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CORNERSTONE CHURCH PRESCHOOL
NOISE IMPACT ANALYSIS
CITY OF WILDOMAR, CALIFORNIA

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1.0 EXECUTIVE SUMMARY

This noise study has been completed to determine the potential noise impacts associated with the development of the proposed Cornerstone Pre-School Expansion (PUP No. 778, Revised Permit No. 4) ("Project"). The proposed project consists of the development of a new 17,315 square foot pre-school/day care building in the northwest corner of the existing Cornerstone Church located east of Monte Vista Drive between Bundy Canyon Road and Baxter Road in the City of Wildomar. This noise study briefly describes the proposed project, provides information regarding noise fundamentals, describes the local regulatory setting, provides the study methods and procedures for traffic noise analysis, and evaluates the future off-site exterior noise environment

1.1 OFF-SITE TRAFFIC NOISE IMPACTS

Traffic generated by the Project will influence the traffic noise levels in surrounding areas. To quantify the traffic noise impacts on the surrounding areas, the changes in traffic noise levels on 14 roadway segments surrounding the Project site were estimated based on the change in the average daily traffic volumes. The traffic noise levels provided in this analysis are based on the traffic forecasts provided in the *Cornerstone Church Traffic Impact Analysis* prepared by Urban Crossroads, Inc. in July 2012.

To assess the noise level impacts associated with the Project, noise contour boundaries were developed for existing, and Year 2017 traffic conditions. In order for a transportation related noise impact to be considered a significant impact, the project traffic must create a noise level increase of 3 dBA or greater. This analysis shows that the development of the Project will increase the noise levels by up to 1.3 dBA CNEL and, therefore, will not generate a substantial permanent increase in transportation related ambient noise levels.

1.2 ON-SITE TRAFFIC NOISE IMPACTS

The project site is currently exposed to significant traffic noise levels from the I-15 Freeway. To estimate the future exterior noise levels, the site plan was used to calculate the distance from the proposed pre-school expansion building façade to roadway centerlines to develop a traffic noise prediction model. Based on the FHWA traffic noise prediction model calculations, the future exterior noise levels at the exterior pre-school building façades is estimated at 72.4 dBA CNEL.

Though the proposed project site does not contain noise sensitive exterior areas requiring noise mitigation (e.g. noise barriers), the interior noise level impacts must be reduced below the City of Wildomar 45 dBA

CNEL interior noise level standard. In order to obtain an interior noise level of 45 dBA CNEL, an interior noise level reduction of 27.4 dBA CNEL is required. The estimated interior noise level reduction of 27.4 dBA CNEL requires upgraded dual-glazed windows having a minimum standard transmission class (STC) rating of 30 for classrooms, libraries, and any other noise sensitive rooms contained in the preschool building. With the upgraded dual-glazed windows, standard building assembly specifications, and a windows closed condition, the proposed project will satisfy the City of Wildomar 45 dBA CNEL interior noise standards.

1.3 CONSTRUCTION NOISE ANALYSIS

The U.S. Environmental Protection Agency (U.S. EPA) has compiled data regarding the noise generating characteristics of specific types of construction equipment. 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. This noise level impact represents a worst-case condition when grading equipment is operating near the project boundaries. To reduce the potential short-term noise impacts during construction activities for the proposed project the following construction noise reduction measures are recommended to minimize noise level increases:

- The most effective method of controlling construction noise is through local control of construction hours and by limiting the hours of construction to normal working hours of 7:00 am to 7:00 pm. Monday through Saturday with no construction permitted on Sundays and nationally recognized holidays.
- During all project site excavation and grading on-site, construction contractors shall equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers, consistent with manufacturers' standards. The construction contractor shall place all stationary construction equipment so that emitted noise is directed away from the noise sensitive receptors nearest the project site.
- The construction contractor shall locate equipment staging in areas that will create the greatest distance between construction-related noise sources and noise sensitive receptors nearest the project site during all project construction.
- The construction contractor shall limit haul truck deliveries to the same hours specified for construction equipment. To the extent feasible, haul routes shall not pass sensitive land uses or residential dwellings.
- Homeowners shall be notified via postings on the construction site 24-hours before major construction-related noise impacts such as grading which may affect them.

The recommended construction noise impact mitigation measures recognize that construction noise is of short-term duration and will not present any long-term impacts on the project site or surrounding area.

2.0 INTRODUCTION

This noise study has been completed to determine the potential noise impacts associated with the development of the proposed Cornerstone Pre-School Expansion.

2.1 PURPOSE OF REPORT

This noise study briefly describes the proposed project, provides information regarding noise fundamentals, describes the local noise guidelines, provides the study methods and procedures for transportation noise analysis, and evaluates the future off-site and on-site exterior noise environment. Included in this study is an analysis of the potential noise impacts during construction activities and the predicted future noise environment that can be expected within the noise sensitive school campus. This study has been prepared to satisfy the City of Wildomar noise criteria.

2.2 SITE LOCATION

The proposed development is located in the City of Wildomar east of Monte Vista Drive between Bundy Canyon Road and Baxter Road in the City of Wildomar. Exhibit 2-A illustrates the location of the project site within the City of Wildomar.

2.3 EXISTING ON-SITE AND SURROUNDING LAND USE

The project site is currently exposed to noise from Monte Vista Drive and the I-15 Freeway. The land uses adjacent to the proposed site include existing single-family residential homes located to the west, vacant mountainous land to the east and rural residential to the north and south. Exhibit 2-B shows the proposed Cornerstone Pre-School Expansion site plan.

2.4 PROPOSED PROJECT

The proposed Project consists of the development of a new 17,315 square foot pre-school/day care building in the northwest corner of the existing Cornerstone Church Property It is our understanding that the school will have the ability to accommodate up to 180 students. In addition, the proposed Project will also include a 23,024 square foot administrative building, 2,438 square foot maintenance building and a parking lot along the east side of the property.

EXHIBIT 2-A

LOCATION MAP

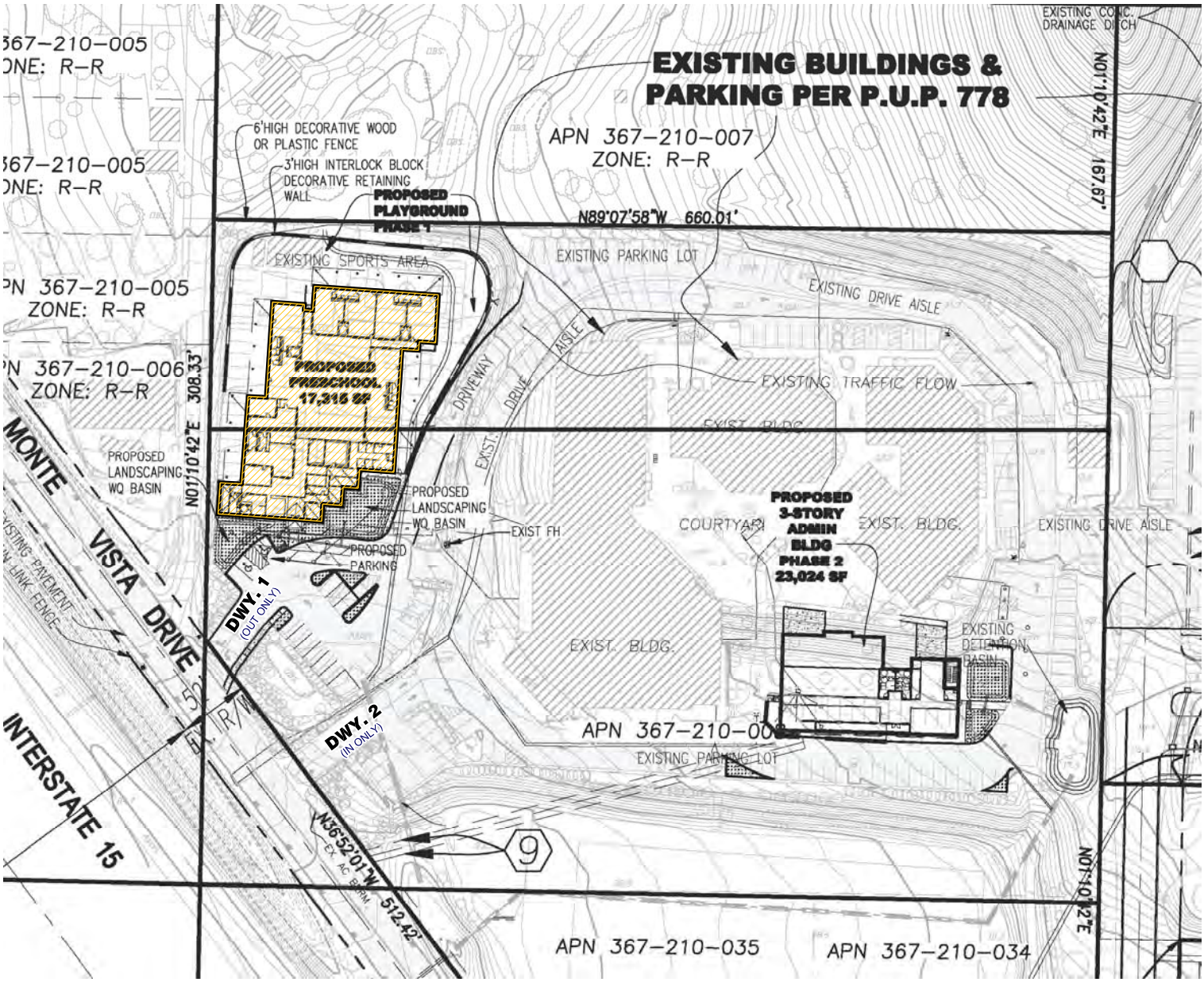
LEGEND:

= DIRT ROAD

N

EXHIBIT 2-B

SITE PLAN



LEGEND:

= PROPOSED PRESCHOOL / DAY CARE

N

3.0 NOISE FUNDAMENTALS

Noise has been simply defined as "unwanted sound." Sound becomes unwanted when it interferes with normal activities, when it causes actual physical harm or when it has adverse effects on health. Noise is measured on a logarithmic scale of sound pressure level known as a decibel (dB). A-weighted decibels (dBA) approximate the subjective response of the human ear to broad frequency noise source by discriminating against very low and very high frequencies of the audible spectrum. They are adjusted to reflect only those frequencies which are audible to the human ear. Exhibit 3-A presents a summary of the typical noise levels and their subjective loudness and effects that are described in more detail below.

3.1 RANGE OF NOISE

Since the range of intensities that the human ear can detect is so large, the scale frequently used to measure intensity is a scale based on multiples of 10, the logarithmic scale. The scale for measuring intensity is the decibel scale. Each interval of 10 decibels indicates a sound energy ten times greater than before, which is perceived by the human ear as being roughly twice as loud. The most common sounds vary between 40 dBA (very quiet) to 100 dBA (very loud). Normal conversation at three feet is roughly at 60 dBA, while loud jet engine noises equate to 110 dBA, which can cause serious discomfort.

3.2 NOISE DESCRIPTORS

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

The CNEL is the weighted average of the intensity of a sound with corrections for time of day and averaged over 24 hours. CNEL does not represent the actual sound level heard at any particular time, but rather represents the total sound exposure. The time of day corrections require the addition of 5 decibels to dBA Leq sound levels in the evening from 7 p.m. to 10 p.m., and the addition of 10 decibels to dBA Leq sound levels at night between 10 p.m. and 7 a.m. These additions are made to account for the noise sensitive time periods during the evening and night hours when sound is perceived to be louder.

EXHIBIT 3-A

TYPICAL NOISE LEVELS AND THEIR SUBJECTIVE LOUDNESS AND EFFECTS

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

SOURCE: NOISE TECHNICAL SUPPLEMENT BY CALTRANS

3.3 TRAFFIC NOISE PREDICTION

The level of traffic noise depends on three primary factors: (1) the volume of the traffic, (2) the speed of the traffic, and (3) the number of trucks in the flow of traffic. Generally, the loudness of traffic noise is increased by heavier traffic volumes, higher speeds, and a greater number of trucks. A doubling of the traffic volume (assuming that the speed and truck mix do not change) results in a noise level increase of 3 dBA. The truck mix on a given roadway may also have an effect on community noise levels. As the number of heavy trucks increases and becomes a larger percentage of the vehicle mix, adjacent noise levels increase. Vehicle noise is a combination of the noise produced by the engine, exhaust, and tires.

3.4 NOISE CONTROL

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

3.5 GROUND ABSORPTION

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

3.6 COMMUNITY RESPONSE TO NOISE

Approximately ten (10) percent of the population has a very low tolerance for noise, and will object to any noise not of their own making. Consequently, even in the quietest environment, some complaints will occur. Another 25 percent of the population will not complain even in very severe noise environments. Thus, a variety of reactions can be expected from people exposed to any given noise environment. Despite this variability in behavior on an individual level, the population as a whole can be expected to exhibit the following responses to changes in noise levels. An increase or decrease of 1 dBA cannot be perceived except in carefully controlled laboratory experiments. A 3 dBA increase may be perceptible outside of the laboratory. An increase of 5.0 dBA is often necessary before any noticeable change in community response (i.e., complaints) would be expected.

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

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

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

3.7 LAND USE COMPATIBILITY WITH NOISE

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

4.0 REGULATORY SETTING

To limit population exposure to physically and/or psychologically damaging as well as intrusive noise levels, the federal government, the State of California, various county governments, and most municipalities in the state have established standards and ordinances to control noise. The City of Wildomar incorporated as a City in October of 2008. Through the incorporation process, the City adopted the Riverside County General Plan and Municipal Code.

4.1 STATE OF CALIFORNIA NOISE REQUIREMENTS

The State of California regulates freeway noise, sets standards for sound transmission, provides occupational noise control criteria, identifies noise standards and provides guidance for local land use compatibility. State law requires that each county and city adopt a General Plan that includes a Noise Element which is to be prepared according to guidelines adopted by the Governor's Office of Planning and Research. The purpose of the Noise Element is to "limit the exposure of the community to excessive noise levels".

In addition, the (CEQA) requires that all known environmental effects of a project be analyzed, including environmental noise impacts. Under CEQA, a project has a potentially significant impact if the project exposes people to noise levels in excess of thresholds, which can include standards established in the local general plan or noise ordinance.

4.2 STATE OF CALIFORNIA BUILDING CODE

The State of California's noise insulation standards are codified in the California Code of Regulations, Title 24, Building Standards Administrative Code, Part 2, and the California Building Code. These noise standards are applied to new construction in California for the purpose of controlling interior noise levels resulting from exterior noise sources. The regulations specify that acoustical studies must be prepared when noise-sensitive structures, such as residential buildings, schools, or hospitals, are located near major transportation noise sources, and where such noise sources create an exterior noise level of 60 dBA CNEL or higher. Acoustical studies that accompany building plans must demonstrate that the structure has been designed to limit interior noise in habitable rooms to acceptable noise levels. For new residential buildings, schools, and hospitals, the acceptable interior noise limit for new construction is 45 dBA CNEL.

4.3 CITY OF WILDOMAR TRANSPORTATION NOISE STANDARDS

The Noise Element specifies the maximum noise levels allowable unmitigated exterior noise levels for new developments impacted by transportation noise sources such as arterial roads, freeways, airports and railroads. The Land Use Compatibility for Community Noise Exposure provided in the General Plan Noise Element indicates that Schools, Libraries, Churches, Hospitals, Nursing Homes are "normally compatible"

with unmitigated exterior noise levels approaching 70 dBA CNEL. Noise levels between 70 and 80 dBA CNEL are considered “normally unacceptable”. For noise levels that are considered “normally unacceptable”, a detailed analysis of the noise reduction requirements must be made with needed noise insulation features included in the design.

While the Noise Element provides compatibility guidelines for exterior noise levels, the California Building Standards require that the interior noise levels do not exceed 45 dBA CNEL. The City of Wildomar Noise Element is included in Appendix 4.1 to this report.

4.4 STATIONARY NOISE STANDARDS

The City of Wildomar has set exterior noise limits to control stationary noise impacts associated with the development of the proposed Cornerstone Pre-School Expansion. The City considers noise generated by sporting events, playground activities and public address systems stationary noise sources. These project-related noises, as projected to any portion of any surrounding property containing a "habitable dwelling, hospital, school, library or nursing home," must not exceed the worst-case noise levels.

Policy N 4.1 of the Noise Element sets an exterior noise limit not to be exceeded for a cumulative period of more than ten (10) minutes in any hour of 65 dBA Leq for daytime hours of 7 a.m. to 10 p.m. and 45 dBA Leq during the noise sensitive nighttime hours of 10 p.m. to 7 a.m. This is consistent with the Stationary Source Requirements included in Appendix 4.2.

