APPENDIX G

NOISE STUDY

STONERIDGE (2,140 UNIT DEVELOPMENT)
EIR NOISE IMPACT ANALYSIS
CITY OF DESERT HOT SPRINGS, CALIFORNIA

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TABLE OF CONTENTS

SECTION			PAGE
1.0	EXECUTIVE SUMMARY		1-1
	1.1	Off-Site Noise Analysis	1-1
	1.2	On-Site Noise Analysis	1-1
		1.2.1 Exterior Noise Mitigation	1-2
		1.2.2 Interior Noise Mitigation	1-2
	1.3	Construction Noise Mitigation	1-2
2.0	INTRODUCTION		2-1
3.0	NOISE FUNDAMENTALS		3-1
	3.1	Noise Descriptors	3-1
	3.2	Traffic Noise Prediction	3-2
	3.3	Noise Control	3-2
	3.4	Ground Absorption	3-2
	3.5	Noise Barrier Attenuation	3-3
4.0	NOISE STANDARDS		4-1
	4.1	Noise Element Criteria	4-1
	4.2	Noise Ordinance Criteria	4-1
	4.3	Community Noise Assessment Criteria	4-1
5.0	NOISE LEVEL MEASUREMENTS		5-1
	5.1	Measurement Procedure and Criteria	5-1
	5.2	Noise Measurement Locations	5-1
	5.3	Noise Measurement Results	5-1
6.0	METHODS AND PROCEDURES		6-1
	6.1	FHWA Traffic Noise Prediction Model	6-1
	6.2	Traffic Noise Prediction Model Inputs	6-1
7.0	OFF-SITE NOISE ANALYSIS		7-1
	7.1	Traffic Noise Contours	7-1
	7.2	Project Traffic Noise Level Contributions	7-1
8.0	ON-SITE EXTERIOR NOISE ANALYSIS		8-1
	8.1	Traffic Noise Level Assessment	8-1
	8.2	Receiver Assumptions	8-4
	8.3	Source Assumptions	8-4
	8.4	Noise Barrier	8-5
	8.5	Noise Control Barrier Construction Materials	8-5

9.0 ON-SITE INTERIOR NOISE ANALYSIS 9-1
9.1 Interior Noise Reduction Methodology 9-1
9.2 Interior Noise Level Assessment 9-1

10.0 SHORT-TERM CONSTRUCTION NOISE IMPACTS 10-1

APPENDICES

CITY OF DESERT HOT SPRINGS NOISE STANDARDS ..... A

STUDY AREA PHOTOS ..... B

FHWA TRAFFIC NOISE MODEL NOISE CONTOURS C

ON-SITE FHWA TRAFFIC NOISE MODEL CALCULATIONS ..... D

LIST OF EXHIBITS

EXHIBIT		PAGE
1-A	SUMMARY OF RECOMMENDATIONS	1-3
2-A	LOCATION MAP	2-2
2-B	SITE PLAN	2-3
5-A	NOISE MONITORING LOCATIONS	5-2
10-A	CONSTRUCTION EQUIPMENT TYPICAL NOISE LEVELS	10-2

LIST OF TABLES

TABLE		PAGE
5-1	EXISTING (AMBIENT) NOISE LEVEL MEASUREMENTS	5-3
6-1	AVERAGE DAILY TRAFFIC (1000's)	6-2
6-2	ROADWAY PARAMETERS	6-3
6-3	HOURLY TRAFFIC FLOW DISTRIBUTION	6-4
7-1	EXISTING CONDITIONS NOISE CONTOURS	7-2
7-2	OPENING YEAR (2008) WITHOUT PROJECT CONDITIONS NOISE CONTOURS	7-3
7-3	OPENING YEAR (2008) WITH PROJECT CONDITIONS NOISE CONTOURS	7-4
7-4	OPENING YEAR (2008) PROJECT CONTRIBUTIONS	7-5
8-1	TRAFFIC NOISE PREDICTION MODEL INPUTS	8-2
8-2	FUTURE EXTERIOR NOISE LEVELS (dBA Ldn)	8-3
9-1	FIRST FLOOR INTERIOR NOISE IMPACTS (dBA CNEL)	9-2
9-2	SECOND FLOOR INTERIOR NOISE IMPACTS (dBA CNEL)	9-3

STONERIDGE (2,140 UNIT DEVELOPMENT)
EIR NOISE IMPACT ANALYSIS
CITY OF DESERT HOT SPRINGS, CALIFORNIA

1.0 EXECUTIVE SUMMARY

A noise study has been completed to determine the noise impacts associated with the development of the proposed Stoneridge residential project located north of Pierson Boulevard, east of SR-62 in the City of Desert Hot Springs. The proposed project is to be developed with 2,140 detached single-family dwelling units. The purpose of this noise assessment is to evaluate the noise impacts throughout the project study area and to recommend noise mitigation measures to minimize the potential project impacts.

1.1 Off-Site Noise Analysis

The off-site analysis shows that based upon the future traffic noise impact projections for the opening year 2008 conditions, the proposed project will contribute up to 3.0 dBA CNEL to the adjacent area roadways and up to 14.1 dBA on Worsely Road north of Pierson Boulevard. There are no uses along this segment of Worsely Road and the CNEL noise contours will remain well below the City of Desert Hot Springs 65 CNEL exterior noise standard. For all other segments the noise impacts will remain below 3.0 dBA CNEL. For the adjacent area roadways, an increase of less than 3.0 dBA CNEL is considered insignificant in terms of community noise exposure.

1.2 On-Site Noise Analysis

The results of this analysis indicate that the future vehicle noise from Pierson Boulevard, Worsely Road and Karen Road are the principal source of community noise that will impact the site.

Based on the future buildout traffic projections, portions of the site will experience unmitigated exterior noise levels that will exceed the City of Desert Hot Springs

noise standards for transportation related noise impacts. To meet the City of Desert Hot Springs 65 dBA CNEL exterior and 45 dBA CNEL interior noise level standards, the project should provide the following noise mitigation measures summarized below and shown on Exhibit 1-A:

1.2.1 Exterior Noise Mitigation

- Construct a 7.0-foot high noise barrier for the backyard / patio outdoor living areas for all lots facing Pierson Boulevard.

- Construct a 5.0-foot high noise barrier for the backyard/patio outdoor living areas for all lots facing Karen Avenue.

1.2.2 Interior Noise Mitigation

- Provide a "windows closed" condition requiring a means of mechanical ventilation (e.g. air conditioning) for all homes facing Pierson Boulevard and Worsely Road.

- To minimize the potential interior noise impacts, homes Pierson Boulevard and Worsely Road should be provided with weather-stripped solid core exterior doors and exterior wall/roof assembles should be free of cut outs and openings.

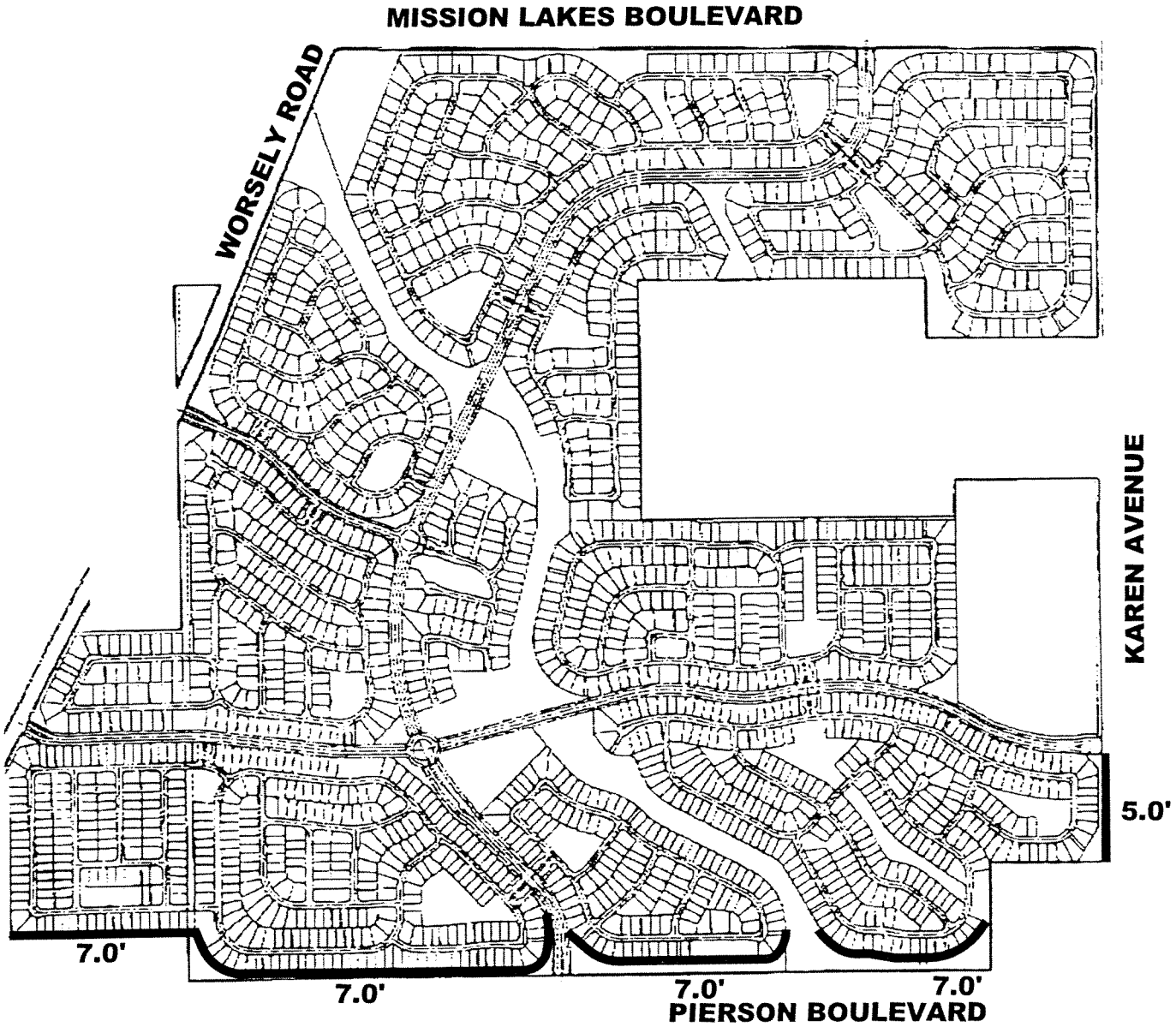
No additional exterior or interior noise mitigation is required to meet the City of Desert Hot Springs 65 dBA CNEL exterior and the 45 dBA CNEL interior noise standards. With the recommended noise mitigation measures provided in this study, the proposed Stoneridge residential project will meet the City of Desert Hot Springs noise standards for residential development.

1.3 Construction Noise Mitigation

Construction noise is a short-term duration and will not represent any long-term impacts on the project site or surrounding area. All areas adjacent to the project

EXHIBIT 1-A

SUMMARY OF RECOMMENDATIONS



PROVIDE A WINDOWS CLOSED CONDITION REQUIRING A MEANS OF MECHANICAL VENTILATION PER UBC REQUIREMENTS FOR ALL HOMES FACING PIERSON BOULEVARD AND WORSELY ROAD

LEGEND:

= NOISE BARRIER LOCATION

7.0' = MINIMUM NOISE BARRIER HEIGHT (IN FEET)

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site are vacant. To minimize potential future noise impact the following recommendations were developed:

- During construction, all vehicles or equipment shall be equipped with properly operating and maintained mufflers.

- To minimize noise impacts limit the construction hours to the hours of 6 AM to 6 PM during the winter and from 7AM to 7 PM during the summer.

- Best efforts should be made to locate stockpiling and/or vehicle staging areas as far as practical from any existing residential dwellings. The intent is to locate construction noise activity in areas that will impact the fewest homes.

A final noise study should be prepared prior to obtaining building permits for the project. This report would finalize the exterior and interior noise requirements based upon precise grading plans and actual building design specifications. Preliminary interior noise requirements are presented in this report.

2.0 INTRODUCTION

This preliminary noise study outlines the project, provides basic information regarding the fundamentals traffic noise, describes local noise guidelines, provides the study methods and procedures for traffic noise analysis, and evaluates the future exterior and interior noise environments. This study has been prepared to satisfy the City of Desert Hot Springs noise standards.

The project site is located north of Pierson Boulevard, east of SR-62 in the City of Desert Hot Springs. Exhibit 2-A illustrates the study area. The site and all other adjacent uses are currently vacant, except for a few homes located east of the project site. The proposed project includes 2,140 detached single-family dwelling units. It is anticipated that the project will be constructed in five phases and will be built-out in year 2008. The proposed Stoneridge project site plan is shown on Exhibit 2-B.

Included in this report is a discussion of the potential off-site project related noise impacts and the expected exterior and interior on-site impacts. In addition, noise mitigation measures have been identified to control the potential noise impacts for the on-site exterior and interior areas.

