APPENDIX K

Noise Technical Study

Canyon Springs Healthcare Campus & Senior Living

NOISE IMPACT ANALYSIS

CITY OF RIVERSIDE

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LIST OF ABBREVIATED TERMS

(1)	Reference
ADT	Average Daily Traffic
ANSI	American National Standards Institute
Calveno	California Vehicle Noise
CEQA	California Environmental Quality Act
CNEL	Community Noise Equivalent Level
dBA	A-weighted decibels
EPA	Environmental Protection Agency
FHWA	Federal Highway Administration
FAA	Federal Aviation Administration
FICON	Federal Interagency Committee on Noise
FTA	Federal Transit Administration
GP	General Plan
I-215	Interstate 215 Freeway
INCE	Institute of Noise Control Engineering
Leq	Equivalent continuous (average) sound level
Lmax	Maximum level measured over the time interval
Lmin	Minimum level measured over the time interval
MARB	March Air Reserve Base
MOB	Medical Office Building
mph	Miles per hour
NLR	Noise Level Reduction
Project	Canyon Springs Healthcare Campus & Senior Living
RCALUC	Riverside Airport Land Use Commission
RCNM	Roadway Construction Noise Model
REMEL	Reference Energy Mean Emission Level
SR-60	State Route 60 Freeway
STC	Sound Transmission Class
VdB	Vibration Decibels

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EXECUTIVE SUMMARY

Urban Crossroads, Inc. has prepared this noise study to determine the noise exposure and the necessary noise mitigation measures for the proposed Canyon Springs Healthcare Campus & Senior Living development ("Project"). The Project site is generally located north of Eucalyptus Avenue, between Valley Springs Parkway and Day Street in the City of Riverside. The Project is proposed to consist of several large parcels with improved street frontage in a master planned business park, including a hospital, hospital-related facilities (e.g., boilers, chillers, emergency generators, exchangers, transformers, switches), central energy plant, medical office buildings, parking structures, senior housing, independent living, assisted living, and skilled nursing facilities. The purpose of this noise analysis is to ensure that the proposed development is compatible with the existing and future noise environment.

OFF-SITE TRAFFIC NOISE ANALYSIS

Traffic generated by the proposed Project will influence the traffic noise levels in surrounding off-site areas. To quantify the off-site traffic noise increases on the surrounding off-site areas, the changes in traffic noise levels on 24 roadway segments surrounding the Project site were estimated based on the change in the average daily traffic (ADT) volumes. The traffic noise levels provided in this analysis are based on the traffic forecasts found in the *Canyon Springs Healthcare Campus & Senior Living Traffic Impact Analysis* prepared by Urban Crossroads, Inc. (1) To assess the off-site noise level impacts associated with the proposed Project, noise contour boundaries were developed for Existing, Year 2016, and General Plan (GP) Buildout traffic conditions. The off-site traffic noise analysis indicates that the Project's contributions to roadway noise levels at adjacent sensitive land uses will be *less than significant* for Existing, Year 2016, and GP Buildout conditions.

ON-SITE TRAFFIC NOISE ANALYSIS

The results of this analysis indicate that future vehicle noise from the I-215 Freeway, the SR-60 Freeway, Valley Springs Parkway, Day Street, Eucalyptus Avenue, and Gateway Drive is the principal source of community noise that will impact the Project site. The Project will also experience some background traffic noise impacts from the Project's internal roads, however due to the distance, topography and low traffic volume/speeds, traffic noise from these roads will not make a significant contribution to the noise environment. The following on-site noise Project Design Features recommended in this noise analysis have been designed to reduce the exterior and interior noise levels to satisfy the City of Riverside transportation related CNEL noise criteria for residential development. With the recommended noise Project Design Features shown on Exhibit ES-A, the on-site noise impacts will satisfy City of Riverside exterior and interior noise level standards.

EXTERIOR NOISE PROJECT DESIGN FEATURES

To satisfy the City of Riverside *conditionally acceptable* 70 dBA CNEL exterior noise level criteria for hospital, senior housing, independent and assisted living, and skilled nursing facility land uses and the 75 dBA CNEL for medical office building land uses, no exterior Project Design Features are included nor required. This noise analysis shows that the Canyon Springs Healthcare Campus & Senior Living Project will satisfy the City of Riverside *conditionally acceptable* 70 dBA CNEL exterior noise level criteria for hospital, senior housing, independent and assisted living, and skilled nursing facility land uses and 75 dBA CNEL for medical office building land uses.

INTERIOR NOISE PROJECT DESIGN FEATURES

The exterior noise levels at the Canyon Springs Healthcare Campus & Senior Living exceed that of a typical hospital due to its proximity to March Air Reserve Base and the I-215 and SR-60 Freeways. The exterior walls of all buildings will be designed and constructed to provide an interior environment that will meet or exceed best practice acoustical standards for healthcare facilities. Noise resulting from the proximity of the airport is addressed in this noise study, which indicates that the interior environment should meet 45 dBA CNEL. California Green Building Standards Code requires a 50 dBA CNEL interior noise level, however the Project will exceed these requirements to accommodate the City of Riverside standard of 45 dBA CNEL. Specific assemblies and materials that will accommodate these requirements will be included in Project construction. Note that interior noise levels of 45 dBA could be equated to being perceived as similar to a quiet urban nighttime environment or the background noise level of a theater or large conference room.

Particular care will be taken for the hospital building and the residential buildings including the assisted living facility and the senior housing to assure that these requirements are met. To satisfy the City of Riverside 45 dBA CNEL interior noise level criteria, buildings facing the I-215 Freeway, the SR-60 Freeway, Valley Springs Parkway, Day Street, Eucalyptus Avenue, and Gateway Drive will require a Noise Level Reduction (NLR) of up to 23.2 dBA and a windows closed condition requiring a means of mechanical ventilation (e.g. air conditioning). The components of the construction that will reduce exterior sound from affecting the interior living spaces include walls, windows, and doors.

- Windows: All windows and sliding glass doors shall be well fitted, well weather-stripped assemblies and shall have a minimum sound transmission class (STC) rating of 27. Windows and curtain walls will all be double-paned glass to provide an interior acoustical environment that will meet or exceed an STC rating of 27, and the Project will not rely on operable windows for ventilation.
- Walls: The exterior walls will typically be constructed of metal stud construction with 3" polyisocyanurate insulation, interior gypsum board, and exterior sheathing. Exterior finish material will be either metal panels, stucco, or masonry as indicated in the design guidelines.
- Doors: Exterior doors will be constructed and gasketed to provide an interior environment that will meet or exceed an STC rating of 27.
- Ventilation: Arrangements for any habitable room shall be such that any exterior door or window can be kept closed when the room is in use and still receive circulated air. A forced air circulation

system (e.g. air conditioning) or active ventilation system (e.g. fresh air supply) shall be provided which satisfies the requirements of the Uniform Building Code. Wall mounted air conditioners shall not be used and any fresh air intake ducts should be oriented away from the adjacent roadways.

- Other: Background white noise-source solutions will be considered if necessary.

OPERATIONAL NOISE ANALYSIS

Using reference noise levels to represent the noise sources from the Canyon Springs Healthcare Campus & Senior Living site, this analysis estimates the Project-related operational stationary-source noise levels at the off-site noise-sensitive receivers within the Project study area. The activities at the proposed Canyon Springs Healthcare Campus & Senior Living are anticipated to include .g., on-site retail such as coffee shops, deli/lunch rooms, outdoor vendor carts, car wash services, valet parking, golf cart transport for elderly/infirm patients, flower/gift shop, pharmacy, and medical retail (medical supplies);personal services such as barber shop, beauty salon, spa, tailor, dry cleaner, and self-service laundry; and restaurants (sit-down, quick-serve, and take-out)parking structure and parking lot vehicle movements, mechanical ventilation (roof-top air conditioning) units, emergency backup generators (central energy plant), emergency vehicles (ambulances), emergency helicopter activities, and other ancillary uses (e. The proposed senior housing, skilled nursing, assisted living, and independent living facilities are not expected to contain any unique operational noise sources beyond what is commonly found within residential land uses.

Based on the results of the noise analysis, the typical Project operational noise levels without helicopter activities will satisfy the daytime and nighttime City of Riverside exterior noise level standards at the nearby sensitive receiver locations with the recommended 8-foot high noise barrier, as shown on Exhibit ES-A. While the Project operational noise levels without helicopter activities are expected to satisfy the City standards, the analysis discussed in this section does not account for the potential noise level impacts associated with emergency vehicles and helicopters, which are discussed separately below.

EMERGENCY VEHICLE NOISE EXEMPTION

Due to the nature of emergency vehicle-related noise sources (e.g., sirens, horns), the California Vehicle Code provides an exemption for these unique noise activities. California Vehicle Code, Sections 21055 and 27007, exempt drivers of emergency vehicles and sound amplification equipment of emergency vehicles, respectively. Section 21055 states that emergency vehicles *driven in response to an emergency or while engaged in rescue operations* and the sirens used *reasonably necessary* are considered exempt from California Vehicle Code regulations. Further, Section 27007 indicates that *sound amplification systems which can be heard outside the vehicle from 50 or more feet* are prohibited, *unless that system is being operated to request assistance or warn of a hazardous situation.* The exemption is for emergency vehicle sirens is explicit when it states *this section does not apply to authorized emergency vehicles or vehicles operated by gas, electric, communications, or water utilities*. (2) Although the City of Riverside Municipal Code is silent regarding noise from emergency vehicles, this noise study considers the exemption found

in the California Vehicle Code, Sections 21055 and 27007, for noise from emergency vehicles related to the Project. (3)

HELICOPTER NOISE ACTIVITIES

Helicopter activities at the Project site are anticipated to occur under two conditions: typical activity and trauma activity. Typical helicopter activities include the scheduled transferring of patients to and from the hospital on an as-needed basis, for patients who require the services of the Project's hospital use, or those of another local hospital, while trauma includes the non-scheduled helicopter activities for major traumatic injuries or events. At the time this analysis was prepared, the exact model type and specifications of the typical helicopter activity to be used at the hospital helipad operations were unknown. However, based on information provided by Heliplanners, a H145 Airbus helicopter represents the worst-case condition for typical hospital helicopter activities, and a Blackhawk helicopter represents the worst-case condition for trauma activities.

With Typical Helicopter Activities

The proposed typical helicopter activities (H145 Airbus helicopter) at the Project site, including the scheduled transport of patients to and from the hospital on an as-needed basis, for patients who require the services of the Project's hospital use, or those of another local hospital, will generate operational noise levels that satisfy the City of Riverside exterior noise level standards at the nearby sensitive receiver locations with the recommended 8-foot high noise barrier, as shown on Exhibit ES-A.

With Trauma Helicopter Activities

The Project operational noise levels with trauma helicopter activities are anticipated to exceed the nighttime City of Riverside exterior noise level standards at receiver locations R3, and R4. Due to the potential trauma helicopter operational noise level impacts, the Project will be required to identify potential noise abatement measures, to fully satisfy the noise compatibility study requirements of the Federal Aviation Administration (FAA), Riverside County Airport Land Use Commission (RCALUC), March Air Reserve Base/Inland Port Airport Land Use Compatibility Plan, the State of California Heliport Permitting process, and City of Riverside Heliport Permitting process. Therefore, the Project-related emergency helicopter noise impacts are considered *less than significant* after the mitigation measures identified in this noise study. Further, trauma activity will only occur intermittently and does not represent the typical, daily operations at the Project site.

OPERATIONAL NOISE IMPACTS

This analysis demonstrates that the Project will contribute a *potentially significant* operational noise level impact to the existing ambient noise environment at receiver locations R1 and R3 during the daytime hours, and a *less than significant* impact at all receiver locations during the nighttime hours. The daytime Project-related operational noise level increases of 5.5 dBA L_{50} at receiver location R1 and up to 5.0 dBA L_{50} at receiver location R3 result in combined exterior noise levels of 55.0 dBA L_{50} at R1, and 54.6 dBA L_{50} at R3, respectively. As such, the combined

Project and ambient noise levels will remain below the City of Riverside Municipal Code noise level standards for community support land uses (60 dBA L_{50} for R1) and residential uses (55 dBA L_{50} for R3), and therefore, the Project-related operational noise level contributions to the ambient noise levels at nearby sensitive receiver locations will be *less than significant* at receiver locations R1 and R3.

Therefore, the long-term operational noise level impacts associated with the proposed Project activities, such as the parking structure and parking lot vehicle movements, mechanical ventilation (roof-top air conditioning) units, emergency backup generators (central energy plant), emergency vehicles (ambulances), emergency helicopter activities, and other ancillary uses (e.g., on-site retail such as coffee shops, deli, lunch rooms, outdoor vendor carts, car wash services, valet parking, golf cart transport for the elderly or infirm patients, flower and gift shop, pharmacy, and medical retail (medical supplies); personal services such as barber shop, beauty salon, spa, tailor, dry cleaner, and self-service laundry; and restaurants (sit-down, quick-serve, and take-out) are considered *less than significant* with mitigation.

The Project study area includes existing stationary noise sources such as: the loading docks north of Corporate Centre Place at an existing Walmart store, the loading dock and trash compactor located north of Campus Parkway at an existing Target store, and three fast food restaurants with drive-thru speakerphones along the eastern right-of-way of Day Street: Panda Express and Baker's Drive-Thru, which are located north of Gateway Drive, and Portillo's Hot Dogs, which is located south of Gateway Drive. The on-site stationary noise levels at the Project site due to activities associated with these existing stationary sources are included in the ambient noise level measurements, presented in Section 5 of this report, and will largely be overshadowed by the intervening traffic noise from the I-215 Freeway, the SR-60 Freeway, Valley Springs Parkway, Day Street, Eucalyptus Avenue, and Gateway Drive in the Project study area.

Construction of ancillary services could occur as part of the Project. Ancillary services could include on-site retail such as coffee shops, deli, lunch rooms, outdoor vendor carts, car wash services, valet parking, golf cart transport for the elderly or infirm patients, flower and gift shop, pharmacy, and medical retail (medical supplies); personal services such as barber shop, beauty salon, spa, tailor, dry cleaner, and self-service laundry; and restaurants (sit-down, quick-serve, and take-out). Future proposed ancillary services would be subject to the same City of Riverside Municipal Code noise standards as the Project. The City of Riverside Municipal Code identifies operational noise level limitations and provides the necessary enforcement tools to address and remedy any potential noise issues related to prospective ancillary uses within the proposed Canyon Spring Healthcare Campus Specific Plan.

OPERATIONAL NOISE MITIGATION MEASURES

- Prior to certificate of occupancy for the proposed Hospital, Medical Office Building 3, Medical Office Building 4 or Parking Structure 1, which every may be constructed first, the Project Applicant shall construct the proposed 8-foot-high perimeter wall (as shown on Exhibit ES-A) to reduce the operational noise levels at the adjacent sensitive receiver locations.
- Prior to certificate of occupancy for the proposed hospital, the Project shall adhere to all Federal, State, Regional, and Local agency requirements including but not limited to: Federal Aviation

Administration, the Riverside County Airport Land Use Commission, the March Air Reserve Base/Inland Port Airport, the State of California Heliport Permitting process, and City of Riverside Entitlement process.

CONSTRUCTION NOISE ANALYSIS

Pursuant to Municipal Code Section 7.35.020 "Exemptions" subsection (G) "Noise sources associated with construction, repair, remodeling, or grading of any real property; provided a permit has been obtained from the City as required; and provided said activities do not take place between the hours of 7:00 p.m. and 7:00 a.m. on weekdays, between the hours of 5:00 p.m. and 8:00 a.m. on Saturdays, or at any time on Sunday or a federal holiday. Therefore, construction noise associated with the proposed Project is exempt from the City's Noise Ordinance. Consistent with direction from the City of Riverside Planning Department, if Project construction activities occur within the permitted hours of Municipal Code, Section 7.35.010(B)(5), the construction noise levels will be considered exempt from the Municipal Code noise level standards, and therefore, the construction of the Project will result in a *less than significant* noise impact.

SUMMARY OF SIGNIFICANCE FINDINGS

The results of this Canyon Springs Healthcare Campus & Senior Living Noise Impact Analysis are summarized below based on the significance criteria in Section 4 of this report. Table ES-1 shows the findings of significance for each potential noise and/or vibration impact before and after any required mitigation measures.

TABLE ES-1: SUMMARY OF SIGNIFICANCE FINDINGS

Analysis	Report Section	Significance Findings	
		Unmitigated	Mitigated
Off-Site Traffic Noise	7	*Less Than Significant*	*n/a*
On-Site Traffic Noise	8	*Compliant with Project Design Features*	*n/a*
Operational Noise	10	*Potentially Significant*	*Less Than Significant*
Construction Noise	11	*Less Than Significant*	*n/a*
Construction Vibration		*Less Than Significant*	*n/a*

"n/a" = No mitigation is required since the unmitigated impacts will be less than significant.

EXHIBIT ES-A: SUMMARY OF RECOMMENDATIONS

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1 INTRODUCTION

This noise analysis has been completed to determine the noise impacts associated with the development of the proposed Canyon Springs Healthcare Campus & Senior Living ("Project"). 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 exterior noise environment. In addition, this study includes an analysis of the potential Project-related long-term operational and short-term construction noise impacts.

1.1 SITE LOCATION

The proposed Canyon Springs Healthcare Campus & Senior Living site is generally located north of Eucalyptus Avenue, between Valley Springs Parkway and Day Street in the City of Riverside as shown on Exhibit 1-A. The State Route 60 (SR-60) Freeway is located less than one-half mile north of the Project site, and the Interstate 215 (I-215) Freeway is located less than one-quarter mile west of the Project site.

The Project site is currently vacant. Generally, land uses immediately adjacent to the Project site include medical office buildings, office buildings, governmental offices (including the County of Riverside County Clerk's office), single-family residential development, a school, and vacant, undeveloped parcels. Land uses north of the overall Project site (north of Corporate Centre Place and Campus Parkway) include big box retail (e.g., Walmart, Target, PetSmart) and other commercial retail uses; land uses west of the overall Project site (west of Valley Springs Parkway) include a big box retail (Sam's Club) and a bank; land uses south of the overall Project site (south of Eucalyptus Avenue) include a mix of residential development, commercial uses, and vacant, undeveloped parcels; and land uses east of the overall Project site (east of Day Street) include big box retail (e.g., Costco, WinCo Foods) and commercial retail uses.

Existing noise sources within the Project study area include the loading docks north of Corporate Centre Place at the existing Walmart store, the loading dock and trash compactor located north of Campus Parkway at the existing Target store, and three fast food restaurants with drive-thru speakerphones at the eastern right-of-way of Day Street: Panda Express and Baker's Drive-Thru, which are located north of Gateway Drive, and Portillo's Hot Dogs, which is located south of Gateway Drive.

1.2 PROJECT DESCRIPTION

The Project is proposed to consist of several large parcels with improved street frontage and infrastructure in a master planned business park, as shown on Exhibit 1-B. The uses within the Project site will include a hospital, hospital-related facilities, medical office buildings, parking structures, senior housing, independent living, assisted living, and skilled nursing facilities.

The previously approved specific plan land use consists of 100,000 square feet of general retail use and 800,000 square feet of general office use. The currently proposed Project land use plan is more intensive than the previously approved land use plan. The proposed Project consists of hospital land use with approximately 280 beds, 370,000 square feet of medical office, 234 "age-restricted" multi-family housing, independent living/memory care, assisted living, and skilled nursing facilities with approximately 267 beds. Business operations would primarily be conducted within the enclosed buildings on the site, with the exception of the on-site Project related noise sources which are expected to include: parking structure and parking lot vehicle movements, mechanical ventilation (roof-top air conditioning) units, emergency backup generators (central energy plant), emergency vehicles (ambulances), emergency helicopter activities, and other ancillary uses (e.g., outdoor vendor carts, car wash services, valet parking, and golf cart transport for the elderly or infirm patients). Future proposed ancillary services would be subject to the same City of Riverside Municipal Code noise standards as the Project. The City of Riverside Municipal Code identifies operational noise level limitations and provides the necessary enforcement tools to address and remedy any potential noise issues related to prospective ancillary uses within the proposed Canyon Spring Healthcare Campus Specific Plan. Consistent with the worst-case analysis in the Air Quality report for the Project, it is assumed that the Project will be constructed and at full occupancy by 2016. (4)

EXHIBIT 1-A: LOCATION MAP

EXHIBIT 1-B: SITE PLAN

2 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 2-A presents a summary of the typical noise levels and their subjective loudness and effects that are described in more detail below.

EXHIBIT 2-A: TYPICAL NOISE LEVELS

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

Source: Environmental Protection Agency Office of Noise Abatement and Control, Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety (EPA/ONAC 550/9-74-004) March 1974.

2.1 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. (5) The most common sounds vary between 40 dBA (very quiet) to 100 dBA (very loud). Normal conversation at three feet is roughly at 60 dBA, while loud jet engine noises equate to 110 dBA

at approximately 100 feet, which can cause serious discomfort. (6) Another important aspect of noise is the duration of the sound and the way it is described and distributed in time.

2.2 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.

To describe the time-varying character of environmental noise, the statistical or percentile noise descriptors L_{50}, L_{25}, L_8 and L_2, are commonly used. The percentile noise descriptors are the noise levels equaled or exceeded during 50 percent, 25 percent, 8 percent and 2 percent of a stated time. Sound levels associated with the L_2 and L_8 typically describe transient or short-term events, while levels associated with the L_{50} describe the steady state (or median) noise conditions. The City of Riverside relies on the percentile noise levels to describe the stationary source noise level limits. While the L_{50} describes the mean noise levels occurring 50 percent of the time, the Leq accounts for the total energy (average) observed for the entire hour. Therefore, the Leq noise descriptor is generally 1-2 dBA higher than the L_{50} noise level.

Peak hour or average noise levels, while useful, do not completely describe a given noise environment. Noise levels lower than the peak hour may be disturbing if they occur during times when quiet is most desirable, namely evening and nighttime (sleeping) hours. To account for this, the Community Noise Equivalent Level (CNEL), representing a composite 24-hour noise level is utilized. The CNEL is the weighted average of the intensity of a sound, with corrections for time of day, and averaged over 24 hours. The time of day corrections require the addition of 5 decibels to dBA Leq sound levels in the evening from 7:00 p.m. to 10:00 p.m., and the addition of 10 decibels to dBA Leq sound levels at night between 10:00 p.m. and 7:00 a.m. These additions are made to account for the noise sensitive time periods during the evening and night hours when sound appears louder. CNEL does not represent the actual sound level heard at any particular time, but rather represents the total sound exposure. The City of Riverside relies on the 24-hour CNEL level to assess land use compatibility with transportation related noise sources.

2.3 SOUND PROPAGATION

When sound propagates over a distance, it changes in level and frequency content. The manner in which noise reduces with distance depends on the following factors.

2.3.1 GEOMETRIC SPREADING

Sound from a localized source (i.e., a stationary point source) propagates uniformly outward in a spherical pattern. The sound level attenuates (or decreases) at a rate of 6 dB for each doubling of distance from a point source. Highways consist of several localized noise sources on a defined path and hence can be treated as a line source, which approximates the effect of several point sources. Noise from a line source propagates outward in a cylindrical pattern, often referred to

as cylindrical spreading. Sound levels attenuate at a rate of 3 dB for each doubling of distance from a line source.

2.3.2 GROUND ABSORPTION

The propagation path of noise from a highway to a receptor is usually very close to the ground. Noise attenuation from ground absorption and reflective wave canceling adds to the attenuation associated with geometric spreading. Traditionally, the excess attenuation has also been expressed in terms of attenuation per doubling of distance. This approximation is usually sufficiently accurate for distances of less than 200 ft. For acoustically hard sites (i.e., sites with a reflective surface between the source and the receptor, such as a parking lot or body of water), no excess ground attenuation is assumed. For acoustically absorptive or soft sites (i.e., those sites with an absorptive ground surface between the source and the receptor such as soft dirt, grass, or scattered bushes and trees), an excess ground attenuation value of 1.5 dB per doubling of distance is normally assumed. When added to the cylindrical spreading, the excess ground attenuation results in an overall drop-off rate of 4.5 dB per doubling of distance from a line source.

2.3.3 ATMOSPHERIC EFFECTS

Receptors located downwind from a source can be exposed to increased noise levels relative to calm conditions, whereas locations upwind can have lowered noise levels. Sound levels can be increased at large distances (e.g., more than 500 feet) due to atmospheric temperature inversion (i.e., increasing temperature with elevation). Other factors such as air temperature, humidity, and turbulence can also have significant effects.

2.3.4 SHIELDING

A large object or barrier in the path between a noise source and a receptor can substantially attenuate noise levels at the receptor. The amount of attenuation provided by shielding depends on the size of the object and the frequency content of the noise source. Shielding by trees and other such vegetation typically only has an "out of sight, out of mind" effect. That is, the perception of noise impact tends to decrease when vegetation blocks the line-of-sight to nearby resident. However, for vegetation to provide a substantial, or even noticeable, noise reduction, the vegetation area must be at least 15 feet in height, 100 feet wide and dense enough to completely obstruct the line-of sight between the source and the receiver. This size of vegetation may provide up to 5 dBA of noise reduction. The FHWA does not consider the planting of vegetation to be a noise abatement measure.

2.4 TRAFFIC NOISE PREDICTION

Vehicle noise is a combination of the noise produced by the engine, exhaust, and tires on the roadway. According to the *Highway Traffic Noise Analysis and Abatement Policy and Guidance,* provided by the Federal Highway Administration (FHWA), the level of traffic noise depends on three primary factors: the volume of the traffic, the speed of the traffic, and the vehicle mix within the flow of traffic. Generally, the loudness of traffic noise is increased by heavier traffic volumes, higher speeds, and a greater number of trucks. (7) A doubling of the traffic volume,

assuming that the speed and vehicle mix do not change, results in a noise level increase of 3 dBA. The vehicle mix on a given roadway may also have an effect on community noise levels. As the number of medium and heavy trucks increases and becomes a larger percentage of the vehicle mix, adjacent noise level impacts will increase.

2.5 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.

2.6 NOISE BARRIER ATTENUATION

Effective noise barriers can reduce noise levels by 10 to 15 dBA, cutting the loudness of traffic noise in half. A noise barrier is most effective when placed close to the noise source or receptor. Noise barriers, however, do have limitations. For a noise barrier to work, it must be high enough and long enough to block the path of the noise source. (7)

2.7 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 developments and related 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. The FHWA encourages State and Local government to regulate land development in such a way that noise-sensitive land uses are either prohibited from being located adjacent to a highway, or that the developments are planned, designed, and constructed in such a way that noise impacts are minimized. (8)

2.8 COMMUNITY RESPONSE TO NOISE

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;
- Perception that those affected are being unfairly treated;
- Attitudes regarding the usefulness of the noise-producing activity;
- Belief that the noise source can be controlled.

Approximately ten percent of the population has a very low tolerance for noise and will object to any noise not of their making. Consequently, even in the quietest environment, some complaints will occur. Another twenty-five 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. (9) Surveys have shown that about ten percent of the people exposed to traffic noise of 60 dBA will report being highly annoyed with the noise, and each increase of one dBA is associated with approximately two percent more people being highly annoyed. When traffic noise exceeds 60 dBA or aircraft noise exceeds 55 dBA, people may begin to complain. (9)

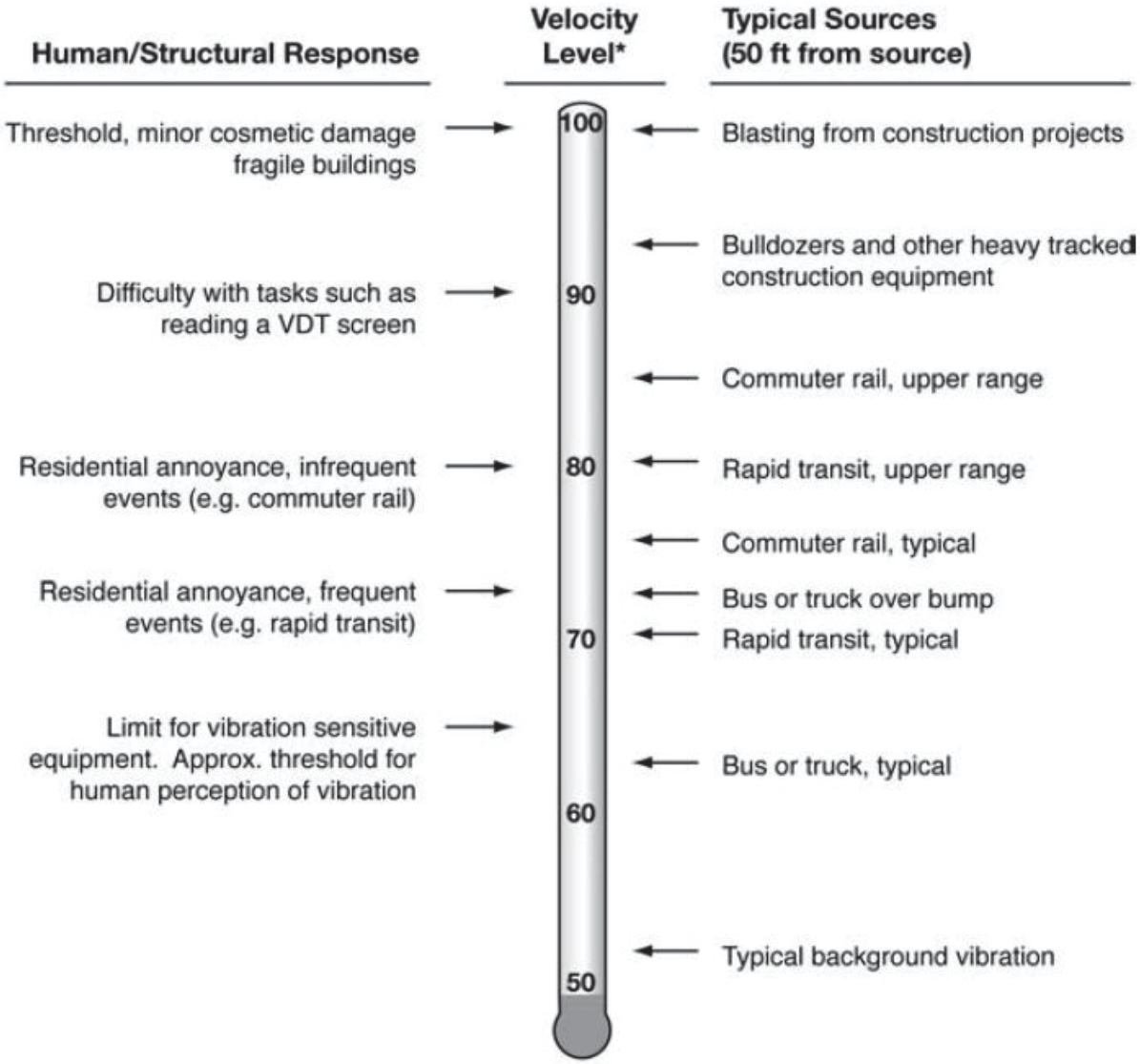
Despite this variability in behavior on an individual level, the population as a whole can be expected to exhibit the following responses to changes in noise levels. An increase or decrease of 1 dBA cannot be perceived except in carefully controlled laboratory experiments, a change of 3 dBA are considered *barely perceptible*, and changes of 5 dBA are considered *readily perceptible*. (7)

2.9 VIBRATION

According to the Federal Transit Administration (FTA) Transit Noise Impact and Vibration Assessment (10), vibration is the periodic oscillation of a medium or object. The rumbling sound caused by the vibration of room surfaces is called structure borne noise. Sources of ground-borne vibrations include natural phenomena (e.g., earthquakes, volcanic eruptions, sea waves, landslides) or human-made causes (e.g., explosions, machinery, traffic, trains, construction equipment). Vibration sources may be continuous, such as factory machinery, or transient, such as explosions. As is the case with airborne sound, ground-borne vibrations may be described by amplitude and frequency. Vibration is often described in units of velocity (inches per second), and discussed in decibel (dB) units in order to compress the range of numbers required to describe vibration. Vibration impacts are generally associated with activities such as train operations, construction and heavy truck movements.

The background vibration-velocity level in residential areas is generally 50 VdB. Ground-borne vibration is normally perceptible to humans at approximately 65 VdB. For most people, a vibration-velocity level of 75 VdB is the approximate dividing line between barely perceptible and distinctly perceptible levels. Typical outdoor sources of perceptible ground-borne vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If a roadway is smooth, the ground-borne vibration is rarely perceptible. The range of interest is from approximately 50 VdB, which is the typical background vibration-velocity level, to 100 VdB, which is the general threshold where minor damage can occur in fragile buildings. Exhibit 2-B illustrates common vibration sources and the human and structural response to ground-borne vibration.

EXHIBIT 2-B: TYPICAL LEVELS OF GROUND-BORNE VIBRATION



** RMS Vibration Velocity Level in VdB relative to 10^{-6} inches/second*

Source: Federal Transit Administration (FTA) Transit Noise Impact and Vibration Assessment

3 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. In most areas, automobile and truck traffic is the major source of environmental noise. Traffic activity generally produces an average sound level that remains fairly constant with time. Air and rail traffic, and commercial and industrial activities are also major sources of noise in some areas. Federal, state, and local agencies regulate different aspects of environmental noise. Federal and state agencies generally set noise standards for mobile sources such as aircraft and motor vehicles, while regulation of stationary sources is left to local agencies.

3.1 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. (11) The purpose of the Noise Element is to *limit the exposure of the community to excessive noise levels*. In addition, the California Environmental Quality Act (CEQA) requires that all known environmental effects of a project be analyzed, including environmental noise impacts.

3.2 STATE OF CALIFORNIA GREEN BUILDING STANDARDS CODE

The 2014 State of California's Green Building Standards Code contains mandatory measures for non-residential building construction in Section 5.506 on Environmental Comfort. (12) 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 non-residential structures are developed in areas where the exterior noise levels exceed 65 dBA CNEL, such as within a noise contour of an airport, freeway, railroad, and other areas where noise contours are not readily available. If the development falls within an airport or freeway 65 dBA CNEL noise contour, the combined sound transmission class (STC) rating of the wall and roof-ceiling assemblies must be at least 50. For those developments in areas where noise contours are not readily available and the noise level exceeds 65 dBA Leq for any hour of operation, a wall and roof-ceiling combined STC rating of 45, and exterior windows with a minimum STC rating of 40 are required (Section 5.507.4.1).

3.3 CITY OF RIVERSIDE GENERAL PLAN

The City of Riverside has adopted a Noise Element of the General Plan (13) to control and abate environmental noise, and to protect the citizens of the City of Riverside from excessive exposure to noise. The Noise Element specifies the maximum allowable unmitigated exterior noise levels for new developments impacted by transportation noise sources such as arterial roads, freeways, airports and railroads. In addition, the Noise Element identifies several polices to minimize the

impacts of excessive noise levels throughout the community, and establishes noise level requirements for all land uses.

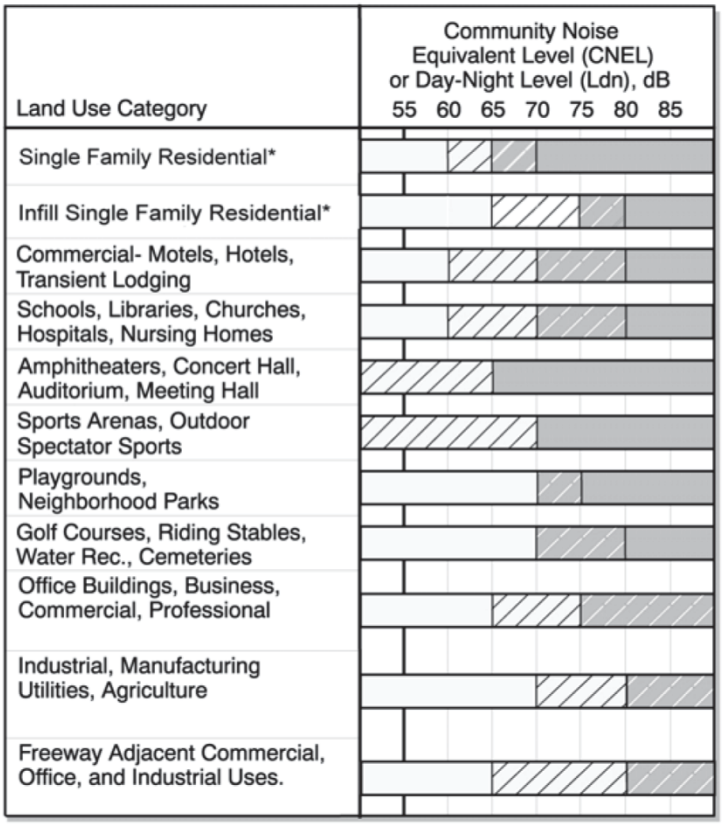
3.3.1 LAND USE COMPATIBILITY

The *Noise/Land Use Noise Compatibility Criteria* (Figure N-10) in the City of Riverside General Plan Noise Element provides guidelines to evaluate the land use compatibility of transportation related noise. The compatibility criteria, shown on Exhibit 3-A, provides the City with a planning tool to gauge the compatibility of land uses relative to existing and future exterior noise levels.

The *Noise/Land Use Noise Compatibility Criteria* describes categories of compatibility and not specific noise standards. According to these categories of compatibility, the Canyon Springs Healthcare Campus & Senior Living hospital, senior housing, independent and assisted living, and skilled nursing facility land uses are considered *normally acceptable* with unmitigated exterior noise levels below 60 dBA CNEL and *conditionally acceptable* with noise levels below 70 dBA CNEL. Medical office building land uses within the Project site are considered *normally acceptable* with exterior noise levels of 65 dBA CNEL and *conditionally acceptable* with noise levels of 75 dBA CNEL. For *conditionally acceptable* land use, *new construction or development should be undertaken only after a detailed analysis of noise reduction requirements is made and needed noise insulation features are included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning, will normally suffice.*

Consistent with the land use compatibility guidelines, this noise study has been prepared to satisfy an exterior noise level of less than the *conditionally acceptable* 70 dBA CNEL for hospital, senior housing, independent and assisted living, and skilled nursing facility land uses and 75 dBA CNEL for medical office building land uses, and an interior noise level of less than 45 dBA CNEL. This approach is consistent with Figure N-10 of the General Plan Noise Element.

EXHIBIT 3-A: NOISE/LAND USE NOISE COMPATIBILITY CRITERIA



Nature of the noise environment where the CNEL or Ldn level is:

Below 55 dB
Relatively quiet suburban or urban areas, no arterial streets within 1 block, no freeways within 1/4 mile.

55-65 dB
Most somewhat noisy urban areas, near but not directly adjacent to high volumes of traffic.

65-75 dB
Very noisy urban areas near arterials, freeways or airports.

75+ dB
Extremely noisy urban areas adjacent to freeways or under airport traffic patterns. Hearing damage with constant exposure outdoors.

Normally Acceptable
Specific land use is satifactory, based on the assumption that any building is of normal conventional construction, without any special noise insulation requirements.

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

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

Conditionally Unacceptable
New construction or development should generally not be undertaken, unless it can be demonstrated that noise reduction requirements can be employed to reduce noise impacts to an acceptable level. If new construction or development does proceed, a detailed analysis of noise reduction requirements must be made and needed noise insulation features included in the design.

The Community Noise Equivalent Level (CNEL) and Day-Night Noise Level (Ldn) are measures of the 24-hour noise environment. They represent the constant A-weighted noise level that would be measured if all the sound energy received over the day were averaged. In order to account for the greater sensitivity of people to noise at night, the CNEL weighting includes a 5-decibel penalty on noise between 7:00 p.m. and 10:00 p.m. and a 10-decibel penalty on noise between 10:00 p.m. and 7:00 a.m. of the next day. The Ldn includes only the 10-decibel weighting for late-night noise events. For practical purposes, the two measures are equivalent for typical urban noise environments.

* For properties located within airport influence areas, acceptable noise limits for single family residential uses are established by the Riverside County Airport Land Use Compatibility Plan.

SOURCE: STATE DEPARTMENT OF HEALTH,
AS MODIFIED BY THE CITY OF RIVERSIDE

3.4 OPERATIONAL NOISE STANDARDS

To analyze noise impacts originating from a designated fixed location or private property such as the Canyon Springs Healthcare Campus & Senior Living Project, operational source noise such as the parking structure and parking lot vehicle movements, mechanical ventilation (roof-top air conditioning) units, emergency backup generators (central energy plant), emergency vehicles (ambulances), emergency helicopter activities, and other ancillary uses (e.g., on-site retail such as coffee shops, deli, lunch rooms, outdoor vendor carts, car wash services, valet parking, golf cart transport for the elderly or infirm patients, flower and gift shop, pharmacy, and medical retail (medical supplies); personal services such as barber shop, beauty salon, spa, tailor, dry cleaner, and self-service laundry; and restaurants (sit-down, quick-serve, and take-out) are typically evaluated against standards established under a City's Municipal Code.

For noise-sensitive residential properties, the City of Riverside Municipal Code, Chapter 7.25, identifies operational noise level limits for the daytime (7:00 a.m. to 10:00 p.m.) hours of 55 dBA L_{50} and 45 dBA L_{50} during the nighttime (10:00 p.m. to 7:00 a.m.) hours. These standards shall apply for a cumulative period of 30 minutes in any hour, as well as plus 5 dBA cannot be exceeded for a cumulative period of more than 15 minutes in any hour, or the standard plus 10 dBA for a cumulative period of more than 5 minutes in any hour, or the standard plus 15 dBA for a cumulative period of more than 1 minute in any hour, or the standard plus 15 dBA for any period of time. (14) Section 7.25.010 (B) states that when the ambient noise levels (shown on Table 5-1 of this report) exceed the first four noise limit categories, the noise level standard shall be adjusted in 5 dBA increments in each category as appropriate to encompass or reflect the ambient noise level. (3) The noise level limit adjustments for the City of Riverside noise standards are shown on Table 3-1 for residential uses. In addition, the base exterior noise level standards and ambient adjustments are provided on Table 3-2 for community support and office/commercial uses.

3.4.1 EMERGENCY VEHICLES

The Project includes the development of a hospital with an emergency room capability that will require the use of emergency vehicles and the noise sources associated with them (e.g. sirens, horns, helicopters). Due to the nature of emergency vehicle-related noise sources (e.g., sirens, horns), the California Vehicle Code provides an exemption for these unique noise activities. California Vehicle Code, Sections 21055 and 27007, exempt drivers of emergency vehicles and sound amplification equipment of emergency vehicles, respectively, as provided below. (2) Although the City of Riverside Municipal Code is silent regarding noise from emergency vehicles, this noise study considers the exemption found in the California Vehicle Code, Sections 21055 and 27007, for noise from emergency vehicles related to the Project.

CALIFORNIA VEHICLE CODE SECTION 21055

The driver of an authorized emergency vehicle is exempt from Chapter 2 (commencing with Section 21350), Chapter 3 (commencing with Section 21650), Chapter 4 (commencing with Section 21800), Chapter 5 (commencing with Section 21950), Chapter 6 (commencing with 22100), Chapter 7 (commencing with Section 22348), Chapter 8 (commencing with Section

22450), Chapter 9 (commencing with Section 22500), and Chapter 10 (commencing with Section 22650) of this division, and Article 3 (commencing with Section 38305) and Article 4 (commencing with Section 38312) of Chapter 5 of Division 16.5, under all of the following conditions:

A. If the vehicle is being driven in response to an emergency call or while engaged in rescue operations or is being used in the immediate pursuit of an actual or suspected violator of the law or is responding to, but not returning from, a fire alarm, except that fire department vehicles are exempt whether directly responding to an emergency call or operated from one place to another as rendered desirable or necessary by reason of an emergency call and operated to the scene of the emergency or operated from one fire station to another or to some other location by reason of the emergency call.

B. If the driver of the vehicle sounds a siren as may be reasonably necessary and the vehicle displays a lighted red lamp visible from the front as a warning to other drivers and pedestrians.

A siren shall not be sounded by an authorized emergency vehicle except when required under this section.

CALIFORNIA VEHICLE CODE SECTION 27007

No driver of a vehicle shall operate, or permit the operation of, any sound amplification system which can be heard outside the vehicle from 50 or more feet when the vehicle is being operated upon a highway, unless that system is being operated to request assistance or warn of a hazardous situation.

This section does not apply to authorized emergency vehicles or vehicles operated by gas, electric, communications, or water utilities. This section does not apply to the sound systems of vehicles used for advertising, or in parades, political or other special events, except that the use of sound systems on those vehicles may be prohibited by a local authority by ordinance or resolution.

3.4.2 HELICOPTERS

Helicopter activities at the Project site are anticipated to occur under both typical and trauma operational conditions. The expected typical helicopter activities at the Project site will likely consist of scheduled transport of patients which are anticipated to occur once during peak hour operating conditions (this analysis assumes one helicopter to and from the Project site once per day for purposes of a worst-case analysis). The trauma helicopter activities would consist of non-scheduled, single events which do not represent typical activity conditions of the Project hospital. Each type of helicopter transport will require different helicopter models, as discussed in Section 10 of the report, based on conversations with the helipad consultant (Heliplanners) for the Project. (15) At the time this analysis was prepared, the exact model type and specifications of the helicopters to be used at the hospital helipad operations were unknown. Based on information provided by Heliplanners, a H145 Airbus helicopter represents the worst-case condition for typical hospital helicopter activities, and a Blackhawk helicopter represents the worst-case condition for trauma activities.

TABLE 3-1: RESIDENTIAL OPERATIONAL NOISE STANDARDS

Time Period	Condition	Municipal Code Section[1]	Exterior Noise Level Standards (dBA)[2]			
			L_{50} (30 mins)	L_{25} (15 mins)	L_8 (5 mins)	L_2 (1 min)
Daytime	Base Exterior Residential Noise Level Standards	7.25.010 (A)	55	60	65	70
	Lowest Measured Ambient Noise Levels[3]	n/a	48.5	51.3	55.2	58.9
	Ambient Exceedance Adjustment[4]	7.25.010 (B)	0	0	0	0
	Project Daytime Exterior Noise Level Criteria[5]	7.25.010 (B)	55	60	65	70
Nighttime	Base Exterior Residential Noise Level Standards	7.25.010 (A)	45	50	55	60
	Lowest Measured Ambient Noise Levels[3]	n/a	46.7	48.0	50.2	54.0
	Ambient Exceedance Adjustment[4]	7.25.010 (B)	+5	0	0	0
	Project Nighttime Exterior Noise Level Criteria[5]	7.25.010 (B)	50	50	55	60

[1] Source: City of Riverside Municipal Code, Chapter 7.25 (Appendix 3.1).
[2] The percent noise level is the level exceeded "n" percent of the time during the measurement period. L_{25} is the noise level exceeded 25% of the time.
[3] Lowest ambient noise levels collected in the City of Riverside at measurement location L7, shown on Exhibit 5-A. See Table 5-1 and Appendix 5-2.
[4] Section 7.25.010(B): "If the measured ambient noise level exceeds that permissible within any of the first four noise limit categories, the allowable noise exposure standard shall be increased in five decibel increments in each category as appropriate to encompass the ambient noise level."
[5] Combined base noise level standards and adjustments per the City of Riverside Municipal Code.
"Daytime" = 7:00 a.m. to 10:00 p.m.; "Nighttime" = 10:00 p.m. to 7:00 a.m.

TABLE 3-2: NON-RESIDENTIAL OPERATIONAL NOISE STANDARDS

Time Period	Condition	Municipal Code Section[1]	Exterior Noise Level Standards (dBA)[2]			
			L_{50} (30 mins)	L_{25} (15 mins)	L_8 (5 mins)	L_2 (1 min)
Anytime (Community Support)	Base Exterior Noise Level Standards	7.25.010 (A)	60	65	70	75
	Community Support Measured Ambient Noise Levels (L3)[3]	n/a	49.5	50.6	51.9	54.4
	Ambient Exceedance Adjustment[4]	7.25.010 (B)	0	0	0	0
	Project Exterior Noise Level Criteria[5]	7.25.010 (B)	60	65	70	75
Anytime (Office/Commercial)	Base Exterior Noise Level Standards	7.25.010 (A)	60	65	70	75
	Office/Commercial Measured Ambient Noise Levels (L7)[3]	n/a	46.7	48.0	50.2	54.0
	Ambient Exceedance Adjustment[4]	7.25.010 (B)	0	0	0	0
	Project Exterior Noise Level Criteria[5]	7.25.010 (B)	60	65	70	75

[1] Source: City of Riverside Municipal Code, Chapter 7.25 (Appendix 3.1).
[2] The percent noise level is the level exceeded "n" percent of the time during the measurement period. L_{25} is the noise level exceeded 25% of the time.
[3] Lowest ambient noise levels collected in the City of Riverside at the given land use, shown on Exhibit 5-A. See Table 5-1 and Appendix 5-2.
[4] Section 7.25.010(B): "If the measured ambient noise level exceeds that permissible within any of the first four noise limit categories, the allowable noise exposure standard shall be increased in five decibel increments in each category as appropriate to encompass the ambient noise level."
[5] Combined base noise level standards and adjustments per the City of Riverside Municipal Code.

3.5 CONSTRUCTION NOISE STANDARDS

To analyze noise impacts originating from the construction of the Canyon Springs Healthcare Campus & Senior Living Project, noise from construction activities are typically evaluated against standards established under a City's Municipal Code. The Municipal Code noise standards for construction are described below for the City of Riverside to determine the potential noise impacts at receiver locations within each jurisdiction. The construction-related noise standards are summarized below.

Pursuant to Section 7.35.020 "Exemptions" subsection (G) "Noise sources associated with construction, repair, remodeling, or grading of any real property; provided a permit has been obtained from the City as required; and provided said activities do not take place between the hours of 7:00 p.m. and 7:00 a.m. on weekdays, between the hours of 5:00 p.m. and 8:00 a.m. on Saturdays, or at any time on Sunday or a federal holiday. Therefore, construction noise associated with the proposed Project is exempt from the City's Noise Ordinance. (3) This approach is consistent with direction from the City of Riverside Planning Department. The City of Riverside Municipal Code construction noise standards are included in Appendix 3.1.

3.6 CONSTRUCTION VIBRATION STANDARDS

The City of Riverside Municipal Code does not identify specific vibration standards for construction. Therefore, the construction-related vibration standards provided by the United States Department of Transportation Federal Transit Administration (FTA) are used in this analysis to assess the potential vibration impacts due to Project construction.

3.6.1 FTA VIBRATION STANDARDS

The United States Department of Transportation Federal Transit Administration (FTA) identifies guidelines (10) for maximum-acceptable vibration criteria for different types of land uses. These guidelines allow 80 VdB for residential uses and buildings where people normally sleep.

Construction activity can result in varying degrees of ground-borne vibration, depending on the equipment and methods used, distance to the affected structures and soil type. Construction vibration is generally associated with pile driving and rock blasting. Other construction equipment such as air compressors, light trucks, hydraulic loaders, etc., generates little or no ground vibration. Occasionally large bulldozers and loaded trucks can cause perceptible vibration levels at close proximity. While not enforceable regulations within the City of Riverside the FTA guidelines of 80 VdB for sensitive land uses provide the basis for determining the relative significance of potential Project related vibration impacts.

3.6.2 HUMAN PERCEPTION OF VIBRATION

Typically, the human response at the perception threshold for vibration includes annoyance in residential areas, previously shown on Exhibit 2-B when vibration levels, expressed in vibration decibels (VdB), approach 75 VdB. As discussed in Section 2.9, ground-borne vibration is normally perceptible to humans at approximately 65 VdB and, for most people, a vibration-velocity level of 75 VdB is the approximate dividing line between barely perceptible and distinctly perceptible levels. For this analysis, the FTA-provided 80 VdB vibration standard represents residential annoyance as perceived by the nearby sensitive receivers in the Project study area.

3.7 FEDERAL AVIATION ADMINISTRATION

The Federal Aviation Administration (FAA) is responsible for the safety and regulation of civil aviation, and oversees the approval of the aviation permitting process and air traffic control. Operation of the Project includes a proposed helipad and emergency helicopter traffic which has the potential to impact nearby sensitive receiver locations during take offs and landings. This

noise study briefly describes the operational noise levels associated with helicopter activity at the Project site, however, it is not intended to fully satisfy the noise compatibility study requirements of the FAA, Riverside County Airport Land Use Commission, March Air Reserve Base/Inland Port Airport Land Use Compatibility Plan, State of California Heliport Permitting process, and City of Riverside Permitting Process.

3.8 MARCH AIR RESERVE BASE/INLAND PORT AIRPORT LAND USE COMPATIBILITY

The Project site is located approximately 1.6 miles north of the March Air Reserve Base (MARB) and is located within the MARB land use compatibility plan area. The Project site is located within the Zone D *Flight Corridor Buffer* as shown in the March ARB/Inland Port Airport Land Use Compatibility Plan, Exhibit MA-4. (16) Consistent with the findings of the *Initial Study for the Proposed Canyon Springs Healthcare Campus Project*, the Project site is not located within the community noise equivalent level (CNEL) noise impact area of the March ARB/Inland Port Airport Land Use Compatibility Plan. (17) As such, impacts would be *less than significant*, and therefore, aircraft noise levels are not further analyzed in this noise study.

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4 SIGNIFICANCE CRITERIA

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

A. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;

B. Exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels.

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

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

E. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, expose people residing or working in the Project area to excessive noise levels.

F. For a project within the vicinity of a private airstrip, expose people residing or working in the Project area to excessive noise levels.

While the CEQA Guidelines, General Plans, and Municipal Codes provide direction on noise compatibility and establish noise standards by land use type that are sufficient to assess the significance of noise impacts under CEQA Guideline A, they do not define the levels at which increases are considered substantial for use under Guidelines B, C, and D. The thresholds used for Guidelines B, C, and D are provided by General Plans and Municipal Codes of each jurisdiction, respectively, as outlined below. CEQA Guidelines E and F apply to nearby public and private airports, if any, and the Project's land use compatibility. The Project site is located approximately 1.6 miles north of the March Air Reserve Base (MARB) and is located within the MARB land use compatibility plan area. The Project site is located within the Zone D *Flight Corridor Buffer* as shown in the March ARB/Inland Port Airport Land Use Compatibility Plan, Exhibit MA-4. (16) Consistent with the findings of the *Initial Study for the Proposed Canyon Springs Healthcare Campus Project*, the Project site is not located within the community noise equivalent level (CNEL) noise impact area of the March ARB/Inland Port Airport Land Use Compatibility Plan. (17) As such, impacts would be *less than significant*, and therefore, aircraft noise levels are not further analyzed in this noise study.

Unfortunately, there is no completely satisfactory way to measure the subjective effects of noise or of the corresponding human reactions of annoyance and dissatisfaction. This is primarily because of the wide variation in individual thresholds of annoyance and differing individual experiences with noise. Thus, an important way of determining a person's subjective reaction to a new noise is the comparison of it to the existing environment to which one has adapted—the so-called *ambient* environment.

In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will typically be judged. With this in mind, the Federal Interagency Committee on Noise (FICON) (18) developed guidance to be used for the assessment of project-generated increases in noise levels that take into account the ambient noise level. The FICON recommendations are based on studies that relate aircraft noise levels to the percentage of persons highly annoyed by aircraft noise. Although the FICON recommendations were specifically developed to assess aircraft noise impacts, these recommendations are often used in environmental noise impact assessments involving the use of cumulative noise exposure metrics, such as the average-daily noise level (i.e., CNEL).

For example, if the ambient noise environment is quiet (<60 dBA) and the new noise source greatly increases the noise levels, an impact may occur even though the noise criteria might not be exceeded. Therefore, for the purpose of this analysis, a *readily perceptible* 5 dBA or greater project related noise level increase is considered a significant impact when nearby noise-sensitive receivers are affected. According to the FICON, in areas where the without project noise levels range from 60 to 65 dBA a 3 dBA *barely perceptible* noise level increase appears to be appropriate for most people. When the without project noise levels already exceed 65 dBA, any increase in community noise louder than 1.5 dBA or greater is considered a significant impact if noise-sensitive receivers are affected, since it likely contributes to an existing noise exposure exceedance. Table 4.1 below provides a summary of the potential noise impact significance criteria, based on guidance from FICON.

TABLE 4-1: SIGNIFICANCE OF NOISE IMPACTS

Without Project Noise Level (CNEL)	Potential Significant Impact
< 60 dBA	5 dBA or more
60 - 65 dBA	3 dBA or more
> 65 dBA	1.5 dBA or more

Federal Interagency Committee on Noise (FICON), 1992

Based on the significance of noise impacts outlined on Table 4-1, noise impacts shall be considered significant if any of the following occur as a direct result of the proposed development:

- If the off-site traffic noise levels at nearby noise-sensitive receivers adjacent to roadways conveying Project traffic:
    - are less than 60 dBA CNEL and the Project creates a *readily perceptible* 5 dBA CNEL or greater Project related noise level increase; or
    - range from 60 to 65 dBA CNEL and the Project creates a *barely perceptible* 3 dBA CNEL or greater Project noise level increase; or
    - already exceed 65 dBA CNEL, and the Project creates a community noise level impact of greater than 1.5 dBA CNEL.
- If the on-site exterior noise levels exceed 70 dBA CNEL at the community support land uses within the Project site, and 75 dBA CNEL at the office building land uses. Interior noise levels shall not

exceed 45 dBA CNEL at any land uses located within the Project site (City of Riverside General Plan Noise Element, Figure N-10).

- If Project-related operational (stationary source) noise levels exceed:
    - the adjusted residential exterior 55 dBA L_{50} daytime or 50 dBA L_{50} nighttime noise level standards based on the measured ambient noise levels at nearby sensitive residential land uses. These standards shall not be exceeded for a cumulative period of 30 minutes (L_{50}), or cannot exceed 60 dBA (daytime) or 50 dBA (nighttime) for a cumulative period of more than 15 minutes (L_{25}) in any hour, or 65 dBA (daytime) or 55 dBA (nighttime) for a cumulative period of more than 5 minutes (L_8) in any hour, or 70 dBA (daytime) or 60 dBA (nighttime) for a cumulative period of more than 1 minute (L_2) in any hour (See Table 3-1 of this report for the City of Riverside Municipal Code, Section 7.25.010(A) & (B) noise standards); or
    - the adjusted community support exterior 60 dBA L_{50} anytime noise level standards based on the measured ambient noise levels at nearby sensitive residential land uses. These standards shall not be exceeded for a cumulative period of 30 minutes (L_{50}), or cannot exceed 65 dBA for a cumulative period of more than 15 minutes (L_{25}) in any hour, or 70 dBA for a cumulative period of more than 5 minutes (L_8) in any hour, or 75 dBA for a cumulative period of more than 1 minute (L_2) in any hour (See Table 3-2 of this report for the City of Riverside Municipal Code, Section 7.25.010(A) & (B) noise standards).
- If Project-related construction activities occur anytime other than between the permitted hours of 7:00 a.m. to 7:00 p.m. on weekdays, or 8:00 a.m. to 5:00 p.m. on Saturdays, with no work allowed on Sundays or federal holidays (City of Riverside Municipal Code Section 7.35.010 (B) (5)).
- If short-term project generated construction source vibration levels could exceed the FTA maximum acceptable vibration standard of 80 vibration decibels (VdB) at noise-sensitive receiver locations.

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5 EXISTING NOISE LEVEL MEASUREMENTS

To assess the existing noise level environment, nine 24-hour noise level measurements were taken at sensitive receiver locations in the Project study area. The receiver locations were selected to describe and document the existing noise environment within the Project study area. Exhibit 5-A provides the boundaries of the Project study area and the noise level measurement locations. To fully describe the existing noise conditions, noise level measurements were collected by Urban Crossroads, Inc. from Thursday, January 22nd to Friday, January 23rd, 2014. Appendix 5.1 includes study area photos.

5.1 MEASUREMENT PROCEDURE AND CRITERIA

To describe the existing noise environment, the hourly noise levels were measured during typical weekday conditions over a 24-hour period. By collecting individual hourly noise level measurements, it is possible to describe the daytime and nighttime hourly noise levels and calculate the 24-hour CNEL. The long-term noise readings were recorded using Piccolo Type 2 integrating sound level meter and dataloggers. The Piccolo sound level meters were calibrated using a Larson-Davis calibrator, Model CAL 150. All noise meters were programmed in "slow" mode to record noise levels in "A" weighted form. The sound level meters and microphones were equipped with a windscreen during all measurements. All noise level measurement equipment satisfies the American National Standards Institute (ANSI) standard specifications for sound level meters ANSI S1.4-2014/IEC 61672-1:2013. (19)

5.2 NOISE MEASUREMENT LOCATIONS

The long-term noise level measurements were positioned at the nearest sensitive receiver locations to assess the existing ambient hourly noise levels surrounding the Project site. To describe the existing noise environment, it is not necessary to collect measurements at each individual building or residence, because each receiver measurement represents a group of buildings that share acoustical equivalence. In other words, the area represented by the receiver shares similar shielding, terrain, and geometric relationship to the reference noise source. Receivers represent a location of noise sensitive areas and are used to estimate the future noise level impacts. Collecting reference ambient noise level measurements at the nearby sensitive receiver locations allows for a comparison of the before and after Project noise levels and is necessary to assess potential cumulative noise impacts.

5.3 NOISE MEASUREMENT RESULTS

To describe the existing ambient noise environment, the noise measurements presented below focus on the average or equivalent sound levels (Leq). 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. Table 5-1 identifies the hourly daytime (7:00 a.m. to 10:00 p.m. in the City of Riverside) and nighttime (10:00 p.m. to 7:00 a.m. in the City of Riverside) noise levels at each noise level measurement location. The median noise levels are provided on Table 5-1

consistent with the City of Riverside Municipal Code stationary noise level standards. Appendix 5.2 provides a summary of the existing hourly ambient noise levels described below:

EXHIBIT 5-A: NOISE MEASUREMENT LOCATIONS

- Located approximately 212 feet south of the planned Canyon Springs Healthcare Campus & Senior Living site, location L1 represents the off-site exterior noise levels south of Eucalyptus Avenue from Edgemont Elementary School. Based on the noise level measurements, the existing daytime hourly ambient noise levels ranged from 65.8 to 72.4 dBA Leq resulting in an energy (logarithmic) average daytime noise level of 69.4 dBA Leq. During the nighttime hours, the measured ambient noise levels ranged from 60.7 to 69.9 dBA Leq producing an energy (logarithmic) average nighttime noise level of 66.4 dBA Leq. A review of the 24-hour Community Noise Equivalent Level (CNEL) indicates that the overall exterior noise level is 73.5 dBA CNEL.
- Location L2 represents the noise levels at the existing single-family residential homes along Eucalyptus Avenue adjacent to the southern Project site. The noise level measurements collected show an overall 24-hour exterior noise level of 60.0 dBA CNEL. The hourly noise levels measured at location L2 ranged from 49.8 to 54.2 dBA Leq during the daytime hours and from 49.2 to 57.3 dBA Leq during the nighttime hours. The energy (logarithmic) average daytime noise level was calculated at 52.0 dBA Leq with an average nighttime noise level of 53.7 dBA Leq.
- Location L3 represents the noise levels at the northern property line of Edgemont Elementary School. The 24-hour CNEL indicates that the overall exterior noise level is 61.8 dBA CNEL. At location L3 the background ambient noise levels ranged from 46.0 to 53.3 dBA Leq during the daytime hours to levels of 50.9 to 59.4 dBA Leq during the nighttime hours. The energy (logarithmic) average daytime noise level was calculated at 50.7 dBA Leq with an average nighttime noise level of 55.9 dBA Leq.
- Located at the southeast corner of Valley Springs Parkway and Corporate Centre Place, location L4 represents the noise levels at the future location of the parking lot for the senior housing residences within the Project site. A Walmart shopping center with two loading docks is located north of this location across Corporate Centre Place. The noise level measurements collected show an overall 24-hour exterior noise level of 62.9 dBA CNEL. The hourly noise levels measured at location L4 ranged from 53.2 to 61.0 dBA Leq during the daytime hours and from 51.8 to 59.2 dBA Leq during the nighttime hours. The energy (logarithmic) average daytime noise level was calculated at 58.2 dBA Leq with an average nighttime noise level of 55.8 dBA Leq.
- Located approximately 225 feet north of the planned senior housing development within the Canyon Springs Healthcare Campus & Senior Living site, location L5 represents the off-site exterior noise levels at the southern corner of Corporate Centre Place and Campus Parkway. A Walmart shopping center with two loading docks is located west of this location across Corporate Centre Place and a Target with one loading dock area and trash compactor is located to the east. Based on the noise level measurements, the existing daytime hourly ambient noise levels ranged from 56.9 to 61.5 dBA Leq resulting in an energy (logarithmic) average daytime noise level of 59.6 dBA Leq. During the nighttime hours, the measured ambient noise levels ranged from 51.5 to 60.2 dBA Leq producing an energy (logarithmic) average nighttime noise level of 55.9 dBA Leq. A review of the 24-hour CNEL indicates that the overall exterior noise level is 63.4 dBA CNEL.
- Location L6 represents the noise levels at the property line between the proposed senior housing development (north) and the existing County of Riverside County Clerk's office building (south). The noise level measurements collected show an overall 24-hour exterior noise level of 63.7 dBA CNEL. The hourly noise levels measured at location L6 ranged from 51.9 to 57.2 dBA Leq during the daytime hours and from 54.8 to 61.2 dBA Leq during the nighttime hours. The energy (logarithmic) average daytime noise level was calculated at 54.5 dBA Leq with an average nighttime noise level of 57.5 dBA Leq.

- Location L7 represents the existing noise levels along Canyon Park Drive at the future location of the independent living facility within the Project site. The 24-hour CNEL indicates that the overall exterior noise level is 56.2 dBA CNEL. At location L7 the background ambient noise levels ranged from 48.8 to 54.5 dBA Leq during the daytime hours to levels of 46.0 to 50.1 dBA Leq during the nighttime hours. The energy (logarithmic) average daytime noise level was calculated at 52.0 dBA Leq with an average nighttime noise level of 48.4 dBA Leq.
- Located north of Gateway Drive, location L8 represents the existing noise levels at the future location of the assisted living building within the Project site. The noise level measurements collected show an overall 24-hour exterior noise level of 65.7 dBA CNEL. The hourly noise levels measured at location L8 ranged from 59.3 to 66.3 dBA Leq during the daytime hours and from 51.3 to 60.9 dBA Leq during the nighttime hours. The energy (logarithmic) average daytime noise level was calculated at 63.5 dBA Leq with an average nighttime noise level of 57.2 dBA Leq.
- Location L9 represents the existing noise levels east of the proposed skilled nursing facility at the northwestern corner of Day Street and Gateway Drive within the Project site. Existing drive-thru speakerphones are located east of this location across Day Street at a Panda Express, Baker's Drive-Thru, and Portillo's Hot Dogs. The 24-hour CNEL indicates that the overall exterior noise level is 66.3 dBA CNEL. At location L9 the background ambient noise levels ranged from 60.8 to 65.0 dBA Leq during the daytime hours to levels of 52.0 to 63.5 dBA Leq during the nighttime hours. The energy (logarithmic) average daytime noise level was calculated at 63.5 dBA Leq with an average nighttime noise level of 58.2 dBA Leq.

Table 5-1 provides the (energy average) noise levels used to describe the daytime and nighttime ambient conditions. These daytime and nighttime energy average noise levels represent the average of all hourly noise levels observed during these time periods expressed as a single number. Appendix 5.2 provides a summary of the hourly noise levels for each hour as well as the minimum and maximum noise level observed during the daytime and nighttime period.

The background ambient noise levels in the Project study area are dominated by the transportation-related noise associated with the arterial roadway network. This includes the auto and heavy truck activities on the I-215 Freeway, the SR-60 Freeway, Valley Springs Parkway, Day Street, Eucalyptus Avenue, and Gateway Drive near the noise level measurement locations. Secondary background ambient noise is also included in the noise level measurements from existing stationary noise sources such as commercial loading docks and drive-thru speakerphones in the Project study area, however, these impacts are generally overshadowed by the nearby vehicular traffic noise levels. The 24-hour existing noise level measurements shown on Table 5-1 present the existing ambient noise conditions.

TABLE 5-1: 24-HOUR AMBIENT NOISE LEVEL MEASUREMENTS

Location[1]	Distance from Site (Feet)	Description	Hourly Noise Level (dBA Leq)[2]		Median Noise Level (dBA L_{50})[2]		CNEL
			Daytime[3]	Nighttime[4]	Daytime[3]	Nighttime[4]	
L1	212'	Located south of Edgemont Elementary School across Eucalyptus Avenue in a vacant lot.	69.4	66.4	65.7	61.9	73.5
L2	0'	Located adjacent to existing single-family residential homes along the southern boundary of the proposed medical office buildings 3 and 4.	52.0	53.7	49.6	52.7	60.0
L3	0'	Located at the northern property line of the Edgemont Elementary School, east of the proposed hospital.	50.7	55.9	49.5	55.1	61.8
L4	0'	Located at the southeast corner of Valley Springs Parkway and Corporate Centre Place at the future location of the parking lot.	58.2	55.8	53.5	53.8	62.9
L5	225'	Located north of the future senior housing development at the southern corner of Corporate Centre Place and Campus Parkway.	59.6	55.9	55.0	51.5	63.4
L6	0'	Located at the northern property line of the County of Riverside County Clerk's office building.	54.5	57.5	53.8	56.0	63.7
L7	0'	Located along Canyon Park Drive at the future location of the independent living facility within the Project site.	52.0	48.4	48.5	46.7	56.2
L8	0'	Located north of Gateway Drive at the future location of the assisted living building within the Project site.	63.5	57.2	55.4	50.8	65.7
L9	0'	Located at the northwestern corner of Day Street and Gateway Drive within the Project site, east of the proposed skilled nursing facility.	63.5	58.2	58.8	54.2	66.3

[1] See Exhibit 5-A for the location of the noise level measurement locations.
[2] The long-term 24-hour measurement printouts are included in Appendix 5.2.
[3] "Daytime" for measurements taken in the City of Riverside represents 7:00 a.m. to 10:00 p.m. per the Municipal Code.
[4] "Nighttime" for measurements taken in the City of Riverside represents 10:00 p.m. to 7:00 a.m. per the Municipal Code.