4.5 COMMUNITY NOISE ASSESSMENT CRITERIA

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

5.0 EXISTING NOISE LEVEL MEASUREMENTS

To assess the existing noise level environment, two (2) long-term 24-hour measurements were taken at locations in the Project study area. Exhibit 5-A provides the boundaries of the Project study area and the noise level measurement locations. The noise level measurements were recorded by Urban Crossroads, Inc. on Wednesday, May 23, 2012.

5.1 NOISE MEASUREMENT PROCEDURE AND CRITERIA

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

5.2 NOISE MEASUREMENT LOCATIONS

The long-term 24-hour noise level measurements were generally positioned at the nearest noise sensitive receptor locations to assess the existing ambient hourly noise levels surrounding the project site. It is important to note that the primary noise source for all the long-term reference noise level measurements was the traffic noise from the neighboring I-15 Freeway. To assess the project study area noise levels, the following noise measurement locations were selected:

- Noise measurement location L1 was taken between Monte Vista Drive and Via Carnaghi just south of the baseball / soccer field.
- Noise measurement location L2 was taken between the church and the main parking lot at the end of Via Carnaghi. An internal mic error resulted in a bad measurement at this location.
- Located at the western boundary of the existing parking lot. This measurement represents the proposed pre-school / day care building location.

5.3 NOISE MEASUREMENT RESULTS

The results of the noise level measurements are presented in Table 5-1. Table 5-1 provides the average daytime (7 am to 10 pm) and nighttime (10 pm to 7 am) hourly noise levels at each noise level measurement location. For comparison purposes, the average hourly Leq noise levels are shown on Table 5-1 in addition to the overall 24-hour CNEL noise levels. The actual hourly noise levels with the appropriate time of day noise penalties that were used to calculate the CNEL are provided in Appendix 5.1.

EXHIBIT 5-A

NOISE LEVEL MEASUREMENT LOCATIONS

LEGEND:

(L3) = NOISE MEASUREMENT LOCATION

N

Table 5-1

Long-Term (Ambient) Noise Level Measurements

Observer Location[1]	Date	Description	Hourly Noise Level (Leq dBA)[2]		CNEL
			Daytime (7am to 10pm)	Nighttime (10pm to 7am)	
L1	5/23/2012	Between Monte Vista Drive and Via Carnaghi just south of the baseball / soccer field.	60.6	57.1	64.7
L2	5/23/2012	Located between the church and the main parking lot at the end of Via Carnaghi. Internal mic error resulted in a bad measurement at this location.	n/a	n/a	n/a
L3	5/23/2012	At the western boundary of the existing parking lot. This measurement represents the proposed pre-school / day care building location.	62.9	59.2	67.1

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

[2] Energy (logarithmic) average hourly noise levels. The long-term noise level measurements printouts are included in Appendix 5.1.

The average hourly daytime noise levels range from 60.6 to 62.9 dBA Leq. The nighttime average hourly noise levels range from 57.1 to 59.2 dBA Leq. The CNEL noise level measurements with the appropriate time of day corrections produced noise levels ranging from 64.7 to 67.1 dBA CNEL.

The results of the noise level measurements show that the ambient noise levels in the study area near the freeway currently do not exceed the City of Wildomar "normally compatible" land use compatibility limits of 70 dBA CNEL defined General Plan Noise Element. The background ambient noise levels in the project study area are dominated by the transportation related noise associated with the I-15 Freeway.

6.0 METHODS AND PROCEDURES

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

6.1 FHWA TRAFFIC NOISE PREDICTION MODEL

The 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 REMEL to account for: the roadway classification (e.g., collector, secondary, major or arterial), the roadway active width (i.e., the distance between the center of the outermost travel lanes on each side of the roadway), the total average daily traffic (ADT), the travel speed, the percentages of automobiles, medium trucks, and heavy trucks in the traffic volume, the roadway grade, the angle of view (e.g., whether the roadway view is blocked), the site conditions ("hard" or "soft" relates to the absorption of the ground, pavement, or landscaping), and the percentage of total ADT which flows each hour throughout a 24-hour period.

Table 6-1 presents the FHWA Traffic Noise Prediction Model roadway parameters used in this analysis. The roadway classifications and volumes for the roadways adjacent to the project site were determined based on the City of Wildomar Roadway General Plan Circulation Element roadway classifications..

Table 6-2 presents the hourly traffic flow distributions (vehicle mix) used for this analysis. The vehicle mixes were based on the City of Wildomar requirements to prepare noise impact analysis and the truck mix data provided by Caltrans for all freeways. The vehicle mix provides the hourly distribution percentages of automobile, medium trucks and heavy trucks for input into the FHWA Model.

6.2 OFF-SITE TRAFFIC NOISE PREDICTION MODEL INPUTS

The average daily traffic volumes used for the off-site traffic noise prediction model are shown on in Table 6-3, and were taken from *Cornerstone Church Traffic Impact Analysis* prepared by Urban Crossroads, Inc. in September 2013. The roadway volumes used for the I-15 Freeway were taken from the Caltrans Traffic Data Branch Report (2010). Table 6-3 provides the Average Daily Traffic Volumes used in the noise analysis for existing and Year 2017 traffic conditions.

The off-site traffic noise prediction model inputs are used to calculate the reference CNEL dBA noise levels at a distance of 100 feet from the centerline for the 14 off-site study area roadway segments. Noise level contours represent the distance to noise levels of a constant value and are measured from the center of the roadway. In addition, noise level contours do not take into account the effect of any existing noise barriers, intervening buildings or topography.

Table 6-1

Off-Site Roadway Parameters

Roadway	Segment	Roadway Classification[1]	Lanes	Vehicle Speed (MPH)
I-15 Freeway	Between Bundy Canyon Road and Baxter Road	I-15 Freeway	8	65
Monte Vista Drive	South of Bundy Canyon Road	Secondary	2	45
Monte Vista Drive	North of Driveway 1	Secondary	2	45
Monte Vista Drive	North of Via Carnaghi	Secondary	2	45
Monte Vista Drive	North of Baxter Road	Secondary	2	45
Bundy Canyon Road	West of I-15 Freeway SB Ramps	Urban Arterial	6	40
Bundy Canyon Road	I-15 Freeway Overpass	Urban Arterial	6	40
Bundy Canyon Road	East of I-15 Freeway NB Ramps	Urban Arterial	6	40
Bundy Canyon Road	West of Monte Vista Drive	Urban Arterial	6	40
Bundy Canyon Road	East of Monte Vista Drive	Urban Arterial	6	40
Baxter Road	West of I-15 Freeway SB Ramps	Secondary	2	45
Baxter Road	I-15 Freeway Overpass	Secondary	2	45
Baxter Road	East of I-15 Freeway NB Ramps	Secondary	2	45
Baxter Road	East of Monte Vista Drive	Secondary	2	45

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

Table 6-2

Hourly Traffic Flow Distribution [1]

Motor-Vehicle Type	Daytime (7 am to 7 pm)	Evening (7 pm to 10 pm)	Night (10 pm to 7 am)	Total % Traffic Flow
I-15 Freeway [1]				
Automobiles	77.5%	12.9%	9.6%	93.27%
Medium Trucks	84.8%	4.9%	10.3%	3.03%
Heavy Trucks	86.5%	2.7%	10.8%	3.70%
Major, Arterial [2]				
Automobiles	75.5%	14.0%	10.5%	92.00%
Medium Trucks	48.0%	2.0%	50.0%	3.00%
Heavy Trucks	48.0%	2.0%	50.0%	5.00%
Secondary / Collector [2]				
Automobiles	77.5%	12.9%	9.6%	97.42%
Medium Trucks	84.8%	4.9%	10.3%	1.84%
Heavy Trucks	86.5%	2.7%	10.8%	0.74%

[1] Vehicle mix provided in the 2010 Caltrans Truck Data on I-15 Freeway.

[2] Vehicle mix obtained from the City of Wildomar General Plan Circulation Element.

Table 6-3

Average Daily Traffic Volumes

Roadway	Segment	Average Daily Traffic (1,000's)			
		Existing		Year 2017	
		No Project	With Project	No Project	With Project
I-15 Freeway	Between Bundy Canyon Road and Baxter Road	117.0	117.1	126.6	126.7
Monte Vista Drive	South of Bundy Canyon Road	1.7	2.3	5.4	5.9
Monte Vista Drive	North of Driveway 1	1.9	2.4	6.1	6.6
Monte Vista Drive	North of Via Carnaghi	2.0	2.3	6.2	6.5
Monte Vista Drive	North of Baxter Road	2.8	3.3	6.9	7.3
Bundy Canyon Road	West of I-15 Freeway SB Ramps	17.7	17.8	27.3	27.4
Bundy Canyon Road	I-15 Freeway Overpass	19.1	19.3	31.7	31.9
Bundy Canyon Road	East of I-15 Freeway NB Ramps	19.0	19.3	34.4	34.8
Bundy Canyon Road	West of Monte Vista Drive	18.6	19.0	29.0	29.3
Bundy Canyon Road	East of Monte Vista Drive	19.7	19.9	28.1	28.3
Baxter Road	West of I-15 Freeway SB Ramps	14.5	14.7	21.3	21.5
Baxter Road	I-15 Freeway Overpass	11.1	11.4	16.3	16.6
Baxter Road	East of I-15 Freeway NB Ramps	6.3	6.7	9.6	10.0
Baxter Road	East of Monte Vista Drive	4.9	4.9	7.1	7.2

[1] Traffic volumes according to the Conerstone Church Traffic Impact Analysis by Urban Crossroads, Inc. in September 2013.

6.3 ON-SITE TRAFFIC NOISE PREDICTION MODEL INPUTS

To predict the future on-site noise environment at the Project site, long-range average daily traffic volumes estimates were used for both Monte Vista Drive and the I-15 Freeway. Using the Riverside County ADT (Average Daily Traffic) design capacities for "Level of Service C", the noise level impacts were estimated using a future traffic a volume of 20,700 vehicles travelling at 40 miles per hour for Monte Vista Drive. A future ADT volume of 127,400 and speeds of 65 miles per hour were used to describe the future I-15 Freeway traffic noise levels.

7.0 OFF-SITE TRAFFIC NOISE ANALYSIS

The traffic associated with future operations of the propose Project could potentially cause off-site noise impacts to surrounding off-site noise-sensitive uses. To assess the off-site traffic-related noise level impacts associated with the Project, the CNEL levels at a distance of 100 feet from the traffic study area roadway segments were developed for existing, and Year 2017 conditions.

7.1 OFF-SITE TRAFFIC NOISE CONTOURS

To quantify the Project's traffic noise impacts on the surrounding off-site areas, the changes in traffic noise levels on 14 roadway segments surrounding the proposed project site were estimated based on the changes in the average daily traffic volumes. The off-site noise contours were used to assess the Project's incremental off-site traffic-related noise impacts at land uses adjacent to roadways conveying project traffic. Noise contours represent the distance to noise levels of a constant value and are measured from the center of the roadway for the 55, 60, 65 and 70 dBA noise levels.

The noise contours do not take into account the effect of any existing noise barriers or topography that may affect ambient noise levels. In addition, since the noise contours reflect modeling of vehicular noise along area roadways, they appropriately do not reflect noise contribution from the surrounding activities within the project study area. Tables 7-1 and 7-2 present the existing conditions without and with project noise contours. Tables 7-3 and 7-4 present the Year 2017 without and with project noise contours. The off-site traffic noise analysis worksheets are included in Appendix 7.1.

7.2 OFF-SITE PROJECT TRAFFIC NOISE LEVEL CONTRIBUTIONS

Based on the community noise assessment criteria, a significant off-site traffic noise impact would occur if the Project were to create a noise level increase in the area adjacent to the roadway segment of greater than 3 dBA. As shown on Table 7-5, for existing conditions, the Project will increase the off-site traffic noise levels from 0.0 to 1.3 dBA CNEL on the 14 off-site roadway segments. For Year 2017 conditions, the Table 7-6 indicates that the Project will increase off-site traffic noise levels from 0.0 to 0.4 dBA CNEL on the 14 off-site roadway segments

7.3 OFF-SITE TRAFFIC NOISE IMPACT SUMMARY

Based on the traffic noise analysis significance threshold of 3 dBA for all project-related off-site traffic noise level increases, the Project's traffic noise impacts on the surrounding communities will be less than significant. This analysis shows that the Project will NOT create a substantial permanent increase in traffic-related noise levels or expose persons to noise levels in excess of the exterior noise level standards established in the General Plan Noise Element, and therefore, no mitigation is required.

Table 7-1

Existing 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
I-15 Freeway	Between Bundy Canyon Road and Baxter Road	83.7	2,354	7,445	23,545	74,455
Monte Vista Drive	South of Bundy Canyon Road	57.1	RW	RW	RW	161
Monte Vista Drive	North of Driveway 1	57.5	RW	RW	RW	180
Monte Vista Drive	North of Via Carnaghi	57.8	RW	RW	RW	189
Monte Vista Drive	North of Baxter Road	59.2	RW	RW	84	265
Bundy Canyon Road	West of I-15 Freeway SB Ramps	73.4	218	689	2,180	6,894
Bundy Canyon Road	I-15 Freeway Overpass	73.7	235	744	2,353	7,440
Bundy Canyon Road	East of I-15 Freeway NB Ramps	73.7	234	740	2,340	7,401
Bundy Canyon Road	West of Monte Vista Drive	73.6	229	724	2,291	7,245
Bundy Canyon Road	East of Monte Vista Drive	73.8	243	767	2,427	7,673
Baxter Road	West of I-15 Freeway SB Ramps	66.4	RW	137	434	1,372
Baxter Road	I-15 Freeway Overpass	65.2	RW	105	332	1,051
Baxter Road	East of I-15 Freeway NB Ramps	62.8	RW	RW	189	596
Baxter Road	East of Monte Vista Drive	61.7	RW	RW	147	464

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

Table 7-2

Existing 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
I-15 Freeway	Between Bundy Canyon Road and Baxter Road	83.7	2,356	7,452	23,565	74,518
Monte Vista Drive	South of Bundy Canyon Road	58.4	RW	RW	RW	218
Monte Vista Drive	North of Driveway 1	58.6	RW	RW	RW	227
Monte Vista Drive	North of Via Carnaghi	58.4	RW	RW	RW	218
Monte Vista Drive	North of Baxter Road	59.9	RW	RW	99	312
Bundy Canyon Road	West of I-15 Freeway SB Ramps	73.4	219	693	2,192	6,933
Bundy Canyon Road	I-15 Freeway Overpass	73.8	238	752	2,377	7,518
Bundy Canyon Road	East of I-15 Freeway NB Ramps	73.8	238	752	2,377	7,518
Bundy Canyon Road	West of Monte Vista Drive	73.7	234	740	2,340	7,401
Bundy Canyon Road	East of Monte Vista Drive	73.9	245	775	2,451	7,751
Baxter Road	West of I-15 Freeway SB Ramps	66.4	RW	139	440	1,391
Baxter Road	I-15 Freeway Overpass	65.3	RW	108	341	1,079
Baxter Road	East of I-15 Freeway NB Ramps	63.0	RW	RW	201	634
Baxter Road	East of Monte Vista Drive	61.7	RW	RW	147	464

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

Table 7-3

Year 2017 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
I-15 Freeway	Between Bundy Canyon Road and Baxter Road	84.1	2,548	8,056	25,476	80,564
Monte Vista Drive	South of Bundy Canyon Road	62.1	RW	RW	162	511
Monte Vista Drive	North of Driveway 1	62.6	RW	RW	183	577
Monte Vista Drive	North of Via Carnaghi	62.7	RW	RW	186	587
Monte Vista Drive	North of Baxter Road	63.1	RW	RW	207	653
Bundy Canyon Road	West of I-15 Freeway SB Ramps	75.3	336	1,063	3,363	10,634
Bundy Canyon Road	I-15 Freeway Overpass	75.9	390	1,235	3,905	12,347
Bundy Canyon Road	East of I-15 Freeway NB Ramps	76.3	424	1,340	4,237	13,399
Bundy Canyon Road	West of Monte Vista Drive	75.5	357	1,130	3,572	11,296
Bundy Canyon Road	East of Monte Vista Drive	75.4	346	1,095	3,461	10,945
Baxter Road	West of I-15 Freeway SB Ramps	68.0	RW	202	637	2,016
Baxter Road	I-15 Freeway Overpass	66.9	RW	154	488	1,543
Baxter Road	East of I-15 Freeway NB Ramps	64.6	RW	91	287	909
Baxter Road	East of Monte Vista Drive	62.4	RW	RW	174	549

