	59.0
Heavy Trucks:	60.6	59.2	50.1	51.4	59.7	59.9
Vehicle Noise:	67.8	66.1	62.9	58.2	66.8	67.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	61	131	283	610
CNEL:	65	141	304	655

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2035 No Project
Road Name: Masters Drive
Road Segment: n/o California Drive

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	8,000 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	800 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	14 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	99.880
Medium Trucks:	99.791
Heavy Trucks:	99.800

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-2.41	-4.61	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-19.65	-4.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-23.60	-4.61	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	58.3	56.4	54.6	48.6	57.2	57.8
Medium Trucks:	52.3	50.8	44.4	42.8	51.3	51.5
Heavy Trucks:	53.6	52.2	43.1	44.4	52.7	52.9
Vehicle Noise:	60.3	58.6	55.3	50.7	59.3	59.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	19	42	90	193
CNEL:	21	44	96	207

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2035 No Project
Road Name: Masters Drive
Road Segment: California Drive to Bennett Avenu

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	12,100 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,210 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	14 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	99.880
Medium Trucks:	99.791
Heavy Trucks:	99.800

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-0.61	-4.61	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-17.85	-4.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-21.81	-4.61	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	60.1	58.2	56.4	50.4	59.0	59.6
Medium Trucks:	54.1	52.6	46.2	44.6	53.1	53.3
Heavy Trucks:	55.4	54.0	44.9	46.2	54.5	54.7
Vehicle Noise:	62.1	60.4	57.1	52.5	61.1	61.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	25	55	118	254
CNEL:	27	59	126	272

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2035 No Project
Road Name: Masters Drive
Road Segment: Bennett Avenue to Eagle Glen Pa

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	8,600 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	860 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	14 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	99.880
Medium Trucks:	99.791
Heavy Trucks:	99.800

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-2.09	-4.61	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-19.33	-4.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-23.29	-4.61	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	58.6	56.7	54.9	48.9	57.5	58.1
Medium Trucks:	52.6	51.1	44.7	43.2	51.6	51.9
Heavy Trucks:	53.9	52.5	43.4	44.7	53.0	53.2
Vehicle Noise:	60.6	58.9	55.6	51.1	59.6	60.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	20	44	94	202
CNEL:	22	47	101	217

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2035 No Project
Road Name: Bedford Canyon
Road Segment: El Cerrito Road to Georgetown Dr

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	14,500 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,450 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	24 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	99.403
Medium Trucks:	99.314
Heavy Trucks:	99.323

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	0.17	-4.58	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-17.06	-4.57	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-21.02	-4.57	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	60.9	59.0	57.2	51.2	59.8	60.4
Medium Trucks:	54.9	53.4	47.0	45.5	53.9	54.2
Heavy Trucks:	56.2	54.8	45.7	47.0	55.3	55.5
Vehicle Noise:	62.9	61.2	57.9	53.4	61.9	62.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	29	62	134	288
CNEL:	31	66	143	308

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2035 No Project
Road Name: Bedford Canyon
Road Segment: Georgetown Drive to Eagle Glen

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	14,200	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	1,420	vehicles
Vehicle Speed:	40	mph
Near/Far Lane Distance:	24	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	100.0	feet
Centerline Dist. to Observer:	100.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	99.403
Medium Trucks:	99.314
Heavy Trucks:	99.323

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	0.08	-4.58	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-17.15	-4.57	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-21.11	-4.57	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	60.8	58.9	57.2	51.1	59.7	60.3
Medium Trucks:	54.8	53.3	46.9	45.4	53.8	54.1
Heavy Trucks:	56.1	54.7	45.7	46.9	55.3	55.4
Vehicle Noise:	62.8	61.1	57.8	53.3	61.8	62.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	28	61	132	284
CNEL:	30	66	141	304

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2035 No Project
Road Name: Temescal Canyon Road
Road Segment: n/o Cajalco Road