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6 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 estimated roadway noise impacts from vehicular traffic were calculated using a computer program that replicates the Federal Highway Administration (FHWA) Traffic Noise Prediction Model- FHWA-RD-77-108. (20) The FHWA Model arrives at a predicted noise level through a series of adjustments to the Reference Energy Mean Emission Level (REMEL). In California the national REMELs are substituted with the California Vehicle Noise (Calveno) Emission Levels. (21) Adjustments are then made to the REMEL to account for: the roadway classification (e.g., collector, secondary, major or arterial), the roadway active width (i.e., the distance between the center of the outermost travel lanes on each side of the roadway), the total average daily traffic (ADT), the travel speed, the percentages of automobiles, medium trucks, and heavy trucks in the traffic volume, the roadway grade, the angle of view (e.g., whether the roadway view is blocked), the site conditions ("hard" or "soft" relates to the absorption of the ground, pavement, or landscaping), and the percentage of total ADT which flows each hour throughout a 24-hour period.

6.2 OFF-SITE TRAFFIC NOISE PREDICTION MODEL INPUTS

Table 6-1 presents the roadway parameters used to assess the Project's off-site transportation noise impacts. Table 6-1 identifies the 24 study area roadway segments, the distance from the centerline to adjacent land use based on the functional roadway classifications according to the City of Riverside General Plan Circulation Element, and the vehicle speeds. For the purpose of the off-site analysis, soft site conditions were used to analyze the traffic noise impacts for the Project study area. Soft site conditions account for the sound propagation loss over natural surfaces such as normal earth and ground vegetation.

The Existing, Year 2016, and General Plan (GP) Buildout average daily traffic volumes used for this study, presented in Table 6-2, were obtained from the *Canyon Springs Healthcare Campus & Senior Living Traffic Impact Analysis,* prepared by Urban Crossroads, Inc. (1) Table 6-3 presents the time of day vehicle splits and Table 6-4 presents the traffic flow distributions (vehicle mix) used for this analysis. The vehicle mix provides the hourly distribution percentages of automobile, medium trucks and heavy trucks for input into the FHWA noise prediction model.

TABLE 6-1: OFF-SITE ROADWAY PARAMETERS

ID	Roadway	Segment	Adjacent Land Use[1]	Distance from Centerline to Nearest Adjacent Land Use (Feet)[2]	Vehicle Speed (MPH)
1	Sycamore Canyon Bl.	n/o Eastridge Av.	Business/Office Park	55'	45
2	Sycamore Canyon Bl.	s/o Eastridge Av.	Business/Office Park	55'	45
3	Box Springs Bl.	n/o Eastridge Av.	Business/Office Park	44'	40
4	Box Springs Bl.	s/o Eastridge Av.	Business/Office Park	44'	40
5	Day St.	n/o SR-60 Fwy	Commercial	60'	40
6	Day St.	n/o Canyon Springs Pkwy.	Commercial	60'	40
7	Day St.	s/o Canyon Springs Pkwy.	Commercial	60'	40
8	Day St.	s/o Campus Pkwy.	Commercial	60'	40
9	Day St.	s/o Gateway Dr.	Commercial	60'	40
10	Day St.	n/o Eucalyptus Av.	Commercial	60'	40
11	Day St.	s/o Eucalyptus Av.	Residential	55'	35
12	Day St.	s/o Cottonwood Av.	Residential/Office	44'	35
13	Day St.	s/o Bay Av.	Residential/Office	44'	35
14	Day St.	s/o Alessandro Bl.	Commercial	44'	35
15	Eucalyptus Av.	s/o Towngate Dr.	Residential	50'	40
16	Eastridge Av.	w/o Sycamore Canyon Bl.	Business/Office Park	60'	40
17	Eastridge Av.	e/o Sycamore Canyon Bl.	Business/Office Park	60'	40
18	Eastridge Av.	e/o Box Springs Bl.	Business/Office Park	60'	40
19	Eucalyptus Av.	w/o Valley Springs Pkwy.	Commercial	60'	40
20	Eucalyptus Av.	e/o Valley Springs Pkwy.	Residential/Office	60'	40
21	Eucalyptus Av.	e/o Day St.	Residential	67'	40
22	Towngate Dr.	e/o Eucalyptus Av.	Residential	67'	40
23	Alessandro Bl.	w/o Day St.	Commercial	67'	45
24	Alessandro Bl.	e/o Day St.	Residential	67'	45

[1] Source: City of Riverside General Plan Land Use/Urban Design Element, Figure LU-10 Land Use Policy Map.
[2] Distance to adjacent land use is based upon the right-of-way distances for each functional roadway classification provided in the General Plan Circulation Elements.

TABLE 6-2: AVERAGE DAILY TRAFFIC VOLUMES

ID	Roadway	Segment	Average Daily Traffic (1,000's)[1]					
			Existing		Year 2016		GP Buildout	
			No Project	With Project	No Project	With Project	No Project	With Project
1	Sycamore Canyon Bl.	n/o Eastridge Av.	13.2	13.8	20.6	21.2	21.7	22.3
2	Sycamore Canyon Bl.	s/o Eastridge Av.	14.1	14.2	21.0	21.2	22.1	22.2
3	Box Springs Bl.	n/o Eastridge Av.	2.5	2.7	7.7	7.9	8.1	8.3
4	Box Springs Bl.	s/o Eastridge Av.	1.0	1.2	3.1	3.3	3.3	3.4
5	Day St.	n/o SR-60 Fwy	28.2	30.9	31.4	34.1	33.1	35.8
6	Day St.	n/o Canyon Springs Pkwy.	39.2	44.3	44.1	49.2	46.6	51.7
7	Day St.	s/o Canyon Springs Pkwy.	24.2	29.2	27.8	32.9	29.5	34.5
8	Day St.	s/o Campus Pkwy.	22.0	26.9	25.3	30.3	26.9	31.8
9	Day St.	s/o Gateway Dr.	16.8	19.1	19.9	22.2	21.0	23.4
10	Day St.	n/o Eucalyptus Av.	16.8	19.4	19.9	22.5	21.0	23.7
11	Day St.	s/o Eucalyptus Av.	11.8	13.2	19.6	21.1	21.0	22.4
12	Day St.	s/o Cottonwood Av.	7.1	8.2	15.7	16.8	17.5	18.6
13	Day St.	s/o Bay Av.	6.7	7.5	15.3	16.1	17.8	18.6
14	Day St.	s/o Alessandro Bl.	0.7	0.9	12.0	12.2	12.6	12.8
15	Eucalyptus Av.	s/o Towngate Dr.	11.4	12.0	16.9	17.8	17.8	18.4
16	Eastridge Av.	w/o Sycamore Canyon Bl.	8.6	8.8	29.1	29.3	31.6	31.8
17	Eastridge Av.	e/o Sycamore Canyon Bl.	16.0	16.9	27.7	28.6	29.2	30.1
18	Eastridge Av.	e/o Box Springs Bl.	19.4	20.7	34.4	35.7	36.2	37.5
19	Eucalyptus Av.	w/o Valley Springs Pkwy.	30.5	38.7	45.8	54.0	48.5	56.7
20	Eucalyptus Av.	e/o Valley Springs Pkwy.	17.1	19.2	28.5	30.6	30.1	32.1
21	Eucalyptus Av.	e/o Day St.	13.9	15.0	29.7	31.3	31.3	32.4
22	Towngate Dr.	e/o Eucalyptus Av.	7.9	8.5	13.4	14.8	14.8	15.4
23	Alessandro Bl.	w/o Day St.	26.7	26.9	41.1	41.3	49.7	49.9
24	Alessandro Bl.	e/o Day St.	27.7	28.0	40.7	41.1	42.8	43.1

[1] Source: Canyon Springs Healthcare Campus & Senior Living Traffic Impact Analysis, Urban Crossroads, Inc., January 2015.
"GP Buildout" = General Plan Buildout volumes.

TABLE 6-3: TIME OF DAY VEHICLE SPLITS

Time Period	Vehicle Type		
	Autos	Medium Trucks	Heavy Trucks
Daytime (7am-7pm)	77.5%	84.8%	86.5%
Evening (7pm-10pm)	12.9%	4.9%	2.7%
Nighttime (10pm-7am)	9.6%	10.3%	10.8%
Total:	100.0%	100.0%	100.0%

Source: County of Riverside Office of Industrial Hygiene Time of Day Vehicle Splits.

TABLE 6-4: OFF-SITE DISTRIBUTION OF TRAFFIC FLOW BY VEHICLE TYPE (VEHICLE MIX)

Roadway Classification	Total % Traffic Flow			Total
	Autos	Medium Trucks	Heavy Trucks	
All Segments	97.42%	1.84%	0.74%	100.00%

Source: County of Riverside Office of Industrial Hygiene.

6.3 ON-SITE TRAFFIC NOISE PREDICTION MODEL INPUTS

The on-site roadway parameters including the average daily traffic (ADT) volumes used for this study are presented on Table 6-5. Based on the City of Riverside General Plan Circulation Element, Figure CCM-2, Valley Springs Parkway, Day Street, and Eucalyptus Avenue are classified as 120-foot Arterials, and Gateway Drive is classified as a 100-foot Arterial. To predict the future on-site noise environment at the Project site, the number of lanes and the General Plan with Project condition traffic volumes were obtained from the *Canyon Springs Healthcare Campus & Senior Living Traffic Impact Analysis*. (1) The I-215 and SR-60 Freeway volumes were obtained using a ten-percent growth factor above the existing conditions provided by the Caltrans Traffic Data Branch *2013 Annual Average Daily Truck Traffic on the California Highways System*. (22) The traffic volumes shown on Table 6-5 reflect future long-range traffic conditions needed to assess the future on-site traffic noise environment and to identify the appropriate Project Design Features that address the worst-case future conditions. For the purposes of this analysis, soft site conditions were used to analyze the on-site traffic noise impacts for the Project study area. Soft site conditions account for the sound propagation loss over natural surfaces such as normal earth and ground vegetation.

TABLE 6-5: ON-SITE ROADWAY PARAMETERS

Roadway	Lanes	Classification[1]	Traffic Volume[2]	Speed Limits (mph)[3]	Site Conditions
I-215 Fwy	8	Freeway	130,900	65	Soft
SR-60 Fwy	9	Freeway	147,400	65	Soft
Valley Springs Pkwy.	5	Arterial (120')	31,200	40	Soft
Day St.	5	Arterial (120')	23,700	40	Soft
Eucalyptus Av.	4	Arterial (120')	32,100	40	Soft
Gateway Dr.	4	Arterial (100')	12,300	40	Soft

[1] Road classifications based upon the City of Riverside General Plan Circulation Element, Figure CCM-2.
[2] I-215 and SR-60 Freeway traffic volumes are based on 10% growth from existing volumes obtained from the Caltrans Traffic Data Branch Annual Average Daily Truck Traffic on the California Highways System, 2013. Roadway traffic volumes were obtained from the Canyon Springs Healthcare Campus & Senior Living Traffic Impact Analysis, Roadway Volume/Capacity Analysis for General Plan With Project Conditions, February 2015.
[3] Posted speed limits on the I-215 and SR-60 Freeways. Roadway speed limits are based on County of Riverside Office of Industrial Hygiene Requirements for Traffic Noise Modeling, July 2012.

Table 6-3 presents the time of day vehicle splits by vehicle type, and Table 6-6 presents the total traffic flow distributions (vehicle mixes) used for this analysis. The vehicle mix provides the hourly distribution percentages of automobile, medium trucks and heavy trucks for input into the FHWA Model based on roadway types. The vehicle mix for the I-215 and SR-60 Freeways was obtained from the *2013 Annual Average Daily Truck Traffic on the California Highways System*, published by Caltrans. (22)

TABLE 6-6: ON-SITE DISTRIBUTION OF TRAFFIC FLOW BY VEHICLE TYPE (VEHICLE MIX)

Roadway	Classification	Total % Traffic Flow			Total
		Autos	Medium Trucks	Heavy Trucks	
I-215 Fwy[1]	Freeway	85.50%	6.31%	8.19%	100.00%
SR-60 Fwy[1]	Freeway	89.50%	4.51%	5.99%	100.00%
All Roadways[2]	All	97.42%	1.84%	0.74%	100.00%

[1] Source: Caltrans Data Branch Annual Average Daily Truck Traffic on the California Highways System, 2013.
[2] Source: County of Riverside Office of Industrial Hygiene Requirements for Traffic Noise Modeling, July 2012.

To predict the future noise environment at each building within the Project site, coordinate information was collected to identify the noise transmission path between the noise source and receiver. The coordinate information is based on the Project site plan showing the plotting of each building in relationship to the I-215 Freeway, SR-60 Freeway, Valley Springs Parkway, Day Street, Eucalyptus Avenue, and Gateway Drive as shown in Appendix 6.1.

The site plan and grading plans, provided in Appendix 6.2, were used to identify the relationship between the roadway centerline elevation, the pad elevation and the centerline distance to the noise barrier, and the building façade. The exterior noise level impacts at the first floor façade were located five feet above the proposed finished floor elevation. All second floor receivers

were located fourteen feet above the proposed finished floor elevation, and all third floor receivers were located 23 feet above the proposed finished floor elevation.

6.4 VIBRATION ASSESSMENT

This analysis focuses on the potential ground-borne vibration associated with vehicular traffic and construction activities. Ground-borne vibration levels from automobile traffic are generally overshadowed by vibration generated by heavy trucks that roll over the same uneven roadway surfaces. However, due to the rapid drop-off rate of ground-borne vibration and the short duration of the associated events, vehicular traffic-induced ground-borne vibration is rarely perceptible beyond the roadway right-of-way, and rarely results in vibration levels that cause damage to buildings in the vicinity.

However, while vehicular traffic is rarely perceptible, construction has the potential to result in varying degrees of temporary ground vibration, depending on the specific construction activities and equipment used. Ground vibration levels associated with various types of construction equipment are summarized on Table 6-7. Based on the representative vibration levels presented for various construction equipment types, it is possible to estimate the human response (annoyance) using the following vibration assessment methods defined by the FTA. To describe the human response (annoyance) associated with vibration impacts the FTA provides the following equation: $L_{VdB}(D) = L_{VdB}(25\ ft) - 30\log(D/25)$

TABLE 6-7: VIBRATION SOURCE LEVELS FOR CONSTRUCTION EQUIPMENT

Equipment	Vibration Decibels (VdB) at 25 feet[1]
Small bulldozer	58
Jackhammer	79
Loaded Trucks	86
Large bulldozer	87

Source: Federal Transit Administration, Transit Noise and Vibration Impact Assessment, May 2006.

7 OFF-SITE TRANSPORTATION NOISE IMPACTS

To assess the off-site transportation CNEL noise level impacts associated with development of the proposed Project, noise contours were developed based on the *Canyon Springs Healthcare Campus & Senior Living Traffic Impact Analysis*. (1) Noise contour boundaries represent the equal levels of noise exposure and are measured in CNEL from the center of the roadway. Noise contours were developed for the following traffic scenarios:

- Existing Without / With Project: This scenario refers to the existing present-day noise conditions, without the Project and with the construction of the proposed Project.
- Year 2016 Without / With Project: This scenario refers to the background noise conditions at future Year 2016 with and without the proposed Project. This scenario corresponds to 2016 conditions, and includes all cumulative projects identified in the Traffic Impact Analysis.
- General Plan (GP) Buildout Without / With Project: This scenario refers to the background noise conditions at future GP Buildout with and without the proposed Project. This scenario corresponds to GP Buildout conditions, and includes all cumulative projects identified in the Traffic Impact Analysis.

7.1 TRAFFIC NOISE CONTOURS

To quantify the Project's traffic noise impacts on the surrounding areas, the changes in traffic noise levels on 24 roadway segments surrounding the Project were calculated based on the changes in the average daily traffic volumes. The noise contours were used to assess the Project's incremental traffic-related cumulative noise impacts at land uses adjacent to roadways conveying Project traffic. Based on the cumulative noise impact significance criteria described in Section 4, a significant off-site traffic noise level impact occurs if the without Project noise levels at nearby noise-sensitive receivers:

- are less than 60 dBA and the Project creates a *readily perceptible* 5 dBA or greater Project related noise level increase, or:
- range from 60 to 65 dBA and the Project creates a *barely perceptible* 3 dBA or greater Project noise level increase, or;
- already exceed 65 dBA, and the Project creates a community noise level impact of greater than 1.5 dBA.

Noise contours represent the distance to noise levels of a constant value and are measured from the center of the roadway for the 70, 65, and 60 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 commercial uses within the Project study area. Tables 7-1 through 7-6 present a summary of the unmitigated exterior traffic noise levels for the 24 study area roadway segments analyzed from the without Project to the with Project conditions in each of the three timeframes: Existing, Year 2016, and GP Buildout conditions. Appendix 7.1 includes a summary of the traffic noise level contours for each of the six traffic scenarios.

TABLE 7-1: EXISTING WITHOUT PROJECT CONDITIONS NOISE CONTOURS

ID	Road	Segment	Adjacent Land Use[1]	CNEL at Nearest Adjacent Land Use (dBA)	Distance to Contour from Centerline (Feet)[2]		
					70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Sycamore Canyon Bl.	n/o Eastridge Av.	Business/Office Park	67.7	RW	83	180
2	Sycamore Canyon Bl.	s/o Eastridge Av.	Business/Office Park	68.0	RW	87	188
3	Box Springs Bl.	n/o Eastridge Av.	Business/Office Park	60.6	RW	RW	48
4	Box Springs Bl.	s/o Eastridge Av.	Business/Office Park	56.6	RW	RW	RW
5	Day St.	n/o SR-60 Fwy	Commercial	69.9	RW	128	276
6	Day St.	n/o Canyon Springs Pkwy.	Commercial	71.4	74	160	344
7	Day St.	s/o Canyon Springs Pkwy.	Commercial	69.3	RW	116	249
8	Day St.	s/o Campus Pkwy.	Commercial	68.9	RW	109	234
9	Day St.	s/o Gateway Dr.	Commercial	67.7	RW	91	195
10	Day St.	n/o Eucalyptus Av.	Commercial	67.7	RW	91	195
11	Day St.	s/o Eucalyptus Av.	Residential	64.9	RW	RW	117
12	Day St.	s/o Cottonwood Av.	Residential/Office	63.7	RW	RW	77
13	Day St.	s/o Bay Av.	Residential/Office	63.4	RW	RW	75
14	Day St.	s/o Alessandro Bl.	Commercial	53.6	RW	RW	RW
15	Eucalyptus Av.	s/o Towngate Dr.	Residential	66.6	RW	64	137
16	Eastridge Av.	w/o Sycamore Canyon Bl.	Business/Office Park	64.8	RW	RW	125
17	Eastridge Av.	e/o Sycamore Canyon Bl.	Business/Office Park	67.5	RW	88	189
18	Eastridge Av.	e/o Box Springs Bl.	Business/Office Park	68.3	RW	100	215
19	Eucalyptus Av.	w/o Valley Springs Pkwy.	Commercial	70.3	63	135	291
20	Eucalyptus Av.	e/o Valley Springs Pkwy.	Residential/Office	67.8	RW	92	198
21	Eucalyptus Av.	e/o Day St.	Residential	66.2	RW	81	174
22	Towngate Dr.	e/o Eucalyptus Av.	Residential	63.8	RW	RW	120
23	Alessandro Bl.	w/o Day St.	Commercial	70.3	71	152	327
24	Alessandro Bl.	e/o Day St.	Residential	70.5	72	156	335

[1] Source: City of Riverside General Plan Land Use/Urban Design Element, Figure LU-10 Land Use Policy Map.
[2] "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

ID	Road	Segment	Adjacent Land Use[1]	CNEL at Nearest Adjacent Land Use (dBA)	Distance to Contour from Centerline (Feet)[2]		
					70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Sycamore Canyon Bl.	n/o Eastridge Av.	Business/Office Park	67.9	RW	86	185
2	Sycamore Canyon Bl.	s/o Eastridge Av.	Business/Office Park	68.0	RW	88	189
3	Box Springs Bl.	n/o Eastridge Av.	Business/Office Park	60.9	RW	RW	51
4	Box Springs Bl.	s/o Eastridge Av.	Business/Office Park	57.4	RW	RW	RW
5	Day St.	n/o SR-60 Fwy	Commercial	70.3	63	136	293
6	Day St.	n/o Canyon Springs Pkwy.	Commercial	71.9	80	173	373
7	Day St.	s/o Canyon Springs Pkwy.	Commercial	70.1	61	131	282
8	Day St.	s/o Campus Pkwy.	Commercial	69.7	RW	124	267
9	Day St.	s/o Gateway Dr.	Commercial	68.2	RW	99	213
10	Day St.	n/o Eucalyptus Av.	Commercial	68.3	RW	100	215
11	Day St.	s/o Eucalyptus Av.	Residential	65.4	RW	58	126
12	Day St.	s/o Cottonwood Av.	Residential/Office	64.3	RW	RW	85
13	Day St.	s/o Bay Av.	Residential/Office	63.9	RW	RW	80
14	Day St.	s/o Alessandro Bl.	Commercial	54.7	RW	RW	RW
15	Eucalyptus Av.	s/o Towngate Dr.	Residential	66.8	RW	66	142
16	Eastridge Av.	w/o Sycamore Canyon Bl.	Business/Office Park	64.9	RW	RW	127
17	Eastridge Av.	e/o Sycamore Canyon Bl.	Business/Office Park	67.7	RW	91	196
18	Eastridge Av.	e/o Box Springs Bl.	Business/Office Park	68.6	RW	104	225
19	Eucalyptus Av.	w/o Valley Springs Pkwy.	Commercial	71.3	73	158	341
20	Eucalyptus Av.	e/o Valley Springs Pkwy.	Residential/Office	68.3	RW	99	214
21	Eucalyptus Av.	e/o Day St.	Residential	66.6	RW	85	183
22	Towngate Dr.	e/o Eucalyptus Av.	Residential	64.1	RW	RW	126
23	Alessandro Bl.	w/o Day St.	Commercial	70.4	71	153	329
24	Alessandro Bl.	e/o Day St.	Residential	70.5	73	157	338

[1] Source: City of Riverside General Plan Land Use/Urban Design Element, Figure LU-10 Land Use Policy Map.
[2] "RW" = Location of the respective noise contour falls within the right-of-way of the road.

TABLE 7-3: YEAR 2016 WITHOUT PROJECT CONDITIONS NOISE CONTOURS

ID	Road	Segment	Adjacent Land Use[1]	CNEL at Nearest Adjacent Land Use (dBA)	Distance to Contour from Centerline (Feet)[2]		
					70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Sycamore Canyon Bl.	n/o Eastridge Av.	Business/Office Park	69.6	RW	112	242
2	Sycamore Canyon Bl.	s/o Eastridge Av.	Business/Office Park	69.7	RW	114	245
3	Box Springs Bl.	n/o Eastridge Av.	Business/Office Park	65.5	RW	47	102
4	Box Springs Bl.	s/o Eastridge Av.	Business/Office Park	61.5	RW	RW	55
5	Day St.	n/o SR-60 Fwy	Commercial	70.4	64	138	296
6	Day St.	n/o Canyon Springs Pkwy.	Commercial	71.9	80	173	372
7	Day St.	s/o Canyon Springs Pkwy.	Commercial	69.9	RW	127	273
8	Day St.	s/o Campus Pkwy.	Commercial	69.5	RW	119	257
9	Day St.	s/o Gateway Dr.	Commercial	68.4	RW	102	219
10	Day St.	n/o Eucalyptus Av.	Commercial	68.4	RW	102	219
11	Day St.	s/o Eucalyptus Av.	Residential	67.1	RW	76	164
12	Day St.	s/o Cottonwood Av.	Residential/Office	67.1	RW	61	131
13	Day St.	s/o Bay Av.	Residential/Office	67.0	RW	60	129
14	Day St.	s/o Alessandro Bl.	Commercial	66.0	RW	51	110
15	Eucalyptus Av.	s/o Towngate Dr.	Residential	68.3	RW	83	179
16	Eastridge Av.	w/o Sycamore Canyon Bl.	Business/Office Park	70.1	61	131	282
17	Eastridge Av.	e/o Sycamore Canyon Bl.	Business/Office Park	69.9	RW	127	273
18	Eastridge Av.	e/o Box Springs Bl.	Business/Office Park	70.8	68	146	315
19	Eucalyptus Av.	w/o Valley Springs Pkwy.	Commercial	72.0	82	177	381
20	Eucalyptus Av.	e/o Valley Springs Pkwy.	Residential/Office	70.0	60	129	278
21	Eucalyptus Av.	e/o Day St.	Residential	69.5	RW	134	289
22	Towngate Dr.	e/o Eucalyptus Av.	Residential	66.1	RW	79	170
23	Alessandro Bl.	w/o Day St.	Commercial	72.2	94	203	436
24	Alessandro Bl.	e/o Day St.	Residential	72.2	93	201	434

[1] Source: City of Riverside General Plan Land Use/Urban Design Element, Figure LU-10 Land Use Policy Map.
[2] "RW" = Location of the respective noise contour falls within the right-of-way of the road.

TABLE 7-4: YEAR 2016 WITH PROJECT CONDITIONS NOISE CONTOURS

ID	Road	Segment	Adjacent Land Use[1]	CNEL at Nearest Adjacent Land Use (dBA)	Distance to Contour from Centerline (Feet)[2]		
					70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Sycamore Canyon Bl.	n/o Eastridge Av.	Business/Office Park	69.8	RW	114	247
2	Sycamore Canyon Bl.	s/o Eastridge Av.	Business/Office Park	69.8	RW	114	247
3	Box Springs Bl.	n/o Eastridge Av.	Business/Office Park	65.6	RW	48	103
4	Box Springs Bl.	s/o Eastridge Av.	Business/Office Park	61.8	RW	RW	58
5	Day St.	n/o SR-60 Fwy	Commercial	70.8	67	145	313
6	Day St.	n/o Canyon Springs Pkwy.	Commercial	72.4	86	186	400
7	Day St.	s/o Canyon Springs Pkwy.	Commercial	70.6	66	142	306
8	Day St.	s/o Campus Pkwy.	Commercial	70.3	62	134	289
9	Day St.	s/o Gateway Dr.	Commercial	68.9	RW	109	235
10	Day St.	n/o Eucalyptus Av.	Commercial	69.0	RW	110	237
11	Day St.	s/o Eucalyptus Av.	Residential	67.4	RW	80	172
12	Day St.	s/o Cottonwood Av.	Residential/Office	67.4	RW	64	138
13	Day St.	s/o Bay Av.	Residential/Office	67.2	RW	62	134
14	Day St.	s/o Alessandro Bl.	Commercial	66.0	RW	52	111
15	Eucalyptus Av.	s/o Towngate Dr.	Residential	68.5	RW	86	185
16	Eastridge Av.	w/o Sycamore Canyon Bl.	Business/Office Park	70.1	61	131	283
17	Eastridge Av.	e/o Sycamore Canyon Bl.	Business/Office Park	70.0	60	129	279
18	Eastridge Av.	e/o Box Springs Bl.	Business/Office Park	71.0	70	150	323
19	Eucalyptus Av.	w/o Valley Springs Pkwy.	Commercial	72.8	92	198	426
20	Eucalyptus Av.	e/o Valley Springs Pkwy.	Residential/Office	70.3	63	135	291
21	Eucalyptus Av.	e/o Day St.	Residential	69.8	RW	139	299
22	Towngate Dr.	e/o Eucalyptus Av.	Residential	66.5	RW	84	182
23	Alessandro Bl.	w/o Day St.	Commercial	72.2	94	203	438
24	Alessandro Bl.	e/o Day St.	Residential	72.2	94	203	436

[1] Source: City of Riverside General Plan Land Use/Urban Design Element, Figure LU-10 Land Use Policy Map.
[2] "RW" = Location of the respective noise contour falls within the right-of-way of the road.

TABLE 7-5: GP BUILDOUT WITHOUT PROJECT CONDITIONS NOISE CONTOURS

ID	Road	Segment	Adjacent Land Use[1]	CNEL at Nearest Adjacent Land Use (dBA)	Distance to Contour from Centerline (Feet)[2]		
					70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Sycamore Canyon Bl.	n/o Eastridge Av.	Business/Office Park	69.9	RW	116	250
2	Sycamore Canyon Bl.	s/o Eastridge Av.	Business/Office Park	70.0	55	118	254
3	Box Springs Bl.	n/o Eastridge Av.	Business/Office Park	65.7	RW	49	105
4	Box Springs Bl.	s/o Eastridge Av.	Business/Office Park	61.8	RW	RW	58
5	Day St.	n/o SR-60 Fwy	Commercial	70.6	66	143	307
6	Day St.	n/o Canyon Springs Pkwy.	Commercial	72.1	83	179	386
7	Day St.	s/o Canyon Springs Pkwy.	Commercial	70.1	61	132	284
8	Day St.	s/o Campus Pkwy.	Commercial	69.7	RW	124	267
9	Day St.	s/o Gateway Dr.	Commercial	68.7	RW	105	227
10	Day St.	n/o Eucalyptus Av.	Commercial	68.7	RW	105	227
11	Day St.	s/o Eucalyptus Av.	Residential	67.4	RW	80	172
12	Day St.	s/o Cottonwood Av.	Residential/Office	67.6	RW	66	141
13	Day St.	s/o Bay Av.	Residential/Office	67.7	RW	66	143
14	Day St.	s/o Alessandro Bl.	Commercial	66.2	RW	53	114
15	Eucalyptus Av.	s/o Towngate Dr.	Residential	68.5	RW	86	185
16	Eastridge Av.	w/o Sycamore Canyon Bl.	Business/Office Park	70.4	64	138	298
17	Eastridge Av.	e/o Sycamore Canyon Bl.	Business/Office Park	70.1	61	131	282
18	Eastridge Av.	e/o Box Springs Bl.	Business/Office Park	71.0	70	151	326
19	Eucalyptus Av.	w/o Valley Springs Pkwy.	Commercial	72.3	85	184	396
20	Eucalyptus Av.	e/o Valley Springs Pkwy.	Residential/Office	70.2	62	134	288
21	Eucalyptus Av.	e/o Day St.	Residential	69.8	RW	139	299
22	Towngate Dr.	e/o Eucalyptus Av.	Residential	66.5	RW	84	182
23	Alessandro Bl.	w/o Day St.	Commercial	73.0	107	230	495
24	Alessandro Bl.	e/o Day St.	Residential	72.4	97	208	448

[1] Source: City of Riverside General Plan Land Use/Urban Design Element, Figure LU-10 Land Use Policy Map.
[2] "RW" = Location of the respective noise contour falls within the right-of-way of the road.

TABLE 7-6: GP BUILDOUT WITH PROJECT CONDITIONS NOISE CONTOURS

ID	Road	Segment	Adjacent Land Use[1]	CNEL at Nearest Adjacent Land Use (dBA)	Distance to Contour from Centerline (Feet)[2]		
					70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Sycamore Canyon Bl.	n/o Eastridge Av.	Business/Office Park	70.0	55	118	255
2	Sycamore Canyon Bl.	s/o Eastridge Av.	Business/Office Park	70.0	55	118	254
3	Box Springs Bl.	n/o Eastridge Av.	Business/Office Park	65.8	RW	50	107
4	Box Springs Bl.	s/o Eastridge Av.	Business/Office Park	61.9	RW	RW	59
5	Day St.	n/o SR-60 Fwy	Commercial	71.0	70	150	324
6	Day St.	n/o Canyon Springs Pkwy.	Commercial	72.6	89	192	413
7	Day St.	s/o Canyon Springs Pkwy.	Commercial	70.8	68	147	316
8	Day St.	s/o Campus Pkwy.	Commercial	70.5	64	139	299
9	Day St.	s/o Gateway Dr.	Commercial	69.1	RW	113	244
10	Day St.	n/o Eucalyptus Av.	Commercial	69.2	RW	114	246
11	Day St.	s/o Eucalyptus Av.	Residential	67.7	RW	83	179
12	Day St.	s/o Cottonwood Av.	Residential/Office	67.9	RW	68	147
13	Day St.	s/o Bay Av.	Residential/Office	67.9	RW	68	147
14	Day St.	s/o Alessandro Bl.	Commercial	66.2	RW	53	115
15	Eucalyptus Av.	s/o Towngate Dr.	Residential	68.7	RW	88	189
16	Eastridge Av.	w/o Sycamore Canyon Bl.	Business/Office Park	70.5	64	139	299
17	Eastridge Av.	e/o Sycamore Canyon Bl.	Business/Office Park	70.2	62	134	288
18	Eastridge Av.	e/o Box Springs Bl.	Business/Office Park	71.2	72	155	334
19	Eucalyptus Av.	w/o Valley Springs Pkwy.	Commercial	73.0	95	204	440
20	Eucalyptus Av.	e/o Valley Springs Pkwy.	Residential/Office	70.5	65	140	301
21	Eucalyptus Av.	e/o Day St.	Residential	69.9	RW	142	306
22	Towngate Dr.	e/o Eucalyptus Av.	Residential	66.7	RW	87	187
23	Alessandro Bl.	w/o Day St.	Commercial	73.0	107	231	497
24	Alessandro Bl.	e/o Day St.	Residential	72.4	97	209	450

[1] Source: City of Riverside General Plan Land Use/Urban Design Element, Figure LU-10 Land Use Policy Map.
[2] "RW" = Location of the respective noise contour falls within the right-of-way of the road.

7.2 EXISTING PROJECT TRAFFIC NOISE LEVEL CONTRIBUTIONS

Table 7-7 presents a comparison of the Existing without and with Project conditions CNEL noise levels. From this we can see that the unmitigated without Project exterior noise levels are expected to range from 53.6 to 71.4 dBA CNEL. Existing with Project noise level contours are expected to range from 54.7 to 71.9 dBA CNEL. Overall the Project is expected to generate an unmitigated exterior noise level increase of up to 1.1 dBA CNEL. A review of the data in Table 7-7 suggests that the Project's contribution to the existing noise level is *less than significant* for all of the study area roadway segments. Based on the criteria in Section 4, the Project will create a *less than significant* off-site traffic noise level impact on the study area roadway segments for Existing conditions.

7.3 YEAR 2016 PROJECT TRAFFIC NOISE LEVEL CONTRIBUTIONS

Table 7-8 presents a comparison of the Year 2016 without and with Project conditions CNEL noise levels. Table 7-3 shows that the unmitigated exterior noise levels are expected to range from 61.5 to 72.2 dBA CNEL. Table 7-4 presents the Year 2016 with Project conditions noise level contours that are expected to range from 61.8 to 72.8 dBA CNEL. As shown on Table 7-8 the Project is expected to generate an unmitigated exterior noise level increase of up to 0.8 dBA CNEL. Based on the noise impact significance criteria described in Section 4, for Year 2016 conditions, the Project will create a *less than significant* impact on the study area roadway segments.

7.4 GP BUILDOUT PROJECT TRAFFIC NOISE LEVEL CONTRIBUTIONS

Table 7-9 presents a comparison of the GP Buildout without and with Project conditions CNEL noise levels. Table 7-5 shows that the unmitigated exterior noise levels are expected to range from 61.8 to 73.0 dBA CNEL. Table 7-6 presents the GP Buildout with Project conditions noise level contours that are expected to range from 61.9 to 73.0 dBA CNEL. As shown on Table 7-9 the Project is expected to generate an unmitigated exterior noise level increase of up to 0.8 dBA CNEL. Based on the noise impact significance criteria described in Section 4, the Project-related noise level increases on the 24 study area roadway segments will not be significant. Therefore, the Project will create a *less than significant* off-site traffic noise level impact on the study area roadway segments for GP Buildout conditions.

7.5 PROJECT TRAFFIC NOISE CONTRIBUTIONS

The off-site traffic noise analysis shows that the Existing Project noise level contribution of up to 1.1 dBA CNEL is expected to decrease to 0.8 dBA CNEL by GP Buildout conditions. This shows that the Project's incremental traffic-related noise level increases at land uses adjacent to roadways conveying Project traffic will diminish over time. This occurs as the background traffic on the study area roadway segments increases and the Project represents a smaller percentage of the overall traffic volume. The off-site traffic noise analysis indicates that the Project's contributions to roadway noise levels will be *less than significant*.

TABLE 7-7: EXISTING OFF-SITE PROJECT RELATED TRAFFIC NOISE IMPACTS

ID	Road	Segment	Adjacent Land Use[1]	CNEL at Adjacent Land Use (dBA)			Potential Significant Impact?[2]
				No Project	With Project	Project Addition	
1	Sycamore Canyon Bl.	n/o Eastridge Av.	Business/Office Park	67.7	67.9	0.2	No
2	Sycamore Canyon Bl.	s/o Eastridge Av.	Business/Office Park	68.0	68.0	0.0	No
3	Box Springs Bl.	n/o Eastridge Av.	Business/Office Park	60.6	60.9	0.3	No
4	Box Springs Bl.	s/o Eastridge Av.	Business/Office Park	56.6	57.4	0.8	No
5	Day St.	n/o SR-60 Fwy	Commercial	69.9	70.3	0.4	No
6	Day St.	n/o Canyon Springs Pkwy.	Commercial	71.4	71.9	0.5	No
7	Day St.	s/o Canyon Springs Pkwy.	Commercial	69.3	70.1	0.8	No
8	Day St.	s/o Campus Pkwy.	Commercial	68.9	69.7	0.8	No
9	Day St.	s/o Gateway Dr.	Commercial	67.7	68.2	0.5	No
10	Day St.	n/o Eucalyptus Av.	Commercial	67.7	68.3	0.6	No
11	Day St.	s/o Eucalyptus Av.	Residential	64.9	65.4	0.5	No
12	Day St.	s/o Cottonwood Av.	Residential/Office	63.7	64.3	0.6	No
13	Day St.	s/o Bay Av.	Residential/Office	63.4	63.9	0.5	No
14	Day St.	s/o Alessandro Bl.	Commercial	53.6	54.7	1.1	No
15	Eucalyptus Av.	s/o Towngate Dr.	Residential	66.6	66.8	0.2	No
16	Eastridge Av.	w/o Sycamore Canyon Bl.	Business/Office Park	64.8	64.9	0.1	No
17	Eastridge Av.	e/o Sycamore Canyon Bl.	Business/Office Park	67.5	67.7	0.2	No
18	Eastridge Av.	e/o Box Springs Bl.	Business/Office Park	68.3	68.6	0.3	No
19	Eucalyptus Av.	w/o Valley Springs Pkwy.	Commercial	70.3	71.3	1.0	No
20	Eucalyptus Av.	e/o Valley Springs Pkwy.	Residential/Office	67.8	68.3	0.5	No
21	Eucalyptus Av.	e/o Day St.	Residential	66.2	66.6	0.4	No
22	Towngate Dr.	e/o Eucalyptus Av.	Residential	63.8	64.1	0.3	No
23	Alessandro Bl.	w/o Day St.	Commercial	70.3	70.4	0.1	No
24	Alessandro Bl.	e/o Day St.	Residential	70.5	70.5	0.0	No

[1] Source: City of Riverside General Plan Land Use/Urban Design Element, Figure LU-10 Land Use Policy Map.
[2] Significance of Cumulative Impacts (Table 4-1).

TABLE 7-8: YEAR 2016 OFF-SITE PROJECT RELATED TRAFFIC NOISE IMPACTS

ID	Road	Segment	Adjacent Land Use[1]	CNEL at Adjacent Land Use (dBA)			Potential Significant Impact?[2]
				No Project	With Project	Project Addition	
1	Sycamore Canyon Bl.	n/o Eastridge Av.	Business/Office Park	69.6	69.8	0.2	No
2	Sycamore Canyon Bl.	s/o Eastridge Av.	Business/Office Park	69.7	69.8	0.1	No
3	Box Springs Bl.	n/o Eastridge Av.	Business/Office Park	65.5	65.6	0.1	No
4	Box Springs Bl.	s/o Eastridge Av.	Business/Office Park	61.5	61.8	0.3	No
5	Day St.	n/o SR-60 Fwy	Commercial	70.4	70.8	0.4	No
6	Day St.	n/o Canyon Springs Pkwy.	Commercial	71.9	72.4	0.5	No
7	Day St.	s/o Canyon Springs Pkwy.	Commercial	69.9	70.6	0.7	No
8	Day St.	s/o Campus Pkwy.	Commercial	69.5	70.3	0.8	No
9	Day St.	s/o Gateway Dr.	Commercial	68.4	68.9	0.5	No
10	Day St.	n/o Eucalyptus Av.	Commercial	68.4	69.0	0.6	No
11	Day St.	s/o Eucalyptus Av.	Residential	67.1	67.4	0.3	No
12	Day St.	s/o Cottonwood Av.	Residential/Office	67.1	67.4	0.3	No
13	Day St.	s/o Bay Av.	Residential/Office	67.0	67.2	0.2	No
14	Day St.	s/o Alessandro Bl.	Commercial	66.0	66.0	0.0	No
15	Eucalyptus Av.	s/o Towngate Dr.	Residential	68.3	68.5	0.2	No
16	Eastridge Av.	w/o Sycamore Canyon Bl.	Business/Office Park	70.1	70.1	0.0	No
17	Eastridge Av.	e/o Sycamore Canyon Bl.	Business/Office Park	69.9	70.0	0.1	No
18	Eastridge Av.	e/o Box Springs Bl.	Business/Office Park	70.8	71.0	0.2	No
19	Eucalyptus Av.	w/o Valley Springs Pkwy.	Commercial	72.0	72.8	0.8	No
20	Eucalyptus Av.	e/o Valley Springs Pkwy.	Residential/Office	70.0	70.3	0.3	No
21	Eucalyptus Av.	e/o Day St.	Residential	69.5	69.8	0.3	No
22	Towngate Dr.	e/o Eucalyptus Av.	Residential	66.1	66.5	0.4	No
23	Alessandro Bl.	w/o Day St.	Commercial	72.2	72.2	0.0	No
24	Alessandro Bl.	e/o Day St.	Residential	72.2	72.2	0.0	No

[1] Source: City of Riverside General Plan Land Use/Urban Design Element, Figure LU-10 Land Use Policy Map.
[2] Significance of Cumulative Impacts (Table 4-1).

TABLE 7-9: GP BUILDOUT OFF-SITE PROJECT RELATED TRAFFIC NOISE IMPACTS

ID	Road	Segment	Adjacent Land Use[1]	CNEL at Adjacent Land Use (dBA)			Potential Significant Impact?[2]
				No Project	With Project	Project Addition	
1	Sycamore Canyon Bl.	n/o Eastridge Av.	Business/Office Park	69.9	70.0	0.1	No
2	Sycamore Canyon Bl.	s/o Eastridge Av.	Business/Office Park	70.0	70.0	0.0	No
3	Box Springs Bl.	n/o Eastridge Av.	Business/Office Park	65.7	65.8	0.1	No
4	Box Springs Bl.	s/o Eastridge Av.	Business/Office Park	61.8	61.9	0.1	No
5	Day St.	n/o SR-60 Fwy	Commercial	70.6	71.0	0.4	No
6	Day St.	n/o Canyon Springs Pkwy.	Commercial	72.1	72.6	0.5	No
7	Day St.	s/o Canyon Springs Pkwy.	Commercial	70.1	70.8	0.7	No
8	Day St.	s/o Campus Pkwy.	Commercial	69.7	70.5	0.8	No
9	Day St.	s/o Gateway Dr.	Commercial	68.7	69.1	0.4	No
10	Day St.	n/o Eucalyptus Av.	Commercial	68.7	69.2	0.5	No
11	Day St.	s/o Eucalyptus Av.	Residential	67.4	67.7	0.3	No
12	Day St.	s/o Cottonwood Av.	Residential/Office	67.6	67.9	0.3	No
13	Day St.	s/o Bay Av.	Residential/Office	67.7	67.9	0.2	No
14	Day St.	s/o Alessandro Bl.	Commercial	66.2	66.2	0.0	No
15	Eucalyptus Av.	s/o Towngate Dr.	Residential	68.5	68.7	0.2	No
16	Eastridge Av.	w/o Sycamore Canyon Bl.	Business/Office Park	70.4	70.5	0.1	No
17	Eastridge Av.	e/o Sycamore Canyon Bl.	Business/Office Park	70.1	70.2	0.1	No
18	Eastridge Av.	e/o Box Springs Bl.	Business/Office Park	71.0	71.2	0.2	No
19	Eucalyptus Av.	w/o Valley Springs Pkwy.	Commercial	72.3	73.0	0.7	No
20	Eucalyptus Av.	e/o Valley Springs Pkwy.	Residential/Office	70.2	70.5	0.3	No
21	Eucalyptus Av.	e/o Day St.	Residential	69.8	69.9	0.1	No
22	Towngate Dr.	e/o Eucalyptus Av.	Residential	66.5	66.7	0.2	No
23	Alessandro Bl.	w/o Day St.	Commercial	73.0	73.0	0.0	No
24	Alessandro Bl.	e/o Day St.	Residential	72.4	72.4	0.0	No

[1] Source: City of Riverside General Plan Land Use/Urban Design Element, Figure LU-10 Land Use Policy Map.
[2] Significance of Cumulative Impacts (Table 4-1).

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8 ON-SITE TRAFFIC NOISE IMPACTS

An on-site exterior noise impact analysis has been completed to determine the traffic noise exposure and to identify potential necessary Project Design Features for the proposed Canyon Springs Healthcare Campus & Senior Living. It is expected that the primary source of noise impacts to the Project site will be traffic noise from the I-215 Freeway, the SR-60 Freeway, Valley Springs Parkway, Day Street, Eucalyptus Avenue, and Gateway Drive. The Project will also experience some background traffic noise impacts from the Project's internal streets, however, due to the distance, topography and low traffic volume/speed, traffic noise from these roads will not make a significant contribution to the noise environment.

8.1 ON-SITE EXTERIOR NOISE ANALYSIS

Using the FHWA traffic noise prediction model and the parameters outlined in Tables 6-3, 6-5, and 6-6, the expected future exterior noise levels for individual buildings were calculated. Table 8-1 presents a summary of future exterior noise level impacts at the first-floor building façades. The on-site traffic noise level impacts indicate that the buildings facing the I-215 Freeway, the SR-60 Freeway, Valley Springs Parkway, Day Street, Eucalyptus Avenue, and Gateway Drive will experience exterior noise levels ranging from 43.6 to 68.3 dBA CNEL. The on-site traffic noise analysis calculations are provided in Appendix 8.1.

To satisfy the City of Riverside *conditionally acceptable* 70 dBA CNEL exterior noise level criteria for hospital, senior housing, independent and assisted living, and skilled nursing facility land uses and the 75 dBA CNEL for medical office building land uses, no exterior noise Project Design Features are required. This noise analysis shows that the Canyon Springs Healthcare Campus & Senior Living Project will satisfy the City of Riverside *conditionally acceptable* 70 dBA CNEL exterior noise level criteria for hospital, senior housing, independent and assisted living, and skilled nursing facility land uses and 75 dBA CNEL for medical office building land uses.

TABLE 8-1: EXTERIOR NOISE LEVELS (CNEL)

Building	Façade	Roadway	Exterior Noise Level (dBA CNEL)
Senior Housing	West	I-215 Fwy	63.6
		Valley Springs Pkwy.	
	North	SR-60 Fwy	44.1
Independent Living	North	SR-60 Fwy	43.6
	East	Day St.	54.3
Skilled Nursing	East	Day St.	60.9
	South	Gateway Dr.	63.7
Assisted Living	South	Gateway Dr.	64.2
Hospital Phase 2	North	Gateway Dr.	62.6
Hospital Phase 1	West	I-215 Fwy	67.9
		Valley Springs Pkwy.	
Medical Office Bldg. 3	West	I-215 Fwy	68.3
		Valley Springs Pkwy.	
	South	Eucalyptus Av.	59.8
Medical Office Bldg. 4	West	Valley Springs Pkwy.	61.9
	South	Eucalyptus Av.	60.9
Medical Office Bldg. 5	East	Day St.	56.1
	South	Eucalyptus Av.	55.0
Medical Office Bldg. 1	North	Gateway Dr.	52.9
Medical Office Bldg. 2	North	Gateway Dr.	52.9

8.2 ON-SITE INTERIOR NOISE ANALYSIS

To ensure that the interior noise levels comply with the City of Riverside 45 dBA CNEL interior noise standards, future noise levels were calculated at the first, second, and third floor building facades.

8.2.1 NOISE LEVEL REDUCTION METHODOLOGY

The interior noise level is the difference between the predicted exterior noise level at the building facade and the noise reduction of the structure. Typical building construction will provide a Noise Level Reduction (NLR) of approximately 12 dBA with "windows open" and a minimum 25 dBA noise reduction with "windows closed." However, sound leaks, cracks and openings within the window assembly can greatly diminish its effectiveness in reducing noise. Several methods are used to improve interior noise reduction, including: (1) weather-stripped solid core exterior doors; (2) upgraded dual glazed windows; (3) mechanical ventilation/air conditioning; and (4) exterior wall/roof assembles free of cut outs or openings.

8.2.2 INTERIOR NOISE LEVEL ASSESSMENT

To provide the necessary interior noise level reduction, Tables 8-2 to 8-4 indicate that buildings adjacent to the I-215 Freeway, the SR-60 Freeway, Valley Springs Parkway, Day Street, Eucalyptus Avenue, and Gateway Drive will require a windows closed condition and a means of mechanical ventilation (e.g. air conditioning). Table 8-2 shows that the future noise levels at the first-floor building façade are expected to range from 43.6 to 68.3 dBA CNEL. The first-floor interior noise level analysis shows that the City of Riverside 45 dBA CNEL interior noise level standards can be satisfied using standard windows with a minimum STC rating of 27. Table 8-3 shows that the future noise levels at the second-floor building façade are expected to range from 41.3 to 68.3 dBA CNEL, and windows with a minimum STC rating of 27 are expected to satisfy the City of Riverside's 45 dBA CNEL interior noise level standards. Table 8-4 shows that the future noise levels at the third-floor building façade are expected to range from 40.4 to 68.2 dBA CNEL, and windows with a minimum STC rating of 27 are expected to satisfy the City of Riverside's 45 dBA CNEL interior noise level standards.

With the Project Design Features shown on Exhibit ES-A, and described in the Executive Summary, the Canyon Springs Healthcare Campus & Senior Living Project will satisfy the City of Riverside interior noise levels standards.

TABLE 8-2: FIRST FLOOR INTERIOR NOISE IMPACTS (CNEL)

Building	Roadway	Location	Noise Level at Façade[1]	Required Interior Noise Reduction[2]	Estimated Interior Noise Reduction[3]	Upgraded Windows[4]	Interior Noise Level[5]
Senior Housing	I-215/Valley Springs	West	63.6	18.6	25	No	38.6
	SR-60 Fwy	North	44.1	0.0	25	No	19.1
Independent Living	SR-60 Fwy	North	43.6	0.0	25	No	18.6
	Day St.	East	54.3	9.3	25	No	29.3
Skilled Nursing	Day St.	East	60.9	15.9	25	No	35.9
	Gateway Dr.	South	63.7	18.7	25	No	38.7
Assisted Living	Gateway Dr.	South	64.2	19.2	25	No	39.2
Hospital Phase 2	Gateway Dr.	North	62.6	17.6	25	No	37.6
Hospital Phase 1	I-215/Valley Springs	West	67.9	22.9	25	No	42.9
MOB 3	I-215/Valley Springs	West	68.3	23.3	25	No	43.3
	Eucalyptus Av.	South	59.8	14.8	25	No	34.8
MOB 4	Valley Springs Pkwy.	West	61.9	16.9	25	No	36.9
	Eucalyptus Av.	South	60.9	15.9	25	No	35.9
MOB 5	Day St.	East	56.1	11.1	25	No	31.1
	Eucalyptus Av.	South	55.0	10.0	25	No	30.0
MOB 1	Gateway Dr.	North	52.9	7.9	25	No	27.9
MOB 2	Gateway Dr.	North	52.9	7.9	25	No	27.9

[1] Exterior noise level at the facade with a windows closed condition requiring a means of mechanical ventilation (e.g. air conditioning).
[2] Noise reduction required to satisfy the 45 dBA CNEL interior noise standards.
[3] A minimum of 25 dBA noise reduction is assumed with standard building construction.
[4] Does the required interior noise reduction trigger upgraded windows with a minimum STC rating of greater than 27?
[5] Estimated interior noise level with minimum STC rating for all windows.
"MOB" = Medical Office Building

TABLE 8-3: SECOND FLOOR INTERIOR NOISE IMPACTS (CNEL)

Building	Roadway	Location	Noise Level at Façade[1]	Required Interior Noise Reduction[2]	Estimated Interior Noise Reduction[3]	Upgraded Windows[4]	Interior Noise Level[5]
Senior Housing	I-215/Valley Springs	West	63.6	18.6	25	No	38.6
	SR-60 Fwy	North	41.8	0.0	25	No	16.8
Independent Living	SR-60 Fwy	North	41.3	0.0	25	No	16.3
	Day St.	East	54.3	9.3	25	No	29.3
Skilled Nursing	Day St.	East	60.9	15.9	25	No	35.9
	Gateway Dr.	South	63.6	18.6	25	No	38.6
Assisted Living	Gateway Dr.	South	64.0	19.0	25	No	39.0
Hospital Phase 2	Gateway Dr.	North	62.6	17.6	25	No	37.6
Hospital Phase 1	I-215/Valley Springs	West	67.9	22.9	25	No	42.9
MOB 3	I-215/Valley Springs	West	68.3	23.3	25	No	43.3
	Eucalyptus Av.	South	59.8	14.8	25	No	34.8
MOB 4	Valley Springs Pkwy.	West	61.8	16.8	25	No	36.8
	Eucalyptus Av.	South	60.9	15.9	25	No	35.9
MOB 5	Day St.	East	56.1	11.1	25	No	31.1
	Eucalyptus Av.	South	55.0	10.0	25	No	30.0
MOB 1	Gateway Dr.	North	52.9	7.9	25	No	27.9
MOB 2	Gateway Dr.	North	52.9	7.9	25	No	27.9

[1] Exterior noise level at the facade with a windows closed condition requiring a means of mechanical ventilation (e.g. air conditioning).
[2] Noise reduction required to satisfy the 45 dBA CNEL interior noise standards.
[3] A minimum of 25 dBA noise reduction is assumed with standard building construction.
[4] Does the required interior noise reduction trigger upgraded windows with a minimum STC rating of greater than 27?
[5] Estimated interior noise level with minimum STC rating for all windows.
"MOB" = Medical Office Building

TABLE 8-4: THIRD FLOOR INTERIOR NOISE IMPACTS (CNEL)

Building	Roadway	Location	Noise Level at Façade[1]	Required Interior Noise Reduction[2]	Estimated Interior Noise Reduction[3]	Upgraded Windows[4]	Interior Noise Level[5]
Senior Housing	I-215/Valley Springs	West	63.6	18.6	25	No	38.6
	SR-60 Fwy	North	40.9	0.0	25	No	15.9
Independent Living	SR-60 Fwy	North	40.4	0.0	25	No	15.4
	Day St.	East	54.3	9.3	25	No	29.3
Skilled Nursing	Day St.	East	60.8	15.8	25	No	35.8
	Gateway Dr.	South	63.4	18.4	25	No	38.4
Assisted Living	Gateway Dr.	South	63.7	18.7	25	No	38.7
Hospital Phase 2	Gateway Dr.	North	62.4	17.4	25	No	37.4
Hospital Phase 1	I-215/Valley Springs	West	67.8	22.8	25	No	42.8
MOB 3	I-215/Valley Springs	West	68.2	23.2	25	No	43.2
	Eucalyptus Av.	South	59.8	14.8	25	No	34.8
MOB 4	Valley Springs Pkwy.	West	61.8	16.8	25	No	36.8
	Eucalyptus Av.	South	60.9	15.9	25	No	35.9
MOB 5	Day St.	East	56.1	11.1	25	No	31.1
	Eucalyptus Av.	South	55.0	10.0	25	No	30.0
MOB 1	Gateway Dr.	North	52.9	7.9	25	No	27.9
MOB 2	Gateway Dr.	North	52.9	7.9	25	No	27.9

[1] Exterior noise level at the facade with a windows closed condition requiring a means of mechanical ventilation (e.g. air conditioning).
[2] Noise reduction required to satisfy the 45 dBA CNEL interior noise standards.
[3] A minimum of 25 dBA noise reduction is assumed with standard building construction.
[4] Does the required interior noise reduction trigger upgraded windows with a minimum STC rating of greater than 27?
[5] Estimated interior noise level with minimum STC rating for all windows.
"MOB" = Medical Office Building

9 RECEIVER LOCATIONS

To assess the potential for long-term operational and short-term construction noise impacts, the following seven receiver locations as shown on Exhibit 9-A were identified as representative locations for analysis. Sensitive receivers 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 land uses are generally considered to include: schools, hospitals, single-family dwellings, mobile home parks, churches, libraries, and recreation areas. Moderately noise-sensitive land uses typically include: multi-family dwellings, hotels, motels, dormitories, out-patient clinics, cemeteries, golf courses, country clubs, athletic/tennis clubs, and equestrian clubs. Land uses that are considered relatively insensitive to noise include business, commercial, and professional developments. Land uses that are typically not affected by noise include: industrial, manufacturing, utilities, agriculture, natural open space, undeveloped land, parking lots, warehousing, liquid and solid waste facilities, salvage yards, and transit terminals.

Representative sensitive receivers in the vicinity of the Project site include Edgemont Elementary School located at receiver locations R1 and R2, single-family residential homes located at receiver locations R3 to R6, and the multi-family residential community at receiver location R7. The closest sensitive receivers are represented by locations R1 and R3 at a distance of approximately 11 feet south of the Project site.

R1: Located approximately 11 feet south of the Project site, R1 represents the northern property line of Edgemont Elementary School. A 24-hour noise level measurement, L3, was taken at this location to describe the existing ambient noise conditions.

R2: Location R2 represents an existing playground within the Edgemont Elementary School located approximately 17 feet east of the Project site boundary.

R3: Location R3 represents the existing residential home located roughly 11 feet south of the Project site along Eucalyptus Avenue. A 24-hour noise level measurement, L2, was taken near this location to describe the existing ambient noise environment.

R4: Located approximately 25 feet south of the Project site, R4 represents the existing residential homes adjacent to the southern property line the Project site.

R5: Location R5 represents the existing single-family homes located approximately 214 feet south of the Project site across Eucalyptus Avenue. A 24-hour noise level measurement was taken near this location, L1, to describe the existing ambient noise environment.

R6: Location R6 represents an existing residential home which is situated approximately 450 feet south of the Project site boundary, south of Eucalyptus Avenue.

R7: At a distance of approximately 598 feet southeast of the Project site, location R7 represents the noise-sensitive multi-family residential community on the southeast corner of Eucalyptus Avenue and Day Street.

EXHIBIT 9-A: RECEIVER LOCATIONS

10 OPERATIONAL NOISE IMPACTS

This section analyzes the potential stationary-source operational noise impacts at nearby receiver locations resulting from operation of the proposed Canyon Springs Healthcare Campus & Senior Living Project. Exhibit 10-A identifies the representative receiver locations and noise source locations used to assess the operational noise levels.

10.1 REFERENCE NOISE LEVELS

To estimate the potential stationary-source noise impacts, reference noise level measurements were collected from similar types of activities to represent the noise levels expected with the development of the proposed Canyon Springs Healthcare Campus & Senior Living Project. This section provides a detailed description of the reference noise level measurements shown on Table 10-1 used to estimate the stationary-source noise impacts. The reference noise levels presented on Table 10-1 are shown at a normalized reference distance of 50 feet for comparison at a uniform distance. It is important to note that the following projected noise levels assume the worst-case noise environment with parking structure and parking lot vehicle movements, mechanical ventilation (roof-top air conditioning) units, emergency backup generators (central energy plant), emergency vehicles (ambulances), emergency helicopter activities, and other ancillary uses (e.g., on-site retail such as coffee shops, deli, lunch rooms, outdoor vendor carts, car wash services, valet parking, golf cart transport for the elderly or infirm patients, flower and gift shop, pharmacy, and medical retail (medical supplies); personal services such as barber shop, beauty salon, spa, tailor, dry cleaner, and self-service laundry; and restaurants (sit-down, quick-serve, and take-out all operating simultaneously. In reality, these noise level impacts will vary throughout the day.

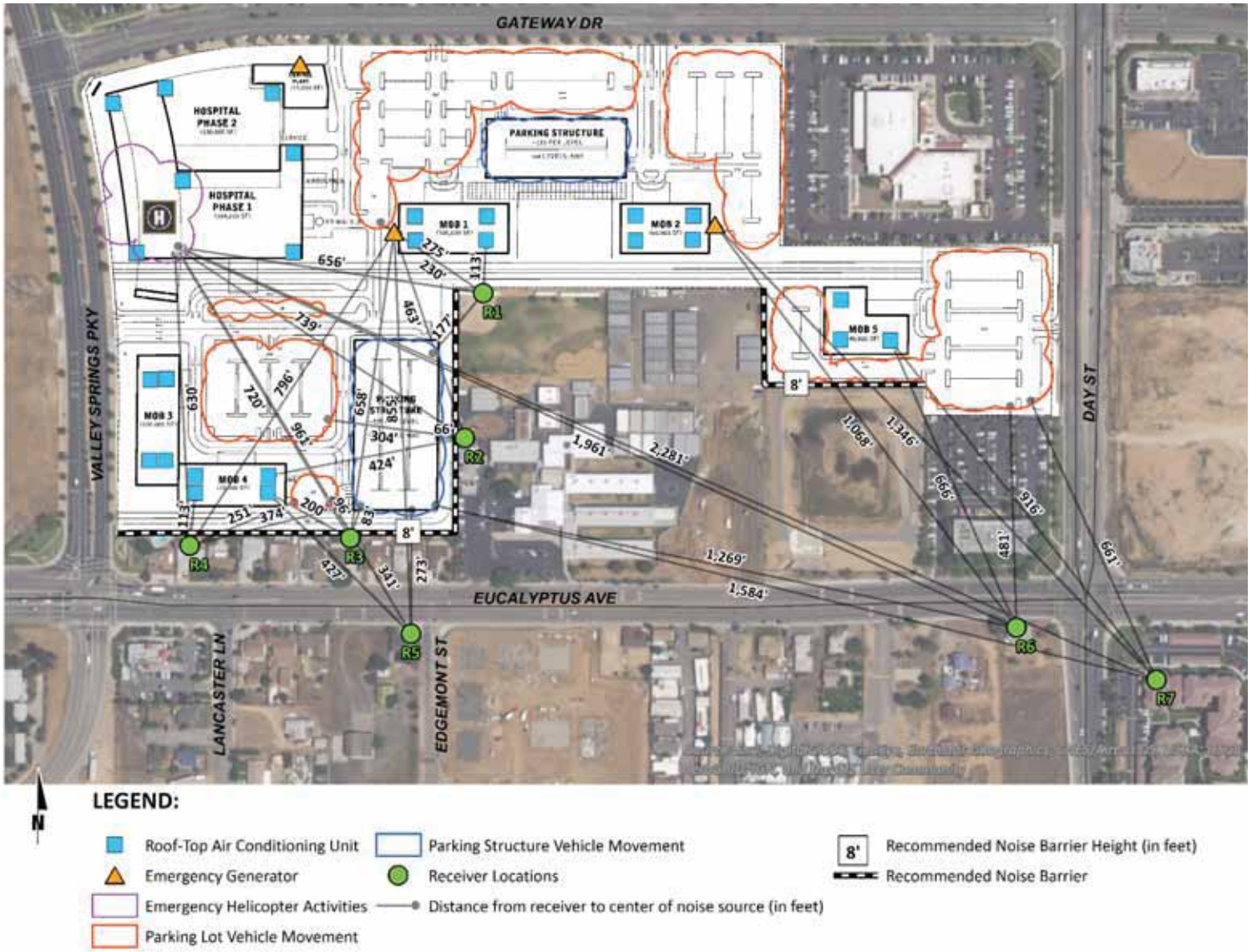
Due to the nature of emergency vehicle-related noise sources (e.g., sirens, horns), the California Vehicle Code provides an exemption for these unique noise activities. California Vehicle Code, Sections 21055 and 27007, exempt drivers of emergency vehicles and sound amplification equipment of emergency vehicles, respectively. Section 21055 states that emergency vehicles *driven in response to an emergency or while engaged in rescue operations* and the sirens used *reasonably necessary* are considered exempt from California Vehicle Code regulations. Further, Section 27007 indicates that *sound amplification systems which can be heard outside the vehicle from 50 or more feet* are prohibited, *unless that system is being operated to request assistance or warn of a hazardous situation.* The exemption is for emergency vehicle sirens is explicit when it states *this section does not apply to authorized emergency vehicles or vehicles operated by gas, electric, communications, or water utilities*. Although the City of Riverside Municipal Code is silent regarding noise from emergency vehicles, this noise study considers the exemption found in the California Vehicle Code, Sections 21055 and 27007, for noise from emergency vehicles related to the Project.

TABLE 10-1: REFERENCE NOISE LEVEL MEASUREMENTS

Noise Source	Dist. From Source (Feet)	Noise Source Height (Feet)	Hourly Activity (Minutes)[7]		Reference Noise Levels (dBA) @ Reference Distance		Reference Noise Levels (dBA) @ 50 Feet	
			Day	Night	Leq (Energy Avg.)	L_{50} (30 mins)	Leq (Energy Avg.)	L_{50} (30 mins)
Parking Structure Vehicle Movement[1]	20'	5'	60	60	65.9	62.5	59.9	56.5
Parking Lot Vehicle Movement[2]	20'	5'	60	60	62.9	54.5	56.9	48.5
Roof-Top Air Conditioning Unit[3]	5'	25'	39	28	77.2	74.4	57.2	54.4
Emergency Generator[4]	50'	10'	30	30	72.0	72.0	72.0	72.0
Typical Helicopter Activities[5]	200'	15'	30	30	70.5	70.5	82.5	82.5
Trauma Helicopter Activities[6]	400'	15'	5	5	81.7	81.7	99.8	99.8

[1] As measured by Urban Crossroads, Inc. during peak activity at the EV Free Church of Fullerton three-story parking garage on Sunday, September 15, 2013.
[2] As measured by Urban Crossroads, Inc. during peak activity at the Water of Life Church overflow parking lot on Sunday, September 15, 2013.
[3] As measured by Urban Crossroads, Inc. on 7/27/2015 at the Santee Walmart located at 170 Town Center Parkway.
[4] Worst-case emergency generator reference noise level based on a 1000 kilowatt Caterpillar XQ1000 generator.
[5] Source: Highest reference noise level for a helicopter provided in the Examination of the low frequency limit for helicopter noise data in the FAA Aviation Environmental Design Tool and INM, Noise-Con 2010.
[6] Source: UH-60A Blackhawk helicopter data provided by the Operational Noise Data for UH-60A and CH-47C Army Helicopters prepared by the United States Army Corps of Engineers, August 1982.
[7] Duration (minutes within the hour) of noise activity during peak hourly conditions.
"Day" = 7:00 a.m. to 10:00 p.m.; "Night" = 10:00 p.m. to 7:00 a.m.

EXHIBIT 10-A: OPERATIONAL NOISE SOURCE LOCATIONS



10.1.1 PARKING STRUCTURE VEHICLE MOVEMENT

To determine the noise level impacts associated with parking structure vehicle movement, Urban Crossroads collected reference noise level measurements at the Evangelical Free Church of Fullerton on Sunday, September 15, 2013. The Evangelical Free Church of Fullerton provides a three-level parking structure to accommodate peak Sunday worship services. Parking in the structure is controlled with volunteer traffic control guides to manage the flow of cars. The noise levels observed at the Evangelical Free Church of Fullerton were used to represent those at the Canyon Springs Healthcare Campus & Senior Living parking structures. The parking structure short-term noise level measurements indicate that the parking structure vehicle movement generates a noise level of 59.9 dBA Leq at a uniform reference distance of 50 feet. Parking structure vehicle movement within the Project site is expected to operate for 60 minutes during typical hourly daytime and nighttime conditions.