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

Table 7-4

Year 2017 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
I-15 Freeway	Between Bundy Canyon Road and Baxter Road	84.1	2,550	8,063	25,497	80,627
Monte Vista Drive	South of Bundy Canyon Road	62.5	RW	RW	177	558
Monte Vista Drive	North of Driveway 1	63.0	RW	RW	198	625
Monte Vista Drive	North of Via Carnaghi	62.9	RW	RW	195	615
Monte Vista Drive	North of Baxter Road	63.4	RW	RW	218	691
Bundy Canyon Road	West of I-15 Freeway SB Ramps	75.3	337	1,067	3,375	10,673
Bundy Canyon Road	I-15 Freeway Overpass	75.9	393	1,243	3,929	12,425
Bundy Canyon Road	East of I-15 Freeway NB Ramps	76.3	429	1,355	4,286	13,555
Bundy Canyon Road	West of Monte Vista Drive	75.6	361	1,141	3,609	11,413
Bundy Canyon Road	East of Monte Vista Drive	75.4	349	1,102	3,486	11,023
Baxter Road	West of I-15 Freeway SB Ramps	68.1	RW	203	643	2,035
Baxter Road	I-15 Freeway Overpass	67.0	RW	157	497	1,571
Baxter Road	East of I-15 Freeway NB Ramps	64.8	RW	95	299	946
Baxter Road	East of Monte Vista Drive	62.4	RW	RW	174	549

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

Table 7-5

Existing Off-Site Project Related Traffic Noise Impacts

Roadway	Segment	CNEL at 100 Feet (dBA)			Potential Significant Impact?[1]
		No Project	With Project	Project Addition	
I-15 Freeway	Between Bundy Canyon Road and Baxter Road	83.7	83.7	0.0	No
Monte Vista Drive	South of Bundy Canyon Road	57.1	58.4	1.3	No
Monte Vista Drive	North of Driveway 1	57.5	58.6	1.0	No
Monte Vista Drive	North of Via Carnaghi	57.8	58.4	0.6	No
Monte Vista Drive	North of Baxter Road	59.2	59.9	0.7	No
Bundy Canyon Road	West of I-15 Freeway SB Ramps	73.4	73.4	0.0	No
Bundy Canyon Road	I-15 Freeway Overpass	73.7	73.8	0.0	No
Bundy Canyon Road	East of I-15 Freeway NB Ramps	73.7	73.8	0.1	No
Bundy Canyon Road	West of Monte Vista Drive	73.6	73.7	0.1	No
Bundy Canyon Road	East of Monte Vista Drive	73.8	73.9	0.0	No
Baxter Road	West of I-15 Freeway SB Ramps	66.4	66.4	0.1	No
Baxter Road	I-15 Freeway Overpass	65.2	65.3	0.1	No
Baxter Road	East of I-15 Freeway NB Ramps	62.8	63.0	0.3	No
Baxter Road	East of Monte Vista Drive	61.7	61.7	0.0	No

[1] A significant impact is considered when the project generates a noise level increase of greater than 3.0 dBA.

Table 7-6

Year 2014 Off-Site Project Related Traffic Noise Impacts

Roadway	Segment	CNEL at 100 Feet (dBA)			Potential Significant Impact?[1]
		No Project	With Project	Project Addition	
I-15 Freeway	Between Bundy Canyon Road and Baxter Road	84.1	84.1	0.0	No
Monte Vista Drive	South of Bundy Canyon Road	62.1	62.5	0.4	No
Monte Vista Drive	North of Driveway 1	62.6	63.0	0.3	No
Monte Vista Drive	North of Via Carnaghi	62.7	62.9	0.2	No
Monte Vista Drive	North of Baxter Road	63.1	63.4	0.2	No
Bundy Canyon Road	West of I-15 Freeway SB Ramps	75.3	75.3	0.0	No
Bundy Canyon Road	I-15 Freeway Overpass	75.9	75.9	0.0	No
Bundy Canyon Road	East of I-15 Freeway NB Ramps	76.3	76.3	0.1	No
Bundy Canyon Road	West of Monte Vista Drive	75.5	75.6	0.0	No
Bundy Canyon Road	East of Monte Vista Drive	75.4	75.4	0.0	No
Baxter Road	West of I-15 Freeway SB Ramps	68.0	68.1	0.0	No
Baxter Road	I-15 Freeway Overpass	66.9	67.0	0.1	No
Baxter Road	East of I-15 Freeway NB Ramps	64.6	64.8	0.2	No
Baxter Road	East of Monte Vista Drive	62.4	62.4	0.0	No

[1] A significant impact is considered when the project generates a noise level increase of greater than 3.0 dBA.

8.0 ON-SITE TRAFFIC NOISE ANALYSIS

The project site will be subjected to transportation related noise impacts from the adjacent roadways and the I-15 Freeway. This section discusses the potential traffic related noise impacts to the proposed pres-school / daycare building.

8.1 ON-SITE EXTERIOR TRAFFIC NOISE IMPACTS

The project site is currently exposed to significant traffic noise levels from the I-15 Freeway. Using the FHWA traffic noise prediction model and the parameters outlined in Tables 6-1 and 6-2, calculations of the expected future noise impacts were completed. Table 8-1 presents a summary of the expected future unmitigated exterior on-site noise level impacts at the pre-school building façade. For the purpose of this preliminary analysis, the site and all roadways were considered flat and do not take into account and future intervening buildings that will reduce potential noise impacts.

Based on the FHWA traffic noise prediction model calculations, the future exterior noise levels at the exterior pre-school building façades is estimated at 72.4 dBA CNEL. The result of the future noise prediction model suggests that the future exterior noise levels may experience a noise level increase of 5.3 dBA CNEL over the existing measured ambient noise levels of 67.1 dBA CNEL. In reality, the predicted future exterior noise level of 72.43 dBA CNEL likely overstates the worst case exterior noise levels. However, for the purpose of this analysis interior noise mitigation measures have been developed to attain interior noise level reduction of 30.3 dBA need to satisfy the 45 dBA CNEL interior noise level standard. The on-site exterior traffic noise prediction model calculations are included in Appendix 8.1.

According to the noise the Land Use Compatibility for Community Noise Exposure provided in the General Plan Noise Element, the predicted future exterior noise level of 72.4 dBA CNEL is considered “normally unacceptable” for schools and churches,. However, the noise element indicates that for noise levels that are considered “normally unacceptable”, a detailed analysis of the noise reduction requirements must be made with needed noise insulation features included in the design.

7.2 ON-SITE INTERIOR TRAFFIC NOISE IMPACTS

While the Noise Element provides compatibility guidelines for exterior noise levels, the California Building Standards require that the interior noise levels do not exceed 45 dBA CNEL. In order to obtain an interior noise level of 45 dBA CNEL the proposed pre-school / daycare building assembly shall provide an interior noise level reduction of 27.4 dBA CNEL. The interior noise mitigation measures provided in this analysis were developed based the worst-case future exterior noise level of 72.4 dBA CNEL that likely overstates the future exterior noise levels. For the existing ambient noise conditions of 67.1 dBA CNEL, standard windows and building construction will satisfy the interior noise level reduction requirement of 22.1 dBA CNEL.

Table 8-1

On-Site Traffic Noise Impacts (dBA CNEL)[1]

Roadway	Noise Level At Façade	Interior Noise Level For Windows		Required Interior Noise Reduction
		Open[2]	Closed[3]	
Monte Vista Drive	66.1	54.1	41.1	21.1
I-15 Freeway	71.3	59.3	46.3	26.3
Total	72.4	60.4	47.4	27.4

[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 and upgraded dual-glazed windows with a minimum STC (Sound Transmission Class) rating of 30.

The estimated interior noise level reduction of 27.4 dBA CNEL requires upgraded dual-glazed windows having a minimum standard transmission class (STC) rating of 30 for classrooms, libraries, and any other noise sensitive rooms contained in the preschool building. With the upgraded dual-glazed windows, standard building assembly specifications, and a windows closed condition, the proposed project will satisfy the City of Wildomar 45 dBA CNEL interior noise standards.

Standard building construction requires that exterior walls with a minimum Sound Transmission Class (STC) rating of 46. Typical walls with this rating will have 2x4 studs or greater, 16" o.c. with R-13 insulation, a minimum 7/8" exterior surface of cement plaster and a minimum interior surface of 1/2" gypsum board. Interior wall finish shall be at least 1/2-inch thick gypsum wallboard or plaster. Ceilings shall be finished with gypsum board or plaster that is at least 1/2 inch thick. The roof system should have minimum 1/2" plywood sheathing which is well sealed to form a continuous barrier with a minimum insulation of R-19.

9.0 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.

9.1 CONSTRUCTION RELATED NOISE STANDARDS

Due to their short-term nature, construction activities are not covered by the City's standards for stationary noise sources. However, the General Plan Noise Element has included the following policies to minimize the noise impacts from construction activities:

N 12.1 Minimize the impacts of construction noise on adjacent uses within acceptable practices.

N 12.2 Ensure that construction activities are regulated to establish hours of operation in order to prevent and/or mitigate the generation of excessive or adverse noise impacts on surrounding areas.

N 12.3 Condition subdivision approval adjacent to developed/occupied noise sensitive land uses by requiring the developer to submit a construction-related noise mitigation plan to the City for review and approval prior to issuance of a grading permit. The plan must depict the location of construction equipment and how the noise from this equipment will be mitigated during construction of this project through the use of such methods as:

- Temporary noise attenuation fences
- Preferential location of equipment
- Use of current noise suppression technology and equipment

N 12.4 Require that all construction equipment utilizes noise reduction features (e.g. mufflers and engine shrouds) that are no less effective than those originally installed by the manufacturer.

9.2 CONSTRUCTION NOISE LEVEL IMPACTS

The U.S. Environmental Protection Agency (U.S. EPA) has compiled data regarding the noise generating characteristics of specific types of construction equipment. 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 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.

9.3 CONSTRUCTION NOISE LEVEL IMPACT ANALYSIS

Although construction noise may result in a short-term increase greater than 5 dBA over ambient noise levels, 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 the potential short-term noise impacts during the construction activities for the proposed project, several construction noise reduction measures are identified in the Executive Summary.

APPENDIX 4.1

City of Wildomar Noise Element

Noise Sensitive Land Uses

A series of land uses have been deemed sensitive by the State of California. These land uses require a serene environment as part of the overall facility or residential experience. Many of these facilities depend on low levels of sound to promote the well being of the occupants. These uses include, but are not necessarily limited to; schools, hospitals, rest homes, long term care facilities, mental care facilities, residential uses, places of worship, libraries, and passive recreation areas. Activities conducted in proximity to these facilities must consider the noise output, and ensure that they don't create unacceptable noise levels that may unduly affect the noise-sensitive uses. The following policies address issues related to noise-sensitive land uses.

NOISE COMPATIBILITY

The Noise Element of the General Plan is closely related to the Land Use Element because of the effects that noise has on sensitive land uses. Noise-producing land uses must be compatible with adjacent land uses in order for the Land Use Plan to be successful. Land uses that emit noise are measured in A-weighted decibels (dBA) or Community Noise Equivalent Level (CNEL). If existing land uses emit noise above a certain level, they are not compatible with one another, and therefore noise attenuation devices must be used to mitigate the noise to acceptable levels indoors and outdoors. In cases of new development, the placement of noise-sensitive land uses is integral to a successful community. Table 1, Land Use Compatibility for Community Noise Exposure, reveals the noise acceptability levels for different land uses. The following policies protect noise-sensitive land uses from noise emitted by outside sources, and prevent new projects from generating adverse noise levels on adjacent properties.

The General Plan policy and implementation item reference system:

Identifies which element contains the Policy, in this case the Land Use Element, and the sequential number.

LU 1.3

Neighborhood commercial uses should be located near residential uses.

(AI 1 and AI 4)

Reference to the relevant Action Items contained in the Implementation Program.

Policies:

N 1.1 Protect noise-sensitive land uses from high levels of noise by restricting noise-producing land uses from these areas. If the noise-producing land use cannot be relocated, then noise buffers such as setbacks, landscaping, or blockwalls shall be used. (AI 107)

N 1.2 Guide noise-tolerant land uses into areas irrevocably committed to land uses that are noise-producing, such as transportation corridors or within the projected noise contours of any adjacent airports. (AI 107)

N 1.3 Consider the following uses noise-sensitive and discourage these uses in areas in excess of 65 CNEL:

- Schools;
- Hospitals;
- Rest Homes;
- Long Term Care Facilities;
- Mental Care Facilities;
- Residential Uses;
- Libraries;
- Passive Recreation Uses; and
- Places of worship

Unregulated noise sources such as household power tools often emit more noise than regulated noise producers.

According to the State of California Office of Planning and Research General Plan Guidelines, an acoustical study may be required in cases where these noise-sensitive land uses are located in an area of 60 CNEL or greater. Any land use that is exposed to levels higher than 65 CNEL will require noise attenuation measures. (AI 105)

N 1.4 Determine if existing land uses will present noise compatibility issues with proposed projects by undertaking site surveys**.** (AI 106, 109)

N 1.5 Prevent and mitigate the adverse impacts of excessive noise exposure on the residents, employees, visitors, and noise-sensitive uses of Riverside County. (AI 105, 106, 108)

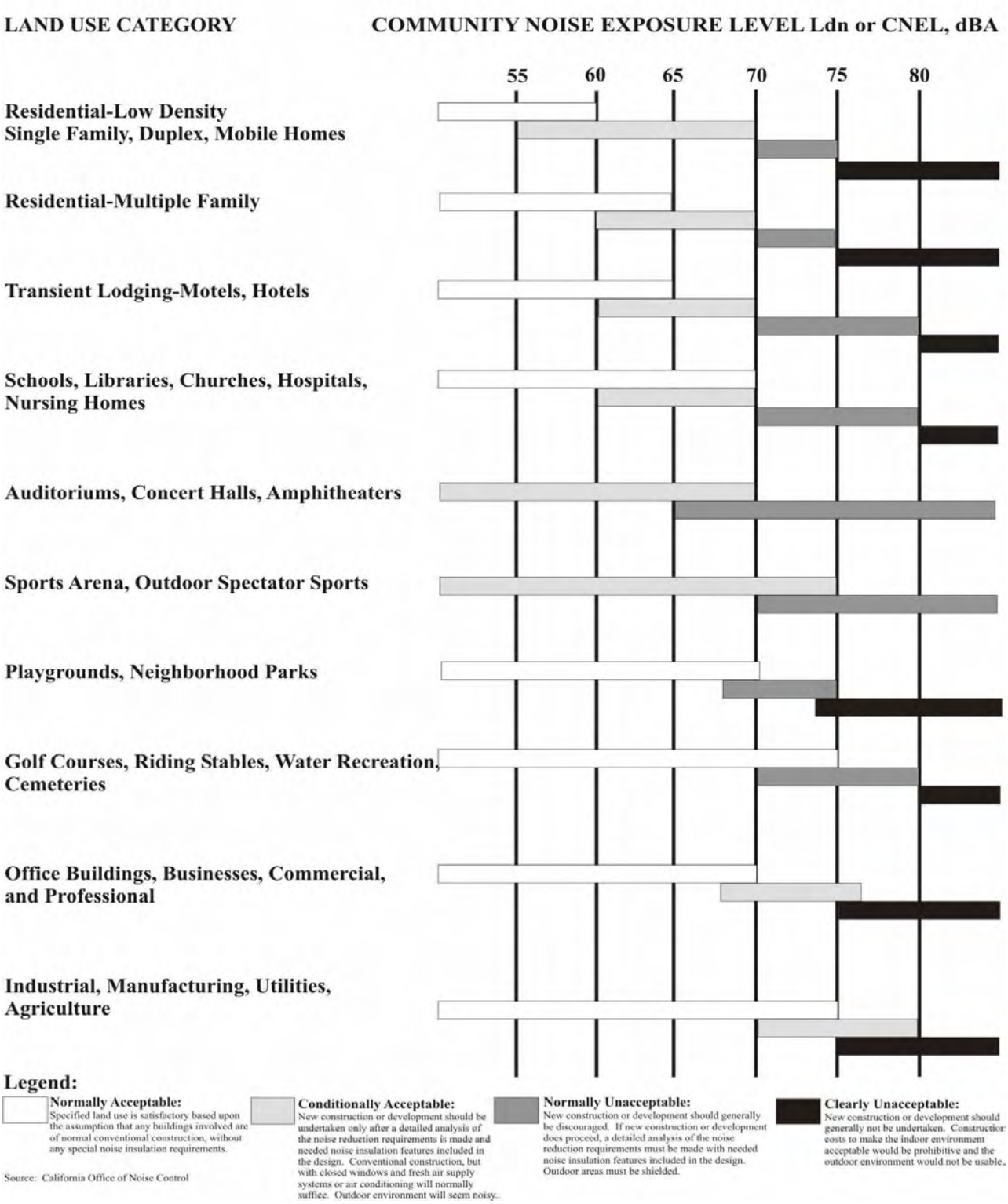
N 1.6 Minimize noise spillover or encroachment from commercial and industrial land uses into adjoining residential neighborhoods or noise-sensitive uses. (AI 107)

N 1.7 Require proposed land uses, affected by unacceptably high noise levels, to have an acoustical specialist prepare a study of the noise problems and recommend structural and site design features that will adequately mitigate the noise problem. (AI 106, 107)

N 1.8 Limit the maximum permitted noise levels that cross property lines and impact adjacent land uses, except when dealing with noise emissions from wind turbines. Please see the Wind Energy Conversion Systems section for more information. (AI 108)

Please contact the Office of Industrial Hygiene for more information on acoustical specialists.