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	26,500 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,650 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	53 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	96.554
Medium Trucks:	96.463
Heavy Trucks:	96.472

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	2.28	-4.39	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-14.96	-4.38	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-18.91	-4.38	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	65.2	63.3	61.5	55.4	64.1	64.7
Medium Trucks:	58.9	57.4	51.0	49.5	58.0	58.2
Heavy Trucks:	59.8	58.3	49.3	50.5	58.9	59.0
Vehicle Noise:	67.0	65.2	62.1	57.4	66.0	66.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	54	116	250	538
CNEL:	58	124	268	577

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2035 No Project
Road Name: Temescal Canyon Road
Road Segment: s/o Cajalco Road

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	21,000 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,100 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	53 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	96.554
Medium Trucks:	96.463
Heavy Trucks:	96.472

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	1.27	-4.39	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-15.97	-4.38	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-19.92	-4.38	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	64.1	62.2	60.5	54.4	63.0	63.6
Medium Trucks:	57.9	56.4	50.0	48.5	56.9	57.2
Heavy Trucks:	58.7	57.3	48.3	49.5	57.9	58.0
Vehicle Noise:	66.0	64.2	61.1	56.4	64.9	65.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	46	99	214	461
CNEL:	49	106	229	494

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2035 With Project
Road Name: California Drive
Road Segment: w/o Masters Drive

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	9,500 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	950 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	14 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	99.880
Medium Trucks:	99.791
Heavy Trucks:	99.800

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-1.66	-4.61	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-18.90	-4.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-22.86	-4.61	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	59.0	57.1	55.4	49.3	57.9	58.5
Medium Trucks:	53.0	51.5	45.1	43.6	52.1	52.3
Heavy Trucks:	54.3	52.9	43.9	45.1	53.5	53.6
Vehicle Noise:	61.0	59.3	56.0	51.5	60.0	60.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	22	47	100	216
CNEL:	23	50	107	232

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2035 With Project
Road Name: California Drive
Road Segment: e/o Masters Drive

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	12,000 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,200 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	14 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	99.880
Medium Trucks:	99.791
Heavy Trucks:	99.800

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-0.65	-4.61	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-17.89	-4.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-21.84	-4.61	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	60.1	58.2	56.4	50.3	59.0	59.6
Medium Trucks:	54.0	52.5	46.2	44.6	53.1	53.3
Heavy Trucks:	55.3	53.9	44.9	46.1	54.5	54.6
Vehicle Noise:	62.1	60.3	57.1	52.5	61.0	61.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	25	54	117	253
CNEL:	27	58	126	271

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2035 With Project
Road Name: El Cerrito Road
Road Segment: w/o Bedford Cayon

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	30,000 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,000 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	98.494
Medium Trucks:	98.404
Heavy Trucks:	98.413

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	3.33	-4.52	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-13.91	-4.51	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-17.86	-4.51	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	64.1	62.2	60.5	54.4	63.0	63.6
Medium Trucks:	58.1	56.6	50.2	48.7	57.1	57.4
Heavy Trucks:	59.4	58.0	49.0	50.2	58.6	58.7
Vehicle Noise:	66.1	64.4	61.1	56.6	65.1	65.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	47	102	219	472
CNEL:	51	109	235	505

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2035 With Project
Road Name: El Cerrito Road
Road Segment: Bedford Cayon to I-15 Freeway

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	36,000 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,600 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	98.494
Medium Trucks:	98.404
Heavy Trucks:	98.413

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	4.12	-4.52	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-13.11	-4.51	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-17.07	-4.51	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	64.9	63.0	61.3	55.2	63.8	64.4
Medium Trucks:	58.9	57.4	51.0	49.5	57.9	58.2
Heavy Trucks:	60.2	58.8	49.8	51.0	59.4	59.5
Vehicle Noise:	66.9	65.2	61.9	57.4	65.9	66.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	53	115	247	533
CNEL:	57	123	265	571