10.1.2 PARKING LOT VEHICLE MOVEMENT

To estimate the potential noise level impacts associated with proposed parking lots within the Canyon Springs Healthcare Campus & Senior Living site, reference noise level measurements were taken during peak worship services on Sunday, September 15, 2013 in Lot A of the Water of Life Church. The projected noise levels from the parking lots within the Project site are expected to reflect the noise levels observed at Lot A. The reference noise level measurement taken at Lot A measured 56.9 dBA Leq when normalized at 50 feet during peak conditions. Parking lot vehicle movement within the Project site is expected to operate for 60 minutes during typical hourly daytime and nighttime conditions.

10.1.3 ROOF-TOP AIR CONDITIONING UNITS

In order to assess the impacts created by the roof-top mechanical ventilation equipment at the Project site, reference noise levels measurements were taken at the Santee Walmart on July 27th, 2015. Located at 170 Town Center Parkway in the City of Santee, the noise level measurements describe a single mechanical roof-top air conditioning unit on the roof of an existing Walmart store. The reference noise level represents a Lennox SCA120 series 10-ton model packaged air conditioning unit. The reference noise level noise level at a uniform distance of 50 feet from the unit was measured at 57.2 dBA Leq. The operating conditions of the reference noise level measurement reflect peak summer cooling requirements with measured temperatures approaching 96 degrees Fahrenheit (°F) with average daytime temperatures of 82°F. The roof-top air condition units were observed to operate the most during the daytime hours, for a total of 39 minutes per hour, and during the nighttime hours for 28 minutes per hour. For the purpose of this noise analysis, the roof-top mechanical ventilation equipment is located at the roof elevation of each building provided in the Project *Building Height Diagram*. (23) The noise attenuation provided by a parapet wall is not included in this reference noise level measurement.

10.1.4 EMERGENCY BACKUP GENERATORS

Based on information provided by the Project team, the Project includes the use of six backup emergency generators for the hospital, medical office buildings 1 and 2, and senior housing buildings, as follows:

- Hospital Phase 1 Building – two 1000 kilowatt (kW) generators in the Central Plant;
- Hospital Phase 2 Building – one 1000 kW generator in the Central Plant;
- Medical Office Building 1 – one 750 kW generator at the west building façade;
- Medical Office Building 2 – one 500 kW generator at the east building façade;
- Senior Housing Building – one 100 kW generator at the southwest building façade;

To present the worst-case Project-related operational noise levels, a reference noise level for a CAT XQ1000 1000 kW generator is used in this analysis for all generator locations. Since this analysis uses the highest kilowatt generator at all locations, it may conservatively overstate the operational noise levels. Caterpillar, Inc. provides the noise level in Leq for a CAT XQ1000 generator at a reference distance of 50 feet of 72.0 dBA Leq and a noise source height of 10 feet. (24)

10.1.5 HELICOPTER ACTIVITIES

The proposed helicopter activities at the Project site are anticipated to occur under two conditions: typical and trauma activity, at a single helipad, located on the roof of the Hospital Phase 1 building. Based on information provided by the Project's helipad consultant, Heliplanners, the operational activities at the Project site can be estimated. (15) Further, published reference noise levels were obtained to describe each type of helicopter activity. Each type of helicopter transport is expected to rely on any combination of helicopter types as described in the sections below.

It is important to recognize that this noise study provides an initial review of the potential noise levels associated with the emergency helicopter activities. Detailed helicopter analysis will be required to identify noise abatement measures, if any, to fully satisfy the noise compatibility study requirements of the Federal Aviation Administration (FAA), Riverside County Airport Land Use Commission (RCALUC), March Air Reserve Base/Inland Port Airport Land Use Compatibility Plan, State of California Heliport Permitting process, and the City of Riverside Heliport Permitting process.

Typical Helicopter Activities

The expected typical helicopter activities at the Project site will consist of the scheduled transport of patients on an as-needed basis, for patients who require the services of the Project's hospital use, or those of another local hospital. (15) The typical helicopter activities were estimated using the worst-case helicopter model reference noise level identified for 'Helicopter A' in the *Examination of the low frequency limit for helicopter noise data in the Federal Aviation Administration Environmental Design Tool and Integrated Noise Model*, prepared by the U.S. Department of Transportation's John A. Volpe National Transportation Systems Center. (25) At

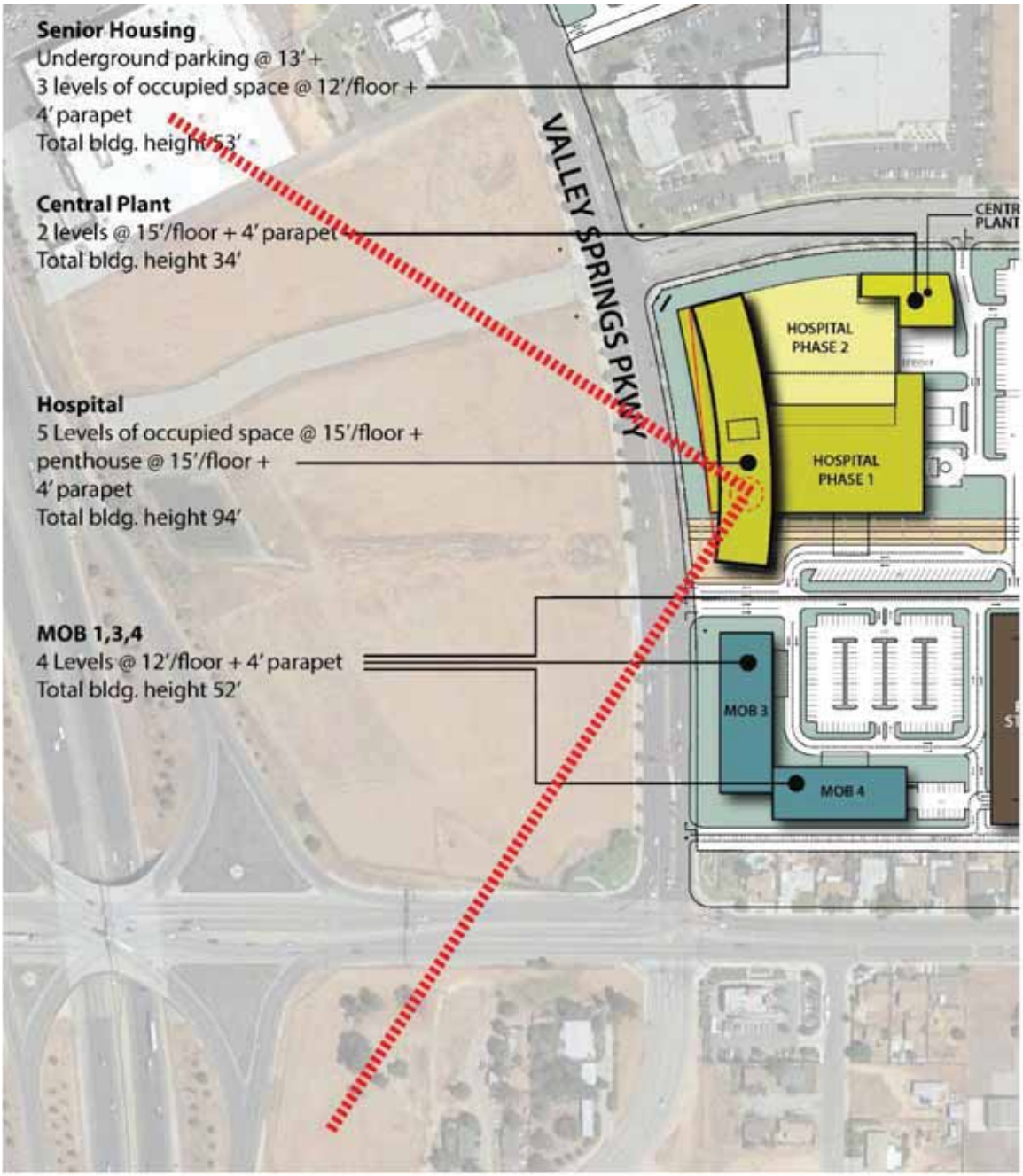
the time this analysis was prepared, the exact model type and specifications of the helicopters to be used at the hospital helipad operations were unknown. Based on information provided by Heliplanners, the 'Helicopter A' reference noise level data is used to describe the potential noise levels from a H145 Airbus helicopter used in worst-case, typical hospital operations.

At a uniform distance of 50 feet, the reference noise level approached 82.5 dBA Leq under in ground effect (IGE) conditions. IGE conditions account for the propagation loss over the ground when a helicopter is hovering at up to five feet above the ground (or helipad). Typical helicopter conditions are estimated to occur during 30 minutes of the peak hour conditions, which conservatively overstates the two typical events per week estimate provided by Heliplanners to represent worst-case conditions. (15)

Trauma Helicopter Activities

The trauma helicopter activities would consist of single events which are unlikely to occur under normal operations of the Project hospital, since this type of activity would only be required for major traumatic injuries or events. Additional published reference noise level data for the trauma-related helicopter events at the Project site was obtained from the U.S. Army Corps of Engineers *Operational Noise Data for UH-60A and CH-47C Army Helicopters*. (26) The reference UH-60A helicopter represents worst-case trauma-related Blackhawk helicopter operations based on the input provided by Heliplanners for trauma-related helicopter activities. (15) At a uniform distance of 50 feet, the reference noise level approached 99.8 dBA Leq under IGE conditions. Trauma helicopter conditions are estimated to occur during 5 minutes of the peak hour conditions, since trauma-related events would only occur on an as-needed basis during emergency conditions. (15) Exhibit 10-B shows the proposed helicopter take-off and landing locations in red at the Hospital Phase 1 building. (15)

EXHIBIT 10-B: CONCEPTUAL HELIPAD AND APPROACH LOCATIONS



10.2 PROJECT OPERATIONAL NOISE LEVELS

Using the reference noise levels to represent the proposed operations that include parking structure and parking lot vehicle movements, mechanical ventilation (roof-top air conditioning) units, emergency backup generators (central energy plant), emergency vehicles (ambulances), emergency helicopter activities, and other ancillary uses (e.g., on-site retail such as coffee shops, deli, lunch rooms, outdoor vendor carts, car wash services, valet parking, golf cart transport for the elderly or infirm patients, flower and gift shop, pharmacy, and medical retail (medical supplies); personal services such as barber shop, beauty salon, spa, tailor, dry cleaner, and self-service laundry; and restaurants (sit-down, quick-serve, and take-out, Urban Crossroads, Inc. calculated the operational source noise levels that are expected to be generated by the Project site and the Project-related noise level increases that would be experienced at each of the sensitive receiver locations. The operational noise level calculations, shown on Tables 10-2 and 10-3 account for the distance attenuation provided due to geometric spreading when sound from a localized stationary source (i.e., a point source) propagates uniformly outward in a spherical pattern. With geometric spreading, sound levels attenuate (or decrease) at a rate of 6 dB for each doubling of distance from a point source. Exhibit 10-A shows the closest operational noise sources and their distance to each receiver location used in this analysis. The operational noise level calculations are included in Appendix 10.1.

Since the exact model type and specifications of the helicopters to be used at the Project site were unknown at the time this analysis was prepared, the Project-related operational noise levels are analyzed under three conditions as shown below:

1. Without helicopter activities;
2. With typical helicopter activities; and
3. With trauma helicopter activities.

Without Helicopter Activities

Table 10-2 presents the Project operational noise levels during the daytime and nighttime hours without helicopter activities, and includes distance attenuation and the barrier attenuation provided by the recommended 8-foot high noise barrier, as shown on Exhibit 10-A. Additional barrier attenuation is included in the calculations when the planned Project buildings block the line-of-sight from the noise source to the receiver locations. Table 10-2 indicates that the noise levels associated with the Canyon Springs Healthcare Campus & Senior Living Project, without helicopter activities, are expected to range from 39.1 to 47.0 dBA L_{50} at the nearby sensitive receiver locations during the daytime and nighttime hours.

TABLE 10-2: PROJECT-ONLY OPERATIONAL NOISE LEVELS WITHOUT HELICOPTER ACTIVITIES

Receiver Location[1]	Noise Sources[2]	Stationary/Area-Source Noise Levels (dBA)[3]			
		L_{50} (30 mins)	L_{25} (15 mins)	L_8 (5 mins)	L_2 (1 min)
R1	Parking Structure Vehicle Movement	42.3	45.4	47.5	54.1
	Parking Lot Vehicle Movement	18.6	21.7	28.3	37.3
	Roof-Top Air Conditioning Unit	35.6	14.9	12.7	11.3
	Emergency Generator	36.7	-[4]	-[4]	-[4]
	Combined Noise Level:	44.0	45.4	47.6	54.2
R2	Parking Structure Vehicle Movement	45.0	48.1	50.2	56.8
	Parking Lot Vehicle Movement	19.3	22.4	29.0	38.0
	Roof-Top Air Conditioning Unit	29.6	8.9	6.7	5.3
	Emergency Generator	30.7	-[4]	-[4]	-[4]
	Combined Noise Level:	45.3	48.1	50.2	56.9
R3	Parking Structure Vehicle Movement	44.1	47.2	49.3	55.9
	Parking Lot Vehicle Movement	35.2	38.3	44.9	53.9
	Roof-Top Air Conditioning Unit	33.3	12.6	10.4	9.0
	Emergency Generator	38.5	-[4]	-[4]	-[4]
	Combined Noise Level:	45.8	48.0	50.6	58.0
R4	Parking Structure Vehicle Movement	37.9	41.0	43.1	49.7
	Parking Lot Vehicle Movement	32.1	35.2	41.8	50.8
	Roof-Top Air Conditioning Unit	37.2	16.5	14.3	12.9
	Emergency Generator	27.7	-[4]	-[4]	-[4]
	Combined Noise Level:	41.3	42.0	45.5	53.3
R5	Parking Structure Vehicle Movement	45.5	48.6	50.7	57.3
	Parking Lot Vehicle Movement	36.0	39.1	45.7	54.7
	Roof-Top Air Conditioning Unit	33.9	13.2	11.0	9.6
	Emergency Generator	39.4	-[4]	-[4]	-[4]
	Combined Noise Level:	47.0	49.1	51.9	59.2
R6	Parking Structure Vehicle Movement	35.5	38.6	40.7	47.3
	Parking Lot Vehicle Movement	33.8	36.9	43.5	52.5
	Roof-Top Air Conditioning Unit	30.0	9.3	7.1	5.7
	Emergency Generator	37.5	-[4]	-[4]	-[4]
	Combined Noise Level:	41.0	40.8	45.3	53.6
R7	Parking Structure Vehicle Movement	34.0	37.1	39.2	45.8
	Parking Lot Vehicle Movement	31.7	34.8	41.4	50.4
	Roof-Top Air Conditioning Unit	27.2	6.5	4.3	2.9
	Emergency Generator	35.5	-[4]	-[4]	-[4]
	Combined Noise Level:	39.1	39.1	43.4	51.7

[1] See Exhibit 10-A for the receiver and noise source locations.
[2] Reference noise sources as shown on Table 10-1.
[3] Stationary source noise level calculations are provided in Appendix 10.1.
[4] Reference noise level data does not include the given noise level descriptor.
Note: The helicopter operational noise levels are added to the Project operational noise levels on Tables 10-3 and 10-4 to show the difference at each receiver location without and with the typical and trauma helicopter noise levels, respectively.

With Typical Helicopter Activity

Table 10-3 presents the Project operational noise levels during the daytime and nighttime hours with the addition of the proposed typical helicopter activities. Table 10-3 indicates that the noise levels associated with the Canyon Springs Healthcare Campus & Senior Living Project, with typical helicopter activities, are expected to range from 39.8 to 47.5 dBA L_{50} at the nearby sensitive receiver locations during the daytime and nighttime hours.

TABLE 10-3: PROJECT-ONLY OPERATIONAL NOISE LEVELS WITH TYPICAL HELICOPTER ACTIVITIES

Receiver Location[1]	Noise Sources[2]	Stationary/Area-Source Noise Levels (dBA)[3]			
		L_{50} (30 mins)	L_{25} (15 mins)	L_8 (5 mins)	L_2 (1 min)
R1	Project Operational Noise Levels (Table 10-2)	44.0	45.4	47.6	54.2
	Typical Helicopter Activities	43.7	-[4]	-[4]	-[4]
	Combined Noise Level:	46.9	45.4	47.6	54.2
R2	Project Operational Noise Levels (Table 10-2)	45.3	48.1	50.2	56.9
	Typical Helicopter Activities	37.7	-[4]	-[4]	-[4]
	Combined Noise Level:	46.0	48.1	50.2	56.9
R3	Project Operational Noise Levels (Table 10-2)	45.8	48.0	50.6	58.0
	Typical Helicopter Activities	42.7	-[4]	-[4]	-[4]
	Combined Noise Level:	47.5	48.0	50.6	58.0
R4	Project Operational Noise Levels (Table 10-2)	41.3	42.0	45.5	53.3
	Typical Helicopter Activities	40.4	-[4]	-[4]	-[4]
	Combined Noise Level:	43.9	42.0	45.5	53.3
R5	Project Operational Noise Levels (Table 10-2)	47.0	49.1	51.9	59.2
	Typical Helicopter Activities	35.8	-[4]	-[4]	-[4]
	Combined Noise Level:	47.4	49.1	51.9	59.2
R6	Project Operational Noise Levels (Table 10-2)	41.0	40.8	45.3	53.6
	Typical Helicopter Activities	33.0	-[4]	-[4]	-[4]
	Combined Noise Level:	41.6	40.8	45.3	53.6
R7	Project Operational Noise Levels (Table 10-2)	39.1	39.1	43.4	51.7
	Typical Helicopter Activities	31.6	-[4]	-[4]	-[4]
	Combined Noise Level:	39.8	39.1	43.4	51.7

[1] See Exhibit 10-A for the receiver and noise source locations.
[2] The Project Operational Noise Levels, previously shown on Table 10-2, are combined with the typical helicopter activities.
[3] Stationary source noise level calculations are provided in Appendix 10.1.
[4] Reference noise level data does not include the given noise level descriptor.

With Trauma Helicopter Activity

Table 10-4 shows the Project operational noise levels during the daytime and nighttime hours with the addition of the proposed trauma helicopter activities. Table 10-4 indicates that the noise levels associated with the Canyon Springs Healthcare Campus & Senior Living Project, with trauma helicopter activities, are expected to range from 43.1 to 53.6 dBA L_{50} at the nearby sensitive receiver locations during the daytime and nighttime hours.

TABLE 10-4: PROJECT-ONLY OPERATIONAL NOISE LEVELS WITH TRAUMA HELICOPTER ACTIVITIES

Receiver Location[1]	Noise Sources[2]	Stationary/Area-Source Noise Levels (dBA)[3]			
		L_{50} (30 mins)	L_{25} (15 mins)	L_8 (5 mins)	L_2 (1 min)
R1	Project Operational Noise Levels (Table 10-2)	44.0	45.4	47.6	54.2
	Trauma Helicopter Activities	53.1	-[4]	-[4]	-[4]
	Combined Noise Level:	53.6	45.4	47.6	54.2
R2	Project Operational Noise Levels (Table 10-2)	45.3	48.1	50.2	56.9
	Trauma Helicopter Activities	47.2	-[4]	-[4]	-[4]
	Combined Noise Level:	49.4	48.1	50.2	56.9
R3	Project Operational Noise Levels (Table 10-2)	45.8	48.0	50.6	58.0
	Trauma Helicopter Activities	52.1	-[4]	-[4]	-[4]
	Combined Noise Level:	53.0	48.0	50.6	58.0
R4	Project Operational Noise Levels (Table 10-2)	41.3	42.0	45.5	53.3
	Trauma Helicopter Activities	49.9	-[4]	-[4]	-[4]
	Combined Noise Level:	50.5	42.0	45.5	53.3
R5	Project Operational Noise Levels (Table 10-2)	47.0	49.1	51.9	59.2
	Trauma Helicopter Activities	45.2	-[4]	-[4]	-[4]
	Combined Noise Level:	49.2	49.1	51.9	59.2
R6	Project Operational Noise Levels (Table 10-2)	41.0	40.8	45.3	53.6
	Trauma Helicopter Activities	42.4	-[4]	-[4]	-[4]
	Combined Noise Level:	44.8	40.8	45.3	53.6
R7	Project Operational Noise Levels (Table 10-2)	39.1	39.1	43.4	51.7
	Trauma Helicopter Activities	41.0	-[4]	-[4]	-[4]
	Combined Noise Level:	43.1	39.1	43.4	51.7

[1] See Exhibit 10-A for the receiver and noise source locations.
[2] The Project Operational Noise Levels, previously shown on Table 10-2, are combined with the trauma helicopter activities.
[3] Stationary source noise level calculations are provided in Appendix 10.1.
[4] Reference noise level data does not include the given noise level descriptor.

10.3 PROJECT OPERATIONAL NOISE LEVEL COMPLIANCE

The operational noise level compliance of the Project noise sources is shown on Tables 10-5, 10-6, and 10-7 in relation to the City of Riverside exterior noise level standards, without helicopter activities, with typical helicopter activities, and with trauma helicopter activities, respectively.

Without Helicopter Activities

Based on the results of the noise analysis, shown on Table 10-5, the Project operational noise levels without helicopter activities will satisfy the daytime and nighttime City of Riverside exterior noise level standards at the nearby sensitive receiver locations with the recommended 8-foot high noise barrier as shown on Exhibit 10-A. Additional attenuation is provided by the Project buildings which will be located between some noise sources and the receiver locations, with roof heights of up to 52 feet. (23)

With Typical Helicopter Activities

Table 10-6 shows the operational noise levels with typical helicopter activities will also satisfy the daytime and nighttime City of Riverside exterior noise level standards at the nearby sensitive receiver locations with the recommended 8-foot high noise barrier as shown on Exhibit 10-A.

With Trauma Helicopter Activities

Table 10-7 shows the Project operational noise levels with trauma helicopter activities are anticipated to exceed the nighttime City of Riverside exterior noise level standards at receiver locations R3, and R4. Due to the potential trauma helicopter operational noise level impacts, the Project will be required to comply with all the conditions of approval per the requirements of the Federal Aviation Administration (FAA), Riverside County Airport Land Use Commission (RCALUC), March Air Reserve Base/Inland Port Airport Land Use Compatibility Plan the State of California Heliport Permitting process, and City of Riverside Heliport Permitting process. Therefore, the Project-related emergency helicopter noise impacts are considered *less than significant* after the mitigation measures identified in this noise study. Further, trauma activity will only occur intermittently and does not represent the typical, daily operations at the Project site.

TABLE 10-5: OPERATIONAL NOISE LEVEL COMPLIANCE WITHOUT HELICOPTER ACTIVITIES

Receiver Location[1]	Noise Level at Receiver Locations (dBA)[2]				Noise Level Thresholds (dBA)[2]								Threshold Exceeded?[3]	
	L_{50} (30 mins)	L_{25} (15 mins)	L_8 (5 mins)	L_2 (1 min)	L_{50} (30 mins)		L_{25} (15 mins)		L_8 (5 mins)		L_2 (1 min)			
					Day	Night	Day	Night	Day	Night	Day	Night	Day	Night
R1	44.0	45.4	47.6	54.2	60	60	65	65	70	70	75	75	No	No
R2	45.3	48.1	50.2	56.9	60	60	65	65	70	70	75	75	No	No
R3	45.8	48.0	50.6	58.0	55	50	60	50	65	55	70	60	No	No
R4	41.3	42.0	45.5	53.3	55	50	60	50	65	55	70	60	No	No
R5	47.0	49.1	51.9	59.2	55	50	60	50	65	55	70	60	No	No
R6	41.0	40.8	45.3	53.6	55	50	60	50	65	55	70	60	No	No
R7	39.1	39.1	43.4	51.7	55	50	60	50	65	55	70	60	No	No

[1] See Exhibit 10-A for the receiver and noise source locations.
[2] Estimated Project operational noise levels as shown on Table 10-2.
[3] Do the estimated Project operational noise levels meet the operational noise level standards?
"Day" = 7:00 a.m. to 10:00 p.m.; "Night" = 10:00 p.m. to 7:00 a.m.

TABLE 10-6: OPERATIONAL NOISE LEVEL COMPLIANCE WITH TYPICAL HELICOPTER ACTIVITIES

Receiver Location[1]	Noise Level at Receiver Locations (dBA)[2]				Noise Level Thresholds (dBA)[2]								Threshold Exceeded?[3]	
	L_{50} (30 mins)	L_{25} (15 mins)	L_8 (5 mins)	L_2 (1 min)	L_{50} (30 mins)		L_{25} (15 mins)		L_8 (5 mins)		L_2 (1 min)			
					Day	Night	Day	Night	Day	Night	Day	Night	Day	Night
R1	46.9	45.4	47.6	54.2	60	60	65	65	70	70	75	75	No	No
R2	46.0	48.1	50.2	56.9	60	60	65	65	70	70	75	75	No	No
R3	47.5	48.0	50.6	58.0	55	50	60	50	65	55	70	60	No	No
R4	43.9	42.0	45.5	53.3	55	50	60	50	65	55	70	60	No	No
R5	47.4	49.1	51.9	59.2	55	50	60	50	65	55	70	60	No	No
R6	41.6	40.8	45.3	53.6	55	50	60	50	65	55	70	60	No	No
R7	39.8	39.1	43.4	51.7	55	50	60	50	65	55	70	60	No	No

[1] See Exhibit 10-A for the receiver and noise source locations.
[2] Estimated Project operational noise levels as shown on Table 10-3 which include the typical helicopter activities at the Project site.
[3] Do the estimated Project operational noise levels meet the operational noise level standards (Table 3-1)?
"Day" = 7:00 a.m. to 10:00 p.m.; "Night" = 10:00 p.m. to 7:00 a.m.

TABLE 10-7: OPERATIONAL NOISE LEVEL COMPLIANCE WITH TRAUMA HELICOPTER ACTIVITIES

Receiver Location[1]	Noise Level at Receiver Locations (dBA)[2]				Noise Level Thresholds (dBA)[2]								Threshold Exceeded?[3]	
	L_{50} (30 mins)	L_{25} (15 mins)	L_8 (5 mins)	L_2 (1 min)	L_{50} (30 mins)		L_{25} (15 mins)		L_8 (5 mins)		L_2 (1 min)			
					Day	Night	Day	Night	Day	Night	Day	Night	Day	Night
R1	53.6	45.4	47.6	54.2	60	60	65	65	70	70	75	75	No	No
R2	49.4	48.1	50.2	56.9	60	60	65	65	70	70	75	75	No	No
R3	53.0	48.0	50.6	58.0	55	50	60	50	65	55	70	60	No	Yes
R4	50.5	42.0	45.5	53.3	55	50	60	50	65	55	70	60	No	Yes
R5	49.2	49.1	51.9	59.2	55	50	60	50	65	55	70	60	No	No
R6	44.8	40.8	45.3	53.6	55	50	60	50	65	55	70	60	No	No
R7	43.1	39.1	43.4	51.7	55	50	60	50	65	55	70	60	No	No

[1] See Exhibit 10-A for the receiver and noise source locations.
[2] Estimated Project operational noise levels as shown on Table 10-4 which include the typical helicopter activities at the Project site.
[3] Do the estimated Project operational noise levels meet the operational noise level standards (Table 3-1)?
"Day" = 7:00 a.m. to 10:00 p.m.; "Night" = 10:00 p.m. to 7:00 a.m.

10.4 PROJECT NOISE CONTRIBUTION

To describe the Project operational noise level contributions, the Project operational noise levels were combined with the existing ambient noise levels measurements. The difference between the combined Project and ambient noise levels describe the Project noise level contributions. Noise levels that would be experienced at receiver locations when Project-source noise is added to ambient daytime and nighttime conditions are presented on Tables 10-6 and 10-7, respectively, and include the attenuation provided by the recommended 8-foot high noise barrier and Project buildings shown on Exhibit 10-A.

The Project-related operational noise levels shown on Tables 10-8 and 10-9 do not include operational noise levels from ambulances operating at the Project site. The California Vehicle Code, Sections 21055 and 27007, exempt drivers of emergency vehicles and sound amplification equipment of emergency vehicles, respectively. Section 21055 states that emergency vehicles *driven in response to an emergency or while engaged in rescue operations* and the sirens used *reasonably necessary* are considered exempt from California Vehicle Code regulations. Further, Section 27007 indicates that *sound amplification systems which can be heard outside the vehicle from 50 or more feet* are prohibited, *unless that system is being operated to request assistance or warn of a hazardous situation.* The exemption is for emergency vehicle sirens is explicit when it states *this section does not apply to authorized emergency vehicles or vehicles operated by gas, electric, communications, or water utilities*. (2)

As indicated in Tables 10-8 and 10-9, the Project would contribute operational stationary-source noise level increases of up to 5.5 dBA L_{50} (daytime) and 3.2 dBA L_{50} (nighttime) at nearby receiver locations. The daytime Project-related operational noise level increases of 5.5 dBA L_{50} at receiver location R1 and up to 5.0 dBA L_{50} at receiver location R3 result in combined exterior noise levels of 55.0 dBA L_{50} at R1, and 54.6 dBA L_{50} at R3, respectively. As such, the combined Project and ambient noise levels will remain below the City of Riverside Municipal Code noise level standards for community support land uses (60 dBA L_{50} for R1) and residential uses (55 dBA L_{50} for R3), and therefore, the Project-related operational noise level contributions to the ambient noise levels at nearby sensitive receiver locations will be *less than significant* at receiver locations R1 and R3. Further, nighttime operational noise level increases with the Project are shown to be *less than significant* at all receiver locations with mitigation.

TABLE 10-8: DAYTIME OPERATIONAL NOISE LEVEL CONTRIBUTIONS (DBA L_{50})

Receiver Location[1]	Total Project Operational Noise Level[2]	Measurement Location[3]	Reference Ambient Noise Levels[4]	Combined Project and Ambient[5]	Project Contribution[6]	Potential Cumulative Significant Impact?[7]
R1	53.6	L3	49.5	55.0	5.5	No[8]
R2	49.4	L3	49.5	52.4	2.9	No
R3	53.0	L2	49.6	54.6	5.0	No[8]
R4	50.5	L2	49.6	53.1	3.5	No
R5	49.2	L1	65.7	65.8	0.1	No
R6	44.8	L1	65.7	65.7	0.0	No
R7	43.1	L1	65.7	65.7	0.0	No

[1] See Exhibit 10-A for the sensitive receiver locations.
[2] Total Project operational noise levels as shown on Table 10-2, without the trauma helicopter.
[3] Reference noise level measurement locations as shown on Exhibit 5-A.
[4] Observed daytime ambient noise levels as shown on Table 5-1.
[5] Represents the combined ambient conditions plus the Project activities.
[6] The noise level increase expected with the addition of the proposed Project activities. As discussed in Section 4, when the without Project noise levels are less than 60 dBA a Project-related increase of 5 dBA is considered readily perceptible; when the without Project noise levels are between 60 to 65 dBA a 3 dBA increase is considered barely perceptible, and when the without Project noise levels are above 65 dBA, a 1.5 dBA increase is just perceptible.
[7] Significance Criteria as defined in Section 4.
[8] The combined Project and ambient noise levels will remain below the City of Riverside Municipal Code noise level standards for community support land uses (60 dBA L_{50} for R1) and residential uses (55 dBA L_{50} for R3), and therefore, the Project-related operational noise level contributions to the ambient noise levels at nearby sensitive receiver locations will be less than significant at receiver locations R1 and R3.

TABLE 10-9: NIGHTTIME OPERATION NOISE LEVEL CONTRIBUTIONS (DBA L_{50})

Receiver Location[1]	Total Project Operational Noise Level[2]	Measurement Location[3]	Reference Ambient Noise Levels[4]	Combined Project and Ambient[5]	Project Contribution[6]	Potential Cumulative Significant Impact?[7]
R1	53.6	L3	55.1	57.4	2.3	No
R2	49.4	L3	55.1	56.1	1.0	No
R3	53.0	L2	52.7	55.9	3.2	No
R4	50.5	L2	52.7	54.7	2.0	No
R5	49.2	L1	61.9	62.1	0.2	No
R6	44.8	L1	61.9	62.0	0.1	No
R7	43.1	L1	61.9	62.0	0.1	No

[1] See Exhibit 10-A for the sensitive receiver locations.
[2] Total Project operational noise levels as shown on Table 10-2, without the trauma helicopter activities.
[3] Reference noise level measurement locations as shown on Exhibit 5-A.
[4] Observed nighttime ambient noise levels as shown on Table 5-1.
[5] Represents the combined ambient conditions plus the Project activities.
[6] The noise level increase expected with the addition of the proposed Project activities. As discussed in Section 4, when the without Project noise levels are less than 60 dBA a Project-related increase of 5 dBA is considered readily perceptible; when the without Project noise levels are between 60 to 65 dBA a 3 dBA increase is considered barely perceptible, and when the without Project noise levels are above 65 dBA, a 1.5 dBA increase is just perceptible.
[7] Significance Criteria as defined in Section 4.

10.5 OPERATIONAL NOISE MITIGATION MEASURES

- Prior to certificate of occupancy for the proposed Hospital, Medical Office Building 3, Medical Office Building 4 or Parking Structure 1, which every may be constructed first, the Project Applicant shall construct the proposed 8-foot-high perimeter wall (as shown on Figure 4.9-2) to reduce the operational noise levels at the adjacent sensitive receiver locations.
- Prior to certificate of occupancy for the proposed hospital, the Project shall adhere to all Federal, State, Regional, and Local agency requirements including but not limited to: Federal Aviation Administration, the Riverside County Airport Land Use Commission, the March Air Reserve Base/Inland Port Airport, the State of California Heliport Permitting process, and City of Riverside Entitlement process.

11 CONSTRUCTION IMPACTS

This section analyzes potential impacts resulting from the short-term construction activities associated with the development of the Project.

11.1 CONSTRUCTION NOISE IMPACTS

Pursuant to Section 7.35.020 "Exemptions" subsection (G) "Noise sources associated with construction, repair, remodeling, or grading of any real property; provided a permit has been obtained from the City as required; and provided said activities do not take place between the hours of 7:00 p.m. and 7:00 a.m. on weekdays, between the hours of 5:00 p.m. and 8:00 a.m. on Saturdays, or at any time on Sunday or a federal holiday. Therefore, construction noise associated with the proposed Project is exempt from the City's Noise Ordinance. (3)

11.2 CONSTRUCTION VIBRATION IMPACTS

Construction activity can result in varying degrees of ground vibration, depending on the equipment and methods used, distance to the affected structures and soil type. It is expected that ground-borne vibration from Project construction activities would cause only intermittent, localized intrusion. The proposed Project's construction activities most likely to cause vibration impacts are:

- Heavy Construction Equipment: Although all heavy mobile construction equipment has the potential of causing at least some perceptible vibration while operating close to building, the vibration is usually short-term and is not of sufficient magnitude to cause building damage. It is not expected that heavy equipment such as large bulldozers would operate close enough to any residences to cause a vibration impact.
- Trucks: Trucks hauling building materials to construction sites can be sources of vibration intrusion if the haul routes pass through residential neighborhoods on streets with bumps or potholes. Repairing the bumps and potholes generally eliminates the problem.

The construction of the Project is not expected to generate vibration levels exceeding the FTA maximum acceptable vibration standard of 80 (VdB). Further, impacts at the site of the closest sensitive receiver are unlikely to be sustained during the entire construction period, but will occur rather only during the times that heavy construction equipment is operating adjacent to the Project site perimeter. Moreover, construction at the Project site will be restricted to daytime hours consistent with City requirements thereby eliminating potential vibration impact during the sensitive nighttime hours.

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23. **HGA Architects and Engineers.** *Canyon Springs Healthcare Center Building Height Diagram.* June 2016.

24. **Caterpillar, Inc.** *XQ1000 Generator Specification Sheet.* 2010.

25. **U.S. Department of Transportation's John A. Volpe National Transportation Systems Center.** *Examination of the low frequency limit for helicopter noise data in the Federal Aviation Administration Environmental Design Tool and Integrated Noise Model.* s.l. : Noise-Con 2010, April 2010.

26. **U.S. Army Corps of Engineers.** *Operational Noise Data for UH-60A and CH-47C Army Helicopters.* August 1982.

13 CERTIFICATION

The contents of this noise study report represent an accurate depiction of the noise environment and impacts associated with the proposed Canyon Springs Healthcare Campus & Senior Living Project. The information contained in this noise study report is based on the best available data at the time of preparation. If you have any questions, please contact me directly at (949) 336-5979.

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EDUCATION

Master of Science in Civil and Environmental Engineering
California Polytechnic State University, San Luis Obispo • December, 1993

Bachelor of Science in City and Regional Planning
California Polytechnic State University, San Luis Obispo • June, 1992

PROFESSIONAL REGISTRATIONS

PE – Registered Professional Traffic Engineer – TR 2537 • January, 2009
AICP – American Institute of Certified Planners – 013011 • June, 1997–January 1, 2012
PTP – Professional Transportation Planner • May, 2007 – May, 2013
INCE – Institute of Noise Control Engineering • March, 2004

PROFESSIONAL AFFILIATIONS

ASA – Acoustical Society of America
ITE – Institute of Transportation Engineers

PROFESSIONAL CERTIFICATIONS

Certified Acoustical Consultant – County of Orange • February, 2011
FHWA-NHI-142051 Highway Traffic Noise Certificate of Training • February, 2013

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APPENDIX 3.1:

CITY OF RIVERSIDE MUNICIPAL CODE

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Title 7

NOISE CONTROL

Chapters:

Chapter 7.05

POLICY AND INTENT

Sections:

Section 7.05.010 Policy and intent.

It is determined that certain noise levels are detrimental to the public health, safety and welfare and are contrary to the public interest. Therefore, the City Council declares that creating, maintaining, causing or allowing to create, maintain or cause any noise in a manner not in conformity with the provisions of this chapter, is a public nuisance and shall be punishable as such.

In order to control unnecessary, excessive and/or annoying noise in the City, it is declared to be the policy of the City to prohibit such noise generated by the sources specified in this chapter. It shall be the goal of the City to minimize noise levels and mitigate the effects of noise to provide a safe and healthy living environment. (Ord. 6273 § 1 (part), 1996)

Chapter 7.10

DEFINITIONS

Sections:

Section 7.10.010 Definitions generally.

For the purposes of this title, the words and phrases defined in this chapter shall have the meanings respectively ascribed to them by this chapter. (Ord. 6273 § 1 (part), 1996)

Section 7.10.015 A-weighted sound level.

"A-weighted sound level" means the sound pressure level in decibels as measured on a sound level meter using the A-weighing network. The level is designated dB(A) or dBA. (Ord. 6273 § 1 (part), 1996)

Section 7.10.020 Agricultural property.

"Agricultural property" means a parcel of real property which is developed for agricultural and incidental residential purposes which is located within any permitted zone. (Ord. 6273 § 1 (part), 1996)

Section 7.10.025 Ambient noise level.

"Ambient noise level" means the all-encompassing noise level associated with a given environment, being a composite of sounds from all sources, excluding an alleged offensive noise, at the location and approximate time at which the comparison with the offensive noise is to be made. The ambient noise level constitutes the normal or existing level of environmental noise at a given location. (Ord. 6273 § 1 (part), 1996)

Section 7.10.030 Commercial purpose.

"Commercial purpose" means the use, operation or maintenance of any sound amplification equipment for the purpose of advertising any business, goods or services, or for the purposes of attracting the attention of the public, or soliciting patronage of customers to any performance, show, entertainment, exhibition or event, or for the purpose of demonstrating such sound equipment. (Ord. 6273 § 1 (part), 1996)

Section 7.10.035 Construction.

"Construction" means any site preparation including grading, building, fabricating, assembly, substantial repair, alteration, or similar action. (Ord. 6273 § 1 (part), 1996)

Section 7.10.040 Community support land use category.

"Community support land use category" means areas developed with schools, libraries, fire stations, hospitals and similar uses in any zone. (Ord. 6273 § 1 (part), 1996)

Section 7.10.045 Cumulative period.

"Cumulative period" means a total period of time composed of time segments which may be continuous or discontinuous. (Ord. 6273 § 1 (part), 1996)

Section 7.10.050 Decibel (dB).

"Decibel (dB)" means a unit for measuring amplitude of a sound, equal to twenty times the logarithm to the base ten of the ratio of the pressure of the sound measured to the reference pressure, which is twenty micropascals (twenty micronewtons per square meter). (Ord. 6273 § 1 (part), 1996)

Section 7.10.055 Demolition.

"Demolition" means any dismantling, intentional destruction or removal of structures, site improvements, landscaping or utilities. (Ord. 6273 § 1 (part), 1996)

Section 7.10.060 Emergency.

"Emergency" means any occurrence or set of circumstances involving actual or imminent physical trauma or property damage which demands immediate action. (Ord. 6273 § 1 (part), 1996)

Section 7.10.065 Emergency work.

"Emergency work" means work made necessary to restore property to a safe condition following a physical trauma or property damage caused by an emergency or work necessary to prevent or minimize damage from a potential emergency. (Ord. 6273 § 1 (part), 1996)

Section 7.10.070 Fixed noise source.

"Fixed noise source" means a stationary device which creates sounds from a fixed location, including residential, agricultural, industrial and commercial machinery and equipment, pumps fans, compressors, air conditioners and refrigeration devices. (Ord. 6273 § 1 (part), 1996)

Section 7.10.075 Grading.

"Grading" means any excavating and/or filling of earth material to prepare a site for construction or the placement of improvements. (Ord. 6273 § 1 (part), 1996)

Section 7.10.080 Impulsive sound.

"Impulsive sound" means sound of short duration, usually less than one second, with an abrupt onset and rapid decay. Examples include explosions, drum beats, drop-forge impacts, fire crackers, discharge of firearms and one object striking another. (Ord. 6273 § 1 (part), 1996)

Section 7.10.085 Industrial land use category.

"Industrial land use category" means any area occupied by land uses whose primary operation involves warehousing, manufacturing, assembling, distributing, packaging or processing goods in the BMP, I, and AIR zones. (Ord. 6967 § 2, 2007; (Ord. 6273 § 1 (part), 1996)

Section 7.10.090 Intrusive noise.

"Intrusive noise" means a noise which intrudes over and above the existing ambient noise. The relative intrusiveness of the sound depends upon its amplitude, duration, frequency and time of occurrence, tonal or informational content as well as its relationship to the prevailing ambient noise level. (Ord. 6273 § 1 (part), 1996)

Section 7.10.095 Minor maintenance.

"Minor maintenance" means work required to keep property used for residential purposes in an existing state. (Ord. 6273 § 1 (part), 1996)

Section 7.10.100 Mobile noise source.

"Mobile noise source" means any noise source other than a fixed noise source. (Ord. 6273 § 1 (part), 1996)

Section 7.10.105 Motor vehicle.

"Motor vehicle" means any self-propelled vehicle as defined in the California Vehicle Code, including all on-highway types of motor vehicles subject to registration under said code, and all off-highway type motor vehicles subject to identification under said code. (Ord. 6273 § 1 (part), 1996)

Section 7.10.110 Muffler or sound dissapative device.

"Muffler or sound dissapative device" means a device for abating the sound of escaping gases from an internal combustion engine. (Ord. 6273 § 1 (part), 1996)

Section 7.10.115 Noise.

"Noise" means any sound which exceeds the appropriate actual or presumed ambient noise level or which annoys or tends to disturb humans or which causes or tends to cause an adverse psychological or physiological effect on humans. (Ord. 6273 § 1 (part), 1996)

Section 7.10.120 Noise Control Officer.

"Noise Control Officer" means the City official(s) or duly authorized representative(s) with the responsibility to enforce the noise ordinance. (Ord. 6273 § 1 (part), 1996)

Section 7.10.125 Noise disturbance.

"Noise disturbance" means any sound which endangers or injures the safety or health of humans or animals, or annoys or disturbs a reasonable person of normal sensitivities or endangers or injures personal or real property. (Ord. 6273 § 1 (part), 1996)

Section 7.10.130 Noise source.

"Noise source" means a disturbance causing operation which originates from noise generating mechanism. An example of a noise source is the combination of a motor, pump and compressor. (Ord. 6273 § 1 (part), 1996)

Section 7.10.135 Noise zone.

"Noise zone" means defined areas of generally consistent land use where the ambient noise levels are generally similar within a range of five decibels. (Ord. 6273 § 1 (part), 1996)

Section 7.10.140 Nonurban land use category.

"Nonurban land use category" means vacant land or land primarily for agricultural production containing ten acres or more. (Ord. 6273 § 1 (part), 1996)

Section 7.10.145 Office/commercial land use category.

"Office/commercial land use category" means areas developed with office and/or commercial uses in the O, CRC, CR-NC, CR, and CG zones. (Ord. 6967 § 2, 2007; Ord. 6273 § 1 (part), 1996)

Section 7.10.150 Person.

"Person" means any individual, association, partnership or corporation and includes any officer, employee, department, agency or instrumentality of a State or any political subdivision of a State. (Ord. 6273 § 1 (part), 1996)

Section 7.10.155 Powered model vehicle.

"Powered model vehicle" means airborne, waterborne or land-borne vehicles such as model airplanes, model boats, and model vehicles of any type or size which are not designed for carrying persons or property and which can be propelled in any form other than manpower or wind power. (Ord. 6273 § 1 (part), 1996)

Section 7.10.160 Public recreation facility land use category.

"Public recreation facility land use category" means areas developed with public parks and other public recreational facilities. (Ord. 6273 § 1 (part), 1996)

Section 7.10.165 Public right-of-way.

"Public right-of-way" means any street, avenue, boulevard, highway, sidewalk or alley or similar place which is owned or controlled by a government entity. (Ord. 6273 § 1 (part), 1996)

Section 7.10.170 Public space.

"Public space" means any real property or structures which are owned or controlled by a government entity. (Ord. 6273 § 1 (part), 1996)

Section 7.10.175 Residential land use category.

"Residential land use category" means areas primarily used for residential purposes in the RE, RA-5, RR, RC, R-1-1-1/2 acre, R-1-13000, R-1-10500, R-1-8500, R-1-7000, R-3-2500, R-3-4000, R-3-3000, R-3-2000, R-3-1500, and R-4 zones. (Ord. 6967 § 2, 2007; Ord. 6273 § 1 (part), 1996)

Section 7.10.180 Sound.

"Sound" means an oscillation in pressure, particle displacement, particle velocity or other physical parameter, in a medium with internal forces that causes compression and rarefaction of that medium. The description of sound may include any characteristic of such sound, including duration, intensity and frequency. (Ord. 6273 § 1 (part), 1996)

Section 7.10.185 Sound amplifying equipment.

"Sound amplifying equipment" means any device for the amplification of the human voice, or music, or any other sound, excluding devices in motor vehicles when heard only by the occupants of the vehicle, excluding warning devices on authorized emergency vehicles or horns or other warning devices on any vehicle used only for traffic safety purposes. (Ord. 6273 § 1 (part), 1996)

Section 7.10.190 Sound level.

"Sound level" means the weighted sound pressure level obtained by the use of a sound level meter and frequency weighing network, such as A, B or C, as specified in American National Standards Institute specifications for sound level meter ANSI S1.4-1971 or the latest approved revision thereof. If the frequency weighing method used is not stated, the A-weighing shall apply. (Ord. 6273 § 1 (part), 1996)

Section 7.10.195 Sound level meter.

"Sound level meter" means an instrument, including a microphone, an amplifier, an output meter, and frequency weighing networks for the measurement of sound levels which satisfies the requirements for S2A meters in American National Standards Institute specifications for

sound level meters, S1.4-1971, or the most recent revision thereof. (Ord. 6273 § 1 (part), 1996)

Section 7.10.200 Sound pressure.

"Sound pressure" means the instantaneous difference between the actual pressure and the average or barometric pressure at a given point in space, as produced by sound energy. (Ord. 6273 § 1 (part), 1996)

Section 7.10.205 Sound pressure level.

"Sound pressure level" in decibels means twenty times the logarithm to the base ten of the ratio of the pressure of this sound to the reference pressure, which reference pressure shall be explicitly stated. (Ord. 6273 § 1 (part), 1996)

Section 7.10.210 Supplementary definitions of technical terms.

Definitions of technical terms not defined herein shall be obtained from the American National Standard, "Acoustical Terminology" S1.1-1961 (R-1971) or the latest revision thereof. (Ord. 6273 § 1 (part), 1996)

Chapter 7.15

ADMINISTRATION AND ENFORCEMENT

Section:

Section 7.15.005 Administration and enforcement.

A. The noise regulation shall be enforced by the Code Enforcement Division of the Community Development Department and/or the Riverside Police Department.

B. It shall be the responsibility of the Code Enforcement Division and/or the Riverside Police Department to enforce the provisions of this Title and to perform all other functions required by this Title. Such duties shall include, but not be limited to investigating potential violations, issuing warning notices and citations, and providing evidence to the City Attorney for legal action.

C. A violation of these regulations may be prosecuted as a misdemeanor or as an infraction. Each day a violation occurs shall constitute a separate offense and shall be punishable as such. However, nothing in these regulations shall prevent any code compliance officer or his duly authorized representatives from efforts to obtain voluntary compliance by way of warning, notice or education. (Ord. 6959 § 1, 2007; Ord. 6844 § 15, 2006; Ord. 6273 § 1 (part), 1996)

Chapter 7.20

SOUND LEVEL MEASUREMENT

Section:

Section 7.20.010 Sound level measurement.

Except as provided by Chapter 17.35, General Noise Regulations, any sound or noise level measurement made to enforce this title shall be measured with a sound level meter using the A-weighing scale at slow response. The exterior noise level shall be measured at the position or positions along the complainant's property line closest to the noise source or where the noise level is highest. If the complaint concerns an interior source, noise measurements shall be made at a point at least four feet from the wall, ceiling or floor nearest the noise source with windows opened or closed as would be normal for the season. (Ord. 6273 § 1 (part), 1996)

Chapter 7.23

AMBIENT NOISE LEVELS

Sections:

Section 7.23.010 Ambient Sound Levels.

Title 7 - Noise Control of the Riverside Municipal Code shall be consistent with Title 24 of the Health and Safety Code of the State of California as may be amended from time to time. (Ord. 6967 § 3, 2007)

Section 7.23.020 Mixed Use Development.

Where a new development proposal includes a mix of residential and nonresidential uses within the same project, the interior ambient noise standard for the residential component of the project may be increased by 5 decibels. (Ord. 6967 § 3, 2007)

Section 7.23.030 Infill Single-Family Residential Development.

Where a new development proposal includes an infill single-family residential use, the interior ambient noise standard for the proposal may be increased by 5 decibels. (Ord. 6967 § 3, 2007)

Chapter 7.25

NUISANCE EXTERIOR SOUND LEVEL LIMITS

Section:

Section 7.25.010 Exterior sound level limits.

A. Unless a variance has been granted as provided in this chapter, it shall be unlawful for any person to cause or allow the creation of any noise which exceeds the following:

1. The exterior noise standard of the applicable land use category, up to five decibels, for a cumulative period of more than thirty minutes in any hour; or
2. The exterior noise standard of the applicable land use category, plus five decibels, for a cumulative period of more than fifteen minutes in any hour; or
3. The exterior noise standard of the applicable land use category, plus ten decibels, for a cumulative period of more than five minutes in any hour; or
4. The exterior noise standard of the applicable land use category, plus fifteen decibels, for the cumulative period of more than one minute in any hour; or
5. The exterior noise standard for the applicable land use category, plus twenty decibels or the maximum measured ambient noise level, for any period of time.

B. If the measured ambient noise level exceeds that permissible within any of the first four noise limit categories, the allowable noise exposure standard shall be increased in five decibel increments in each category as appropriate to encompass the ambient noise level. In the event the ambient noise level exceeds the fifth noise limit category, the maximum allowable noise level under said category shall be increased to reflect the maximum ambient noise level.

C. If possible, the ambient noise level shall be measured at the same location along the property line with the alleged offending noise source inoperative. If for any reason the alleged offending noise source cannot be shut down, then the ambient noise must be estimated by performing a measurement in the same general area of the source but at a sufficient distance that the offending noise is inaudible. If the measurement location is on the boundary between two different districts, the noise shall be the arithmetic mean of the two districts.

D. Where the intruding noise source is an air-conditioning unit or refrigeration system which was installed prior to the effective date of this chapter, the exterior noise level when measured at the property line shall not exceed sixty dBA for units installed before 1-1-80 and fifty-five dBA for units installed after 1-1-80.

Table 7.25.010A

Exterior Noise Standards		
Land Use Category	**Time Period**	**Noise Level**
Residential	Night (10 p.m. to 7 a.m.) Day (7 a.m. to 10 p.m.)	45 dBA 55 dBA
Office/commercial	Any time	65 dBA
Industrial	Any time	70 dBA
Community support	Any time	60 dBA
Public recreation facility	Any time	65 dBA
Nonurban	Any time	70 dBA

Table 7.25.010B

Land Use Category/Zoning Matrix	
Land Use Category	**Underlying Zone**
Residential	RE, RA-5, RR, RC, R-1-1/2 acre, R-1-13000, R-1-10500, R-1-8500, R-1-7000, R-3-2500, R-3-4000, R-3-3000, R-3-2000, R-3-1500, R-4
Office/commercial	O, CRC, CR-NC, CR, CG
Industrial	BMP, I, AIR
Community support	Any permitted zone
Nonurban	Any permitted zone

(Ord. 6967 § 5, 2007; Ord. 6273 § 1 (part), 1996)

Chapter 7.30

NUISANCE INTERIOR SOUND LEVEL LIMITS

Section:

Section 7.30.015 Interior sound level limits.

A. No person shall operate or cause to be operated, any source of sound indoors which causes the noise level, when measured inside another dwelling unit, school or hospital, to exceed:

1. The interior noise standard for the applicable land category area, up to five decibels, for a cumulative period of more than five minutes in any hour;

2. The interior noise standard for the applicable land use category, plus five decibels, for a cumulative period of more than one minute in any hour;

3. The interior noise standard for the applicable land use category, plus ten decibels or the maximum measured ambient noise level, for any period of time.

B. If the measured interior ambient noise level exceeds that permissible within the first two noise limit categories in this section, the allowable noise exposure standard shall be increased in five decibel increments in each category as appropriate to reflect the interior ambient noise level. In the event the interior ambient noise level exceeds the third noise limit category, the maximum allowable interior noise level under said category shall be increased to reflect the maximum interior ambient noise level.

C. The interior noise standard for various land use districts shall apply, unless otherwise specifically indicated, within structures located in designated zones with windows opened or closed as is typical of the season.

Table 7.30.015

Interior Noise Standard		
Land Use Category	**Time Period**	**Noise Level**
Residential	Night (10 p.m. C 7 a.m.) Day (7 a.m. C 10 p.m.)	35 dBA 45 dBA
School	7 a.m. C 10 p.m. (while school is in session)	45 dBA
Hospital	Any time	45 dBA

(Ord. 6273 § 1 (part), 1996)

Chapter 7.35

GENERAL NOISE REGULATIONS

Sections:

Section 7.35.010 General noise regulations.

A. Notwithstanding the sound level meter standards described in this ordinance, it is nonetheless unlawful for any person to make, continue, or cause to be made or continued any disturbing, excessive or offensive noise which causes discomfort or annoyance to reasonable persons of normal sensitivity. The factors which should be considered in determining whether a violation of this section exists, include the following:

1. The sound level of the objectionable noise.

2. The sound level of the ambient noise.

3. The proximity of the noise to residential sleeping facilities.

4. The zoning of the area.

5. The population density of the area.

6. The time of day or night.

7. The duration of the noise.

8. Whether the noise is recurrent, intermittent, or constant.

9. Whether the noise is produced by a commercial or noncommercial activity.

10. Whether the nature of the noise is usual or unusual.

11. Whether the noise is natural or unnatural.

B. It is unlawful for any person to make, continue, or cause to be made or continued any disturbing, excessive or offensive noise which causes discomfort or annoyance to reasonable persons of normal sensitivity. The following acts, among others, are declared to be disturbing, excessive and offensive noises in violation of this section:

1. Radios, Television Sets, Musical Instruments and similar stationary or mobile devices: Operating, playing or permitting the operation or playing of any radio, television set, audio equipment, drum, musical instrument, or similar device which produces or reproduces sound in such a manner as to disturb the peace, quiet and comfort of neighboring residents or

persons of normal sensitivity. The operation of any such set, instrument, audio equipment, television set, machine or similar device between the hours of 10:00 p.m. and 7:00 a.m. in such a manner as to be plainly audible at a distance of 50 feet from the building, structure or vehicle in which it is located, shall be prima facie evidence of a violation of this section.

2. Loud Speakers (Amplified Sound): Using, or operating, or permitting to be used or operated, for any purpose, any loud speaker, loudspeaker system, or similar device between the hours of 10:00 p.m. and 7:00 a.m. such that the sound therefrom creates a noise disturbance across a residential property line, or at any time exceeds the maximum permitted noise level for the underlying land use category, except for any non-commercial public speaking, public assembly or other activity for which a variance has been issued.

3. Animals and Birds: Owning, possessing, or permitting to be harbored any animal or bird which frequently or for a continued duration howls, barks, meows, squawks, or makes other sounds which create a noise disturbance across a residential or commercial property line.

4. Loading and Unloading: Loading, unloading, opening, closing or other handling of boxes, crates, containers, building materials, garbage cans, or similar objects, or permitting these activities between the hours of 10:00 p.m. and 7:00 a.m. in such a manner as to cause a noise disturbance across a residential property line or at any time exceeds the maximum permitted noise level for the underlying land use category.

5. Construction: Operating or causing the operation of any tools or equipment used in construction, drilling, repair, alteration, grading or demolition work between the hours of 7:00 p.m. and 7:00 a.m. on week days and between 5 p.m. and 8 a.m. on Saturdays or at any time on Sunday or federal holidays such that the sound therefrom creates a noise disturbance across a residential or commercial property line or at any time exceeds the maximum permitted noise level for the underlying land use category, except for emergency work or by variance. This section does not apply to the use of domestic power tools.

6. Domestic Power Tools: Operating or permitting the operation of any mechanically powered saw, sander, drill grinder, lawn or garden tool, or similar tool between 10:00 p.m. and 7:00 a.m. so as to create a noise disturbance across a residential or commercial property line. Any motor, machinery, pump, compressor, generator etc., shall be sufficiently muffled and maintained so as not to create a noise disturbance.

7. Powered Model Vehicles: Operating or permitting the operation of powered model vehicles between the hours of 7:00 p.m. and 7:00 a.m. so as to create a noise disturbance across a residential or commercial property line or at any time exceeds the maximum permitted noise level for the underlying land use category.

8. Stationary Non-emergency Signaling Devices: Sounding, or permit-ting the sounding of any signal from any stationary bell, chime, siren, whistle, or similar device intended primarily for non-emergency purposes, from any place, for more than 10 seconds in any hourly period. Houses of worship and the Mission Inn carillons shall be exempt from the operation of this provision. Sound sources covered by this provision and not exempted under this subsection may be exempted by a variance.

9. Emergency Signaling Devices: The intentional sounding or permitting the sounding outdoors of any fire, burglar or civil defense alarm, siren, whistle or similar stationary emergency signaling device, except for emergency purposes or for testing. Testing of a stationary emergency signaling device shall not occur before 7 a.m. or after 7 p.m. Any such testing shall only use the minimum cycle test time. In no case shall the test time exceed 10 seconds or occur more than once each calendar month.

10. Vehicle, Motorcycle, Motorboat or Aircraft Repair and Testing: Repairing, rebuilding, modifying or testing any motor vehicle, motorboat or aircraft, or permitting any these activities, in such a manner as to create a noise disturbance across a residential property line, or at any time exceeds the maximum permitted noise level for the underlying land use category shall not be permitted except where said activities are directly related to officially sanctioned events. underlying land use category.

11. Permitting any noise disturbance that is:

    a. Plainly audible across property boundaries;

    b. Plainly audible through partitions common to two residences within a building;

    c. Plainly audible at a distance of 50 feet in any direction from the source of music or sound between the hours of 7:00 a.m. and 10:00 p.m.; or

    d. Plainly audible at a distance of 25 feet in any direction from the source of music or sound between the hours of 10:00 p.m. and 7:00 a.m. (Ord. 6959 §2, 2007; Ord. 6328 § 1, 1996; Ord. 6273 § 1 (part), 1996)

Section 7.35.020 Exemptions.

The following activities shall be exempt from the provisions of this title:

A. Emergency Work. The provisions of this Title shall not apply to the emission of sound for the purpose of alerting persons to the existence of an emergency or in the performance of emergency work.

B. Entertainment Events. The provisions of this Title shall not apply to those reasonable sounds emanating from authorized school bands, school athletic and school entertainment events and occasional public and private outdoor or indoor

gatherings, public dances, shows, bands, sporting and entertainment events conducted between the hours of seven a.m. and ten p.m.

C. Federal or State Preempted Activities. The provisions of this Chapter shall not apply to any other activity the noise level of which is regulated by state or federal law.

D. Minor Maintenance to Residential Property. The provisions of this Title shall not apply to noise sources associated with minor maintenance to property used for residential purposes, provided the activities take place between the hours of seven a.m. and ten p.m.

E. Right-Of-Way Construction. The provisions of this Title shall not apply to any work performed in the City right-of-ways when, in the opinion of the Public Works Director or his designee, such work will create traffic congestion and/or hazardous or unsafe conditions.

F. Public Health, Welfare and Safety Activities. The provisions of this Title shall not apply to construction maintenance and repair operations conducted by public agencies and/or utility companies or their contractors which are deemed necessary to serve the best interests of the public and to protect the public health, welfare and safety, including but not limited to, trash collection, street sweeping, debris and limb removal, removal of downed wires, restoring electrical service, repairing traffic signals, unplugging sewers, vacuuming catch basins, repairing of damaged poles, removal of abandoned vehicles, repairing of water hydrants and mains, gas lines, oil lines, sewers, storm drains, roads, sidewalks, etc. (Ord. 6917 § 1, 2006; Ord. 6328 § 2, 1996; Ord. 6273 § 1 (part), 1996)

Chapter 7.40

VARIANCE PROCEDURE

Sections:

Section 7.40.010 Variance procedure.

A. The Zoning Administrator is authorized to grant variances for exemption from any provision of this title, and may limit area of applicability, noise levels, time limits, and other terms and conditions determined appropriate to protect the public health, safety, and welfare. The provisions of this section shall in no way affect the duty to obtain any permit or license required by law for such activities.

B. Any person seeking a variance pursuant to this section shall file an application with the Zoning Administrator. The application shall be signed by the property owner or owner's representative using forms supplied by the Planning Division. The application shall contain information which demonstrates that bringing the source of the sound or activity into compliance with this title would constitute an unreasonable hardship to the applicant, the community, or other persons. The Zoning Administrator may require additional information if it is necessary to make a determination regarding the variance request. The application shall be accompanied by a fee established by resolution of the City Council.

C. A separate application shall be filed for each noise source; provided, however, several mobile sources under common ownership or several fixed sources on a single property may be combined into one application. Any person who claims to be adversely affected by the allowance of the variance may file a statement with the Zoning Administrator containing any information to support his claim. If the Zoning Administrator determines that a sufficient controversy exists regarding a variance application, the variance may be set for public hearing before the Planning Commission.

D. Public notice of the consideration of a proposed variance from the standards of this chapter shall be provided by the Zoning Administrator by mailing such notice to property owners within three hundred feet of the exterior boundaries of the property under consideration. The notice shall invite interested persons to notify the Planning Department of any concerns or comments within ten days of the date of the notice.

E. In determining whether to grant or deny the application, the Zoning Administrator or the Planning Commission shall consider comments received from property owners within three hundred feet, hardship on the applicant, the community, or other persons affected and property affected and any other adverse impacts. The requested variance may be granted in whole or in part and upon such terms and conditions as it deems necessary if, from the facts presented on the application, the Zoning Administrator or the Planning Commission finds that:

1. The strict application of the provisions of this title would result in practical difficulties or unnecessary hardships inconsistent with the general purpose of this title;

2. There are exceptional circumstances or conditions applicable to the property involved or to the intended use or development of the property that do not apply generally to other property in the same zone or neighborhood;

3. The granting of such variance will not be materially detrimental to the public welfare or injurious to the property or improvements in the zone or neighborhood in which the property is located;

4. The granting of such variance will not be contrary to the objectives of any part of the adopted General Plan.

F. A variance shall be granted by a notice to the applicant containing all the necessary conditions, including any time limits on the permitted activity. The variance shall not become effective until all the conditions are agreed to by the applicant. Noncompliance with any condition of the variance shall terminate the variance and subject the person holding it to those provisions of this chapter for which the variance was granted.

G. A variance shall be valid for a period not exceeding one year after the date on which it was granted. Applications for extensions of the time limits specified in variances or for the modification of other substantial conditions shall be treated like applications for initial variances.

H. In the event the Zoning Administrator does not approve an application for a variance within ten days after the application is filed it shall be placed on the agenda of the next regularly scheduled Planning Commission, unless the Commission refers the matter to the City Council. (Ord. 6967 § 7, 2007; Ord. 6462 § 8-10, 1999; Ord. 6273 § 1 (part), 1996)

Section 7.40.020 Appeals.