Table N-1:
Land Use Compatibility for Community Noise Exposure



NOISE MITIGATION STRATEGIES

Many land uses emit noise above state-mandated acceptable levels. The noise emitted from a land use must be mitigated to acceptable levels indoors and outdoors in order for other, more noise-sensitive land uses to locate in proximity to these noise producers. There are a number of ways to mitigate noise and the following policies suggest some possible solutions to noise problems.

Policies:

N 2.1 Create a County Noise Inventory to identify major noise generators and noise-sensitive land uses, and to establish appropriate noise mitigation strategies. (AI 105)

N 2.2 Require a qualified acoustical specialist to prepare acoustical studies for proposed noise-sensitive projects within noise impacted areas to mitigate existing noise. (AI 105, 107)

N 2.3 Mitigate exterior and interior noises to the levels listed in the table below to the extent feasible, for stationary sources: (AI 105)

Table N-2:
Stationary Source Land Use Noise Standards[1]

Land Use	Interior Standards	Exterior Standards
Residential		
10:00 p.m. to 7:00 a.m.	40 L_{eq} (10 minute)	45 L_{eq} (10 minute)
7:00 a.m. to 10:00 p.m.	55 L_{eq} (10 minute)	65 L_{eq} (10 minute)

[1]These are only preferred standards; final decision will be made by the Riverside County Planning Department and Office of Public Health.

COUNTY OF RIVERSIDE
DEPARTMENT OF ENVIRONMENTAL HEALTH

Office of Industrial Hygiene
3880 Lemon Street, Suite 200, Riverside, CA 92501
Office: 951-955-8982 FAX: 951-955-8988

TO: Whom it may concern DATE: July 2, 2012

FROM: Steven Hinde, REHS, CIH, Senior Industrial Hygienist

RE: Requirements for determining and mitigating traffic noise impacts to residential structures

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NOISE STANDARDS:

1. The "Noise Element" section of the Riverside County General Plan states "to avoid future noise hazard, the maximum capacity design standard for highways and major roads shall be used for determining the maximum future noise level" or, in the case of freeways and airports, the estimated conditions 20 years in the future may be used.
2. The interior noise levels in residential dwellings shall not exceed 45 Ldn/CNEL.
3. The exterior noise level shall not exceed 65 Ldn/CNEL.
4. Required Noise Prediction Model - Traffic Noise: FHWA RD 77-108 Highway Traffic Prediction Model, Sound 32 or the equivalent.

REQUIRED TRAFFIC NOISE MODELING PARAMETERS:

Roadway Classification: All roadways must be classified into one of the following categories as defined in the County's General Plan: "Secondary", "Major", "Arterial", "Urban Arterial", "Expressway", "Freeway", and "Specific Plan Road". For future reference the Riverside County Integrated Project (RCIP)/ General Plan can be accessed using http://www.rctlma.org/genplan/content/gp/chapter04.html. The areas will be listed under AREA PLANS VOLUMES 1 and 2. Click on specific area to be looked at. Under the section title “List of Figures” found near the bottom of the page, click on "Circulation" for the most current roadway classifications.

1. **Roadway Traffic Volume:** All roadways must be modeled using Average Daily Trip (ADT) level "C" design capacities (also known as future build-out daily traffic volumes) as quoted County of Riverside General Plan, Chapter 4, Page C-11 "Link Volume Capacities/ Level of Service for Riverside County Roadways" revised March 2001. Or the page can be found on the Internet at http://www.rcip.org/Documents/general_plan/gen_plan/fig_04_02.pdf, or in the case of freeways, contact CALTRANS for future number of lanes.
2. **Required vehicle mix (MANDATORY)**
   i) Freeways: Vehicle mix information must be obtained from CALTRANS.
   ii) Roadways designated as "major", "arterial" highways or "expressways":

VEHICLE	OVERALL %	DAY % (7AM-7PM)	EVENING % (7PM-10PM)	NIGHT % (10PM-7AM)
Auto	92	69.5	12.9	9.6
Medium Truck	3	1.44	0.06	1.5
Heavy Truck	5	2.4	0.1	2.5

3. iii) Roadways designated as "secondary", "collectors" or smaller.

VEHICLE	OVERALL %	DAY % (7AM-7PM)	EVENING % (7PM-10PM)	NIGHT % (10PM-7AM)
Auto	97.4	73.6	13.6	10.22
Medium Truck	1.84	0.9	0.04	0.9
Heavy Truck	0.74	0.35	0.04	0.35

4. **Traffic Speed**: For County roads assume an average traffic speed of 40 MPH. For freeways, contact CALTRANS and use what speed they recommend.
5. **Terrain conditions for modeling noise propagation**: Assume "hard site" conditions in determining noise propagation (no more than 3 dB of attenuation per doubling of distance between source and receiver).
6. **Noise attenuation attributed to standard residential architecture**: It is assumed that standard residential design (with windows closed) will provide no more than 20 dB (A) of attenuation. Additional mitigation must be demonstrated via modeling.
7. **Receiver placement for modeling exterior noise levels (unmitigated)**: Noise levels must be estimated at the exterior face of the nearest residence at an elevation of five feet above the finished pad.
8. **Receiver placement for noise barrier design**:
   i) *Set back*: Barrier calculations shall be based on a hypothetical outdoor receiver located ten (10) feet behind the intervening noise barrier.
   ii) *Receiver height*: Initial calculations shall be based on a receiver height of five (5) feet above the ground. If these calculations result in a barrier less than or equal to six (6) feet in height, no further barrier calculations are necessary and this shall be selected as the required wall height. However, if the resulting barrier height is calculated to be greater than six feet, it shall be re-calculated using a receiver height of three (3) feet. The resulting re-calculated wall height shall be then selected as the required wall height.
9. **Receiver placement for architectural-based (indoor) noise mitigation - first floor**: First floor interior noise level predictions are to be calculated assuming a hypothetical receiver is located in the center of the room nearest the noise source and elevated 5 feet above the pad (finished floor).
10. **Receiver placement for architectural-based noise mitigation-second floor**: Second floor interior noise level predictions are to be calculated assuming a hypothetical receiver is located in the center of the room nearest the noise source and elevated 14 feet above the pad (or 5 feet above the second story finished floor).

NOISE REPORT FORMAT AND REQUIRED SUBMITTALS: The noise Consultants findings and recommendations must be submitted for review, and receive approval from, the Office of Industrial Hygiene. The resulting report must incorporate the requirements above and, at a minimum, contain the following information: a) a clear description of the proposed project; b) the identity and characterization of all acoustically significant roadways; c) a discussion of analytical methodology and parameters used for noise modeling; d) information obtained from applying requirements 6-10 (above); e) a discussion of mitigation (if necessary) including a clear diagram illustrating noise barrier placement; f) a printed copy of computer input/output (if available).

In addition to the report, Industrial Hygiene must be provided with the following depending on the design stage of the project. The first item that must be provided is a scaled map (blue-line) of the project. This map must clearly illustrate lot boundaries and the relative location of all acoustically significant roadways. Topographical elevations for lots and roadway centerlines must be included. Second, if architectural-based mitigation is necessary, and if the project has progressed to the point where plans for the homes have been drawn, copies must be provided (floor plans and exterior elevation drawings). Additionally, an updated blue-line showing exact pad location and finished floor elevation must be included.

APPENDIX 4.2

Stationary Source Noise Criteria

Office of Industrial Hygiene
4065 County Circle Drive, Suite 318,
Riverside, CA 92503 909-358-5050
FAX: 909-358-5443
TDD: 909-358-512

Department of Public Health
Riverside County Community Health Agency

MEMO: Requirements for Determining and Mitigating Non-transportation Noise Source Impacts to Residential Properties.

APPLICATION:

This document is intended to provide guidelines for the determination of community noise impact due to non-transportation (hereafter known as "stationary") noise sources. Noise sources covered by this standard include, but are not limited to: industrial facilities, mining activities, loading dock activities, loud speakers operation, sporting events, musical performances, well pumps, equipment, vehicles operated off the public roadways, or any noise producing activities associated with a permanent fixed base of operation (hereafter referred to as the "facility"). Temporary construction activities are not covered by the standard.

NOISE STANDARDS FOR STATIONARY NOISE SOURCES:

Facility-related noise, as projected to any portion of any surrounding property containing a "habitable dwelling, hospital, school, library or nursing home", must not exceed the following worst-case noise levels.

A) 45 dB(A) - 10 minute noise equivalent level ("leq"), between the hours of 10:00 p.m. to 7:00 a.m. (nighttime standard).

B) 65 dB(A) - 10 minute leq, between 7:00 a.m. and 10:00 p.m. (daytime standard).

REQUIREMENTS FOR DETERMINATION OF COMMUNITY NOISE IMPACT:

1. Noise originating from operations within the facility grounds shall be treated as "stationary" noise sources for which this standard will apply.

2. Noise Modeling Methodology: Noise predictions are to be made by an engineer, acoustical consultant, or other similar professional with experience in predicting community noise exposure using standard methods and practices of the noise consulting industry.

3. Required Modeling Parameters for Stationary Sources:

i. Stationary sources are to be modeled as "point" sources.

ii. Mobile point sources are to be modeled as emanating from the acoustical centroid of the activity, or at its closest approach to potentially impacted residential property lines, which ever yields the worst-case results.

iii. Noise modeling for each piece of acoustically significant equipment, process or activity must be based on Reference Noise Levels (RNL). RNL may be obtained directly from the manufacturer (in

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Riverside, CA 92503 909-358-5050
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Department of Public Health
Riverside County Community Health Agency

the case of equipment) or generated from field studies. Regardless, the data must be representative of worst-case conditions. Directionality of the noise source must be taken into consideration if applicable.

iv. Predicted noise levels are to be expressed in germs of worst-case "equivalent continuous sound levels" [or, Leq] averaged over a ten minute period.

v. For modeling purposes, receivers are assumed to be positioned at the property line boundary at an elevation of five feet off the ground.

vi. Terrain conditions for modeling noise propagation: Assumptions regarding ground effects, atmospheric absorption and other forms of noise attenuation must be fully justified.

NOISE REPORT FORMAT AND REQUIRED SUBMITTALS:

The noise Consultant's findings and recommendations must be submitted for review, and receive approval from, the Office of Industrial Hygiene. The resulting report must incorporate the requirements above and, at a minimum, contain the following information:

a) an adequate and accurate characterization of the current ambient noise environment;
b) a clear description of the proposed facility and its activities including a step-by-step flow chart of manufacturing processes if applicable;
c) the identity and characterization of all acoustically significant equipment and/or activities;
d) a discussion of analytical methodology and parameters used for noise modeling;
e) a table containing reference noise data accompanied by a detailed description of how it was obtained;
f) the facilities hours of operation;
g) a discussion of anticipated production volume, how it is expected to change over time and how such change will effect community noise;
h) a discussion of worst-case unmitigated noise impact;
i) a discussion of mitigation (if necessary);
j) a printed copy of computer input/output (if available) or manual calculations clearly illustrating the rationale for the Consultant's conclusions.

In addition, the final noise report must contain a scaled map(s) defining the acoustical contours surrounding the facility. Minimally, this map(s) must show:

a) The facility relative to the residential properties surrounding it. Include both unincorporated and incorporated (any adjoining Cities) area surrounding the project and potentially affected by project-related noise.
b) The 65 dB(A) 10 minute Leq noise contour reflecting the anticipated "worst-case" conditions between the hours of 7AM - 10 PM (daytime hours).
c) The 45 dB(A) 10 minute Leq noise contour reflecting the anticipated "worst-case" conditions between the hours of 10 PM - 7AM (nighttime hours).
d) The location and number of residential structures located within these contours.

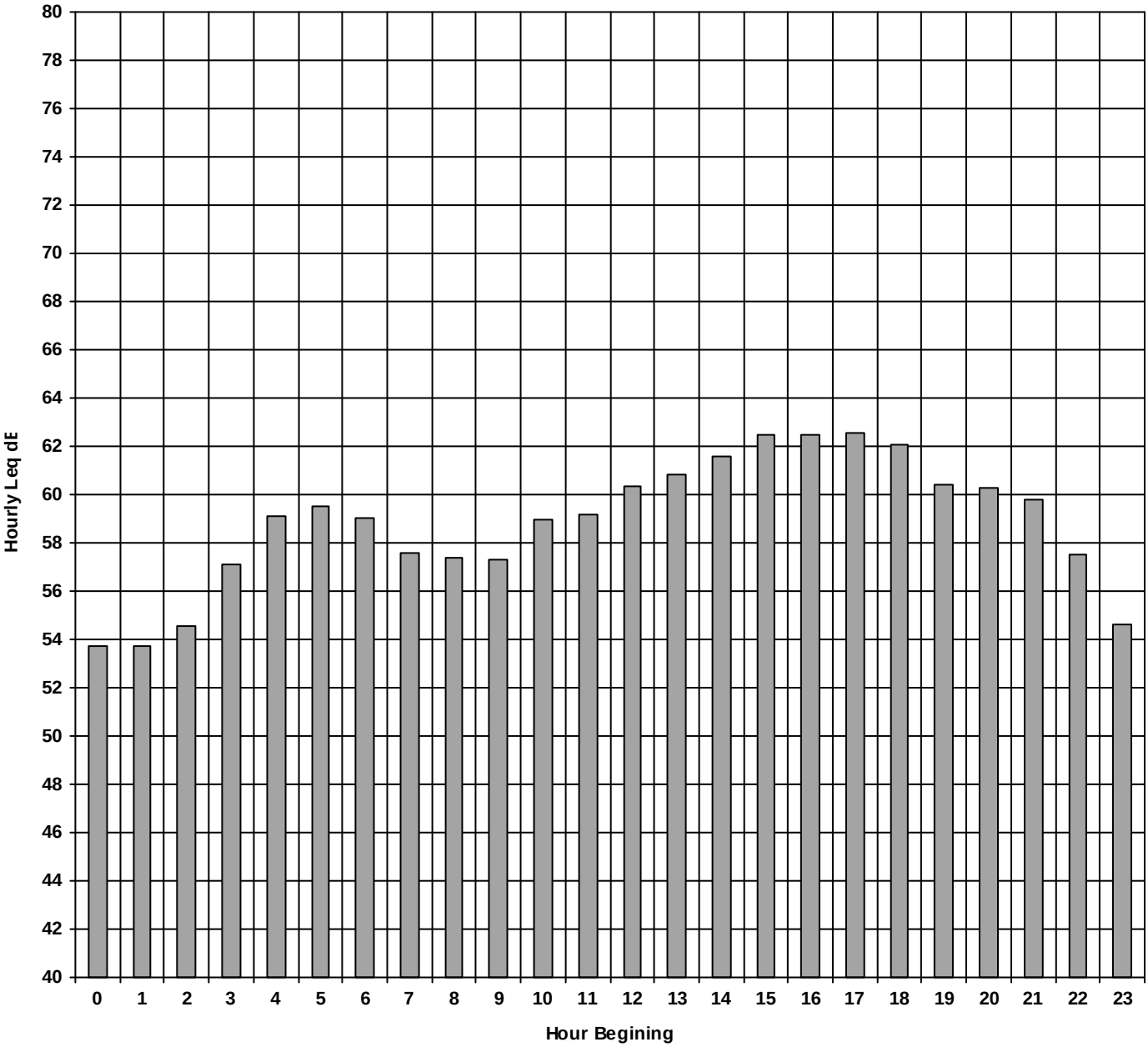
APPENDIX 5.1

Noise Monitoring Printouts

24-Hour Noise Level Measurement Summary

Project Name: Cornerstone Church
Job Number: 08231
Location #: L1
Analyst: B. Lawson
Description: South of Soccer Field
Start Date: Wednesday, May 23, 2012

Hourly Leq dB(A) Readings (unadjusted)