EXHIBIT 2-A

LOCATION MAP

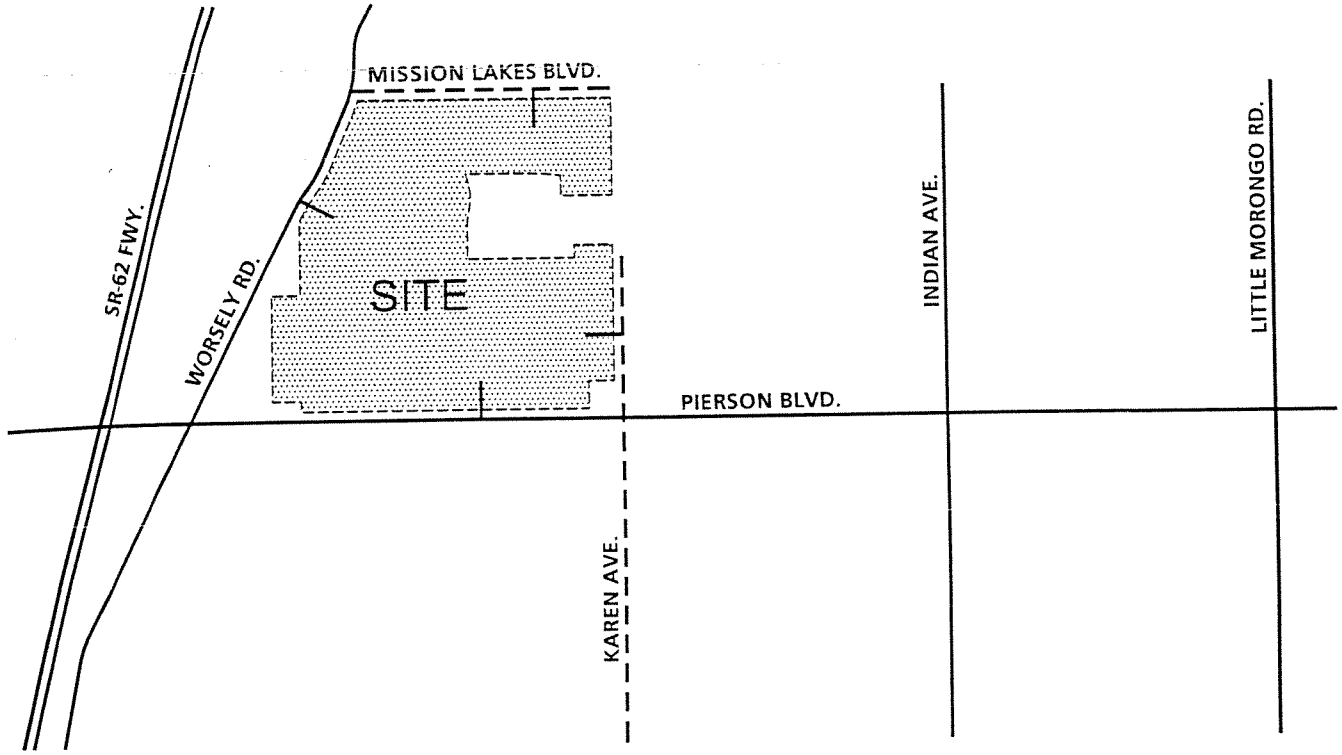

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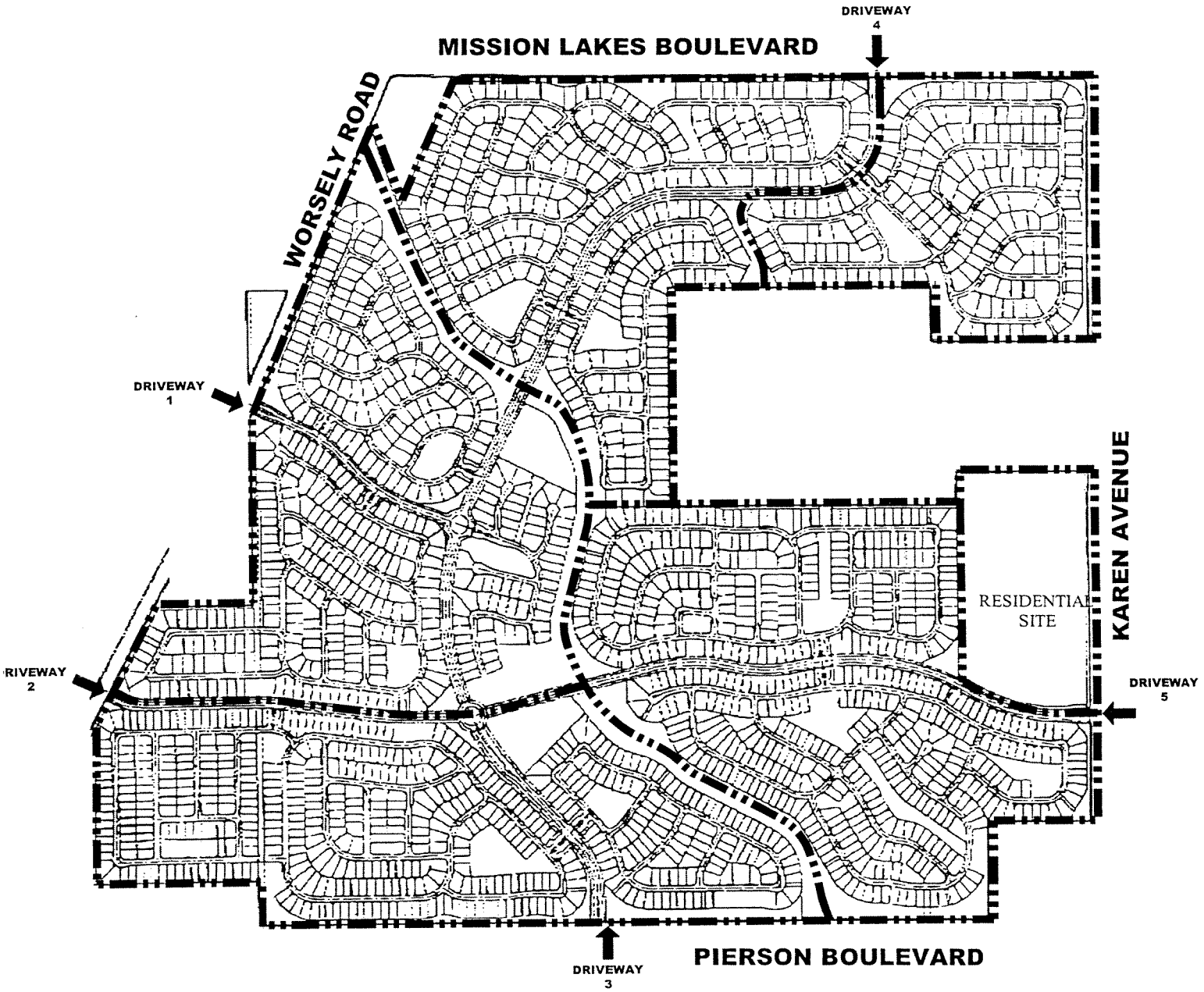
EXHIBIT 2-B

SITE PLAN



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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.

3.1 Noise Descriptors

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. The peak hour Leq is the noise metric used by Caltrans for all traffic noise impact analysis.

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

The City of Desert Hot Springs relies on the CNEL noise standard to assess transportation related impacts on noise sensitive land uses.

3.2 Traffic Noise Prediction

The level of traffic noise depends on the three primary factors: (1) the volume of the traffic, (2) the speed of the traffic, and (3) the number of truck in the flow of traffic. Generally, the loudness of traffic noise is increased by heavier traffic volumes, higher speeds, and greater number of trucks. Vehicle noise is a combination of the noise produced by the engine, exhaust, and tires.

Because of the logarithmic nature of traffic noise levels, a doubling of the traffic noise (acoustic energy) results in a noise level increase 3 dBA. Based on the FHWA community noise assessment criteria this change is "barely perceptible". In other words, a doubling of the traffic volume (assuming that the speed and truck mix do not change) results in a noise increase of 3 dBA. The truck mix on a given roadway also has a significant 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.

3.3 Noise Control

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

3.4 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. To predict the worst-case future noise environment, hard site conditions were used in this analysis.

3.5 Noise Barrier Attenuation

Effective noise barriers can reduce noise levels by 10 to 15 decibels, cutting the loudness of traffic noise in half. 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 a road. Noise barriers do very little good for homes on a hillside overlooking a road or for building which rise above the barrier. A noise barrier can achieve a 5 dB noise level reduction when it is tall enough to break the line-of-sight.

4.0 NOISE STANDARDS

The City of Desert Hot Springs has identified two separate types of noise sources: (1) mobile, and (2) stationary. To control mobile or transportation related noise sources such as freeways, airport and railroads, the City of Desert Hot Springs has established guidelines for acceptable community noise levels in the Noise Element of the General Plan. The most effective method to control community noise impacts from non-transportation noise sources (such as speakerphones, trash compactors, air-conditioning units, etc.) is through the application of a community noise ordinance.

4.1 Noise Element Criteria

The City of Desert Hot Springs has adopted interior and exterior noise standard sources as part of the General Plan Noise Element for assessing the compatibility of land uses with transportation related noise impacts. For noise sensitive residential land use, the County requires an exterior noise level of less 65 CNEL for the outdoor living areas and an interior noise standard of 45 dBA CNEL. The City of Desert Hot Springs exterior and interior noise standards are included in Appendix "A".

4.2 Noise Ordinance Criteria

The most effective method to control community noise impacts from non-transportation noise sources (such as trash compactors, air-conditioning units, etc.) is through the application of a community noise ordinance. For the purpose of this analysis, the noise impacts associated with the Stoneridge residential project are controlled by the City of Desert Hot Springs Noise Element.

4.3 Community Noise Assessment Criteria

In community noise assessment, changes in noise levels greater than 3 dBA are often identified as "barely perceptible", while of 5 dBA are "readily perceptible". In

the range of 1 dBA to 3 dBA people who are very sensitive to noise may perceive a slight change in noise level. No scientific evidence is available to support the use of 3 dBA as the significance threshold. 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.

For purposes of this study, roadway noise impacts should be considered significant if the project increases noise levels by 3 dBA (CNEL) and if: (1) the existing noise levels already exceed the 65 dBA (CNEL) residential standard or (2) the project increases noise levels from below the 65 dBA (CNEL) standard to above 65 dBA (CNEL). Additionally, if the project increases noise level by 5 dBA (CNEL) and the noise levels remain below the 65 dBA (CNEL) residential standard with the project, this would also be considered a significant impact.

With respect to roadway noise impacts, the project will not generate noise levels that are considered significant. As set forth later in this report, cumulative noise increases with the project will not exceed the significance criteria as set forth above.

5.0 NOISE LEVEL MEASUREMENTS

To determine the existing noise level environment and to assess potential noise impacts on the adjacent residential areas, noise measurements were taken at four (4) locations in the project study area. The noise measurements were recorded by Urban Crossroads, Inc. between the hours of 2:10 p.m. and 3:25 p.m. on December 9, 2003. Appendix "B" includes study area photos.

5.1 Measurement Procedure and Criteria

Noise measurements were taken using a Larson-Davis Model 824 Type 1 precision sound level meter, programmed, in "slow" mode, to record noise levels in "A" weighted form. The sound level meter and microphone were mounted on a tripod, five feet above the ground and equipped with a windscreen during all measurements. The sound level meter was calibrated before and after the monitoring using a Larson-Davis calibrator, Model CAL 150.

5.2 Noise Measurement Locations

Noise monitoring locations were selected based on their respective impact potential. Sites 1 to 4 were located within the project site. The site is currently vacant. The site is located in a relatively undeveloped area and does not experience significant traffic noise.

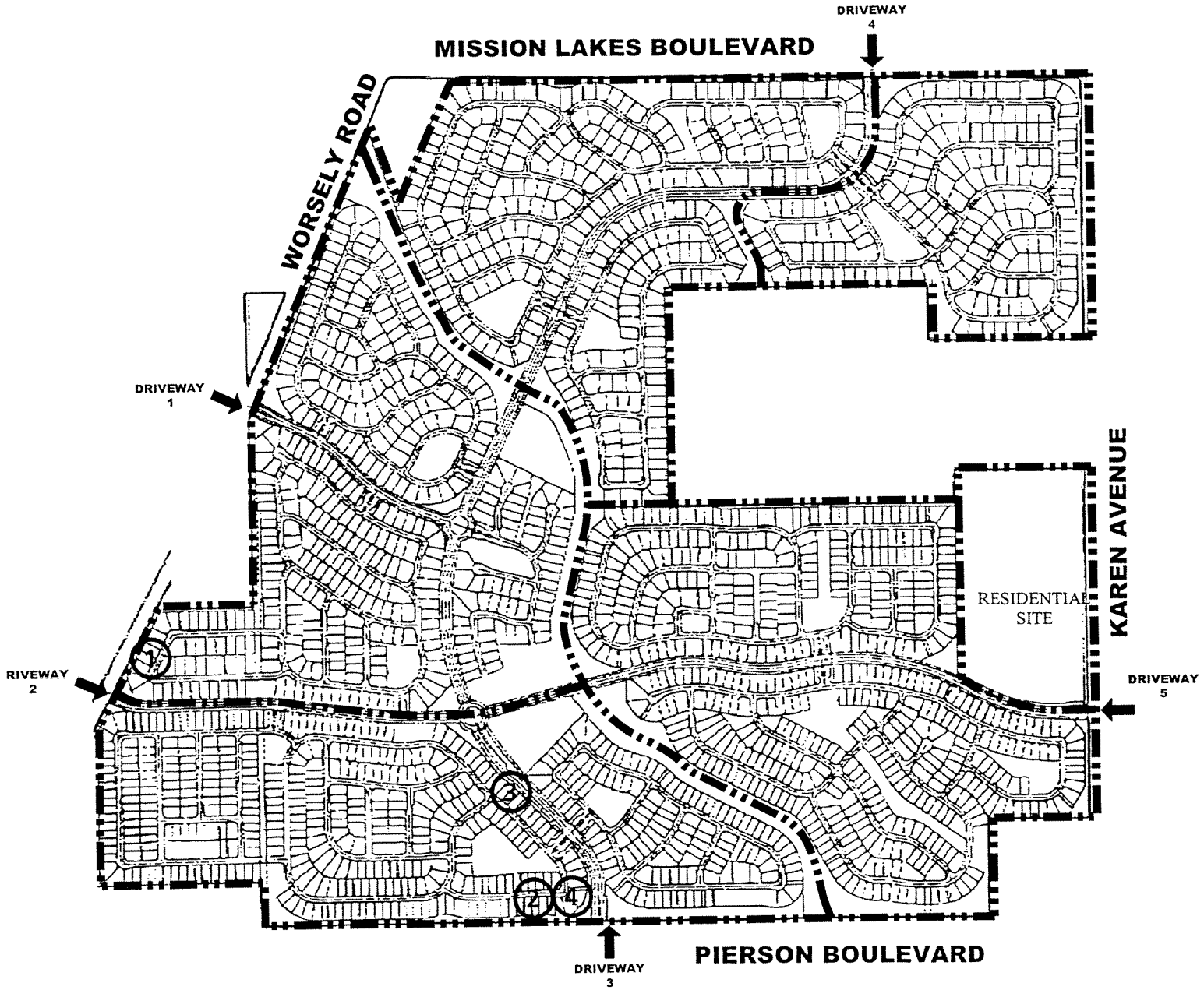
Site 1 was located in the west portion of the project 20 feet from Worsely Road. Site 2 was located in the south portion of the project 30 feet from Pierson Blvd. Site 3 was located in the south portion of the project, in the same area as Site 2 approximately 130 feet from Pierson Blvd. Site 4 is the same location as Site 2. Exhibit 5-A shows the noise monitoring locations.