Any person aggrieved by the approval or disapproval of a variance, may appeal the decision of the Zoning Administrator or Planning Commission to the City Council within ten days after the date of such approval or disapproval. The City Council shall hold a hearing thereon, upon notice to the applicant, considering the same criteria presented to the Zoning Administrator. (Ord. 6462 § 11, 1999; Ord. 6273 § 1 (part), 1996)

Chapter 7.45

SEVERABILITY

Section:
7.45.010 Severability

Section 7.45.010 Severability

If any section, subsection, sentence, clause or phrase in this title is for any reason held to be invalid or unconstitutional by decision of any court of competent jurisdiction, such decision shall not affect the validity of the remaining portions of this title. The City Council hereby declares that it would have passed this title and each section, subsection, clause or phrase thereof irrespective of the fact that any one or more other sections, subsections, clauses or phrases may be declared invalid or unconstitutional. (Ord. 6328 § 3, 1996)

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APPENDIX 5.1:

STUDY AREA PHOTOS

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L1
33, 55' 52.532900", 117, 16' 59.393900"

L1_E
33, 55' 52.532900", 117, 16' 59.393900"

L1_N
33, 55' 51.420500", 117, 16' 59.723500"

L1_N2
33, 55' 51.420500", 117, 16' 59.723500"

L1_N3
33, 55' 52.532900", 117, 16' 59.393900"

L1_N4
33, 55' 52.532900", 117, 16' 59.393900"

L1_NE
33, 55' 51.420500", 117, 16' 59.723500"

L1_S
33, 55' 52.532900", 117, 16' 59.393900"

L1_SE
33, 55' 52.532900", 117, 16' 59.393900"

L1_W
33, 55' 52.532900", 117, 16' 59.393900"

L2
33, 56' 12.006200", 117, 17' 14.637400"

L2_E
33, 55' 53.878700", 117, 17' 1.481300"

L2_E2
33, 55' 54.743900", 117, 17' 2.442600"

L2_N
33, 55' 54.743900", 117, 17' 2.442600"

L2_NE
33, 55' 54.743900", 117, 17' 2.442600"

L2_NW
33, 55' 54.743900", 117, 17' 2.442600"

L2_S
33, 55' 53.878700", 117, 17' 1.481300"

L2_S2
33, 55' 53.878700", 117, 17' 1.481300"

L2_W
33, 55' 54.743900", 117, 17' 2.442600"

L3
33, 55' 59.742700", 117, 16' 59.091800"

L3_2
33, 55' 59.742700", 117, 16' 59.091800"

L3_E
33, 55' 59.742700", 117, 16' 59.091800"

L3_N
33, 55' 59.742700", 117, 16' 59.091800"

L3_NE
33, 55' 59.742700", 117, 16' 59.091800"

L3_NW
33, 55' 59.742700", 117, 16' 59.091800"

L3_S
33, 55' 59.742700", 117, 16' 59.091800"

L3_SW
33, 55' 59.742700", 117, 16' 59.091800"

L4
33, 56' 11.855100", 117, 17' 12.192900"

L4_2
33, 56' 11.855100", 117, 17' 12.192900"

L4_N
33, 56' 12.349500", 117, 17' 11.094300"

L4_NE
33, 56' 12.349500", 117, 17' 11.094300"

L4_NW
33, 56' 12.349500", 117, 17' 11.094300"

L4_S
33, 56' 11.855100", 117, 17' 12.192900"

L4_SE
33, 56' 11.855100", 117, 17' 12.192900"

L4_SE2
33, 56' 12.349500", 117, 17' 11.094300"

L5
33, 56' 17.677900", 117, 17' 1.728500"

L5_E
33, 56' 17.677900", 117, 17' 1.728500"

L5_E2
33, 56' 17.677900", 117, 17' 1.728500"

L5_E3
33, 56' 17.677900", 117, 17' 1.728500"

L5_N
33, 56' 17.677900", 117, 17' 1.728500"

L5_NE
33, 56' 17.677900", 117, 17' 1.728500"

L5_S
33, 56' 17.677900", 117, 17' 1.728500"

L5_SE
33, 56' 17.677900", 117, 17' 1.728500"

L5_SW
33, 56' 17.677900", 117, 17' 1.728500"

L6
33, 56' 8.998700", 117, 17' 7.194200"

L6_N
33, 56' 8.998700", 117, 17' 7.194200"

L6_N2
33, 56' 8.998700", 117, 17' 7.194200"

L6_N3
33, 56' 8.243400", 117, 17' 7.853300"

L6_NE
33, 56' 8.998700", 117, 17' 7.194200"

L7
33, 56' 12.239600", 117, 16' 54.395100"

L7_2
33, 56' 12.239600", 117, 16' 54.395100"

L7_E
33, 56' 12.239600", 117, 16' 54.395100"

L7_E2
33, 56' 12.239600", 117, 16' 54.395100"

L7_E3
33, 56' 12.239600", 117, 16' 54.395100"

L7_S
33, 56' 12.239600", 117, 16' 54.395100"

L7_SE
33, 56' 12.239600", 117, 16' 54.395100"

L8
33, 56' 5.071100", 117, 16' 53.955600"

L8_2
33, 56' 5.744000", 117, 16' 53.681000"

L8_E
33, 56' 5.744000", 117, 16' 53.681000"

L8_E2
33, 56' 5.744000", 117, 16' 53.681000"

L8_N
33, 56' 5.744000", 117, 16' 53.681000"

L8_NE
33, 56' 5.744000", 117, 16' 53.681000"

L8_S
33, 56' 5.744000", 117, 16' 53.681000"

L8_SW
33, 56' 5.744000", 117, 16' 53.681000"

L8_W
33, 56' 5.744000", 117, 16' 53.681000"

L9
33, 56' 6.334500", 117, 16' 45.386300"

L9_E
33, 56' 6.334500", 117, 16' 45.386300"

L9_E2
33, 56' 5.936200", 117, 16' 45.688400"

L9_NE
33, 56' 5.936200", 117, 16' 45.688400"

L9_NW
33, 56' 5.936200", 117, 16' 45.688400"

L9_S
33, 56' 6.334500", 117, 16' 45.386300"

L9_SE
33, 56' 6.334500", 117, 16' 45.386300"

L9_W
33, 56' 6.334500", 117, 16' 45.386300"

NoiseSource_Baker's Drive-Thru
33, 56' 5.812600", 117, 16' 45.221500"

NoiseSource_Baker's Drive-Thru-2
33, 56' 6.856300", 117, 16' 44.562300"

NoiseSource_Ground Squirrels
33, 56' 16.840200", 117, 17' 0.904500"

NoiseSource_Panda Express Drive-Thru
33, 56' 6.856300", 117, 16' 44.562300"

NoiseSource_Portillo's Drive-Thru
33, 56' 5.812600", 117, 16' 45.221500"

NoiseSource_Target Loading Docks + Trash Compactor
33, 56' 17.156000", 117, 16' 55.026800"

NoiseSource_Target Loading Docks + Trash Compactor-2
33, 56' 16.373200", 117, 16' 55.438800"

NoiseSource_Target Loading Docks + Trash Compactor-3
33, 56' 15.521800", 117, 16' 55.768400"

NoiseSource_Target Loading Docks + Trash Compactor-4
33, 56' 15.521800", 117, 16' 55.768400"

NoiseSource_Target
33, 56' 16.373200", 117, 16' 55.438800"

NoiseSource_Target-2
33, 56' 15.521800", 117, 16' 55.768400"

NoiseSource_Target-3
33, 56' 15.521800", 117, 16' 55.768400"

NoiseSource_Target-4
33, 56' 16.826400", 117, 17' 0.053100"

NoiseSource_Walmart Loading Docks-E
33, 56' 19.216000", 117, 17' 5.628600"

NoiseSource_Walmart Loading Docks-W
33, 56' 18.529300", 117, 17' 13.264100"

NoiseSource_Walmart
33, 56' 16.853900", 117, 17' 14.307800"

Site_Assisted Living-E
33, 56' 12.280800", 117, 16' 54.422600"

Site_Assisted Living-NE
33, 56' 12.280800", 117, 16' 54.422600"

Site_Assisted Living-NW
33, 56' 12.280800", 117, 16' 54.422600"

Site_Assisted Living-S
33, 56' 12.280800", 117, 16' 54.422600"

Site_Assisted Living-S2
33, 56' 12.280800", 117, 16' 54.422600"

Site_Assisted Living-SE
33, 56' 12.280800", 117, 16' 54.422600"

Site_Assisted Living-SW
33, 56' 12.280800", 117, 16' 54.422600"

Site_Assisted Living-W
33, 56' 12.280800", 117, 16' 54.422600"

Site_Hospital_S
33, 55' 59.825100", 117, 17' 4.557400"

Site_Hospital_SE
33, 55' 59.825100", 117, 17' 4.557400"

Site_Hospital-E
33, 55' 59.825100", 117, 17' 4.557400"

Site_Hospital-NE
33, 55' 59.825100", 117, 17' 4.557400"

Site_Hospital-SW
33, 55' 59.825100", 117, 17' 4.557400"

Site_Hospital-SW2
33, 55' 59.825100", 117, 17' 4.557400"

Site_Hospital-W
33, 55' 59.825100", 117, 17' 4.557400"

Site_Nursing Facility-E
33, 56' 5.661600", 117, 16' 49.973100"

Site_Nursing Facility-N
33, 56' 5.661600", 117, 16' 49.973100"

Site_Nursing Facility-N2
33, 56' 5.661600", 117, 16' 49.973100"

Site_Nursing Facility-N3
33, 56' 5.812600", 117, 16' 45.221500"

Site_Nursing Facility-NE
33, 56' 5.661600", 117, 16' 49.973100"

Site_Nursing Facility-NW
33, 56' 5.661600", 117, 16' 49.973100"

Site_Nursing Facility-NW2
33, 56' 5.812600", 117, 16' 45.221500"

Site_Nursing Facility-NW3
33, 56' 5.812600", 117, 16' 45.221500"

Site_Nursing Facility-S
33, 56' 5.661600", 117, 16' 49.973100"

Site_Nursing Facility-W
33, 56' 5.826400", 117, 16' 45.276400"

Site_Senior Housing-Campus Pkwy-N
33, 56' 17.362000", 117, 17' 0.986900"

Site_Senior Housing-Campus Pkwy-S
33, 56' 16.840200", 117, 17' 0.904500"

Site_Senior Housing-Campus Pkwy-W
33, 56' 16.826400", 117, 17' 0.053100"

Site_Senior Housing-Campus Pkwy-W2
33, 56' 16.826400", 117, 17' 0.053100"

Site_Senior Housing-E
33, 56' 10.660400", 117, 17' 12.495100"

Site_Senior Housing-N
33, 56' 10.660400", 117, 17' 12.495100"

Site_Senior Housing-NE
33, 56' 10.660400", 117, 17' 12.495100"

Site_Senior Housing-S
33, 56' 10.660400", 117, 17' 12.495100"

Site_Senior Housing-SE
33, 56' 10.660400", 117, 17' 12.495100"

Site_Valley Springs Pkwy-E
33, 55' 58.932400", 117, 17' 8.210400"

Site_Valley Springs Pkwy-N
33, 55' 58.932400", 117, 17' 8.210400"

Site_Valley Springs Pkwy-NE
33, 55' 58.932400", 117, 17' 8.210400"

Site_Valley Springs Pkwy-S
33, 55' 58.932400", 117, 17' 8.210400"

Site_Valley Springs Pkwy-SE
33, 55' 58.932400", 117, 17' 8.210400"

Site_Valley Springs Pkwy-SW
33, 55' 58.932400", 117, 17' 8.210400"

Site_Valley Springs Pkwy-W
33, 55' 58.932400", 117, 17' 8.210400"

APPENDIX 5.2:

NOISE LEVEL MEASUREMENT WORKSHEETS

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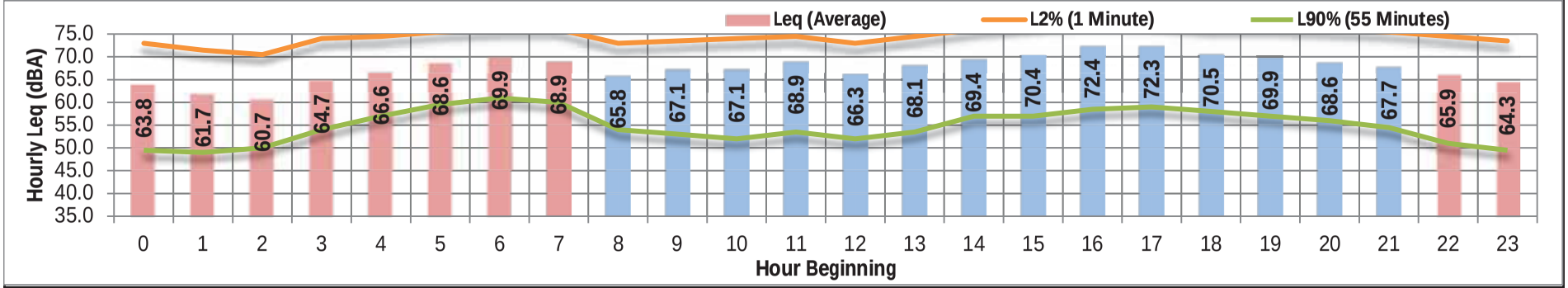
24-Hour Noise Level Measurement Summary

				Energy Average Leq		24-Hour
Project Name:	Canyon Springs	*JN:*	8991	*Day*	*Night*	*CNEL*
Location:	L1 - Located south of Edgemont Elementary School across Eucalyptus Avenue in a vacant lot. Existing single-family homes are located west and north of this location.	*Analyst:*	A. Wolfe	69.4	66.4	73.5
		Date:	1/22/2015 - 1/23/2015			

Hourly Leq dBA Readings (unadjusted)



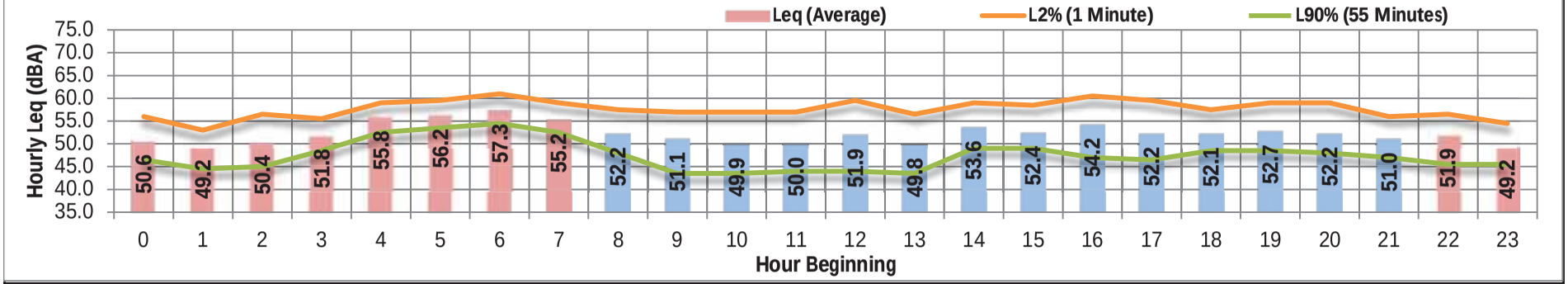
Time Period	*Hour*	*Leq*	*Lmax*	*Lmin*	*L1%*	*L2%*	*L5%*	*L8%*	*L25%*	*L50%*	*L90%*	*L95%*	*L99%*
Day	Min	65.8	77.3	42.4	74.0	73.0	71.5	70.5	66.5	62.0	52.0	49.5	46.0
	Max	72.4	98.3	52.7	80.5	78.0	76.5	75.5	73.0	69.0	59.0	56.5	54.5
Energy Average		69.4	90.9	49.8	77.0	75.7	74.2	73.3	69.9	65.7	56.0	53.8	51.6
Night	Min	60.7	76.8	42.2	73.0	70.5	67.0	65.0	57.0	53.5	49.0	47.0	43.5
	Max	69.9	86.5	57.5	78.0	76.0	75.0	74.0	71.0	67.0	61.0	60.0	58.5
Energy Average		66.4	83.6	52.7	75.7	74.2	72.2	70.6	66.2	61.9	56.4	55.4	54.1
Hourly Summary													
Night	0	63.8	85.7	46.3	74.5	73.0	70.0	67.5	58.0	53.5	49.5	49.0	47.5
	1	61.7	80.9	42.2	73.5	71.5	68.5	66.0	57.5	53.5	49.0	47.0	43.5
	2	60.7	76.8	45.7	73.0	70.5	67.0	65.0	57.0	53.5	50.0	49.0	48.0
	3	64.7	82.0	50.8	75.5	74.0	71.0	69.5	63.0	58.0	54.0	53.0	52.0
	4	66.6	86.5	52.4	75.5	74.5	72.0	70.5	66.0	61.5	57.0	56.0	54.5
	5	68.6	83.5	56.2	76.5	75.5	74.0	72.5	69.5	65.0	59.5	58.5	57.5
	6	69.9	83.0	57.5	77.0	76.0	75.0	74.0	71.0	67.0	61.0	60.0	58.5
	7	68.9	85.8	55.7	78.0	76.0	74.0	72.5	69.0	65.5	60.0	59.0	57.5
Day	8	65.8	83.4	49.1	74.5	73.0	71.5	70.5	66.5	62.0	54.0	52.5	50.5
	9	67.1	80.0	44.6	75.0	73.5	72.5	71.5	68.0	64.0	53.0	50.0	47.5
	10	67.1	86.1	42.4	75.5	74.0	72.5	71.0	67.5	63.0	52.0	49.5	47.0
	11	68.9	93.3	45.4	75.5	74.5	73.5	72.5	69.0	64.5	53.5	50.5	47.5
	12	66.3	77.3	44.3	74.0	73.0	71.5	71.0	67.5	63.0	52.0	49.5	46.0
	13	68.1	89.6	44.9	75.5	74.5	72.5	72.0	68.5	64.5	53.5	50.5	47.0
	14	69.4	91.1	50.8	77.0	76.0	74.0	73.0	69.5	65.5	57.0	55.0	53.0
	15	70.4	86.2	50.8	78.0	77.0	75.5	74.5	71.5	67.5	57.0	54.5	52.5
	16	72.4	94.8	52.5	80.5	78.0	76.5	75.5	73.0	68.5	58.5	56.5	54.0
	17	72.3	98.3	50.4	78.5	77.5	76.0	75.5	72.5	69.0	59.0	55.5	52.5
	18	70.5	83.6	52.7	77.5	76.5	75.5	75.0	71.5	67.5	58.0	56.0	54.5
	19	69.9	89.7	52.3	77.5	76.5	75.0	74.0	70.5	66.0	57.0	56.0	54.0
	20	68.6	86.2	51.5	77.0	76.0	74.5	73.5	69.0	64.5	56.0	54.0	52.0
	21	67.7	82.4	49.8	77.0	75.5	74.0	72.5	67.5	62.0	54.5	53.5	51.5
Night	22	65.9	82.6	47.9	76.0	74.5	72.5	71.0	65.0	57.5	51.0	50.0	48.5
	23	64.3	82.5	46.3	75.0	73.5	71.5	69.5	61.5	55.0	49.5	48.5	47.5

URBAN CROSSROADS

24-Hour Noise Level Measurement Summary

				Energy Average Leq		24-Hour
Project Name:	Canyon Springs	*JN:*	8991	*Day*	*Night*	*CNEL*
Location:	L2 - Located adjacent to existing single-family residential homes along the southern boundary of the proposed medical office buildings 3 and 4, and parking structure.	*Analyst:*	A. Wolfe	52.0	53.7	60.0
		Date:	1/22/2015 - 1/23/2015			

Hourly Leq dBA Readings (unadjusted)



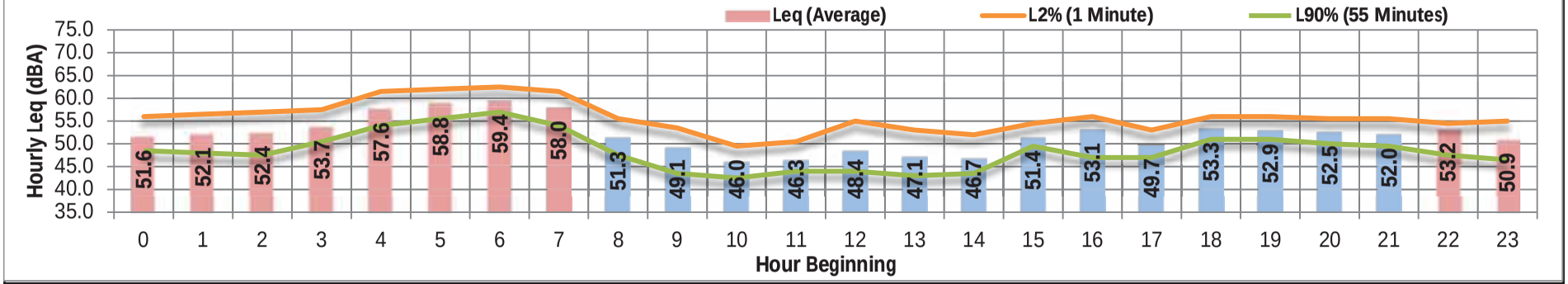
Time Period	*Hour*	*Leq*	*Lmax*	*Lmin*	*L1%*	*L2%*	*L5%*	*L8%*	*L25%*	*L50%*	*L90%*	*L95%*	*L99%*
Day	Min	49.8	65.9	39.4	58.0	56.0	53.0	51.5	49.0	47.0	43.5	42.5	41.0
	Max	54.2	74.5	47.7	64.5	60.5	56.5	54.5	52.0	51.0	49.0	48.5	48.0
Energy Average		52.0	70.4	44.4	61.0	58.3	55.1	53.7	51.2	49.6	46.9	46.3	45.3
Night	Min	49.2	58.8	39.6	54.0	53.0	52.0	51.0	49.0	47.5	44.5	43.0	41.5
	Max	57.3	73.7	51.3	62.5	61.0	59.5	59.0	57.5	56.5	54.5	54.0	53.0
Energy Average		53.7	67.9	47.6	59.2	57.7	56.2	55.7	54.0	52.7	50.4	49.9	48.8
Hourly Summary													
Night	0	50.6	67.4	42.7	57.0	56.0	54.0	53.0	50.5	49.0	46.5	46.0	44.5
	1	49.2	58.8	39.6	54.0	53.0	52.0	51.5	50.0	48.5	44.5	43.0	41.5
	2	50.4	61.1	41.7	57.5	56.5	54.5	54.0	51.0	48.0	45.0	44.5	43.0
	3	51.8	59.5	46.0	56.0	55.5	54.5	54.0	52.5	51.0	48.5	48.0	47.0
	4	55.8	66.6	50.2	60.0	59.0	58.5	58.0	56.5	55.0	52.5	52.0	51.0
	5	56.2	64.6	51.2	60.5	59.5	58.5	58.0	56.5	55.5	53.5	53.0	52.0
	6	57.3	71.2	51.3	62.5	61.0	59.5	59.0	57.5	56.5	54.5	54.0	53.0
	7	55.2	68.0	49.2	60.5	59.0	57.5	57.0	55.5	54.5	52.5	52.0	50.5
Day	8	52.2	69.7	45.2	59.5	57.5	55.0	54.0	52.0	50.5	48.0	47.5	46.0
	9	51.1	72.7	40.5	59.5	57.0	54.5	53.0	49.5	47.5	43.5	43.0	41.5
	10	49.9	71.7	40.2	59.5	57.0	53.0	51.5	49.0	47.0	43.5	42.5	41.0
	11	50.0	67.6	41.0	59.0	57.0	54.5	53.0	49.5	47.5	44.0	43.5	42.5
	12	51.9	71.2	39.4	62.5	59.5	55.5	54.0	50.5	48.0	44.0	43.0	41.0
	13	49.8	65.9	40.1	58.0	56.5	53.5	52.5	50.0	48.0	43.5	42.5	41.0
	14	53.6	74.5	46.6	62.0	59.0	55.5	54.5	52.0	50.5	49.0	48.5	47.5
	15	52.4	67.6	47.7	61.0	58.5	55.5	54.0	52.0	51.0	49.0	48.5	48.0
	16	54.2	74.1	43.3	64.5	60.5	56.5	54.5	52.0	50.5	47.0	46.0	44.5
	17	52.2	66.2	42.5	62.0	59.5	56.0	54.5	51.5	50.0	46.5	46.0	44.0
	18	52.1	67.0	46.7	59.0	57.5	55.0	54.0	52.0	50.5	48.5	48.0	47.5
	19	52.7	68.8	46.7	61.5	59.0	55.5	54.5	52.0	51.0	48.5	48.5	47.5
	20	52.2	68.0	45.3	61.5	59.0	55.5	54.0	51.5	50.5	48.0	47.0	46.5
	21	51.0	66.1	43.8	58.5	56.0	54.0	53.0	51.0	49.5	47.0	46.5	45.0
Night	22	51.9	73.7	42.0	60.0	56.5	53.0	52.0	49.5	48.0	45.5	44.5	44.0
	23	49.2	65.4	42.6	57.0	54.5	52.0	51.0	49.0	47.5	45.5	44.5	43.5

URBAN CROSSROADS

24-Hour Noise Level Measurement Summary

				Energy Average Leq		24-Hour
Project Name:	Canyon Springs	*JN:*	8991	*Day*	*Night*	*CNEL*
Location:	L3 - Located at the northern property line of the Edgemont Elementary School, east of the proposed hospital and south of medical office building 1.	*Analyst:*	A. Wolfe	50.7	55.9	61.8
		Date:	1/22/2015 - 1/23/2015			

Hourly Leq dBA Readings (unadjusted)



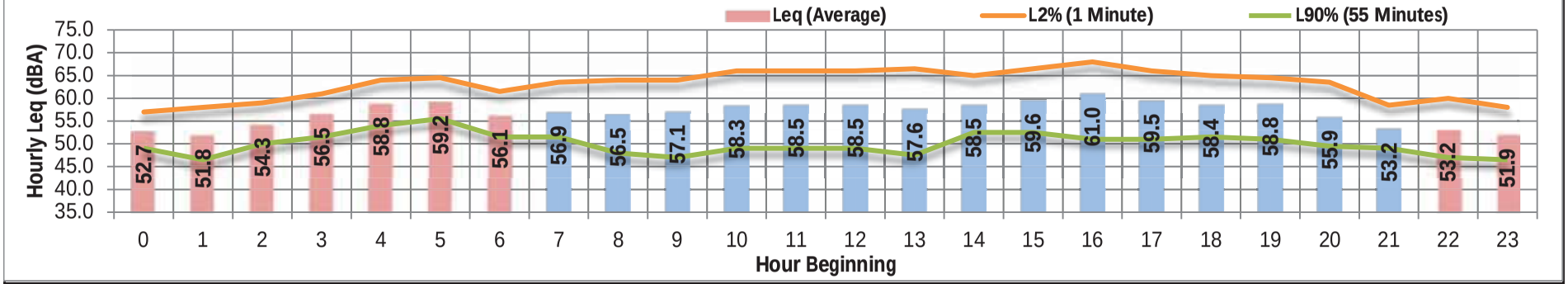
Time Period	*Hour*	*Leq*	*Lmax*	*Lmin*	*L1%*	*L2%*	*L5%*	*L8%*	*L25%*	*L50%*	*L90%*	*L95%*	*L99%*
Day	Min	46.0	57.5	41.3	51.0	49.5	48.5	48.0	46.5	45.0	42.5	42.0	42.0
	Max	53.3	73.7	49.2	62.5	56.0	55.0	54.5	53.5	52.5	51.0	50.5	50.0
Energy Average		50.7	66.4	45.8	56.8	54.4	52.7	51.9	50.6	49.5	47.7	47.1	46.5
Night	Min	50.9	62.3	42.9	57.0	54.5	52.5	52.0	50.0	48.5	46.5	46.5	45.0
	Max	59.4	75.5	53.7	63.5	62.5	61.5	61.0	60.0	59.0	57.0	56.5	55.0
Energy Average		55.9	69.6	49.4	60.5	59.4	58.3	57.7	56.4	55.1	52.5	51.8	50.4
Hourly Summary													
Night	0	51.6	64.2	45.2	57.0	56.0	54.5	53.5	52.0	50.5	48.5	48.0	46.5
	1	52.1	63.2	42.9	57.0	56.5	55.5	54.5	52.5	51.0	48.0	47.0	45.0
	2	52.4	63.1	45.0	57.5	57.0	56.0	55.5	53.5	51.0	47.5	47.0	46.0
	3	53.7	62.3	47.6	58.0	57.5	56.5	56.0	54.5	53.0	50.5	49.5	48.5
	4	57.6	67.4	51.9	62.0	61.5	60.5	60.0	58.5	57.0	54.0	53.5	52.5
	5	58.8	72.7	51.7	63.5	62.0	61.0	60.5	59.0	58.0	55.5	54.5	53.0
	6	59.4	68.9	53.7	63.5	62.5	61.5	61.0	60.0	59.0	57.0	56.5	55.0
	7	58.0	65.2	50.8	62.0	61.5	60.5	60.0	59.0	57.5	54.0	53.0	51.5
Day	8	51.3	59.9	45.3	56.5	55.5	54.5	53.5	52.0	50.5	47.5	46.5	46.0
	9	49.1	71.2	42.0	57.0	53.5	50.0	48.5	46.5	45.5	43.5	43.0	42.5
	10	46.0	58.0	41.3	51.0	49.5	48.5	48.0	46.5	45.0	42.5	42.0	42.0
	11	46.3	60.3	42.6	52.0	50.5	49.0	48.0	46.5	45.0	44.0	43.5	43.0
	12	48.4	65.8	42.1	58.0	55.0	52.0	50.0	47.0	45.5	44.0	43.5	43.0
	13	47.1	62.5	41.3	56.0	53.0	50.5	49.0	46.5	45.0	43.0	42.5	42.0
	14	46.7	59.8	42.1	53.5	52.0	50.0	49.0	46.5	45.0	43.5	43.0	42.5
	15	51.4	64.9	48.3	55.0	54.5	53.0	52.5	51.5	51.0	49.5	49.5	49.0
	16	53.1	73.7	45.0	62.5	56.0	53.0	52.0	50.5	49.5	47.0	46.5	46.0
	17	49.7	57.5	44.9	53.5	53.0	52.0	51.5	50.5	49.0	47.0	46.5	45.5
	18	53.3	62.4	49.1	57.5	56.0	55.0	54.5	53.5	52.5	51.0	50.5	49.5
	19	52.9	65.9	49.2	57.5	56.0	54.5	54.0	53.0	52.5	51.0	50.5	50.0
	20	52.5	67.2	48.3	56.0	55.5	54.5	54.0	53.0	51.5	50.0	49.5	49.0
	21	52.0	61.0	46.5	56.5	55.5	54.5	54.0	52.5	51.5	49.5	48.5	47.5
Night	22	53.2	75.5	45.5	59.0	54.5	52.5	52.0	50.5	49.0	47.5	47.0	46.5
	23	50.9	71.1	45.2	57.0	55.0	53.0	52.0	50.0	48.5	46.5	46.5	46.0

URBAN CROSSROADS

24-Hour Noise Level Measurement Summary

				Energy Average Leq		24-Hour
Project Name:	Canyon Springs	*JN:*	8991	*Day*	*Night*	*CNEL*
Location:	L4 - Located at the southeast corner of Valley Springs Parkway and Corporate Centre Place at the future location of the parking lot for the senior housing residences.	*Analyst:*	A. Wolfe	58.2	55.8	62.9
		Date:	1/22/2015 - 1/23/2015			

Hourly Leq dBA Readings (unadjusted)



Time Period	Hour	Leq	Lmax	Lmin	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%
Day	Min	53.2	66.8	44.1	60.0	58.5	56.5	55.5	53.5	51.0	47.0	46.5	45.0
	Max	61.0	86.1	50.3	71.5	68.0	64.5	62.5	58.5	55.0	52.5	52.0	51.0
Energy Average		58.2	81.2	47.2	68.2	65.3	61.9	60.3	56.3	53.5	50.3	49.6	48.4
Night	Min	51.8	63.4	41.4	58.5	57.0	55.0	54.5	51.0	49.5	46.5	46.0	43.5
	Max	59.2	79.8	52.7	67.5	64.5	62.0	61.0	59.0	57.5	55.5	55.0	54.0
Energy Average		55.8	74.3	48.3	63.7	61.1	58.7	57.6	55.6	53.8	51.3	50.7	49.5
Hourly Summary													
Night	0	52.7	63.4	45.7	58.5	57.0	56.0	55.0	53.0	51.5	49.0	48.5	47.5
	1	51.8	66.7	41.4	60.0	58.0	55.0	54.5	52.0	50.0	46.5	46.0	43.5
	2	54.3	66.4	46.9	62.0	59.0	57.0	56.5	54.5	53.0	50.0	49.5	48.0
	3	56.5	70.6	48.4	62.0	61.0	60.0	59.0	57.5	55.0	51.5	50.5	49.5
	4	58.8	79.8	50.8	67.5	64.0	61.5	60.0	58.0	56.5	54.0	53.5	52.0
	5	59.2	75.0	52.7	66.5	64.5	62.0	61.0	59.0	57.5	55.5	55.0	54.0
	6	56.1	78.0	49.5	63.5	61.5	59.0	57.5	55.5	53.5	51.5	51.0	50.0
Day	7	56.9	74.0	48.1	66.0	63.5	61.0	59.5	56.0	54.5	51.5	50.5	49.0
	8	56.5	77.4	44.3	67.0	64.0	60.5	59.0	54.0	51.0	48.0	47.5	46.0
	9	57.1	79.9	44.3	67.0	64.0	61.0	59.5	54.5	51.0	47.0	46.5	45.5
	10	58.3	79.0	44.9	69.0	66.0	62.0	60.5	56.0	52.5	49.0	48.0	46.5
	11	58.5	82.5	45.0	69.0	66.0	63.0	61.0	57.0	53.5	49.0	48.0	47.0
	12	58.5	81.2	45.9	69.0	66.0	63.0	61.5	56.5	53.0	49.0	48.0	47.0
	13	57.6	76.9	44.1	69.0	66.5	62.0	59.5	55.5	52.0	47.5	46.5	45.0
	14	58.5	78.1	49.4	68.0	65.0	62.5	61.0	57.5	55.0	52.5	52.0	51.0
	15	59.6	82.6	50.3	69.5	66.5	62.5	61.5	57.5	55.0	52.5	52.0	51.0
	16	61.0	83.6	47.5	71.5	68.0	64.5	62.5	58.5	55.0	51.0	50.5	49.0
	17	59.5	83.5	47.4	69.0	66.0	63.0	61.5	57.5	54.5	51.0	50.0	49.0
	18	58.4	82.8	48.9	67.5	65.0	61.5	60.5	56.5	54.5	51.5	51.0	50.0
	19	58.8	86.1	48.6	67.0	64.5	61.0	60.0	56.0	54.0	51.0	50.5	49.5
	20	55.9	76.2	46.9	65.5	63.5	59.5	58.0	54.5	52.5	49.5	49.0	48.0
	21	53.2	66.8	45.9	60.0	58.5	56.5	55.5	53.5	52.0	49.0	48.5	47.0
Night	22	53.2	72.0	44.6	64.5	60.0	56.0	54.5	51.0	49.5	47.0	46.5	45.5
	23	51.9	71.8	43.4	60.0	58.0	55.0	54.5	52.0	50.0	46.5	46.0	44.5

URBAN CROSSROADS

24-Hour Noise Level Measurement Summary

Project Name: Canyon Springs

Location: L5 - Located north of the Project site and future senior housing development at the southern corner of Corporate Centre Place and Campus Parkway.

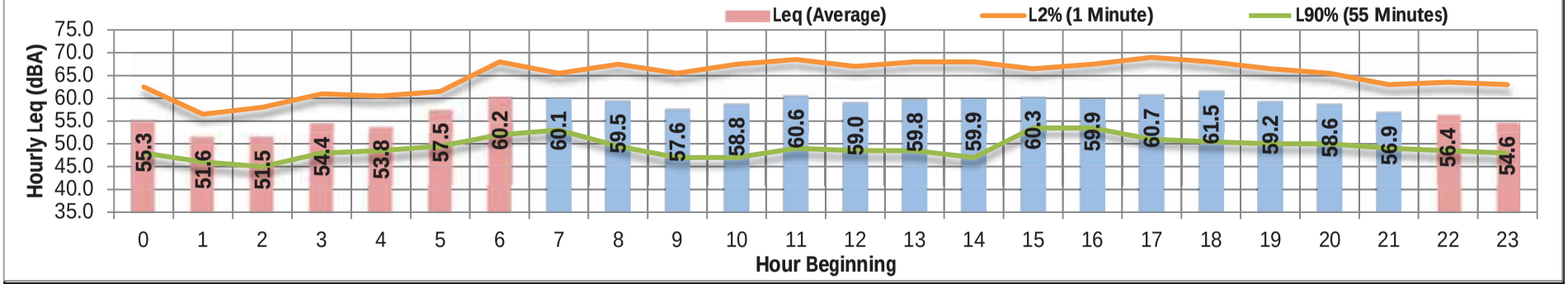
JN: 8991

Analyst: A. Wolfe

Date: 1/22/2015 - 1/23/2015

Energy Average Leq		24-Hour
Day	Night	CNEL
59.6	55.9	63.4

Hourly Leq dBA Readings (unadjusted)



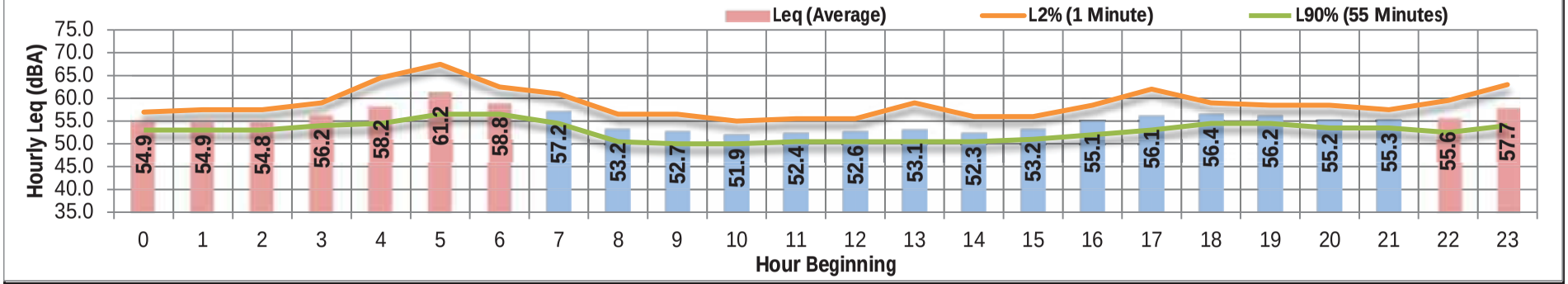
Time Period	Hour	Leq	Lmax	Lmin	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%
Day	Min	56.9	74.1	42.2	64.5	63.0	60.5	59.0	55.0	52.5	47.0	45.5	43.5
	Max	61.5	86.5	51.4	72.0	69.0	65.0	63.0	59.5	57.0	53.5	53.0	52.0
Energy Average		59.6	81.1	46.9	70.1	67.1	63.6	62.0	58.1	55.0	50.3	49.5	48.1
Night	Min	51.5	69.0	42.1	60.0	56.5	53.5	52.5	50.5	48.5	45.0	44.5	43.0
	Max	60.2	84.0	49.7	71.5	68.0	62.5	60.5	57.0	54.5	52.0	51.5	50.5
Energy Average		55.9	79.0	45.6	66.0	62.8	58.7	57.0	53.6	51.5	48.6	47.9	46.7
Hourly Summary													
Night	0	55.3	77.0	43.6	66.5	62.5	59.0	56.5	53.0	51.0	48.0	47.0	45.5
	1	51.6	71.8	43.8	61.0	56.5	53.5	52.5	50.5	49.0	46.0	45.5	44.5
	2	51.5	76.0	42.1	60.0	58.0	54.5	53.0	50.5	48.5	45.0	44.5	43.0
	3	54.4	76.7	44.2	64.0	61.0	57.0	55.0	52.0	50.5	48.0	47.5	45.5
	4	53.8	72.4	45.9	64.0	60.5	56.5	55.5	52.5	51.0	48.5	48.0	47.5
	5	57.5	83.2	46.2	65.0	61.5	58.0	57.0	54.5	52.5	49.5	49.0	47.0
	6	60.2	84.0	49.7	71.5	68.0	62.5	60.5	57.0	54.5	52.0	51.5	50.5
Day	7	60.1	82.7	50.0	68.5	65.5	62.5	61.5	59.0	57.0	53.0	52.5	51.0
	8	59.5	78.2	45.5	70.5	67.5	63.5	62.0	58.5	56.0	49.5	48.0	46.0
	9	57.6	74.1	43.7	67.5	65.5	63.0	61.5	57.0	53.0	47.0	46.0	45.0
	10	58.8	78.4	42.4	69.5	67.5	63.5	62.0	57.5	53.5	47.0	46.0	43.5
	11	60.6	82.0	43.1	71.0	68.5	64.5	62.5	58.0	54.0	49.0	47.5	45.5
	12	59.0	79.5	42.4	69.5	67.0	63.5	62.0	58.0	54.5	48.5	47.0	45.0
	13	59.8	79.3	43.3	72.0	68.0	63.5	62.0	58.0	54.0	48.5	47.0	45.0
	14	59.9	80.7	42.2	72.0	68.0	64.0	62.0	57.5	54.0	47.0	45.5	43.5
	15	60.3	82.5	51.0	70.0	66.5	64.0	62.5	59.0	56.5	53.5	53.0	52.0
	16	59.9	76.3	51.4	69.5	67.5	64.5	63.0	59.5	56.5	53.5	53.0	52.0
	17	60.7	79.7	46.4	71.5	69.0	65.0	63.0	59.5	56.5	51.0	50.0	48.5
	18	61.5	86.5	47.3	72.0	68.0	64.0	62.0	58.0	55.0	50.5	49.5	48.5
	19	59.2	79.5	46.7	69.5	66.5	63.5	62.0	58.0	55.0	50.0	49.0	48.0
	20	58.6	80.2	47.2	68.0	65.5	63.0	61.5	57.0	53.5	50.0	49.5	48.5
	21	56.9	82.2	44.3	64.5	63.0	60.5	59.0	55.0	52.5	49.0	47.5	45.5
Night	22	56.4	78.5	45.1	65.5	63.5	60.5	59.0	54.5	52.0	48.5	47.5	46.5
	23	54.6	69.0	45.2	65.5	63.0	59.5	57.5	53.5	51.0	48.0	47.0	46.0

URBAN CROSSROADS

24-Hour Noise Level Measurement Summary

				Energy Average Leq		24-Hour
Project Name:	Canyon Springs	*JN:*	8991	*Day*	*Night*	*CNEL*
Location:	L6 - Located at the northern property line of the County of Riverside County Clerk's office building, south of the proposed senior housing building within the Project site.	*Analyst:*	A. Wolfe	54.5	57.5	63.7
		Date:	1/22/2015 - 1/23/2015			

Hourly Leq dBA Readings (unadjusted)



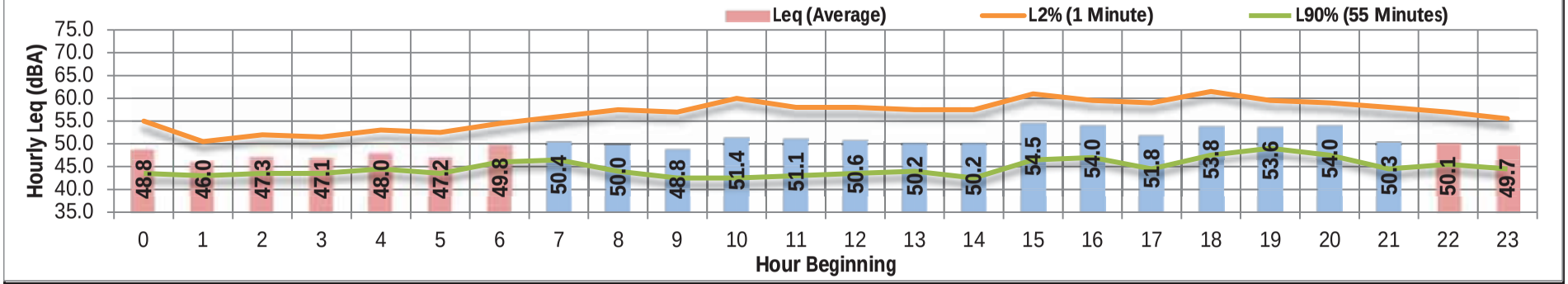
Time Period	*Hour*	*Leq*	*Lmax*	*Lmin*	*L1%*	*L2%*	*L5%*	*L8%*	*L25%*	*L50%*	*L90%*	*L95%*	*L99%*
Day	Min	51.9	62.0	47.4	56.0	55.0	54.0	53.5	52.0	51.0	50.0	49.0	48.0
	Max	57.2	74.0	53.1	63.0	62.0	59.5	59.0	57.5	56.5	54.5	54.5	54.0
Energy Average		54.5	68.4	50.6	59.4	58.2	56.4	55.8	54.6	53.8	52.3	51.9	51.4
Night	Min	54.8	60.9	51.0	57.5	57.0	56.5	56.0	55.0	54.0	52.5	52.5	52.0
	Max	61.2	81.6	54.9	70.0	67.5	62.5	61.0	59.5	58.5	56.5	56.0	55.5
Energy Average		57.5	74.1	52.7	64.3	62.4	59.6	58.7	57.0	56.0	54.4	53.9	53.4
Hourly Summary													
Night	0	54.9	63.2	51.6	57.5	57.0	56.5	56.0	55.0	54.5	53.0	52.5	52.0
	1	54.9	63.5	51.0	58.0	57.5	57.0	56.5	55.5	54.5	53.0	52.5	52.0
	2	54.8	60.9	51.5	57.5	57.5	56.5	56.5	55.0	54.0	53.0	52.5	52.0
	3	56.2	62.5	52.6	59.5	59.0	58.0	57.5	56.5	55.5	54.0	54.0	53.0
	4	58.2	71.5	52.8	65.5	64.5	62.5	61.0	58.0	56.0	54.5	54.0	53.5
	5	61.2	81.6	54.8	70.0	67.5	62.5	61.0	59.5	58.5	56.5	56.0	55.5
	6	58.8	69.6	54.9	63.5	62.5	61.0	60.5	59.0	58.0	56.5	56.0	55.5
Day	7	57.2	65.9	53.1	62.0	61.0	59.5	59.0	57.5	56.5	54.5	54.0	53.5
	8	53.2	65.0	48.6	57.5	56.5	55.5	55.0	53.5	52.5	50.5	50.0	49.5
	9	52.7	74.0	47.4	59.0	56.5	54.0	53.5	52.0	51.0	50.0	49.0	48.0
	10	51.9	64.5	47.4	56.0	55.0	54.0	53.5	52.0	51.5	50.0	49.5	48.5
	11	52.4	62.3	49.1	56.0	55.5	54.0	53.5	52.5	52.0	50.5	50.0	49.5
	12	52.6	62.0	48.1	56.0	55.5	54.5	54.0	53.0	52.0	50.5	50.0	49.0
	13	53.1	67.8	49.1	61.5	59.0	55.5	54.5	52.5	52.0	50.5	50.5	50.0
	14	52.3	63.3	49.3	57.0	56.0	54.5	53.5	52.5	51.5	50.5	50.0	50.0
	15	53.2	70.5	49.3	57.0	56.0	55.0	54.0	53.0	52.5	51.0	50.5	50.0
	16	55.1	71.9	50.6	61.0	58.5	56.5	56.0	54.5	53.5	52.0	51.5	51.0
	17	56.1	70.1	50.7	63.0	62.0	58.5	57.5	56.0	55.0	53.0	52.5	52.0
	18	56.4	62.9	53.0	59.5	59.0	58.0	57.5	56.5	56.0	54.5	54.5	54.0
	19	56.2	70.6	52.8	59.0	58.5	57.5	57.5	56.5	55.5	54.5	54.5	54.0
	20	55.2	63.7	52.0	59.5	58.5	57.0	56.5	55.5	54.5	53.5	53.0	52.5
	21	55.3	66.7	52.0	58.5	57.5	57.0	56.5	55.5	55.0	53.5	53.0	52.5
Night	22	55.6	70.4	51.1	61.0	59.5	57.0	57.0	55.5	54.5	52.5	52.5	52.0
	23	57.7	76.3	51.7	66.5	63.0	59.5	58.5	56.5	55.5	54.0	53.5	53.0

URBAN CROSSROADS

24-Hour Noise Level Measurement Summary

				Energy Average Leq		24-Hour
Project Name:	Canyon Springs	*JN:*	8991	*Day*	*Night*	*CNEL*
Location:	L7 - Located along Canyon Park Drive at the future location of the independent living facility within the Project site, south of an existing office building.	*Analyst:*	A. Wolfe	52.0	48.4	56.2
		Date:	1/22/2015 - 1/23/2015			

Hourly Leq dBA Readings (unadjusted)



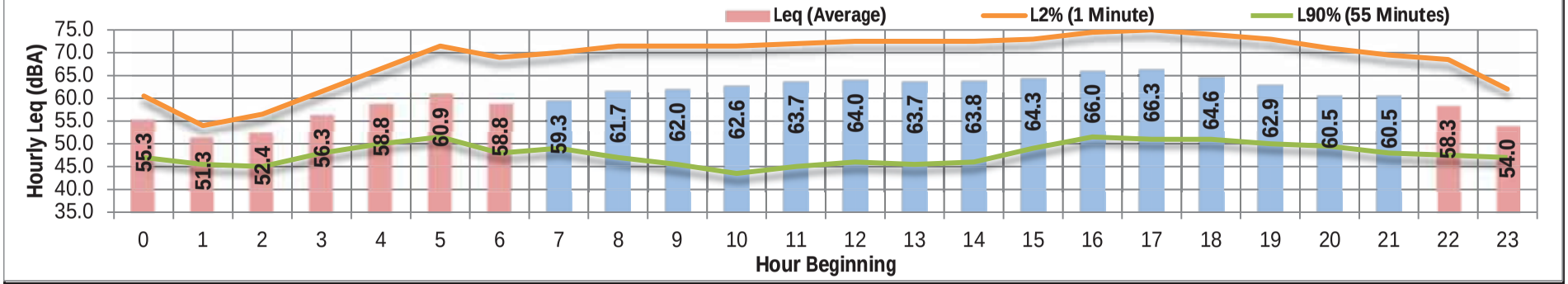
Time Period	*Hour*	*Leq*	*Lmax*	*Lmin*	*L1%*	*L2%*	*L5%*	*L8%*	*L25%*	*L50%*	*L90%*	*L95%*	*L99%*
Day	Min	48.8	63.4	40.3	57.5	56.0	54.0	53.0	47.0	44.5	42.5	42.0	41.0
	Max	54.5	80.2	45.4	63.0	61.5	59.0	57.5	54.0	52.0	49.0	48.0	46.5
Energy Average		52.0	73.8	43.0	60.5	58.9	56.7	55.2	51.3	48.5	45.5	44.8	43.9
Night	Min	46.0	61.1	40.1	53.0	50.5	49.0	48.0	46.0	44.5	43.0	42.5	41.5
	Max	50.1	71.5	43.2	58.5	57.0	54.0	52.0	50.0	49.0	46.0	45.5	44.5
Energy Average		48.4	67.3	41.7	56.2	54.0	51.4	50.2	48.0	46.7	44.3	43.8	42.8
Hourly Summary													
Night	0	48.8	67.3	41.1	58.0	55.0	51.5	50.0	48.0	46.0	43.5	43.0	42.0
	1	46.0	61.1	40.1	53.0	50.5	49.0	48.0	46.0	44.5	43.0	42.5	41.5
	2	47.3	65.4	40.9	53.0	52.0	50.5	49.5	47.5	46.0	43.5	43.0	42.0
	3	47.1	63.2	41.6	54.0	51.5	50.5	49.5	47.0	46.0	43.5	43.0	42.5
	4	48.0	68.2	41.3	55.0	53.0	50.0	49.5	47.5	46.5	44.5	44.0	42.5
	5	47.2	67.2	41.5	55.0	52.5	50.0	48.5	46.5	45.5	43.5	43.5	42.5
	6	49.8	63.5	43.2	56.5	54.5	52.5	51.5	50.0	49.0	46.0	45.5	44.5
Day	7	50.4	63.4	45.0	57.5	56.0	54.0	53.0	50.5	49.0	46.5	46.0	45.5
	8	50.0	63.7	42.4	59.0	57.5	55.0	53.5	50.0	47.5	44.0	43.5	43.0
	9	48.8	64.7	40.3	58.5	57.0	54.5	53.0	47.0	44.5	42.5	42.0	41.5
	10	51.4	69.3	40.4	63.0	60.0	56.5	54.5	48.5	45.0	42.5	42.0	41.0
	11	51.1	77.4	41.1	60.0	58.0	55.5	54.0	48.5	45.0	43.0	42.5	41.5
	12	50.6	67.4	41.3	60.0	58.0	56.0	54.5	50.0	46.0	43.5	43.0	42.0
	13	50.2	64.7	42.3	59.0	57.5	55.5	54.5	50.0	46.5	44.0	43.5	42.5
	14	50.2	67.5	40.9	59.0	57.5	55.5	54.5	49.5	45.5	42.5	42.5	41.5
	15	54.5	80.1	41.9	62.5	61.0	58.5	57.0	53.5	51.0	46.5	45.5	43.0
	16	54.0	75.8	44.4	61.5	59.5	58.0	56.5	53.0	49.5	47.0	46.5	45.5
	17	51.8	65.7	42.5	60.0	59.0	57.5	56.0	52.0	48.0	44.5	44.0	43.0
	18	53.8	72.5	45.3	63.0	61.5	59.0	57.5	52.5	50.0	47.5	47.0	46.5
	19	53.6	68.7	45.4	60.5	59.5	58.0	56.5	54.0	52.0	49.0	48.0	46.5
	20	54.0	80.2	44.6	61.0	59.0	57.0	56.0	53.0	51.0	47.5	46.5	45.5
	21	50.3	65.6	41.7	59.0	58.0	55.5	53.5	50.0	47.0	44.5	43.5	43.0
Night	22	50.1	69.2	43.0	58.5	57.0	54.0	52.0	49.0	47.5	45.5	45.0	44.0
	23	49.7	71.5	42.1	58.5	55.5	52.5	51.5	49.0	47.5	44.5	44.0	43.0

URBAN CROSSROADS

24-Hour Noise Level Measurement Summary

				Energy Average Leq		24-Hour
Project Name:	Canyon Springs	*JN:*	8991	*Day*	*Night*	*CNEL*
Location:	L8 - Located north of Gateway Drive at the future location of the assisted living building within the Project site. An existing urgent care facility is located south of Gateway Drive.	*Analyst:*	A. Wolfe	63.5	57.2	65.7
		Date:	1/22/2015 - 1/23/2015			

Hourly Leq dBA Readings (unadjusted)



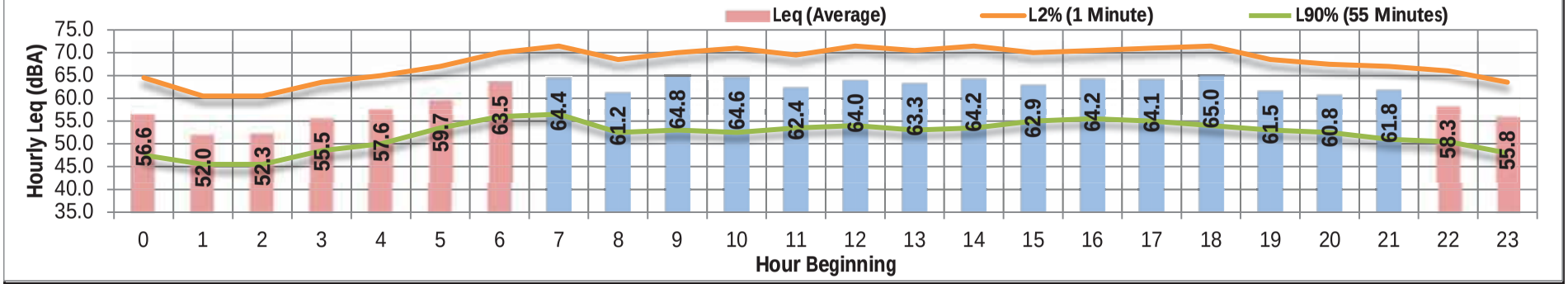
Time Period	*Hour*	*Leq*	*Lmax*	*Lmin*	*L1%*	*L2%*	*L5%*	*L8%*	*L25%*	*L50%*	*L90%*	*L95%*	*L99%*
Day	Min	59.3	77.7	41.0	72.0	69.5	64.0	60.0	53.0	51.0	43.5	42.5	41.5
	Max	66.3	88.1	48.3	76.0	75.0	73.0	71.5	65.5	59.0	51.5	50.5	49.0
Energy Average		63.5	81.8	45.4	73.8	72.5	70.2	68.5	62.0	55.4	48.5	47.6	46.5
Night	Min	51.3	75.4	43.0	55.5	54.0	52.5	52.0	49.5	48.0	45.0	44.5	43.5
	Max	60.9	81.2	47.9	74.0	71.5	65.0	61.5	56.5	54.5	51.5	51.0	49.5
Energy Average		57.2	79.0	45.7	69.8	66.3	60.2	57.2	52.7	50.8	48.2	47.6	46.6
Hourly Summary													
Night	0	55.3	78.2	44.9	67.0	60.5	55.0	53.0	50.5	49.0	47.0	46.5	45.5
	1	51.3	78.0	43.0	55.5	54.0	52.5	52.0	49.5	48.0	45.5	45.0	43.5
	2	52.4	75.4	43.5	60.5	56.5	53.5	52.5	50.5	48.5	45.0	44.5	43.5
	3	56.3	81.0	45.4	67.5	61.5	56.5	55.0	52.5	51.0	48.0	47.0	46.0
	4	58.8	81.2	47.5	71.5	66.5	60.0	57.5	54.0	52.5	50.0	49.5	48.5
	5	60.9	79.0	47.9	74.0	71.5	65.0	61.5	56.5	54.5	51.5	51.0	49.5
	6	58.8	78.3	45.9	72.0	69.0	63.5	60.0	53.5	51.0	48.0	47.5	46.5
Day	7	59.3	79.6	46.9	72.0	70.0	65.0	61.5	53.0	51.0	49.0	48.5	48.0
	8	61.7	78.1	44.1	73.0	71.5	68.5	66.5	58.5	53.0	47.0	46.5	45.5
	9	62.0	79.5	42.3	72.5	71.5	69.0	67.0	60.5	52.5	45.5	44.5	43.0
	10	62.6	77.7	41.0	72.5	71.5	70.0	68.0	61.5	53.0	43.5	42.5	41.5
	11	63.7	84.2	41.5	73.5	72.0	70.0	68.5	62.5	55.5	45.0	44.0	42.5
	12	64.0	78.4	42.2	73.5	72.5	71.0	69.5	63.5	56.5	46.0	45.0	43.0
	13	63.7	80.1	41.7	74.0	72.5	70.5	69.0	62.5	55.0	45.5	44.5	43.0
	14	63.8	78.3	41.7	74.0	72.5	70.5	69.0	63.0	56.0	46.0	44.5	43.0
	15	64.3	82.0	45.6	74.0	73.0	71.0	69.5	63.5	56.5	49.0	48.0	47.0
	16	66.0	84.3	47.1	75.5	74.5	73.0	71.5	65.5	59.0	51.5	50.5	49.0
	17	66.3	80.0	47.2	76.0	75.0	73.0	71.5	65.5	59.0	51.0	49.5	48.5
	18	64.6	80.6	48.3	75.5	74.0	72.0	70.0	62.0	56.0	51.0	50.0	49.0
	19	62.9	78.4	47.3	74.0	73.0	70.0	67.6	59.5	54.5	50.0	49.5	48.5
	20	60.5	79.1	47.6	73.0	71.0	66.5	63.5	55.5	52.0	49.5	49.0	48.5
	21	60.5	88.1	45.5	72.0	69.5	64.0	60.0	53.5	51.0	48.0	47.0	46.5
Night	22	58.3	80.5	45.7	72.0	68.5	61.0	57.5	51.5	49.5	47.5	47.0	46.5
	23	54.0	75.6	45.4	65.0	62.0	57.0	55.5	50.5	49.0	47.0	46.5	46.0

URBAN CROSSROADS

24-Hour Noise Level Measurement Summary

			Energy Average Leq		24-Hour
Project Name: Canyon Springs	*JN:* 8991		*Day*	*Night*	*CNEL*
Location: L9 - Located at the northwestern corner of Day Street and Gateway Drive within the Project site, east of the proposed skilled nursing facility.	*Analyst:* A. Wolfe		63.5	58.2	66.3
	Date: 1/22/2015 - 1/23/2015				

Hourly Leq dBA Readings (unadjusted)



Time Period	*Hour*	*Leq*	*Lmax*	*Lmin*	*L1%*	*L2%*	*L5%*	*L8%*	*L25%*	*L50%*	*L90%*	*L95%*	*L99%*
Day	Min	60.8	77.8	47.3	69.0	67.0	64.5	63.5	59.0	55.0	51.0	50.0	49.0
	Max	65.0	91.7	52.3	75.0	71.5	69.0	67.5	64.0	61.0	56.5	55.5	54.5
Energy Average		63.5	87.0	49.6	72.8	70.2	67.6	66.3	62.4	58.8	53.9	52.9	51.4
Night	Min	52.0	68.2	44.0	62.5	60.5	57.0	55.5	50.5	48.0	45.5	45.0	44.5
	Max	63.5	85.6	53.1	72.5	70.0	67.0	66.0	62.5	59.5	56.0	55.5	54.5
Energy Average		58.2	79.2	48.1	67.6	65.5	62.6	61.3	57.2	54.2	50.9	50.3	49.3
Hourly Summary													
Night	0	56.6	82.7	45.7	66.5	64.5	61.5	59.5	55.0	52.0	47.5	47.0	46.0
	1	52.0	68.2	44.0	62.5	60.5	57.5	55.5	50.5	48.0	45.5	45.0	44.5
	2	52.3	70.7	44.3	62.5	60.5	57.0	55.5	51.0	48.5	45.5	45.5	45.0
	3	55.5	73.1	46.5	65.5	63.5	60.5	59.0	54.0	51.5	48.5	48.0	47.0
	4	57.6	77.2	47.6	67.0	65.0	62.5	61.0	56.5	54.0	50.0	49.5	48.5
	5	59.7	73.8	50.2	68.5	67.0	64.5	63.5	59.5	56.5	53.5	53.0	51.5
	6	63.5	85.6	53.1	72.5	70.0	67.0	66.0	62.5	59.5	56.0	55.5	54.5
Day	7	64.4	84.2	52.3	75.0	71.5	68.5	67.0	64.0	61.0	56.5	55.5	54.5
	8	61.2	78.3	48.1	69.5	68.5	66.0	65.0	61.5	58.0	52.5	51.5	50.0
	9	64.8	91.7	49.5	72.5	70.0	67.5	66.0	62.0	58.5	53.0	52.0	50.5
	10	64.6	88.2	47.3	75.0	71.0	68.0	66.5	62.5	58.5	52.5	51.0	49.5
	11	62.4	77.8	49.0	71.5	69.5	67.5	66.5	62.5	59.0	53.5	52.5	51.0
	12	64.0	84.3	48.9	74.0	71.5	68.0	67.0	63.0	59.0	54.0	52.5	50.5
	13	63.3	83.7	47.9	73.0	70.5	67.5	66.5	62.5	58.5	53.0	52.0	50.0
	14	64.2	89.2	47.9	74.0	71.5	68.5	67.0	62.5	59.0	53.5	52.5	51.0
	15	62.9	80.2	51.1	72.5	70.0	67.5	66.5	62.5	59.0	55.0	54.0	53.0
	16	64.2	85.9	49.8	72.5	70.5	68.5	67.5	63.5	60.0	55.5	54.5	53.0
	17	64.1	85.4	50.5	73.0	71.0	69.0	67.5	63.5	60.5	55.0	54.0	52.0
	18	65.0	91.4	50.3	74.5	71.5	68.5	67.0	62.5	59.0	54.0	53.5	52.0
	19	61.5	81.3	49.9	70.5	68.5	66.5	65.0	61.5	58.0	53.0	52.5	51.0
	20	60.8	81.6	49.8	70.5	67.5	65.0	63.5	60.0	56.5	52.5	51.5	50.5
	21	61.8	90.8	47.8	69.0	67.0	64.5	63.5	59.0	55.0	51.0	50.0	49.0
Night	22	58.3	76.4	47.0	68.0	66.0	63.0	61.5	57.0	53.5	50.5	49.5	48.5
	23	55.8	75.6	45.2	66.0	63.5	61.0	59.5	54.0	50.5	48.0	47.5	46.5

URBAN CROSSROADS

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APPENDIX 6.1:

SITE PLAN

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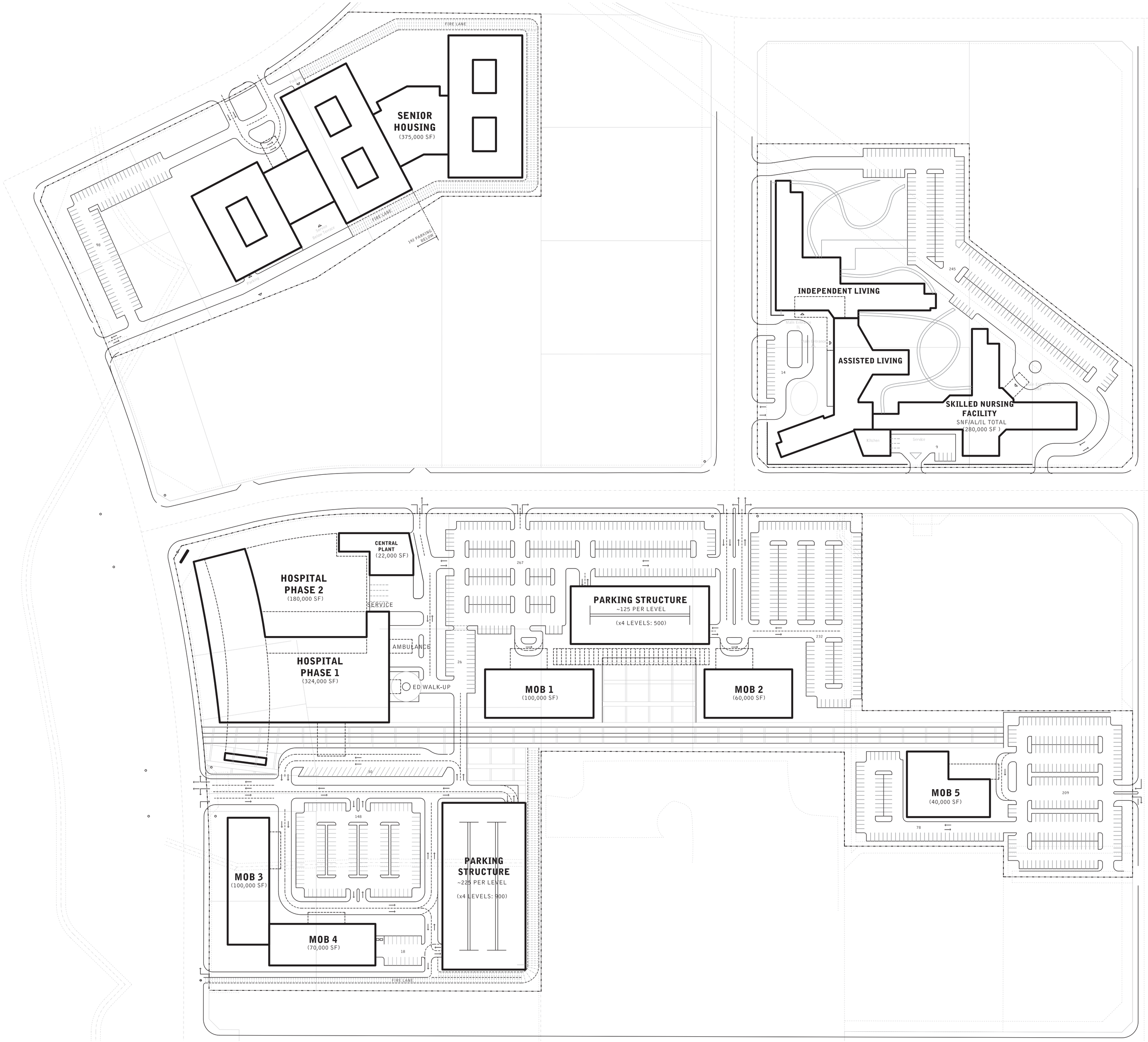
CANYON SPRINGS HEALTHCARE CENTER

SITE PLAN



SCALE: 1"=100'-0"

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APPENDIX 6.2:

GRADING PLANS

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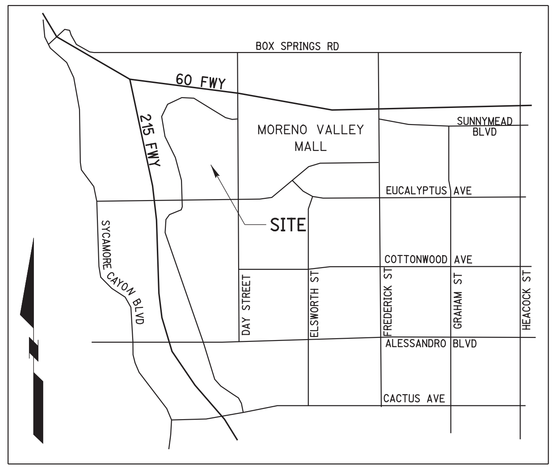
IN THE CITY OF RIVERSIDE, CALIFORNIA

PRELIMINARY GRADING EXHIBIT

CANYON SPRINGS HEALTHCARE CENTER



VICINITY MAP
N.T.S.

OWNER
CANYON SPRINGS MARKETPLACE CORP
C/O TDA INVESTMENT GROUP
2025 PIONEER COURT
SAN MATEO, CA 94403

ENGINEER
RICK ENGINEERING COMPANY
1770 IOWA AVENUE SUITE 100
RIVERSIDE, CA. 92507
PHONE: (951) 782-0707
FAX: (951) 782-0723
MARTEN L. ANDERSON

LEGEND

PROPERTY BOUNDARY	
STREET CENTERLINE	
CITY LIMITS	
FINISHED FLOOR ELEVATION	FF=60.0
FINISHED SURFACE ELEVATION	60.0 FS
PROPOSED BIORETENTION AREA	
PROPOSED PAVERS	
PROPOSED CURB	
DIRECTION OF FLOW	
EXIST. TREE	
EXIST. STREET LIGHT	
EXIST. FIRE HYDRANT	
EXIST. EDGE OF PAVEMENT	
EXISTING DOMESTIC WATER	W
EXISTING SANITARY SEWER	S
EXISTING STORM DRAIN	SD
EXISTING GAS MAIN	G
EXISTING ELECTRIC LINE	E

SCALE: 1" = 100'
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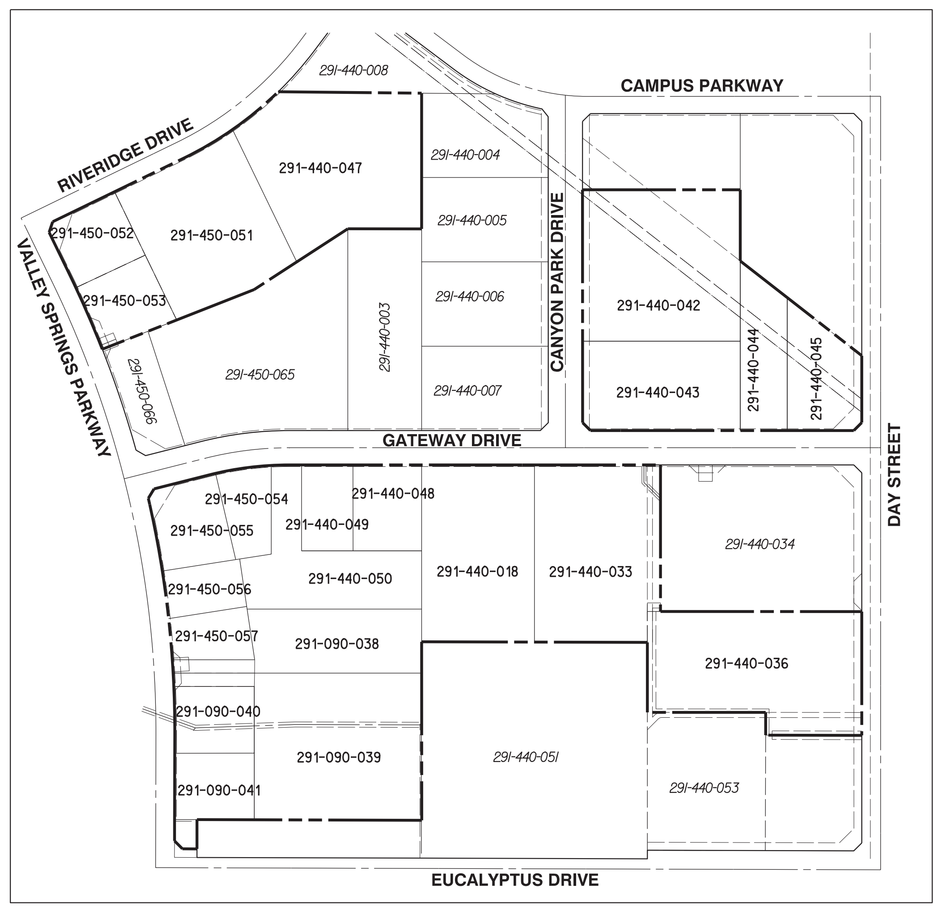


APN INDEX
N.T.S.