Measured Peak Noise Hour: 17

Measured Peak Hour dBA Leq: 62.6

24-Hour Noise Level Measurement Summary

Project Name: Cornerstone Church
Job Number: 08231
Location #: L1
Analyst: B. Lawson
Description: South of Soccer Field
Start Date: Wednesday, May 23, 2012

Leq To CNEL Noise Calculations

Noise Hour	*Hourly Leq*	*CNEL Penalty*	*Adjusted Hourly Leq*
0	53.7	10	63.7
1	53.7	10	63.7
2	54.5	10	64.5
3	57.1	10	67.1
4	59.1	10	69.1
5	59.5	10	69.5
6	59.1	10	69.1
7	57.6	0	57.6
8	57.4	0	57.4
9	57.3	0	57.3
10	59.0	0	59.0
11	59.2	0	59.2
12	60.3	0	60.3
13	60.9	0	60.9
14	61.6	0	61.6
15	62.5	0	62.5
16	62.5	0	62.5
17	62.6	0	62.6
18	62.0	0	62.0
19	60.4	5	65.4
20	60.3	5	65.3
21	59.8	5	64.8
22	57.5	10	67.5
23	54.6	10	64.6

Calculated CNEL: 64.7

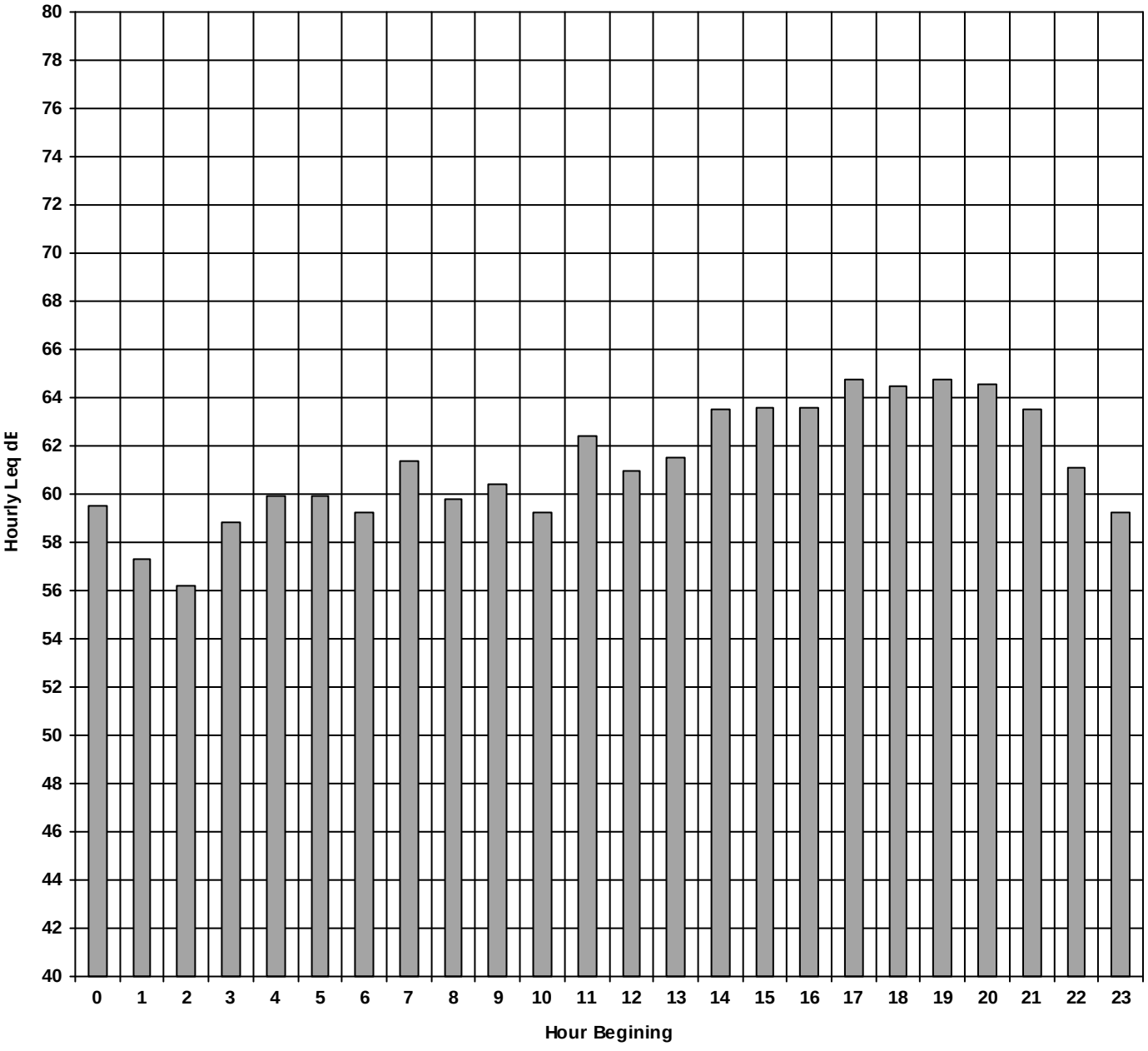
Evening Hours

Nighttime Hours

24-Hour Noise Level Measurement Summary

Project Name: Cornerstone Church
Job Number: 08231
Location #: L3
Analyst: B. Lawson
Description: Near Home in Parking Lot
Start Date: Wednesday, May 23, 2012

Hourly Leq dB(A) Readings (unadjusted)



Measured Peak Noise Hour: 19

Measured Peak Hour dBA Leq: 64.8

24-Hour Noise Level Measurement Summary

Project Name: Cornerstone Church
Job Number: 08231
Location #: L3
Analyst: B. Lawson
Description: Near Home in Parking Lot
Start Date: Wednesday, May 23, 2012

Leq To CNEL Noise Calculations

Noise Hour	*Hourly Leq*	*CNEL Penalty*	*Adjusted Hourly Leq*
0	59.5	10	69.5
1	57.3	10	67.3
2	56.2	10	66.2
3	58.8	10	68.8
4	60.0	10	70.0
5	59.9	10	69.9
6	59.2	10	69.2
7	61.4	0	61.4
8	59.8	0	59.8
9	60.4	0	60.4
10	59.2	0	59.2
11	62.4	0	62.4
12	60.9	0	60.9
13	61.5	0	61.5
14	63.5	0	63.5
15	63.6	0	63.6
16	63.6	0	63.6
17	64.7	0	64.7
18	64.5	0	64.5
19	64.8	5	69.8
20	64.5	5	69.5
21	63.5	5	68.5
22	61.1	10	71.1
23	59.2	10	69.2

Calculated CNEL: 67.1

Evening Hours

Nighttime Hours

APPENDIX 7.1

Off-Site Traffic Noise Analysis Worksheets

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: I-15 Freeway
Road Segment: Between Bundy Canyon Road and Baxter Road

Project Name: Cornerstone Church
Job Number: 8231

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	117,000 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	11,700 vehicles
Vehicle Speed:	65 mph
Near/Far Lane Distance:	160 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:	10
Medium Trucks (2 Axles):	10
Heavy Trucks (3+ Axles):	10

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	93.27%
Medium Trucks:	84.8%	4.9%	10.3%	2.34%
Heavy Trucks:	86.5%	2.7%	10.8%	4.39%

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:	60.208
Medium Trucks:	60.061
Heavy Trucks:	60.075

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	74.55	6.94	-0.88	0.00	*-4.77*	0.000	0.000
Medium Trucks:	84.86	-9.06	-0.87	0.00	*-4.88*	0.000	0.000
Heavy Trucks:	88.18	-6.33	-0.87	0.00	*-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:	80.6	78.7	76.9	70.9	79.5	80.1
Medium Trucks:	74.9	73.4	67.1	65.5	74.0	74.2
Heavy Trucks:	81.0	79.6	70.5	71.8	80.1	80.3
Vehicle Noise:	84.3	82.7	78.2	74.9	83.4	83.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	2,176	6,882	21,763	68,820
CNEL:	2,354	7,445	23,545	74,455

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Monte Vista Drive
Road Segment: South of Bundy Canyon Road
Project Name: Cornerstone Church
Job Number: 8231

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	1,700 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	170 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:	10
Medium Trucks (2 Axles):	10
Heavy Trucks (3+ Axles):	10

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	-9.65	-3.01	0.00	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-26.88	-3.01	0.00	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-30.84	-3.01	0.00	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	55.8	53.9	52.1	46.1	54.7	55.3
Medium Trucks:	49.6	48.0	41.7	40.1	48.6	48.8
Heavy Trucks:	50.4	49.0	39.9	41.2	49.5	49.7
Vehicle Noise:	57.6	55.9	52.7	48.1	56.6	57.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	5	14	46	145
CNEL:	5	16	51	161

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Monte Vista Drive
Road Segment: North of Driveway 1

Project Name: Cornerstone Church
Job Number: 8231

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:	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:	10
Medium Trucks (2 Axles):	10
Heavy Trucks (3+ Axles):	10

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	-9.16	-3.01	0.00	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-26.40	-3.01	0.00	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-30.36	-3.01	0.00	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	56.3	54.4	52.6	46.6	55.2	55.8
Medium Trucks:	50.0	48.5	42.2	40.6	49.1	49.3
Heavy Trucks:	50.9	49.5	40.4	41.7	50.0	50.2
Vehicle Noise:	58.1	56.4	53.2	48.5	57.1	57.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	5	16	51	162
CNEL:	6	18	57	180

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Monte Vista Drive
Road Segment: North of Via Carnaghi

Project Name: Cornerstone Church
Job Number: 8231

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	2,000 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	200 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:	10
Medium Trucks (2 Axles):	10
Heavy Trucks (3+ Axles):	10

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	-8.94	-3.01	0.00	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-26.18	-3.01	0.00	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-30.13	-3.01	0.00	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	56.5	54.6	52.8	46.8	55.4	56.0
Medium Trucks:	50.3	48.8	42.4	40.8	49.3	49.5
Heavy Trucks:	51.1	49.7	40.7	41.9	50.3	50.4
Vehicle Noise:	58.3	56.6	53.5	48.8	57.3	57.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	5	17	54	170
CNEL:	6	19	60	189

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Monte Vista Drive
Road Segment: North of Baxter Road
Project Name: Cornerstone Church
Job Number: 8231

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	2,800 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	280 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:	10
Medium Trucks (2 Axles):	10
Heavy Trucks (3+ Axles):	10

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	-7.48	-3.01	0.00	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-24.72	-3.01	0.00	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-28.67	-3.01	0.00	*-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:	58.0	56.1	54.3	48.2	56.9	57.5
Medium Trucks:	51.7	50.2	43.9	42.3	50.8	51.0
Heavy Trucks:	52.6	51.1	42.1	43.4	51.7	51.8
Vehicle Noise:	59.8	58.1	54.9	50.2	58.8	59.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	8	24	75	239
CNEL:	8	27	84	265

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Bundy Canyon Road
Road Segment: West of I-15 Freeway SB Ramps

Project Name: Cornerstone Church
Job Number: 8231

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	17,700 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,770 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	82 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:	10
Medium Trucks (2 Axles):	10
Heavy Trucks (3+ Axles):	10

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	14.0%	10.5%	92.00%
Medium Trucks:	48.0%	2.0%	50.0%	3.00%
Heavy Trucks:	48.0%	2.0%	50.0%	5.00%

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:	91.345
Medium Trucks:	91.249
Heavy Trucks:	91.258

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	0.79	-2.69	0.00	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-14.08	-2.68	0.00	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-11.86	-2.68	0.00	*-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:	64.6	62.7	61.3	55.3	63.7	64.4
Medium Trucks:	61.0	57.0	49.2	58.4	64.6	64.6
Heavy Trucks:	68.5	64.5	56.7	65.9	72.1	72.1
Vehicle Noise:	70.5	67.1	62.8	66.9	73.3	73.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	213	673	2,129	6,732
CNEL:	218	689	2,180	6,894

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Bundy Canyon Road
Road Segment: I-15 Freeway Overpass

Project Name: Cornerstone Church
Job Number: 8231

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	19,100 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,910 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	82 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:	10
Medium Trucks (2 Axles):	10
Heavy Trucks (3+ Axles):	10

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	14.0%	10.5%	92.00%
Medium Trucks:	48.0%	2.0%	50.0%	3.00%
Heavy Trucks:	48.0%	2.0%	50.0%	5.00%

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:	91.345
Medium Trucks:	91.249
Heavy Trucks:	91.258

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	1.12	-2.69	0.00	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-13.74	-2.68	0.00	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-11.53	-2.68	0.00	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	64.9	63.0	61.6	55.6	64.1	64.7
Medium Trucks:	61.3	57.3	49.5	58.7	64.9	64.9
Heavy Trucks:	68.8	64.8	57.0	66.2	72.4	72.4
Vehicle Noise:	70.8	67.5	63.1	67.3	73.6	73.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	230	726	2,297	7,264
CNEL:	235	744	2,353	7,440

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Bundy Canyon Road
Road Segment: East of I-15 Freeway NB Ramps

Project Name: Cornerstone Church
Job Number: 8231

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	19,000 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,900 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	82 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:	10
Medium Trucks (2 Axles):	10
Heavy Trucks (3+ Axles):	10

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	14.0%	10.5%	92.00%
Medium Trucks:	48.0%	2.0%	50.0%	3.00%
Heavy Trucks:	48.0%	2.0%	50.0%	5.00%

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:	91.345
Medium Trucks:	91.249
Heavy Trucks:	91.258

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	1.10	-2.69	0.00	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-13.77	-2.68	0.00	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-11.55	-2.68	0.00	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	64.9	63.0	61.6	55.6	64.1	64.7
Medium Trucks:	61.3	57.3	49.5	58.7	64.9	64.9
Heavy Trucks:	68.8	64.8	57.0	66.2	72.4	72.4
Vehicle Noise:	70.8	67.4	63.1	67.2	73.6	73.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	229	723	2,285	7,226
CNEL:	234	740	2,340	7,401

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Bundy Canyon Road
Road Segment: West of Monte Vista Drive
Project Name: Cornerstone Church
Job Number: 8231

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	18,600 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,860 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	82 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:	10
Medium Trucks (2 Axles):	10
Heavy Trucks (3+ Axles):	10

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	14.0%	10.5%	92.00%
Medium Trucks:	48.0%	2.0%	50.0%	3.00%
Heavy Trucks:	48.0%	2.0%	50.0%	5.00%

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:	91.345
Medium Trucks:	91.249
Heavy Trucks:	91.258

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	1.01	-2.69	0.00	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-13.86	-2.68	0.00	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-11.64	-2.68	0.00	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	64.8	62.9	61.5	55.5	64.0	64.6
Medium Trucks:	61.2	57.2	49.4	58.6	64.8	64.8
Heavy Trucks:	68.7	64.7	56.9	66.1	72.3	72.3
Vehicle Noise:	70.7	67.4	63.0	67.1	73.5	73.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	224	707	2,237	7,074
CNEL:	229	724	2,291	7,245

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Bundy Canyon Road
Road Segment: East of Monte Vista Drive

Project Name: Cornerstone Church
Job Number: 8231

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	19,700 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,970 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	82 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:	10
Medium Trucks (2 Axles):	10
Heavy Trucks (3+ Axles):	10

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	14.0%	10.5%	92.00%
Medium Trucks:	48.0%	2.0%	50.0%	3.00%
Heavy Trucks:	48.0%	2.0%	50.0%	5.00%

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:	91.345
Medium Trucks:	91.249
Heavy Trucks:	91.258

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	1.26	-2.69	0.00	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-13.61	-2.68	0.00	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-11.39	-2.68	0.00	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	65.1	63.2	61.8	55.8	64.2	64.8
Medium Trucks:	61.4	57.4	49.7	58.9	65.0	65.1
Heavy Trucks:	68.9	64.9	57.2	66.4	72.5	72.6
Vehicle Noise:	70.9	67.6	63.3	67.4	73.7	73.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	237	749	2,369	7,492
CNEL:	243	767	2,427	7,673

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Baxter Road
Road Segment: West of I-15 Freeway SB Ramps

Project Name: Cornerstone Church
Job Number: 8231

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	14,500 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,450 vehicles
Vehicle Speed:	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:	10
Medium Trucks (2 Axles):	10
Heavy Trucks (3+ Axles):	10

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	-0.34	-3.01	0.00	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-17.58	-3.01	0.00	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-21.53	-3.01	0.00	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	65.1	63.2	61.4	55.4	64.0	64.6
Medium Trucks:	58.9	57.4	51.0	49.5	57.9	58.1
Heavy Trucks:	59.7	58.3	49.3	50.5	58.9	59.0
Vehicle Noise:	66.9	65.2	62.1	57.4	65.9	66.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	39	124	391	1,235
CNEL:	43	137	434	1,372