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2035 With Project
Road Name: El Cerrito Road
Road Segment: I-15 Freeway to Temescal Canyo

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	18,100	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	1,810	vehicles
Vehicle Speed:	40	mph
Near/Far Lane Distance:	36	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	100.0	feet
Centerline Dist. to Observer:	100.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	98.494
Medium Trucks:	98.404
Heavy Trucks:	98.413

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	1.14	-4.52	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-16.10	-4.51	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-20.06	-4.51	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	61.9	60.0	58.3	52.2	60.8	61.4
Medium Trucks:	55.9	54.4	48.0	46.5	54.9	55.2
Heavy Trucks:	57.2	55.8	46.8	48.0	56.4	56.5
Vehicle Noise:	63.9	62.2	58.9	54.4	62.9	63.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	34	73	156	337
CNEL:	36	78	168	361

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2035 With Project
Road Name: Bennett Avenue
Road Segment: Eagle Glen Parkway to Masters D

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	1,800 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	180 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	14 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	99.880
Medium Trucks:	99.791
Heavy Trucks:	99.800

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-8.89	-4.61	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-26.13	-4.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-30.08	-4.61	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	51.8	49.9	48.1	42.1	50.7	51.3
Medium Trucks:	45.8	44.3	37.9	36.4	44.8	45.1
Heavy Trucks:	47.1	45.7	36.6	37.9	46.3	46.4
Vehicle Noise:	53.8	52.1	48.8	44.3	52.8	53.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	7	15	33	71
CNEL:	8	16	35	76

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2035 With Project
Road Name: Bennett Avenue
Road Segment: n/o Masters Drive

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	1,400 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	140 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	14 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	99.880
Medium Trucks:	99.791
Heavy Trucks:	99.800

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-9.98	-4.61	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-27.22	-4.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-31.17	-4.61	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	50.7	48.8	47.1	41.0	49.6	50.2
Medium Trucks:	44.7	43.2	36.8	35.3	43.7	44.0
Heavy Trucks:	46.0	44.6	35.6	36.8	45.2	45.3
Vehicle Noise:	52.7	51.0	47.7	43.2	51.7	52.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	6	13	28	60
CNEL:	6	14	30	65

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2035 With Project
Road Name: Georgetown Drive
Road Segment: w/o Bedford Cayon

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	3,100 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	310 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	14 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	99.880
Medium Trucks:	99.791
Heavy Trucks:	99.800

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-6.53	-4.61	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-23.76	-4.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-27.72	-4.61	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	54.2	52.3	50.5	44.5	53.1	53.7
Medium Trucks:	48.1	46.6	40.3	38.7	47.2	47.4
Heavy Trucks:	49.5	48.0	39.0	40.3	48.6	48.7
Vehicle Noise:	56.2	54.5	51.2	46.6	55.2	55.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	10	22	48	103
CNEL:	11	24	51	110

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2035 With Project
Road Name: Eagle Glen Parkway
Road Segment: Bennett Avenue to Masters Drive

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,000 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,500 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	98.494
Medium Trucks:	98.404
Heavy Trucks:	98.413

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	2.54	-4.52	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-14.70	-4.51	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-18.65	-4.51	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	63.3	61.4	59.7	53.6	62.2	62.8
Medium Trucks:	57.3	55.8	49.4	47.9	56.3	56.6
Heavy Trucks:	58.6	57.2	48.2	49.4	57.8	57.9
Vehicle Noise:	65.3	63.6	60.3	55.8	64.3	64.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	42	90	194	418
CNEL:	45	96	208	448

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2035 With Project
Road Name: Eagle Glen Parkway
Road Segment: Masters Drive to Bedford Canyon

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,500 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,550 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	98.494
Medium Trucks:	98.404
Heavy Trucks:	98.413