5.3 Noise Measurement Results

The results of the noise level measurements are presented in Table 5-1. Each site was monitored for a minimum time period of 10 minutes. The existing ambient Leq

EXHIBIT 5-A

NOISE MONITORING LOCATIONS



LEGEND:

(4) = OBSERVER / NOISE MEASUREMENT LOCATION

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TABLE 5-1

EXISTING (AMBIENT) NOISE LEVEL MEASUREMENTS[1]

OBSERVER LOCATION[2]	DESCRIPTION	TIME OF MEASUREMENT	PRIMARY NOISE SOURCE	NOISE LEVELS (Leq dBA)
1	Located in the west portion of the project 20 feet from Worsely Road.	2:10 PM	Traffic noise from SR-62	54.7
2	Located in the south portion of the project 30 feet from Pierson Blvd.	2:30 PM	Traffic noise from Pierson Blvd.	65.0
3	Located in the south portion of the project 130 feet from Pierson Blvd.	2:35 PM	Traffic noise from Pierson Blvd.	50.4 [3]
4	Same as location 2	3:15 PM	Traffic noise from Pierson Blvd.	67.5

[1] Noise measurements taken by Urban Crossroads, Inc. on December 9, 2003.

[2] See Exhibit 5-A for the location of the monitoring sites, and Appendix B for Study Aea Photos.

[3] Taken with a Larson Davis LD-700 Series Type 2 noise meter.

[4] Weather conditions: Sunny, Temperature=70F, wind = calm, Pressure = 29.46 in Hg.

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noise levels measured in the project area ranged from 50.4 dBA Leq to 67.5 dBA Leq. There are few developed areas adjacent to the site. Some 4 or 5 homes were identified east of the project site. The existing noise levels are low within the project site, below 55 dBA Leq. The only significant noise impact in the area is traffic noise from Pierson Street. Traffic noise from the SR-62 freeway is barely perceptible and the adjacent roads do not represent a significant impact to the site due to the low traffic volumes. According to section N-2230 of the Caltrans Technical Noise Supplement (TeNS), CNEL values are generally within 2 dBA of peak hour Leq dBA.

6.0 METHODS AND PROCEDURES

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

6.1 FHWA Traffic Noise Prediction Model

The projected roadway noise impacts from vehicular traffic were projected using a computer program that replicates the Federal Highway Administration (FHWA) Traffic Noise Prediction Model- FHWA-RD-77-108 (the "FHWA Model"). The FHWA Model arrives at a predicted noise level through a series of adjustments to the Reference Energy Mean Emission Level (REMEL). Adjustments are then made to the reference energy mean emission level to account for; the roadway classification (e.g., collector, secondary, major and 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 average daily traffic (ADT) which flows each hour throughout a 24-hour period.

6.2 Traffic Noise Prediction Model Inputs

The average daily traffic volumes used for this study are presented in Table 6-1. The traffic volumes shown in Table 6-1 were obtained from The Stoneridge Traffic Impact Analysis prepared by Urban Crossroads, Inc. on June 8, 2004. Table 6-2 presents the FHWA Traffic Noise Prediction Model roadway parameters used in this analysis. Table 6-3 presents the hourly traffic flow distribution (vehicle mix) used for this analysis. The vehicle mix provides the hourly distribution percentages of automobile, medium trucks and heavy trucks for input into the FHWA Model.

TABLE 6-1

AVERAGE DAILY TRAFFIC (1000's)[1]

ROADWAY	SEGMENT	AVERAGE DAILY TRAFFIC (IN 1000's)		
		EXISTING	OPENING YEAR NO PROJECT	OPENING YEAR WITH PROJECT
Pierson Blvd.	e/o SR-62	1.5	11.4	20.6
Pierson Blvd.	e/o Worseley Rd.	1.4	11.2	16.5
Pierson Blvd.	w/o Karen Av.	1.4	11.2	20.2
Pierson Blvd.	e/o Karen Av.	1.5	11.4	22.6
Pierson Blvd.	e/o Indiana Av.	3.8	15.0	22.1
Pierson Blvd.	e/o Little Morongo Rd.	4.3	15.9	20.0
Worseley Rd.	n/o Pierson	0.1	0.2	5.2
Worseley Rd.	s/o Pierson	0.2	0.3	0.3
Karen Av.	s/o Pierson	0.1	0.1	0.1
Indiana Ave.	n/o Pierson	7.8	12.3	13.4
Indiana Ave.	s/o Pierson	8.0	12.5	15.6
Little Morongo Rd.	n/o Pierson	1.9	11.6	12.7
Little Morongo Rd.	s/o Pierson	2.5	7.0	9.0

[1] SOURCE: Stoneridge Traffic Impact Analysis, prepared by Urban Crossroads, Inc. on June 8, 2004.

n/o: North of, s/o: South of, e/o: East of, w/o: West of

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TABLE 6-2

ROADWAY PARAMETERS

ROADWAY	SEGMENT	CLASSIFICATION[1]	SPEED (MPH)	SITE CONDITIONS
Pierson Blvd.	e/o SR-62	Major Arterial	45	Soft
Pierson Blvd.	e/o Worseley Rd.	Major Arterial	45	Soft
Pierson Blvd.	w/o Karen Av.	Major Arterial	45	Soft
Pierson Blvd.	e/o Karen Av.	Major Arterial	45	Soft
Pierson Blvd.	e/o Indiana Av.	Major Arterial	45	Soft
Pierson Blvd.	e/o Little Morongo Rd.	Major Arterial	45	Soft
Worseley Rd.	n/o Pierson	Major Collector	45	Soft
Worseley Rd.	s/o Pierson	Major Collector	45	Soft
Karen Av.	s/o Pierson	Minor Collector	45	Soft
Indiana Ave.	n/o Pierson	Major Arterial	45	Soft
Indiana Ave.	s/o Pierson	Major Arterial	45	Soft
Little Morongo Rd.	n/o Pierson	Major Collector	45	Soft
Little Morongo Rd.	s/o Pierson	Major Collector	45	Soft

[1] According to the City of Desert Hot Springs Circulation Element.

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TABLE 6-3

HOURLY TRAFFIC FLOW DISTRIBUTION

MOTOR-VEHICLE TYPE	DAYTIME % (7 AM TO 7 PM)	EVENING % (7 PM TO 10 PM)	NIGHT% (10 PM TO 7 AM)	TOTAL % TRAFFIC FLOW
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%

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7.0 OFF-SITE NOISE ANALYSIS

To assess the off-site noise levels impact associated with development of the proposed Stoneridge project noise contours were developed for the following traffic scenarios.

Existing: This scenario refers to the existing present-day noise conditions, without construction of the proposed project.

Opening Year (2008) With / Without Project: This scenario refers to the background noise conditions at future year 2008 with and without the proposed project. This corresponds to the phase V, which is the last phase of the project construction.

7.1 Traffic Noise Contours

Noise contours represent the distance to noise levels of a constant value and are measured from the center of the roadway. CNEL noise contours are determined below for the 55, 60, 65 and 70 dBA noise levels. The CNEL computer printouts are included in Appendix "C".

The distance from the centerline of the roadway to the CNEL contours for roadways in the project's vicinity are presented in Tables 7-1 through 7-3. Table 7-1 presents the existing noise contours. Tables 7-2 and 7-3 present the Opening Year (2008) with and without project noise contours. For reference purposes, the CNEL level at a distance of 100 feet from the highway centerline is also included in Tables 7-1 through 7-3.

7.2 Project Traffic Noise Level Contributions

Table 7-4 presents a comparison of the Opening Year (2008) with and without project noise levels shown in Tables 7-2 and 7-3. Table 7-4 indicates that for

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
Pierson Blvd.	e/o SR-62	53.8	8	18	39	83
Pierson Blvd.	e/o Worseley Rd.	53.5	8	17	37	80
Pierson Blvd.	w/o Karen Av.	53.5	8	17	37	80
Pierson Blvd.	e/o Karen Av.	53.8	8	18	39	83
Pierson Blvd.	e/o Indiana Av.	56.8	13	28	61	131
Pierson Blvd.	e/o Little Morongo Rd.	58.4	17	36	78	168
Worseley Rd.	n/o Pierson	42.2	1	3	6	14
Worseley Rd.	s/o Pierson	45.2	2	5	10	22
Karen Av.	s/o Pierson	42.1	1	3	6	14
Indiana Ave.	n/o Pierson	61.0	25	54	116	250
Indiana Ave.	s/o Pierson	61.1	25	55	118	255
Little Morongo Rd.	n/o Pierson	55.0	10	21	46	99
Little Morongo Rd.	s/o Pierson	56.2	12	26	55	119

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TABLE 7-2

OPENING YEAR (2008) 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
Pierson Blvd.	e/o SR-62	62.6	32	70	150	323
Pierson Blvd.	e/o Worseley Rd.	62.6	32	69	148	319
Pierson Blvd.	w/o Karen Av.	62.6	32	69	148	319
Pierson Blvd.	e/o Karen Av.	62.6	32	70	150	323
Pierson Blvd.	e/o Indiana Av.	62.7	33	71	152	327
Pierson Blvd.	e/o Little Morongo Rd.	64.1	40	87	187	403
Worseley Rd.	n/o Pierson	45.2	2	5	10	22
Worseley Rd.	s/o Pierson	46.9	3	6	13	29
Karen Av.	s/o Pierson	42.1	1	3	6	14
Indiana Ave.	n/o Pierson	63.0	34	73	158	339
Indiana Ave.	s/o Pierson	63.0	34	74	159	343
Little Morongo Rd.	n/o Pierson	62.8	33	72	154	332
Little Morongo Rd.	s/o Pierson	60.6	24	51	110	237

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TABLE 7-3

OPENING YEAR (2008) 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
Pierson Blvd.	e/o SR-62	65.2	48	103	222	479
Pierson Blvd.	e/o Worseley Rd.	64.2	41	89	192	413
Pierson Blvd.	w/o Karen Av.	65.1	47	102	219	472
Pierson Blvd.	e/o Karen Av.	65.6	51	110	236	509
Pierson Blvd.	e/o Indiana Av.	64.4	42	91	197	424
Pierson Blvd.	e/o Little Morongo Rd.	65.1	47	101	218	469
Worseley Rd.	n/o Pierson	59.3	19	42	90	195
Worseley Rd.	s/o Pierson	46.9	3	6	13	29
Karen Av.	s/o Pierson	42.1	1	3	6	14
Indiana Ave.	n/o Pierson	63.3	36	77	167	359
Indiana Ave.	s/o Pierson	64.0	40	86	185	398
Little Morongo Rd.	n/o Pierson	63.2	35	76	164	353
Little Morongo Rd.	s/o Pierson	61.7	28	60	130	280

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TABLE 7-4

OPENING YEAR (2008) PROJECT CONTRIBUTIONS

ROAD	SEGMENT	CNEL AT 100 FEET (dBA)		
		NO PROJECT	WITH PROJECT	PROJECT CONTRIBUTION
Pierson Blvd.	e/o SR-62	62.6	65.2	2.6
Pierson Blvd.	e/o Worseley Rd.	62.6	64.2	1.7
Pierson Blvd.	w/o Karen Av.	62.6	65.1	2.6
Pierson Blvd.	e/o Karen Av.	62.6	65.6	3.0
Pierson Blvd.	e/o Indiana Av.	62.7	64.4	1.7
Pierson Blvd.	e/o Little Morongo Rd.	64.1	65.1	1.0
Worseley Rd.	n/o Pierson	45.2	59.3	14.1
Worseley Rd.	s/o Pierson	46.9	46.9	0.0
Karen Av.	s/o Pierson	42.1	42.1	0.0
Indiana Ave.	n/o Pierson	63.0	63.3	0.4
Indiana Ave.	s/o Pierson	63.0	64.0	1.0
Little Morongo Rd.	n/o Pierson	62.8	63.2	0.4
Little Morongo Rd.	s/o Pierson	60.6	61.7	1.1

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Opening Year conditions, the roadway noise impacts will increase 14.1 dBA CNEL on Worsely Road north of Pierson Boulevard. There are no uses along this segment of Worsely Road and the CNEL noise contours will remain well below the City of Desert Hot Springs 65 CNEL exterior noise standard. All other adjacent streets will increase from 0.0 dBA CNEL to 3.0 dBA CNEL with the development of Stoneridge project. With the through traffic, project related noise impacts during future year conditions will remain below 3 dBA CNEL. An increase of less than 3.0 dBA CNEL is considered insignificant in terms of community noise exposure.

8.0 ON-SITE EXTERIOR NOISE ANALYSIS

It is expected that the primary source of noise impacts to the site will be traffic noise from Pierson Boulevard and Worsely Road. Additional noise impacts may results from Mission Lake Boulevard, Karen Avenue and the internal project roads. However, due to the distance, topography and low traffic volume/speed, traffic noise from these roads will not make a significant contribution to the noise environment.

The preliminary grading plan was used to predict the future noise environment. This information provides the relationship between the roadway centerline elevation, the pad elevation and the centerline distance to the noise barrier, the backyard observer and at the building façade. The exterior noise levels were determined based on an observer location ten feet from the lot boundary.

8.1 Traffic Noise Level Assessment

The roadway parameters including the average daily traffic volumes used for this study are presented in Table 8-1 and were obtained from the Stoneridge Traffic Impact Analysis. Future Average Daily Traffic Volumes (ADT) were obtained from the Opening Year 2008 With Project scenario, which includes the buildout project, cumulative projects and areawide growth. According to the City of Desert Hot Springs General Plan Circulation Element, Pierson Boulevard is classified as a 6-lane Major Arterial Roadway with a Future Year ADT of 20,200, and Karen Avenue is classified as a 4-lane Minor Collector Roadway with a Future Year ADT of 6,400 and Worsely Road is classified as a 4-lane Major Collector Roadway with a future year ADT of 5,200 and Karen Avenue is classified as a 4-lane minor collector roadway with a future year ADT of 5,200 at 45 miles per hour. Table 6-3 presents the hourly traffic flow distribution (vehicle mix) used for this analysis. The vehicle mix provides the hourly distribution percentages of automobile, medium trucks and heavy trucks for input into the FHWA Model.