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Baxter Road
Road Segment: I-15 Freeway Overpass

Project Name: Cornerstone Church
Job Number: 8231

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	11,100 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,110 vehicles
Vehicle Speed:	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:	10
Medium Trucks (2 Axles):	10
Heavy Trucks (3+ Axles):	10

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	-1.50	-3.01	0.00	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-18.74	-3.01	0.00	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-22.69	-3.01	0.00	*-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	62.1	60.3	54.2	62.9	63.5
Medium Trucks:	57.7	56.2	49.8	48.3	56.8	57.0
Heavy Trucks:	58.6	57.1	48.1	49.3	57.7	57.8
Vehicle Noise:	65.8	64.0	60.9	56.2	64.8	65.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	30	95	299	946
CNEL:	33	105	332	1,051

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Baxter Road
Road Segment: East of I-15 Freeway NB Ramps

Project Name: Cornerstone Church
Job Number: 8231

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	6,300 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	630 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:	10
Medium Trucks (2 Axles):	10
Heavy Trucks (3+ Axles):	10

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	-3.96	-3.01	0.00	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-21.20	-3.01	0.00	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-25.15	-3.01	0.00	*-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:	61.5	59.6	57.8	51.8	60.4	61.0
Medium Trucks:	55.2	53.7	47.4	45.8	54.3	54.5
Heavy Trucks:	56.1	54.7	45.6	46.9	55.2	55.4
Vehicle Noise:	63.3	61.6	58.4	53.8	62.3	62.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	17	54	170	537
CNEL:	19	60	189	596

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Baxter Road
Road Segment: East of Monte Vista Drive

Project Name: Cornerstone Church
Job Number: 8231

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	4,900 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	490 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:	10
Medium Trucks (2 Axles):	10
Heavy Trucks (3+ Axles):	10

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	-5.05	-3.01	0.00	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-22.29	-3.01	0.00	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-26.24	-3.01	0.00	*-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:	60.4	58.5	56.7	50.7	59.3	59.9
Medium Trucks:	54.2	52.6	46.3	44.7	53.2	53.4
Heavy Trucks:	55.0	53.6	44.5	45.8	54.1	54.3
Vehicle Noise:	62.2	60.5	57.3	52.7	61.2	61.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	13	42	132	417
CNEL:	15	46	147	464

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: I-15 Freeway
Road Segment: Between Bundy Canyon Road and Baxter Road

Project Name: Cornerstone Church
Job Number: 8231

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	117,100 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	11,710 vehicles
Vehicle Speed:	65 mph
Near/Far Lane Distance:	160 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:	10
Medium Trucks (2 Axles):	10
Heavy Trucks (3+ Axles):	10

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	93.27%
Medium Trucks:	84.8%	4.9%	10.3%	2.34%
Heavy Trucks:	86.5%	2.7%	10.8%	4.39%

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:	60.208
Medium Trucks:	60.061
Heavy Trucks:	60.075

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	74.55	6.95	-0.88	0.00	*-4.77*	0.000	0.000
Medium Trucks:	84.86	-9.06	-0.87	0.00	*-4.88*	0.000	0.000
Heavy Trucks:	88.18	-6.32	-0.87	0.00	*-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:	80.6	78.7	77.0	70.9	79.5	80.1
Medium Trucks:	74.9	73.4	67.1	65.5	74.0	74.2
Heavy Trucks:	81.0	79.6	70.5	71.8	80.1	80.3
Vehicle Noise:	84.3	82.7	78.2	74.9	83.4	83.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	2,178	6,888	21,781	68,879
CNEL:	2,356	7,452	23,565	74,518

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Monte Vista Drive
Road Segment: South of Bundy Canyon Road

Project Name: Cornerstone Church
Job Number: 8231

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	2,300 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	230 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:	10
Medium Trucks (2 Axles):	10
Heavy Trucks (3+ Axles):	10

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	-8.33	-3.01	0.00	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-25.57	-3.01	0.00	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-29.53	-3.01	0.00	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	57.1	55.2	53.4	47.4	56.0	56.6
Medium Trucks:	50.9	49.4	43.0	41.5	49.9	50.1
Heavy Trucks:	51.7	50.3	41.3	42.5	50.9	51.0
Vehicle Noise:	58.9	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:	6	20	62	196
CNEL:	7	22	69	218

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Monte Vista Drive
Road Segment: North of Driveway 1

Project Name: Cornerstone Church
Job Number: 8231

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	2,400 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	240 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:	10
Medium Trucks (2 Axles):	10
Heavy Trucks (3+ Axles):	10

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	-8.15	-3.01	0.00	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-25.39	-3.01	0.00	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-29.34	-3.01	0.00	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	57.3	55.4	53.6	47.6	56.2	56.8
Medium Trucks:	51.1	49.5	43.2	41.6	50.1	50.3
Heavy Trucks:	51.9	50.5	41.4	42.7	51.0	51.2
Vehicle Noise:	59.1	57.4	54.2	49.6	58.1	58.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	6	20	65	204
CNEL:	7	23	72	227

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Monte Vista Drive
Road Segment: North of Via Carnaghi

Project Name: Cornerstone Church
Job Number: 8231

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	2,300 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	230 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:	10
Medium Trucks (2 Axles):	10
Heavy Trucks (3+ Axles):	10

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	-8.33	-3.01	0.00	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-25.57	-3.01	0.00	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-29.53	-3.01	0.00	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	57.1	55.2	53.4	47.4	56.0	56.6
Medium Trucks:	50.9	49.4	43.0	41.5	49.9	50.1
Heavy Trucks:	51.7	50.3	41.3	42.5	50.9	51.0
Vehicle Noise:	58.9	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:	6	20	62	196
CNEL:	7	22	69	218

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Monte Vista Drive
Road Segment: North of Baxter Road

Project Name: Cornerstone Church
Job Number: 8231

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	3,300 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	330 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:	10
Medium Trucks (2 Axles):	10
Heavy Trucks (3+ Axles):	10

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	-6.77	-3.01	0.00	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-24.00	-3.01	0.00	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-27.96	-3.01	0.00	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	58.7	56.8	55.0	49.0	57.6	58.2
Medium Trucks:	52.4	50.9	44.6	43.0	51.5	51.7
Heavy Trucks:	53.3	51.9	42.8	44.1	52.4	52.6
Vehicle Noise:	60.5	58.8	55.6	50.9	59.5	59.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	9	28	89	281
CNEL:	10	31	99	312

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Bundy Canyon Road
Road Segment: West of I-15 Freeway SB Ramps

Project Name: Cornerstone Church
Job Number: 8231

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	17,800 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,780 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	82 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:	10
Medium Trucks (2 Axles):	10
Heavy Trucks (3+ Axles):	10

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	14.0%	10.5%	92.00%
Medium Trucks:	48.0%	2.0%	50.0%	3.00%
Heavy Trucks:	48.0%	2.0%	50.0%	5.00%

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:	91.345
Medium Trucks:	91.249
Heavy Trucks:	91.258

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	0.82	-2.69	0.00	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-14.05	-2.68	0.00	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-11.83	-2.68	0.00	*-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:	64.6	62.7	61.3	55.3	63.8	64.4
Medium Trucks:	61.0	57.0	49.2	58.4	64.6	64.6
Heavy Trucks:	68.5	64.5	56.7	65.9	72.1	72.1
Vehicle Noise:	70.5	67.2	62.8	66.9	73.3	73.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	214	677	2,141	6,770
CNEL:	219	693	2,192	6,933

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Bundy Canyon Road
Road Segment: I-15 Freeway Overpass

Project Name: Cornerstone Church
Job Number: 8231

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	19,300 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,930 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	82 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:	10
Medium Trucks (2 Axles):	10
Heavy Trucks (3+ Axles):	10

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	14.0%	10.5%	92.00%
Medium Trucks:	48.0%	2.0%	50.0%	3.00%
Heavy Trucks:	48.0%	2.0%	50.0%	5.00%

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:	91.345
Medium Trucks:	91.249
Heavy Trucks:	91.258

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	1.17	-2.69	0.00	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-13.70	-2.68	0.00	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-11.48	-2.68	0.00	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	65.0	63.1	61.7	55.7	64.1	64.7
Medium Trucks:	61.3	57.4	49.6	58.8	64.9	65.0
Heavy Trucks:	68.8	64.9	57.1	66.3	72.4	72.5
Vehicle Noise:	70.8	67.5	63.2	67.3	73.7	73.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	232	734	2,321	7,340
CNEL:	238	752	2,377	7,518

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Bundy Canyon Road
Road Segment: East of I-15 Freeway NB Ramps

Project Name: Cornerstone Church
Job Number: 8231

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	19,300 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,930 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	82 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:	10
Medium Trucks (2 Axles):	10
Heavy Trucks (3+ Axles):	10

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	14.0%	10.5%	92.00%
Medium Trucks:	48.0%	2.0%	50.0%	3.00%
Heavy Trucks:	48.0%	2.0%	50.0%	5.00%

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:	91.345
Medium Trucks:	91.249
Heavy Trucks:	91.258

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	1.17	-2.69	0.00	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-13.70	-2.68	0.00	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-11.48	-2.68	0.00	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	65.0	63.1	61.7	55.7	64.1	64.7
Medium Trucks:	61.3	57.4	49.6	58.8	64.9	65.0
Heavy Trucks:	68.8	64.9	57.1	66.3	72.4	72.5
Vehicle Noise:	70.8	67.5	63.2	67.3	73.7	73.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	232	734	2,321	7,340
CNEL:	238	752	2,377	7,518

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Bundy Canyon Road
Road Segment: West of Monte Vista Drive

Project Name: Cornerstone Church
Job Number: 8231

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	19,000 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,900 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	82 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:	10
Medium Trucks (2 Axles):	10
Heavy Trucks (3+ Axles):	10

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	14.0%	10.5%	92.00%
Medium Trucks:	48.0%	2.0%	50.0%	3.00%
Heavy Trucks:	48.0%	2.0%	50.0%	5.00%

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:	91.345
Medium Trucks:	91.249
Heavy Trucks:	91.258

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	1.10	-2.69	0.00	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-13.77	-2.68	0.00	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-11.55	-2.68	0.00	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	64.9	63.0	61.6	55.6	64.1	64.7
Medium Trucks:	61.3	57.3	49.5	58.7	64.9	64.9
Heavy Trucks:	68.8	64.8	57.0	66.2	72.4	72.4
Vehicle Noise:	70.8	67.4	63.1	67.2	73.6	73.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	229	723	2,285	7,226
CNEL:	234	740	2,340	7,401

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Bundy Canyon Road
Road Segment: East of Monte Vista Drive

Project Name: Cornerstone Church
Job Number: 8231

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	19,900 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,990 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	82 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:	10
Medium Trucks (2 Axles):	10
Heavy Trucks (3+ Axles):	10

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	14.0%	10.5%	92.00%
Medium Trucks:	48.0%	2.0%	50.0%	3.00%
Heavy Trucks:	48.0%	2.0%	50.0%	5.00%

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:	91.345
Medium Trucks:	91.249
Heavy Trucks:	91.258

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	1.30	-2.69	0.00	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-13.57	-2.68	0.00	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-11.35	-2.68	0.00	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	65.1	63.2	61.8	55.8	64.3	64.9
Medium Trucks:	61.5	57.5	49.7	58.9	65.1	65.1
Heavy Trucks:	69.0	65.0	57.2	66.4	72.6	72.6
Vehicle Noise:	71.0	67.6	63.3	67.4	73.8	73.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	239	757	2,393	7,568
CNEL:	245	775	2,451	7,751

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Baxter Road
Road Segment: West of I-15 Freeway SB Ramps

Project Name: Cornerstone Church
Job Number: 8231

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	14,700 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,470 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:	10
Medium Trucks (2 Axles):	10
Heavy Trucks (3+ Axles):	10

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	-0.28	-3.01	0.00	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-17.52	-3.01	0.00	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-21.47	-3.01	0.00	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	65.2	63.3	61.5	55.4	64.1	64.7
Medium Trucks:	58.9	57.4	51.1	49.5	58.0	58.2
Heavy Trucks:	59.8	58.3	49.3	50.6	58.9	59.0
Vehicle Noise:	67.0	65.3	62.1	57.4	66.0	66.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	40	125	396	1,252
CNEL:	44	139	440	1,391

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Baxter Road
Road Segment: I-15 Freeway Overpass

Project Name: Cornerstone Church
Job Number: 8231

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:	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:	10
Medium Trucks (2 Axles):	10
Heavy Trucks (3+ Axles):	10

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	-1.38	-3.01	0.00	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-18.62	-3.01	0.00	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-22.58	-3.01	0.00	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	64.1	62.2	60.4	54.3	63.0	63.6
Medium Trucks:	57.8	56.3	50.0	48.4	56.9	57.1
Heavy Trucks:	58.7	57.2	48.2	49.5	57.8	57.9
Vehicle Noise:	65.9	64.2	61.0	56.3	64.9	65.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	31	97	307	971
CNEL:	34	108	341	1,079

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Baxter Road
Road Segment: East of I-15 Freeway NB Ramps

Project Name: Cornerstone Church
Job Number: 8231

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	6,700 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	670 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:	10
Medium Trucks (2 Axles):	10
Heavy Trucks (3+ Axles):	10

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	-3.69	-3.01	0.00	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-20.93	-3.01	0.00	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-24.88	-3.01	0.00	*-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	47.6	46.1	54.6	54.8
Heavy Trucks:	56.4	54.9	45.9	47.2	55.5	55.6
Vehicle Noise:	63.6	61.8	58.7	54.0	62.6	63.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	18	57	180	571
CNEL:	20	63	201	634

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Baxter Road
Road Segment: East of Monte Vista Drive

Project Name: Cornerstone Church
Job Number: 8231

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	4,900 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	490 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:	10
Medium Trucks (2 Axles):	10
Heavy Trucks (3+ Axles):	10

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	-5.05	-3.01	0.00	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-22.29	-3.01	0.00	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-26.24	-3.01	0.00	*-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:	60.4	58.5	56.7	50.7	59.3	59.9
Medium Trucks:	54.2	52.6	46.3	44.7	53.2	53.4
Heavy Trucks:	55.0	53.6	44.5	45.8	54.1	54.3
Vehicle Noise:	62.2	60.5	57.3	52.7	61.2	61.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	13	42	132	417
CNEL:	15	46	147	464

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2017 Without Project
Road Name: I-15 Freeway
Road Segment: Between Bundy Canyon Road and Baxter Road
Project Name: Cornerstone Church
Job Number: 8231

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	126,600 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	12,660 vehicles
Vehicle Speed:	65 mph
Near/Far Lane Distance:	160 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:	10
Medium Trucks (2 Axles):	10
Heavy Trucks (3+ Axles):	10

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	93.27%
Medium Trucks:	84.8%	4.9%	10.3%	2.34%
Heavy Trucks:	86.5%	2.7%	10.8%	4.39%

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:	60.208
Medium Trucks:	60.061
Heavy Trucks:	60.075

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	74.55	7.29	-0.88	0.00	*-4.77*	0.000	0.000
Medium Trucks:	84.86	-8.72	-0.87	0.00	*-4.88*	0.000	0.000
Heavy Trucks:	88.18	-5.99	-0.87	0.00	*-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:	81.0	79.1	77.3	71.2	79.9	80.5
Medium Trucks:	75.3	73.8	67.4	65.9	74.3	74.6
Heavy Trucks:	81.3	79.9	70.9	72.1	80.5	80.6
Vehicle Noise:	84.7	83.1	78.5	75.2	83.7	84.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	2,355	7,447	23,549	74,467
CNEL:	2,548	8,056	25,476	80,564

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2017 Without Project
Road Name: Monte Vista Drive
Road Segment: South of Bundy Canyon Road

Project Name: Cornerstone Church
Job Number: 8231

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	5,400 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	540 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:	10
Medium Trucks (2 Axles):	10
Heavy Trucks (3+ Axles):	10

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	-4.63	-3.01	0.00	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-21.87	-3.01	0.00	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-25.82	-3.01	0.00	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	60.8	58.9	57.2	51.1	59.7	60.3
Medium Trucks:	54.6	53.1	46.7	45.2	53.6	53.9
Heavy Trucks:	55.4	54.0	45.0	46.2	54.6	54.7
Vehicle Noise:	62.7	60.9	57.8	53.1	61.6	62.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	15	46	145	460
CNEL:	16	51	162	511

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2017 Without Project
Road Name: Monte Vista Drive
Road Segment: North of Driveway 1

Project Name: Cornerstone Church
Job Number: 8231

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	6,100 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	610 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:	10
Medium Trucks (2 Axles):	10
Heavy Trucks (3+ Axles):	10