RICK ENGINEERING COMPANY
1770 IOWA AVENUE
SUITE 100
RIVERSIDE, CA 92507
951.782.0707
(FAX)951.782.0723
San Diego - Orange - San Luis Obispo
Sacramento - Bakersfield - Tucson - Phoenix
rickengineering.com

CANYON SPRINGS HEALTHCARE CENTER

NO	DESCRIPTION	DATE

REVISION HISTORY - THIS SHEET

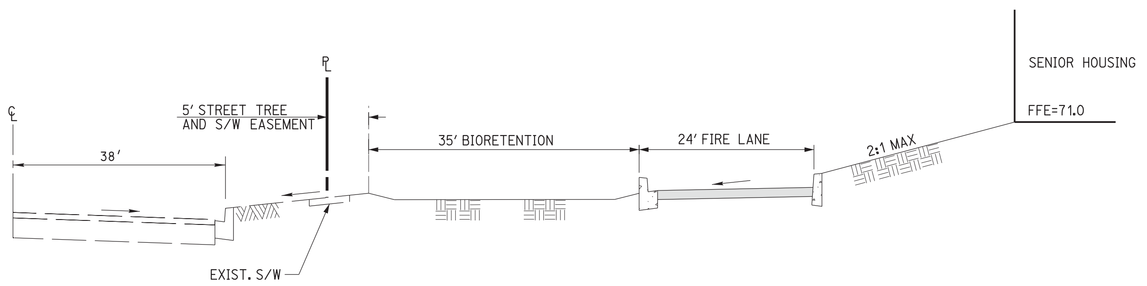
HGA NO: 3481-001-00

GRADING EXHIBIT

PRE-DESIGN

SHEET 1 OF 2

PRELIMINARY
NOT FOR CONSTRUCTION



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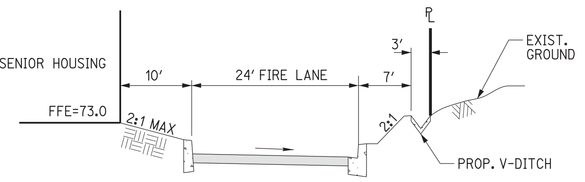

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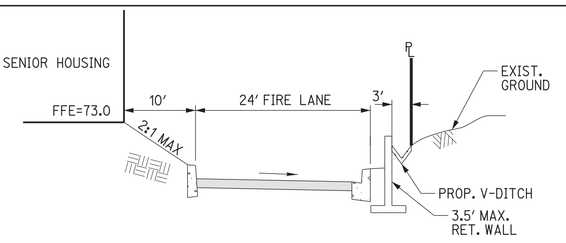

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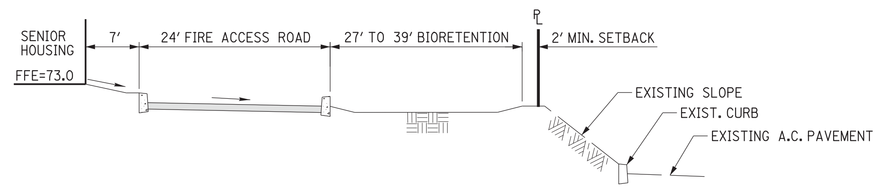

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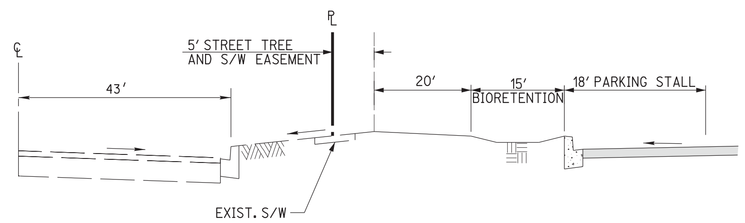

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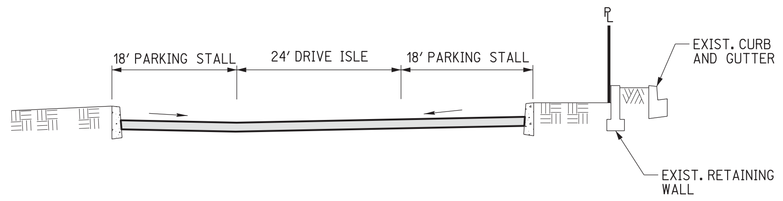

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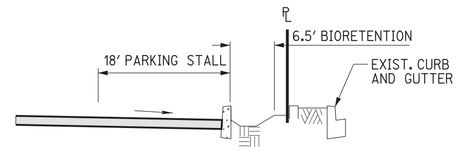

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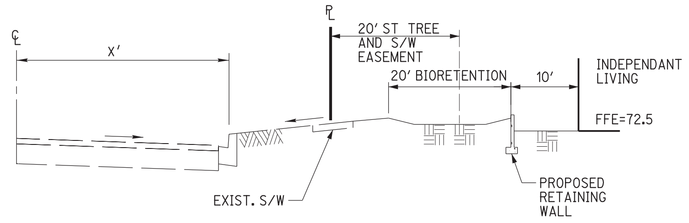

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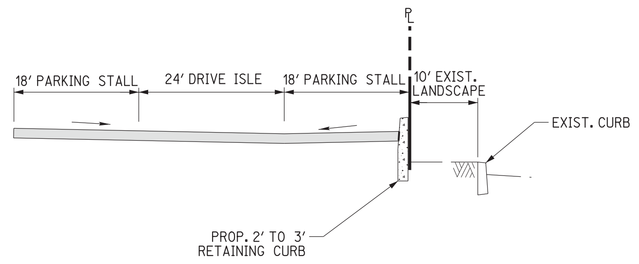

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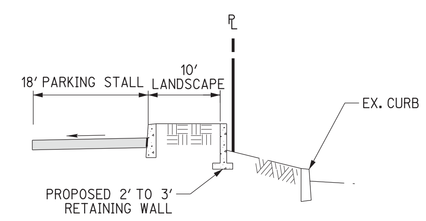

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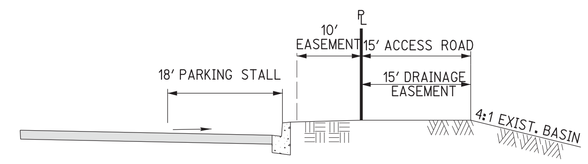
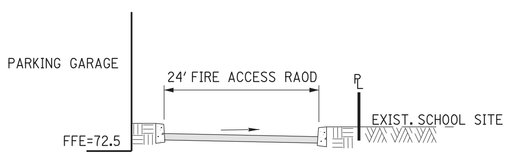


J/2 NOT TO SCALE



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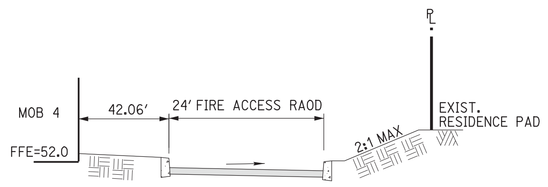

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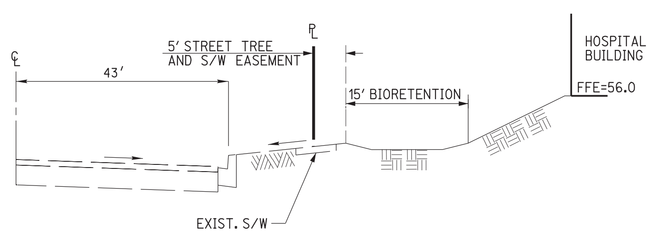

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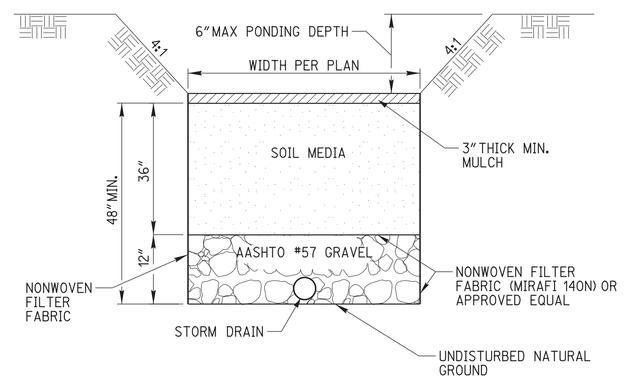

TYPICAL BIORETENTION TRENCH
NOT TO SCALE

PRELIMINARY
NOT FOR CONSTRUCTION

RICK ENGINEERING COMPANY
1770 IOWA AVENUE
SUITE 100
RIVERSIDE, CA 92507
951.782.0707
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Sacramento - Bakersfield - Tucson - Phoenix
rickengineering.com

CANYON SPRINGS
HEALTHCARE
CENTER

NO	DESCRIPTION	DATE

REVISION HISTORY - THIS SHEET

HGA NO: 3481-001-00

GRADING EXHIBIT

PRE-DESIGN

SHEET 2 OF 2

PLOT DATE: 10-OCT-2014 JN 17067

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APPENDIX 7.1:

OFF-SITE TRAFFIC NOISE CONTOURS

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Sycamore Canyon Bl.
Road Segment: n/o Eastridge Av.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	13,200 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,320 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	48 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	55.0 feet
Centerline Dist. to Observer:	55.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	49.739
Medium Trucks:	49.561
Heavy Trucks:	49.579

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.75	-0.07	-1.20	-4.67	0.000	0.000
Medium Trucks:	79.45	-17.98	-0.05	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-21.94	-0.05	-1.20	-5.38	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:	66.4	64.5	62.8	56.7	65.3	66.0
Medium Trucks:	60.2	58.7	52.4	50.8	59.3	59.5
Heavy Trucks:	61.1	59.6	50.6	51.9	60.2	60.3
Vehicle Noise:	68.3	66.5	63.4	58.7	67.3	67.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	78	168	361
CNEL:	39	83	180	387

Tuesday, February 03, 2015

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Sycamore Canyon Bl.
Road Segment: s/o Eastridge Av.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	14,100 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,410 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	48 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	55.0 feet
Centerline Dist. to Observer:	55.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	49.739
Medium Trucks:	49.561
Heavy Trucks:	49.579

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.46	-0.07	-1.20	-4.67	0.000	0.000
Medium Trucks:	79.45	-17.70	-0.05	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-21.65	-0.05	-1.20	-5.38	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	63.1	57.0	65.6	66.2
Medium Trucks:	60.5	59.0	52.6	51.1	59.6	59.8
Heavy Trucks:	61.4	59.9	50.9	52.1	60.5	60.6
Vehicle Noise:	68.6	66.8	63.7	59.0	67.5	68.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	81	175	377
CNEL:	40	87	188	405

Tuesday, February 03, 2015

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Box Springs Bl.
Road Segment: n/o Eastridge Av.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	2,500 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	250 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	44.0 feet
Centerline Dist. to Observer:	44.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-7.46	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	77.72	-24.70	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-28.65	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.1	57.2	55.5	49.4	58.0	58.6
Medium Trucks:	53.1	51.6	45.3	43.7	52.2	52.4
Heavy Trucks:	54.4	53.0	44.0	45.2	53.6	53.7
Vehicle Noise:	61.1	59.4	56.1	51.6	60.1	60.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	10	21	45	97
CNEL:	10	22	48	103

Tuesday, February 03, 2015

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Box Springs Bl.
Road Segment: s/o Eastridge Av.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

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

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	44.0 feet
Centerline Dist. to Observer:	44.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-11.44	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	77.72	-28.68	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-32.63	1.31	-1.20	-5.50	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:	55.1	53.2	51.5	45.4	54.1	54.7
Medium Trucks:	49.1	47.6	41.3	39.7	48.2	48.4
Heavy Trucks:	50.5	49.0	40.0	41.3	49.6	49.7
Vehicle Noise:	57.2	55.4	52.2	47.6	56.1	56.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	5	11	24	52
CNEL:	6	12	26	56

Tuesday, February 03, 2015

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Day St.
Road Segment: n/o SR-60 Fwy

Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,200	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,820	vehicles
Vehicle Speed:	40	mph
Near/Far Lane Distance:	72	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	48.260
Medium Trucks:	48.076
Heavy Trucks:	48.094

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	3.06	0.13	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	77.72	-14.18	0.15	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-18.13	0.15	-1.20	*-5.34*	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:	68.5	66.6	64.8	58.8	67.4	68.0
Medium Trucks:	62.5	61.0	54.6	53.1	61.5	61.8
Heavy Trucks:	63.8	62.4	53.4	54.6	63.0	63.1
Vehicle Noise:	70.5	68.8	65.5	61.0	69.5	69.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	56	120	258	555
CNEL:	59	128	276	595

Tuesday, February 03, 2015

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Day St.
Road Segment: n/o Canyon Springs Pkwy.

Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	39,200	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,920	vehicles
Vehicle Speed:	40	mph
Near/Far Lane Distance:	72	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	48.260
Medium Trucks:	48.076
Heavy Trucks:	48.094

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	4.49	0.13	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	77.72	-12.74	0.15	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-16.70	0.15	-1.20	*-5.34*	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:	69.9	68.0	66.3	60.2	68.8	69.4
Medium Trucks:	63.9	62.4	56.1	54.5	63.0	63.2
Heavy Trucks:	65.2	63.8	54.8	56.0	64.4	64.5
Vehicle Noise:	71.9	70.2	66.9	62.4	70.9	71.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	69	149	321	692
CNEL:	74	160	344	741

Tuesday, February 03, 2015

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Day St.
Road Segment: s/o Canyon Springs Pkwy.

Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	24,200	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,420	vehicles
Vehicle Speed:	40	mph
Near/Far Lane Distance:	72	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	48.260
Medium Trucks:	48.076
Heavy Trucks:	48.094

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	2.40	0.13	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	77.72	-14.84	0.15	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-18.80	0.15	-1.20	*-5.34*	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:	67.8	65.9	64.2	58.1	66.7	67.3
Medium Trucks:	61.8	60.3	54.0	52.4	60.9	61.1
Heavy Trucks:	63.1	61.7	52.7	53.9	62.3	62.4
Vehicle Noise:	69.9	68.1	64.8	60.3	68.8	69.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	50	108	233	501
CNEL:	54	116	249	537

Tuesday, February 03, 2015

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Day St.
Road Segment: s/o Campus Pkwy.

Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	22,000	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,200	vehicles
Vehicle Speed:	40	mph
Near/Far Lane Distance:	72	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	48.260
Medium Trucks:	48.076
Heavy Trucks:	48.094

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	1.98	0.13	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	77.72	-15.25	0.15	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-19.21	0.15	-1.20	*-5.34*	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:	67.4	65.5	63.8	57.7	66.3	66.9
Medium Trucks:	61.4	59.9	53.5	52.0	60.5	60.7
Heavy Trucks:	62.7	61.3	52.3	53.5	61.9	62.0
Vehicle Noise:	69.4	67.7	64.4	59.9	68.4	68.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	47	101	218	471
CNEL:	50	109	234	504

Tuesday, February 03, 2015

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Day St.
Road Segment: s/o Gateway Dr.

Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	16,800 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,680 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	72 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	48.260
Medium Trucks:	48.076
Heavy Trucks:	48.094

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.81	0.13	-1.20	-4.69	0.000	0.000
Medium Trucks:	77.72	-16.42	0.15	-1.20	-4.88	0.000	0.000
Heavy Trucks:	82.99	-20.38	0.15	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.3	64.4	62.6	56.5	65.2	65.8
Medium Trucks:	60.2	58.7	52.4	50.8	59.3	59.5
Heavy Trucks:	61.6	60.1	51.1	52.4	60.7	60.8
Vehicle Noise:	68.3	66.5	63.3	58.7	67.2	67.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	39	85	182	393
CNEL:	42	91	195	421

Tuesday, February 03, 2015

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Day St.
Road Segment: n/o Eucalyptus Av.

Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	16,800 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,680 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	72 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	48.260
Medium Trucks:	48.076
Heavy Trucks:	48.094

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.81	0.13	-1.20	-4.69	0.000	0.000
Medium Trucks:	77.72	-16.42	0.15	-1.20	-4.88	0.000	0.000
Heavy Trucks:	82.99	-20.38	0.15	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.3	64.4	62.6	56.5	65.2	65.8
Medium Trucks:	60.2	58.7	52.4	50.8	59.3	59.5
Heavy Trucks:	61.6	60.1	51.1	52.4	60.7	60.8
Vehicle Noise:	68.3	66.5	63.3	58.7	67.2	67.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	39	85	182	393
CNEL:	42	91	195	421

Tuesday, February 03, 2015

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Day St.
Road Segment: s/o Eucalyptus Av.

Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	11,800 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,180 vehicles
Vehicle Speed:	35 mph
Near/Far Lane Distance:	58 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	55.0 feet
Centerline Dist. to Observer:	55.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	47.000
Medium Trucks:	46.811
Heavy Trucks:	46.830

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-0.14	0.30	-1.20	-4.67	0.000	0.000
Medium Trucks:	75.75	-17.38	0.33	-1.20	-4.87	0.000	0.000
Heavy Trucks:	81.57	-21.33	0.32	-1.20	-5.38	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.3	61.4	59.6	53.5	62.2	62.8
Medium Trucks:	57.5	56.0	49.6	48.1	56.5	56.8
Heavy Trucks:	59.4	57.9	48.9	50.1	58.5	58.6
Vehicle Noise:	65.5	63.8	60.3	56.0	64.5	64.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	24	51	109	236
CNEL:	25	54	117	252

Tuesday, February 03, 2015

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Day St.
Road Segment: s/o Cottonwood Av.

Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	7,100 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	710 vehicles
Vehicle Speed:	35 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:	44.0 feet
Centerline Dist. to Observer:	44.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-2.35	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	75.75	-19.59	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	81.57	-23.54	1.31	-1.20	-5.50	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	58.4	52.3	60.9	61.5
Medium Trucks:	56.3	54.8	48.4	46.9	55.3	55.6
Heavy Trucks:	58.1	56.7	47.7	48.9	57.3	57.4
Vehicle Noise:	64.3	62.6	59.1	54.7	63.3	63.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	16	34	72	156
CNEL:	17	36	77	167

Tuesday, February 03, 2015

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Day St.
Road Segment: s/o Bay Av.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	6,700 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	670 vehicles
Vehicle Speed:	35 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:	44.0 feet
Centerline Dist. to Observer:	44.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-2.60	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	75.75	-19.84	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	81.57	-23.79	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.8	59.9	58.1	52.1	60.7	61.3
Medium Trucks:	56.0	54.5	48.2	46.6	55.1	55.3
Heavy Trucks:	57.9	56.5	47.4	48.7	57.0	57.2
Vehicle Noise:	64.0	62.3	58.9	54.5	63.0	63.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	15	32	70	150
CNEL:	16	35	75	161

Tuesday, February 03, 2015

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Day St.
Road Segment: s/o Alessandro Bl.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	700 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	70 vehicles
Vehicle Speed:	35 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:	44.0 feet
Centerline Dist. to Observer:	44.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-12.41	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	75.75	-29.65	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	81.57	-33.60	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	52.0	50.1	48.3	42.2	50.9	51.5
Medium Trucks:	46.2	44.7	38.3	36.8	45.3	45.5
Heavy Trucks:	48.1	46.7	37.6	38.9	47.2	47.3
Vehicle Noise:	54.2	52.5	49.0	44.7	53.2	53.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	3	7	15	33
CNEL:	4	8	17	36

Tuesday, February 03, 2015

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Eucalyptus Av.
Road Segment: s/o Towngate Dr.
Project Name: Canyon Springs
Job Number: 8991

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:	40 mph
Near/Far Lane Distance:	48 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	50.0 feet
Centerline Dist. to Observer:	50.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	44.147
Medium Trucks:	43.947
Heavy Trucks:	43.966

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-0.87	0.71	-1.20	-4.65	0.000	0.000
Medium Trucks:	77.72	-18.11	0.74	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-22.06	0.73	-1.20	-5.43	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	63.3	61.5	55.4	64.1	64.7
Medium Trucks:	59.1	57.6	51.3	49.7	58.2	58.4
Heavy Trucks:	60.5	59.0	50.0	51.3	59.6	59.7
Vehicle Noise:	67.2	65.4	62.2	57.6	66.1	66.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	28	60	128	277
CNEL:	30	64	137	296

Tuesday, February 03, 2015

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Eastridge Av.
Road Segment: w/o Sycamore Canyon Bl.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	8,600 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	860 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	72 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	48.260
Medium Trucks:	48.076
Heavy Trucks:	48.094

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.09	0.13	-1.20	-4.69	0.000	0.000
Medium Trucks:	77.72	-19.33	0.15	-1.20	-4.88	0.000	0.000
Heavy Trucks:	82.99	-23.29	0.15	-1.20	-5.34	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	62.9
Medium Trucks:	57.3	55.8	49.5	47.9	56.4	56.6
Heavy Trucks:	58.7	57.2	48.2	49.4	57.8	57.9
Vehicle Noise:	65.4	63.6	60.3	55.8	64.3	64.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	25	54	117	252
CNEL:	27	58	125	269

Tuesday, February 03, 2015

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Eastridge Av.
Road Segment: e/o Sycamore Canyon Bl.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	16,000 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,600 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	72 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	48.260
Medium Trucks:	48.076
Heavy Trucks:	48.094

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.60	0.13	-1.20	-4.69	0.000	0.000
Medium Trucks:	77.72	-16.64	0.15	-1.20	-4.88	0.000	0.000
Heavy Trucks:	82.99	-20.59	0.15	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.0	64.1	62.4	56.3	64.9	65.5
Medium Trucks:	60.0	58.5	52.2	50.6	59.1	59.3
Heavy Trucks:	61.4	59.9	50.9	52.1	60.5	60.6
Vehicle Noise:	68.1	66.3	63.0	58.5	67.0	67.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	82	177	381
CNEL:	41	88	189	407

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Eastridge Av.
Road Segment: e/o Box Springs Bl.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	19,400 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,940 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	72 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	48.260
Medium Trucks:	48.076
Heavy Trucks:	48.094

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.44	0.13	-1.20	-4.69	0.000	0.000
Medium Trucks:	77.72	-15.80	0.15	-1.20	-4.88	0.000	0.000
Heavy Trucks:	82.99	-19.76	0.15	-1.20	-5.34	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:	66.9	65.0	63.2	57.2	65.8	66.4
Medium Trucks:	60.9	59.4	53.0	51.5	59.9	60.1
Heavy Trucks:	62.2	60.8	51.7	53.0	61.3	61.5
Vehicle Noise:	68.9	67.2	63.9	59.3	67.9	68.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	43	93	201	433
CNEL:	46	100	215	463

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Eucalyptus Av.
Road Segment: w/o Valley Springs Pkwy.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	30,500 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,050 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	72 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	48.260
Medium Trucks:	48.076
Heavy Trucks:	48.094

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	3.40	0.13	-1.20	-4.69	0.000	0.000
Medium Trucks:	77.72	-13.83	0.15	-1.20	-4.88	0.000	0.000
Heavy Trucks:	82.99	-17.79	0.15	-1.20	-5.34	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:	68.8	66.9	65.2	59.1	67.7	68.4
Medium Trucks:	62.8	61.3	55.0	53.4	61.9	62.1
Heavy Trucks:	64.2	62.7	53.7	54.9	63.3	63.4
Vehicle Noise:	70.9	69.1	65.8	61.3	69.8	70.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	126	272	585
CNEL:	63	135	291	626

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Eucalyptus Av.
Road Segment: e/o Valley Springs Pkwy.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	17,100 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,710 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	72 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	48.260
Medium Trucks:	48.076
Heavy Trucks:	48.094

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.89	0.13	-1.20	-4.69	0.000	0.000
Medium Trucks:	77.72	-16.35	0.15	-1.20	-4.88	0.000	0.000
Heavy Trucks:	82.99	-20.30	0.15	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.3	64.4	62.7	56.6	65.2	65.8
Medium Trucks:	60.3	58.8	52.5	50.9	59.4	59.6
Heavy Trucks:	61.6	60.2	51.2	52.4	60.8	60.9
Vehicle Noise:	68.3	66.6	63.3	58.8	67.3	67.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	40	86	185	398
CNEL:	43	92	198	426

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Eucalyptus Av.
Road Segment: e/o Day St.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	13,900 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,390 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:	67.0 feet
Centerline Dist. to Observer:	67.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	53.226
Medium Trucks:	53.059
Heavy Trucks:	53.076

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-0.01	-0.51	-1.20	-4.71	0.000	0.000
Medium Trucks:	77.72	-17.25	-0.49	-1.20	-4.88	0.000	0.000
Heavy Trucks:	82.99	-21.20	-0.49	-1.20	-5.29	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.8	62.9	61.1	55.1	63.7	64.3
Medium Trucks:	58.8	57.3	50.9	49.4	57.8	58.1
Heavy Trucks:	60.1	58.7	49.6	50.9	59.2	59.4
Vehicle Noise:	66.8	65.1	61.8	57.2	65.8	66.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	76	163	351
CNEL:	38	81	174	376

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Towngate Dr.
Road Segment: e/o Eucalyptus Av.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	7,900 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	790 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	82 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	67.0 feet
Centerline Dist. to Observer:	67.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	53.226
Medium Trucks:	53.059
Heavy Trucks:	53.076

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.46	-0.51	-1.20	-4.71	0.000	0.000
Medium Trucks:	77.72	-19.70	-0.49	-1.20	-4.88	0.000	0.000
Heavy Trucks:	82.99	-23.66	-0.49	-1.20	-5.29	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.3	60.4	58.7	52.6	61.2	61.8
Medium Trucks:	56.3	54.8	48.5	46.9	55.4	55.6
Heavy Trucks:	57.6	56.2	47.2	48.4	56.8	56.9
Vehicle Noise:	64.4	62.6	59.3	54.8	63.3	63.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	24	52	112	241
CNEL:	26	56	120	258

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Alessandro Bl.
Road Segment: w/o Day St.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	26,700 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,670 vehicles
Vehicle Speed:	45 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:	67.0 feet
Centerline Dist. to Observer:	67.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	53.226
Medium Trucks:	53.059
Heavy Trucks:	53.076

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.31	-0.51	-1.20	-4.71	0.000	0.000
Medium Trucks:	79.45	-14.92	-0.49	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-18.88	-0.49	-1.20	-5.29	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:	69.1	67.2	65.4	59.3	68.0	68.6
Medium Trucks:	62.8	61.3	55.0	53.4	61.9	62.1
Heavy Trucks:	63.7	62.3	53.2	54.5	62.8	63.0
Vehicle Noise:	70.9	69.2	66.0	61.3	69.9	70.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	66	142	305	657
CNEL:	71	152	327	705

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Alessandro Bl.
Road Segment: e/o Day St.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,700 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,770 vehicles
Vehicle Speed:	45 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:	67.0 feet
Centerline Dist. to Observer:	67.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	53.226
Medium Trucks:	53.059
Heavy Trucks:	53.076

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.47	-0.51	-1.20	-4.71	0.000	0.000
Medium Trucks:	79.45	-14.76	-0.49	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-18.72	-0.49	-1.20	-5.29	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:	69.2	67.3	65.6	59.5	68.1	68.7
Medium Trucks:	63.0	61.5	55.1	53.6	62.0	62.3
Heavy Trucks:	63.8	62.4	53.4	54.6	63.0	63.1
Vehicle Noise:	71.1	69.3	66.2	61.5	70.0	70.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	67	145	313	674
CNEL:	72	156	335	723

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Sycamore Canyon Bl.
Road Segment: n/o Eastridge Av.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	13,800 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,380 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	48 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	55.0 feet
Centerline Dist. to Observer:	55.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	49.739
Medium Trucks:	49.561
Heavy Trucks:	49.579

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.55	-0.07	-1.20	-4.67	0.000	0.000
Medium Trucks:	79.45	-17.79	-0.05	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-21.75	-0.05	-1.20	-5.38	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	63.0	56.9	65.5	66.1
Medium Trucks:	60.4	58.9	52.5	51.0	59.5	59.7
Heavy Trucks:	61.3	59.8	50.8	52.0	60.4	60.5
Vehicle Noise:	68.5	66.7	63.6	58.9	67.5	67.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	80	173	372
CNEL:	40	86	185	399

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Sycamore Canyon Bl.
Road Segment: s/o Eastridge Av.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	14,200 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,420 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	48 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	55.0 feet
Centerline Dist. to Observer:	55.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	49.739
Medium Trucks:	49.561
Heavy Trucks:	49.579

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.43	-0.07	-1.20	-4.67	0.000	0.000
Medium Trucks:	79.45	-17.67	-0.05	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-21.62	-0.05	-1.20	-5.38	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	57.0	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:	38	82	176	379
CNEL:	41	88	189	407

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Box Springs Bl.
Road Segment: n/o Eastridge Av.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	2,700 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	270 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	44.0 feet
Centerline Dist. to Observer:	44.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-7.13	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	77.72	-24.36	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-28.32	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.5	57.6	55.8	49.7	58.4	59.0
Medium Trucks:	53.5	52.0	45.6	44.0	52.5	52.7
Heavy Trucks:	54.8	53.4	44.3	45.6	53.9	54.1
Vehicle Noise:	61.5	59.8	56.5	51.9	60.5	60.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	10	22	47	102
CNEL:	11	23	51	109

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Box Springs Bl.
Road Segment: s/o Eastridge Av.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	1,200 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	120 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	44.0 feet
Centerline Dist. to Observer:	44.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-10.65	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	77.72	-27.89	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-31.84	1.31	-1.20	-5.50	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:	55.9	54.0	52.3	46.2	54.8	55.4
Medium Trucks:	49.9	48.4	42.1	40.5	49.0	49.2
Heavy Trucks:	51.3	49.8	40.8	42.1	50.4	50.5
Vehicle Noise:	58.0	56.2	52.9	48.4	56.9	57.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	6	13	27	59
CNEL:	6	14	29	63

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Day St.
Road Segment: n/o SR-60 Fwy

Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	30,900	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,090	vehicles
Vehicle Speed:	40	mph
Near/Far Lane Distance:	72	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	48.260
Medium Trucks:	48.076
Heavy Trucks:	48.094

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	3.46	0.13	-1.20	-4.69	0.000	0.000
Medium Trucks:	77.72	-13.78	0.15	-1.20	-4.88	0.000	0.000
Heavy Trucks:	82.99	-17.73	0.15	-1.20	-5.34	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:	68.9	67.0	65.2	59.2	67.8	68.4
Medium Trucks:	62.9	61.4	55.0	53.5	61.9	62.2
Heavy Trucks:	64.2	62.8	53.8	55.0	63.4	63.5
Vehicle Noise:	70.9	69.2	65.9	61.4	69.9	70.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	127	274	590
CNEL:	63	136	293	632

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Day St.
Road Segment: n/o Canyon Springs Pkwy.

Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	44,300	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,430	vehicles
Vehicle Speed:	40	mph
Near/Far Lane Distance:	72	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	48.260
Medium Trucks:	48.076
Heavy Trucks:	48.094

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	5.02	0.13	-1.20	-4.69	0.000	0.000
Medium Trucks:	77.72	-12.21	0.15	-1.20	-4.88	0.000	0.000
Heavy Trucks:	82.99	-16.17	0.15	-1.20	-5.34	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:	70.5	68.6	66.8	60.7	69.4	70.0
Medium Trucks:	64.5	62.9	56.6	55.0	63.5	63.7
Heavy Trucks:	65.8	64.4	55.3	56.6	64.9	65.0
Vehicle Noise:	72.5	70.7	67.5	62.9	71.5	71.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	162	348	750
CNEL:	80	173	373	803

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Day St.
Road Segment: s/o Canyon Springs Pkwy.

Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,200	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,920	vehicles
Vehicle Speed:	40	mph
Near/Far Lane Distance:	72	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	48.260
Medium Trucks:	48.076
Heavy Trucks:	48.094

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	3.21	0.13	-1.20	-4.69	0.000	0.000
Medium Trucks:	77.72	-14.02	0.15	-1.20	-4.88	0.000	0.000
Heavy Trucks:	82.99	-17.98	0.15	-1.20	-5.34	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:	68.7	66.8	65.0	58.9	67.6	68.2
Medium Trucks:	62.6	61.1	54.8	53.2	61.7	61.9
Heavy Trucks:	64.0	62.5	53.5	54.8	63.1	63.2
Vehicle Noise:	70.7	68.9	65.7	61.1	69.6	70.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	57	122	264	568
CNEL:	61	131	282	608

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Day St.
Road Segment: s/o Campus Pkwy.

Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	26,900	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,690	vehicles
Vehicle Speed:	40	mph
Near/Far Lane Distance:	72	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	48.260
Medium Trucks:	48.076
Heavy Trucks:	48.094

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	2.86	0.13	-1.20	-4.69	0.000	0.000
Medium Trucks:	77.72	-14.38	0.15	-1.20	-4.88	0.000	0.000
Heavy Trucks:	82.99	-18.34	0.15	-1.20	-5.34	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:	68.3	66.4	64.6	58.6	67.2	67.8
Medium Trucks:	62.3	60.8	54.4	52.9	61.3	61.6
Heavy Trucks:	63.6	62.2	53.2	54.4	62.8	62.9
Vehicle Noise:	70.3	68.6	65.3	60.8	69.3	69.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	54	116	250	538
CNEL:	58	124	267	576

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Day St.
Road Segment: s/o Gateway Dr.

Project Name: Canyon Springs
Job Number: 8991

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:	72 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	48.260
Medium Trucks:	48.076
Heavy Trucks:	48.094

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.37	0.13	-1.20	-4.69	0.000	0.000
Medium Trucks:	77.72	-15.87	0.15	-1.20	-4.88	0.000	0.000
Heavy Trucks:	82.99	-19.82	0.15	-1.20	-5.34	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:	60.8	59.3	52.9	51.4	59.8	60.1
Heavy Trucks:	62.1	60.7	51.7	52.9	61.3	61.4
Vehicle Noise:	68.8	67.1	63.8	59.3	67.8	68.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	43	92	199	428
CNEL:	46	99	213	459

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Day St.
Road Segment: n/o Eucalyptus Av.

Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	19,400 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,940 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	72 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	48.260
Medium Trucks:	48.076
Heavy Trucks:	48.094

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.44	0.13	-1.20	-4.69	0.000	0.000
Medium Trucks:	77.72	-15.80	0.15	-1.20	-4.88	0.000	0.000
Heavy Trucks:	82.99	-19.76	0.15	-1.20	-5.34	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:	66.9	65.0	63.2	57.2	65.8	66.4
Medium Trucks:	60.9	59.4	53.0	51.5	59.9	60.1
Heavy Trucks:	62.2	60.8	51.7	53.0	61.3	61.5
Vehicle Noise:	68.9	67.2	63.9	59.3	67.9	68.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	43	93	201	433
CNEL:	46	100	215	463

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Day St.
Road Segment: s/o Eucalyptus Av.

Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	13,200 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,320 vehicles
Vehicle Speed:	35 mph
Near/Far Lane Distance:	58 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	55.0 feet
Centerline Dist. to Observer:	55.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	47.000
Medium Trucks:	46.811
Heavy Trucks:	46.830

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	0.35	0.30	-1.20	-4.67	0.000	0.000
Medium Trucks:	75.75	-16.89	0.33	-1.20	-4.87	0.000	0.000
Heavy Trucks:	81.57	-20.85	0.32	-1.20	-5.38	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:	63.7	61.8	60.1	54.0	62.7	63.3
Medium Trucks:	58.0	56.5	50.1	48.6	57.0	57.3
Heavy Trucks:	59.8	58.4	49.4	50.6	59.0	59.1
Vehicle Noise:	66.0	64.3	60.8	56.4	65.0	65.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	25	55	118	254
CNEL:	27	58	126	271

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Day St.
Road Segment: s/o Cottonwood Av.

Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	8,200 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	820 vehicles
Vehicle Speed:	35 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:	44.0 feet
Centerline Dist. to Observer:	44.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-1.72	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	75.75	-18.96	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	81.57	-22.92	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.7	60.8	59.0	52.9	61.6	62.2
Medium Trucks:	56.9	55.4	49.0	47.5	55.9	56.2
Heavy Trucks:	58.8	57.3	48.3	49.6	57.9	58.0
Vehicle Noise:	64.9	63.2	59.7	55.4	63.9	64.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	17	37	80	172
CNEL:	18	40	85	184

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Day St.
Road Segment: s/o Bay Av.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	7,500 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	750 vehicles
Vehicle Speed:	35 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:	44.0 feet
Centerline Dist. to Observer:	44.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-2.11	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	75.75	-19.35	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	81.57	-23.30	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.3	60.4	58.6	52.5	61.2	61.8
Medium Trucks:	56.5	55.0	48.6	47.1	55.6	55.8
Heavy Trucks:	58.4	57.0	47.9	49.2	57.5	57.6
Vehicle Noise:	64.5	62.8	59.3	55.0	63.5	63.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	16	35	75	162
CNEL:	17	37	80	173

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Day St.
Road Segment: s/o Alessandro Bl.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	900 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	90 vehicles
Vehicle Speed:	35 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:	44.0 feet
Centerline Dist. to Observer:	44.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-11.32	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	75.75	-28.56	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	81.57	-32.51	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	53.1	51.2	49.4	43.3	52.0	52.6
Medium Trucks:	47.3	45.8	39.4	37.9	46.4	46.6
Heavy Trucks:	49.2	47.7	38.7	40.0	48.3	48.4
Vehicle Noise:	55.3	53.6	50.1	45.8	54.3	54.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	4	8	18	39
CNEL:	4	9	20	42

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Eucalyptus Av.
Road Segment: s/o Towngate Dr.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	12,000 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,200 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	48 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	50.0 feet
Centerline Dist. to Observer:	50.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	44.147
Medium Trucks:	43.947
Heavy Trucks:	43.966

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-0.65	0.71	-1.20	-4.65	0.000	0.000
Medium Trucks:	77.72	-17.89	0.74	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-21.84	0.73	-1.20	-5.43	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	61.7	55.7	64.3	64.9
Medium Trucks:	59.4	57.9	51.5	50.0	58.4	58.6
Heavy Trucks:	60.7	59.3	50.2	51.5	59.8	60.0
Vehicle Noise:	67.4	65.7	62.4	57.8	66.4	66.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	29	62	133	286
CNEL:	31	66	142	306

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Eastridge Av.
Road Segment: w/o Sycamore Canyon Bl.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	8,800 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	880 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	72 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	48.260
Medium Trucks:	48.076
Heavy Trucks:	48.094

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-1.99	0.13	-1.20	-4.69	0.000	0.000
Medium Trucks:	77.72	-19.23	0.15	-1.20	-4.88	0.000	0.000
Heavy Trucks:	82.99	-23.19	0.15	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.4	61.5	59.8	53.7	62.3	63.0
Medium Trucks:	57.4	55.9	49.6	48.0	56.5	56.7
Heavy Trucks:	58.8	57.3	48.3	49.5	57.9	58.0
Vehicle Noise:	65.5	63.7	60.4	55.9	64.4	64.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	26	55	119	255
CNEL:	27	59	127	274

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Eastridge Av.
Road Segment: e/o Sycamore Canyon Bl.

Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	16,900 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,690 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	72 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	48.260
Medium Trucks:	48.076
Heavy Trucks:	48.094

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.84	0.13	-1.20	-4.69	0.000	0.000
Medium Trucks:	77.72	-16.40	0.15	-1.20	-4.88	0.000	0.000
Heavy Trucks:	82.99	-20.35	0.15	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.3	64.4	62.6	56.6	65.2	65.8
Medium Trucks:	60.3	58.8	52.4	50.9	59.3	59.5
Heavy Trucks:	61.6	60.2	51.1	52.4	60.7	60.9
Vehicle Noise:	68.3	66.6	63.3	58.7	67.3	67.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	39	85	183	395
CNEL:	42	91	196	423

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Eastridge Av.
Road Segment: e/o Box Springs Bl.

Project Name: Canyon Springs
Job Number: 8991

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:	72 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	48.260
Medium Trucks:	48.076
Heavy Trucks:	48.094

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.72	0.13	-1.20	-4.69	0.000	0.000
Medium Trucks:	77.72	-15.52	0.15	-1.20	-4.88	0.000	0.000
Heavy Trucks:	82.99	-19.47	0.15	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.2	65.3	63.5	57.4	66.1	66.7
Medium Trucks:	61.1	59.6	53.3	51.7	60.2	60.4
Heavy Trucks:	62.5	61.0	52.0	53.3	61.6	61.7
Vehicle Noise:	69.2	67.4	64.2	59.6	68.2	68.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	45	97	210	452
CNEL:	48	104	225	484

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Eucalyptus Av.
Road Segment: w/o Valley Springs Pkwy.

Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	38,700 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,870 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	72 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	48.260
Medium Trucks:	48.076
Heavy Trucks:	48.094

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	4.44	0.13	-1.20	-4.69	0.000	0.000
Medium Trucks:	77.72	-12.80	0.15	-1.20	-4.88	0.000	0.000
Heavy Trucks:	82.99	-16.76	0.15	-1.20	-5.34	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:	69.9	68.0	66.2	60.2	68.8	69.4
Medium Trucks:	63.9	62.4	56.0	54.5	62.9	63.1
Heavy Trucks:	65.2	63.8	54.7	56.0	64.3	64.5
Vehicle Noise:	71.9	70.2	66.9	62.3	70.9	71.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	69	148	318	686
CNEL:	73	158	341	734

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Eucalyptus Av.
Road Segment: e/o Valley Springs Pkwy.

Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	19,200 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,920 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	72 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	48.260
Medium Trucks:	48.076
Heavy Trucks:	48.094

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.39	0.13	-1.20	-4.69	0.000	0.000
Medium Trucks:	77.72	-15.84	0.15	-1.20	-4.88	0.000	0.000
Heavy Trucks:	82.99	-19.80	0.15	-1.20	-5.34	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:	60.8	59.3	53.0	51.4	59.9	60.1
Heavy Trucks:	62.1	60.7	51.7	52.9	61.3	61.4
Vehicle Noise:	68.8	67.1	63.8	59.3	67.8	68.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	43	93	199	430
CNEL:	46	99	214	460

Tuesday, February 03, 2015

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project | Project Name: Canyon Springs
Road Name: Eucalyptus Av. | Job Number: 8991
Road Segment: e/o Day St.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	15,000 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,500 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	82 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	67.0 feet
Centerline Dist. to Observer:	67.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	53.226
Medium Trucks:	53.059
Heavy Trucks:	53.076

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.32	-0.51	-1.20	-4.71	0.000	0.000
Medium Trucks:	77.72	-16.92	-0.49	-1.20	-4.88	0.000	0.000
Heavy Trucks:	82.99	-20.87	-0.49	-1.20	-5.29	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	61.5	55.4	64.0	64.6
Medium Trucks:	59.1	57.6	51.2	49.7	58.2	58.4
Heavy Trucks:	60.4	59.0	50.0	51.2	59.6	59.7
Vehicle Noise:	67.1	65.4	62.1	57.6	66.1	66.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	79	171	369
CNEL:	40	85	183	395

Tuesday, February 03, 2015

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project | Project Name: Canyon Springs
Road Name: Towngate Dr. | Job Number: 8991
Road Segment: e/o Eucalyptus Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	8,500 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	850 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	82 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	67.0 feet
Centerline Dist. to Observer:	67.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	53.226
Medium Trucks:	53.059
Heavy Trucks:	53.076

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.15	-0.51	-1.20	-4.71	0.000	0.000
Medium Trucks:	77.72	-19.38	-0.49	-1.20	-4.88	0.000	0.000
Heavy Trucks:	82.99	-23.34	-0.49	-1.20	-5.29	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.7	60.8	59.0	52.9	61.6	62.2
Medium Trucks:	56.6	55.1	48.8	47.2	55.7	55.9
Heavy Trucks:	58.0	56.5	47.5	48.8	57.1	57.2
Vehicle Noise:	64.7	62.9	59.7	55.1	63.6	64.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	25	54	117	253
CNEL:	27	58	126	271

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project | Project Name: Canyon Springs
Road Name: Alessandro Bl. | Job Number: 8991
Road Segment: w/o Day St.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	26,900 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,690 vehicles
Vehicle Speed:	45 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:	67.0 feet
Centerline Dist. to Observer:	67.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	53.226
Medium Trucks:	53.059
Heavy Trucks:	53.076

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.35	-0.51	-1.20	-4.71	0.000	0.000
Medium Trucks:	79.45	-14.89	-0.49	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-18.85	-0.49	-1.20	-5.29	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:	69.1	67.2	65.4	59.4	68.0	68.6
Medium Trucks:	62.9	61.4	55.0	53.5	61.9	62.1
Heavy Trucks:	63.7	62.3	53.3	54.5	62.9	63.0
Vehicle Noise:	70.9	69.2	66.0	61.4	69.9	70.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	66	142	307	661
CNEL:	71	153	329	709

Tuesday, February 03, 2015

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project | Project Name: Canyon Springs
Road Name: Alessandro Bl. | Job Number: 8991
Road Segment: e/o Day St.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,000 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,800 vehicles
Vehicle Speed:	45 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:	67.0 feet
Centerline Dist. to Observer:	67.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	53.226
Medium Trucks:	53.059
Heavy Trucks:	53.076

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.52	-0.51	-1.20	-4.71	0.000	0.000
Medium Trucks:	79.45	-14.72	-0.49	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-18.67	-0.49	-1.20	-5.29	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:	69.3	67.4	65.6	59.6	68.2	68.8
Medium Trucks:	63.0	61.5	55.2	53.6	62.1	62.3
Heavy Trucks:	63.9	62.5	53.4	54.7	63.0	63.2
Vehicle Noise:	71.1	69.4	66.2	61.5	70.1	70.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	68	146	315	679
CNEL:	73	157	338	728

Tuesday, February 03, 2015

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2018 Without Project
Road Name: Sycamore Canyon Bl.
Road Segment: n/o Eastridge Av.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	20,600 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,060 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	48 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	55.0 feet
Centerline Dist. to Observer:	55.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	49.739
Medium Trucks:	49.561
Heavy Trucks:	49.579

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.19	-0.07	-1.20	-4.67	0.000	0.000
Medium Trucks:	79.45	-16.05	-0.05	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-20.01	-0.05	-1.20	-5.38	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:	68.4	66.5	64.7	58.7	67.3	67.9
Medium Trucks:	62.2	60.6	54.3	52.7	61.2	61.4
Heavy Trucks:	63.0	61.6	52.5	53.8	62.1	62.3
Vehicle Noise:	70.2	68.5	65.3	60.7	69.2	69.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	49	105	226	486
CNEL:	52	112	242	521

Tuesday, February 03, 2015

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2018 Without Project
Road Name: Sycamore Canyon Bl.
Road Segment: s/o Eastridge Av.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	21,000 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,100 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	48 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	55.0 feet
Centerline Dist. to Observer:	55.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	49.739
Medium Trucks:	49.561
Heavy Trucks:	49.579

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.27	-0.07	-1.20	-4.67	0.000	0.000
Medium Trucks:	79.45	-15.97	-0.05	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-19.92	-0.05	-1.20	-5.38	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:	68.5	66.6	64.8	58.7	67.4	68.0
Medium Trucks:	62.2	60.7	54.4	52.8	61.3	61.5
Heavy Trucks:	63.1	61.7	52.6	53.9	62.2	62.4
Vehicle Noise:	70.3	68.6	65.4	60.7	69.3	69.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	49	106	228	492
CNEL:	53	114	245	528

Tuesday, February 03, 2015

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2018 Without Project
Road Name: Box Springs Bl.
Road Segment: n/o Eastridge Av.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

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

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	44.0 feet
Centerline Dist. to Observer:	44.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.57	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	77.72	-19.81	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-23.77	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.0	62.1	60.3	54.3	62.9	63.5
Medium Trucks:	58.0	56.5	50.1	48.6	57.1	57.3
Heavy Trucks:	59.3	57.9	48.9	50.1	58.5	58.6
Vehicle Noise:	66.0	64.3	61.0	56.5	65.0	65.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	20	44	95	205
CNEL:	22	47	102	219

Tuesday, February 03, 2015

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2018 Without Project
Road Name: Box Springs Bl.
Road Segment: s/o Eastridge Av.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	3,100 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	310 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	44.0 feet
Centerline Dist. to Observer:	44.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-6.53	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	77.72	-23.76	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-27.72	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.1	58.2	56.4	50.3	59.0	59.6
Medium Trucks:	54.1	52.6	46.2	44.6	53.1	53.3
Heavy Trucks:	55.4	54.0	44.9	46.2	54.5	54.7
Vehicle Noise:	62.1	60.4	57.1	52.5	61.1	61.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	11	24	52	112
CNEL:	12	26	55	119

Tuesday, February 03, 2015

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2018 Without Project
Road Name: Day St.
Road Segment: n/o SR-60 Fwy
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,400 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,140 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	72 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	48.260
Medium Trucks:	48.076
Heavy Trucks:	48.094

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	3.53	0.13	-1.20	-4.69	0.000	0.000
Medium Trucks:	77.72	-13.71	0.15	-1.20	-4.88	0.000	0.000
Heavy Trucks:	82.99	-17.66	0.15	-1.20	-5.34	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:	69.0	67.1	65.3	59.2	67.9	68.5
Medium Trucks:	63.0	61.5	55.1	53.5	62.0	62.2
Heavy Trucks:	64.3	62.9	53.8	55.1	63.4	63.6
Vehicle Noise:	71.0	69.3	66.0	61.4	70.0	70.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	60	129	277	597
CNEL:	64	138	296	639

Tuesday, February 03, 2015

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2018 Without Project
Road Name: Day St.
Road Segment: n/o Canyon Springs Pkwy.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	44,100 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	4,410 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	72 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	48.260
Medium Trucks:	48.076
Heavy Trucks:	48.094

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	5.00	0.13	-1.20	-4.69	0.000	0.000
Medium Trucks:	77.72	-12.23	0.15	-1.20	-4.88	0.000	0.000
Heavy Trucks:	82.99	-16.19	0.15	-1.20	-5.34	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:	70.4	68.5	66.8	60.7	69.3	70.0
Medium Trucks:	64.4	62.9	56.6	55.0	63.5	63.7
Heavy Trucks:	65.8	64.3	55.3	56.5	64.9	65.0
Vehicle Noise:	72.5	70.7	67.4	62.9	71.4	71.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	161	347	748
CNEL:	80	173	372	801

Tuesday, February 03, 2015

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2018 Without Project
Road Name: Day St.
Road Segment: s/o Canyon Springs Pkwy.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,800 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,780 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	72 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	48.260
Medium Trucks:	48.076
Heavy Trucks:	48.094

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	3.00	0.13	-1.20	-4.69	0.000	0.000
Medium Trucks:	77.72	-14.24	0.15	-1.20	-4.88	0.000	0.000
Heavy Trucks:	82.99	-18.19	0.15	-1.20	-5.34	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:	68.4	66.5	64.8	58.7	67.3	67.9
Medium Trucks:	62.4	60.9	54.6	53.0	61.5	61.7
Heavy Trucks:	63.8	62.3	53.3	54.5	62.9	63.0
Vehicle Noise:	70.5	68.7	65.4	60.9	69.4	69.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	55	118	255	550
CNEL:	59	127	273	589

Tuesday, February 03, 2015

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2018 Without Project
Road Name: Day St.
Road Segment: s/o Campus Pkwy.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,300 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,530 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	72 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	48.260
Medium Trucks:	48.076
Heavy Trucks:	48.094

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	2.59	0.13	-1.20	-4.69	0.000	0.000
Medium Trucks:	77.72	-14.65	0.15	-1.20	-4.88	0.000	0.000
Heavy Trucks:	82.99	-18.60	0.15	-1.20	-5.34	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:	68.0	66.1	64.4	58.3	66.9	67.5
Medium Trucks:	62.0	60.5	54.2	52.6	61.1	61.3
Heavy Trucks:	63.3	61.9	52.9	54.1	62.5	62.6
Vehicle Noise:	70.0	68.3	65.0	60.5	69.0	69.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	52	111	240	517
CNEL:	55	119	257	553

Tuesday, February 03, 2015

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2018 Without Project
Road Name: Day St.
Road Segment: s/o Gateway Dr.
Project Name: Canyon Springs
Job Number: 8991

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:	72	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	48.260
Medium Trucks:	48.076
Heavy Trucks:	48.094

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	1.55	0.13	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	77.72	-15.69	0.15	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-19.65	0.15	-1.20	*-5.34*	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:	67.0	65.1	63.3	57.3	65.9	66.5
Medium Trucks:	61.0	59.5	53.1	51.6	60.0	60.3
Heavy Trucks:	62.3	60.9	51.8	53.1	61.4	61.6
Vehicle Noise:	69.0	67.3	64.0	59.4	68.0	68.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	44	95	204	440
CNEL:	47	102	219	471

Tuesday, February 03, 2015

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2018 Without Project
Road Name: Day St.
Road Segment: n/o Eucalyptus Av.
Project Name: Canyon Springs
Job Number: 8991

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:	72	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	48.260
Medium Trucks:	48.076
Heavy Trucks:	48.094

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	1.55	0.13	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	77.72	-15.69	0.15	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-19.65	0.15	-1.20	*-5.34*	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:	67.0	65.1	63.3	57.3	65.9	66.5
Medium Trucks:	61.0	59.5	53.1	51.6	60.0	60.3
Heavy Trucks:	62.3	60.9	51.8	53.1	61.4	61.6
Vehicle Noise:	69.0	67.3	64.0	59.4	68.0	68.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	44	95	204	440
CNEL:	47	102	219	471

Tuesday, February 03, 2015

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2018 Without Project
Road Name: Day St.
Road Segment: s/o Eucalyptus Av.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	19,600	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	1,960	vehicles
Vehicle Speed:	35	mph
Near/Far Lane Distance:	58	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	55.0	feet
Centerline Dist. to Observer:	55.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	47.000
Medium Trucks:	46.811
Heavy Trucks:	46.830

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	64.30	2.06	0.30	-1.20	*-4.67*	0.000	0.000
Medium Trucks:	75.75	-15.18	0.33	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	81.57	-19.13	0.32	-1.20	*-5.38*	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:	65.5	63.6	61.8	55.7	64.4	65.0
Medium Trucks:	59.7	58.2	51.8	50.3	58.7	59.0
Heavy Trucks:	61.6	60.1	51.1	52.4	60.7	60.8
Vehicle Noise:	67.7	66.0	62.5	58.2	66.7	67.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	33	71	153	331
CNEL:	35	76	164	353

Tuesday, February 03, 2015

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2018 Without Project
Road Name: Day St.
Road Segment: s/o Cottonwood Av.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	15,700	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	1,570	vehicles
Vehicle Speed:	35	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:	44.0	feet
Centerline Dist. to Observer:	44.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	64.30	1.10	1.28	-1.20	*-4.61*	0.000	0.000
Medium Trucks:	75.75	-16.14	1.31	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	81.57	-20.09	1.31	-1.20	*-5.50*	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:	65.5	63.6	61.8	55.8	64.4	65.0
Medium Trucks:	59.7	58.2	51.9	50.3	58.8	59.0
Heavy Trucks:	61.6	60.2	51.1	52.4	60.7	60.9
Vehicle Noise:	67.7	66.0	62.6	58.2	66.7	67.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	27	57	123	265
CNEL:	28	61	131	283

Tuesday, February 03, 2015

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2018 Without Project
Road Name: Day St.
Road Segment: s/o Bay Av.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	15,300	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	1,530	vehicles
Vehicle Speed:	35	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:	44.0	feet
Centerline Dist. to Observer:	44.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	64.30	0.99	1.28	-1.20	*-4.61*	0.000	0.000
Medium Trucks:	75.75	-16.25	1.31	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	81.57	-20.21	1.31	-1.20	*-5.50*	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	61.7	55.6	64.3	64.9
Medium Trucks:	59.6	58.1	51.7	50.2	58.7	58.9
Heavy Trucks:	61.5	60.0	51.0	52.3	60.6	60.7
Vehicle Noise:	67.6	65.9	62.4	58.1	66.6	67.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	26	56	121	261
CNEL:	28	60	129	278

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2018 Without Project
Road Name: Day St.
Road Segment: s/o Alessandro Bl.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	12,000	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	1,200	vehicles
Vehicle Speed:	35	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:	44.0	feet
Centerline Dist. to Observer:	44.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	64.30	-0.07	1.28	-1.20	*-4.61*	0.000	0.000
Medium Trucks:	75.75	-17.31	1.31	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	81.57	-21.26	1.31	-1.20	*-5.50*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	64.3	62.4	60.6	54.6	63.2	63.8
Medium Trucks:	58.6	57.0	50.7	49.1	57.6	57.8
Heavy Trucks:	60.4	59.0	50.0	51.2	59.6	59.7
Vehicle Noise:	66.5	64.8	61.4	57.0	65.5	66.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	22	48	103	222
CNEL:	24	51	110	237

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2018 Without Project
Road Name: Eucalyptus Av.
Road Segment: s/o Towngate Dr.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	16,900	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	1,690	vehicles
Vehicle Speed:	40	mph
Near/Far Lane Distance:	48	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	50.0	feet
Centerline Dist. to Observer:	50.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	44.147
Medium Trucks:	43.947
Heavy Trucks:	43.966

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	0.84	0.71	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	77.72	-16.40	0.74	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	82.99	-20.35	0.73	-1.20	*-5.43*	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:	66.9	65.0	63.2	57.1	65.8	66.4
Medium Trucks:	60.9	59.3	53.0	51.4	59.9	60.1
Heavy Trucks:	62.2	60.8	51.7	53.0	61.3	61.4
Vehicle Noise:	68.9	67.1	63.9	59.3	67.9	68.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	36	77	167	360
CNEL:	39	83	179	385

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2018 Without Project
Road Name: Eastridge Av.
Road Segment: w/o Sycamore Canyon Bl.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,100	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,910	vehicles
Vehicle Speed:	40	mph
Near/Far Lane Distance:	72	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	48.260
Medium Trucks:	48.076
Heavy Trucks:	48.094

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	3.20	0.13	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	77.72	-14.04	0.15	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-17.99	0.15	-1.20	*-5.34*	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:	68.6	66.7	65.0	58.9	67.5	68.1
Medium Trucks:	62.6	61.1	54.8	53.2	61.7	61.9
Heavy Trucks:	63.9	62.5	53.5	54.7	63.1	63.2
Vehicle Noise:	70.7	68.9	65.6	61.1	69.6	70.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	57	122	263	567
CNEL:	61	131	282	607

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2018 Without Project
Road Name: Eastridge Av.
Road Segment: e/o Sycamore Canyon Bl.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,700 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,770 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	72 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	48.260
Medium Trucks:	48.076
Heavy Trucks:	48.094

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	2.99	0.13	-1.20	-4.69	0.000	0.000
Medium Trucks:	77.72	-14.25	0.15	-1.20	-4.88	0.000	0.000
Heavy Trucks:	82.99	-18.21	0.15	-1.20	-5.34	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:	68.4	66.5	64.8	58.7	67.3	67.9
Medium Trucks:	62.4	60.9	54.5	53.0	61.5	61.7
Heavy Trucks:	63.7	62.3	53.3	54.5	62.9	63.0
Vehicle Noise:	70.4	68.7	65.4	60.9	69.4	69.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	55	118	255	549
CNEL:	59	127	273	587

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2018 Without Project
Road Name: Eastridge Av.
Road Segment: e/o Box Springs Bl.
Project Name: Canyon Springs
Job Number: 8991

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:	72 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	48.260
Medium Trucks:	48.076
Heavy Trucks:	48.094

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	3.93	0.13	-1.20	-4.69	0.000	0.000
Medium Trucks:	77.72	-13.31	0.15	-1.20	-4.88	0.000	0.000
Heavy Trucks:	82.99	-17.27	0.15	-1.20	-5.34	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:	69.4	67.5	65.7	59.6	68.3	68.9
Medium Trucks:	63.4	61.8	55.5	53.9	62.4	62.6
Heavy Trucks:	64.7	63.3	54.2	55.5	63.8	63.9
Vehicle Noise:	71.4	69.7	66.4	61.8	70.4	70.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	63	137	294	634
CNEL:	68	146	315	679

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2018 Without Project
Road Name: Eucalyptus Av.
Road Segment: w/o Valley Springs Pkwy.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	45,800 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	4,580 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	72 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	48.260
Medium Trucks:	48.076
Heavy Trucks:	48.094

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	5.17	0.13	-1.20	-4.69	0.000	0.000
Medium Trucks:	77.72	-12.07	0.15	-1.20	-4.88	0.000	0.000
Heavy Trucks:	82.99	-16.03	0.15	-1.20	-5.34	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:	70.6	68.7	66.9	60.9	69.5	70.1
Medium Trucks:	64.6	63.1	56.7	55.2	63.6	63.9
Heavy Trucks:	65.9	64.5	55.5	56.7	65.1	65.2
Vehicle Noise:	72.6	70.9	67.6	63.1	71.6	72.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	165	356	767
CNEL:	82	177	381	821

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2018 Without Project
Road Name: Eucalyptus Av.
Road Segment: e/o Valley Springs Pkwy.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,500 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,850 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	72 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	48.260
Medium Trucks:	48.076
Heavy Trucks:	48.094

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	3.11	0.13	-1.20	-4.69	0.000	0.000
Medium Trucks:	77.72	-14.13	0.15	-1.20	-4.88	0.000	0.000
Heavy Trucks:	82.99	-18.09	0.15	-1.20	-5.34	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:	68.5	66.6	64.9	58.8	67.5	68.1
Medium Trucks:	62.5	61.0	54.7	53.1	61.6	61.8
Heavy Trucks:	63.9	62.4	53.4	54.7	63.0	63.1
Vehicle Noise:	70.6	68.8	65.6	61.0	69.5	70.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	56	120	260	559
CNEL:	60	129	278	599

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2018 Without Project
Road Name: Eucalyptus Av.
Road Segment: e/o Day St.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,700 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,970 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:	67.0 feet
Centerline Dist. to Observer:	67.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	53.226
Medium Trucks:	53.059
Heavy Trucks:	53.076

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	3.29	-0.51	-1.20	-4.71	0.000	0.000
Medium Trucks:	77.72	-13.95	-0.49	-1.20	-4.88	0.000	0.000
Heavy Trucks:	82.99	-17.91	-0.49	-1.20	-5.29	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:	68.1	66.2	64.4	58.4	67.0	67.6
Medium Trucks:	62.1	60.6	54.2	52.7	61.1	61.4
Heavy Trucks:	63.4	62.0	52.9	54.2	62.5	62.7
Vehicle Noise:	70.1	68.4	65.1	60.5	69.1	69.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	125	270	582
CNEL:	62	134	289	623

Tuesday, February 03, 2015

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2018 Without Project
Road Name: Towngate Dr.
Road Segment: e/o Eucalyptus Av.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	13,400 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,340 vehicles
Vehicle Speed:	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:	67.0 feet
Centerline Dist. to Observer:	67.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	53.226
Medium Trucks:	53.059
Heavy Trucks:	53.076

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-0.17	-0.51	-1.20	-4.71	0.000	0.000
Medium Trucks:	77.72	-17.41	-0.49	-1.20	-4.88	0.000	0.000
Heavy Trucks:	82.99	-21.36	-0.49	-1.20	-5.29	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	61.0	54.9	63.5	64.1
Medium Trucks:	58.6	57.1	50.7	49.2	57.7	57.9
Heavy Trucks:	59.9	58.5	49.5	50.7	59.1	59.2
Vehicle Noise:	66.6	64.9	61.6	57.1	65.6	66.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	74	159	342
CNEL:	37	79	170	366

Tuesday, February 03, 2015

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2018 Without Project
Road Name: Alessandro Bl.
Road Segment: w/o Day St.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	41,100 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	4,110 vehicles
Vehicle Speed:	45 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:	67.0 feet
Centerline Dist. to Observer:	67.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	53.226
Medium Trucks:	53.059
Heavy Trucks:	53.076

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.19	-0.51	-1.20	-4.71	0.000	0.000
Medium Trucks:	79.45	-13.05	-0.49	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-17.01	-0.49	-1.20	-5.29	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:	70.9	69.0	67.3	61.2	69.8	70.4
Medium Trucks:	64.7	63.2	56.8	55.3	63.8	64.0
Heavy Trucks:	65.6	64.1	55.1	56.3	64.7	64.8
Vehicle Noise:	72.8	71.0	67.9	63.2	71.8	72.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	88	189	407	877
CNEL:	94	203	436	940

Tuesday, February 03, 2015

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2018 Without Project
Road Name: Alessandro Bl.
Road Segment: e/o Day St.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	40,700 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	4,070 vehicles
Vehicle Speed:	45 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:	67.0 feet
Centerline Dist. to Observer:	67.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	53.226
Medium Trucks:	53.059
Heavy Trucks:	53.076

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.14	-0.51	-1.20	-4.71	0.000	0.000
Medium Trucks:	79.45	-13.09	-0.49	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-17.05	-0.49	-1.20	-5.29	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:	70.9	69.0	67.2	61.2	69.8	70.4
Medium Trucks:	64.7	63.2	56.8	55.3	63.7	63.9
Heavy Trucks:	65.5	64.1	55.1	56.3	64.7	64.8
Vehicle Noise:	72.7	71.0	67.8	63.2	71.7	72.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	87	188	404	871
CNEL:	93	201	434	934

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2018 With Project
Road Name: Sycamore Canyon Bl.
Road Segment: n/o Eastridge Av.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	21,200 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,120 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	48 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	55.0 feet
Centerline Dist. to Observer:	55.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	49.739
Medium Trucks:	49.561
Heavy Trucks:	49.579

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.31	-0.07	-1.20	-4.67	0.000	0.000
Medium Trucks:	79.45	-15.93	-0.05	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-19.88	-0.05	-1.20	-5.38	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:	68.5	66.6	64.8	58.8	67.4	68.0
Medium Trucks:	62.3	60.8	54.4	52.9	61.3	61.6
Heavy Trucks:	63.1	61.7	52.7	53.9	62.3	62.4
Vehicle Noise:	70.3	68.6	65.4	60.8	69.3	69.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	50	107	230	495
CNEL:	53	114	247	531

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2018 With Project
Road Name: Sycamore Canyon Bl.
Road Segment: s/o Eastridge Av.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	21,200 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,120 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	48 feet

Site Data

Barrier Height:	0.0 feet
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	55.0 feet
Centerline Dist. to Observer:	55.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	49.739
Medium Trucks:	49.561
Heavy Trucks:	49.579

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.31	-0.07	-1.20	-4.67	0.000	0.000
Medium Trucks:	79.45	-15.93	-0.05	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-19.88	-0.05	-1.20	-5.38	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:	68.5	66.6	64.8	58.8	67.4	68.0
Medium Trucks:	62.3	60.8	54.4	52.9	61.3	61.6
Heavy Trucks:	63.1	61.7	52.7	53.9	62.3	62.4
Vehicle Noise:	70.3	68.6	65.4	60.8	69.3	69.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	50	107	230	495
CNEL:	53	114	247	531

Tuesday, February 03, 2015

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2018 With Project
Road Name: Box Springs Bl.
Road Segment: n/o Eastridge Av.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	7,900 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	790 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	44.0 feet
Centerline Dist. to Observer:	44.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.46	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	77.72	-19.70	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-23.66	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.1	62.2	60.5	54.4	63.0	63.6
Medium Trucks:	58.1	56.6	50.3	48.7	57.2	57.4
Heavy Trucks:	59.4	58.0	49.0	50.2	58.6	58.7
Vehicle Noise:	66.1	64.4	61.1	56.6	65.1	65.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	21	45	97	208
CNEL:	22	48	103	223

Tuesday, February 03, 2015

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2018 With Project
Road Name: Box Springs Bl.
Road Segment: s/o Eastridge Av.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	3,300 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	330 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:	44.0 feet
Centerline Dist. to Observer:	44.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-6.25	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	77.72	-23.49	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-27.45	1.31	-1.20	-5.50	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:	60.3	58.4	56.7	50.6	59.2	59.8
Medium Trucks:	54.3	52.8	46.5	44.9	53.4	53.6
Heavy Trucks:	55.7	54.2	45.2	46.4	54.8	54.9
Vehicle Noise:	62.4	60.6	57.3	52.8	61.3	61.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	12	25	54	116
CNEL:	12	27	58	124

Tuesday, February 03, 2015

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2018 With Project
Road Name: Day St.
Road Segment: n/o SR-60 Fwy

Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	34,100 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,410 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	72 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	48.260
Medium Trucks:	48.076
Heavy Trucks:	48.094

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	3.89	0.13	-1.20	-4.69	0.000	0.000
Medium Trucks:	77.72	-13.35	0.15	-1.20	-4.88	0.000	0.000
Heavy Trucks:	82.99	-17.31	0.15	-1.20	-5.34	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:	69.3	67.4	65.7	59.6	68.2	68.8
Medium Trucks:	63.3	61.8	55.4	53.9	62.4	62.6
Heavy Trucks:	64.6	63.2	54.2	55.4	63.8	63.9
Vehicle Noise:	71.3	69.6	66.3	61.8	70.3	70.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	63	136	293	630
CNEL:	67	145	313	675

Tuesday, February 03, 2015

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2018 With Project
Road Name: Day St.
Road Segment: n/o Canyon Springs Pkwy.

Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	49,200 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	4,920 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	72 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	48.260
Medium Trucks:	48.076
Heavy Trucks:	48.094

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	5.48	0.13	-1.20	-4.69	0.000	0.000
Medium Trucks:	77.72	-11.76	0.15	-1.20	-4.88	0.000	0.000
Heavy Trucks:	82.99	-15.71	0.15	-1.20	-5.34	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:	70.9	69.0	67.3	61.2	69.8	70.4
Medium Trucks:	64.9	63.4	57.0	55.5	64.0	64.2
Heavy Trucks:	66.2	64.8	55.8	57.0	65.4	65.5
Vehicle Noise:	72.9	71.2	67.9	63.4	71.9	72.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	80	173	374	805
CNEL:	86	186	400	862

Tuesday, February 03, 2015

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2018 With Project
Road Name: Day St.
Road Segment: s/o Canyon Springs Pkwy.

Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	32,900 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,290 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	72 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	48.260
Medium Trucks:	48.076
Heavy Trucks:	48.094

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	3.73	0.13	-1.20	-4.69	0.000	0.000
Medium Trucks:	77.72	-13.51	0.15	-1.20	-4.88	0.000	0.000
Heavy Trucks:	82.99	-17.46	0.15	-1.20	-5.34	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:	69.2	67.3	65.5	59.5	68.1	68.7
Medium Trucks:	63.2	61.7	55.3	53.7	62.2	62.4
Heavy Trucks:	64.5	63.1	54.0	55.3	63.6	63.8
Vehicle Noise:	71.2	69.5	66.2	61.6	70.2	70.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	62	133	286	615
CNEL:	66	142	306	659

Tuesday, February 03, 2015

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2018 With Project
Road Name: Day St.
Road Segment: s/o Campus Pkwy.

Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	30,300 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,030 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	72 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	48.260
Medium Trucks:	48.076
Heavy Trucks:	48.094

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	3.37	0.13	-1.20	-4.69	0.000	0.000
Medium Trucks:	77.72	-13.86	0.15	-1.20	-4.88	0.000	0.000
Heavy Trucks:	82.99	-17.82	0.15	-1.20	-5.34	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:	68.8	66.9	65.1	59.1	67.7	68.3
Medium Trucks:	62.8	61.3	54.9	53.4	61.9	62.1
Heavy Trucks:	64.1	62.7	53.7	54.9	63.3	63.4
Vehicle Noise:	70.8	69.1	65.8	61.3	69.8	70.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	126	270	583
CNEL:	62	134	289	624

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2018 With Project
Road Name: Day St.
Road Segment: s/o Gateway Dr.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	22,200 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,220 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	72 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	48.260
Medium Trucks:	48.076
Heavy Trucks:	48.094

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	2.02	0.13	-1.20	-4.69	0.000	0.000
Medium Trucks:	77.72	-15.21	0.15	-1.20	-4.88	0.000	0.000
Heavy Trucks:	82.99	-19.17	0.15	-1.20	-5.34	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	63.8	57.7	66.4	67.0
Medium Trucks:	61.5	59.9	53.6	52.0	60.5	60.7
Heavy Trucks:	62.8	61.4	52.3	53.6	61.9	62.0
Vehicle Noise:	69.5	67.7	64.5	59.9	68.5	68.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	47	102	220	473
CNEL:	51	109	235	507

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2018 With Project
Road Name: Day St.
Road Segment: n/o Eucalyptus Av.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	22,500 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,250 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	72 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	48.260
Medium Trucks:	48.076
Heavy Trucks:	48.094

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	2.08	0.13	-1.20	-4.69	0.000	0.000
Medium Trucks:	77.72	-15.16	0.15	-1.20	-4.88	0.000	0.000
Heavy Trucks:	82.99	-19.11	0.15	-1.20	-5.34	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	63.9	57.8	66.4	67.0
Medium Trucks:	61.5	60.0	53.6	52.1	60.6	60.8
Heavy Trucks:	62.8	61.4	52.4	53.6	62.0	62.1
Vehicle Noise:	69.5	67.8	64.5	60.0	68.5	69.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	48	103	222	478
CNEL:	51	110	237	511

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2018 With Project
Road Name: Day St.
Road Segment: s/o Eucalyptus Av.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	21,100 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,110 vehicles
Vehicle Speed:	35 mph
Near/Far Lane Distance:	58 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	55.0 feet
Centerline Dist. to Observer:	55.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	47.000
Medium Trucks:	46.811
Heavy Trucks:	46.830

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	2.38	0.30	-1.20	-4.67	0.000	0.000
Medium Trucks:	75.75	-14.86	0.33	-1.20	-4.87	0.000	0.000
Heavy Trucks:	81.57	-18.81	0.32	-1.20	-5.38	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.8	63.9	62.1	56.1	64.7	65.3
Medium Trucks:	60.0	58.5	52.2	50.6	59.1	59.3
Heavy Trucks:	61.9	60.5	51.4	52.7	61.0	61.2
Vehicle Noise:	68.0	66.3	62.9	58.5	67.0	67.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	75	161	347
CNEL:	37	80	172	371

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2018 With Project
Road Name: Day St.
Road Segment: s/o Cottonwood Av.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	16,800 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,680 vehicles
Vehicle Speed:	35 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:	44.0 feet
Centerline Dist. to Observer:	44.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	1.39	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	75.75	-15.84	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	81.57	-19.80	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.8	63.9	62.1	56.1	64.7	65.3
Medium Trucks:	60.0	58.5	52.1	50.6	59.1	59.3
Heavy Trucks:	61.9	60.5	51.4	52.7	61.0	61.1
Vehicle Noise:	68.0	66.3	62.8	58.5	67.0	67.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	28	60	129	277
CNEL:	30	64	138	296

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2018 With Project
Road Name: Day St.
Road Segment: s/o Bay Av.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	16,100	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	1,610	vehicles
Vehicle Speed:	35	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:	44.0	feet
Centerline Dist. to Observer:	44.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	1.21	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	75.75	-16.03	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	81.57	-19.99	1.31	-1.20	-5.50	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	61.9	55.9	64.5	65.1
Medium Trucks:	59.8	58.3	52.0	50.4	58.9	59.1
Heavy Trucks:	61.7	60.3	51.2	52.5	60.8	61.0
Vehicle Noise:	67.8	66.1	62.7	58.3	66.8	67.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	27	58	125	270
CNEL:	29	62	134	288

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2018 With Project
Road Name: Day St.
Road Segment: s/o Alessandro Bl.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	12,200	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	1,220	vehicles
Vehicle Speed:	35	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:	44.0	feet
Centerline Dist. to Observer:	44.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	0.00	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	75.75	-17.23	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	81.57	-21.19	1.31	-1.20	-5.50	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:	64.4	62.5	60.7	54.7	63.3	63.9
Medium Trucks:	58.6	57.1	50.8	49.2	57.7	57.9
Heavy Trucks:	60.5	59.1	50.0	51.3	59.6	59.8
Vehicle Noise:	66.6	64.9	61.5	57.1	65.6	66.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	48	104	224
CNEL:	24	52	111	239

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2018 With Project
Road Name: Eucalyptus Av.
Road Segment: s/o Towngate Dr.
Project Name: Canyon Springs
Job Number: 8991

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:	48	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	50.0	feet
Centerline Dist. to Observer:	50.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	44.147
Medium Trucks:	43.947
Heavy Trucks:	43.966

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.06	0.71	-1.20	-4.65	0.000	0.000
Medium Trucks:	77.72	-16.17	0.74	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-20.13	0.73	-1.20	-5.43	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	63.4	57.4	66.0	66.6
Medium Trucks:	61.1	59.6	53.2	51.7	60.1	60.4
Heavy Trucks:	62.4	61.0	51.9	53.2	61.5	61.7
Vehicle Noise:	69.1	67.4	64.1	59.5	68.1	68.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	80	173	372
CNEL:	40	86	185	399

Tuesday, February 03, 2015

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2018 With Project
Road Name: Eastridge Av.
Road Segment: w/o Sycamore Canyon Bl.
Project Name: Canyon Springs
Job Number: 8991

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:	72	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	48.260
Medium Trucks:	48.076
Heavy Trucks:	48.094

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	3.23	0.13	-1.20	-4.69	0.000	0.000
Medium Trucks:	77.72	-14.01	0.15	-1.20	-4.88	0.000	0.000
Heavy Trucks:	82.99	-17.96	0.15	-1.20	-5.34	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:	68.7	66.8	65.0	58.9	67.6	68.2
Medium Trucks:	62.7	61.2	54.8	53.2	61.7	61.9
Heavy Trucks:	64.0	62.6	53.5	54.8	63.1	63.3
Vehicle Noise:	70.7	69.0	65.7	61.1	69.7	70.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	57	123	264	570
CNEL:	61	131	283	610

Tuesday, February 03, 2015

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2018 With Project
Road Name: Eastridge Av.
Road Segment: e/o Sycamore Canyon Bl.

Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,600	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,860	vehicles
Vehicle Speed:	40	mph
Near/Far Lane Distance:	72	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	48.260
Medium Trucks:	48.076
Heavy Trucks:	48.094

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	3.12	0.13	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	77.72	-14.11	0.15	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-18.07	0.15	-1.20	*-5.34*	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:	68.6	66.7	64.9	58.8	67.5	68.1
Medium Trucks:	62.6	61.0	54.7	53.1	61.6	61.8
Heavy Trucks:	63.9	62.5	53.4	54.7	63.0	63.1
Vehicle Noise:	70.6	68.8	65.6	61.0	69.6	70.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	56	121	260	561
CNEL:	60	129	279	600

Tuesday, February 03, 2015

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2018 With Project
Road Name: Eastridge Av.
Road Segment: e/o Box Springs Bl.

Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	35,700	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,570	vehicles
Vehicle Speed:	40	mph
Near/Far Lane Distance:	72	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	48.260
Medium Trucks:	48.076
Heavy Trucks:	48.094

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	4.09	0.13	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	77.72	-13.15	0.15	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-17.11	0.15	-1.20	*-5.34*	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:	69.5	67.6	65.9	59.8	68.4	69.0
Medium Trucks:	63.5	62.0	55.6	54.1	62.6	62.8
Heavy Trucks:	64.8	63.4	54.4	55.6	64.0	64.1
Vehicle Noise:	71.5	69.8	66.5	62.0	70.5	71.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	65	140	302	650
CNEL:	70	150	323	696

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2018 With Project
Road Name: Eucalyptus Av.
Road Segment: w/o Valley Springs Pkwy.

Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	54,000	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	5,400	vehicles
Vehicle Speed:	40	mph
Near/Far Lane Distance:	72	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	48.260
Medium Trucks:	48.076
Heavy Trucks:	48.094

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	5.88	0.13	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	77.72	-11.35	0.15	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-15.31	0.15	-1.20	*-5.34*	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:	71.3	69.4	67.7	61.6	70.2	70.8
Medium Trucks:	65.3	63.8	57.4	55.9	64.4	64.6
Heavy Trucks:	66.6	65.2	56.2	57.4	65.8	65.9
Vehicle Noise:	73.3	71.6	68.3	63.8	72.3	72.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	86	184	397	856
CNEL:	92	198	426	917

Tuesday, February 03, 2015

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2018 With Project
Road Name: Eucalyptus Av.
Road Segment: e/o Valley Springs Pkwy.

Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	30,600	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,060	vehicles
Vehicle Speed:	40	mph
Near/Far Lane Distance:	72	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	48.260
Medium Trucks:	48.076
Heavy Trucks:	48.094

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	3.42	0.13	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	77.72	-13.82	0.15	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-17.78	0.15	-1.20	*-5.34*	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:	68.9	67.0	65.2	59.1	67.8	68.4
Medium Trucks:	62.8	61.3	55.0	53.4	61.9	62.1
Heavy Trucks:	64.2	62.7	53.7	55.0	63.3	63.4
Vehicle Noise:	70.9	69.1	65.9	61.3	69.9	70.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	59	126	272	586
CNEL:	63	135	291	628

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2018 With Project
Road Name: Eucalyptus Av.
Road Segment: e/o Day St.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,300 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,130 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:	67.0 feet
Centerline Dist. to Observer:	67.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	53.226
Medium Trucks:	53.059
Heavy Trucks:	53.076

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	3.52	-0.51	-1.20	-4.71	0.000	0.000
Medium Trucks:	77.72	-13.72	-0.49	-1.20	-4.88	0.000	0.000
Heavy Trucks:	82.99	-17.68	-0.49	-1.20	-5.29	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:	68.3	66.4	64.7	58.6	67.2	67.8
Medium Trucks:	62.3	60.8	54.4	52.9	61.3	61.6
Heavy Trucks:	63.6	62.2	53.2	54.4	62.8	62.9
Vehicle Noise:	70.3	68.6	65.3	60.8	69.3	69.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	60	130	280	603
CNEL:	65	139	299	645

Tuesday, February 03, 2015

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2018 With Project
Road Name: Towngate Dr.
Road Segment: e/o Eucalyptus Av.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	14,800 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,480 vehicles
Vehicle Speed:	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:	67.0 feet
Centerline Dist. to Observer:	67.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	53.226
Medium Trucks:	53.059
Heavy Trucks:	53.076

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.26	-0.51	-1.20	-4.71	0.000	0.000
Medium Trucks:	77.72	-16.98	-0.49	-1.20	-4.88	0.000	0.000
Heavy Trucks:	82.99	-20.93	-0.49	-1.20	-5.29	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	55.3	64.0	64.6
Medium Trucks:	59.0	57.5	51.2	49.6	58.1	58.3
Heavy Trucks:	60.4	58.9	49.9	51.2	59.5	59.6
Vehicle Noise:	67.1	65.3	62.1	57.5	66.1	66.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	79	170	366
CNEL:	39	84	182	392

Tuesday, February 03, 2015

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2018 With Project
Road Name: Alessandro Bl.
Road Segment: w/o Day St.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	41,300 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	4,130 vehicles
Vehicle Speed:	45 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:	67.0 feet
Centerline Dist. to Observer:	67.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	53.226
Medium Trucks:	53.059
Heavy Trucks:	53.076

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.21	-0.51	-1.20	-4.71	0.000	0.000
Medium Trucks:	79.45	-13.03	-0.49	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-16.99	-0.49	-1.20	-5.29	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:	71.0	69.1	67.3	61.2	69.9	70.5
Medium Trucks:	64.7	63.2	56.9	55.3	63.8	64.0
Heavy Trucks:	65.6	64.2	55.1	56.4	64.7	64.8
Vehicle Noise:	72.8	71.1	67.9	63.2	71.8	72.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	88	189	408	879
CNEL:	94	203	438	943

Tuesday, February 03, 2015

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2018 With Project
Road Name: Alessandro Bl.
Road Segment: e/o Day St.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	41,100 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	4,110 vehicles
Vehicle Speed:	45 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:	67.0 feet
Centerline Dist. to Observer:	67.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	53.226
Medium Trucks:	53.059
Heavy Trucks:	53.076

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.19	-0.51	-1.20	-4.71	0.000	0.000
Medium Trucks:	79.45	-13.05	-0.49	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-17.01	-0.49	-1.20	-5.29	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:	70.9	69.0	67.3	61.2	69.8	70.4
Medium Trucks:	64.7	63.2	56.8	55.3	63.8	64.0
Heavy Trucks:	65.6	64.1	55.1	56.3	64.7	64.8
Vehicle Noise:	72.8	71.0	67.9	63.2	71.8	72.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	88	189	407	877
CNEL:	94	203	436	940

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2035 Without Project
Road Name: Sycamore Canyon Bl.
Road Segment: n/o Eastridge Av.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	21,700 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,170 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	48 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	55.0 feet
Centerline Dist. to Observer:	55.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	49.739
Medium Trucks:	49.561
Heavy Trucks:	49.579

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.41	-0.07	-1.20	-4.67	0.000	0.000
Medium Trucks:	79.45	-15.82	-0.05	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-19.78	-0.05	-1.20	-5.38	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:	68.6	66.7	64.9	58.9	67.5	68.1
Medium Trucks:	62.4	60.9	54.5	53.0	61.4	61.7
Heavy Trucks:	63.2	61.8	52.8	54.0	62.4	62.5
Vehicle Noise:	70.4	68.7	65.6	60.9	69.4	69.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	50	108	233	503
CNEL:	54	116	250	540

Tuesday, February 03, 2015

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2035 Without Project
Road Name: Sycamore Canyon Bl.
Road Segment: s/o Eastridge Av.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	22,100 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,210 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	48 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	55.0 feet
Centerline Dist. to Observer:	55.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	49.739
Medium Trucks:	49.561
Heavy Trucks:	49.579

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.49	-0.07	-1.20	-4.67	0.000	0.000
Medium Trucks:	79.45	-15.75	-0.05	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-19.70	-0.05	-1.20	-5.38	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:	68.7	66.8	65.0	59.0	67.6	68.2
Medium Trucks:	62.5	61.0	54.6	53.0	61.5	61.7
Heavy Trucks:	63.3	61.9	52.8	54.1	62.5	62.6
Vehicle Noise:	70.5	68.8	65.6	61.0	69.5	70.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	51	110	236	509
CNEL:	55	118	254	546

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2035 Without Project
Road Name: Box Springs Bl.
Road Segment: n/o Eastridge Av.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	8,100 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	810 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	44.0 feet
Centerline Dist. to Observer:	44.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.35	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	77.72	-19.59	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-23.55	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.2	62.3	60.6	54.5	63.1	63.7
Medium Trucks:	58.2	56.7	50.4	48.8	57.3	57.5
Heavy Trucks:	59.6	58.1	49.1	50.3	58.7	58.8
Vehicle Noise:	66.3	64.5	61.2	56.7	65.2	65.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	21	46	98	212
CNEL:	23	49	105	227

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2035 Without Project
Road Name: Box Springs Bl.
Road Segment: s/o Eastridge Av.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	3,300 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	330 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:	44.0 feet
Centerline Dist. to Observer:	44.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-6.25	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	77.72	-23.49	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-27.45	1.31	-1.20	-5.50	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:	60.3	58.4	56.7	50.6	59.2	59.8
Medium Trucks:	54.3	52.8	46.5	44.9	53.4	53.6
Heavy Trucks:	55.7	54.2	45.2	46.4	54.8	54.9
Vehicle Noise:	62.4	60.6	57.3	52.8	61.3	61.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	12	25	54	116
CNEL:	12	27	58	124

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2035 Without Project
Road Name: Day St.
Road Segment: n/o SR-60 Fwy

Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	33,100	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,310	vehicles
Vehicle Speed:	40	mph
Near/Far Lane Distance:	72	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	48.260
Medium Trucks:	48.076
Heavy Trucks:	48.094

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	3.76	0.13	-1.20	-4.69	0.000	0.000
Medium Trucks:	77.72	-13.48	0.15	-1.20	-4.88	0.000	0.000
Heavy Trucks:	82.99	-17.44	0.15	-1.20	-5.34	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:	69.2	67.3	65.5	59.5	68.1	68.7
Medium Trucks:	63.2	61.7	55.3	53.8	62.2	62.5
Heavy Trucks:	64.5	63.1	54.1	55.3	63.7	63.8
Vehicle Noise:	71.2	69.5	66.2	61.7	70.2	70.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	62	133	287	618
CNEL:	66	143	307	662

Tuesday, February 03, 2015

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2035 Without Project
Road Name: Day St.
Road Segment: n/o Canyon Springs Pkwy.

Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	46,600	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,660	vehicles
Vehicle Speed:	40	mph
Near/Far Lane Distance:	72	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	48.260
Medium Trucks:	48.076
Heavy Trucks:	48.094

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	5.24	0.13	-1.20	-4.69	0.000	0.000
Medium Trucks:	77.72	-11.99	0.15	-1.20	-4.88	0.000	0.000
Heavy Trucks:	82.99	-15.95	0.15	-1.20	-5.34	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:	70.7	68.8	67.0	61.0	69.6	70.2
Medium Trucks:	64.7	63.2	56.8	55.3	63.7	64.0
Heavy Trucks:	66.0	64.6	55.5	56.8	65.1	65.3
Vehicle Noise:	72.7	71.0	67.7	63.1	71.7	72.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	78	167	360	776
CNEL:	83	179	386	831

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2035 Without Project
Road Name: Day St.
Road Segment: s/o Canyon Springs Pkwy.

Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,500	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,950	vehicles
Vehicle Speed:	40	mph
Near/Far Lane Distance:	72	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	48.260
Medium Trucks:	48.076
Heavy Trucks:	48.094

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	3.26	0.13	-1.20	-4.69	0.000	0.000
Medium Trucks:	77.72	-13.98	0.15	-1.20	-4.88	0.000	0.000
Heavy Trucks:	82.99	-17.94	0.15	-1.20	-5.34	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:	68.7	66.8	65.0	59.0	67.6	68.2
Medium Trucks:	62.7	61.2	54.8	53.3	61.7	62.0
Heavy Trucks:	64.0	62.6	53.6	54.8	63.2	63.3
Vehicle Noise:	70.7	69.0	65.7	61.2	69.7	70.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	57	123	266	572
CNEL:	61	132	284	613

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2035 Without Project
Road Name: Day St.
Road Segment: s/o Campus Pkwy.

Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	26,900	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,690	vehicles
Vehicle Speed:	40	mph
Near/Far Lane Distance:	72	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	48.260
Medium Trucks:	48.076
Heavy Trucks:	48.094

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	2.86	0.13	-1.20	-4.69	0.000	0.000
Medium Trucks:	77.72	-14.38	0.15	-1.20	-4.88	0.000	0.000
Heavy Trucks:	82.99	-18.34	0.15	-1.20	-5.34	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:	68.3	66.4	64.6	58.6	67.2	67.8
Medium Trucks:	62.3	60.8	54.4	52.9	61.3	61.6
Heavy Trucks:	63.6	62.2	53.2	54.4	62.8	62.9
Vehicle Noise:	70.3	68.6	65.3	60.8	69.3	69.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	54	116	250	538
CNEL:	58	124	267	576

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2035 Without Project
Road Name: Day St.
Road Segment: s/o Gateway Dr.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	21,000 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,100 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	72 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	48.260
Medium Trucks:	48.076
Heavy Trucks:	48.094

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.78	0.13	-1.20	-4.69	0.000	0.000
Medium Trucks:	77.72	-15.46	0.15	-1.20	-4.88	0.000	0.000
Heavy Trucks:	82.99	-19.41	0.15	-1.20	-5.34	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	63.6	57.5	66.1	66.7
Medium Trucks:	61.2	59.7	53.3	51.8	60.3	60.5
Heavy Trucks:	62.5	61.1	52.1	53.3	61.7	61.8
Vehicle Noise:	69.2	67.5	64.2	59.7	68.2	68.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	46	98	212	456
CNEL:	49	105	227	488

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2035 Without Project
Road Name: Day St.
Road Segment: n/o Eucalyptus Av.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	21,000 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,100 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	72 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	48.260
Medium Trucks:	48.076
Heavy Trucks:	48.094

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.78	0.13	-1.20	-4.69	0.000	0.000
Medium Trucks:	77.72	-15.46	0.15	-1.20	-4.88	0.000	0.000
Heavy Trucks:	82.99	-19.41	0.15	-1.20	-5.34	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	63.6	57.5	66.1	66.7
Medium Trucks:	61.2	59.7	53.3	51.8	60.3	60.5
Heavy Trucks:	62.5	61.1	52.1	53.3	61.7	61.8
Vehicle Noise:	69.2	67.5	64.2	59.7	68.2	68.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	46	98	212	456
CNEL:	49	105	227	488

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2035 Without Project
Road Name: Day St.
Road Segment: s/o Eucalyptus Av.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	21,000 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,100 vehicles
Vehicle Speed:	35 mph
Near/Far Lane Distance:	58 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	55.0 feet
Centerline Dist. to Observer:	55.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	47.000
Medium Trucks:	46.811
Heavy Trucks:	46.830

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	2.36	0.30	-1.20	-4.67	0.000	0.000
Medium Trucks:	75.75	-14.88	0.33	-1.20	-4.87	0.000	0.000
Heavy Trucks:	81.57	-18.83	0.32	-1.20	-5.38	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.8	63.9	62.1	56.0	64.7	65.3
Medium Trucks:	60.0	58.5	52.1	50.6	59.0	59.3
Heavy Trucks:	61.9	60.4	51.4	52.7	61.0	61.1
Vehicle Noise:	68.0	66.3	62.8	58.5	67.0	67.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	75	161	346
CNEL:	37	80	172	370

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2035 Without Project
Road Name: Day St.
Road Segment: s/o Cottonwood Av.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	17,500 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,750 vehicles
Vehicle Speed:	35 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:	44.0 feet
Centerline Dist. to Observer:	44.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	1.57	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	75.75	-15.67	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	81.57	-19.62	1.31	-1.20	-5.50	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:	65.9	64.1	62.3	56.2	64.9	65.5
Medium Trucks:	60.2	58.7	52.3	50.8	59.2	59.5
Heavy Trucks:	62.1	60.6	51.6	52.8	61.2	61.3
Vehicle Noise:	68.2	66.5	63.0	58.6	67.2	67.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	29	61	132	285
CNEL:	30	66	141	304

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2035 Without Project
Road Name: Day St.
Road Segment: s/o Bay Av.
Project Name: Canyon Springs
Job Number: 8991

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:	35 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:	44.0 feet
Centerline Dist. to Observer:	44.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	1.64	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	75.75	-15.59	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	81.57	-19.55	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.0	64.1	62.4	56.3	64.9	65.5
Medium Trucks:	60.3	58.8	52.4	50.9	59.3	59.5
Heavy Trucks:	62.1	60.7	51.7	52.9	61.3	61.4
Vehicle Noise:	68.3	66.5	63.1	58.7	67.2	67.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	29	62	134	288
CNEL:	31	66	143	308

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2035 Without Project
Road Name: Day St.
Road Segment: s/o Alessandro Bl.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	12,600 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,260 vehicles
Vehicle Speed:	35 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:	44.0 feet
Centerline Dist. to Observer:	44.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	0.14	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	75.75	-17.09	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	81.57	-21.05	1.31	-1.20	-5.50	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:	64.5	62.6	60.9	54.8	63.4	64.0
Medium Trucks:	58.8	57.3	50.9	49.4	57.8	58.0
Heavy Trucks:	60.6	59.2	50.2	51.4	59.8	59.9
Vehicle Noise:	66.8	65.0	61.6	57.2	65.7	66.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	49	106	229
CNEL:	24	53	114	245

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2035 Without Project
Road Name: Eucalyptus Av.
Road Segment: s/o Towngate Dr.
Project Name: Canyon Springs
Job Number: 8991

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:	48 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	50.0 feet
Centerline Dist. to Observer:	50.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	44.147
Medium Trucks:	43.947
Heavy Trucks:	43.966

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.06	0.71	-1.20	-4.65	0.000	0.000
Medium Trucks:	77.72	-16.17	0.74	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-20.13	0.73	-1.20	-5.43	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	63.4	57.4	66.0	66.6
Medium Trucks:	61.1	59.6	53.2	51.7	60.1	60.4
Heavy Trucks:	62.4	61.0	51.9	53.2	61.5	61.7
Vehicle Noise:	69.1	67.4	64.1	59.5	68.1	68.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	80	173	372
CNEL:	40	86	185	399

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2035 Without Project
Road Name: Eastridge Av.
Road Segment: w/o Sycamore Canyon Bl.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,600 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,160 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	72 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	48.260
Medium Trucks:	48.076
Heavy Trucks:	48.094

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	3.56	0.13	-1.20	-4.69	0.000	0.000
Medium Trucks:	77.72	-13.68	0.15	-1.20	-4.88	0.000	0.000
Heavy Trucks:	82.99	-17.64	0.15	-1.20	-5.34	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:	69.0	67.1	65.3	59.3	67.9	68.5
Medium Trucks:	63.0	61.5	55.1	53.6	62.0	62.3
Heavy Trucks:	64.3	62.9	53.8	55.1	63.5	63.6
Vehicle Noise:	71.0	69.3	66.0	61.5	70.0	70.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	60	129	278	599
CNEL:	64	138	298	641

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2035 Without Project
Road Name: Eastridge Av.
Road Segment: e/o Sycamore Canyon Bl.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,200	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,920	vehicles
Vehicle Speed:	40	mph
Near/Far Lane Distance:	72	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	48.260
Medium Trucks:	48.076
Heavy Trucks:	48.094

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	3.21	0.13	-1.20	-4.69	0.000	0.000
Medium Trucks:	77.72	-14.02	0.15	-1.20	-4.88	0.000	0.000
Heavy Trucks:	82.99	-17.98	0.15	-1.20	-5.34	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:	68.7	66.8	65.0	58.9	67.6	68.2
Medium Trucks:	62.6	61.1	54.8	53.2	61.7	61.9
Heavy Trucks:	64.0	62.5	53.5	54.8	63.1	63.2
Vehicle Noise:	70.7	68.9	65.7	61.1	69.6	70.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	57	122	264	568
CNEL:	61	131	282	608

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2035 Without Project
Road Name: Eastridge Av.
Road Segment: e/o Box Springs Bl.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	36,200	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,620	vehicles
Vehicle Speed:	40	mph
Near/Far Lane Distance:	72	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	48.260
Medium Trucks:	48.076
Heavy Trucks:	48.094

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	4.15	0.13	-1.20	-4.69	0.000	0.000
Medium Trucks:	77.72	-13.09	0.15	-1.20	-4.88	0.000	0.000
Heavy Trucks:	82.99	-17.05	0.15	-1.20	-5.34	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:	69.6	67.7	65.9	59.9	68.5	69.1
Medium Trucks:	63.6	62.1	55.7	54.2	62.6	62.9
Heavy Trucks:	64.9	63.5	54.4	55.7	64.0	64.2
Vehicle Noise:	71.6	69.9	66.6	62.0	70.6	71.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	66	141	304	656
CNEL:	70	151	326	702

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2035 Without Project
Road Name: Eucalyptus Av.
Road Segment: w/o Valley Springs Pkwy.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	48,500	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,850	vehicles
Vehicle Speed:	40	mph
Near/Far Lane Distance:	72	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	48.260
Medium Trucks:	48.076
Heavy Trucks:	48.094

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	5.42	0.13	-1.20	-4.69	0.000	0.000
Medium Trucks:	77.72	-11.82	0.15	-1.20	-4.88	0.000	0.000
Heavy Trucks:	82.99	-15.78	0.15	-1.20	-5.34	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:	70.9	69.0	67.2	61.1	69.8	70.4
Medium Trucks:	64.8	63.3	57.0	55.4	63.9	64.1
Heavy Trucks:	66.2	64.7	55.7	57.0	65.3	65.4
Vehicle Noise:	72.9	71.1	67.9	63.3	71.9	72.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	80	172	370	797
CNEL:	85	184	396	853

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2035 Without Project
Road Name: Eucalyptus Av.
Road Segment: e/o Valley Springs Pkwy.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	30,100	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,010	vehicles
Vehicle Speed:	40	mph
Near/Far Lane Distance:	72	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	48.260
Medium Trucks:	48.076
Heavy Trucks:	48.094

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	3.35	0.13	-1.20	-4.69	0.000	0.000
Medium Trucks:	77.72	-13.89	0.15	-1.20	-4.88	0.000	0.000
Heavy Trucks:	82.99	-17.85	0.15	-1.20	-5.34	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:	68.8	66.9	65.1	59.1	67.7	68.3
Medium Trucks:	62.8	61.3	54.9	53.4	61.8	62.1
Heavy Trucks:	64.1	62.7	53.6	54.9	63.2	63.4
Vehicle Noise:	70.8	69.1	65.8	61.2	69.8	70.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	125	269	580
CNEL:	62	134	288	621

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2035 Without Project
Road Name: Eucalyptus Av.
Road Segment: e/o Day St.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,300 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,130 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:	67.0 feet
Centerline Dist. to Observer:	67.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	53.226
Medium Trucks:	53.059
Heavy Trucks:	53.076

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	3.52	-0.51	-1.20	-4.71	0.000	0.000
Medium Trucks:	77.72	-13.72	-0.49	-1.20	-4.88	0.000	0.000
Heavy Trucks:	82.99	-17.68	-0.49	-1.20	-5.29	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:	68.3	66.4	64.7	58.6	67.2	67.8
Medium Trucks:	62.3	60.8	54.4	52.9	61.3	61.6
Heavy Trucks:	63.6	62.2	53.2	54.4	62.8	62.9
Vehicle Noise:	70.3	68.6	65.3	60.8	69.3	69.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	60	130	280	603
CNEL:	65	139	299	645

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2035 Without Project
Road Name: Towngate Dr.
Road Segment: e/o Eucalyptus Av.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	14,800 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,480 vehicles
Vehicle Speed:	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:	67.0 feet
Centerline Dist. to Observer:	67.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	53.226
Medium Trucks:	53.059
Heavy Trucks:	53.076

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.26	-0.51	-1.20	-4.71	0.000	0.000
Medium Trucks:	77.72	-16.98	-0.49	-1.20	-4.88	0.000	0.000
Heavy Trucks:	82.99	-20.93	-0.49	-1.20	-5.29	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	55.3	64.0	64.6
Medium Trucks:	59.0	57.5	51.2	49.6	58.1	58.3
Heavy Trucks:	60.4	58.9	49.9	51.2	59.5	59.6
Vehicle Noise:	67.1	65.3	62.1	57.5	66.1	66.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	79	170	366
CNEL:	39	84	182	392

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2035 Without Project
Road Name: Alessandro Bl.
Road Segment: w/o Day St.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	49,700 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	4,970 vehicles
Vehicle Speed:	45 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:	67.0 feet
Centerline Dist. to Observer:	67.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	53.226
Medium Trucks:	53.059
Heavy Trucks:	53.076

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	5.01	-0.51	-1.20	-4.71	0.000	0.000
Medium Trucks:	79.45	-12.23	-0.49	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-16.18	-0.49	-1.20	-5.29	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:	71.8	69.9	68.1	62.0	70.7	71.3
Medium Trucks:	65.5	64.0	57.7	56.1	64.6	64.8
Heavy Trucks:	66.4	65.0	55.9	57.2	65.5	65.7
Vehicle Noise:	73.6	71.9	68.7	64.0	72.6	73.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	99	214	462	995
CNEL:	107	230	495	1,067

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2035 Without Project
Road Name: Alessandro Bl.
Road Segment: e/o Day St.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	42,800 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	4,280 vehicles
Vehicle Speed:	45 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:	67.0 feet
Centerline Dist. to Observer:	67.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	53.226
Medium Trucks:	53.059
Heavy Trucks:	53.076

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.36	-0.51	-1.20	-4.71	0.000	0.000
Medium Trucks:	79.45	-12.87	-0.49	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-16.83	-0.49	-1.20	-5.29	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:	71.1	69.2	67.4	61.4	70.0	70.6
Medium Trucks:	64.9	63.4	57.0	55.5	63.9	64.2
Heavy Trucks:	65.7	64.3	55.3	56.5	64.9	65.0
Vehicle Noise:	73.0	71.2	68.1	63.4	71.9	72.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	90	194	418	901
CNEL:	97	208	448	966

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2035 With Project
Road Name: Sycamore Canyon Bl.
Road Segment: n/o Eastridge Av.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	22,300 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,230 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	48 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	55.0 feet
Centerline Dist. to Observer:	55.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	49.739
Medium Trucks:	49.561
Heavy Trucks:	49.579

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.53	-0.07	-1.20	-4.67	0.000	0.000
Medium Trucks:	79.45	-15.71	-0.05	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-19.66	-0.05	-1.20	-5.38	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:	68.7	66.8	65.1	59.0	67.6	68.2
Medium Trucks:	62.5	61.0	54.6	53.1	61.5	61.8
Heavy Trucks:	63.3	61.9	52.9	54.1	62.5	62.6
Vehicle Noise:	70.6	68.8	65.7	61.0	69.5	70.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	51	110	238	512
CNEL:	55	118	255	550

Tuesday, February 03, 2015

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2035 With Project
Road Name: Sycamore Canyon Bl.
Road Segment: s/o Eastridge Av.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	22,200 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,220 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	48 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	55.0 feet
Centerline Dist. to Observer:	55.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	49.739
Medium Trucks:	49.561
Heavy Trucks:	49.579

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.51	-0.07	-1.20	-4.67	0.000	0.000
Medium Trucks:	79.45	-15.73	-0.05	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-19.68	-0.05	-1.20	-5.38	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:	68.7	66.8	65.0	59.0	67.6	68.2
Medium Trucks:	62.5	61.0	54.6	53.1	61.5	61.8
Heavy Trucks:	63.3	61.9	52.9	54.1	62.5	62.6
Vehicle Noise:	70.5	68.8	65.7	61.0	69.5	70.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	51	110	237	511
CNEL:	55	118	254	548

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2035 With Project
Road Name: Box Springs Bl.
Road Segment: n/o Eastridge Av.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	8,300 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	830 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	44.0 feet
Centerline Dist. to Observer:	44.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.25	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	77.72	-19.49	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-23.44	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.3	62.4	60.7	54.6	63.2	63.8
Medium Trucks:	58.3	56.8	50.5	48.9	57.4	57.6
Heavy Trucks:	59.7	58.2	49.2	50.5	58.8	58.9
Vehicle Noise:	66.4	64.6	61.3	56.8	65.3	65.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	46	100	215
CNEL:	23	50	107	230

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2035 With Project
Road Name: Box Springs Bl.
Road Segment: s/o Eastridge Av.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	3,400 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	340 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:	44.0 feet
Centerline Dist. to Observer:	44.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-6.12	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	77.72	-23.36	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-27.32	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.5	58.6	56.8	50.7	59.4	60.0
Medium Trucks:	54.5	53.0	46.6	45.0	53.5	53.7
Heavy Trucks:	55.8	54.4	45.3	46.6	54.9	55.1
Vehicle Noise:	62.5	60.8	57.5	52.9	61.5	61.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	12	26	55	119
CNEL:	13	27	59	127

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2035 With Project
Road Name: Day St.
Road Segment: n/o SR-60 Fwy

Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	35,800 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,580 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	72 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	48.260
Medium Trucks:	48.076
Heavy Trucks:	48.094

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	4.10	0.13	-1.20	-4.69	0.000	0.000
Medium Trucks:	77.72	-13.14	0.15	-1.20	-4.88	0.000	0.000
Heavy Trucks:	82.99	-17.09	0.15	-1.20	-5.34	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:	69.5	67.6	65.9	59.8	68.4	69.0
Medium Trucks:	63.5	62.0	55.7	54.1	62.6	62.8
Heavy Trucks:	64.8	63.4	54.4	55.6	64.0	64.1
Vehicle Noise:	71.6	69.8	66.5	62.0	70.5	71.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	65	140	302	651
CNEL:	70	150	324	697

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2035 With Project
Road Name: Day St.
Road Segment: n/o Canyon Springs Pkwy.

Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	51,700 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	5,170 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	72 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	48.260
Medium Trucks:	48.076
Heavy Trucks:	48.094

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	5.70	0.13	-1.20	-4.69	0.000	0.000
Medium Trucks:	77.72	-11.54	0.15	-1.20	-4.88	0.000	0.000
Heavy Trucks:	82.99	-15.50	0.15	-1.20	-5.34	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:	71.1	69.2	67.5	61.4	70.0	70.6
Medium Trucks:	65.1	63.6	57.3	55.7	64.2	64.4
Heavy Trucks:	66.4	65.0	56.0	57.2	65.6	65.7
Vehicle Noise:	73.1	71.4	68.1	63.6	72.1	72.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	83	179	386	832
CNEL:	89	192	413	891

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2035 With Project
Road Name: Day St.
Road Segment: s/o Canyon Springs Pkwy.

Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	34,500 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,450 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	72 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	48.260
Medium Trucks:	48.076
Heavy Trucks:	48.094

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	3.94	0.13	-1.20	-4.69	0.000	0.000
Medium Trucks:	77.72	-13.30	0.15	-1.20	-4.88	0.000	0.000
Heavy Trucks:	82.99	-17.26	0.15	-1.20	-5.34	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:	69.4	67.5	65.7	59.7	68.3	68.9
Medium Trucks:	63.4	61.9	55.5	54.0	62.4	62.6
Heavy Trucks:	64.7	63.3	54.2	55.5	63.8	64.0
Vehicle Noise:	71.4	69.7	66.4	61.8	70.4	70.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	64	137	295	635
CNEL:	68	147	316	680

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2035 With Project
Road Name: Day St.
Road Segment: s/o Campus Pkwy.

Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,800 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,180 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	72 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	48.260
Medium Trucks:	48.076
Heavy Trucks:	48.094

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	3.58	0.13	-1.20	-4.69	0.000	0.000
Medium Trucks:	77.72	-13.65	0.15	-1.20	-4.88	0.000	0.000
Heavy Trucks:	82.99	-17.61	0.15	-1.20	-5.34	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:	69.0	67.1	65.4	59.3	67.9	68.5
Medium Trucks:	63.0	61.5	55.1	53.6	62.1	62.3
Heavy Trucks:	64.3	62.9	53.9	55.1	63.5	63.6
Vehicle Noise:	71.0	69.3	66.0	61.5	70.0	70.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	60	130	279	602
CNEL:	64	139	299	644

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2035 With Project
Road Name: Day St.
Road Segment: s/o Gateway Dr.

Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	23,400	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,340	vehicles
Vehicle Speed:	40	mph
Near/Far Lane Distance:	72	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	48.260
Medium Trucks:	48.076
Heavy Trucks:	48.094

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	2.25	0.13	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	77.72	-14.99	0.15	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-18.94	0.15	-1.20	*-5.34*	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:	67.7	65.8	64.0	58.0	66.6	67.2
Medium Trucks:	61.7	60.2	53.8	52.3	60.7	61.0
Heavy Trucks:	63.0	61.6	52.5	53.8	62.1	62.3
Vehicle Noise:	69.7	68.0	64.7	60.1	68.7	69.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	49	106	228	490
CNEL:	52	113	244	525

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2035 With Project
Road Name: Day St.
Road Segment: n/o Eucalyptus Av.

Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	23,700	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,370	vehicles
Vehicle Speed:	40	mph
Near/Far Lane Distance:	72	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	48.260
Medium Trucks:	48.076
Heavy Trucks:	48.094

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	2.31	0.13	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	77.72	-14.93	0.15	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-18.89	0.15	-1.20	*-5.34*	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:	67.7	65.8	64.1	58.0	66.6	67.3
Medium Trucks:	61.7	60.2	53.9	52.3	60.8	61.0
Heavy Trucks:	63.1	61.6	52.6	53.8	62.2	62.3
Vehicle Noise:	69.8	68.0	64.7	60.2	68.7	69.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	49	107	230	495
CNEL:	53	114	246	529

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2035 With Project
Road Name: Day St.
Road Segment: s/o Eucalyptus Av.

Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	22,400	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,240	vehicles
Vehicle Speed:	35	mph
Near/Far Lane Distance:	58	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	55.0	feet
Centerline Dist. to Observer:	55.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	47.000
Medium Trucks:	46.811
Heavy Trucks:	46.830

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	64.30	2.64	0.30	-1.20	*-4.67*	0.000	0.000
Medium Trucks:	75.75	-14.60	0.33	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	81.57	-18.55	0.32	-1.20	*-5.38*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	66.0	64.1	62.4	56.3	64.9	65.6
Medium Trucks:	60.3	58.8	52.4	50.9	59.3	59.6
Heavy Trucks:	62.1	60.7	51.7	52.9	61.3	61.4
Vehicle Noise:	68.3	66.6	63.1	58.7	67.3	67.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	36	78	168	361
CNEL:	39	83	179	386

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2035 With Project
Road Name: Day St.
Road Segment: s/o Cottonwood Av.

Project Name: Canyon Springs
Job Number: 8991

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:	35	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:	44.0	feet
Centerline Dist. to Observer:	44.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	64.30	1.84	1.28	-1.20	*-4.61*	0.000	0.000
Medium Trucks:	75.75	-15.40	1.31	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	81.57	-19.36	1.31	-1.20	*-5.50*	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:	66.2	64.3	62.5	56.5	65.1	65.7
Medium Trucks:	60.5	58.9	52.6	51.0	59.5	59.7
Heavy Trucks:	62.3	60.9	51.9	53.1	61.5	61.6
Vehicle Noise:	68.4	66.7	63.3	58.9	67.4	67.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	30	64	138	297
CNEL:	32	68	147	317

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2035 With Project
Road Name: Day St.
Road Segment: s/o Bay Av.
Project Name: Canyon Springs
Job Number: 8991

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:	35	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:	44.0	feet
Centerline Dist. to Observer:	44.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	64.30	1.84	1.28	-1.20	*-4.61*	0.000	0.000
Medium Trucks:	75.75	-15.40	1.31	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	81.57	-19.36	1.31	-1.20	*-5.50*	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:	66.2	64.3	62.5	56.5	65.1	65.7
Medium Trucks:	60.5	58.9	52.6	51.0	59.5	59.7
Heavy Trucks:	62.3	60.9	51.9	53.1	61.5	61.6
Vehicle Noise:	68.4	66.7	63.3	58.9	67.4	67.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	30	64	138	297
CNEL:	32	68	147	317

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2035 With Project
Road Name: Day St.
Road Segment: s/o Alessandro Bl.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	12,800	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	1,280	vehicles
Vehicle Speed:	35	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:	44.0	feet
Centerline Dist. to Observer:	44.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	64.30	0.21	1.28	-1.20	*-4.61*	0.000	0.000
Medium Trucks:	75.75	-17.03	1.31	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	81.57	-20.98	1.31	-1.20	*-5.50*	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	60.9	54.9	63.5	64.1
Medium Trucks:	58.8	57.3	51.0	49.4	57.9	58.1
Heavy Trucks:	60.7	59.3	50.2	51.5	59.8	60.0
Vehicle Noise:	66.8	65.1	61.7	57.3	65.8	66.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	23	50	107	231
CNEL:	25	53	115	247

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2035 With Project
Road Name: Eucalyptus Av.
Road Segment: s/o Towngate Dr.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	18,400	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	1,840	vehicles
Vehicle Speed:	40	mph
Near/Far Lane Distance:	48	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	50.0	feet
Centerline Dist. to Observer:	50.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	44.147
Medium Trucks:	43.947
Heavy Trucks:	43.966

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	1.21	0.71	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	77.72	-16.03	0.74	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	82.99	-19.99	0.73	-1.20	*-5.43*	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	63.6	57.5	66.1	66.7
Medium Trucks:	61.2	59.7	53.4	51.8	60.3	60.5
Heavy Trucks:	62.5	61.1	52.1	53.3	61.7	61.8
Vehicle Noise:	69.2	67.5	64.2	59.7	68.2	68.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	38	82	177	381
CNEL:	41	88	189	408

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2035 With Project
Road Name: Eastridge Av.
Road Segment: w/o Sycamore Canyon Bl.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,800	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,180	vehicles
Vehicle Speed:	40	mph
Near/Far Lane Distance:	72	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	48.260
Medium Trucks:	48.076
Heavy Trucks:	48.094

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	3.58	0.13	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	77.72	-13.65	0.15	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-17.61	0.15	-1.20	*-5.34*	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:	69.0	67.1	65.4	59.3	67.9	68.5
Medium Trucks:	63.0	61.5	55.1	53.6	62.1	62.3
Heavy Trucks:	64.3	62.9	53.9	55.1	63.5	63.6
Vehicle Noise:	71.0	69.3	66.0	61.5	70.0	70.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	60	130	279	602
CNEL:	64	139	299	644

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2035 With Project
Road Name: Eastridge Av.
Road Segment: e/o Sycamore Canyon Bl.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	30,100 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,010 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	72 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	48.260
Medium Trucks:	48.076
Heavy Trucks:	48.094

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	3.35	0.13	-1.20	-4.69	0.000	0.000
Medium Trucks:	77.72	-13.89	0.15	-1.20	-4.88	0.000	0.000
Heavy Trucks:	82.99	-17.85	0.15	-1.20	-5.34	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:	68.8	66.9	65.1	59.1	67.7	68.3
Medium Trucks:	62.8	61.3	54.9	53.4	61.8	62.1
Heavy Trucks:	64.1	62.7	53.6	54.9	63.2	63.4
Vehicle Noise:	70.8	69.1	65.8	61.2	69.8	70.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	125	269	580
CNEL:	62	134	288	621

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2035 With Project
Road Name: Eastridge Av.
Road Segment: e/o Box Springs Bl.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	37,500 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,750 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	72 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	48.260
Medium Trucks:	48.076
Heavy Trucks:	48.094

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	4.30	0.13	-1.20	-4.69	0.000	0.000
Medium Trucks:	77.72	-12.94	0.15	-1.20	-4.88	0.000	0.000
Heavy Trucks:	82.99	-16.89	0.15	-1.20	-5.34	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:	69.7	67.8	66.1	60.0	68.6	69.2
Medium Trucks:	63.7	62.2	55.9	54.3	62.8	63.0
Heavy Trucks:	65.1	63.6	54.6	55.8	64.2	64.3
Vehicle Noise:	71.8	70.0	66.7	62.2	70.7	71.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	67	145	312	671
CNEL:	72	155	334	719

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2035 With Project
Road Name: Eucalyptus Av.
Road Segment: w/o Valley Springs Pkwy.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	56,700 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	5,670 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	72 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	48.260
Medium Trucks:	48.076
Heavy Trucks:	48.094

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	6.10	0.13	-1.20	-4.69	0.000	0.000
Medium Trucks:	77.72	-11.14	0.15	-1.20	-4.88	0.000	0.000
Heavy Trucks:	82.99	-15.10	0.15	-1.20	-5.34	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:	71.5	69.6	67.9	61.8	70.4	71.0
Medium Trucks:	65.5	64.0	57.7	56.1	64.6	64.8
Heavy Trucks:	66.8	65.4	56.4	57.6	66.0	66.1
Vehicle Noise:	73.6	71.8	68.5	64.0	72.5	73.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	88	191	411	885
CNEL:	95	204	440	947

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2035 With Project
Road Name: Eucalyptus Av.
Road Segment: e/o Valley Springs Pkwy.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	32,100 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,210 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	72 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	48.260
Medium Trucks:	48.076
Heavy Trucks:	48.094

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	3.63	0.13	-1.20	-4.69	0.000	0.000
Medium Trucks:	77.72	-13.61	0.15	-1.20	-4.88	0.000	0.000
Heavy Trucks:	82.99	-17.57	0.15	-1.20	-5.34	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:	69.1	67.2	65.4	59.3	68.0	68.6
Medium Trucks:	63.1	61.5	55.2	53.6	62.1	62.3
Heavy Trucks:	64.4	63.0	53.9	55.2	63.5	63.6
Vehicle Noise:	71.1	69.3	66.1	61.5	70.1	70.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	61	130	281	605
CNEL:	65	140	301	648

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2035 With Project
Road Name: Eucalyptus Av.
Road Segment: e/o Day St.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	32,400 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,240 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:	67.0 feet
Centerline Dist. to Observer:	67.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	53.226
Medium Trucks:	53.059
Heavy Trucks:	53.076

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	3.67	-0.51	-1.20	-4.71	0.000	0.000
Medium Trucks:	77.72	-13.57	-0.49	-1.20	-4.88	0.000	0.000
Heavy Trucks:	82.99	-17.53	-0.49	-1.20	-5.29	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:	68.5	66.6	64.8	58.7	67.4	68.0
Medium Trucks:	62.5	60.9	54.6	53.0	61.5	61.7
Heavy Trucks:	63.8	62.4	53.3	54.6	62.9	63.0
Vehicle Noise:	70.5	68.8	65.5	60.9	69.5	69.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	62	133	286	617
CNEL:	66	142	306	660

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2035 With Project
Road Name: Towngate Dr.
Road Segment: e/o Eucalyptus Av.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	15,400 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,540 vehicles
Vehicle Speed:	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:	67.0 feet
Centerline Dist. to Observer:	67.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	53.226
Medium Trucks:	53.059
Heavy Trucks:	53.076

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.44	-0.51	-1.20	-4.71	0.000	0.000
Medium Trucks:	77.72	-16.80	-0.49	-1.20	-4.88	0.000	0.000
Heavy Trucks:	82.99	-20.76	-0.49	-1.20	-5.29	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.2	63.3	61.6	55.5	64.1	64.7
Medium Trucks:	59.2	57.7	51.4	49.8	58.3	58.5
Heavy Trucks:	60.5	59.1	50.1	51.3	59.7	59.8
Vehicle Noise:	67.3	65.5	62.2	57.7	66.2	66.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	81	174	376
CNEL:	40	87	187	402

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2035 With Project
Road Name: Alessandro Bl.
Road Segment: w/o Day St.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	49,900 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	4,990 vehicles
Vehicle Speed:	45 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:	67.0 feet
Centerline Dist. to Observer:	67.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	53.226
Medium Trucks:	53.059
Heavy Trucks:	53.076

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	5.03	-0.51	-1.20	-4.71	0.000	0.000
Medium Trucks:	79.45	-12.21	-0.49	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-16.16	-0.49	-1.20	-5.29	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:	71.8	69.9	68.1	62.1	70.7	71.3
Medium Trucks:	65.6	64.0	57.7	56.1	64.6	64.8
Heavy Trucks:	66.4	65.0	55.9	57.2	65.5	65.7
Vehicle Noise:	73.6	71.9	68.7	64.1	72.6	73.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	100	215	463	998
CNEL:	107	231	497	1,070

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Year 2035 With Project
Road Name: Alessandro Bl.
Road Segment: e/o Day St.
Project Name: Canyon Springs
Job Number: 8991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	43,100 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	4,310 vehicles
Vehicle Speed:	45 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:	67.0 feet
Centerline Dist. to Observer:	67.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	53.226
Medium Trucks:	53.059
Heavy Trucks:	53.076

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.39	-0.51	-1.20	-4.71	0.000	0.000
Medium Trucks:	79.45	-12.84	-0.49	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-16.80	-0.49	-1.20	-5.29	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:	71.1	69.2	67.5	61.4	70.0	70.7
Medium Trucks:	64.9	63.4	57.0	55.5	64.0	64.2
Heavy Trucks:	65.8	64.3	55.3	56.6	64.9	65.0
Vehicle Noise:	73.0	71.2	68.1	63.4	72.0	72.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	90	195	420	905
CNEL:	97	209	450	970

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APPENDIX 8.1:

ON-SITE TRAFFIC NOISE CALCULATIONS

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO) - 6/2/2013

Scenario: First Floor With Wall
Road Name: I-215 Fwy
Lot No: Senior Housing-West Façade
Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt): 130,900 vehicles
Peak Hour Percentage: 10%
Peak Hour Volume: 13,090 vehicles
Vehicle Speed: 65 mph
Near/Far Lane Distance: 120 feet

Site Data

Barrier Height: 0.0 feet
Barrier Type (0-Wall, 1-Berm): 0.0
Centerline Dist. to Barrier: 1,424.0 feet
Centerline Dist. to Observer: 1,424.0 feet
Barrier Distance to Observer: 0.0 feet
Observer Height (Above Pad): 5.0 feet
Pad Elevation: 1,571.0 feet
Road Elevation: 1,545.0 feet
Barrier Elevation: 1,571.0 feet
Road Grade: 0.0%

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%	85.50%
Medium Trucks:	84.8%	4.9%	10.3%	6.31%
Heavy Trucks:	86.5%	2.7%	10.8%	8.19%

Noise Source Elevations (in feet)

Autos: 1,545.000
Medium Trucks: 1,547.297
Heavy Trucks: 1,553.006 Grade Adjustment: 0.0

Lane Equivalent Distance (in feet)

Autos: 1,423.073
Medium Trucks: 1,423.025
Heavy Trucks: 1,422.921

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	75.54	7.05	-21.92	-1.20	-4.79	0.000	0.000
Medium Trucks:	81.71	-4.26	-21.92	-1.20	-4.80	0.000	0.000
Heavy Trucks:	85.21	-3.13	-21.92	-1.20	-4.82	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.5	57.6	55.8	49.8	58.4	59.0
Medium Trucks:	54.3	52.8	46.5	44.9	53.4	53.6
Heavy Trucks:	59.0	57.5	48.5	49.8	58.1	58.2
Vehicle Noise:	62.9	61.2	57.0	53.4	61.9	62.3

Mitigated Noise Levels (with Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.5	57.6	55.8	49.8	58.4	59.0
Medium Trucks:	54.3	52.8	46.5	44.9	53.4	53.6
Heavy Trucks:	59.0	57.5	48.5	49.8	58.1	58.2
Vehicle Noise:	62.9	61.2	57.0	53.4	61.9	62.3

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO) - 6/2/2013

Scenario: First Floor With Wall
Road Name: Valley Springs Pkwy.
Lot No: Senior Housing-West Façade
Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt): 31,200 vehicles
Peak Hour Percentage: 10%
Peak Hour Volume: 3,120 vehicles
Vehicle Speed: 40 mph
Near/Far Lane Distance: 48 feet

Site Data

Barrier Height: 0.0 feet
Barrier Type (0-Wall, 1-Berm): 0.0
Centerline Dist. to Barrier: 345.0 feet
Centerline Dist. to Observer: 345.0 feet
Barrier Distance to Observer: 0.0 feet
Observer Height (Above Pad): 5.0 feet
Pad Elevation: 1,571.0 feet
Road Elevation: 1,553.0 feet
Barrier Elevation: 1,571.0 feet
Road Grade: 0.0%

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

Autos: 1,553.000
Medium Trucks: 1,555.297
Heavy Trucks: 1,561.006 Grade Adjustment: 0.0

Lane Equivalent Distance (in feet)

Autos: 344.932
Medium Trucks: 344.786
Heavy Trucks: 344.491

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	67.36	3.50	-12.68	-1.20	-4.60	0.000	0.000
Medium Trucks:	76.31	-13.74	-12.68	-1.20	-4.63	0.000	0.000
Heavy Trucks:	81.16	-17.69	-12.68	-1.20	-4.71	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	57.0	55.1	53.3	47.3	55.9	56.5
Medium Trucks:	48.7	47.2	40.8	39.3	47.7	48.0
Heavy Trucks:	49.6	48.2	39.1	40.4	48.7	48.9
Vehicle Noise:	58.2	56.4	53.7	48.6	57.2	57.7

Mitigated Noise Levels (with Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	57.0	55.1	53.3	47.3	55.9	56.5
Medium Trucks:	48.7	47.2	40.8	39.3	47.7	48.0
Heavy Trucks:	49.6	48.2	39.1	40.4	48.7	48.9
Vehicle Noise:	58.2	56.4	53.7	48.6	57.2	57.7

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO) - 6/2/2013

Scenario: First Floor With Wall
Road Name: SR-60 Fwy
Lot No: Senior Housing-North Façade
Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt): 147,400 vehicles
Peak Hour Percentage: 10%
Peak Hour Volume: 14,740 vehicles
Vehicle Speed: 65 mph
Near/Far Lane Distance: 120 feet

Site Data

Barrier Height: 0.0 feet
Barrier Type (0-Wall, 1-Berm): 0.0
Centerline Dist. to Barrier: 2,202.0 feet
Centerline Dist. to Observer: 2,202.0 feet
Barrier Distance to Observer: 0.0 feet
Observer Height (Above Pad): 5.0 feet
Pad Elevation: 1,571.0 feet
Road Elevation: 1,610.0 feet
Barrier Elevation: 1,571.0 feet
Road Grade: 0.0%

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%	89.50%
Medium Trucks:	84.8%	4.9%	10.3%	4.51%
Heavy Trucks:	86.5%	2.7%	10.8%	5.99%

Noise Source Elevations (in feet)

Autos: 1,610.000
Medium Trucks: 1,612.297
Heavy Trucks: 1,618.006 Grade Adjustment: 0.0

Lane Equivalent Distance (in feet)

Autos: 2,206.528
Medium Trucks: 2,206.570
Heavy Trucks: 2,206.684

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	75.54	7.77	-24.77	-1.20	4.97	-15.279	-18.279
Medium Trucks:	81.71	-5.21	-24.77	-1.20	4.98	-15.286	-18.286
Heavy Trucks:	85.21	-3.98	-24.77	-1.20	4.99	-15.293	-18.293

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	53.7	47.6	56.2	56.8
Medium Trucks:	50.5	49.0	42.7	41.1	49.6	49.8
Heavy Trucks:	55.3	53.8	44.8	46.0	54.4	54.5
Vehicle Noise:	60.0	58.3	54.5	50.5	59.0	59.4

Mitigated Noise Levels (with Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	42.1	40.2	38.4	32.3	41.0	41.6
Medium Trucks:	35.2	33.7	27.4	25.8	34.3	34.5
Heavy Trucks:	40.0	38.5	29.5	30.8	39.1	39.2
Vehicle Noise:	44.7	43.0	39.2	35.2	43.7	44.1

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO) - 6/2/2013

Scenario: First Floor With Wall
Road Name: SR-60 Fwy
Lot No: Independent Living-North Façade
Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt): 147,400 vehicles
Peak Hour Percentage: 10%
Peak Hour Volume: 14,740 vehicles
Vehicle Speed: 65 mph
Near/Far Lane Distance: 120 feet

Site Data

Barrier Height: 0.0 feet
Barrier Type (0-Wall, 1-Berm): 0.0
Centerline Dist. to Barrier: 2,359.0 feet
Centerline Dist. to Observer: 2,359.0 feet
Barrier Distance to Observer: 0.0 feet
Observer Height (Above Pad): 5.0 feet
Pad Elevation: 1,573.5 feet
Road Elevation: 1,639.0 feet
Barrier Elevation: 1,573.5 feet
Road Grade: 0.0%

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%	89.50%
Medium Trucks:	84.8%	4.9%	10.3%	4.51%
Heavy Trucks:	86.5%	2.7%	10.8%	5.99%

Noise Source Elevations (in feet)

Autos: 1,639.000
Medium Trucks: 1,641.297
Heavy Trucks: 1,647.006 Grade Adjustment: 0.0

Lane Equivalent Distance (in feet)

Autos: 2,364.146
Medium Trucks: 2,364.211
Heavy Trucks: 2,364.382

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	75.54	7.77	-25.22	-1.20	5.02	-15.312	-18.312
Medium Trucks:	81.71	-5.21	-25.22	-1.20	5.03	-15.318	-18.318
Heavy Trucks:	85.21	-3.98	-25.22	-1.20	5.04	-15.324	-18.324

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.9	55.0	53.2	47.2	55.8	56.4
Medium Trucks:	50.1	48.6	42.2	40.7	49.1	49.4
Heavy Trucks:	54.8	53.4	44.4	45.6	54.0	54.1
Vehicle Noise:	59.5	57.8	54.0	50.0	58.5	58.9

Mitigated Noise Levels (with Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	41.6	39.7	37.9	31.9	40.5	41.1
Medium Trucks:	34.8	33.3	26.9	25.3	33.8	34.0
Heavy Trucks:	39.5	38.1	29.0	30.3	38.6	38.8
Vehicle Noise:	44.2	42.5	38.7	34.7	43.2	43.6

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO) - 6/2/2013

Scenario: First Floor With Wall
Road Name: Day St.
Lot No: Independent Living-East Façade

Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	23,700 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,370 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	48 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	481.0 feet
Centerline Dist. to Observer:	481.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	1,573.5 feet
Road Elevation:	1,572.2 feet
Barrier Elevation:	1,573.5 feet
Road Grade:	0.0%

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

Autos:	1,572.200		
Medium Trucks:	1,574.497		
Heavy Trucks:	1,580.206	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	480.442
Medium Trucks:	480.418
Heavy Trucks:	480.404

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	67.36	2.31	-14.84	-1.20	-4.85	0.000	0.000
Medium Trucks:	76.31	-14.93	-14.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	81.16	-18.89	-14.84	-1.20	-4.93	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	53.6	51.7	50.0	43.9	52.5	53.1
Medium Trucks:	45.3	43.8	37.5	35.9	44.4	44.6
Heavy Trucks:	46.2	44.8	35.8	37.0	45.4	45.5
Vehicle Noise:	54.9	53.1	50.4	45.3	53.8	54.3

Mitigated Noise Levels (with Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	53.6	51.7	50.0	43.9	52.5	53.1
Medium Trucks:	45.3	43.8	37.5	35.9	44.4	44.6
Heavy Trucks:	46.2	44.8	35.8	37.0	45.4	45.5
Vehicle Noise:	54.9	53.1	50.4	45.3	53.8	54.3

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO) - 6/2/2013

Scenario: First Floor With Wall
Road Name: Day St.
Lot No: Skilled Nursing-East Façade

Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	23,700 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,370 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	48 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	177.0 feet
Centerline Dist. to Observer:	177.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	1,572.5 feet
Road Elevation:	1,572.2 feet
Barrier Elevation:	1,572.5 feet
Road Grade:	0.0%

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

Autos:	1,572.200		
Medium Trucks:	1,574.497		
Heavy Trucks:	1,580.206	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	175.445
Medium Trucks:	175.391
Heavy Trucks:	175.386

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	67.36	2.31	-8.28	-1.20	-4.81	0.000	0.000
Medium Trucks:	76.31	-14.93	-8.28	-1.20	-4.88	0.000	0.000
Heavy Trucks:	81.16	-18.89	-8.28	-1.20	-5.04	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.2	58.3	56.5	50.5	59.1	59.7
Medium Trucks:	51.9	50.4	44.0	42.5	51.0	51.2
Heavy Trucks:	52.8	51.4	42.3	43.6	51.9	52.1
Vehicle Noise:	61.4	59.6	56.9	51.8	60.4	60.9

Mitigated Noise Levels (with Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.2	58.3	56.5	50.5	59.1	59.7
Medium Trucks:	51.9	50.4	44.0	42.5	51.0	51.2
Heavy Trucks:	52.8	51.4	42.3	43.6	51.9	52.1
Vehicle Noise:	61.4	59.6	56.9	51.8	60.4	60.9

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO) - 6/2/2013

Scenario: First Floor With Wall
Road Name: Gateway Dr.
Lot No: Skilled Nursing-South Façade

Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	12,300 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,230 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	48 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	77.0 feet
Centerline Dist. to Observer:	77.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	1,572.5 feet
Road Elevation:	1,572.2 feet
Barrier Elevation:	1,572.5 feet
Road Grade:	0.0%

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

Autos:	1,572.200		
Medium Trucks:	1,574.497		
Heavy Trucks:	1,580.206	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	73.356
Medium Trucks:	73.226
Heavy Trucks:	73.214

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	67.36	-0.54	-2.60	-1.20	-4.71	0.000	0.000
Medium Trucks:	76.31	-17.78	-2.59	-1.20	-4.86	0.000	0.000
Heavy Trucks:	81.16	-21.73	-2.59	-1.20	-5.22	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.0	61.1	59.4	53.3	61.9	62.5
Medium Trucks:	54.7	53.2	46.9	45.3	53.8	54.0
Heavy Trucks:	55.6	54.2	45.2	46.4	54.8	54.9
Vehicle Noise:	64.3	62.5	59.7	54.7	63.2	63.7

Mitigated Noise Levels (with Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.0	61.1	59.4	53.3	61.9	62.5
Medium Trucks:	54.7	53.2	46.9	45.3	53.8	54.0
Heavy Trucks:	55.6	54.2	45.2	46.4	54.8	54.9
Vehicle Noise:	64.3	62.5	59.7	54.7	63.2	63.7

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO) - 6/2/2013

Scenario: First Floor With Wall
Road Name: Gateway Dr.
Lot No: Assisted Living-South Façade

Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	12,300 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,230 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	48 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	72.0 feet
Centerline Dist. to Observer:	72.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	1,572.5 feet
Road Elevation:	1,567.3 feet
Barrier Elevation:	1,572.5 feet
Road Grade:	0.0%

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

Autos:	1,567.250		
Medium Trucks:	1,569.547		
Heavy Trucks:	1,575.256	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	68.652
Medium Trucks:	68.347
Heavy Trucks:	67.919

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	67.36	-0.54	-2.17	-1.20	-4.37	0.000	0.000
Medium Trucks:	76.31	-17.78	-2.14	-1.20	-4.52	0.000	0.000
Heavy Trucks:	81.16	-21.73	-2.10	-1.20	-4.91	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	53.7	62.4	63.0
Medium Trucks:	55.2	53.7	47.3	45.8	54.2	54.5
Heavy Trucks:	56.1	54.7	45.7	46.9	55.3	55.4
Vehicle Noise:	64.7	62.9	60.2	55.1	63.7	64.2

Mitigated Noise Levels (with Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.5	61.6	59.8	53.7	62.4	63.0
Medium Trucks:	55.2	53.7	47.3	45.8	54.2	54.5
Heavy Trucks:	56.1	54.7	45.7	46.9	55.3	55.4
Vehicle Noise:	64.7	62.9	60.2	55.1	63.7	64.2

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO) - 6/2/2013

Scenario: First Floor With Wall
Road Name: Gateway Dr.
Lot No: Hospital Phase 2-North Façade
Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	12,300 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,230 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	48 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	90.0 feet
Centerline Dist. to Observer:	90.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	1,556.0 feet
Road Elevation:	1,556.3 feet
Barrier Elevation:	1,556.0 feet
Road Grade:	0.0%