Table 8-2 presents the future exterior noise levels and barrier heights for selected lots facing Pierson Boulevard, Worsely Road and Karen Road. Since the precise

TABLE 8-1

TRAFFIC NOISE PREDICTION MODEL INPUTS

ROADWAY	LANES	CLASSIFICATION[1]	BUILDOUT (ADT)[2]	SPEED (MPH)	SITE CONDITIONS
Pierson Boulevard	6	Major Arterial	20,200	45	Hard
Karen Avenue	4	Minor Collector	6,400	45	Hard
Worseley Road	4	Major Collector	5,200	45	Hard

[1] Road Classification based upon the City of Desert Hot Springs General Plan Circulation Element.

[2] Based on the Stoneridge Traffic Impact Analysis prepared by Urban Crossroads, Inc on June 8, 2004.

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TABLE 8-2

FUTURE EXTERIOR NOISE LEVELS (dBA Ldn)

LOCATION	ROADWAY	UNMITIGATED	MITIGATED	MINIMUM BARRIER HEIGHT (IN FEET)[1]
A	Pierson Boulevard	71.5	64.5	7.0
B	Worsely Road	64.5	64.4	0.0
C	Karen Avenue	65.8	61.4	5.0

[1] Barrier height in feet above pad or roadway elevation, whichever is greater to achieve 65 dBA CNEL.

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grading plans are not yet available, the noise impacts at these lots were calculated assuming an at-grade configuration. For this configuration the noise impacts based on the FHWA traffic noise prediction model, the future unmitigated exterior noise levels will range from 64.5 to 71.5 dBA CNEL. With the recommended exterior noise mitigation measures that include the construction of a 5.0 to 7.0-foot high noise barrier, the mitigated exterior noise levels will range from 61.4 to 64.5 dBA CNEL. This represents a worst case scenario. If grade separation exists between the pad and the roadway or the distance from the lot boundary to the roadway right of way is increased, the noise impacts are somewhat reduced and barrier heights requirements are expected to be reduced. The computer outputs for the specific site impacts are included in Appendix "D".

An analysis has been performed to determine the acoustical shielding which may be used to reduce the expected roadway noise impact to below 65 dBA CNEL for the affected outdoor usable areas. Key input data for these barrier performance equations include the relative source-barrier-receiver horizontal separations, the relative source-barrier-receiver vertical separations, the typical noise source spectra and the barrier transmission loss. The following general assumptions were used in determination the source and receiver geometry:

8.2 Receiver Assumptions

Horizontal Geometry: Distance behind top-of-slope: 10 feet.

Vertical Geometry: Height above pad for ground level receivers:

- Exterior noise: 5 feet
- 1st Floor Interior: 5.5 feet
- 2nd Floor Interior:14.5 feet

8.3 Source Assumptions

Horizontal Geometry: All vehicles are located at the single lane equivalent acoustic center of the full roadway.

Vertical Geometry: Height above road grade:

- Autos = 0.0 feet
- Medium Trucks = 2.3 feet
- Heavy Trucks = 8.0 feet

8.4 Noise Barrier

The noise barrier recommendations presented on Exhibit 1-A reflect a barrier location at the property line, between the adjacent roadways and exterior living areas. Indicated barrier heights are assumed to be the top of the slope, above pad or roadway elevation, whichever is greater. Where applicable, the barriers should wrap around the ends of the dwelling units to prevent flanking of noise into the site.

8.5 Noise Control Barrier Construction Materials

The designed noise screening may only be accomplished if the barriers weight is at least 3.5 pounds per square foot of face area and have no decorative cutouts or line-of-site openings between shielded areas and the roadways. The recommended noise control barrier may be constructed using one of the following alternative materials:

1. Masonry block;
2. Stucco veneer over wood framing (or foam core), or 1 inch thick tongue and groove wood of sufficient weight per square foot;
3. Glass (1/4 inch thick), or other transparent material with sufficient weight per square foot;
4. Earthen berm;
5. Any combination of these construction materials.

The recommended barrier must present a solid face from top to bottom. Unnecessary openings or decorative cutouts should not be made. All gaps (except for weep holes) should be filled grout or caulking.

9.0 ON-SITE INTERIOR NOISE ANALYSIS

To ensure that interior noise levels comply with the City of Desert Hot Springs 45 dBA CNEL criteria, future exterior noise levels were calculated at the first and second floor building facades.

9.1 Interior Noise Reduction Methodology

The interior noise exposure is the difference between the projected exterior dBA Ldn exposure at the building facade and the noise reduction of the structure. Typical building construction will provide approximately 12 dBA noise reduction with "windows open" and a minimum 25 dBA noise reduction with "windows closed". Several methods are used to improve interior noise reduction including: (1) weather-stripped solid core exterior doors; (2) upgraded dual glazed windows; (3) mechanical ventilation/air conditioning; and (4) exterior wall/roof assembles free of cut outs or openings.

New construction will generally produce a "windows closed" noise reduction ranging from 25 dBA to 30 dBA. However, sound leaks, cracks and openings within the window assembly can greatly diminish the effectiveness.

9.2 Interior Noise Level Assessment

Tables 9-1 and 9-2 present the future first and second floor interior noise levels. With the recommended exterior noise mitigation measures including: the construction of a 5.0 to 7.0-foot high noise barrier, the exterior noise levels at the first and second floor building facade will range from 60.3 to 70.1 dBA CNEL. The calculations show that the "windows open" condition will not provide adequate interior noise mitigation.

To meet the 45 dBA Ldn interior noise standard, an interior noise level reduction ranging from 15.3 to 25.1 dBA CNEL is required. The required interior noise level

TABLE 9-1

FIRST FLOOR INTERIOR NOISE IMPACTS (dBA CNEL)

LOTS FACING ROADWAY	NOISE IMPACTS AT FAÇADE	INTERIOR NOISE LEVEL FOR WINDOWS		REQUIRED INTERIOR NOISE REDUCTION
		OPEN[1]	CLOSED[2]	
Pierson Boulevard	63.6	51.6	38.6	18.6
Worsely Road	63.8	51.8	38.8	18.8
Karen Avenue	60.3	48.3	35.3	15.3

[1] A minimum of 12 dBA noise reduction is assumed with a windows open condition

[2] A minimum of 25 dBA noise reduction is assumed with a windows closed condition

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TABLE 9-2

SECOND FLOOR INTERIOR NOISE IMPACTS (dBA CNEL)

LOTS FACING ROADWAY	NOISE IMPACTS AT FACADE	INTERIOR NOISE LEVEL FOR WINDOWS		REQUIRED INTERIOR NOISE REDUCTION
		OPEN[1]	CLOSED[2]	
Pierson Boulevard	70.1	58.1	45.1	25.1
Worsely Road	63.7	51.7	38.7	18.7
Karen Avenue	64.9	52.9	39.9	19.9

[1] A minimum of 12 dBA noise reduction is assumed with a windows open condition

[2] A minimum of 25 dBA noise reduction is assumed with a windows closed condition

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reduction can be accomplished with a "window closed" condition, requiring a means of mechanical ventilation (e.g. air conditioning) for all homes facing Pierson Boulevard and Worsely Road. With these design features, the future interior noise levels will be below the City of Desert Hot Springs 45 dBA CNEL interior level standard.

Verification of these requirements will be based upon the final noise study, which is required prior to obtaining building permits. The final noise study will evaluate the affects of the precise building placement, design and materials used for construction.

10.0 SHORT-TERM CONSTRUCTION NOISE IMPACTS

Construction noise represents a short-term impact on the ambient noise levels. Noise generated by construction equipment, including trucks, graders, bulldozers, concrete mixers and portable generators can reach high levels. Grading activities typically represent one of the highest potential sources for noise impacts. The most effective method of controlling construction noise is through local control of construction hours and by limiting the hours of construction to normal weekday working hours.

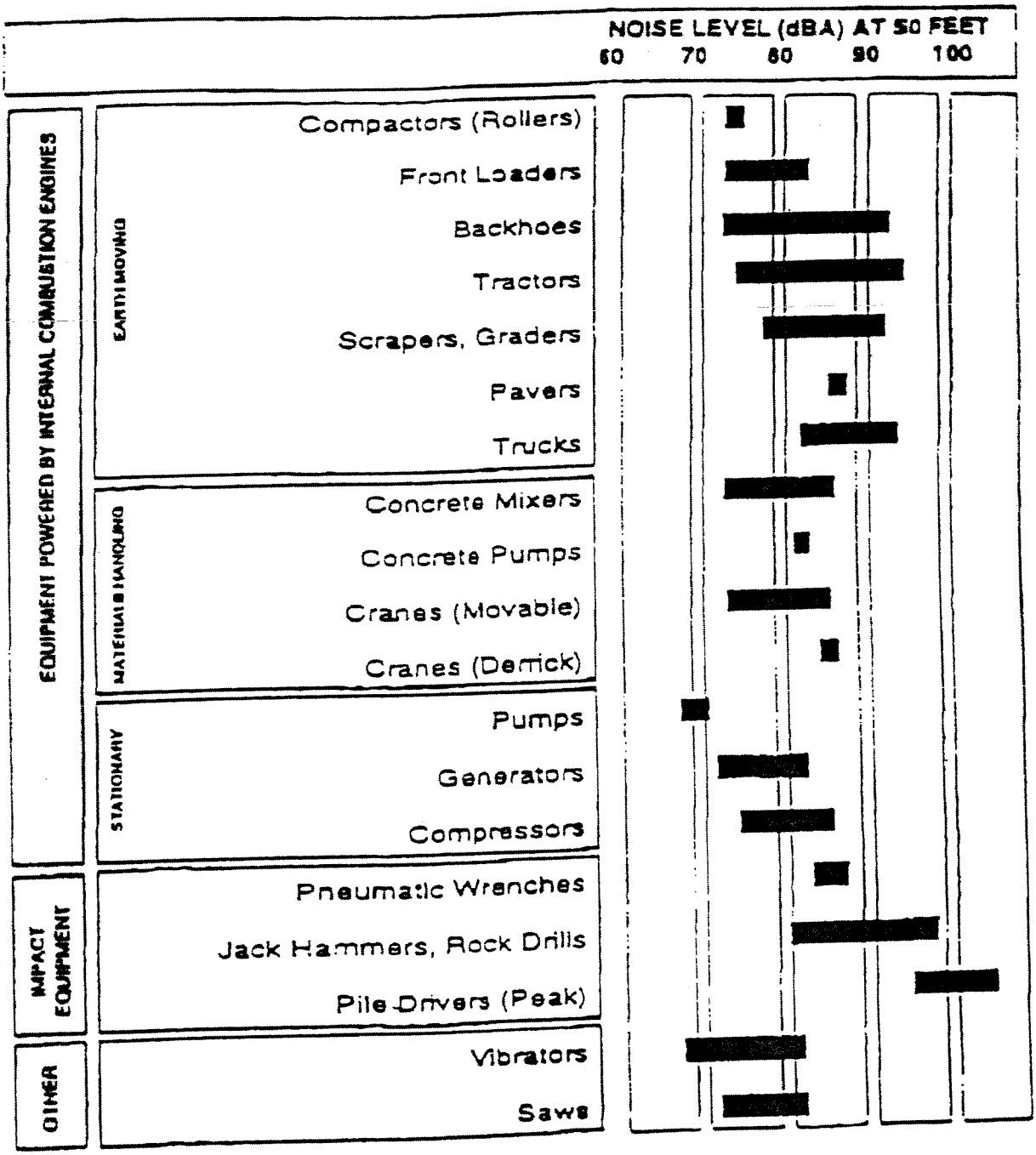
The U.S. Environmental Protection Agency (U.S. EPA) had compiled data regarding the noise generating characteristics of specific types of construction equipment. These data are shown on Exhibit 10-A. As shown, noise levels generated by heavy construction equipment can range from approximately 68 dBA to noise levels in excess of 100 dBA when measured at 50 feet. However, these noise levels would diminish rapidly with distance from the construction site at a rate of approximately 6 dBA per doubling of distance. For example, a noise level of 68 dBA measured at 50 feet from the noise source to the receptor would be reduced to 62 dBA at 100 feet from the source to the receptor, and would be further reduced by another 6 dBA to 56 dBA 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 10-A. For the purpose of this analysis, an overall grading noise level of 89 dBA at 50 feet will be used as the worst-case maximum exterior noise level. Using a drop-off rate of 6 dBA per doubling of distance noise levels at 100 feet are estimated at 83 dBA and at 200 feet 77 dBA.

There are a few homes near the project area located east of the project site. Construction noise is of short-term duration and will not present any long-term impacts on the project site or the surrounding area. To minimize noise impacts all construction vehicles or equipment fixed or mobile shall be equipped with properly operating and maintained mufflers, all stockpiling and/or vehicle staging areas should be located as far as practical from any existing residential dwelling and limit construction hours according to the City of Desert Hot Springs City Ordinance.

EXHIBIT 10-A

CONSTRUCTION EQUIPMENT TYPICAL NOISE LEVELS



APPENDIX A

CITY OF DESERT HOT SPRINGS NOISE STANDARDS

impacts associated with 1996 Interstate-10 and Southern Pacific RR traffic place the 65 dB and 70 dB contours at 277 feet and 117 feet north of Interstate-10, respectively.

Aircraft Noise

Aircraft noise impacting the community emanates from commercial and general aviation operations at the Palm Springs International Airport, located south of the planning area. The recently updated Airport Master Plan and Part 150 Noise Compatibility Study evaluated airport operations, monitored portions of the noise environment, and projected future noise impacts from planned expansions and increased operations. Flight tracks or patterns that aircraft are assumed to follow in the noise study indicate limited overflights in Desert Hot Springs.

The tracking of flight operations associated with the airport indicate that both arrivals and departures, whether during prevailing northwest or southeast winds, bring over-flights to the edge of the City's Sphere-of-Influence along Interstate-10. The analysis conducted for the Airport Master Plan update indicates that existing and future noise levels associated with airport operations will have no significant impact on the City or its Sphere.

Mechanical and Industrial Noise

In addition to noise generated by vehicular traffic, there are other noise generators within the City, which could create significant noise-related conflicts. Industrial operations related to such activities as rock crushing, construction and automotive repair can create substantial noise problems. Loading and materials transfer areas, outdoor materials warehousing operations and other acoustically unscreened operations will also raise issues of impact and compatibility. Wind turbine operations can also be expected to be potentially significant noise generators.