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	-4.10	-3.01	0.00	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-21.34	-3.01	0.00	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-25.29	-3.01	0.00	*-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	59.5	57.7	51.6	60.3	60.9
Medium Trucks:	55.1	53.6	47.2	45.7	54.2	54.4
Heavy Trucks:	56.0	54.5	45.5	46.7	55.1	55.2
Vehicle Noise:	63.2	61.4	58.3	53.6	62.2	62.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	16	52	164	520
CNEL:	18	58	183	577

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2017 Without Project
Road Name: Monte Vista Drive
Road Segment: North of Via Carnaghi

Project Name: Cornerstone Church
Job Number: 8231

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	6,200 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	620 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:	10
Medium Trucks (2 Axles):	10
Heavy Trucks (3+ Axles):	10

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	-4.03	-3.01	0.00	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-21.27	-3.01	0.00	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-25.22	-3.01	0.00	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	61.4	59.5	57.8	51.7	60.3	60.9
Medium Trucks:	55.2	53.7	47.3	45.8	54.2	54.5
Heavy Trucks:	56.0	54.6	45.6	46.8	55.2	55.3
Vehicle Noise:	63.3	61.5	58.4	53.7	62.2	62.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	17	53	167	528
CNEL:	19	59	186	587

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2017 Without Project
Road Name: Monte Vista Drive
Road Segment: North of Baxter Road
Project Name: Cornerstone Church
Job Number: 8231

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	6,900 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	690 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:	10
Medium Trucks (2 Axles):	10
Heavy Trucks (3+ Axles):	10

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	-3.56	-3.01	0.00	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-20.80	-3.01	0.00	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-24.76	-3.01	0.00	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	61.9	60.0	58.2	52.2	60.8	61.4
Medium Trucks:	55.6	54.1	47.8	46.2	54.7	54.9
Heavy Trucks:	56.5	55.1	46.0	47.3	55.6	55.8
Vehicle Noise:	63.7	62.0	58.8	54.1	62.7	63.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	19	59	186	588
CNEL:	21	65	207	653

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2017 Without Project
Road Name: Bundy Canyon Road
Road Segment: West of I-15 Freeway SB Ramps

Project Name: Cornerstone Church
Job Number: 8231

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,300 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,730 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	82 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:	10
Medium Trucks (2 Axles):	10
Heavy Trucks (3+ Axles):	10

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	14.0%	10.5%	92.00%
Medium Trucks:	48.0%	2.0%	50.0%	3.00%
Heavy Trucks:	48.0%	2.0%	50.0%	5.00%

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:	91.345
Medium Trucks:	91.249
Heavy Trucks:	91.258

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	2.67	-2.69	0.00	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-12.19	-2.68	0.00	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-9.97	-2.68	0.00	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	66.5	64.6	63.2	57.2	65.6	66.3
Medium Trucks:	62.8	58.9	51.1	60.3	66.4	66.5
Heavy Trucks:	70.3	66.4	58.6	67.8	73.9	74.0
Vehicle Noise:	72.4	69.0	64.7	68.8	75.2	75.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	328	1,038	3,283	10,383
CNEL:	336	1,063	3,363	10,634

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2017 Without Project
Road Name: Bundy Canyon Road
Road Segment: I-15 Freeway Overpass

Project Name: Cornerstone Church
Job Number: 8231

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,700 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,170 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	82 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:	10
Medium Trucks (2 Axles):	10
Heavy Trucks (3+ Axles):	10

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	14.0%	10.5%	92.00%
Medium Trucks:	48.0%	2.0%	50.0%	3.00%
Heavy Trucks:	48.0%	2.0%	50.0%	5.00%

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:	91.345
Medium Trucks:	91.249
Heavy Trucks:	91.258

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	3.32	-2.69	0.00	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-11.54	-2.68	0.00	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-9.33	-2.68	0.00	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	67.1	65.2	63.8	57.8	66.3	66.9
Medium Trucks:	63.5	59.5	51.7	60.9	67.1	67.1
Heavy Trucks:	71.0	67.0	59.2	68.4	74.6	74.6
Vehicle Noise:	73.0	69.7	65.3	69.5	75.8	75.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	381	1,206	3,813	12,056
CNEL:	390	1,235	3,905	12,347

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2017 Without Project
Road Name: Bundy Canyon Road
Road Segment: East of I-15 Freeway NB Ramps

Project Name: Cornerstone Church
Job Number: 8231

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	34,400 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,440 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	82 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:	10
Medium Trucks (2 Axles):	10
Heavy Trucks (3+ Axles):	10

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	14.0%	10.5%	92.00%
Medium Trucks:	48.0%	2.0%	50.0%	3.00%
Heavy Trucks:	48.0%	2.0%	50.0%	5.00%

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:	91.345
Medium Trucks:	91.249
Heavy Trucks:	91.258

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	3.68	-2.69	0.00	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-11.19	-2.68	0.00	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-8.97	-2.68	0.00	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	67.5	65.6	64.2	58.2	66.6	67.3
Medium Trucks:	63.8	59.9	52.1	61.3	67.4	67.5
Heavy Trucks:	71.3	67.4	59.6	68.8	74.9	75.0
Vehicle Noise:	73.4	70.0	65.7	69.8	76.2	76.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	414	1,308	4,137	13,083
CNEL:	424	1,340	4,237	13,399

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2017 Without Project
Road Name: Bundy Canyon Road
Road Segment: West of Monte Vista Drive

Project Name: Cornerstone Church
Job Number: 8231

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,000 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,900 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	82 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:	10
Medium Trucks (2 Axles):	10
Heavy Trucks (3+ Axles):	10

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	14.0%	10.5%	92.00%
Medium Trucks:	48.0%	2.0%	50.0%	3.00%
Heavy Trucks:	48.0%	2.0%	50.0%	5.00%

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:	91.345
Medium Trucks:	91.249
Heavy Trucks:	91.258

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	2.94	-2.69	0.00	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-11.93	-2.68	0.00	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-9.71	-2.68	0.00	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	66.8	64.9	63.5	57.4	65.9	66.5
Medium Trucks:	63.1	59.1	51.3	60.6	66.7	66.7
Heavy Trucks:	70.6	66.6	58.8	68.0	74.2	74.2
Vehicle Noise:	72.6	69.3	64.9	69.1	75.4	75.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	349	1,103	3,488	11,029
CNEL:	357	1,130	3,572	11,296

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2017 Without Project
Road Name: Bundy Canyon Road
Road Segment: East of Monte Vista Drive

Project Name: Cornerstone Church
Job Number: 8231

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,100 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,810 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	82 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:	10
Medium Trucks (2 Axles):	10
Heavy Trucks (3+ Axles):	10

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	14.0%	10.5%	92.00%
Medium Trucks:	48.0%	2.0%	50.0%	3.00%
Heavy Trucks:	48.0%	2.0%	50.0%	5.00%

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:	91.345
Medium Trucks:	91.249
Heavy Trucks:	91.258

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	2.80	-2.69	0.00	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-12.07	-2.68	0.00	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-9.85	-2.68	0.00	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	66.6	64.7	63.3	57.3	65.8	66.4
Medium Trucks:	63.0	59.0	51.2	60.4	66.6	66.6
Heavy Trucks:	70.5	66.5	58.7	67.9	74.1	74.1
Vehicle Noise:	72.5	69.1	64.8	68.9	75.3	75.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	338	1,069	3,380	10,687
CNEL:	346	1,095	3,461	10,945

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2017 Without Project
Road Name: Baxter Road
Road Segment: West of I-15 Freeway SB Ramps

Project Name: Cornerstone Church
Job Number: 8231

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	21,300 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,130 vehicles
Vehicle Speed:	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:	10
Medium Trucks (2 Axles):	10
Heavy Trucks (3+ Axles):	10

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	1.33	-3.01	0.00	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-15.91	-3.01	0.00	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-19.86	-3.01	0.00	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	66.8	64.9	63.1	57.1	65.7	66.3
Medium Trucks:	60.5	59.0	52.7	51.1	59.6	59.8
Heavy Trucks:	61.4	60.0	50.9	52.2	60.5	60.7
Vehicle Noise:	68.6	66.9	63.7	59.0	67.6	68.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	57	181	574	1,814
CNEL:	64	202	637	2,016

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2017 Without Project
Road Name: Baxter Road
Road Segment: I-15 Freeway Overpass

Project Name: Cornerstone Church
Job Number: 8231

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	16,300 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,630 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:	10
Medium Trucks (2 Axles):	10
Heavy Trucks (3+ Axles):	10

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	0.17	-3.01	0.00	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-17.07	-3.01	0.00	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-21.02	-3.01	0.00	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	65.6	63.7	62.0	55.9	64.5	65.1
Medium Trucks:	59.4	57.9	51.5	50.0	58.4	58.7
Heavy Trucks:	60.2	58.8	49.8	51.0	59.4	59.5
Vehicle Noise:	67.5	65.7	62.6	57.9	66.4	66.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	44	139	439	1,389
CNEL:	49	154	488	1,543

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2017 Without Project
Road Name: Baxter Road
Road Segment: East of I-15 Freeway NB Ramps

Project Name: Cornerstone Church
Job Number: 8231

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	9,600 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	960 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:	10
Medium Trucks (2 Axles):	10
Heavy Trucks (3+ Axles):	10

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	-2.13	-3.01	0.00	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-19.37	-3.01	0.00	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-23.32	-3.01	0.00	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	63.3	61.4	59.7	53.6	62.2	62.8
Medium Trucks:	57.1	55.6	49.2	47.7	56.1	56.4
Heavy Trucks:	57.9	56.5	47.5	48.7	57.1	57.2
Vehicle Noise:	65.2	63.4	60.3	55.6	64.1	64.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	26	82	259	818
CNEL:	29	91	287	909

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2017 Without Project
Road Name: Baxter Road
Road Segment: East of Monte Vista Drive

Project Name: Cornerstone Church
Job Number: 8231

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	7,100 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	710 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:	10
Medium Trucks (2 Axles):	10
Heavy Trucks (3+ Axles):	10

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	-3.44	-3.01	0.00	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-20.68	-3.01	0.00	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-24.63	-3.01	0.00	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	62.0	60.1	58.3	52.3	60.9	61.5
Medium Trucks:	55.8	54.3	47.9	46.3	54.8	55.0
Heavy Trucks:	56.6	55.2	46.2	47.4	55.8	55.9
Vehicle Noise:	63.8	62.1	59.0	54.3	62.8	63.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	19	60	191	605
CNEL:	21	67	212	672

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2017 With Project
Road Name: I-15 Freeway
Road Segment: Between Bundy Canyon Road and Baxter Road
Project Name: Cornerstone Church
Job Number: 8231

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	126,700 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	12,670 vehicles
Vehicle Speed:	65 mph
Near/Far Lane Distance:	160 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:	10
Medium Trucks (2 Axles):	10
Heavy Trucks (3+ Axles):	10

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	93.27%
Medium Trucks:	84.8%	4.9%	10.3%	2.34%
Heavy Trucks:	86.5%	2.7%	10.8%	4.39%

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:	60.208
Medium Trucks:	60.061
Heavy Trucks:	60.075

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	74.55	7.29	-0.88	0.00	*-4.77*	0.000	0.000
Medium Trucks:	84.86	-8.71	-0.87	0.00	*-4.88*	0.000	0.000
Heavy Trucks:	88.18	-5.98	-0.87	0.00	*-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:	81.0	79.1	77.3	71.2	79.9	80.5
Medium Trucks:	75.3	73.8	67.4	65.9	74.3	74.6
Heavy Trucks:	81.3	79.9	70.9	72.1	80.5	80.6
Vehicle Noise:	84.7	83.1	78.5	75.2	83.7	84.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	2,357	7,453	23,567	74,526
CNEL:	2,550	8,063	25,497	80,627

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2017 With Project
Road Name: Monte Vista Drive
Road Segment: South of Bundy Canyon Road
Project Name: Cornerstone Church
Job Number: 8231

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	5,900 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	590 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:	10
Medium Trucks (2 Axles):	10
Heavy Trucks (3+ Axles):	10

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	-4.24	-3.01	0.00	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-21.48	-3.01	0.00	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-25.44	-3.01	0.00	*-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:	61.2	59.3	57.5	51.5	60.1	60.7
Medium Trucks:	55.0	53.5	47.1	45.5	54.0	54.2
Heavy Trucks:	55.8	54.4	45.3	46.6	55.0	55.1
Vehicle Noise:	63.0	61.3	58.1	53.5	62.0	62.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	16	50	159	503
CNEL:	18	56	177	558

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2017 With Project
Road Name: Monte Vista Drive
Road Segment: North of Driveway 1

Project Name: Cornerstone Church
Job Number: 8231

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	6,600 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	660 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:	10
Medium Trucks (2 Axles):	10
Heavy Trucks (3+ Axles):	10

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	-3.76	-3.01	0.00	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-20.99	-3.01	0.00	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-24.95	-3.01	0.00	*-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:	55.4	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:	18	56	178	562
CNEL:	20	62	198	625

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2017 With Project
Road Name: Monte Vista Drive
Road Segment: North of Via Carnaghi

Project Name: Cornerstone Church
Job Number: 8231

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	6,500 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	650 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:	10
Medium Trucks (2 Axles):	10
Heavy Trucks (3+ Axles):	10

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	-3.82	-3.01	0.00	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-21.06	-3.01	0.00	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-25.02	-3.01	0.00	*-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	58.0	51.9	60.5	61.1
Medium Trucks:	55.4	53.9	47.5	46.0	54.4	54.7
Heavy Trucks:	56.2	54.8	45.8	47.0	55.4	55.5
Vehicle Noise:	63.5	61.7	58.6	53.9	62.4	62.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	18	55	175	554
CNEL:	19	62	195	615

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2017 With Project
Road Name: Monte Vista Drive
Road Segment: North of Baxter Road
Project Name: Cornerstone Church
Job Number: 8231

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	7,300 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	730 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:	10
Medium Trucks (2 Axles):	10
Heavy Trucks (3+ Axles):	10

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	-3.32	-3.01	0.00	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-20.56	-3.01	0.00	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-24.51	-3.01	0.00	*-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	58.5	52.4	61.0	61.6
Medium Trucks:	55.9	54.4	48.0	46.5	54.9	55.2
Heavy Trucks:	56.7	55.3	46.3	47.5	55.9	56.0
Vehicle Noise:	64.0	62.2	59.1	54.4	62.9	63.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	20	62	197	622
CNEL:	22	69	218	691

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2017 With Project
Road Name: Bundy Canyon Road
Road Segment: West of I-15 Freeway SB Ramps

Project Name: Cornerstone Church
Job Number: 8231

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,400 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,740 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	82 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:	10
Medium Trucks (2 Axles):	10
Heavy Trucks (3+ Axles):	10

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	14.0%	10.5%	92.00%
Medium Trucks:	48.0%	2.0%	50.0%	3.00%
Heavy Trucks:	48.0%	2.0%	50.0%	5.00%

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:	91.345
Medium Trucks:	91.249
Heavy Trucks:	91.258

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	2.69	-2.69	0.00	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-12.18	-2.68	0.00	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-9.96	-2.68	0.00	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	66.5	64.6	63.2	57.2	65.6	66.3
Medium Trucks:	62.9	58.9	51.1	60.3	66.5	66.5
Heavy Trucks:	70.4	66.4	58.6	67.8	74.0	74.0
Vehicle Noise:	72.4	69.0	64.7	68.8	75.2	75.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	330	1,042	3,295	10,421
CNEL:	337	1,067	3,375	10,673

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2017 With Project
Road Name: Bundy Canyon Road
Road Segment: I-15 Freeway Overpass

Project Name: Cornerstone Church
Job Number: 8231

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,900 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,190 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	82 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:	10
Medium Trucks (2 Axles):	10
Heavy Trucks (3+ Axles):	10

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	14.0%	10.5%	92.00%
Medium Trucks:	48.0%	2.0%	50.0%	3.00%
Heavy Trucks:	48.0%	2.0%	50.0%	5.00%

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:	91.345
Medium Trucks:	91.249
Heavy Trucks:	91.258

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	3.35	-2.69	0.00	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-11.52	-2.68	0.00	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-9.30	-2.68	0.00	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	67.2	65.3	63.9	57.8	66.3	66.9
Medium Trucks:	63.5	59.5	51.8	61.0	67.1	67.2
Heavy Trucks:	71.0	67.0	59.3	68.5	74.6	74.6
Vehicle Noise:	73.0	69.7	65.3	69.5	75.8	75.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	384	1,213	3,837	12,132
CNEL:	393	1,243	3,929	12,425