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

Autos:	1,556.300		
Medium Trucks:	1,558.597		
Heavy Trucks:	1,564.306	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	86.868
Medium Trucks:	86.774
Heavy Trucks:	86.804

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	67.36	-0.54	-3.70	-1.20	-4.77	0.000	0.000
Medium Trucks:	76.31	-17.78	-3.69	-1.20	-4.90	0.000	0.000
Heavy Trucks:	81.16	-21.73	-3.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.9	60.0	58.3	52.2	60.8	61.4
Medium Trucks:	53.6	52.1	45.8	44.2	52.7	52.9
Heavy Trucks:	54.5	53.1	44.1	45.3	53.7	53.8
Vehicle Noise:	63.2	61.4	58.6	53.5	62.1	62.6

Mitigated Noise Levels (with Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.9	60.0	58.3	52.2	60.8	61.4
Medium Trucks:	53.6	52.1	45.8	44.2	52.7	52.9
Heavy Trucks:	54.5	53.1	44.1	45.3	53.7	53.8
Vehicle Noise:	63.2	61.4	58.6	53.5	62.1	62.6

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO) - 6/2/2013

Scenario: First Floor With Wall
Road Name: I-215 Fwy
Lot No: Hospital Phase 1-West Façade
Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	130,900 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	13,090 vehicles
Vehicle Speed:	65 mph
Near/Far Lane Distance:	120 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	1,260.0 feet
Centerline Dist. to Observer:	1,260.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	1,556.0 feet
Road Elevation:	1,539.0 feet
Barrier Elevation:	1,556.0 feet
Road Grade:	0.0%

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%	85.50%
Medium Trucks:	84.8%	4.9%	10.3%	6.31%
Heavy Trucks:	86.5%	2.7%	10.8%	8.19%

Noise Source Elevations (in feet)

Autos:	1,539.000		
Medium Trucks:	1,541.297		
Heavy Trucks:	1,547.006	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	1,258.763
Medium Trucks:	1,258.725
Heavy Trucks:	1,258.648

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	75.54	7.05	-21.12	-1.20	-4.82	0.000	0.000
Medium Trucks:	81.71	-4.26	-21.12	-1.20	-4.83	0.000	0.000
Heavy Trucks:	85.21	-3.13	-21.12	-1.20	-4.85	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:	60.3	58.4	56.6	50.6	59.2	59.8
Medium Trucks:	55.1	53.6	47.3	45.7	54.2	54.4
Heavy Trucks:	59.8	58.3	49.3	50.6	58.9	59.0
Vehicle Noise:	63.7	62.0	57.8	54.2	62.7	63.1

Mitigated Noise Levels (with Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.3	58.4	56.6	50.6	59.2	59.8
Medium Trucks:	55.1	53.6	47.3	45.7	54.2	54.4
Heavy Trucks:	59.8	58.3	49.3	50.6	58.9	59.0
Vehicle Noise:	63.7	62.0	57.8	54.2	62.7	63.1

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO) - 6/2/2013

Scenario: First Floor With Wall
Road Name: Valley Springs Pkwy.
Lot No: Hospital Phase 1-West Façade
Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,200 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,120 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	48 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	95.0 feet
Centerline Dist. to Observer:	95.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	1,556.0 feet
Road Elevation:	1,548.6 feet
Barrier Elevation:	1,556.0 feet
Road Grade:	0.0%

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

Autos:	1,548.600		
Medium Trucks:	1,550.897		
Heavy Trucks:	1,556.606	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	92.751
Medium Trucks:	92.472
Heavy Trucks:	92.023

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	67.36	3.50	-4.13	-1.20	-4.39	0.000	0.000
Medium Trucks:	76.31	-13.74	-4.11	-1.20	-4.50	0.000	0.000
Heavy Trucks:	81.16	-17.69	-4.08	-1.20	-4.79	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:	65.5	63.6	61.9	55.8	64.4	65.0
Medium Trucks:	57.3	55.8	49.4	47.9	56.3	56.5
Heavy Trucks:	58.2	56.8	47.7	49.0	57.3	57.5
Vehicle Noise:	66.8	65.0	62.3	57.2	65.7	66.2

Mitigated Noise Levels (with Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.5	63.6	61.9	55.8	64.4	65.0
Medium Trucks:	57.3	55.8	49.4	47.9	56.3	56.5
Heavy Trucks:	58.2	56.8	47.7	49.0	57.3	57.5
Vehicle Noise:	66.8	65.0	62.3	57.2	65.7	66.2

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO) - 6/2/2013

Scenario: First Floor With Wall
Road Name: I-215 Fwy
Lot No: Medical Office Bldg. 3-West Façade
Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	130,900 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	13,090 vehicles
Vehicle Speed:	65 mph
Near/Far Lane Distance:	120 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	1,118.0 feet
Centerline Dist. to Observer:	1,118.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	1,552.0 feet
Road Elevation:	1,536.0 feet
Barrier Elevation:	1,552.0 feet
Road Grade:	0.0%

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%	85.50%
Medium Trucks:	84.8%	4.9%	10.3%	6.31%
Heavy Trucks:	86.5%	2.7%	10.8%	8.19%

Noise Source Elevations (in feet)

Autos:	1,536.000		
Medium Trucks:	1,538.297		
Heavy Trucks:	1,544.006	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	1,116.586
Medium Trucks:	1,116.545
Heavy Trucks:	1,116.464

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	75.54	7.05	-20.34	-1.20	-4.81	0.000	0.000
Medium Trucks:	81.71	-4.26	-20.34	-1.20	-4.82	0.000	0.000
Heavy Trucks:	85.21	-3.13	-20.34	-1.20	-4.85	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.1	59.2	57.4	51.3	60.0	60.6
Medium Trucks:	55.9	54.4	48.0	46.5	55.0	55.2
Heavy Trucks:	60.5	59.1	50.1	51.3	59.7	59.8
Vehicle Noise:	64.5	62.8	58.5	55.0	63.5	63.9

Mitigated Noise Levels (with Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.1	59.2	57.4	51.3	60.0	60.6
Medium Trucks:	55.9	54.4	48.0	46.5	55.0	55.2
Heavy Trucks:	60.5	59.1	50.1	51.3	59.7	59.8
Vehicle Noise:	64.5	62.8	58.5	55.0	63.5	63.9

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO) - 6/2/2013

Scenario: First Floor With Wall
Road Name: Valley Springs Pkwy.
Lot No: Medical Office Bldg. 3-West Façade
Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,200 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,120 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	48 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	93.0 feet
Centerline Dist. to Observer:	93.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	1,552.0 feet
Road Elevation:	1,549.4 feet
Barrier Elevation:	1,552.0 feet
Road Grade:	0.0%

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

Autos:	1,549.400		
Medium Trucks:	1,551.697		
Heavy Trucks:	1,557.406	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	90.171
Medium Trucks:	90.006
Heavy Trucks:	89.851

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	67.36	3.50	-3.94	-1.20	*-4.62*	0.000	0.000
Medium Trucks:	76.31	-13.74	-3.93	-1.20	*-4.74*	0.000	0.000
Heavy Trucks:	81.16	-17.69	-3.92	-1.20	*-5.04*	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	62.1	56.0	64.6	65.2
Medium Trucks:	57.4	55.9	49.6	48.0	56.5	56.7
Heavy Trucks:	58.3	56.9	47.9	49.1	57.5	57.6
Vehicle Noise:	67.0	65.2	62.4	57.4	65.9	66.4

Mitigated Noise Levels (with Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.7	63.8	62.1	56.0	64.6	65.2
Medium Trucks:	57.4	55.9	49.6	48.0	56.5	56.7
Heavy Trucks:	58.3	56.9	47.9	49.1	57.5	57.6
Vehicle Noise:	67.0	65.2	62.4	57.4	65.9	66.4

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO) - 6/2/2013

Scenario: First Floor With Wall
Road Name: Eucalyptus Av.
Lot No: Medical Office Bldg. 3-South Façade
Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	32,100 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,210 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	48 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	255.0 feet
Centerline Dist. to Observer:	255.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	1,552.0 feet
Road Elevation:	1,551.3 feet
Barrier Elevation:	1,552.0 feet
Road Grade:	0.0%

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

Autos:	1,551.300		
Medium Trucks:	1,553.597		
Heavy Trucks:	1,559.306	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	253.932
Medium Trucks:	253.891
Heavy Trucks:	253.879

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	67.36	3.63	-10.69	-1.20	*-4.83*	0.000	0.000
Medium Trucks:	76.31	-13.61	-10.69	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	81.16	-17.57	-10.69	-1.20	*-4.98*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.1	57.2	55.4	49.4	58.0	58.6
Medium Trucks:	50.8	49.3	42.9	41.4	49.9	50.1
Heavy Trucks:	51.7	50.3	41.2	42.5	50.8	51.0
Vehicle Noise:	60.3	58.6	55.8	50.7	59.3	59.8

Mitigated Noise Levels (with Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.1	57.2	55.4	49.4	58.0	58.6
Medium Trucks:	50.8	49.3	42.9	41.4	49.9	50.1
Heavy Trucks:	51.7	50.3	41.2	42.5	50.8	51.0
Vehicle Noise:	60.3	58.6	55.8	50.7	59.3	59.8

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO) - 6/2/2013

Scenario: First Floor With Wall
Road Name: Valley Springs Pkwy.
Lot No: Medical Office Bldg. 4-West Façade
Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,200 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,120 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	48 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	183.0 feet
Centerline Dist. to Observer:	183.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	1,552.0 feet
Road Elevation:	1,549.4 feet
Barrier Elevation:	1,552.0 feet
Road Grade:	0.0%

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

Autos:	1,549.400		
Medium Trucks:	1,551.697		
Heavy Trucks:	1,557.406	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	181.579
Medium Trucks:	181.497
Heavy Trucks:	181.420

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	67.36	3.50	-8.50	-1.20	*-4.76*	0.000	0.000
Medium Trucks:	76.31	-13.74	-8.50	-1.20	*-4.82*	0.000	0.000
Heavy Trucks:	81.16	-17.69	-8.50	-1.20	*-4.97*	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	51.4	60.1	60.7
Medium Trucks:	52.9	51.4	45.0	43.5	51.9	52.2
Heavy Trucks:	53.8	52.3	43.3	44.6	52.9	53.0
Vehicle Noise:	62.4	60.6	57.9	52.8	61.4	61.9

Mitigated Noise Levels (with Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.2	59.3	57.5	51.4	60.1	60.7
Medium Trucks:	52.9	51.4	45.0	43.5	51.9	52.2
Heavy Trucks:	53.8	52.3	43.3	44.6	52.9	53.0
Vehicle Noise:	62.4	60.6	57.9	52.8	61.4	61.9

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO) - 6/2/2013

Scenario: First Floor With Wall
Road Name: Eucalyptus Av.
Lot No: Medical Office Bldg. 4-South Façade
Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	32,100 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,210 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	48 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	214.0 feet
Centerline Dist. to Observer:	214.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	1,552.0 feet
Road Elevation:	1,553.2 feet
Barrier Elevation:	1,552.0 feet
Road Grade:	0.0%

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

Autos:	1,553.200		
Medium Trucks:	1,555.497		
Heavy Trucks:	1,561.206	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	212.684
Medium Trucks:	212.655
Heavy Trucks:	212.692

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	67.36	3.63	-9.53	-1.20	*-4.86*	0.000	0.000
Medium Trucks:	76.31	-13.61	-9.53	-1.20	*-4.91*	0.000	0.000
Heavy Trucks:	81.16	-17.57	-9.54	-1.20	*-5.05*	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:	60.3	58.4	56.6	50.5	59.2	59.8
Medium Trucks:	52.0	50.5	44.1	42.6	51.0	51.2
Heavy Trucks:	52.9	51.4	42.4	43.6	52.0	52.1
Vehicle Noise:	61.5	59.7	57.0	51.9	60.4	60.9

Mitigated Noise Levels (with Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.3	58.4	56.6	50.5	59.2	59.8
Medium Trucks:	52.0	50.5	44.1	42.6	51.0	51.2
Heavy Trucks:	52.9	51.4	42.4	43.6	52.0	52.1
Vehicle Noise:	61.5	59.7	57.0	51.9	60.4	60.9

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO) - 6/2/2013

Scenario: First Floor With Wall
Road Name: Day St.
Lot No: Medical Office Bldg. 5-East Façade
Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	23,700 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,370 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	48 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	364.0 feet
Centerline Dist. to Observer:	364.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	1,561.0 feet
Road Elevation:	1,562.5 feet
Barrier Elevation:	1,561.0 feet
Road Grade:	0.0%

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

Autos:	1,562.500		
Medium Trucks:	1,564.797		
Heavy Trucks:	1,570.506	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	363.225
Medium Trucks:	363.210
Heavy Trucks:	363.236

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	67.36	2.31	-13.02	-1.20	*-4.88*	0.000	0.000
Medium Trucks:	76.31	-14.93	-13.02	-1.20	*-4.91*	0.000	0.000
Heavy Trucks:	81.16	-18.89	-13.02	-1.20	*-4.99*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	55.4	53.5	51.8	45.7	54.3	55.0
Medium Trucks:	47.2	45.7	39.3	37.7	46.2	46.4
Heavy Trucks:	48.1	46.6	37.6	38.8	47.2	47.3
Vehicle Noise:	56.7	54.9	52.2	47.1	55.6	56.1

Mitigated Noise Levels (with Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	55.4	53.5	51.8	45.7	54.3	55.0
Medium Trucks:	47.2	45.7	39.3	37.7	46.2	46.4
Heavy Trucks:	48.1	46.6	37.6	38.8	47.2	47.3
Vehicle Noise:	56.7	54.9	52.2	47.1	55.6	56.1

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO) - 6/2/2013

Scenario: First Floor With Wall
Road Name: Eucalyptus Av.
Lot No: Medical Office Bldg. 5-South Façade
Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	32,100 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,210 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	48 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	529.0 feet
Centerline Dist. to Observer:	529.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	1,561.0 feet
Road Elevation:	1,550.0 feet
Barrier Elevation:	1,561.0 feet
Road Grade:	0.0%

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

Autos:	1,550.000		
Medium Trucks:	1,552.297		
Heavy Trucks:	1,558.006	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	528.697
Medium Trucks:	528.633
Heavy Trucks:	528.516

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	67.36	3.63	-15.47	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	76.31	-13.61	-15.47	-1.20	*-4.79*	0.000	0.000
Heavy Trucks:	81.16	-17.57	-15.46	-1.20	*-4.84*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.3	52.4	50.7	44.6	53.2	53.8
Medium Trucks:	46.0	44.5	38.2	36.6	45.1	45.3
Heavy Trucks:	46.9	45.5	36.5	37.7	46.1	46.2
Vehicle Noise:	55.6	53.8	51.0	45.9	54.5	55.0

Mitigated Noise Levels (with Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.3	52.4	50.7	44.6	53.2	53.8
Medium Trucks:	46.0	44.5	38.2	36.6	45.1	45.3
Heavy Trucks:	46.9	45.5	36.5	37.7	46.1	46.2
Vehicle Noise:	55.6	53.8	51.0	45.9	54.5	55.0

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO) - 6/2/2013

Scenario: First Floor With Wall
Road Name: Gateway Dr.
Lot No: Medical Office Bldg. 1-North Façade
Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	12,300 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,230 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	48 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	386.0 feet
Centerline Dist. to Observer:	386.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	1,560.5 feet
Road Elevation:	1,565.0 feet
Barrier Elevation:	1,560.5 feet
Road Grade:	0.0%

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

Autos:	1,565.000		
Medium Trucks:	1,567.297		
Heavy Trucks:	1,573.006	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	385.253
Medium Trucks:	385.257
Heavy Trucks:	385.326

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	67.36	-0.54	-13.41	-1.20	*-4.92*	0.000	0.000
Medium Trucks:	76.31	-17.78	-13.41	-1.20	*-4.95*	0.000	0.000
Heavy Trucks:	81.16	-21.73	-13.41	-1.20	*-5.02*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	52.2	50.3	48.5	42.5	51.1	51.7
Medium Trucks:	43.9	42.4	36.1	34.5	43.0	43.2
Heavy Trucks:	44.8	43.4	34.4	35.6	44.0	44.1
Vehicle Noise:	53.5	51.7	48.9	43.8	52.4	52.9

Mitigated Noise Levels (with Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	52.2	50.3	48.5	42.5	51.1	51.7
Medium Trucks:	43.9	42.4	36.1	34.5	43.0	43.2
Heavy Trucks:	44.8	43.4	34.4	35.6	44.0	44.1
Vehicle Noise:	53.5	51.7	48.9	43.8	52.4	52.9

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO) - 6/2/2013

Scenario: First Floor With Wall
Road Name: Gateway Dr.
Lot No: Medical Office Bldg. 2-North Façade
Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	12,300 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,230 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	48 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	388.0 feet
Centerline Dist. to Observer:	388.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	1,566.0 feet
Road Elevation:	1,567.0 feet
Barrier Elevation:	1,567.0 feet
Road Grade:	0.0%

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

Autos:	1,567.000		
Medium Trucks:	1,569.297		
Heavy Trucks:	1,575.006	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	387.278
Medium Trucks:	387.261
Heavy Trucks:	387.278

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	67.36	-0.54	-13.44	-1.20	*-3.89*	0.000	0.000
Medium Trucks:	76.31	-17.78	-13.44	-1.20	*-3.92*	0.000	0.000
Heavy Trucks:	81.16	-21.73	-13.44	-1.20	*-3.97*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	52.2	50.3	48.5	42.5	51.1	51.7
Medium Trucks:	43.9	42.4	36.0	34.5	42.9	43.2
Heavy Trucks:	44.8	43.4	34.3	35.6	43.9	44.1
Vehicle Noise:	53.4	51.6	48.9	43.8	52.4	52.9

Mitigated Noise Levels (with Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	52.2	50.3	48.5	42.5	51.1	51.7
Medium Trucks:	43.9	42.4	36.0	34.5	42.9	43.2
Heavy Trucks:	44.8	43.4	34.3	35.6	43.9	44.1
Vehicle Noise:	53.4	51.6	48.9	43.8	52.4	52.9

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO) - 6/2/2013

Scenario: Second Floor With Wall
Road Name: I-215 Fwy
Lot No: Senior Housing-West Façade
Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	130,900 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	13,090 vehicles
Vehicle Speed:	65 mph
Near/Far Lane Distance:	120 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	1,424.0 feet
Centerline Dist. to Observer:	1,424.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	14.0 feet
Pad Elevation:	1,571.0 feet
Road Elevation:	1,545.0 feet
Barrier Elevation:	1,571.0 feet
Road Grade:	0.0%

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%	85.50%
Medium Trucks:	84.8%	4.9%	10.3%	6.31%
Heavy Trucks:	86.5%	2.7%	10.8%	8.19%

Noise Source Elevations (in feet)

Autos:	1,545.000		
Medium Trucks:	1,547.297		
Heavy Trucks:	1,553.006	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	1,423.298
Medium Trucks:	1,423.235
Heavy Trucks:	1,423.095

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	75.54	7.05	-21.92	-1.20	*-13.38*	0.000	0.000
Medium Trucks:	81.71	-4.26	-21.92	-1.20	*-13.40*	0.000	0.000
Heavy Trucks:	85.21	-3.13	-21.92	-1.20	*-13.46*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.5	57.6	55.8	49.8	58.4	59.0
Medium Trucks:	54.3	52.8	46.5	44.9	53.4	53.6
Heavy Trucks:	59.0	57.5	48.5	49.8	58.1	58.2
Vehicle Noise:	62.9	61.2	57.0	53.4	61.9	62.3

Mitigated Noise Levels (with Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.5	57.6	55.8	49.8	58.4	59.0
Medium Trucks:	54.3	52.8	46.5	44.9	53.4	53.6
Heavy Trucks:	59.0	57.5	48.5	49.8	58.1	58.2
Vehicle Noise:	62.9	61.2	57.0	53.4	61.9	62.3

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO) - 6/2/2013

Scenario: Second Floor With Wall
Road Name: Valley Springs Pkwy.
Lot No: Senior Housing-West Façade
Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,200 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,120 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	48 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	345.0 feet
Centerline Dist. to Observer:	345.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	14.0 feet
Pad Elevation:	1,571.0 feet
Road Elevation:	1,553.0 feet
Barrier Elevation:	1,571.0 feet
Road Grade:	0.0%

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

Autos:	1,553.000		
Medium Trucks:	1,555.297		
Heavy Trucks:	1,561.006	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	345.649
Medium Trucks:	345.444
Heavy Trucks:	345.000

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	67.36	3.50	-12.70	-1.20	*-12.71*	0.000	0.000
Medium Trucks:	76.31	-13.74	-12.69	-1.20	*-12.80*	0.000	0.000
Heavy Trucks:	81.16	-17.69	-12.69	-1.20	*-13.02*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	57.0	55.1	53.3	47.2	55.9	56.5
Medium Trucks:	48.7	47.2	40.8	39.3	47.7	48.0
Heavy Trucks:	49.6	48.2	39.1	40.4	48.7	48.9
Vehicle Noise:	58.2	56.4	53.7	48.6	57.2	57.7

Mitigated Noise Levels (with Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	57.0	55.1	53.3	47.2	55.9	56.5
Medium Trucks:	48.7	47.2	40.8	39.3	47.7	48.0
Heavy Trucks:	49.6	48.2	39.1	40.4	48.7	48.9
Vehicle Noise:	58.2	56.4	53.7	48.6	57.2	57.7

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO) - 6/2/2013

Scenario: Second Floor With Wall
Road Name: SR-60 Fwy
Lot No: Senior Housing-North Façade
Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	147,400 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	14,740 vehicles
Vehicle Speed:	65 mph
Near/Far Lane Distance:	120 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	2,202.0 feet
Centerline Dist. to Observer:	2,202.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	14.0 feet
Pad Elevation:	1,571.0 feet
Road Elevation:	1,610.0 feet
Barrier Elevation:	1,571.0 feet
Road Grade:	0.0%

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%	89.50%
Medium Trucks:	84.8%	4.9%	10.3%	4.51%
Heavy Trucks:	86.5%	2.7%	10.8%	5.99%

Noise Source Elevations (in feet)

Autos:	1,610.000		
Medium Trucks:	1,612.297		
Heavy Trucks:	1,618.006	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	2,215.528
Medium Trucks:	2,215.570
Heavy Trucks:	2,215.684

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	75.54	7.77	-24.80	-1.20	*13.90*	-17.568	-20.568
Medium Trucks:	81.71	-5.21	-24.80	-1.20	*13.91*	-17.569	-20.569
Heavy Trucks:	85.21	-3.98	-24.80	-1.20	*13.95*	-17.574	-20.574

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:	50.5	49.0	42.6	41.1	49.5	49.8
Heavy Trucks:	55.2	53.8	44.8	46.0	54.4	54.5
Vehicle Noise:	59.9	58.2	54.5	50.4	58.9	59.3

Mitigated Noise Levels (with Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	39.7	37.8	36.1	30.0	38.6	39.2
Medium Trucks:	32.9	31.4	25.1	23.5	32.0	32.2
Heavy Trucks:	37.7	36.2	27.2	28.4	36.8	36.9
Vehicle Noise:	42.4	40.7	36.9	32.9	41.4	41.8

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO) - 6/2/2013

Scenario: Second Floor With Wall
Road Name: SR-60 Fwy
Lot No: Independent Living-North Façade
Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	147,400 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	14,740 vehicles
Vehicle Speed:	65 mph
Near/Far Lane Distance:	120 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	2,359.0 feet
Centerline Dist. to Observer:	2,359.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	14.0 feet
Pad Elevation:	1,573.5 feet
Road Elevation:	1,639.0 feet
Barrier Elevation:	1,573.5 feet
Road Grade:	0.0%

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%	89.50%
Medium Trucks:	84.8%	4.9%	10.3%	4.51%
Heavy Trucks:	86.5%	2.7%	10.8%	5.99%

Noise Source Elevations (in feet)

Autos:	1,639.000		
Medium Trucks:	1,641.297		
Heavy Trucks:	1,647.006	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	2,373.146
Medium Trucks:	2,373.211
Heavy Trucks:	2,373.382

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	75.54	7.77	-25.25	-1.20	*14.04*	-17.585	-20.585
Medium Trucks:	81.71	-5.21	-25.25	-1.20	*14.05*	-17.586	-20.586
Heavy Trucks:	85.21	-3.98	-25.25	-1.20	*14.08*	-17.590	-20.590

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.9	55.0	53.2	47.1	55.8	56.4
Medium Trucks:	50.1	48.5	42.2	40.6	49.1	49.3
Heavy Trucks:	54.8	53.4	44.3	45.6	53.9	54.1
Vehicle Noise:	59.5	57.8	54.0	50.0	58.5	58.9

Mitigated Noise Levels (with Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	39.3	37.4	35.6	29.6	38.2	38.8
Medium Trucks:	32.5	31.0	24.6	23.1	31.5	31.7
Heavy Trucks:	37.2	35.8	26.7	28.0	36.3	36.5
Vehicle Noise:	41.9	40.2	36.4	32.4	40.9	41.3

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO) - 6/2/2013

Scenario: Second Floor With Wall
Road Name: Day St.
Lot No: Independent Living-East Façade

Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	23,700 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,370 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	48 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	481.0 feet
Centerline Dist. to Observer:	481.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	14.0 feet
Pad Elevation:	1,573.5 feet
Road Elevation:	1,572.2 feet
Barrier Elevation:	1,573.5 feet
Road Grade:	0.0%

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

Autos:	1,572.200		
Medium Trucks:	1,574.497		
Heavy Trucks:	1,580.206	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	480.644
Medium Trucks:	480.577
Heavy Trucks:	480.456

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	67.36	2.31	-14.85	-1.20	-13.46	0.000	0.000
Medium Trucks:	76.31	-14.93	-14.85	-1.20	-13.53	0.000	0.000
Heavy Trucks:	81.16	-18.89	-14.84	-1.20	-13.69	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	53.6	51.7	50.0	43.9	52.5	53.1
Medium Trucks:	45.3	43.8	37.5	35.9	44.4	44.6
Heavy Trucks:	46.2	44.8	35.8	37.0	45.4	45.5
Vehicle Noise:	54.9	53.1	50.3	45.3	53.8	54.3

Mitigated Noise Levels (with Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	53.6	51.7	50.0	43.9	52.5	53.1
Medium Trucks:	45.3	43.8	37.5	35.9	44.4	44.6
Heavy Trucks:	46.2	44.8	35.8	37.0	45.4	45.5
Vehicle Noise:	54.9	53.1	50.3	45.3	53.8	54.3

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO) - 6/2/2013

Scenario: Second Floor With Wall
Road Name: Day St.
Lot No: Skilled Nursing-East Façade

Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	23,700 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,370 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	48 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	177.0 feet
Centerline Dist. to Observer:	177.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	14.0 feet
Pad Elevation:	1,572.5 feet
Road Elevation:	1,572.2 feet
Barrier Elevation:	1,572.5 feet
Road Grade:	0.0%

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

Autos:	1,572.200		
Medium Trucks:	1,574.497		
Heavy Trucks:	1,580.206	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	175.947
Medium Trucks:	175.776
Heavy Trucks:	175.478

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	67.36	2.31	-8.30	-1.20	-13.13	0.000	0.000
Medium Trucks:	76.31	-14.93	-8.29	-1.20	-13.31	0.000	0.000
Heavy Trucks:	81.16	-18.89	-8.28	-1.20	-13.75	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.2	58.3	56.5	50.4	59.1	59.7
Medium Trucks:	51.9	50.4	44.0	42.5	50.9	51.2
Heavy Trucks:	52.8	51.4	42.3	43.6	51.9	52.1
Vehicle Noise:	61.4	59.6	56.9	51.8	60.4	60.9

Mitigated Noise Levels (with Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.2	58.3	56.5	50.4	59.1	59.7
Medium Trucks:	51.9	50.4	44.0	42.5	50.9	51.2
Heavy Trucks:	52.8	51.4	42.3	43.6	51.9	52.1
Vehicle Noise:	61.4	59.6	56.9	51.8	60.4	60.9

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO) - 6/2/2013

Scenario: Second Floor With Wall
Road Name: Gateway Dr.
Lot No: Skilled Nursing-South Façade

Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	12,300 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,230 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	48 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	77.0 feet
Centerline Dist. to Observer:	77.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	14.0 feet
Pad Elevation:	1,572.5 feet
Road Elevation:	1,572.2 feet
Barrier Elevation:	1,572.5 feet
Road Grade:	0.0%

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

Autos:	1,572.200		
Medium Trucks:	1,574.497		
Heavy Trucks:	1,580.206	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	74.549
Medium Trucks:	74.142
Heavy Trucks:	73.434

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	67.36	-0.54	-2.71	-1.20	-12.41	0.000	0.000
Medium Trucks:	76.31	-17.78	-2.67	-1.20	-12.81	0.000	0.000
Heavy Trucks:	81.16	-21.73	-2.61	-1.20	-13.82	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.9	61.0	59.2	53.2	61.8	62.4
Medium Trucks:	54.7	53.2	46.8	45.3	53.7	53.9
Heavy Trucks:	55.6	54.2	45.2	46.4	54.8	54.9
Vehicle Noise:	64.2	62.4	59.6	54.6	63.1	63.6

Mitigated Noise Levels (with Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.9	61.0	59.2	53.2	61.8	62.4
Medium Trucks:	54.7	53.2	46.8	45.3	53.7	53.9
Heavy Trucks:	55.6	54.2	45.2	46.4	54.8	54.9
Vehicle Noise:	64.2	62.4	59.6	54.6	63.1	63.6

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO) - 6/2/2013

Scenario: Second Floor With Wall
Road Name: Gateway Dr.
Lot No: Assisted Living-South Façade

Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	12,300 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,230 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	48 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	72.0 feet
Centerline Dist. to Observer:	72.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	14.0 feet
Pad Elevation:	1,572.5 feet
Road Elevation:	1,567.3 feet
Barrier Elevation:	1,572.5 feet
Road Grade:	0.0%

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

Autos:	1,567.250		
Medium Trucks:	1,569.547		
Heavy Trucks:	1,575.256	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	70.559
Medium Trucks:	69.967
Heavy Trucks:	68.807

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	67.36	-0.54	-2.35	-1.20	-11.41	0.000	0.000
Medium Trucks:	76.31	-17.78	-2.29	-1.20	-11.83	0.000	0.000
Heavy Trucks:	81.16	-21.73	-2.18	-1.20	-12.90	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.3	61.4	59.6	53.6	62.2	62.8
Medium Trucks:	55.0	53.5	47.2	45.6	54.1	54.3
Heavy Trucks:	56.0	54.6	45.6	46.8	55.2	55.3
Vehicle Noise:	64.5	62.8	60.0	54.9	63.5	64.0

Mitigated Noise Levels (with Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.3	61.4	59.6	53.6	62.2	62.8
Medium Trucks:	55.0	53.5	47.2	45.6	54.1	54.3
Heavy Trucks:	56.0	54.6	45.6	46.8	55.2	55.3
Vehicle Noise:	64.5	62.8	60.0	54.9	63.5	64.0

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO) - 6/2/2013

Scenario: Second Floor With Wall
Road Name: Gateway Dr.
Lot No: Hospital Phase 2-North Façade

Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS	
Highway Data		**Site Conditions (Hard = 10, Soft = 15)**	
Average Daily Traffic (Adt):	12,300 vehicles	Autos:	15
Peak Hour Percentage:	10%	Medium Trucks (2 Axles):	15
Peak Hour Volume:	1,230 vehicles	Heavy Trucks (3+ Axles):	15
Vehicle Speed:	40 mph		
Near/Far Lane Distance:	48 feet		

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%

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	90.0 feet
Centerline Dist. to Observer:	90.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	14.0 feet
Pad Elevation:	1,556.0 feet
Road Elevation:	1,556.3 feet
Barrier Elevation:	1,556.0 feet
Road Grade:	0.0%

Noise Source Elevations (in feet)

Autos:	1,556.300		
Medium Trucks:	1,558.597		
Heavy Trucks:	1,564.306	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	87.816
Medium Trucks:	87.487
Heavy Trucks:	86.928

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	67.36	-0.54	-3.77	-1.20	*-12.68*	0.000	0.000
Medium Trucks:	76.31	-17.78	-3.75	-1.20	*-13.03*	0.000	0.000
Heavy Trucks:	81.16	-21.73	-3.71	-1.20	*-13.90*	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	58.2	52.1	60.7	61.4
Medium Trucks:	53.6	52.1	45.7	44.2	52.6	52.9
Heavy Trucks:	54.5	53.1	44.1	45.3	53.7	53.8
Vehicle Noise:	63.1	61.3	58.6	53.5	62.1	62.6

Mitigated Noise Levels (with Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.8	59.9	58.2	52.1	60.7	61.4
Medium Trucks:	53.6	52.1	45.7	44.2	52.6	52.9
Heavy Trucks:	54.5	53.1	44.1	45.3	53.7	53.8
Vehicle Noise:	63.1	61.3	58.6	53.5	62.1	62.6

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO) - 6/2/2013

Scenario: Second Floor With Wall
Road Name: I-215 Fwy
Lot No: Hospital Phase 1-West Façade

Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS	
Highway Data		**Site Conditions (Hard = 10, Soft = 15)**	
Average Daily Traffic (Adt):	130,900 vehicles	Autos:	15
Peak Hour Percentage:	10%	Medium Trucks (2 Axles):	15
Peak Hour Volume:	13,090 vehicles	Heavy Trucks (3+ Axles):	15
Vehicle Speed:	65 mph		
Near/Far Lane Distance:	120 feet		

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	77.5%	12.9%	9.6%	85.50%
Medium Trucks:	84.8%	4.9%	10.3%	6.31%
Heavy Trucks:	86.5%	2.7%	10.8%	8.19%

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	1,260.0 feet
Centerline Dist. to Observer:	1,260.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	14.0 feet
Pad Elevation:	1,556.0 feet
Road Elevation:	1,539.0 feet
Barrier Elevation:	1,556.0 feet
Road Grade:	0.0%

Noise Source Elevations (in feet)

Autos:	1,539.000		
Medium Trucks:	1,541.297		
Heavy Trucks:	1,547.006	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	1,258.952
Medium Trucks:	1,258.898
Heavy Trucks:	1,258.781

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	75.54	7.05	-21.12	-1.20	*-13.44*	0.000	0.000
Medium Trucks:	81.71	-4.26	-21.12	-1.20	*-13.46*	0.000	0.000
Heavy Trucks:	85.21	-3.13	-21.12	-1.20	*-13.52*	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:	60.3	58.4	56.6	50.6	59.2	59.8
Medium Trucks:	55.1	53.6	47.3	45.7	54.2	54.4
Heavy Trucks:	59.8	58.3	49.3	50.5	58.9	59.0
Vehicle Noise:	63.7	62.0	57.8	54.2	62.7	63.1

Mitigated Noise Levels (with Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.3	58.4	56.6	50.6	59.2	59.8
Medium Trucks:	55.1	53.6	47.3	45.7	54.2	54.4
Heavy Trucks:	59.8	58.3	49.3	50.5	58.9	59.0
Vehicle Noise:	63.7	62.0	57.8	54.2	62.7	63.1

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO) - 6/2/2013

Scenario: Second Floor With Wall
Road Name: Valley Springs Pkwy.
Lot No: Hospital Phase 1-West Façade

Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS	
Highway Data		**Site Conditions (Hard = 10, Soft = 15)**	
Average Daily Traffic (Adt):	31,200 vehicles	Autos:	15
Peak Hour Percentage:	10%	Medium Trucks (2 Axles):	15
Peak Hour Volume:	3,120 vehicles	Heavy Trucks (3+ Axles):	15
Vehicle Speed:	40 mph		
Near/Far Lane Distance:	48 feet		

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%

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	95.0 feet
Centerline Dist. to Observer:	95.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	14.0 feet
Pad Elevation:	1,556.0 feet
Road Elevation:	1,548.6 feet
Barrier Elevation:	1,556.0 feet
Road Grade:	0.0%

Noise Source Elevations (in feet)

Autos:	1,548.600		
Medium Trucks:	1,550.897		
Heavy Trucks:	1,556.606	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	94.377
Medium Trucks:	93.883
Heavy Trucks:	92.889

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	67.36	3.50	-4.24	-1.20	*-11.65*	0.000	0.000
Medium Trucks:	76.31	-13.74	-4.21	-1.20	*-11.97*	0.000	0.000
Heavy Trucks:	81.16	-17.69	-4.14	-1.20	*-12.78*	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	64.9
Medium Trucks:	57.2	55.7	49.3	47.8	56.2	56.4
Heavy Trucks:	58.1	56.7	47.7	48.9	57.3	57.4
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	64.9
Medium Trucks:	57.2	55.7	49.3	47.8	56.2	56.4
Heavy Trucks:	58.1	56.7	47.7	48.9	57.3	57.4
Vehicle Noise:	66.7	64.9	62.2	57.1	65.6	66.1

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO) - 6/2/2013

Scenario: Second Floor With Wall
Road Name: I-215 Fwy
Lot No: Medical Office Bldg. 3-West Façade

Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS	
Highway Data		**Site Conditions (Hard = 10, Soft = 15)**	
Average Daily Traffic (Adt):	130,900 vehicles	Autos:	15
Peak Hour Percentage:	10%	Medium Trucks (2 Axles):	15
Peak Hour Volume:	13,090 vehicles	Heavy Trucks (3+ Axles):	15
Vehicle Speed:	65 mph		
Near/Far Lane Distance:	120 feet		

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	77.5%	12.9%	9.6%	85.50%
Medium Trucks:	84.8%	4.9%	10.3%	6.31%
Heavy Trucks:	86.5%	2.7%	10.8%	8.19%

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	1,118.0 feet
Centerline Dist. to Observer:	1,118.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	14.0 feet
Pad Elevation:	1,552.0 feet
Road Elevation:	1,536.0 feet
Barrier Elevation:	1,552.0 feet
Road Grade:	0.0%

Noise Source Elevations (in feet)

Autos:	1,536.000		
Medium Trucks:	1,538.297		
Heavy Trucks:	1,544.006	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	1,116.792
Medium Trucks:	1,116.732
Heavy Trucks:	1,116.605

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	75.54	7.05	-20.34	-1.20	*-13.42*	0.000	0.000
Medium Trucks:	81.71	-4.26	-20.34	-1.20	*-13.44*	0.000	0.000
Heavy Trucks:	85.21	-3.13	-20.34	-1.20	*-13.51*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.1	59.2	57.4	51.3	60.0	60.6
Medium Trucks:	55.9	54.4	48.0	46.5	55.0	55.2
Heavy Trucks:	60.5	59.1	50.1	51.3	59.7	59.8
Vehicle Noise:	64.5	62.8	58.5	55.0	63.5	63.9

Mitigated Noise Levels (with Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.1	59.2	57.4	51.3	60.0	60.6
Medium Trucks:	55.9	54.4	48.0	46.5	55.0	55.2
Heavy Trucks:	60.5	59.1	50.1	51.3	59.7	59.8
Vehicle Noise:	64.5	62.8	58.5	55.0	63.5	63.9

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO) - 6/2/2013

Scenario: Second Floor With Wall
Road Name: Valley Springs Pkwy.
Lot No: Medical Office Bldg. 3-West Façade
Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,200 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,120 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	48 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	93.0 feet
Centerline Dist. to Observer:	93.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	14.0 feet
Pad Elevation:	1,552.0 feet
Road Elevation:	1,549.4 feet
Barrier Elevation:	1,552.0 feet
Road Grade:	0.0%

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

Autos:	1,549.400		
Medium Trucks:	1,551.697		
Heavy Trucks:	1,557.406	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	91.370
Medium Trucks:	90.981
Heavy Trucks:	90.260

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	67.36	3.50	-4.03	-1.20	*-12.30*	0.000	0.000
Medium Trucks:	76.31	-13.74	-4.00	-1.20	*-12.63*	0.000	0.000
Heavy Trucks:	81.16	-17.69	-3.95	-1.20	*-13.46*	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:	57.4	55.9	49.5	48.0	56.4	56.7
Heavy Trucks:	58.3	56.9	47.9	49.1	57.5	57.6
Vehicle Noise:	66.9	65.1	62.4	57.3	65.8	66.3

Mitigated Noise Levels (with 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:	57.4	55.9	49.5	48.0	56.4	56.7
Heavy Trucks:	58.3	56.9	47.9	49.1	57.5	57.6
Vehicle Noise:	66.9	65.1	62.4	57.3	65.8	66.3

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO) - 6/2/2013

Scenario: Second Floor With Wall
Road Name: Eucalyptus Av.
Lot No: Medical Office Bldg. 3-South Façade
Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	32,100 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,210 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	48 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	255.0 feet
Centerline Dist. to Observer:	255.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	14.0 feet
Pad Elevation:	1,552.0 feet
Road Elevation:	1,551.3 feet
Barrier Elevation:	1,552.0 feet
Road Grade:	0.0%

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

Autos:	1,551.300		
Medium Trucks:	1,553.597		
Heavy Trucks:	1,559.306	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	254.293
Medium Trucks:	254.171
Heavy Trucks:	253.956

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	67.36	3.63	-10.70	-1.20	*-13.28*	0.000	0.000
Medium Trucks:	76.31	-13.61	-10.70	-1.20	*-13.41*	0.000	0.000
Heavy Trucks:	81.16	-17.57	-10.69	-1.20	*-13.71*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.1	57.2	55.4	49.4	58.0	58.6
Medium Trucks:	50.8	49.3	42.9	41.4	49.9	50.1
Heavy Trucks:	51.7	50.3	41.2	42.5	50.8	51.0
Vehicle Noise:	60.3	58.5	55.8	50.7	59.3	59.8

Mitigated Noise Levels (with Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.1	57.2	55.4	49.4	58.0	58.6
Medium Trucks:	50.8	49.3	42.9	41.4	49.9	50.1
Heavy Trucks:	51.7	50.3	41.2	42.5	50.8	51.0
Vehicle Noise:	60.3	58.5	55.8	50.7	59.3	59.8

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO) - 6/2/2013

Scenario: Second Floor With Wall
Road Name: Valley Springs Pkwy.
Lot No: Medical Office Bldg. 4-West Façade
Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,200 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,120 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	48 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	183.0 feet
Centerline Dist. to Observer:	183.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	14.0 feet
Pad Elevation:	1,552.0 feet
Road Elevation:	1,549.4 feet
Barrier Elevation:	1,552.0 feet
Road Grade:	0.0%

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

Autos:	1,549.400		
Medium Trucks:	1,551.697		
Heavy Trucks:	1,557.406	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	182.177
Medium Trucks:	181.982
Heavy Trucks:	181.623

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	67.36	3.50	-8.53	-1.20	*-12.98*	0.000	0.000
Medium Trucks:	76.31	-13.74	-8.52	-1.20	*-13.15*	0.000	0.000
Heavy Trucks:	81.16	-17.69	-8.51	-1.20	*-13.58*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.1	59.2	57.5	51.4	60.0	60.6
Medium Trucks:	52.9	51.3	45.0	43.4	51.9	52.1
Heavy Trucks:	53.8	52.3	43.3	44.6	52.9	53.0
Vehicle Noise:	62.4	60.6	57.9	52.8	61.3	61.8

Mitigated Noise Levels (with Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.1	59.2	57.5	51.4	60.0	60.6
Medium Trucks:	52.9	51.3	45.0	43.4	51.9	52.1
Heavy Trucks:	53.8	52.3	43.3	44.6	52.9	53.0
Vehicle Noise:	62.4	60.6	57.9	52.8	61.3	61.8

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO) - 6/2/2013

Scenario: Second Floor With Wall
Road Name: Eucalyptus Av.
Lot No: Medical Office Bldg. 4-South Façade
Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	32,100 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,210 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	48 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	214.0 feet
Centerline Dist. to Observer:	214.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	14.0 feet
Pad Elevation:	1,552.0 feet
Road Elevation:	1,553.2 feet
Barrier Elevation:	1,552.0 feet
Road Grade:	0.0%

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

Autos:	1,553.200		
Medium Trucks:	1,555.497		
Heavy Trucks:	1,561.206	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	213.035
Medium Trucks:	212.909
Heavy Trucks:	212.704

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	67.36	3.63	-9.55	-1.20	*-13.33*	0.000	0.000
Medium Trucks:	76.31	-13.61	-9.54	-1.20	*-13.47*	0.000	0.000
Heavy Trucks:	81.16	-17.57	-9.54	-1.20	*-13.84*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.2	58.3	56.6	50.5	59.1	59.7
Medium Trucks:	52.0	50.5	44.1	42.5	51.0	51.2
Heavy Trucks:	52.9	51.4	42.4	43.6	52.0	52.1
Vehicle Noise:	61.5	59.7	57.0	51.9	60.4	60.9

Mitigated Noise Levels (with Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.2	58.3	56.6	50.5	59.1	59.7
Medium Trucks:	52.0	50.5	44.1	42.5	51.0	51.2
Heavy Trucks:	52.9	51.4	42.4	43.6	52.0	52.1
Vehicle Noise:	61.5	59.7	57.0	51.9	60.4	60.9

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO) - 6/2/2013

Scenario: Second Floor With Wall
Road Name: Day St.
Lot No: Medical Office Bldg. 5-East Façade
Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	23,700 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,370 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	48 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	364.0 feet
Centerline Dist. to Observer:	364.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	14.0 feet
Pad Elevation:	1,561.0 feet
Road Elevation:	1,562.5 feet
Barrier Elevation:	1,561.0 feet
Road Grade:	0.0%

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

Autos:	1,562.500		
Medium Trucks:	1,564.797		
Heavy Trucks:	1,570.506	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	363.423
Medium Trucks:	363.351
Heavy Trucks:	363.236

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	67.36	2.31	-13.03	-1.20	*-13.49*	0.000	0.000
Medium Trucks:	76.31	-14.93	-13.02	-1.20	*-13.58*	0.000	0.000
Heavy Trucks:	81.16	-18.89	-13.02	-1.20	*-13.79*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	55.4	53.5	51.8	45.7	54.3	55.0
Medium Trucks:	47.2	45.7	39.3	37.7	46.2	46.4
Heavy Trucks:	48.1	46.6	37.6	38.8	47.2	47.3
Vehicle Noise:	56.7	54.9	52.2	47.1	55.6	56.1

Mitigated Noise Levels (with Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	55.4	53.5	51.8	45.7	54.3	55.0
Medium Trucks:	47.2	45.7	39.3	37.7	46.2	46.4
Heavy Trucks:	48.1	46.6	37.6	38.8	47.2	47.3
Vehicle Noise:	56.7	54.9	52.2	47.1	55.6	56.1

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO) - 6/2/2013

Scenario: Second Floor With Wall
Road Name: Eucalyptus Av.
Lot No: Medical Office Bldg. 5-South Façade
Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	32,100 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,210 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	48 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	529.0 feet
Centerline Dist. to Observer:	529.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	14.0 feet
Pad Elevation:	1,561.0 feet
Road Elevation:	1,550.0 feet
Barrier Elevation:	1,561.0 feet
Road Grade:	0.0%

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

Autos:	1,550.000		
Medium Trucks:	1,552.297		
Heavy Trucks:	1,558.006	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	529.046
Medium Trucks:	528.943
Heavy Trucks:	528.728

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	67.36	3.63	-15.47	-1.20	*-13.23*	0.000	0.000
Medium Trucks:	76.31	-13.61	-15.47	-1.20	*-13.29*	0.000	0.000
Heavy Trucks:	81.16	-17.57	-15.47	-1.20	*-13.44*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.3	52.4	50.6	44.6	53.2	53.8
Medium Trucks:	46.0	44.5	38.2	36.6	45.1	45.3
Heavy Trucks:	46.9	45.5	36.5	37.7	46.1	46.2
Vehicle Noise:	55.6	53.8	51.0	45.9	54.5	55.0

Mitigated Noise Levels (with Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.3	52.4	50.6	44.6	53.2	53.8
Medium Trucks:	46.0	44.5	38.2	36.6	45.1	45.3
Heavy Trucks:	46.9	45.5	36.5	37.7	46.1	46.2
Vehicle Noise:	55.6	53.8	51.0	45.9	54.5	55.0

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO) - 6/2/2013

Scenario: Second Floor With Wall
Road Name: Gateway Dr.
Lot No: Medical Office Bldg. 1-North Façade
Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	12,300 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,230 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	48 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	386.0 feet
Centerline Dist. to Observer:	386.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	14.0 feet
Pad Elevation:	1,560.5 feet
Road Elevation:	1,565.0 feet
Barrier Elevation:	1,560.5 feet
Road Grade:	0.0%

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

Autos:	1,565.000		
Medium Trucks:	1,567.297		
Heavy Trucks:	1,573.006	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	385.370
Medium Trucks:	385.320
Heavy Trucks:	385.256

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	67.36	-0.54	-13.41	-1.20	*-13.61*	0.000	0.000
Medium Trucks:	76.31	-17.78	-13.41	-1.20	*-13.69*	0.000	0.000
Heavy Trucks:	81.16	-21.73	-13.41	-1.20	*-13.89*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	52.2	50.3	48.5	42.5	51.1	51.7
Medium Trucks:	43.9	42.4	36.1	34.5	43.0	43.2
Heavy Trucks:	44.8	43.4	34.4	35.6	44.0	44.1
Vehicle Noise:	53.5	51.7	48.9	43.8	52.4	52.9

Mitigated Noise Levels (with Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	52.2	50.3	48.5	42.5	51.1	51.7
Medium Trucks:	43.9	42.4	36.1	34.5	43.0	43.2
Heavy Trucks:	44.8	43.4	34.4	35.6	44.0	44.1
Vehicle Noise:	53.5	51.7	48.9	43.8	52.4	52.9

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO) - 6/2/2013

Scenario: Second Floor With Wall
Road Name: Gateway Dr.
Lot No: Medical Office Bldg. 2-North Façade
Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	12,300 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,230 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	48 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	388.0 feet
Centerline Dist. to Observer:	388.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	14.0 feet
Pad Elevation:	1,566.0 feet
Road Elevation:	1,567.0 feet
Barrier Elevation:	1,567.0 feet
Road Grade:	0.0%

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

Autos:	1,567.000		
Medium Trucks:	1,569.297		
Heavy Trucks:	1,575.006	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	387.475
Medium Trucks:	387.405
Heavy Trucks:	387.289

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	67.36	-0.54	-13.44	-1.20	*-12.51*	0.000	0.000
Medium Trucks:	76.31	-17.78	-13.44	-1.20	*-12.58*	0.000	0.000
Heavy Trucks:	81.16	-21.73	-13.44	-1.20	*-12.77*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	52.2	50.3	48.5	42.5	51.1	51.7
Medium Trucks:	43.9	42.4	36.0	34.5	42.9	43.2
Heavy Trucks:	44.8	43.4	34.3	35.6	43.9	44.1
Vehicle Noise:	53.4	51.6	48.9	43.8	52.4	52.9

Mitigated Noise Levels (with Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	52.2	50.3	48.5	42.5	51.1	51.7
Medium Trucks:	43.9	42.4	36.0	34.5	42.9	43.2
Heavy Trucks:	44.8	43.4	34.3	35.6	43.9	44.1
Vehicle Noise:	53.4	51.6	48.9	43.8	52.4	52.9

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO) - 6/2/2013

Scenario: Third Floor With Wall
Road Name: I-215 Fwy
Lot No: Senior Housing-West Façade
Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS	
Highway Data		**Site Conditions (Hard = 10, Soft = 15)**	
Average Daily Traffic (Adt):	130,900 vehicles	Autos:	15
Peak Hour Percentage:	10%	Medium Trucks (2 Axles):	15
Peak Hour Volume:	13,090 vehicles	Heavy Trucks (3+ Axles):	15
Vehicle Speed:	65 mph		
Near/Far Lane Distance:	120 feet		

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	77.5%	12.9%	9.6%	85.50%
Medium Trucks:	84.8%	4.9%	10.3%	6.31%
Heavy Trucks:	86.5%	2.7%	10.8%	8.19%

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	1,424.0 feet
Centerline Dist. to Observer:	1,424.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	23.0 feet
Pad Elevation:	1,571.0 feet
Road Elevation:	1,545.0 feet
Barrier Elevation:	1,571.0 feet
Road Grade:	0.0%

Noise Source Elevations (in feet)

Autos:	1,545.000		
Medium Trucks:	1,547.297		
Heavy Trucks:	1,553.006	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	1,423.579
Medium Trucks:	1,423.502
Heavy Trucks:	1,423.326

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	75.54	7.05	-21.92	-1.20	*-21.91*	0.000	0.000
Medium Trucks:	81.71	-4.26	-21.92	-1.20	*-21.95*	0.000	0.000
Heavy Trucks:	85.21	-3.13	-21.92	-1.20	*-22.04*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.5	57.6	55.8	49.8	58.4	59.0
Medium Trucks:	54.3	52.8	46.5	44.9	53.4	53.6
Heavy Trucks:	59.0	57.5	48.5	49.7	58.1	58.2
Vehicle Noise:	62.9	61.2	57.0	53.4	61.9	62.3

Mitigated Noise Levels (with Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.5	57.6	55.8	49.8	58.4	59.0
Medium Trucks:	54.3	52.8	46.5	44.9	53.4	53.6
Heavy Trucks:	59.0	57.5	48.5	49.7	58.1	58.2
Vehicle Noise:	62.9	61.2	57.0	53.4	61.9	62.3

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO) - 6/2/2013

Scenario: Third Floor With Wall
Road Name: Valley Springs Pkwy.
Lot No: Senior Housing-West Façade
Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS	
Highway Data		**Site Conditions (Hard = 10, Soft = 15)**	
Average Daily Traffic (Adt):	31,200 vehicles	Autos:	15
Peak Hour Percentage:	10%	Medium Trucks (2 Axles):	15
Peak Hour Volume:	3,120 vehicles	Heavy Trucks (3+ Axles):	15
Vehicle Speed:	40 mph		
Near/Far Lane Distance:	48 feet		

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%

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	345.0 feet
Centerline Dist. to Observer:	345.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	23.0 feet
Pad Elevation:	1,571.0 feet
Road Elevation:	1,553.0 feet
Barrier Elevation:	1,571.0 feet
Road Grade:	0.0%

Noise Source Elevations (in feet)

Autos:	1,553.000		
Medium Trucks:	1,555.297		
Heavy Trucks:	1,561.006	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	346.598
Medium Trucks:	346.334
Heavy Trucks:	345.742

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	67.36	3.50	-12.72	-1.20	*-20.59*	0.000	0.000
Medium Trucks:	76.31	-13.74	-12.71	-1.20	*-20.74*	0.000	0.000
Heavy Trucks:	81.16	-17.69	-12.70	-1.20	*-21.10*	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:	56.9	55.0	53.3	47.2	55.8	56.5
Medium Trucks:	48.7	47.2	40.8	39.3	47.7	47.9
Heavy Trucks:	49.6	48.1	39.1	40.4	48.7	48.8
Vehicle Noise:	58.2	56.4	53.7	48.6	57.1	57.6

Mitigated Noise Levels (with Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.9	55.0	53.3	47.2	55.8	56.5
Medium Trucks:	48.7	47.2	40.8	39.3	47.7	47.9
Heavy Trucks:	49.6	48.1	39.1	40.4	48.7	48.8
Vehicle Noise:	58.2	56.4	53.7	48.6	57.1	57.6

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO) - 6/2/2013

Scenario: Third Floor With Wall
Road Name: SR-60 Fwy
Lot No: Senior Housing-North Façade
Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS	
Highway Data		**Site Conditions (Hard = 10, Soft = 15)**	
Average Daily Traffic (Adt):	147,400 vehicles	Autos:	15
Peak Hour Percentage:	10%	Medium Trucks (2 Axles):	15
Peak Hour Volume:	14,740 vehicles	Heavy Trucks (3+ Axles):	15
Vehicle Speed:	65 mph		
Near/Far Lane Distance:	120 feet		

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	77.5%	12.9%	9.6%	89.50%
Medium Trucks:	84.8%	4.9%	10.3%	4.51%
Heavy Trucks:	86.5%	2.7%	10.8%	5.99%

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	2,202.0 feet
Centerline Dist. to Observer:	2,202.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	23.0 feet
Pad Elevation:	1,571.0 feet
Road Elevation:	1,610.0 feet
Barrier Elevation:	1,571.0 feet
Road Grade:	0.0%

Noise Source Elevations (in feet)

Autos:	1,610.000		
Medium Trucks:	1,612.297		
Heavy Trucks:	1,618.006	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	2,224.528
Medium Trucks:	2,224.570
Heavy Trucks:	2,224.684

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	75.54	7.77	-24.83	-1.20	*22.78*	-18.439	-21.439
Medium Trucks:	81.71	-5.21	-24.83	-1.20	*22.81*	-18.440	-21.440
Heavy Trucks:	85.21	-3.98	-24.83	-1.20	*22.87*	-18.443	-21.443

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:	50.5	49.0	42.6	41.1	49.5	49.8
Heavy Trucks:	55.2	53.8	44.7	46.0	54.4	54.5
Vehicle Noise:	59.9	58.2	54.4	50.4	58.9	59.3

Mitigated Noise Levels (with Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	38.8	36.9	35.2	29.1	37.7	38.4
Medium Trucks:	32.0	30.5	24.2	22.6	31.1	31.3
Heavy Trucks:	36.8	35.3	26.3	27.6	35.9	36.0
Vehicle Noise:	41.5	39.8	36.0	32.0	40.5	40.9

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO) - 6/2/2013

Scenario: Third Floor With Wall
Road Name: SR-60 Fwy
Lot No: Independent Living-North Façade
Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS	
Highway Data		**Site Conditions (Hard = 10, Soft = 15)**	
Average Daily Traffic (Adt):	147,400 vehicles	Autos:	15
Peak Hour Percentage:	10%	Medium Trucks (2 Axles):	15
Peak Hour Volume:	14,740 vehicles	Heavy Trucks (3+ Axles):	15
Vehicle Speed:	65 mph		
Near/Far Lane Distance:	120 feet		

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	77.5%	12.9%	9.6%	89.50%
Medium Trucks:	84.8%	4.9%	10.3%	4.51%
Heavy Trucks:	86.5%	2.7%	10.8%	5.99%

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	2,359.0 feet
Centerline Dist. to Observer:	2,359.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	23.0 feet
Pad Elevation:	1,573.5 feet
Road Elevation:	1,639.0 feet
Barrier Elevation:	1,573.5 feet
Road Grade:	0.0%

Noise Source Elevations (in feet)

Autos:	1,639.000		
Medium Trucks:	1,641.297		
Heavy Trucks:	1,647.006	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	2,382.146
Medium Trucks:	2,382.211
Heavy Trucks:	2,382.382

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	75.54	7.77	-25.27	-1.20	*23.02*	-18.451	-21.451
Medium Trucks:	81.71	-5.21	-25.27	-1.20	*23.04*	-18.452	-21.452
Heavy Trucks:	85.21	-3.98	-25.27	-1.20	*23.09*	-18.454	-21.454

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.8	54.9	53.2	47.1	55.7	56.3
Medium Trucks:	50.0	48.5	42.2	40.6	49.1	49.3
Heavy Trucks:	54.8	53.3	44.3	45.6	53.9	54.0
Vehicle Noise:	59.5	57.8	54.0	50.0	58.5	58.9

Mitigated Noise Levels (with Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	38.4	36.5	34.7	28.7	37.3	37.9
Medium Trucks:	31.6	30.1	23.7	22.2	30.6	30.9
Heavy Trucks:	36.3	34.9	25.8	27.1	35.5	35.6
Vehicle Noise:	41.0	39.3	35.5	31.5	40.0	40.4

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO) - 6/2/2013

Scenario: Third Floor With Wall
Road Name: Day St.
Lot No: Independent Living-East Façade

Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	23,700 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,370 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	48 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	481.0 feet
Centerline Dist. to Observer:	481.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	23.0 feet
Pad Elevation:	1,573.5 feet
Road Elevation:	1,572.2 feet
Barrier Elevation:	1,573.5 feet
Road Grade:	0.0%

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

Autos:	1,572.200		
Medium Trucks:	1,574.497		
Heavy Trucks:	1,580.206	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	481.015
Medium Trucks:	480.904
Heavy Trucks:	480.677

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	67.36	2.31	-14.85	-1.20	*-21.90*	0.000	0.000
Medium Trucks:	76.31	-14.93	-14.85	-1.20	*-22.01*	0.000	0.000
Heavy Trucks:	81.16	-18.89	-14.85	-1.20	*-22.28*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	53.6	51.7	50.0	43.9	52.5	53.1
Medium Trucks:	45.3	43.8	37.5	35.9	44.4	44.6
Heavy Trucks:	46.2	44.8	35.8	37.0	45.4	45.5
Vehicle Noise:	54.9	53.1	50.3	45.2	53.8	54.3

Mitigated Noise Levels (with Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	53.6	51.7	50.0	43.9	52.5	53.1
Medium Trucks:	45.3	43.8	37.5	35.9	44.4	44.6
Heavy Trucks:	46.2	44.8	35.8	37.0	45.4	45.5
Vehicle Noise:	54.9	53.1	50.3	45.2	53.8	54.3

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO) - 6/2/2013

Scenario: Third Floor With Wall
Road Name: Day St.
Lot No: Skilled Nursing-East Façade

Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	23,700 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,370 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	48 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	177.0 feet
Centerline Dist. to Observer:	177.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	23.0 feet
Pad Elevation:	1,572.5 feet
Road Elevation:	1,572.2 feet
Barrier Elevation:	1,572.5 feet
Road Grade:	0.0%

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

Autos:	1,572.200		
Medium Trucks:	1,574.497		
Heavy Trucks:	1,580.206	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	176.906
Medium Trucks:	176.619
Heavy Trucks:	176.031

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	67.36	2.31	-8.34	-1.20	*-21.01*	0.000	0.000
Medium Trucks:	76.31	-14.93	-8.32	-1.20	*-21.30*	0.000	0.000
Heavy Trucks:	81.16	-18.89	-8.30	-1.20	*-22.02*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.1	58.2	56.5	50.4	59.0	59.6
Medium Trucks:	51.9	50.4	44.0	42.4	50.9	51.1
Heavy Trucks:	52.8	51.3	42.3	43.6	51.9	52.0
Vehicle Noise:	61.4	59.6	56.9	51.8	60.3	60.8

Mitigated Noise Levels (with Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.1	58.2	56.5	50.4	59.0	59.6
Medium Trucks:	51.9	50.4	44.0	42.4	50.9	51.1
Heavy Trucks:	52.8	51.3	42.3	43.6	51.9	52.0
Vehicle Noise:	61.4	59.6	56.9	51.8	60.3	60.8

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO) - 6/2/2013

Scenario: Third Floor With Wall
Road Name: Gateway Dr.
Lot No: Skilled Nursing-South Façade

Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	12,300 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,230 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	48 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	77.0 feet
Centerline Dist. to Observer:	77.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	23.0 feet
Pad Elevation:	1,572.5 feet
Road Elevation:	1,572.2 feet
Barrier Elevation:	1,572.5 feet
Road Grade:	0.0%

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

Autos:	1,572.200		
Medium Trucks:	1,574.497		
Heavy Trucks:	1,580.206	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	76.785
Medium Trucks:	76.119
Heavy Trucks:	74.746

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	67.36	-0.54	-2.90	-1.20	*-19.13*	0.000	0.000
Medium Trucks:	76.31	-17.78	-2.84	-1.20	*-19.78*	0.000	0.000
Heavy Trucks:	81.16	-21.73	-2.72	-1.20	*-21.41*	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:	62.7	60.8	59.1	53.0	61.6	62.2
Medium Trucks:	54.5	53.0	46.6	45.1	53.5	53.8
Heavy Trucks:	55.5	54.1	45.0	46.3	54.6	54.8
Vehicle Noise:	64.0	62.2	59.5	54.4	62.9	63.4

Mitigated Noise Levels (with Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.7	60.8	59.1	53.0	61.6	62.2
Medium Trucks:	54.5	53.0	46.6	45.1	53.5	53.8
Heavy Trucks:	55.5	54.1	45.0	46.3	54.6	54.8
Vehicle Noise:	64.0	62.2	59.5	54.4	62.9	63.4

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO) - 6/2/2013

Scenario: Third Floor With Wall
Road Name: Gateway Dr.
Lot No: Assisted Living-South Façade

Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	12,300 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,230 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	48 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	72.0 feet
Centerline Dist. to Observer:	72.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	23.0 feet
Pad Elevation:	1,572.5 feet
Road Elevation:	1,567.3 feet
Barrier Elevation:	1,572.5 feet
Road Grade:	0.0%

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

Autos:	1,567.250		
Medium Trucks:	1,569.547		
Heavy Trucks:	1,575.256	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	73.526
Medium Trucks:	72.674
Heavy Trucks:	70.837

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	67.36	-0.54	-2.62	-1.20	*-17.46*	0.000	0.000
Medium Trucks:	76.31	-17.78	-2.54	-1.20	*-18.13*	0.000	0.000
Heavy Trucks:	81.16	-21.73	-2.37	-1.20	*-19.82*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.0	61.1	59.3	53.3	61.9	62.5
Medium Trucks:	54.8	53.3	46.9	45.4	53.8	54.1
Heavy Trucks:	55.9	54.4	45.4	46.6	55.0	55.1
Vehicle Noise:	64.3	62.5	59.7	54.7	63.2	63.7

Mitigated Noise Levels (with Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.0	61.1	59.3	53.3	61.9	62.5
Medium Trucks:	54.8	53.3	46.9	45.4	53.8	54.1
Heavy Trucks:	55.9	54.4	45.4	46.6	55.0	55.1
Vehicle Noise:	64.3	62.5	59.7	54.7	63.2	63.7

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO) - 6/2/2013

Scenario: Third Floor With Wall
Road Name: Gateway Dr.
Lot No: Hospital Phase 2-North Façade
Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	12,300 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,230 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	48 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	90.0 feet
Centerline Dist. to Observer:	90.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	23.0 feet
Pad Elevation:	1,556.0 feet
Road Elevation:	1,556.3 feet
Barrier Elevation:	1,556.0 feet
Road Grade:	0.0%

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

Autos:	1,556.300		
Medium Trucks:	1,558.597		
Heavy Trucks:	1,564.306	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	89.662
Medium Trucks:	89.108
Heavy Trucks:	87.977

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	67.36	-0.54	-3.91	-1.20	*-19.75*	0.000	0.000
Medium Trucks:	76.31	-17.78	-3.87	-1.20	*-20.31*	0.000	0.000
Heavy Trucks:	81.16	-21.73	-3.78	-1.20	*-21.71*	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:	53.5	52.0	45.6	44.1	52.5	52.7
Heavy Trucks:	54.4	53.0	44.0	45.2	53.6	53.7
Vehicle Noise:	63.0	61.2	58.4	53.4	61.9	62.4

Mitigated Noise Levels (with 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:	53.5	52.0	45.6	44.1	52.5	52.7
Heavy Trucks:	54.4	53.0	44.0	45.2	53.6	53.7
Vehicle Noise:	63.0	61.2	58.4	53.4	61.9	62.4

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO) - 6/2/2013

Scenario: Third Floor With Wall
Road Name: I-215 Fwy
Lot No: Hospital Phase 1-West Façade
Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	130,900 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	13,090 vehicles
Vehicle Speed:	65 mph
Near/Far Lane Distance:	120 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	1,260.0 feet
Centerline Dist. to Observer:	1,260.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	23.0 feet
Pad Elevation:	1,556.0 feet
Road Elevation:	1,539.0 feet
Barrier Elevation:	1,556.0 feet
Road Grade:	0.0%

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%	85.50%
Medium Trucks:	84.8%	4.9%	10.3%	6.31%
Heavy Trucks:	86.5%	2.7%	10.8%	8.19%

Noise Source Elevations (in feet)

Autos:	1,539.000		
Medium Trucks:	1,541.297		
Heavy Trucks:	1,547.006	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	1,259.206
Medium Trucks:	1,259.135
Heavy Trucks:	1,258.977

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	75.54	7.05	-21.12	-1.20	*-21.99*	0.000	0.000
Medium Trucks:	81.71	-4.26	-21.12	-1.20	*-22.04*	0.000	0.000
Heavy Trucks:	85.21	-3.13	-21.12	-1.20	*-22.14*	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:	60.3	58.4	56.6	50.6	59.2	59.8
Medium Trucks:	55.1	53.6	47.3	45.7	54.2	54.4
Heavy Trucks:	59.8	58.3	49.3	50.5	58.9	59.0
Vehicle Noise:	63.7	62.0	57.8	54.2	62.7	63.1

Mitigated Noise Levels (with Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.3	58.4	56.6	50.6	59.2	59.8
Medium Trucks:	55.1	53.6	47.3	45.7	54.2	54.4
Heavy Trucks:	59.8	58.3	49.3	50.5	58.9	59.0
Vehicle Noise:	63.7	62.0	57.8	54.2	62.7	63.1

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO) - 6/2/2013

Scenario: Third Floor With Wall
Road Name: Valley Springs Pkwy.
Lot No: Hospital Phase 1-West Façade
Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,200 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,120 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	48 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	95.0 feet
Centerline Dist. to Observer:	95.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	23.0 feet
Pad Elevation:	1,556.0 feet
Road Elevation:	1,548.6 feet
Barrier Elevation:	1,556.0 feet
Road Grade:	0.0%