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	2.63	-4.52	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-14.61	-4.51	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-18.57	-4.51	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	63.4	61.5	59.8	53.7	62.3	62.9
Medium Trucks:	57.4	55.9	49.5	48.0	56.4	56.7
Heavy Trucks:	58.7	57.3	48.3	49.5	57.9	58.0
Vehicle Noise:	65.4	63.7	60.4	55.9	64.4	64.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	42	91	197	424
CNEL:	45	98	211	454

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2035 With Project
Road Name: Cajalco Road
Road Segment: Bedford Canyon to I-15 Freeway

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	40,600 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	4,060 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	77 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	92.427
Medium Trucks:	92.331
Heavy Trucks:	92.341

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	4.13	-4.11	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-13.10	-4.10	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-17.06	-4.10	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	67.3	65.4	63.6	57.6	66.2	66.8
Medium Trucks:	61.0	59.5	53.2	51.6	60.1	60.3
Heavy Trucks:	61.9	60.5	51.4	52.7	61.0	61.2
Vehicle Noise:	69.1	67.4	64.2	59.6	68.1	68.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	75	161	347	747
CNEL:	80	173	372	801

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2035 With Project
Road Name: Cajalco Road
Road Segment: I-15 Freeway to Grand Oaks

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,000 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,900 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	77 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	92.427
Medium Trucks:	92.331
Heavy Trucks:	92.341

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	2.67	-4.11	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-14.57	-4.10	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-18.52	-4.10	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	65.8	63.9	62.2	56.1	64.7	65.3
Medium Trucks:	59.6	58.1	51.7	50.2	58.6	58.9
Heavy Trucks:	60.4	59.0	50.0	51.2	59.6	59.7
Vehicle Noise:	67.7	65.9	62.8	58.1	66.6	67.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	60	129	277	597
CNEL:	64	138	297	640

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2035 With Project
Road Name: Cajalco Road
Road Segment: Grand Oaks to Temescal Canyon

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	22,500 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,250 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	77 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	92.427
Medium Trucks:	92.331
Heavy Trucks:	92.341

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	1.57	-4.11	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-15.67	-4.10	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-19.62	-4.10	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	64.7	62.8	61.1	55.0	63.6	64.2
Medium Trucks:	58.5	57.0	50.6	49.1	57.5	57.8
Heavy Trucks:	59.3	57.9	48.9	50.1	58.5	58.6
Vehicle Noise:	66.6	64.8	61.7	57.0	65.5	66.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	50	109	234	504
CNEL:	54	116	251	540

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2035 With Project
Road Name: Cajalco Road
Road Segment: e/o Temescal Canyon Road

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	32,000 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,200 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	77 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	92.427
Medium Trucks:	92.331
Heavy Trucks:	92.341

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	3.10	-4.11	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-14.14	-4.10	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-18.09	-4.10	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	66.3	64.4	62.6	56.5	65.2	65.8
Medium Trucks:	60.0	58.5	52.1	50.6	59.1	59.3
Heavy Trucks:	60.9	59.4	50.4	51.7	60.0	60.1
Vehicle Noise:	68.1	66.3	63.2	58.5	67.1	67.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	64	137	296	637
CNEL:	68	147	317	683

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2035 With Project
Road Name: Masters Drive
Road Segment: n/o California Drive

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	8,500 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	850 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	14 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	99.880
Medium Trucks:	99.791
Heavy Trucks:	99.800

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-2.15	-4.61	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-19.38	-4.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-23.34	-4.61	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	58.6	56.7	54.9	48.8	57.5	58.1
Medium Trucks:	52.5	51.0	44.7	43.1	51.6	51.8
Heavy Trucks:	53.8	52.4	43.4	44.6	53.0	53.1
Vehicle Noise:	60.6	58.8	55.6	51.0	59.5	60.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	20	43	93	201
CNEL:	22	46	100	215

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2035 With Project
Road Name: Masters Drive
Road Segment: California Drive to Bennett Avenu