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2017 With Project
Road Name: Bundy Canyon Road
Road Segment: East of I-15 Freeway NB Ramps

Project Name: Cornerstone Church
Job Number: 8231

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	34,800 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,480 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	82 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:	10
Medium Trucks (2 Axles):	10
Heavy Trucks (3+ Axles):	10

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	14.0%	10.5%	92.00%
Medium Trucks:	48.0%	2.0%	50.0%	3.00%
Heavy Trucks:	48.0%	2.0%	50.0%	5.00%

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:	91.345
Medium Trucks:	91.249
Heavy Trucks:	91.258

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	3.73	-2.69	0.00	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-11.14	-2.68	0.00	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-8.92	-2.68	0.00	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	67.6	65.7	64.2	58.2	66.7	67.3
Medium Trucks:	63.9	59.9	52.1	61.3	67.5	67.5
Heavy Trucks:	71.4	67.4	59.6	68.8	75.0	75.0
Vehicle Noise:	73.4	70.1	65.7	69.9	76.2	76.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	419	1,324	4,185	13,235
CNEL:	429	1,355	4,286	13,555

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2017 With Project
Road Name: Bundy Canyon Road
Road Segment: West of Monte Vista Drive

Project Name: Cornerstone Church
Job Number: 8231

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,300 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,930 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	82 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:	10
Medium Trucks (2 Axles):	10
Heavy Trucks (3+ Axles):	10

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	14.0%	10.5%	92.00%
Medium Trucks:	48.0%	2.0%	50.0%	3.00%
Heavy Trucks:	48.0%	2.0%	50.0%	5.00%

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:	91.345
Medium Trucks:	91.249
Heavy Trucks:	91.258

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	2.98	-2.69	0.00	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-11.89	-2.68	0.00	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-9.67	-2.68	0.00	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	66.8	64.9	63.5	57.5	65.9	66.6
Medium Trucks:	63.1	59.2	51.4	60.6	66.7	66.8
Heavy Trucks:	70.6	66.7	58.9	68.1	74.2	74.3
Vehicle Noise:	72.7	69.3	65.0	69.1	75.5	75.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	352	1,114	3,524	11,144
CNEL:	361	1,141	3,609	11,413

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2017 With Project
Road Name: Bundy Canyon Road
Road Segment: East of Monte Vista Drive

Project Name: Cornerstone Church
Job Number: 8231

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,300 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,830 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	82 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:	10
Medium Trucks (2 Axles):	10
Heavy Trucks (3+ Axles):	10

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	14.0%	10.5%	92.00%
Medium Trucks:	48.0%	2.0%	50.0%	3.00%
Heavy Trucks:	48.0%	2.0%	50.0%	5.00%

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:	91.345
Medium Trucks:	91.249
Heavy Trucks:	91.258

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	2.83	-2.69	0.00	*-4.77*	0.000	0.000
Medium Trucks:	77.72	-12.04	-2.68	0.00	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-9.82	-2.68	0.00	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	66.7	64.8	63.3	57.3	65.8	66.4
Medium Trucks:	63.0	59.0	51.2	60.4	66.6	66.6
Heavy Trucks:	70.5	66.5	58.7	67.9	74.1	74.1
Vehicle Noise:	72.5	69.2	64.8	69.0	75.3	75.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	340	1,076	3,404	10,763
CNEL:	349	1,102	3,486	11,023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2017 With Project
Road Name: Baxter Road
Road Segment: West of I-15 Freeway SB Ramps

Project Name: Cornerstone Church
Job Number: 8231

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	21,500 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,150 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:	10
Medium Trucks (2 Axles):	10
Heavy Trucks (3+ Axles):	10

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	1.37	-3.01	0.00	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-15.86	-3.01	0.00	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-19.82	-3.01	0.00	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	66.8	64.9	63.2	57.1	65.7	66.3
Medium Trucks:	60.6	59.1	52.7	51.2	59.6	59.9
Heavy Trucks:	61.4	60.0	51.0	52.2	60.6	60.7
Vehicle Noise:	68.7	66.9	63.8	59.1	67.6	68.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	58	183	579	1,832
CNEL:	64	203	643	2,035

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2017 With Project
Road Name: Baxter Road
Road Segment: I-15 Freeway Overpass

Project Name: Cornerstone Church
Job Number: 8231

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	16,600 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,660 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	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:	10
Medium Trucks (2 Axles):	10
Heavy Trucks (3+ Axles):	10

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	0.25	-3.01	0.00	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-16.99	-3.01	0.00	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-20.94	-3.01	0.00	*-5.16*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	65.7	63.8	62.0	56.0	64.6	65.2
Medium Trucks:	59.5	57.9	51.6	50.0	58.5	58.7
Heavy Trucks:	60.3	58.9	49.8	51.1	59.4	59.6
Vehicle Noise:	67.5	65.8	62.6	58.0	66.5	67.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	45	141	447	1,414
CNEL:	50	157	497	1,571

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2017 With Project
Road Name: Baxter Road
Road Segment: East of I-15 Freeway NB Ramps
Project Name: Cornerstone Church
Job Number: 8231

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	10,000 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,000 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:	10
Medium Trucks (2 Axles):	10
Heavy Trucks (3+ Axles):	10

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	-1.95	-3.01	0.00	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-19.19	-3.01	0.00	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-23.15	-3.01	0.00	*-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:	63.5	61.6	59.8	53.8	62.4	63.0
Medium Trucks:	57.3	55.7	49.4	47.8	56.3	56.5
Heavy Trucks:	58.1	56.7	47.6	48.9	57.2	57.4
Vehicle Noise:	65.3	63.6	60.4	55.8	64.3	64.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	27	85	269	852
CNEL:	30	95	299	946

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2017 With Project
Road Name: Baxter Road
Road Segment: East of Monte Vista Drive

Project Name: Cornerstone Church
Job Number: 8231

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	7,200 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	720 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:	10
Medium Trucks (2 Axles):	10
Heavy Trucks (3+ Axles):	10

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	-3.38	-3.01	0.00	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-20.62	-3.01	0.00	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-24.57	-3.01	0.00	*-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:	19	61	194	613
CNEL:	22	68	215	681

APPENDIX 8.1

On-Site Traffic Noise Analysis Worksheets

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO)

Scenario: Backyard No Wall
Road Name: Monte Vista Dr.
Lot No: Pre-School Building

Project Name: Cornerstone Church
Job Number: 8231
Analyst: B. Lawson

SITE SPECIFIC INPUT DATA

Highway Data

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

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	105.0 feet
Centerline Dist. to Observer:	115.0 feet
Barrier Distance to Observer:	10.0 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:	10
Medium Trucks (2 Axles):	10
Heavy Trucks (3+ Axles):	10

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:	113.693
Medium Trucks:	113.615
Heavy Trucks:	113.622

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	67.36	1.72	-3.64	0.00	*-1.05*	0.000	0.000
Medium Trucks:	76.31	-15.52	-3.63	0.00	*-1.15*	0.000	0.000
Heavy Trucks:	81.16	-19.47	-3.63	0.00	*-1.41*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	65.4	63.5	61.8	55.7	64.3	65.0
Medium Trucks:	57.2	55.7	49.3	47.7	56.2	56.4
Heavy Trucks:	58.1	56.6	47.6	48.8	57.2	57.3
Vehicle Noise:	66.7	64.9	62.2	57.1	65.6	66.1

Mitigated Noise Levels (with Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	65.4	63.5	61.8	55.7	64.3	65.0
Medium Trucks:	57.2	55.7	49.3	47.7	56.2	56.4
Heavy Trucks:	58.1	56.6	47.6	48.8	57.2	57.3
Vehicle Noise:	66.7	64.9	62.2	57.1	65.6	66.1

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO)

Scenario: Backyard No Wall
Road Name: I-15 Freeway
Lot No: Pre-School Building

Project Name: Cornerstone Church
Job Number: 8231
Analyst: B. Lawson

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	126,700 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	12,670 vehicles
Vehicle Speed:	65 mph
Near/Far Lane Distance:	160 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	290.0 feet
Centerline Dist. to Observer:	300.0 feet
Barrier Distance to Observer:	10.0 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%	93.27%
Medium Trucks:	84.8%	4.9%	10.3%	3.03%
Heavy Trucks:	86.5%	2.7%	10.8%	3.70%

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:	289.180
Medium Trucks:	289.149
Heavy Trucks:	289.152

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	75.54	7.29	-11.54	-1.20	*-1.11*	0.000	0.000
Medium Trucks:	81.71	-7.59	-11.54	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	85.21	-6.72	-11.54	-1.20	*-1.25*	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:	70.1	68.2	66.4	60.4	69.0	69.6
Medium Trucks:	61.4	59.9	53.5	52.0	60.4	60.7
Heavy Trucks:	65.7	64.3	55.3	56.5	64.9	65.0
Vehicle Noise:	71.9	70.1	67.0	62.3	70.8	71.3

Mitigated Noise Levels (with Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	70.1	68.2	66.4	60.4	69.0	69.6
Medium Trucks:	61.4	59.9	53.5	52.0	60.4	60.7
Heavy Trucks:	65.7	64.3	55.3	56.5	64.9	65.0
Vehicle Noise:	71.9	70.1	67.0	62.3	70.8	71.3

URBAN CROSSROADS

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May 6, 2014

Mr. Larry Markham
MDMG, Inc.
41635 Enterprise Circle, North, Suite B
Temecula, CA 92590

SUBJECT: CORNERSTONE CHURCH PRESCHOOL SUPPLEMENTAL CONSTRUCTION NOISE ANALYSIS

Dear Mr. Larry Markham:

Urban Crossroads, Inc. is pleased to provide the following Cornerstone Church Preschool ("Project") Supplemental Construction Noise Analysis. The purpose of this work effort is to identify additional noise abatement measures to reduce the construction noise impacts on neighboring noise sensitive residential property.

NOISE STUDY

On September 4, 2013, Urban Crossroads, Inc. prepared a noise study for the Cornerstone Church Preschool. The noise study included a brief discussion of the off-site construction noise and relied on the General Plan Noise Element policies to minimize noise impacts from construction noise.

CITY OF WILDOMAR CONSTRUCTION NOISE STANDARDS

To control noise impacts associated with the construction of the proposed Project, the City has established limits to the hours of operation. Section 9.48.020 of the City's Noise Ordinance indicates that noise sources associated with private construction projects located within one-quarter of a mile or more from an inhabited dwelling, are exempted from the provisions of the noise ordinance. The exemption requires that said activities do not occur between the hours of six p.m. to six a.m. during the month of June through September, and between the hours of six p.m. and seven a.m. during the months of October through May.

The City of Wildomar has not identified or adopted any specific construction noise standards to assess the direct project construction noise level impacts. While the City of Wildomar does not provide specific standards for construction noise, the following policies contained in the adopted County of Riverside Noise Element are designed to reduce noise impacts during construction:

N12.1 Minimize the impacts of construction noise on adjacent uses within acceptable standards.

N12.2 Ensure that construction activities are regulated to establish hours of operation in order to prevent and/or mitigate the generation of excessive or adverse impacts on surrounding areas.

N12.3 Condition subdivision approval adjacent to developed/occupied noise-sensitive land uses (see policy N1.3) by requiring the developer to submit a construction-related noise mitigation plan to the County for review and approval prior to issuance of a grading permit. The plan must depict the location of construction equipment and how the noise from this equipment will be mitigated during construction of this project, through the use of such methods as:

- *i. Temporary noise attenuation fences;*
- *ii. Preferential location of equipment; and*
- *iii. Use of current noise suppression technology and equipment.*

N 12.4 Require that all construction equipment utilizes noise reduction features (e.g. mufflers and engine shrouds) that are no less effective than those originally installed by the manufacturer. (AI 105, 108)

NOISE SENSITIVE RECEIVER LOCATIONS

Noise-sensitive receptors are generally defined as locations where people reside or where the presence of unwanted sound could otherwise adversely affect the use of the land. Noise-sensitive receptors typically include residences, hospitals, schools, libraries and certain types of passive recreational uses. A review of the Project study area indicates that the closest noise-sensitive receptors are located less than 50 feet from the Project boundaries.

CONSTRUCTION ACTIVITIES

Construction noise represents a short-term impact on the ambient noise levels. The Project construction noise impacts will include both short-term mobile equipment and long-term stationary equipment. Short-term mobile construction activities (e.g. nail guns, hammers, power saws, drills, etc.) generated throughout the Project site that are not staged or stationary. During construction, all of the long-term construction equipment (generators, compressors, pumps) staging activities will be located in areas that will create the greatest distance between construction-related noise sources and the noise-sensitive receptors. It is expected that the Project construction activities will consist primarily of short-term mobile equipment noise.

CONSTRUCTION NOISE LEVEL IMPACTS

Noise levels generated by heavy construction equipment can range from approximately 70 dBA to in excess of 100 dBA when measured at 50 feet. However, these noise levels diminish with distance from the construction site at a rate of 6 dBA per doubling of distance. For example, a noise level of 78 dBA measured at 50 feet from the noise source to the receiver would be reduced to 72 dBA at 100 feet from the source to the receiver, and would be further reduced to 66 dBA at 200 feet from the source

to the receiver. The analysis shows that the highest construction noise level impacts will occur during construction activities at the boundaries of the Project site.

At a distance of less than 50 feet from the Project boundaries, it is expected that the nearby sensitive residential receivers will likely experience a significant, temporary/periodic increase above the existing ambient noise due to Project construction activities. However, while construction noise may be heard at varying levels of intensity according to the location and operations of grading equipment, it will often be overshadowed by existing traffic noise from the I-15 Freeway.

While construction noise is temporary, intermittent and of short duration, and will not present any long-term impacts, the following noise abatement measures have been developed to reduce the noise level impacts produced by the construction equipment to the nearby noise-sensitive residential land uses.

- Prior to approval of grading plans and/or issuance of building permits, plans shall include a note indicating that noise-generating Project construction activities shall not occur between the hours of six p.m. to six a.m. during the month of June through September, and between the hours of six p.m. and seven a.m. during the months of October through May. The construction supervisor shall ensure compliance with the note and the City shall conduct periodic inspection at its discretion.
- Prior to the issuance of grading permits, the Project Proponent shall submit a construction-related noise control plan to the City for review and approval. The Plan shall: depict the location of construction equipment staging areas; require that construction contractors equip construction equipment (fixed or mobile) with property operating and maintained mufflers consistent with manufacturers' standards; require that the construction contractor place stationary construction equipment so that emitted noise is directed away from noise sensitive receptors nearest the Project site; and describe other noise control measures that will be implemented during Project-related construction activities. The construction supervisor shall ensure compliance with the noise control plan and the City shall conduct periodic inspection at its discretion.
- The construction-related noise control plan shall specify that haul truck deliveries be subject to the same hours specified for construction equipment (i.e., six a.m. to six p.m. during the month of June through September, and between the hours of seven a.m. and six p.m. during the months of October through May). Where alternative routes are available that would not substantially increase vehicle miles traveled, the plan shall denote haul routes that do not pass noise-sensitive land uses or residential dwellings. The construction-related noise control plan shall also incorporate any other restrictions imposed by City staff.
- The construction-related noise control plan shall indicate the location of frame-mounted temporary noise curtains. The noise curtains shall be installed near the noise-sensitive residential receiver locations to shield the neighboring homes from construction noise. Noise

control curtains shall provide a minimum STC (Sound Transmission Class) rating of 20. The temporary noise curtains shall be installed without any gaps or openings on the project boundary between the noise sensitive receiver and the construction activities.

- The construction supervisor shall provide written notification of planned activities to each property owners located within ¼-mile of the Project 15 days prior to commencement of each phase of construction.
- The construction supervisor shall maintain a "complaint log" noting date, time, complainant's name, nature of the complaint, and any corrective action taken. The project manager shall publish and distribute to the potentially affected community, a phone number that is attended during active construction working hours, for use by the disturbed public to register complaints.
- The construction supervisor shall ensure compliance with the noise control plan and the City shall conduct periodic inspection at its discretion.

Implementation of these construction noise abatement measures would act to minimize Project construction-source noise impacts. However, even after the implementation of the construction noise abatement measures, it is anticipated that nearby sensitive residential receivers will likely experience a significant, temporary/periodic increase above the existing ambient noise due to Project construction activities. This is a significant and unavoidable short-term impact. Notwithstanding, it is noted that any construction-source noise would be temporary and intermittent, and would tend to diminish as the use of heavy equipment in the early construction stages concludes. Construction-source noise would dissipate entirely at the conclusion of construction activities. If you have any questions, please contact me directly at (949) 660-1994 x203.

Respectfully submitted,

URBAN CROSSROADS, INC.

Bill Lawson, P.E., INCE
Principal