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

Autos:	1,548.600		
Medium Trucks:	1,550.897		
Heavy Trucks:	1,556.606	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	96.815
Medium Trucks:	96.119
Heavy Trucks:	94.607

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	67.36	3.50	-4.41	-1.20	*-18.14*	0.000	0.000
Medium Trucks:	76.31	-13.74	-4.36	-1.20	*-18.66*	0.000	0.000
Heavy Trucks:	81.16	-17.69	-4.26	-1.20	*-19.96*	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:	65.3	63.4	61.6	55.5	64.2	64.8
Medium Trucks:	57.0	55.5	49.1	47.6	56.1	56.3
Heavy Trucks:	58.0	56.6	47.6	48.8	57.2	57.3
Vehicle Noise:	66.5	64.7	62.0	56.9	65.5	66.0

Mitigated Noise Levels (with Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.3	63.4	61.6	55.5	64.2	64.8
Medium Trucks:	57.0	55.5	49.1	47.6	56.1	56.3
Heavy Trucks:	58.0	56.6	47.6	48.8	57.2	57.3
Vehicle Noise:	66.5	64.7	62.0	56.9	65.5	66.0

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO) - 6/2/2013

Scenario: Third Floor With Wall
Road Name: I-215 Fwy
Lot No: Medical Office Bldg. 3-West Façade
Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	130,900 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	13,090 vehicles
Vehicle Speed:	65 mph
Near/Far Lane Distance:	120 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	1,118.0 feet
Centerline Dist. to Observer:	1,118.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	23.0 feet
Pad Elevation:	1,552.0 feet
Road Elevation:	1,536.0 feet
Barrier Elevation:	1,552.0 feet
Road Grade:	0.0%

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%	85.50%
Medium Trucks:	84.8%	4.9%	10.3%	6.31%
Heavy Trucks:	86.5%	2.7%	10.8%	8.19%

Noise Source Elevations (in feet)

Autos:	1,536.000		
Medium Trucks:	1,538.297		
Heavy Trucks:	1,544.006	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	1,117.070
Medium Trucks:	1,116.992
Heavy Trucks:	1,116.819

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	75.54	7.05	-20.34	-1.20	*-21.95*	0.000	0.000
Medium Trucks:	81.71	-4.26	-20.34	-1.20	*-22.00*	0.000	0.000
Heavy Trucks:	85.21	-3.13	-20.34	-1.20	*-22.11*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.1	59.2	57.4	51.3	60.0	60.6
Medium Trucks:	55.9	54.4	48.0	46.5	55.0	55.2
Heavy Trucks:	60.5	59.1	50.1	51.3	59.7	59.8
Vehicle Noise:	64.5	62.8	58.5	55.0	63.5	63.8

Mitigated Noise Levels (with Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.1	59.2	57.4	51.3	60.0	60.6
Medium Trucks:	55.9	54.4	48.0	46.5	55.0	55.2
Heavy Trucks:	60.5	59.1	50.1	51.3	59.7	59.8
Vehicle Noise:	64.5	62.8	58.5	55.0	63.5	63.8

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO) - 6/2/2013

Scenario: Third Floor With Wall
Road Name: Valley Springs Pkwy.
Lot No: Medical Office Bldg. 3-West Façade
Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,200 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,120 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	48 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	93.0 feet
Centerline Dist. to Observer:	93.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	23.0 feet
Pad Elevation:	1,552.0 feet
Road Elevation:	1,549.4 feet
Barrier Elevation:	1,552.0 feet
Road Grade:	0.0%

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

Autos:	1,549.400		
Medium Trucks:	1,551.697		
Heavy Trucks:	1,557.406	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	93.426
Medium Trucks:	92.823
Heavy Trucks:	91.556

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	67.36	3.50	-4.18	-1.20	*-19.15*	0.000	0.000
Medium Trucks:	76.31	-13.74	-4.13	-1.20	*-19.69*	0.000	0.000
Heavy Trucks:	81.16	-17.69	-4.04	-1.20	*-21.04*	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:	65.5	63.6	61.8	55.8	64.4	65.0
Medium Trucks:	57.2	55.7	49.4	47.8	56.3	56.5
Heavy Trucks:	58.2	56.8	47.8	49.0	57.4	57.5
Vehicle Noise:	66.7	65.0	62.2	57.1	65.7	66.2

Mitigated Noise Levels (with Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.5	63.6	61.8	55.8	64.4	65.0
Medium Trucks:	57.2	55.7	49.4	47.8	56.3	56.5
Heavy Trucks:	58.2	56.8	47.8	49.0	57.4	57.5
Vehicle Noise:	66.7	65.0	62.2	57.1	65.7	66.2

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO) - 6/2/2013

Scenario: Third Floor With Wall
Road Name: Eucalyptus Av.
Lot No: Medical Office Bldg. 3-South Façade
Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	32,100 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,210 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	48 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	255.0 feet
Centerline Dist. to Observer:	255.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	23.0 feet
Pad Elevation:	1,552.0 feet
Road Elevation:	1,551.3 feet
Barrier Elevation:	1,552.0 feet
Road Grade:	0.0%

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

Autos:	1,551.300		
Medium Trucks:	1,553.597		
Heavy Trucks:	1,559.306	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	254.972
Medium Trucks:	254.769
Heavy Trucks:	254.353

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	67.36	3.63	-10.72	-1.20	*-21.43*	0.000	0.000
Medium Trucks:	76.31	-13.61	-10.71	-1.20	*-21.63*	0.000	0.000
Heavy Trucks:	81.16	-17.57	-10.70	-1.20	*-22.13*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.1	57.2	55.4	49.3	58.0	58.6
Medium Trucks:	50.8	49.3	42.9	41.4	49.8	50.1
Heavy Trucks:	51.7	50.3	41.2	42.5	50.8	51.0
Vehicle Noise:	60.3	58.5	55.8	50.7	59.3	59.8

Mitigated Noise Levels (with Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.1	57.2	55.4	49.3	58.0	58.6
Medium Trucks:	50.8	49.3	42.9	41.4	49.8	50.1
Heavy Trucks:	51.7	50.3	41.2	42.5	50.8	51.0
Vehicle Noise:	60.3	58.5	55.8	50.7	59.3	59.8

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO) - 6/2/2013

Scenario: Third Floor With Wall
Road Name: Valley Springs Pkwy.
Lot No: Medical Office Bldg. 4-West Façade
Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,200 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,120 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	48 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	183.0 feet
Centerline Dist. to Observer:	183.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	23.0 feet
Pad Elevation:	1,552.0 feet
Road Elevation:	1,549.4 feet
Barrier Elevation:	1,552.0 feet
Road Grade:	0.0%

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

Autos:	1,549.400		
Medium Trucks:	1,551.697		
Heavy Trucks:	1,557.406	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	183.217
Medium Trucks:	182.910
Heavy Trucks:	182.271

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	67.36	3.50	-8.56	-1.20	*-20.78*	0.000	0.000
Medium Trucks:	76.31	-13.74	-8.55	-1.20	*-21.06*	0.000	0.000
Heavy Trucks:	81.16	-17.69	-8.53	-1.20	*-21.76*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.1	59.2	57.4	51.4	60.0	60.6
Medium Trucks:	52.8	51.3	45.0	43.4	51.9	52.1
Heavy Trucks:	53.7	52.3	43.3	44.5	52.9	53.0
Vehicle Noise:	62.3	60.6	57.8	52.7	61.3	61.8

Mitigated Noise Levels (with Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.1	59.2	57.4	51.4	60.0	60.6
Medium Trucks:	52.8	51.3	45.0	43.4	51.9	52.1
Heavy Trucks:	53.7	52.3	43.3	44.5	52.9	53.0
Vehicle Noise:	62.3	60.6	57.8	52.7	61.3	61.8

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO) - 6/2/2013

Scenario: Third Floor With Wall
Road Name: Eucalyptus Av.
Lot No: Medical Office Bldg. 4-South Façade
Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	32,100 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,210 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	48 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	214.0 feet
Centerline Dist. to Observer:	214.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	23.0 feet
Pad Elevation:	1,552.0 feet
Road Elevation:	1,553.2 feet
Barrier Elevation:	1,552.0 feet
Road Grade:	0.0%

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

Autos:	1,553.200		
Medium Trucks:	1,555.497		
Heavy Trucks:	1,561.206	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	213.764
Medium Trucks:	213.542
Heavy Trucks:	213.097

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	67.36	3.63	-9.57	-1.20	*-21.42*	0.000	0.000
Medium Trucks:	76.31	-13.61	-9.56	-1.20	*-21.66*	0.000	0.000
Heavy Trucks:	81.16	-17.57	-9.55	-1.20	*-22.26*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.2	58.3	56.6	50.5	59.1	59.7
Medium Trucks:	51.9	50.4	44.1	42.5	51.0	51.2
Heavy Trucks:	52.8	51.4	42.4	43.6	52.0	52.1
Vehicle Noise:	61.5	59.7	56.9	51.9	60.4	60.9

Mitigated Noise Levels (with Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.2	58.3	56.6	50.5	59.1	59.7
Medium Trucks:	51.9	50.4	44.1	42.5	51.0	51.2
Heavy Trucks:	52.8	51.4	42.4	43.6	52.0	52.1
Vehicle Noise:	61.5	59.7	56.9	51.9	60.4	60.9

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO) - 6/2/2013

Scenario: Third Floor With Wall
Road Name: Day St.
Lot No: Medical Office Bldg. 5-East Façade
Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	23,700 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,370 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	48 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	364.0 feet
Centerline Dist. to Observer:	364.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	23.0 feet
Pad Elevation:	1,561.0 feet
Road Elevation:	1,562.5 feet
Barrier Elevation:	1,561.0 feet
Road Grade:	0.0%

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

Autos:	1,562.500		
Medium Trucks:	1,564.797		
Heavy Trucks:	1,570.506	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	363.844
Medium Trucks:	363.715
Heavy Trucks:	363.459

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	67.36	2.31	-13.03	-1.20	*-21.89*	0.000	0.000
Medium Trucks:	76.31	-14.93	-13.03	-1.20	*-22.03*	0.000	0.000
Heavy Trucks:	81.16	-18.89	-13.03	-1.20	*-22.38*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	55.4	53.5	51.8	45.7	54.3	54.9
Medium Trucks:	47.2	45.6	39.3	37.7	46.2	46.4
Heavy Trucks:	48.0	46.6	37.6	38.8	47.2	47.3
Vehicle Noise:	56.7	54.9	52.2	47.1	55.6	56.1

Mitigated Noise Levels (with Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	55.4	53.5	51.8	45.7	54.3	54.9
Medium Trucks:	47.2	45.6	39.3	37.7	46.2	46.4
Heavy Trucks:	48.0	46.6	37.6	38.8	47.2	47.3
Vehicle Noise:	56.7	54.9	52.2	47.1	55.6	56.1

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO) - 6/2/2013

Scenario: Third Floor With Wall
Road Name: Eucalyptus Av.
Lot No: Medical Office Bldg. 5-South Façade
Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	32,100 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,210 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	48 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	529.0 feet
Centerline Dist. to Observer:	529.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	23.0 feet
Pad Elevation:	1,561.0 feet
Road Elevation:	1,550.0 feet
Barrier Elevation:	1,561.0 feet
Road Grade:	0.0%

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

Autos:	1,550.000		
Medium Trucks:	1,552.297		
Heavy Trucks:	1,558.006	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	529.548
Medium Trucks:	529.405
Heavy Trucks:	529.094

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	67.36	3.63	-15.48	-1.20	*-21.55*	0.000	0.000
Medium Trucks:	76.31	-13.61	-15.48	-1.20	*-21.64*	0.000	0.000
Heavy Trucks:	81.16	-17.57	-15.47	-1.20	*-21.89*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.3	52.4	50.6	44.6	53.2	53.8
Medium Trucks:	46.0	44.5	38.2	36.6	45.1	45.3
Heavy Trucks:	46.9	45.5	36.5	37.7	46.1	46.2
Vehicle Noise:	55.5	53.8	51.0	45.9	54.5	55.0

Mitigated Noise Levels (with Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.3	52.4	50.6	44.6	53.2	53.8
Medium Trucks:	46.0	44.5	38.2	36.6	45.1	45.3
Heavy Trucks:	46.9	45.5	36.5	37.7	46.1	46.2
Vehicle Noise:	55.5	53.8	51.0	45.9	54.5	55.0

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO) - 6/2/2013

Scenario: Third Floor With Wall
Road Name: Gateway Dr.
Lot No: Medical Office Bldg. 1-North Façade
Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	12,300 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,230 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	48 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	386.0 feet
Centerline Dist. to Observer:	386.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	23.0 feet
Pad Elevation:	1,560.5 feet
Road Elevation:	1,565.0 feet
Barrier Elevation:	1,560.5 feet
Road Grade:	0.0%

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

Autos:	1,565.000		
Medium Trucks:	1,567.297		
Heavy Trucks:	1,573.006	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	385.697
Medium Trucks:	385.594
Heavy Trucks:	385.396

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	67.36	-0.54	-13.41	-1.20	*-22.10*	0.000	0.000
Medium Trucks:	76.31	-17.78	-13.41	-1.20	*-22.23*	0.000	0.000
Heavy Trucks:	81.16	-21.73	-13.41	-1.20	*-22.56*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	52.2	50.3	48.5	42.5	51.1	51.7
Medium Trucks:	43.9	42.4	36.1	34.5	43.0	43.2
Heavy Trucks:	44.8	43.4	34.4	35.6	44.0	44.1
Vehicle Noise:	53.4	51.7	48.9	43.8	52.4	52.9

Mitigated Noise Levels (with Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	52.2	50.3	48.5	42.5	51.1	51.7
Medium Trucks:	43.9	42.4	36.1	34.5	43.0	43.2
Heavy Trucks:	44.8	43.4	34.4	35.6	44.0	44.1
Vehicle Noise:	53.4	51.7	48.9	43.8	52.4	52.9

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO) - 6/2/2013

Scenario: Third Floor With Wall
Road Name: Gateway Dr.
Lot No: Medical Office Bldg. 2-North Façade
Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	12,300 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,230 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	48 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	388.0 feet
Centerline Dist. to Observer:	388.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	23.0 feet
Pad Elevation:	1,566.0 feet
Road Elevation:	1,567.0 feet
Barrier Elevation:	1,567.0 feet
Road Grade:	0.0%

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

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

Noise Source Elevations (in feet)

Autos:	1,567.000		
Medium Trucks:	1,569.297		
Heavy Trucks:	1,575.006	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	387.881
Medium Trucks:	387.758
Heavy Trucks:	387.510

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	67.36	-0.54	-13.45	-1.20	*-20.92*	0.000	0.000
Medium Trucks:	76.31	-17.78	-13.45	-1.20	*-21.04*	0.000	0.000
Heavy Trucks:	81.16	-21.73	-13.44	-1.20	*-21.36*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	52.2	50.3	48.5	42.5	51.1	51.7
Medium Trucks:	43.9	42.4	36.0	34.5	42.9	43.2
Heavy Trucks:	44.8	43.4	34.3	35.6	43.9	44.1
Vehicle Noise:	53.4	51.6	48.9	43.8	52.4	52.9

Mitigated Noise Levels (with Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	52.2	50.3	48.5	42.5	51.1	51.7
Medium Trucks:	43.9	42.4	36.0	34.5	42.9	43.2
Heavy Trucks:	44.8	43.4	34.3	35.6	43.9	44.1
Vehicle Noise:	53.4	51.6	48.9	43.8	52.4	52.9

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APPENDIX 10.1:

STATIONARY-SOURCE NOISE CALCULATIONS

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STATIONARY SOURCE NOISE PREDICTION MODEL

Source: Parking Structure Activity
Observer Location: R1

Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	177.0 feet	***Barrier Height:***	**8.0 feet**
Noise Distance to Barrier:	90.0 feet	*Barrier Type (0-Wall, 1-Berm):*	0.0
Barrier Distance to Observer:	87.0 feet		
Noise Height:	5.0 feet		
Observer Height (Above Pad):	5.0 feet	*Barrier Breaks Line of Sight:*	Yes
Observer Elevation:	0.0 feet	*Wall Located at Noise Source Elevation:*	No
Noise Source Elevation:	0.0 feet		

Drop Off Coefficient: 15.0 (20 = 6 dBA per doubling of distance, 15 = 4.5 dBA per doubling of distance)

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	20.0	65.9	62.5	65.6	67.7	74.3	81.7
Distance Attenuation	177.0	-14.2	-14.2	-14.2	-14.2	-14.2	-14.2
Shielding (Barrier Attenuation)	177.0	-6.0	-6.0	-6.0	-6.0	-6.0	-6.0
Raw (Distance + Barrier)		45.7	42.3	45.4	47.5	54.1	61.5
60 Minute Hourly Adjustment		**45.7**	**42.3**	**45.4**	**47.5**	**54.1**	**61.5**

STATIONARY SOURCE NOISE PREDICTION MODEL

Source: Parking Lot Vehicle Movement
Observer Location: R1

Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	275.0 feet	***Barrier Height:***	**52.0 feet**
Noise Distance to Barrier:	30.0 feet	*Barrier Type (0-Wall, 1-Berm):*	0.0
Barrier Distance to Observer:	245.0 feet		
Noise Height:	5.0 feet		
Observer Height (Above Pad):	5.0 feet	*Barrier Breaks Line of Sight:*	Yes
Observer Elevation:	0.0 feet	*Wall Located at Noise Source Elevation:*	No
Noise Source Elevation:	0.0 feet		

Drop Off Coefficient: 15.0 (20 = 6 dBA per doubling of distance, 15 = 4.5 dBA per doubling of distance)

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	20.0	62.9	54.5	57.6	64.2	73.2	81.8
Distance Attenuation	275.0	-17.1	-17.1	-17.1	-17.1	-17.1	-17.1
Shielding (Barrier Attenuation)	275.0	-18.8	-18.8	-18.8	-18.8	-18.8	-18.8
Raw (Distance + Barrier)		27.0	18.6	21.7	28.3	37.3	45.9
60 Minute Hourly Adjustment		**27.0**	**18.6**	**21.7**	**28.3**	**37.3**	**45.9**

STATIONARY SOURCE NOISE PREDICTION MODEL

Source: Roof-Top Air Conditioning Unit
Observer Location: R1

Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	113.0 feet	***Barrier Height:***	**52.0 feet**
Noise Distance to Barrier:	25.0 feet	*Barrier Type (0-Wall, 1-Berm):*	0.0
Barrier Distance to Observer:	88.0 feet		
Noise Height:	5.0 feet		
Observer Height (Above Pad):	5.0 feet	*Barrier Breaks Line of Sight:*	Yes
Observer Elevation:	0.0 feet	*Wall Located at Noise Source Elevation:*	No
Noise Source Elevation:	52.0 feet		

Drop Off Coefficient: 20.0 (20 = 6 dBA per doubling of distance, 15 = 4.5 dBA per doubling of distance)

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	5.0	81.9	74.4	53.7	51.5	50.1	78.2
Distance Attenuation	113.0	-27.1	-27.1	-27.1	-27.1	-27.1	-27.1
Shielding (Barrier Attenuation)	113.0	-9.8	-9.8	-9.8	-9.8	-9.8	-9.8
Raw (Distance + Barrier)		45.0	37.5	16.8	14.6	13.2	41.3
39 Minute Hourly Adjustment		**43.1**	**35.6**	**14.9**	**12.7**	**11.3**	**39.4**

STATIONARY SOURCE NOISE PREDICTION MODEL

Source: Parking Structure Activity
Observer Location: R2

Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	66.0 feet	***Barrier Height:***	**8.0 feet**
Noise Distance to Barrier:	56.0 feet	*Barrier Type (0-Wall, 1-Berm):*	0.0
Barrier Distance to Observer:	10.0 feet		
Noise Height:	5.0 feet		
Observer Height (Above Pad):	5.0 feet	*Barrier Breaks Line of Sight:*	Yes
Observer Elevation:	58.0 feet	*Wall Located at Noise Source Elevation:*	No
Noise Source Elevation:	53.0 feet		

Drop Off Coefficient: 15.0 (20 = 6 dBA per doubling of distance, 15 = 4.5 dBA per doubling of distance)

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	20.0	65.9	62.5	65.6	67.7	74.3	81.7
Distance Attenuation	66.0	-7.8	-7.8	-7.8	-7.8	-7.8	-7.8
Shielding (Barrier Attenuation)	66.0	-9.7	-9.7	-9.7	-9.7	-9.7	-9.7
Raw (Distance + Barrier)		48.4	45.0	48.1	50.2	56.8	64.2
60 Minute Hourly Adjustment		**48.4**	**45.0**	**48.1**	**50.2**	**56.8**	**64.2**

STATIONARY SOURCE NOISE PREDICTION MODEL

Source: Parking Lot Vehicle Movement
Observer Location: R2

Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	304.0 feet	***Barrier Height:***	**40.0 feet**
Noise Distance to Barrier:	50.0 feet	*Barrier Type (0-Wall, 1-Berm):*	0.0
Barrier Distance to Observer:	254.0 feet		
Noise Height:	5.0 feet		
Observer Height (Above Pad):	5.0 feet	*Barrier Breaks Line of Sight:*	Yes
Observer Elevation:	0.0 feet	*Wall Located at Noise Source Elevation:*	No
Noise Source Elevation:	0.0 feet		

Drop Off Coefficient: 15.0 (20 = 6 dBA per doubling of distance, 15 = 4.5 dBA per doubling of distance)

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	20.0	62.9	54.5	57.6	64.2	73.2	81.8
Distance Attenuation	304.0	-17.7	-17.7	-17.7	-17.7	-17.7	-17.7
Shielding (Barrier Attenuation)	304.0	-17.5	-17.5	-17.5	-17.5	-17.5	-17.5
Raw (Distance + Barrier)		27.7	19.3	22.4	29.0	38.0	46.6
60 Minute Hourly Adjustment		**27.7**	**19.3**	**22.4**	**29.0**	**38.0**	**46.6**

STATIONARY SOURCE NOISE PREDICTION MODEL

Source: Roof-Top Air Conditioning Unit
Observer Location: R2

Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	396.0 feet	***Barrier Height:***	**52.0 feet**
Noise Distance to Barrier:	35.0 feet	*Barrier Type (0-Wall, 1-Berm):*	0.0
Barrier Distance to Observer:	361.0 feet		
Noise Height:	5.0 feet		
Observer Height (Above Pad):	5.0 feet	*Barrier Breaks Line of Sight:*	Yes
Observer Elevation:	0.0 feet	*Wall Located at Noise Source Elevation:*	No
Noise Source Elevation:	52.0 feet		

Drop Off Coefficient: 20.0 (20 = 6 dBA per doubling of distance, 15 = 4.5 dBA per doubling of distance)

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	5.0	81.9	74.4	53.7	51.5	50.1	78.2
Distance Attenuation	396.0	-38.0	-38.0	-38.0	-38.0	-38.0	-38.0
Shielding (Barrier Attenuation)	396.0	-4.9	-4.9	-4.9	-4.9	-4.9	-4.9
Raw (Distance + Barrier)		39.0	31.5	10.8	8.6	7.2	35.3
39 Minute Hourly Adjustment		**37.1**	**29.6**	**8.9**	**6.7**	**5.3**	**33.4**

STATIONARY SOURCE NOISE PREDICTION MODEL

Source: Parking Structure Activity
Observer Location: R3

Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	83.0 feet	***Barrier Height:***	**8.0 feet**
Noise Distance to Barrier:	73.0 feet	*Barrier Type (0-Wall, 1-Berm):*	0.0
Barrier Distance to Observer:	10.0 feet		
Noise Height:	5.0 feet		
Observer Height (Above Pad):	5.0 feet	*Barrier Breaks Line of Sight:*	Yes
Observer Elevation:	55.0 feet	*Wall Located at Noise Source Elevation:*	No
Noise Source Elevation:	52.0 feet		

Drop Off Coefficient: 15.0 (20 = 6 dBA per doubling of distance, 15 = 4.5 dBA per doubling of distance)

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	20.0	65.9	62.5	65.6	67.7	74.3	81.7
Distance Attenuation	83.0	-9.3	-9.3	-9.3	-9.3	-9.3	-9.3
Shielding (Barrier Attenuation)	83.0	-9.1	-9.1	-9.1	-9.1	-9.1	-9.1
Raw (Distance + Barrier)		47.5	44.1	47.2	49.3	55.9	63.3
60 Minute Hourly Adjustment		**47.5**	**44.1**	**47.2**	**49.3**	**55.9**	**63.3**

STATIONARY SOURCE NOISE PREDICTION MODEL

Source: Parking Lot Vehicle Movement
Observer Location: R3

Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	96.0 feet	***Barrier Height:***	**8.0 feet**
Noise Distance to Barrier:	86.0 feet	*Barrier Type (0-Wall, 1-Berm):*	0.0
Barrier Distance to Observer:	10.0 feet		
Noise Height:	5.0 feet		
Observer Height (Above Pad):	5.0 feet	*Barrier Breaks Line of Sight:*	Yes
Observer Elevation:	55.0 feet	*Wall Located at Noise Source Elevation:*	No
Noise Source Elevation:	51.0 feet		

Drop Off Coefficient: 15.0 (20 = 6 dBA per doubling of distance, 15 = 4.5 dBA per doubling of distance)

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	20.0	62.9	54.5	57.6	64.2	73.2	81.8
Distance Attenuation	96.0	-10.2	-10.2	-10.2	-10.2	-10.2	-10.2
Shielding (Barrier Attenuation)	96.0	-9.1	-9.1	-9.1	-9.1	-9.1	-9.1
Raw (Distance + Barrier)		43.6	35.2	38.3	44.9	53.9	62.5
60 Minute Hourly Adjustment		**43.6**	**35.2**	**38.3**	**44.9**	**53.9**	**62.5**

STATIONARY SOURCE NOISE PREDICTION MODEL

Source: Roof-Top Air Conditioning Unit
Observer Location: R3

Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	200.0 feet	***Barrier Height:***	**52.0 feet**
Noise Distance to Barrier:	35.0 feet	*Barrier Type (0-Wall, 1-Berm):*	0.0
Barrier Distance to Observer:	165.0 feet		
Noise Height:	5.0 feet		
Observer Height (Above Pad):	5.0 feet	*Barrier Breaks Line of Sight:*	Yes
Observer Elevation:	0.0 feet	*Wall Located at Noise Source Elevation:*	No
Noise Source Elevation:	52.0 feet		

Drop Off Coefficient: 20.0 (20 = 6 dBA per doubling of distance, 15 = 4.5 dBA per doubling of distance)

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	5.0	81.9	74.4	53.7	51.5	50.1	78.2
Distance Attenuation	200.0	-32.0	-32.0	-32.0	-32.0	-32.0	-32.0
Shielding (Barrier Attenuation)	200.0	-7.2	-7.2	-7.2	-7.2	-7.2	-7.2
Raw (Distance + Barrier)		42.7	35.2	14.5	12.3	10.9	39.0
39 Minute Hourly Adjustment		**40.8**	**33.3**	**12.6**	**10.4**	**9.0**	**37.1**

STATIONARY SOURCE NOISE PREDICTION MODEL

Source: Parking Structure Activity
Observer Location: R4

Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	374.0 feet	***Barrier Height:***	**8.0 feet**
Noise Distance to Barrier:	124.0 feet	*Barrier Type (0-Wall, 1-Berm):*	0.0
Barrier Distance to Observer:	250.0 feet		
Noise Height:	5.0 feet		
Observer Height (Above Pad):	5.0 feet	*Barrier Breaks Line of Sight:*	Yes
Observer Elevation:	0.0 feet	*Wall Located at Noise Source Elevation:*	No
Noise Source Elevation:	0.0 feet		

Drop Off Coefficient: 15.0 (20 = 6 dBA per doubling of distance, 15 = 4.5 dBA per doubling of distance)

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	20.0	65.9	62.5	65.6	67.7	74.3	81.7
Distance Attenuation	374.0	-19.1	-19.1	-19.1	-19.1	-19.1	-19.1
Shielding (Barrier Attenuation)	374.0	-5.5	-5.5	-5.5	-5.5	-5.5	-5.5
Raw (Distance + Barrier)		41.3	37.9	41.0	43.1	49.7	57.1
60 Minute Hourly Adjustment		**41.3**	**37.9**	**41.0**	**43.1**	**49.7**	**57.1**

STATIONARY SOURCE NOISE PREDICTION MODEL

Source: Parking Lot Vehicle Movement
Observer Location: R4

Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	251.0 feet	***Barrier Height:***	**8.0 feet**
Noise Distance to Barrier:	67.0 feet	*Barrier Type (0-Wall, 1-Berm):*	0.0
Barrier Distance to Observer:	184.0 feet		
Noise Height:	5.0 feet		
Observer Height (Above Pad):	5.0 feet	*Barrier Breaks Line of Sight:*	Yes
Observer Elevation:	0.0 feet	*Wall Located at Noise Source Elevation:*	No
Noise Source Elevation:	0.0 feet		

Drop Off Coefficient: 15.0 (20 = 6 dBA per doubling of distance, 15 = 4.5 dBA per doubling of distance)

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	20.0	62.9	54.5	57.6	64.2	73.2	81.8
Distance Attenuation	251.0	-16.5	-16.5	-16.5	-16.5	-16.5	-16.5
Shielding (Barrier Attenuation)	251.0	-5.9	-5.9	-5.9	-5.9	-5.9	-5.9
Raw (Distance + Barrier)		40.5	32.1	35.2	41.8	50.8	59.4
60 Minute Hourly Adjustment		**40.5**	**32.1**	**35.2**	**41.8**	**50.8**	**59.4**

STATIONARY SOURCE NOISE PREDICTION MODEL

Source: Roof-Top Air Conditioning Unit
Observer Location: R4

Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	94.0 feet	***Barrier Height:***	**52.0 feet**
Noise Distance to Barrier:	20.0 feet	*Barrier Type (0-Wall, 1-Berm):*	0.0
Barrier Distance to Observer:	74.0 feet		
Noise Height:	5.0 feet		
Observer Height (Above Pad):	5.0 feet	*Barrier Breaks Line of Sight:*	Yes
Observer Elevation:	0.0 feet	*Wall Located at Noise Source Elevation:*	No
Noise Source Elevation:	52.0 feet		

Drop Off Coefficient: 20.0 (20 = 6 dBA per doubling of distance, 15 = 4.5 dBA per doubling of distance)

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	5.0	81.9	74.4	53.7	51.5	50.1	78.2
Distance Attenuation	94.0	-25.5	-25.5	-25.5	-25.5	-25.5	-25.5
Shielding (Barrier Attenuation)	94.0	-9.8	-9.8	-9.8	-9.8	-9.8	-9.8
Raw (Distance + Barrier)		46.6	39.1	18.4	16.2	14.8	42.9
39 Minute Hourly Adjustment		**44.7**	**37.2**	**16.5**	**14.3**	**12.9**	**41.0**

STATIONARY SOURCE NOISE PREDICTION MODEL

Source: Parking Structure Activity
Observer Location: R5

Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	273.0 feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	273.0 feet	*Barrier Type (0-Wall, 1-Berm):*	0.0
Barrier Distance to Observer:	0.0 feet		
Noise Height:	5.0 feet		
Observer Height (Above Pad):	5.0 feet	*Barrier Breaks Line of Sight:*	No
Observer Elevation:	0.0 feet	*Wall Located at Noise Source Elevation:*	No
Noise Source Elevation:	0.0 feet		

Drop Off Coefficient: 15.0 (20 = 6 dBA per doubling of distance, 15 = 4.5 dBA per doubling of distance)

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	20.0	65.9	62.5	65.6	67.7	74.3	81.7
Distance Attenuation	273.0	-17.0	-17.0	-17.0	-17.0	-17.0	-17.0
Shielding (Barrier Attenuation)	273.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		48.9	45.5	48.6	50.7	57.3	64.7
60 Minute Hourly Adjustment		**48.9**	**45.5**	**48.6**	**50.7**	**57.3**	**64.7**

STATIONARY SOURCE NOISE PREDICTION MODEL

Source: Parking Lot Vehicle Movement
Observer Location: R5

Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	341.0 feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	341.0 feet	*Barrier Type (0-Wall, 1-Berm):*	0.0
Barrier Distance to Observer:	0.0 feet		
Noise Height:	5.0 feet		
Observer Height (Above Pad):	5.0 feet	*Barrier Breaks Line of Sight:*	No
Observer Elevation:	0.0 feet	*Wall Located at Noise Source Elevation:*	No
Noise Source Elevation:	0.0 feet		

Drop Off Coefficient: 15.0 (20 = 6 dBA per doubling of distance, 15 = 4.5 dBA per doubling of distance)

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	20.0	62.9	54.5	57.6	64.2	73.2	81.8
Distance Attenuation	341.0	-18.5	-18.5	-18.5	-18.5	-18.5	-18.5
Shielding (Barrier Attenuation)	341.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		44.4	36.0	39.1	45.7	54.7	63.3
60 Minute Hourly Adjustment		**44.4**	**36.0**	**39.1**	**45.7**	**54.7**	**63.3**

STATIONARY SOURCE NOISE PREDICTION MODEL

Source: Roof-Top Air Conditioning Unit
Observer Location: R5

Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	427.0 feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	427.0 feet	*Barrier Type (0-Wall, 1-Berm):*	0.0
Barrier Distance to Observer:	0.0 feet		
Noise Height:	5.0 feet		
Observer Height (Above Pad):	5.0 feet	*Barrier Breaks Line of Sight:*	Yes
Observer Elevation:	0.0 feet	*Wall Located at Noise Source Elevation:*	No
Noise Source Elevation:	52.0 feet		

Drop Off Coefficient: 20.0 (20 = 6 dBA per doubling of distance, 15 = 4.5 dBA per doubling of distance)

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	5.0	81.9	74.4	53.7	51.5	50.1	78.2
Distance Attenuation	427.0	-38.6	-38.6	-38.6	-38.6	-38.6	-38.6
Shielding (Barrier Attenuation)	427.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		43.3	35.8	15.1	12.9	11.5	39.6
39 Minute Hourly Adjustment		**41.4**	**33.9**	**13.2**	**11.0**	**9.6**	**37.7**

STATIONARY SOURCE NOISE PREDICTION MODEL

Source: Parking Structure Activity
Observer Location: R6

Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	1,269.0 feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	1,269.0 feet	*Barrier Type (0-Wall, 1-Berm):*	0.0
Barrier Distance to Observer:	0.0 feet		
Noise Height:	5.0 feet		
Observer Height (Above Pad):	5.0 feet	*Barrier Breaks Line of Sight:*	No
Observer Elevation:	0.0 feet	*Wall Located at Noise Source Elevation:*	No
Noise Source Elevation:	0.0 feet		

Drop Off Coefficient: 15.0 (20 = 6 dBA per doubling of distance, 15 = 4.5 dBA per doubling of distance)

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	20.0	65.9	62.5	65.6	67.7	74.3	81.7
Distance Attenuation	1,269.0	-27.0	-27.0	-27.0	-27.0	-27.0	-27.0
Shielding (Barrier Attenuation)	1,269.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		38.9	35.5	38.6	40.7	47.3	54.7
60 Minute Hourly Adjustment		**38.9**	**35.5**	**38.6**	**40.7**	**47.3**	**54.7**

STATIONARY SOURCE NOISE PREDICTION MODEL

Source: Parking Lot Vehicle Movement
Observer Location: R6

Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	481.0 feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	481.0 feet	*Barrier Type (0-Wall, 1-Berm):*	0.0
Barrier Distance to Observer:	0.0 feet		
Noise Height:	5.0 feet		
Observer Height (Above Pad):	5.0 feet	*Barrier Breaks Line of Sight:*	No
Observer Elevation:	0.0 feet	*Wall Located at Noise Source Elevation:*	No
Noise Source Elevation:	0.0 feet		

Drop Off Coefficient: 15.0 (20 = 6 dBA per doubling of distance, 15 = 4.5 dBA per doubling of distance)

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	20.0	62.9	54.5	57.6	64.2	73.2	81.8
Distance Attenuation	481.0	-20.7	-20.7	-20.7	-20.7	-20.7	-20.7
Shielding (Barrier Attenuation)	481.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		42.2	33.8	36.9	43.5	52.5	61.1
60 Minute Hourly Adjustment		**42.2**	**33.8**	**36.9**	**43.5**	**52.5**	**61.1**

STATIONARY SOURCE NOISE PREDICTION MODEL

Source: Roof-Top Air Conditioning Unit
Observer Location: R6

Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	666.0 feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	666.0 feet	*Barrier Type (0-Wall, 1-Berm):*	0.0
Barrier Distance to Observer:	0.0 feet		
Noise Height:	5.0 feet		
Observer Height (Above Pad):	5.0 feet	*Barrier Breaks Line of Sight:*	Yes
Observer Elevation:	0.0 feet	*Wall Located at Noise Source Elevation:*	No
Noise Source Elevation:	34.0 feet		

Drop Off Coefficient: 20.0 (20 = 6 dBA per doubling of distance, 15 = 4.5 dBA per doubling of distance)

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	5.0	81.9	74.4	53.7	51.5	50.1	78.2
Distance Attenuation	666.0	-42.5	-42.5	-42.5	-42.5	-42.5	-42.5
Shielding (Barrier Attenuation)	666.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		39.4	31.9	11.2	9.0	7.6	35.7
39 Minute Hourly Adjustment		**37.5**	**30.0**	**9.3**	**7.1**	**5.7**	**33.8**

STATIONARY SOURCE NOISE PREDICTION MODEL

Source: Parking Structure Activity
Observer Location: R7

Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	1,584.0	feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	1,584.0	feet	*Barrier Type (0-Wall, 1-Berm):*	0.0
Barrier Distance to Observer:	0.0	feet		
Noise Height:	5.0	feet		
Observer Height (Above Pad):	5.0	feet	*Barrier Breaks Line of Sight:*	No
Observer Elevation:	0.0	feet	*Wall Located at Noise Source Elevation:*	No
Noise Source Elevation:	0.0	feet		

Drop Off Coefficient: 15.0 (20 = 6 dBA per doubling of distance, 15 = 4.5 dBA per doubling of distance)

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	20.0	65.9	62.5	65.6	67.7	74.3	81.7
Distance Attenuation	1,584.0	-28.5	-28.5	-28.5	-28.5	-28.5	-28.5
Shielding (Barrier Attenuation)	1,584.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		37.4	34.0	37.1	39.2	45.8	53.2
60 Minute Hourly Adjustment		**37.4**	**34.0**	**37.1**	**39.2**	**45.8**	**53.2**

STATIONARY SOURCE NOISE PREDICTION MODEL

Source: Parking Lot Vehicle Movement
Observer Location: R7

Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	661.0 feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	661.0 feet	*Barrier Type (0-Wall, 1-Berm):*	0.0
Barrier Distance to Observer:	0.0 feet		
Noise Height:	5.0 feet		
Observer Height (Above Pad):	5.0 feet	*Barrier Breaks Line of Sight:*	No
Observer Elevation:	0.0 feet	*Wall Located at Noise Source Elevation:*	No
Noise Source Elevation:	0.0 feet		

Drop Off Coefficient: 15.0 (20 = 6 dBA per doubling of distance, 15 = 4.5 dBA per doubling of distance)

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	20.0	62.9	54.5	57.6	64.2	73.2	81.8
Distance Attenuation	661.0	-22.8	-22.8	-22.8	-22.8	-22.8	-22.8
Shielding (Barrier Attenuation)	661.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		40.1	31.7	34.8	41.4	50.4	59.0
60 Minute Hourly Adjustment		**40.1**	**31.7**	**34.8**	**41.4**	**50.4**	**59.0**

STATIONARY SOURCE NOISE PREDICTION MODEL

Source: Roof-Top Air Conditioning Unit
Observer Location: R7

Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	916.0 feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	916.0 feet	*Barrier Type (0-Wall, 1-Berm):*	0.0
Barrier Distance to Observer:	0.0 feet		
Noise Height:	5.0 feet		
Observer Height (Above Pad):	5.0 feet	*Barrier Breaks Line of Sight:*	Yes
Observer Elevation:	0.0 feet	*Wall Located at Noise Source Elevation:*	No
Noise Source Elevation:	34.0 feet		

Drop Off Coefficient: 20.0 (20 = 6 dBA per doubling of distance, 15 = 4.5 dBA per doubling of distance)

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	5.0	81.9	74.4	53.7	51.5	50.1	78.2
Distance Attenuation	916.0	-45.3	-45.3	-45.3	-45.3	-45.3	-45.3
Shielding (Barrier Attenuation)	916.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		36.6	29.1	8.4	6.2	4.8	32.9
39 Minute Hourly Adjustment		**34.7**	**27.2**	**6.5**	**4.3**	**2.9**	**31.0**

STATIONARY SOURCE NOISE PREDICTION MODEL

Source: Emergency Generator
Observer Location: R1

Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	230.0 feet	***Barrier Height:***	**52.0 feet**
Noise Distance to Barrier:	10.0 feet	*Barrier Type (0-Wall, 1-Berm):*	0.0
Barrier Distance to Observer:	220.0 feet		
Noise Height:	9.5 feet		
Observer Height (Above Pad):	5.0 feet	*Barrier Breaks Line of Sight:*	Yes
Observer Elevation:	0.0 feet	*Wall Located at Noise Source Elevation:*	No
Noise Source Elevation:	0.0 feet		

Drop Off Coefficient: 20.0 (20 = 6 dBA per doubling of distance, 15 = 4.5 dBA per doubling of distance)

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	50.0	72.0	72.0	0.0	0.0	0.0	0.0
Distance Attenuation	230.0	-13.3	-13.3	-13.3	-13.3	-13.3	-13.3
Shielding (Barrier Attenuation)	230.0	-19.0	-19.0	-19.0	-19.0	-19.0	-19.0
Raw (Distance + Barrier)		39.7	39.7	-32.3	-32.3	-32.3	-32.3
30 Minute Hourly Adjustment		**36.7**	**36.7**	**-35.3**	**-35.3**	**-35.3**	**-35.3**

STATIONARY SOURCE NOISE PREDICTION MODEL

Source: Emergency Generator
Observer Location: R2

Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	463.0 feet	***Barrier Height:***	**52.0 feet**
Noise Distance to Barrier:	453.0 feet	*Barrier Type (0-Wall, 1-Berm):*	0.0
Barrier Distance to Observer:	10.0 feet		
Noise Height:	9.5 feet		
Observer Height (Above Pad):	5.0 feet	*Barrier Breaks Line of Sight:*	Yes
Observer Elevation:	0.0 feet	*Wall Located at Noise Source Elevation:*	No
Noise Source Elevation:	0.0 feet		

Drop Off Coefficient: 20.0 (20 = 6 dBA per doubling of distance, 15 = 4.5 dBA per doubling of distance)

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	50.0	72.0	72.0	0.0	0.0	0.0	0.0
Distance Attenuation	463.0	-19.3	-19.3	-19.3	-19.3	-19.3	-19.3
Shielding (Barrier Attenuation)	463.0	-19.0	-19.0	-19.0	-19.0	-19.0	-19.0
Raw (Distance + Barrier)		33.7	33.7	-38.3	-38.3	-38.3	-38.3
30 Minute Hourly Adjustment		**30.7**	**30.7**	**-41.3**	**-41.3**	**-41.3**	**-41.3**

STATIONARY SOURCE NOISE PREDICTION MODEL

Source: Emergency Generator
Observer Location: R3

Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	658.0 feet	***Barrier Height:***	**8.0 feet**
Noise Distance to Barrier:	648.0 feet	*Barrier Type (0-Wall, 1-Berm):*	0.0
Barrier Distance to Observer:	10.0 feet		
Noise Height:	9.5 feet		
Observer Height (Above Pad):	5.0 feet	*Barrier Breaks Line of Sight:*	Yes
Observer Elevation:	0.0 feet	*Wall Located at Noise Source Elevation:*	No
Noise Source Elevation:	0.0 feet		

Drop Off Coefficient: 20.0 (20 = 6 dBA per doubling of distance, 15 = 4.5 dBA per doubling of distance)

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	50.0	72.0	72.0	0.0	0.0	0.0	0.0
Distance Attenuation	658.0	-22.4	-22.4	-22.4	-22.4	-22.4	-22.4
Shielding (Barrier Attenuation)	658.0	-8.1	-8.1	-8.1	-8.1	-8.1	-8.1
Raw (Distance + Barrier)		41.5	41.5	-30.5	-30.5	-30.5	-30.5
30 Minute Hourly Adjustment		**38.5**	**38.5**	**-33.5**	**-33.5**	**-33.5**	**-33.5**

STATIONARY SOURCE NOISE PREDICTION MODEL

Source: Emergency Generator
Observer Location: R4

Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	796.0 feet	***Barrier Height:***	**52.0 feet**
Noise Distance to Barrier:	700.0 feet	*Barrier Type (0-Wall, 1-Berm):*	0.0
Barrier Distance to Observer:	96.0 feet		
Noise Height:	9.5 feet		
Observer Height (Above Pad):	5.0 feet	*Barrier Breaks Line of Sight:*	Yes
Observer Elevation:	0.0 feet	*Wall Located at Noise Source Elevation:*	No
Noise Source Elevation:	0.0 feet		

Drop Off Coefficient: 20.0 (20 = 6 dBA per doubling of distance, 15 = 4.5 dBA per doubling of distance)

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	50.0	72.0	72.0	0.0	0.0	0.0	0.0
Distance Attenuation	796.0	-24.0	-24.0	-24.0	-24.0	-24.0	-24.0
Shielding (Barrier Attenuation)	796.0	-17.3	-17.3	-17.3	-17.3	-17.3	-17.3
Raw (Distance + Barrier)		30.7	30.7	-41.3	-41.3	-41.3	-41.3
30 Minute Hourly Adjustment		**27.7**	**27.7**	**-44.3**	**-44.3**	**-44.3**	**-44.3**

STATIONARY SOURCE NOISE PREDICTION MODEL

Source: Emergency Generator
Observer Location: R5

Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	855.0 feet	***Barrier Height:***	**8.0 feet**
Noise Distance to Barrier:	200.0 feet	*Barrier Type (0-Wall, 1-Berm):*	0.0
Barrier Distance to Observer:	655.0 feet		
Noise Height:	9.5 feet		
Observer Height (Above Pad):	5.0 feet	*Barrier Breaks Line of Sight:*	No
Observer Elevation:	0.0 feet	*Wall Located at Noise Source Elevation:*	No
Noise Source Elevation:	0.0 feet		

Drop Off Coefficient: 20.0 (20 = 6 dBA per doubling of distance, 15 = 4.5 dBA per doubling of distance)

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	50.0	72.0	72.0	0.0	0.0	0.0	0.0
Distance Attenuation	855.0	-24.7	-24.7	-24.7	-24.7	-24.7	-24.7
Shielding (Barrier Attenuation)	855.0	-4.9	-4.9	-4.9	-4.9	-4.9	-4.9
Raw (Distance + Barrier)		42.4	42.4	-29.6	-29.6	-29.6	-29.6
30 Minute Hourly Adjustment		**39.4**	**39.4**	**-32.6**	**-32.6**	**-32.6**	**-32.6**

STATIONARY SOURCE NOISE PREDICTION MODEL

Source: Emergency Generator
Observer Location: R6

Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	1,068.0 feet	***Barrier Height:***	**8.0 feet**
Noise Distance to Barrier:	422.0 feet	*Barrier Type (0-Wall, 1-Berm):*	0.0
Barrier Distance to Observer:	646.0 feet		
Noise Height:	9.5 feet		
Observer Height (Above Pad):	5.0 feet	*Barrier Breaks Line of Sight:*	Yes
Observer Elevation:	0.0 feet	*Wall Located at Noise Source Elevation:*	No
Noise Source Elevation:	0.0 feet		

Drop Off Coefficient: 20.0 (20 = 6 dBA per doubling of distance, 15 = 4.5 dBA per doubling of distance)

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	50.0	72.0	72.0	0.0	0.0	0.0	0.0
Distance Attenuation	1,068.0	-26.6	-26.6	-26.6	-26.6	-26.6	-26.6
Shielding (Barrier Attenuation)	1,068.0	-4.9	-4.9	-4.9	-4.9	-4.9	-4.9
Raw (Distance + Barrier)		40.5	40.5	-31.5	-31.5	-31.5	-31.5
30 Minute Hourly Adjustment		**37.5**	**37.5**	**-34.5**	**-34.5**	**-34.5**	**-34.5**

STATIONARY SOURCE NOISE PREDICTION MODEL

Source: Emergency Generator
Observer Location: R7

Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	1,346.0	feet	***Barrier Height:***	**8.0 feet**
Noise Distance to Barrier:	450.0	feet	*Barrier Type (0-Wall, 1-Berm):*	0.0
Barrier Distance to Observer:	896.0	feet		
Noise Height:	9.5	feet		
Observer Height (Above Pad):	5.0	feet	*Barrier Breaks Line of Sight:*	Yes
Observer Elevation:	0.0	feet	*Wall Located at Noise Source Elevation:*	No
Noise Source Elevation:	0.0	feet		

Drop Off Coefficient: 20.0 (20 = 6 dBA per doubling of distance, 15 = 4.5 dBA per doubling of distance)

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	50.0	72.0	72.0	0.0	0.0	0.0	0.0
Distance Attenuation	1,346.0	-28.6	-28.6	-28.6	-28.6	-28.6	-28.6
Shielding (Barrier Attenuation)	1,346.0	-4.9	-4.9	-4.9	-4.9	-4.9	-4.9
Raw (Distance + Barrier)		38.5	38.5	-33.5	-33.5	-33.5	-33.5
30 Minute Hourly Adjustment		**35.5**	**35.5**	**-36.5**	**-36.5**	**-36.5**	**-36.5**

STATIONARY SOURCE NOISE PREDICTION MODEL

Source: Typical Helicopter Activities
Observer Location: R1

Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	656.0 feet	***Barrier Height:***	**94.0 feet**
Noise Distance to Barrier:	20.0 feet	*Barrier Type (0-Wall, 1-Berm):*	0.0
Barrier Distance to Observer:	636.0 feet		
Noise Height:	15.0 feet		
Observer Height (Above Pad):	5.0 feet	*Barrier Breaks Line of Sight:*	Yes
Observer Elevation:	0.0 feet	*Wall Located at Noise Source Elevation:*	No
Noise Source Elevation:	94.0 feet		

Drop Off Coefficient: 20.0 (20 = 6 dBA per doubling of distance, 15 = 4.5 dBA per doubling of distance)

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	200.0	70.5	70.5	0.0	0.0	0.0	0.0
Distance Attenuation	656.0	-10.3	-10.3	-10.3	-10.3	-10.3	-10.3
Shielding (Barrier Attenuation)	656.0	-13.5	-13.5	-13.5	-13.5	-13.5	-13.5
Raw (Distance + Barrier)		46.7	46.7	-23.8	-23.8	-23.8	-23.8
30 Minute Hourly Adjustment		**43.7**	**43.7**	**-26.8**	**-26.8**	**-26.8**	**-26.8**

STATIONARY SOURCE NOISE PREDICTION MODEL

Source: Trauma Helicopter Activities
Observer Location: R1

Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	656.0	feet	***Barrier Height:***	**94.0 feet**
Noise Distance to Barrier:	20.0	feet	*Barrier Type (0-Wall, 1-Berm):*	0.0
Barrier Distance to Observer:	636.0	feet		
Noise Height:	15.0	feet		
Observer Height (Above Pad):	5.0	feet	*Barrier Breaks Line of Sight:*	Yes
Observer Elevation:	0.0	feet	*Wall Located at Noise Source Elevation:*	No
Noise Source Elevation:	94.0	feet		

Drop Off Coefficient: 20.0 (20 = 6 dBA per doubling of distance, 15 = 4.5 dBA per doubling of distance)

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	400.0	81.7	81.7	0.0	0.0	0.0	0.0
Distance Attenuation	656.0	-4.3	-4.3	-4.3	-4.3	-4.3	-4.3
Shielding (Barrier Attenuation)	656.0	-13.5	-13.5	-13.5	-13.5	-13.5	-13.5
Raw (Distance + Barrier)		63.9	63.9	-17.8	-17.8	-17.8	-17.8
5 Minute Hourly Adjustment		**53.1**	**53.1**	**-28.6**	**-28.6**	**-28.6**	**-28.6**

STATIONARY SOURCE NOISE PREDICTION MODEL

Source: Typical Helicopter Activities
Observer Location: R2

Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	739.0 feet	***Barrier Height:***	**40.0 feet**
Noise Distance to Barrier:	66.0 feet	*Barrier Type (0-Wall, 1-Berm):*	0.0
Barrier Distance to Observer:	673.0 feet		
Noise Height:	15.0 feet		
Observer Height (Above Pad):	5.0 feet	*Barrier Breaks Line of Sight:*	Yes
Observer Elevation:	0.0 feet	*Wall Located at Noise Source Elevation:*	No
Noise Source Elevation:	94.0 feet		

Drop Off Coefficient: 20.0 (20 = 6 dBA per doubling of distance, 15 = 4.5 dBA per doubling of distance)

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	200.0	70.5	70.5	0.0	0.0	0.0	0.0
Distance Attenuation	739.0	-11.4	-11.4	-11.4	-11.4	-11.4	-11.4
Shielding (Barrier Attenuation)	739.0	-18.4	-18.4	-18.4	-18.4	-18.4	-18.4
Raw (Distance + Barrier)		40.7	40.7	-29.8	-29.8	-29.8	-29.8
30 Minute Hourly Adjustment		**37.7**	**37.7**	**-32.8**	**-32.8**	**-32.8**	**-32.8**

STATIONARY SOURCE NOISE PREDICTION MODEL

Source: Trauma Helicopter Activities
Observer Location: R2

Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	739.0	feet	***Barrier Height:***	**40.0 feet**
Noise Distance to Barrier:	66.0	feet	*Barrier Type (0-Wall, 1-Berm):*	0.0
Barrier Distance to Observer:	673.0	feet		
Noise Height:	15.0	feet		
Observer Height (Above Pad):	5.0	feet	*Barrier Breaks Line of Sight:*	Yes
Observer Elevation:	0.0	feet	*Wall Located at Noise Source Elevation:*	No
Noise Source Elevation:	94.0	feet		

Drop Off Coefficient: 20.0 (20 = 6 dBA per doubling of distance, 15 = 4.5 dBA per doubling of distance)

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	400.0	81.7	81.7	0.0	0.0	0.0	0.0
Distance Attenuation	739.0	-5.3	-5.3	-5.3	-5.3	-5.3	-5.3
Shielding (Barrier Attenuation)	739.0	-18.4	-18.4	-18.4	-18.4	-18.4	-18.4
Raw (Distance + Barrier)		58.0	58.0	-23.7	-23.7	-23.7	-23.7
5 Minute Hourly Adjustment		**47.2**	**47.2**	**-34.5**	**-34.5**	**-34.5**	**-34.5**

STATIONARY SOURCE NOISE PREDICTION MODEL

Source: Typical Helicopter Activities
Observer Location: R3

Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	720.0 feet	***Barrier Height:***	**94.0 feet**
Noise Distance to Barrier:	20.0 feet	*Barrier Type (0-Wall, 1-Berm):*	0.0
Barrier Distance to Observer:	700.0 feet		
Noise Height:	15.0 feet		
Observer Height (Above Pad):	5.0 feet	*Barrier Breaks Line of Sight:*	Yes
Observer Elevation:	0.0 feet	*Wall Located at Noise Source Elevation:*	No
Noise Source Elevation:	94.0 feet		

Drop Off Coefficient: 20.0 (20 = 6 dBA per doubling of distance, 15 = 4.5 dBA per doubling of distance)

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	200.0	70.5	70.5	0.0	0.0	0.0	0.0
Distance Attenuation	720.0	-11.1	-11.1	-11.1	-11.1	-11.1	-11.1
Shielding (Barrier Attenuation)	720.0	-13.7	-13.7	-13.7	-13.7	-13.7	-13.7
Raw (Distance + Barrier)		45.7	45.7	-24.8	-24.8	-24.8	-24.8
30 Minute Hourly Adjustment		**42.7**	**42.7**	**-27.8**	**-27.8**	**-27.8**	**-27.8**

STATIONARY SOURCE NOISE PREDICTION MODEL

Source: Trauma Helicopter Activities
Observer Location: R3

Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	720.0	feet	***Barrier Height:***	**94.0 feet**
Noise Distance to Barrier:	20.0	feet	*Barrier Type (0-Wall, 1-Berm):*	0.0
Barrier Distance to Observer:	700.0	feet		
Noise Height:	15.0	feet		
Observer Height (Above Pad):	5.0	feet	*Barrier Breaks Line of Sight:*	Yes
Observer Elevation:	0.0	feet	*Wall Located at Noise Source Elevation:*	No
Noise Source Elevation:	94.0	feet		

Drop Off Coefficient: 20.0 (20 = 6 dBA per doubling of distance, 15 = 4.5 dBA per doubling of distance)

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	400.0	81.7	81.7	0.0	0.0	0.0	0.0
Distance Attenuation	720.0	-5.1	-5.1	-5.1	-5.1	-5.1	-5.1
Shielding (Barrier Attenuation)	720.0	-13.7	-13.7	-13.7	-13.7	-13.7	-13.7
Raw (Distance + Barrier)		62.9	62.9	-18.8	-18.8	-18.8	-18.8
5 Minute Hourly Adjustment		**52.1**	**52.1**	**-29.6**	**-29.6**	**-29.6**	**-29.6**

STATIONARY SOURCE NOISE PREDICTION MODEL

Source: Typical Helicopter Activities
Observer Location: R4

Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	630.0 feet	***Barrier Height:***	**52.0 feet**
Noise Distance to Barrier:	90.0 feet	*Barrier Type (0-Wall, 1-Berm):*	0.0
Barrier Distance to Observer:	540.0 feet		
Noise Height:	15.0 feet		
Observer Height (Above Pad):	5.0 feet	*Barrier Breaks Line of Sight:*	Yes
Observer Elevation:	0.0 feet	*Wall Located at Noise Source Elevation:*	No
Noise Source Elevation:	94.0 feet		

Drop Off Coefficient: 20.0 (20 = 6 dBA per doubling of distance, 15 = 4.5 dBA per doubling of distance)

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	200.0	70.5	70.5	0.0	0.0	0.0	0.0
Distance Attenuation	630.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
Shielding (Barrier Attenuation)	630.0	-17.1	-17.1	-17.1	-17.1	-17.1	-17.1
Raw (Distance + Barrier)		43.4	43.4	-27.1	-27.1	-27.1	-27.1
30 Minute Hourly Adjustment		**40.4**	**40.4**	**-30.1**	**-30.1**	**-30.1**	**-30.1**

STATIONARY SOURCE NOISE PREDICTION MODEL

Source: Trauma Helicopter Activities
Observer Location: R4

Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	630.0	feet	***Barrier Height:***	**52.0 feet**
Noise Distance to Barrier:	90.0	feet	*Barrier Type (0-Wall, 1-Berm):*	0.0
Barrier Distance to Observer:	540.0	feet		
Noise Height:	15.0	feet		
Observer Height (Above Pad):	5.0	feet	*Barrier Breaks Line of Sight:*	Yes
Observer Elevation:	0.0	feet	*Wall Located at Noise Source Elevation:*	No
Noise Source Elevation:	94.0	feet		

Drop Off Coefficient: 20.0 (20 = 6 dBA per doubling of distance, 15 = 4.5 dBA per doubling of distance)

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	400.0	81.7	81.7	0.0	0.0	0.0	0.0
Distance Attenuation	630.0	-3.9	-3.9	-3.9	-3.9	-3.9	-3.9
Shielding (Barrier Attenuation)	630.0	-17.1	-17.1	-17.1	-17.1	-17.1	-17.1
Raw (Distance + Barrier)		60.7	60.7	-21.0	-21.0	-21.0	-21.0
5 Minute Hourly Adjustment		**49.9**	**49.9**	**-31.8**	**-31.8**	**-31.8**	**-31.8**

STATIONARY SOURCE NOISE PREDICTION MODEL

Source: Typical Helicopter Activities
Observer Location: R5

Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	961.0 feet	***Barrier Height:***	**8.0 feet**
Noise Distance to Barrier:	200.0 feet	*Barrier Type (0-Wall, 1-Berm):*	0.0
Barrier Distance to Observer:	761.0 feet		
Noise Height:	15.0 feet		
Observer Height (Above Pad):	5.0 feet	*Barrier Breaks Line of Sight:*	Yes
Observer Elevation:	0.0 feet	*Wall Located at Noise Source Elevation:*	No
Noise Source Elevation:	94.0 feet		

Drop Off Coefficient: 20.0 (20 = 6 dBA per doubling of distance, 15 = 4.5 dBA per doubling of distance)

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	200.0	70.5	70.5	0.0	0.0	0.0	0.0
Distance Attenuation	961.0	-13.6	-13.6	-13.6	-13.6	-13.6	-13.6
Shielding (Barrier Attenuation)	961.0	-18.1	-18.1	-18.1	-18.1	-18.1	-18.1
Raw (Distance + Barrier)		38.8	38.8	-31.7	-31.7	-31.7	-31.7
30 Minute Hourly Adjustment		**35.8**	**35.8**	**-34.7**	**-34.7**	**-34.7**	**-34.7**

STATIONARY SOURCE NOISE PREDICTION MODEL

Source: Trauma Helicopter Activities
Observer Location: R5

Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	961.0 feet	***Barrier Height:***	**8.0 feet**
Noise Distance to Barrier:	200.0 feet	*Barrier Type (0-Wall, 1-Berm):*	0.0
Barrier Distance to Observer:	761.0 feet		
Noise Height:	15.0 feet		
Observer Height (Above Pad):	5.0 feet	*Barrier Breaks Line of Sight:*	Yes
Observer Elevation:	0.0 feet	*Wall Located at Noise Source Elevation:*	No
Noise Source Elevation:	94.0 feet		

Drop Off Coefficient: 20.0 (20 = 6 dBA per doubling of distance, 15 = 4.5 dBA per doubling of distance)

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	400.0	81.7	81.7	0.0	0.0	0.0	0.0
Distance Attenuation	961.0	-7.6	-7.6	-7.6	-7.6	-7.6	-7.6
Shielding (Barrier Attenuation)	961.0	-18.1	-18.1	-18.1	-18.1	-18.1	-18.1
Raw (Distance + Barrier)		56.0	56.0	-25.7	-25.7	-25.7	-25.7
5 Minute Hourly Adjustment		**45.2**	**45.2**	**-36.5**	**-36.5**	**-36.5**	**-36.5**

STATIONARY SOURCE NOISE PREDICTION MODEL

Source: Typical Helicopter Activities
Observer Location: R6

Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	1,961.0	feet	***Barrier Height:***	**94.0 feet**
Noise Distance to Barrier:	20.0	feet	*Barrier Type (0-Wall, 1-Berm):*	0.0
Barrier Distance to Observer:	1,941.0	feet		
Noise Height:	15.0	feet		
Observer Height (Above Pad):	5.0	feet	*Barrier Breaks Line of Sight:*	Yes
Observer Elevation:	0.0	feet	*Wall Located at Noise Source Elevation:*	No
Noise Source Elevation:	94.0	feet		

Drop Off Coefficient: 20.0 (20 = 6 dBA per doubling of distance, 15 = 4.5 dBA per doubling of distance)

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	200.0	70.5	70.5	0.0	0.0	0.0	0.0
Distance Attenuation	1,961.0	-19.8	-19.8	-19.8	-19.8	-19.8	-19.8
Shielding (Barrier Attenuation)	1,961.0	-14.7	-14.7	-14.7	-14.7	-14.7	-14.7
Raw (Distance + Barrier)		36.0	36.0	-34.5	-34.5	-34.5	-34.5
30 Minute Hourly Adjustment		**33.0**	**33.0**	**-37.5**	**-37.5**	**-37.5**	**-37.5**

STATIONARY SOURCE NOISE PREDICTION MODEL

Source: Trauma Helicopter Activities
Observer Location: R6

Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	1,961.0	feet	***Barrier Height:***	**94.0 feet**
Noise Distance to Barrier:	20.0	feet	*Barrier Type (0-Wall, 1-Berm):*	0.0
Barrier Distance to Observer:	1,941.0	feet		
Noise Height:	15.0	feet		
Observer Height (Above Pad):	5.0	feet	*Barrier Breaks Line of Sight:*	Yes
Observer Elevation:	0.0	feet	*Wall Located at Noise Source Elevation:*	No
Noise Source Elevation:	94.0	feet		

Drop Off Coefficient: 20.0 (20 = 6 dBA per doubling of distance, 15 = 4.5 dBA per doubling of distance)

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	400.0	81.7	81.7	0.0	0.0	0.0	0.0
Distance Attenuation	1,961.0	-13.8	-13.8	-13.8	-13.8	-13.8	-13.8
Shielding (Barrier Attenuation)	1,961.0	-14.7	-14.7	-14.7	-14.7	-14.7	-14.7
Raw (Distance + Barrier)		53.2	53.2	-28.5	-28.5	-28.5	-28.5
5 Minute Hourly Adjustment		**42.4**	**42.4**	**-39.3**	**-39.3**	**-39.3**	**-39.3**

STATIONARY SOURCE NOISE PREDICTION MODEL

Source: Typical Helicopter Activities
Observer Location: R7

Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	2,281.0	feet	***Barrier Height:***	**94.0**	**feet**
Noise Distance to Barrier:	20.0	feet	*Barrier Type (0-Wall, 1-Berm):*	0.0	
Barrier Distance to Observer:	2,261.0	feet			
Noise Height:	15.0	feet			
Observer Height (Above Pad):	5.0	feet	*Barrier Breaks Line of Sight:*	Yes	
Observer Elevation:	0.0	feet	*Wall Located at Noise Source Elevation:*	No	
Noise Source Elevation:	94.0	feet			

Drop Off Coefficient: 20.0 (20 = 6 dBA per doubling of distance, 15 = 4.5 dBA per doubling of distance)

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	200.0	70.5	70.5	0.0	0.0	0.0	0.0
Distance Attenuation	2,281.0	-21.1	-21.1	-21.1	-21.1	-21.1	-21.1
Shielding (Barrier Attenuation)	2,281.0	-14.8	-14.8	-14.8	-14.8	-14.8	-14.8
Raw (Distance + Barrier)		34.6	34.6	-35.9	-35.9	-35.9	-35.9
30 Minute Hourly Adjustment		**31.6**	**31.6**	**-38.9**	**-38.9**	**-38.9**	**-38.9**

STATIONARY SOURCE NOISE PREDICTION MODEL

Source: Trauma Helicopter Activities
Observer Location: R7

Project Name: Canyon Springs
Job Number: 8991
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	2,281.0	feet	***Barrier Height:***	**94.0**	**feet**
Noise Distance to Barrier:	20.0	feet	*Barrier Type (0-Wall, 1-Berm):*	0.0	
Barrier Distance to Observer:	2,261.0	feet			
Noise Height:	15.0	feet			
Observer Height (Above Pad):	5.0	feet	*Barrier Breaks Line of Sight:*	Yes	
Observer Elevation:	0.0	feet	*Wall Located at Noise Source Elevation:*	No	
Noise Source Elevation:	94.0	feet			

Drop Off Coefficient: 20.0 (20 = 6 dBA per doubling of distance, 15 = 4.5 dBA per doubling of distance)

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	400.0	81.7	81.7	0.0	0.0	0.0	0.0
Distance Attenuation	2,281.0	-15.1	-15.1	-15.1	-15.1	-15.1	-15.1
Shielding (Barrier Attenuation)	2,281.0	-14.8	-14.8	-14.8	-14.8	-14.8	-14.8
Raw (Distance + Barrier)		51.8	51.8	-29.9	-29.9	-29.9	-29.9
5 Minute Hourly Adjustment		**41.0**	**41.0**	**-40.7**	**-40.7**	**-40.7**	**-40.7**

URBAN CROSSROADS

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April 3, 2017

c/o Ms. Paula Purcell
Canyon Springs Marketplace Corp.
2025 Pioneer Court
San Mateo, CA 94403

SUBJECT: CANYON SPRINGS HEALTHCARE CAMPUS & SENIOR LIVING SUPPLEMENTAL NOISE MEMO

Dear Ms. Paula Purcell:

Urban Crossroads, Inc. is pleased to submit the following memorandum for the Canyon Springs Healthcare Campus & Senior Living Project ("Project"). The purpose of this memorandum is to provide clarification on the Projects Opening Year utilized in the 2016 Noise Impact Analysis.

It is important to note that the Noise Impact Analysis commenced in 2015. At the time the Noise Impact Analysis was prepared, the Project's anticipated Opening Year was identified as 2016. Although the 2016 Opening Year is no longer possible, the underlying technical calculations of the operational and construction noise analyses of the Noise Impact Analysis are independent of the actual Opening Year of the Project, and represent worst-case analyses. Further, the off-site Project-related traffic noise level increase of up to 0.8 dBA CNEL under Opening Year 2016 with Project conditions is shown to be consistent with the long-range General Plan Buildout increase of up to 0.8 dBA CNEL with the Project.

As such, the results of the Noise Impact Analysis are conservative, overstate potential impacts, and no further analysis is required. If you have any questions or require any additional information regarding this response to comments, please contact me directly at (949) 336-5979.

Respectfully submitted,

URBAN CROSSROADS, INC.

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