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	15,000 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,500 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	14 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	99.880
Medium Trucks:	99.791
Heavy Trucks:	99.800

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	0.32	-4.61	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-16.92	-4.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-20.87	-4.61	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	61.0	59.1	57.4	51.3	59.9	60.5
Medium Trucks:	55.0	53.5	47.1	45.6	54.0	54.3
Heavy Trucks:	56.3	54.9	45.9	47.1	55.5	55.6
Vehicle Noise:	63.0	61.3	58.0	53.5	62.0	62.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	29	63	136	293
CNEL:	31	68	146	314

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2035 With Project
Road Name: Masters Drive
Road Segment: Bennett Avenue to Eagle Glen Pa

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	12,000 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,200 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	14 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	99.880
Medium Trucks:	99.791
Heavy Trucks:	99.800

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-0.65	-4.61	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-17.89	-4.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-21.84	-4.61	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	60.1	58.2	56.4	50.3	59.0	59.6
Medium Trucks:	54.0	52.5	46.2	44.6	53.1	53.3
Heavy Trucks:	55.3	53.9	44.9	46.1	54.5	54.6
Vehicle Noise:	62.1	60.3	57.1	52.5	61.0	61.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	25	54	117	253
CNEL:	27	58	126	271

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2035 With Project
Road Name: Bedford Canyon
Road Segment: El Cerrito Road to Georgetown Dr

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	17,000 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,700 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	24 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	99.403
Medium Trucks:	99.314
Heavy Trucks:	99.323

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	0.86	-4.58	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-16.37	-4.57	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-20.33	-4.57	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	61.6	59.7	57.9	51.9	60.5	61.1
Medium Trucks:	55.6	54.1	47.7	46.2	54.6	54.8
Heavy Trucks:	56.9	55.5	46.4	47.7	56.0	56.2
Vehicle Noise:	63.6	61.9	58.6	54.0	62.6	63.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	32	69	149	320
CNEL:	34	74	159	343

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2035 With Project
Road Name: Bedford Canyon
Road Segment: Georgetown Drive to Eagle Glen

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	17,000 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,700 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	24 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	99.403
Medium Trucks:	99.314
Heavy Trucks:	99.323

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	0.86	-4.58	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-16.37	-4.57	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-20.33	-4.57	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	61.6	59.7	57.9	51.9	60.5	61.1
Medium Trucks:	55.6	54.1	47.7	46.2	54.6	54.8
Heavy Trucks:	56.9	55.5	46.4	47.7	56.0	56.2
Vehicle Noise:	63.6	61.9	58.6	54.0	62.6	63.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	32	69	149	320
CNEL:	34	74	159	343

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2035 With Project
Road Name: Temescal Canyon Road
Road Segment: n/o Cajalco Road

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,000 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,700 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	53 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	96.554
Medium Trucks:	96.463
Heavy Trucks:	96.472

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	2.36	-4.39	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-14.88	-4.38	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-18.83	-4.38	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	65.2	63.3	61.6	55.5	64.1	64.7
Medium Trucks:	59.0	57.5	51.1	49.6	58.0	58.3
Heavy Trucks:	59.8	58.4	49.4	50.6	59.0	59.1
Vehicle Noise:	67.1	65.3	62.2	57.5	66.0	66.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	54	117	253	545
CNEL:	58	126	271	584

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2035 With Project
Road Name: Temescal Canyon Road
Road Segment: s/o Cajalco Road

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	22,000 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,200 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	53 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	96.554
Medium Trucks:	96.463
Heavy Trucks:	96.472

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	1.47	-4.39	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-15.77	-4.38	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-19.72	-4.38	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	64.3	62.4	60.7	54.6	63.2	63.9
Medium Trucks:	58.1	56.6	50.2	48.7	57.1	57.4
Heavy Trucks:	58.9	57.5	48.5	49.7	58.1	58.2
Vehicle Noise:	66.2	64.4	61.3	56.6	65.2	65.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	48	102	221	475
CNEL:	51	110	237	510