The operation of mechanical equipment is another important source of potentially significant noise and includes chillers, refrigerator units and heating/air conditioning equipment associated with commercial centers. Noise from roof-mounted equipment is especially effective at penetrating into adjoining neighborhoods and impacting sensitive receptors. The constant hum associated with fans and compressors can substantially impact the enjoyment of the outdoors and adversely affect the quality of life. Substantial progress has been made in noise analysis and mitigation through careful equipment design and ever improving baffling and noise cancellation technologies.

Noise and Land Use Compatibility

In California and the City specifically, a CNEL of 65 dBA is used as a standard for maximum outdoor noise levels in residential areas. Typically, the noise impacts cited are "unmitigated" or have unobstructed transmission paths representing the worst case noise impact. As discussed below, a variety of design and technical options are available to substantially reduce noise impacts. The compatibility of different land uses is directly related to the user's sensitivity to noise and the potential for impacts to be mitigated.

Particularly sensitive land uses include residences, schools, libraries, churches, hospitals and nursing homes, and resort areas. In addition, parks, golf courses and other outdoor activity areas can be sensitive to noise disturbances. Less sensitive land uses include commercial and industrial uses, conventional hotels and motels, playgrounds and neighborhood ball parks, and other outdoor spectator sport arenas. Least sensitive to noise are heavy commercial and industrial uses, transportation, communication and utility land uses. Table V-2 illustrates the ranges of allowable exterior noise levels for various land uses.

Table V-2
Community Noise And Land Use Compatibility

Land Uses	CNEL (dBA) 50	55	60	65	70	75	80
Residential Land Uses: Single & Multi-Family Dwellings, Group Quarters, Mobile Homes	A	B		C	D		
Transient Lodging: Hotels & Motels	A		B	C	D		
School Classrooms, Libraries, Churches, Hospitals, Nursing Homes & Convalescent Hospitals	A	B		C	D		
Recreation Land Uses: Golf Courses, Open Space (with walking, bicycling or horseback riding trails, etc.)	A	B	C		D		
Office Building, Personal Business, and Professional Services	A		B	C	D		
Commercial Land Uses: Retail Trade, Movie Theaters, Restaurants, Bars, Entertainment Activities, Services	A		B	C	D		
Heavy Commercial/Industrial: Wholesale, Manufacturing, Utilities, Transportation, Communications	A			C	D		
Auditoriums, Concert Halls, Amphi-theaters, Music Shells (may be sensitive receptors or generators)	B			C			
Sports Arenas, Outdoor Spectacular Sports	B			C			

Source: Federal Highway Program Manual Vol. 7, Ch. 7, Sec. 3, 1982

Explanatory Notes

A Normally Acceptable: With no special noise reduction requirements assuming standard construction.

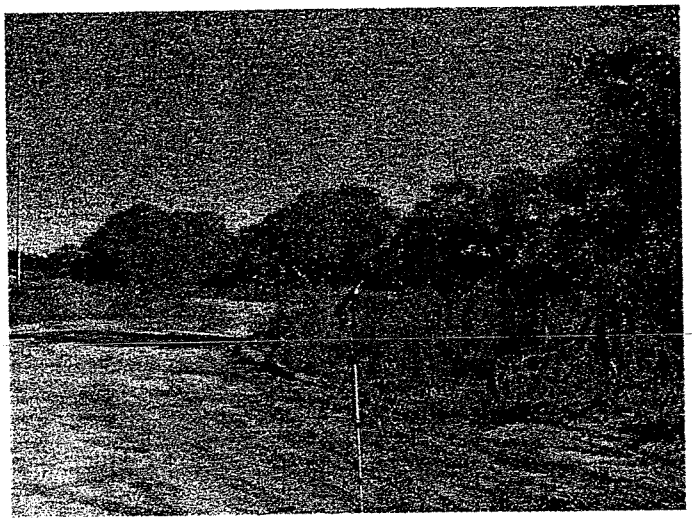
B Conditionally Acceptable: New construction or development should be underaken only after a detailed analysis of the noise reduction requirement is made and needed noise insulation features included in the design.

C Generally Unacceptable: New construction is discouraged. If new construction does proceed, a detailed analysis of noise reduction requirements must be made and needed noise insulation features included in the design.

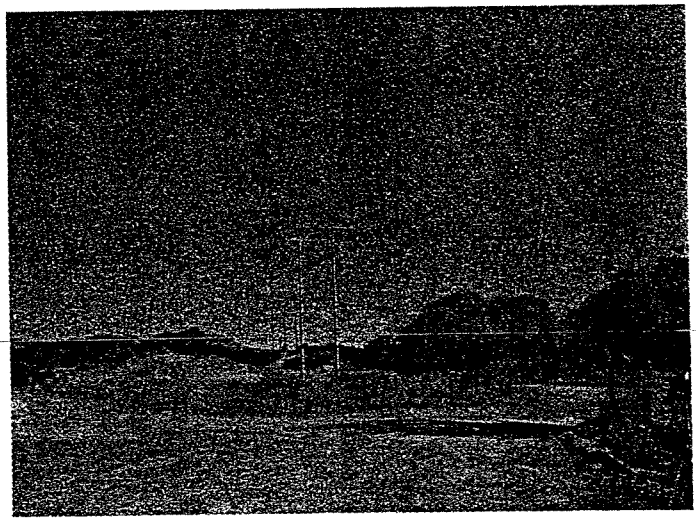
D Land Use Discouraged: New construction or development should generally not be undertaken.

APPENDIX B

STUDY AREA PHOTOS

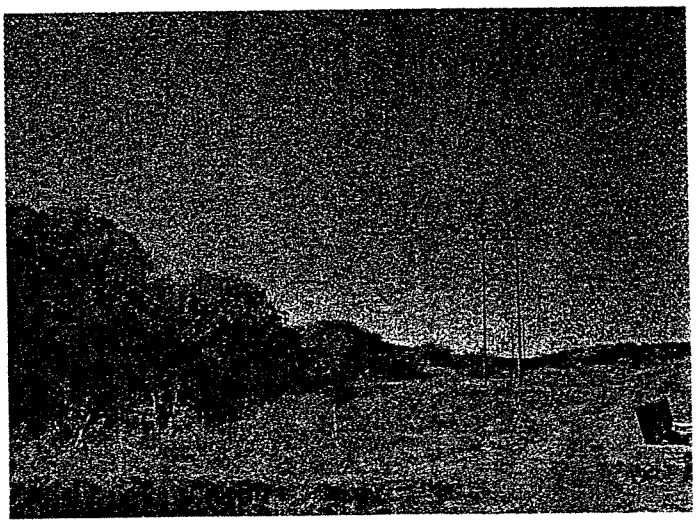


Noise measurement location 1

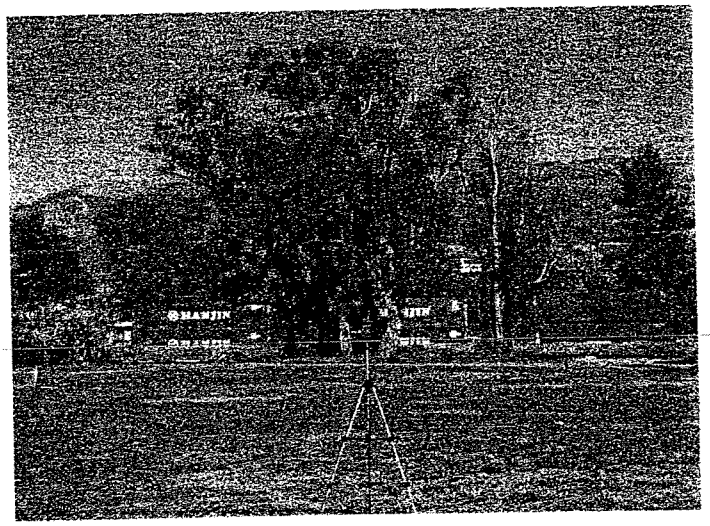


Location 1

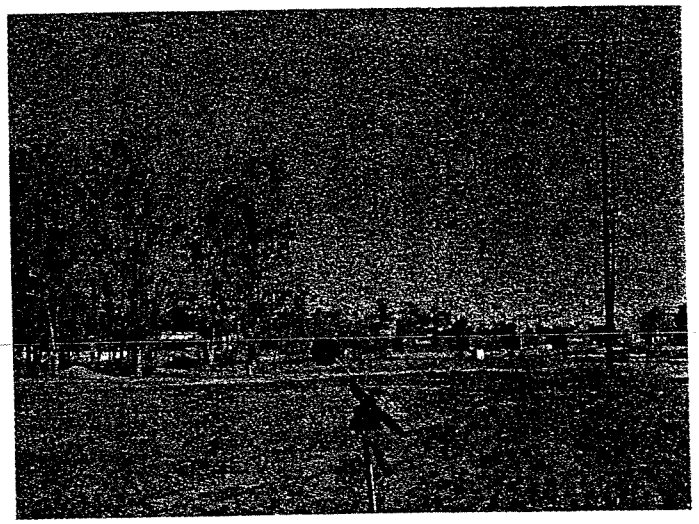
Location 1



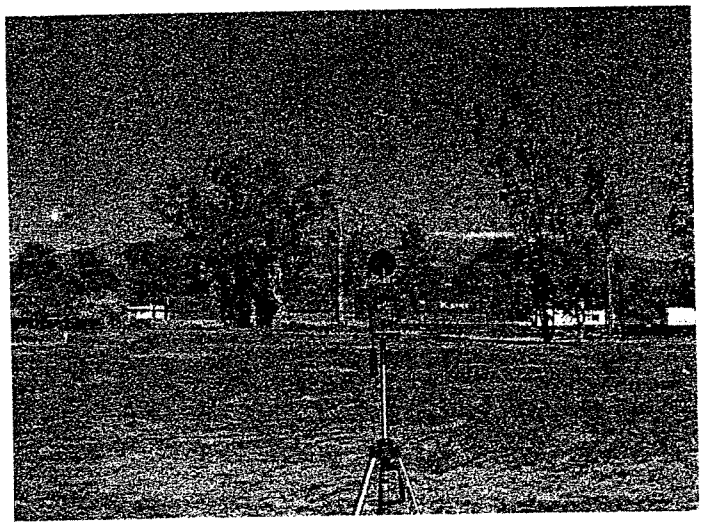
Location 1



Location 2 - measuring train pass by noise



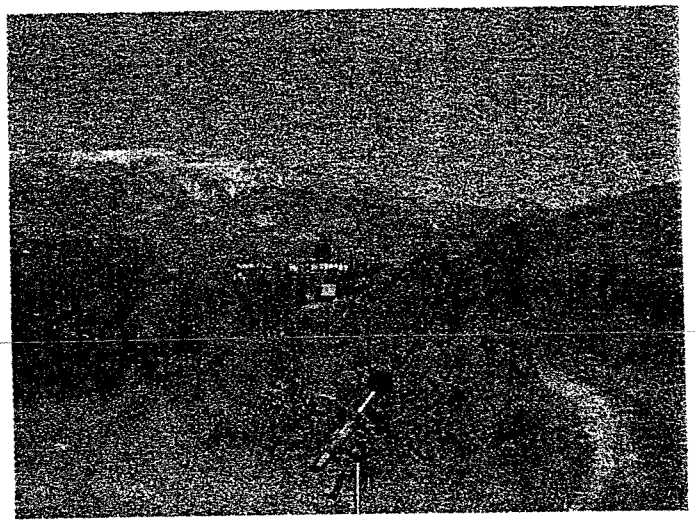
Train passy by



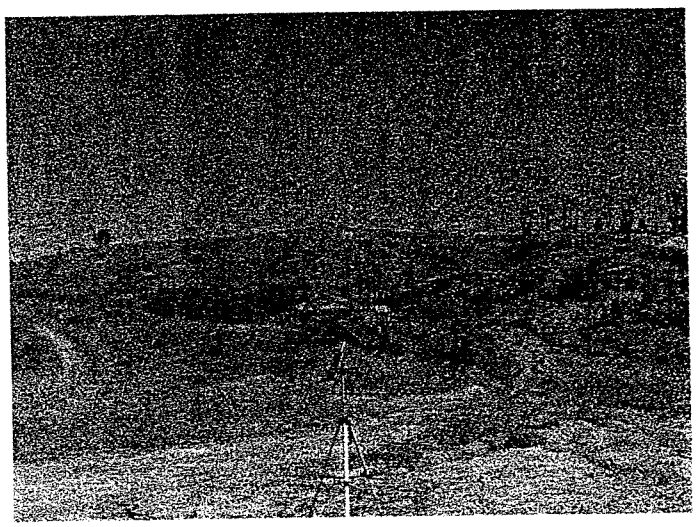
Measuring train pass by noise

Noise Monitoring location 3

Location 3



Location 3



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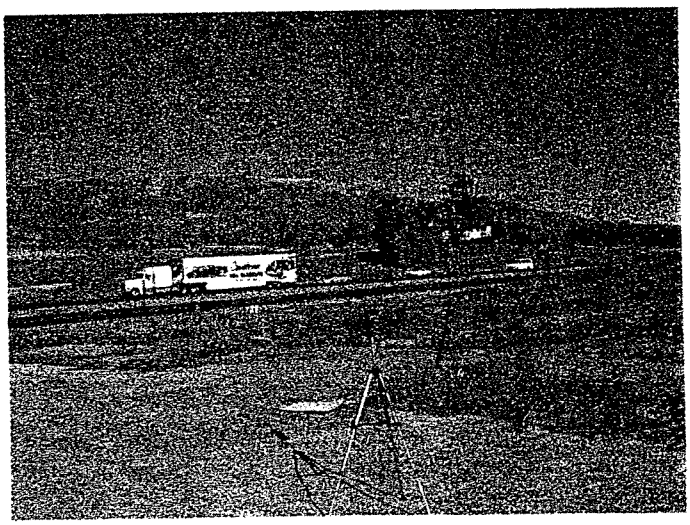