Thursday, March 31, 2011

APPENDIX 8.1

On-Site FHWA Traffic Noise Model Contours

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2035 On-Site Countours
Road Name: Eagle Glen Parkway
Road Segment: Bennett Avenue to Masters Drive

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,000 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,500 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	98.494
Medium Trucks:	98.404
Heavy Trucks:	98.413

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	2.54	-4.52	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-14.70	-4.51	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-18.65	-4.51	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	63.3	61.4	59.7	53.6	62.2	62.8
Medium Trucks:	57.3	55.8	49.4	47.9	56.3	56.6
Heavy Trucks:	58.6	57.2	48.2	49.4	57.8	57.9
Vehicle Noise:	65.3	63.6	60.3	55.8	64.3	64.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	42	90	194	418
CNEL:	45	96	208	448

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2035 On-Site Countours
Road Name: Eagle Glen Parkway
Road Segment: Masters Drive to Bedford Canyon

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,500 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,550 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	98.494
Medium Trucks:	98.404
Heavy Trucks:	98.413

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	2.63	-4.52	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-14.61	-4.51	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-18.57	-4.51	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	63.4	61.5	59.8	53.7	62.3	62.9
Medium Trucks:	57.4	55.9	49.5	48.0	56.4	56.7
Heavy Trucks:	58.7	57.3	48.3	49.5	57.9	58.0
Vehicle Noise:	65.4	63.7	60.4	55.9	64.4	64.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	42	91	197	424
CNEL:	45	98	211	454

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2035 On-Site Countours
Road Name: Street "A"
Road Segment: Eagle Glen Parkway to Street "B"

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	21,900 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,190 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	24 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	99.403
Medium Trucks:	99.314
Heavy Trucks:	99.323

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	1.96	-4.58	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-15.27	-4.57	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-19.23	-4.57	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	62.7	60.8	59.0	53.0	61.6	62.2
Medium Trucks:	56.7	55.2	48.8	47.3	55.7	55.9
Heavy Trucks:	58.0	56.6	47.5	48.8	57.1	57.3
Vehicle Noise:	64.7	63.0	59.7	55.1	63.7	64.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	38	82	176	379
CNEL:	41	87	188	406

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2035 On-Site Countours
Road Name: Street "B"
Road Segment: Street "A" to Street "C"

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	4,900 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	490 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	14 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	99.880
Medium Trucks:	99.791
Heavy Trucks:	99.800

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-4.54	-4.61	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-21.78	-4.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-25.73	-4.61	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	56.2	54.3	52.5	46.4	55.1	55.7
Medium Trucks:	50.1	48.6	42.3	40.7	49.2	49.4
Heavy Trucks:	51.5	50.0	41.0	42.2	50.6	50.7
Vehicle Noise:	58.2	56.4	53.2	48.6	57.1	57.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	14	30	65	139
CNEL:	15	32	69	149

Thursday, March 31, 2011

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2035 On-Site Countours
Road Name: Street "C"
Road Segment: Eagle Glen Parkway to Street "B"

Project Name: Arantine Hills Noise Analy
Job Number: 6897
Analyst: J.T. Stephens

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	7,300 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	730 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	14 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	100.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	99.880
Medium Trucks:	99.791
Heavy Trucks:	99.800

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-2.81	-4.61	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-20.04	-4.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-24.00	-4.61	-1.20	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	57.9	56.0	54.2	48.2	56.8	57.4
Medium Trucks:	51.9	50.4	44.0	42.5	50.9	51.1
Heavy Trucks:	53.2	51.8	42.7	44.0	52.3	52.5
Vehicle Noise:	59.9	58.2	54.9	50.3	58.9	59.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	18	39	84	181
CNEL:	19	42	90	194

Thursday, March 31, 2011