Noise monitoring location 4

Location 4

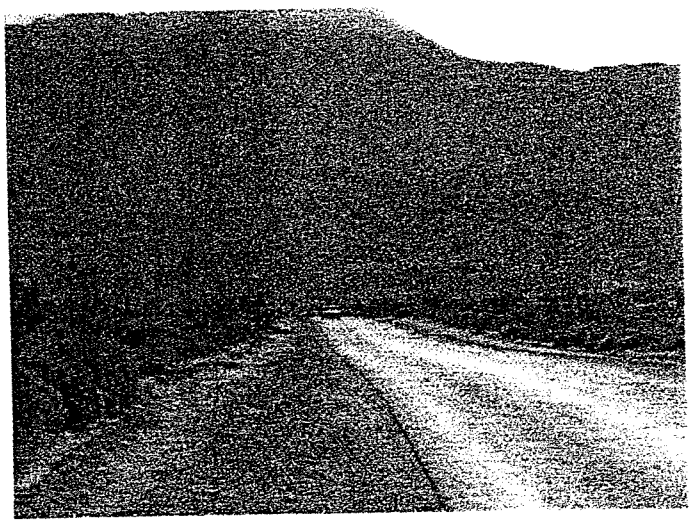
Location 4

Location 4

Location 4

Noise monitoring location 1

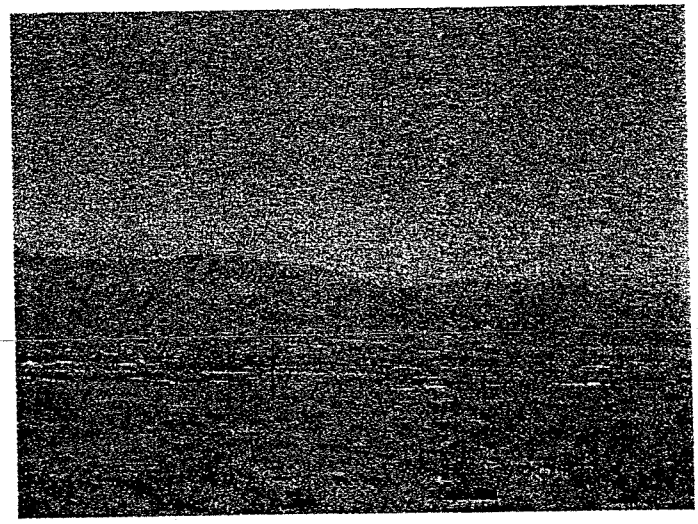
Worsely Rd.



Worsely Rd.

Location 1

Location 1



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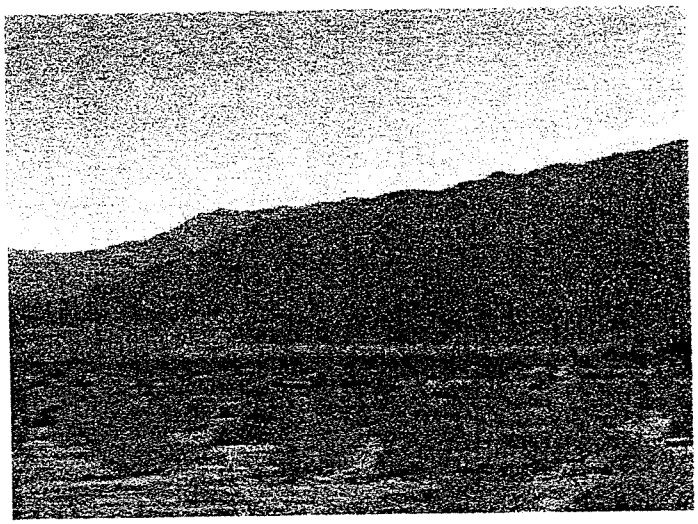

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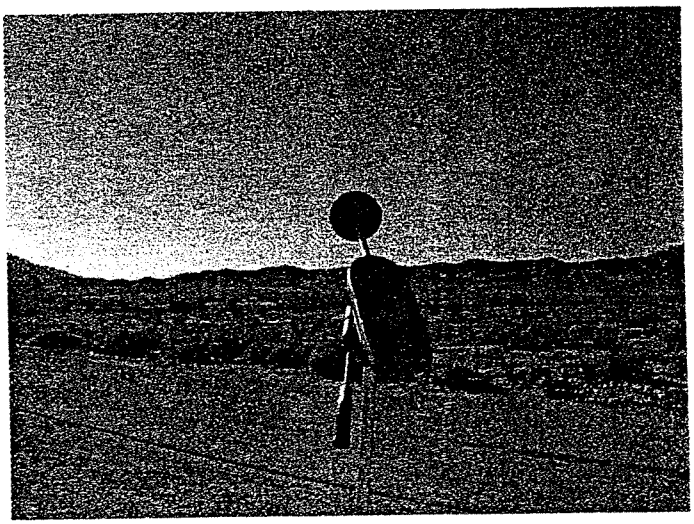
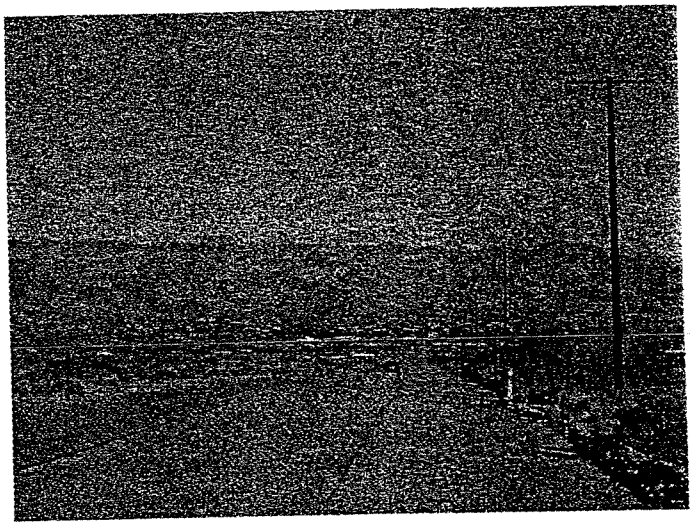
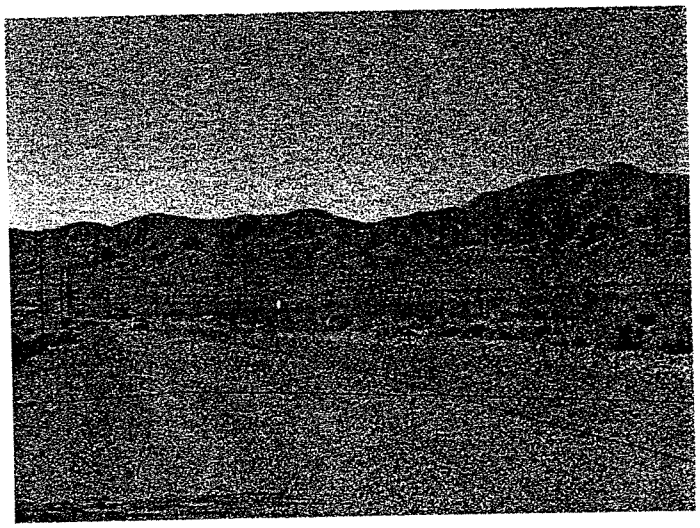


Monitoring Location 1 with SR-62 in the background

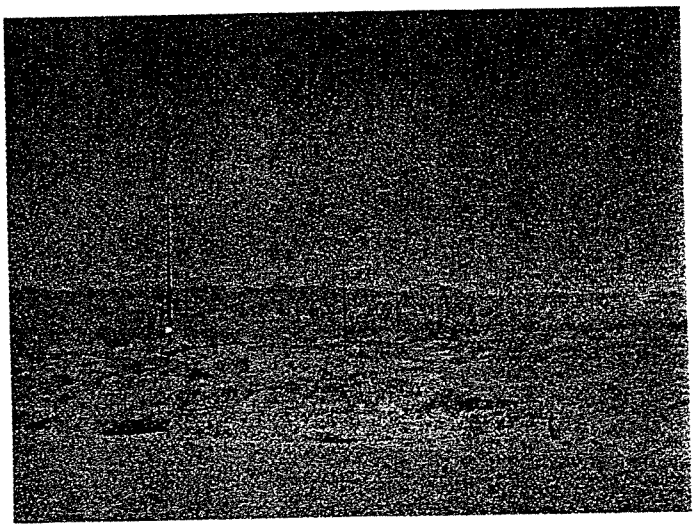
Location 1



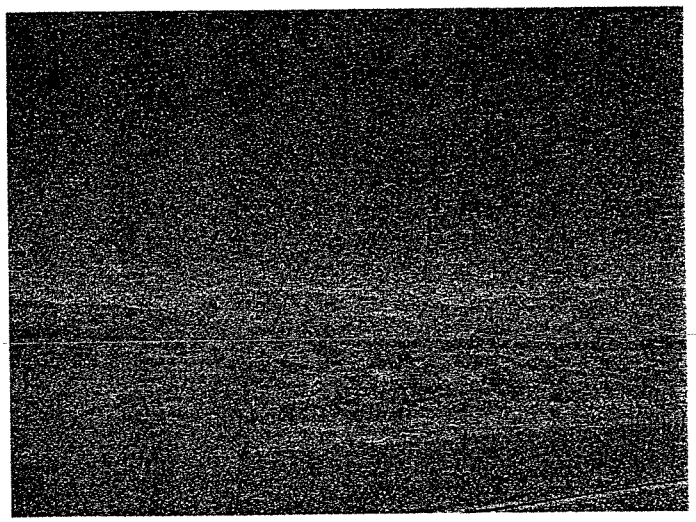
Pierson Blvd.



Pierson Blvd.

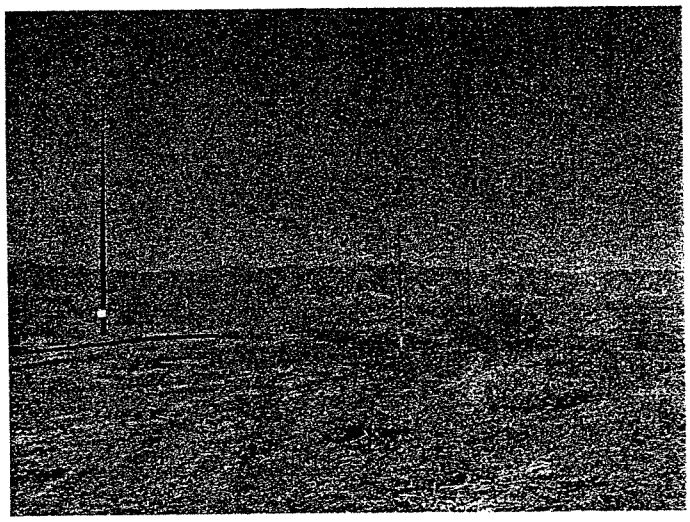


Noise monitoring location 2



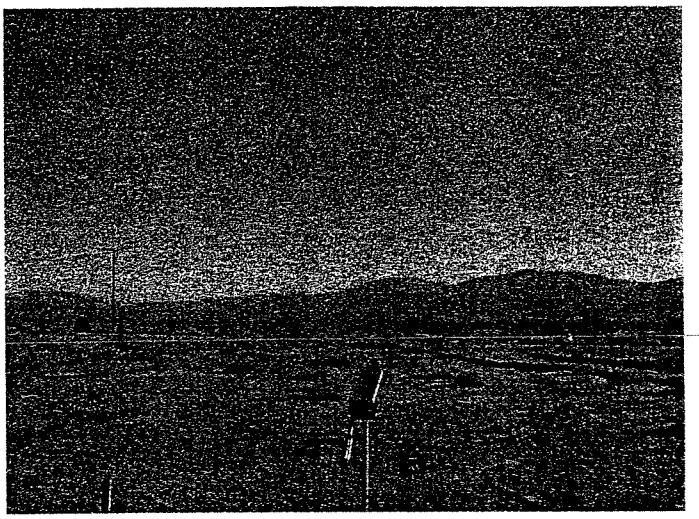
Location 2

Location 2



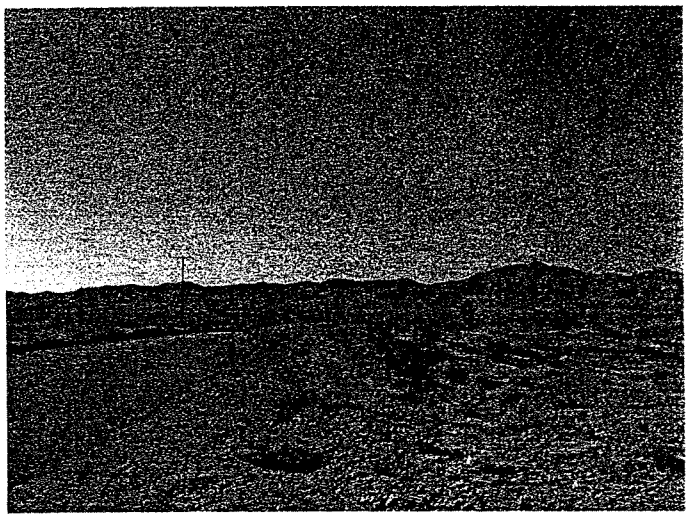
Noise monitoring location 3

Location 3



Location 3

Pierson Blvd.



Pierson Blvd.

APPENDIX C

FHWA TRAFFIC NOISE MODEL NOISE CONTOURS

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Pierson Blvd.
Road Segment: e/o SR-62

Project Name: Stoneridge Alternative 2
Job Number: 1566
Analyst: F.Sotelo

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	1,500 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	150 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	37 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:	98.401
Medium Trucks:	98.311
Heavy Trucks:	98.320

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-10.19	-4.51	-1.20	-4.77	0.000	0.000
Medium Trucks:	79.45	-27.43	-4.51	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-31.38	-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:	52.6	50.7	48.9	42.8	51.5	52.1
Medium Trucks:	46.3	44.8	38.4	36.9	45.4	45.6
Heavy Trucks:	47.2	45.7	36.7	38.0	46.3	46.4
Vehicle Noise:	54.4	52.6	49.5	44.8	53.4	53.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	17	36	78
CNEL:	8	18	39	83

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Pierson Blvd.
Road Segment: e/o Worseley Rd.

Project Name: Stoneridge Alternative 2
Job Number: 1566
Analyst: F.Sotelo

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	1,400 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	140 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	37 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:	98.401
Medium Trucks:	98.311
Heavy Trucks:	98.320

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-10.49	-4.51	-1.20	-4.77	0.000	0.000
Medium Trucks:	79.45	-27.73	-4.51	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-31.68	-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:	52.3	50.4	48.6	42.5	51.2	51.8
Medium Trucks:	46.0	44.5	38.1	36.6	45.1	45.3
Heavy Trucks:	46.9	45.4	36.4	37.7	46.0	46.1
Vehicle Noise:	54.1	52.4	49.2	44.5	53.1	53.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	7	16	34	74
CNEL:	8	17	37	80

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Pierson Blvd.
Road Segment: w/o Karen Av.

Project Name: Stoneridge Alternative 2
Job Number: 1566
Analyst: F.Sotelo

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	1,400 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	140 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	37 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:	98.401
Medium Trucks:	98.311
Heavy Trucks:	98.320

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-10.49	-4.51	-1.20	-4.77	0.000	0.000
Medium Trucks:	79.45	-27.73	-4.51	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-31.68	-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:	52.3	50.4	48.6	42.5	51.2	51.8
Medium Trucks:	46.0	44.5	38.1	36.6	45.1	45.3
Heavy Trucks:	46.9	45.4	36.4	37.7	46.0	46.1
Vehicle Noise:	54.1	52.4	49.2	44.5	53.1	53.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	7	16	34	74
CNEL:	8	17	37	80

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Pierson Blvd.
Road Segment: e/o Karen Av.

Project Name: Stoneridge Alternative 2
Job Number: 1566
Analyst: F.Sotelo

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	1,500 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	150 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	37 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:	98.401
Medium Trucks:	98.311
Heavy Trucks:	98.320

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	-10.19	-4.51	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-27.43	-4.51	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-31.38	-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:	52.6	50.7	48.9	42.8	51.5	52.1
Medium Trucks:	46.3	44.8	38.4	36.9	45.4	45.6
Heavy Trucks:	47.2	45.7	36.7	38.0	46.3	46.4
Vehicle Noise:	54.4	52.6	49.5	44.8	53.4	53.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	8	17	36	78
CNEL:	8	18	39	83

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Pierson Blvd.
Road Segment: e/o Indiana Av.

Project Name: Stoneridge Alternative 2
Job Number: 1566
Analyst: F.Sotelo

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	3,800 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	380 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	58 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:	95.833
Medium Trucks:	95.741
Heavy Trucks:	95.750

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-5.64	-4.34	-1.20	-4.77	0.000	0.000
Medium Trucks:	77.72	-22.88	-4.34	-1.20	-4.88	0.000	0.000
Heavy Trucks:	82.99	-26.84	-4.34	-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:	55.3	53.4	51.7	45.6	54.2	54.8
Medium Trucks:	49.3	47.8	41.4	39.9	48.3	48.6
Heavy Trucks:	50.6	49.2	40.2	41.4	49.8	49.9
Vehicle Noise:	57.3	55.6	52.3	47.8	56.3	56.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	12	26	57	122
CNEL:	13	28	61	131

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Pierson Blvd.
Road Segment: e/o Little Morongo Rd.

Project Name: Stoneridge Alternative 2
Job Number: 1566
Analyst: F.Sotelo

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	4,300 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	430 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	37 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:	98.401
Medium Trucks:	98.311
Heavy Trucks:	98.320

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-5.62	-4.51	-1.20	-4.77	0.000	0.000
Medium Trucks:	79.45	-22.85	-4.51	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-26.81	-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:	57.1	55.2	53.5	47.4	56.0	56.6
Medium Trucks:	50.9	49.4	43.0	41.5	49.9	50.2
Heavy Trucks:	51.7	50.3	41.3	42.5	50.9	51.0
Vehicle Noise:	59.0	57.2	54.1	49.4	57.9	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	168

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Worseley Rd.
Road Segment: n/o Pierson

Project Name: Stoneridge Alternative 2
Job Number: 1566
Analyst: F.Sotelo

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	100 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	10 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	52 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:	96.690
Medium Trucks:	96.599
Heavy Trucks:	96.608

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-21.95	-4.40	-1.20	-4.77	0.000	0.000
Medium Trucks:	79.45	-39.19	-4.39	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-43.15	-4.39	-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:	40.9	39.0	37.2	31.2	39.8	40.4
Medium Trucks:	34.7	33.2	26.8	25.3	33.7	33.9
Heavy Trucks:	35.5	34.1	25.1	26.3	34.7	34.8
Vehicle Noise:	42.7	41.0	37.9	33.2	41.7	42.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	1	3	6	13
CNEL:	1	3	6	14

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Worseley Rd.
Road Segment: s/o Pierson

Project Name: Stoneridge Alternative 2
Job Number: 1566
Analyst: F.Sotelo

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	200 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	20 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	52 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:	96.690
Medium Trucks:	96.599
Heavy Trucks:	96.608

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-18.94	-4.40	-1.20	-4.77	0.000	0.000
Medium Trucks:	79.45	-36.18	-4.39	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-40.13	-4.39	-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:	43.9	42.0	40.3	34.2	42.8	43.4
Medium Trucks:	37.7	36.2	29.8	28.3	36.7	37.0
Heavy Trucks:	38.5	37.1	28.1	29.3	37.7	37.8
Vehicle Noise:	45.8	44.0	40.9	36.2	44.7	45.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	2	4	10	21
CNEL:	2	5	10	22

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Karen Av.
Road Segment: s/o Pierson

Project Name: Stoneridge Alternative 2
Job Number: 1566
Analyst: F.Sotelo

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	100 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	10 vehicles
Vehicle Speed:	45 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:	68.46	-21.95	-4.52	-1.20	-4.77	0.000	0.000
Medium Trucks:	79.45	-39.19	-4.51	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-43.15	-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:	40.8	38.9	37.1	31.1	39.7	40.3
Medium Trucks:	34.5	33.0	26.7	25.1	33.6	33.8
Heavy Trucks:	35.4	34.0	24.9	26.2	34.5	34.7
Vehicle Noise:	42.6	40.9	37.7	33.1	41.6	42.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	1	3	6	13
CNEL:	1	3	6	14

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Indiana Ave.
Road Segment: n/o Pierson

Project Name: Stoneridge Alternative 2
Job Number: 1566
Analyst: F.Sotelo

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	7,800 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	780 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	37 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:	98.401
Medium Trucks:	98.311
Heavy Trucks:	98.320

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.03	-4.51	-1.20	-4.77	0.000	0.000
Medium Trucks:	79.45	-20.27	-4.51	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-24.22	-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:	59.7	57.8	56.1	50.0	58.6	59.2
Medium Trucks:	53.5	52.0	45.6	44.1	52.5	52.8
Heavy Trucks:	54.3	52.9	43.9	45.1	53.5	53.6
Vehicle Noise:	61.6	59.8	56.7	52.0	60.5	61.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	50	108	234
CNEL:	25	54	116	250

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Indiana Ave.
Road Segment: s/o Pierson

Project Name: Stoneridge Alternative 2
Job Number: 1566
Analyst: F.Sotelo

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	8,000 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	800 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	37 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:	98.401
Medium Trucks:	98.311
Heavy Trucks:	98.320

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.92	-4.51	-1.20	-4.77	0.000	0.000
Medium Trucks:	79.45	-20.16	-4.51	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-24.11	-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	59.3
Medium Trucks:	53.6	52.1	45.7	44.2	52.6	52.9
Heavy Trucks:	54.4	53.0	44.0	45.2	53.6	53.7
Vehicle Noise:	61.7	59.9	56.8	52.1	60.6	61.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	24	51	110	237
CNEL:	25	55	118	255

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Little Morongo Rd.
Road Segment: n/o Pierson

Project Name: Stoneridge Alternative 2
Job Number: 1566
Analyst: F.Sotelo

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	1,900 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	190 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	52 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:	96.690
Medium Trucks:	96.599
Heavy Trucks:	96.608

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-9.16	-4.40	-1.20	-4.77	0.000	0.000
Medium Trucks:	79.45	-26.40	-4.39	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-30.36	-4.39	-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	50.0	44.0	52.6	53.2
Medium Trucks:	47.5	45.9	39.6	38.0	46.5	46.7
Heavy Trucks:	48.3	46.9	37.8	39.1	47.4	47.6
Vehicle Noise:	55.5	53.8	50.6	46.0	54.5	55.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	9	20	43	93
CNEL:	10	21	46	99

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Little Morongo Rd.
Road Segment: s/o Pierson

Project Name: Stoneridge Alternative 2
Job Number: 1566
Analyst: F.Sotelo

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	2,500 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	250 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	52 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:	96.690
Medium Trucks:	96.599
Heavy Trucks:	96.608

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-7.97	-4.40	-1.20	-4.77	0.000	0.000
Medium Trucks:	79.45	-25.21	-4.39	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-29.17	-4.39	-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:	54.9	53.0	51.2	45.2	53.8	54.4
Medium Trucks:	48.6	47.1	40.8	39.2	47.7	47.9
Heavy Trucks:	49.5	48.1	39.0	40.3	48.6	48.8
Vehicle Noise:	56.7	55.0	51.8	47.2	55.7	56.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	11	24	52	111
CNEL:	12	26	55	119

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cummulative (2008) Without Project
Road Name: Pierson Blvd.
Road Segment: e/o SR-62

Project Name: Stoneridge Alternative 2
Job Number: 1566
Analyst: F.Sotelo

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	11,400 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,140 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	37 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:	98.401
Medium Trucks:	98.311
Heavy Trucks:	98.320

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.38	-4.51	-1.20	-4.77	0.000	0.000
Medium Trucks:	79.45	-18.62	-4.51	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-22.58	-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	57.7	51.6	60.3	60.9
Medium Trucks:	55.1	53.6	47.3	45.7	54.2	54.4
Heavy Trucks:	56.0	54.5	45.5	46.8	55.1	55.2
Vehicle Noise:	63.2	61.5	58.3	53.6	62.2	62.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	65	140	301
CNEL:	32	70	150	323

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cummulative (2008) Without Project
Road Name: Pierson Blvd.
Road Segment: e/o Worseley Rd.

Project Name: Stoneridge Alternative 2
Job Number: 1566
Analyst: F.Sotelo

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:	45 mph
Near/Far Lane Distance:	37 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:	98.401
Medium Trucks:	98.311
Heavy Trucks:	98.320

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	-1.46	-4.51	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-18.70	-4.51	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-22.65	-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:	61.3	59.4	57.6	51.6	60.2	60.8
Medium Trucks:	55.0	53.5	47.2	45.6	54.1	54.3
Heavy Trucks:	55.9	54.5	45.4	46.7	55.0	55.2
Vehicle Noise:	63.1	61.4	58.2	53.6	62.1	62.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	30	64	138	297
CNEL:	32	69	148	319

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cummulative (2008) Without Project
Road Name: Pierson Blvd.
Road Segment: w/o Karen Av.

Project Name: Stoneridge Alternative 2
Job Number: 1566
Analyst: F.Sotelo

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:	45 mph
Near/Far Lane Distance:	37 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:	98.401
Medium Trucks:	98.311
Heavy Trucks:	98.320

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.46	-4.51	-1.20	-4.77	0.000	0.000
Medium Trucks:	79.45	-18.70	-4.51	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-22.65	-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:	61.3	59.4	57.6	51.6	60.2	60.8
Medium Trucks:	55.0	53.5	47.2	45.6	54.1	54.3
Heavy Trucks:	55.9	54.5	45.4	46.7	55.0	55.2
Vehicle Noise:	63.1	61.4	58.2	53.6	62.1	62.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	64	138	297
CNEL:	32	69	148	319

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cummulative (2008) Without Project
Road Name: Pierson Blvd.
Road Segment: e/o Karen Av.

Project Name: Stoneridge Alternative 2
Job Number: 1566
Analyst: F.Sotelo

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	11,400 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,140 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	37 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:	98.401
Medium Trucks:	98.311
Heavy Trucks:	98.320

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	-1.38	-4.51	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-18.62	-4.51	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-22.58	-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	57.7	51.6	60.3	60.9
Medium Trucks:	55.1	53.6	47.3	45.7	54.2	54.4
Heavy Trucks:	56.0	54.5	45.5	46.8	55.1	55.2
Vehicle Noise:	63.2	61.5	58.3	53.6	62.2	62.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	30	65	140	301
CNEL:	32	70	150	323

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cummulative (2008) Without Project
Road Name: Pierson Blvd.
Road Segment: e/o Indiana Av.

Project Name: Stoneridge Alternative 2
Job Number: 1566
Analyst: F.Sotelo

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:	58 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:	95.833
Medium Trucks:	95.741
Heavy Trucks:	95.750

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.32	-4.34	-1.20	-4.77	0.000	0.000
Medium Trucks:	77.72	-16.92	-4.34	-1.20	-4.88	0.000	0.000
Heavy Trucks:	82.99	-20.87	-4.34	-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:	61.3	59.4	57.6	51.6	60.2	60.8
Medium Trucks:	55.3	53.8	47.4	45.8	54.3	54.5
Heavy Trucks:	56.6	55.2	46.1	47.4	55.7	55.9
Vehicle Noise:	63.3	61.6	58.3	53.7	62.3	62.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	66	142	306
CNEL:	33	71	152	327

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cummulative (2008) Without Project
Road Name: Pierson Blvd.
Road Segment: e/o Little Morongo Rd.

Project Name: Stoneridge Alternative 2
Job Number: 1566
Analyst: F.Sotelo

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	15,900 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,590 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	37 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:	98.401
Medium Trucks:	98.311
Heavy Trucks:	98.320

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	0.06	-4.51	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-17.18	-4.51	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-21.13	-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:	56.6	55.1	48.7	47.2	55.6	55.8
Heavy Trucks:	57.4	56.0	47.0	48.2	56.6	56.7
Vehicle Noise:	64.6	62.9	59.8	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	375
CNEL:	40	87	187	403

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cummulative (2008) Without Project
Road Name: Worseley Rd.
Road Segment: n/o Pierson

Project Name: Stoneridge Alternative 2
Job Number: 1566
Analyst: F.Sotelo

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	200 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	20 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	52 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:	96.690
Medium Trucks:	96.599
Heavy Trucks:	96.608

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-18.94	-4.40	-1.20	-4.77	0.000	0.000
Medium Trucks:	79.45	-36.18	-4.39	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-40.13	-4.39	-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:	43.9	42.0	40.3	34.2	42.8	43.4
Medium Trucks:	37.7	36.2	29.8	28.3	36.7	37.0
Heavy Trucks:	38.5	37.1	28.1	29.3	37.7	37.8
Vehicle Noise:	45.8	44.0	40.9	36.2	44.7	45.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	2	4	10	21
CNEL:	2	5	10	22

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cummulative (2008) Without Project
Road Name: Worseley Rd.
Road Segment: s/o Pierson

Project Name: Stoneridge Alternative 2
Job Number: 1566
Analyst: F.Sotelo

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	300 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	30 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	52 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:	96.690
Medium Trucks:	96.599
Heavy Trucks:	96.608

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-17.18	-4.40	-1.20	-4.77	0.000	0.000
Medium Trucks:	79.45	-34.42	-4.39	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-38.37	-4.39	-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:	45.7	43.8	42.0	36.0	44.6	45.2
Medium Trucks:	39.4	37.9	31.6	30.0	38.5	38.7
Heavy Trucks:	40.3	38.9	29.8	31.1	39.4	39.6
Vehicle Noise:	47.5	45.8	42.6	37.9	46.5	46.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	3	6	13	27
CNEL:	3	6	13	29

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cummulative (2008) Without Project
Road Name: Karen Av.
Road Segment: s/o Pierson

Project Name: Stoneridge Alternative 2
Job Number: 1566
Analyst: F.Sotelo

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	100 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	10 vehicles
Vehicle Speed:	45 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:	68.46	-21.95	-4.52	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-39.19	-4.51	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-43.15	-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:	40.8	38.9	37.1	31.1	39.7	40.3
Medium Trucks:	34.5	33.0	26.7	25.1	33.6	33.8
Heavy Trucks:	35.4	34.0	24.9	26.2	34.5	34.7
Vehicle Noise:	42.6	40.9	37.7	33.1	41.6	42.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	1	3	6	13
CNEL:	1	3	6	14

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cummulative (2008) Without Project
Road Name: Indiana Ave.
Road Segment: n/o Pierson

Project Name: Stoneridge Alternative 2
Job Number: 1566
Analyst: F.Sotelo

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:	37 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:	98.401
Medium Trucks:	98.311
Heavy Trucks:	98.320

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.05	-4.51	-1.20	-4.77	0.000	0.000
Medium Trucks:	79.45	-18.29	-4.51	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-22.25	-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	58.0	52.0	60.6	61.2
Medium Trucks:	55.5	53.9	47.6	46.0	54.5	54.7
Heavy Trucks:	56.3	54.9	45.8	47.1	55.4	55.6
Vehicle Noise:	63.5	61.8	58.6	54.0	62.5	63.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	32	68	147	316
CNEL:	34	73	158	339

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cummulative (2008) Without Project
Road Name: Indiana Ave.
Road Segment: s/o Pierson

Project Name: Stoneridge Alternative 2
Job Number: 1566
Analyst: F.Sotelo

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:	37 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:	98.401
Medium Trucks:	98.311
Heavy Trucks:	98.320

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	-0.98	-4.51	-1.20	-4.77	0.000	0.000
Medium Trucks:	79.45	-18.22	-4.51	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-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:	61.8	59.9	58.1	52.0	60.7	61.3
Medium Trucks:	55.5	54.0	47.7	46.1	54.6	54.8
Heavy Trucks:	56.4	54.9	45.9	47.2	55.5	55.6
Vehicle Noise:	63.6	61.9	58.7	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	320
CNEL:	34	74	159	343

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cummulative (2008) Without Project
Road Name: Little Morongo Rd.
Road Segment: n/o Pierson

Project Name: Stoneridge Alternative 2
Job Number: 1566
Analyst: F.Sotelo

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	11,600 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,160 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	52 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:	96.690
Medium Trucks:	96.599
Heavy Trucks:	96.608

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	-1.31	-4.40	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-18.54	-4.39	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-22.50	-4.39	-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	51.8	60.5	61.1
Medium Trucks:	55.3	53.8	47.4	45.9	54.4	54.6
Heavy Trucks:	56.2	54.7	45.7	46.9	55.3	55.4
Vehicle Noise:	63.4	61.6	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	310
CNEL:	33	72	154	332

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cummulative (2008) Without Project
Road Name: Little Morongo Rd.
Road Segment: s/o Pierson

Project Name: Stoneridge Alternative 2
Job Number: 1566
Analyst: F.Sotelo

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	7,000 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	700 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	52 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:	96.690
Medium Trucks:	96.599
Heavy Trucks:	96.608

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	-3.50	-4.40	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-20.74	-4.39	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-24.69	-4.39	-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	49.6	58.3	58.9
Medium Trucks:	53.1	51.6	45.2	43.7	52.2	52.4
Heavy Trucks:	54.0	52.5	43.5	44.8	53.1	53.2
Vehicle Noise:	61.2	59.5	56.3	51.6	60.2	60.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	22	48	103	221
CNEL:	24	51	110	237

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cummulative (2008) With Project
Road Name: Pierson Blvd.
Road Segment: e/o SR-62

Project Name: Stoneridge Alternative 2
Job Number: 1566
Analyst: F.Sotelo

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	20,600 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,060 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	37 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:	98.401
Medium Trucks:	98.311
Heavy Trucks:	98.320

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.19	-4.51	-1.20	-4.77	0.000	0.000
Medium Trucks:	79.45	-16.05	-4.51	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-20.01	-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	60.3	54.2	62.8	63.4
Medium Trucks:	57.7	56.2	49.8	48.3	56.7	57.0
Heavy Trucks:	58.5	57.1	48.1	49.3	57.7	57.8
Vehicle Noise:	65.8	64.0	60.9	56.2	64.7	65.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	45	96	207	446
CNEL:	48	103	222	479

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cummulative (2008) With Project
Road Name: Pierson Blvd.
Road Segment: e/o Worseley Rd.

Project Name: Stoneridge Alternative 2
Job Number: 1566
Analyst: F.Sotelo

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	16,500 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,650 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	37 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:	98.401
Medium Trucks:	98.311
Heavy Trucks:	98.320

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.22	-4.51	-1.20	-4.77	0.000	0.000
Medium Trucks:	79.45	-17.01	-4.51	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-20.97	-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:	63.0	61.1	59.3	53.3	61.9	62.5
Medium Trucks:	56.7	55.2	48.9	47.3	55.8	56.0
Heavy Trucks:	57.6	56.2	47.1	48.4	56.7	56.8
Vehicle Noise:	64.8	63.1	59.9	55.2	63.8	64.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	83	179	385
CNEL:	41	89	192	413

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cummulative (2008) With Project
Road Name: Pierson Blvd.
Road Segment: w/o Karen Av.

Project Name: Stoneridge Alternative 2
Job Number: 1566
Analyst: F.Sotelo

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	20,200 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,020 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	37 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:	98.401
Medium Trucks:	98.311
Heavy Trucks:	98.320

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.10	-4.51	-1.20	-4.77	0.000	0.000
Medium Trucks:	79.45	-16.14	-4.51	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-20.09	-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:	63.8	62.0	60.2	54.1	62.8	63.4
Medium Trucks:	57.6	56.1	49.7	48.2	56.7	56.9
Heavy Trucks:	58.5	57.0	48.0	49.2	57.6	57.7
Vehicle Noise:	65.7	63.9	60.8	56.1	64.7	65.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	44	95	204	440
CNEL:	47	102	219	472

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cummulative (2008) With Project
Road Name: Pierson Blvd.
Road Segment: e/o Karen Av.

Project Name: Stoneridge Alternative 2
Job Number: 1566
Analyst: F.Sotelo

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	22,600 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,260 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	37 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:	98.401
Medium Trucks:	98.311
Heavy Trucks:	98.320

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.59	-4.51	-1.20	-4.77	0.000	0.000
Medium Trucks:	79.45	-15.65	-4.51	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-19.60	-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:	64.3	62.4	60.7	54.6	63.2	63.8
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	65.1	65.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	47	102	220	475
CNEL:	51	110	236	509

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cummulative (2008) With Project
Road Name: Pierson Blvd.
Road Segment: e/o Indiana Av.

Project Name: Stoneridge Alternative 2
Job Number: 1566
Analyst: F.Sotelo

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:	58 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:	95.833
Medium Trucks:	95.741
Heavy Trucks:	95.750

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	2.00	-4.34	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-15.23	-4.34	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-19.19	-4.34	-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:	63.0	61.1	59.3	53.3	61.9	62.5
Medium Trucks:	56.9	55.4	49.1	47.5	56.0	56.2
Heavy Trucks:	58.3	56.8	47.8	49.1	57.4	57.5
Vehicle Noise:	65.0	63.3	60.0	55.4	64.0	64.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	40	85	184	396
CNEL:	42	91	197	424

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cummulative (2008) With Project
Road Name: Pierson Blvd.
Road Segment: e/o Little Morongo Rd.

Project Name: Stoneridge Alternative 2
Job Number: 1566
Analyst: F.Sotelo

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:	37 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:	98.401
Medium Trucks:	98.311
Heavy Trucks:	98.320

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.06	-4.51	-1.20	-4.77	0.000	0.000
Medium Trucks:	79.45	-16.18	-4.51	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-20.13	-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:	63.8	61.9	60.1	54.1	62.7	63.3
Medium Trucks:	57.6	56.1	49.7	48.1	56.6	56.8
Heavy Trucks:	58.4	57.0	48.0	49.2	57.6	57.7
Vehicle Noise:	65.6	63.9	60.8	56.1	64.6	65.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	44	94	203	437
CNEL:	47	101	218	469

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cummulative (2008) With Project
Road Name: Worseley Rd.
Road Segment: n/o Pierson

Project Name: Stoneridge Alternative 2
Job Number: 1566
Analyst: F.Sotelo

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	5,200 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	520 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	52 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:	96.690
Medium Trucks:	96.599
Heavy Trucks:	96.608

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-4.79	-4.40	-1.20	-4.77	0.000	0.000
Medium Trucks:	79.45	-22.03	-4.39	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-25.99	-4.39	-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:	58.1	56.2	54.4	48.4	57.0	57.6
Medium Trucks:	51.8	50.3	44.0	42.4	50.9	51.1
Heavy Trucks:	52.7	51.3	42.2	43.5	51.8	51.9
Vehicle Noise:	59.9	58.2	55.0	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	195

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cummulative (2008) With Project
Road Name: Worseley Rd.
Road Segment: s/o Pierson

Project Name: Stoneridge Alternative 2
Job Number: 1566
Analyst: F.Sotelo

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	300 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	30 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	52 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:	96.690
Medium Trucks:	96.599
Heavy Trucks:	96.608

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	-17.18	-4.40	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-34.42	-4.39	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-38.37	-4.39	-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:	45.7	43.8	42.0	36.0	44.6	45.2
Medium Trucks:	39.4	37.9	31.6	30.0	38.5	38.7
Heavy Trucks:	40.3	38.9	29.8	31.1	39.4	39.6
Vehicle Noise:	47.5	45.8	42.6	37.9	46.5	46.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	3	6	13	27
CNEL:	3	6	13	29

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cummulative (2008) With Project
Road Name: Karen Av.
Road Segment: s/o Pierson

Project Name: Stoneridge Alternative 2
Job Number: 1566
Analyst: F.Sotelo

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	100 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	10 vehicles
Vehicle Speed:	45 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:	68.46	-21.95	-4.52	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-39.19	-4.51	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-43.15	-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:	40.8	38.9	37.1	31.1	39.7	40.3
Medium Trucks:	34.5	33.0	26.7	25.1	33.6	33.8
Heavy Trucks:	35.4	34.0	24.9	26.2	34.5	34.7
Vehicle Noise:	42.6	40.9	37.7	33.1	41.6	42.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	1	3	6	13
CNEL:	1	3	6	14

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cummulative (2008) With Project
Road Name: Indiana Ave.
Road Segment: n/o Pierson

Project Name: Stoneridge Alternative 2
Job Number: 1566
Analyst: F.Sotelo

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	13,400 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,340 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	37 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:	98.401
Medium Trucks:	98.311
Heavy Trucks:	98.320

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	-0.68	-4.51	-1.20	-4.77	0.000	0.000
Medium Trucks:	79.45	-17.92	-4.51	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-21.87	-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:	62.1	60.2	58.4	52.3	61.0	61.6
Medium Trucks:	55.8	54.3	48.0	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

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cummulative (2008) With Project
Road Name: Indiana Ave.
Road Segment: s/o Pierson

Project Name: Stoneridge Alternative 2
Job Number: 1566
Analyst: F.Sotelo

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:	37 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:	98.401
Medium Trucks:	98.311
Heavy Trucks:	98.320

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	-0.02	-4.51	-1.20	-4.77	0.000	0.000
Medium Trucks:	79.45	-17.26	-4.51	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-21.21	-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:	56.5	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

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cummulative (2008) With Project
Road Name: Little Morongo Rd.
Road Segment: n/o Pierson

Project Name: Stoneridge Alternative 2
Job Number: 1566
Analyst: F.Sotelo

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:	52 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:	96.690
Medium Trucks:	96.599
Heavy Trucks:	96.608

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	-0.91	-4.40	-1.20	-4.77	0.000	0.000
Medium Trucks:	79.45	-18.15	-4.39	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-22.11	-4.39	-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	60.9	61.5
Medium Trucks:	55.7	54.2	47.8	46.3	54.8	55.0
Heavy Trucks:	56.6	55.1	46.1	47.3	55.7	55.8
Vehicle Noise:	63.8	62.0	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

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cummulative (2008) With Project
Road Name: Little Morongo Rd.
Road Segment: s/o Pierson

Project Name: Stoneridge Alternative 2
Job Number: 1566
Analyst: F.Sotelo

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	9,000 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	900 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	52 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:	96.690
Medium Trucks:	96.599
Heavy Trucks:	96.608

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.41	-4.40	-1.20	-4.77	0.000	0.000
Medium Trucks:	79.45	-19.65	-4.39	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-23.60	-4.39	-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	56.8	50.7	59.4	60.0
Medium Trucks:	54.2	52.7	46.3	44.8	53.3	53.5
Heavy Trucks:	55.1	53.6	44.6	45.8	54.2	54.3
Vehicle Noise:	62.3	60.5	57.4	52.7	61.3	61.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	26	56	121	261
CNEL:	28	60	130	280