APPENDIX G:
NOISE DATA

Noise Background and Modeling Data

NOISE BACKGROUND

Terminology and Noise Descriptors

The following are brief definitions of noise terminology:

- **Sound.** A vibratory disturbance that, when transmitted by pressure waves through a medium such as air, is capable of being detected by a receiving mechanism, such as the human ear or a microphone.

- **Noise.** Sound that is loud, unpleasant, unexpected, or otherwise undesirable.

- **Decibel** (**dB**). A unitless measure of sound on a logarithmic scale, which indicates the squared ratio of sound pressure amplitude to a reference sound pressure amplitude. The reference pressure is 20 micropascals.

- **A-Weighted Decibel (dBA).** An overall frequency-weighted sound level in decibels which approximates the frequency response of the human ear.

- **Equivalent Continuous Noise Level (Leq).** The mean of the noise level averaged over the measurement period, regarded as an average level.

- **Day-Night Level (Ldn).** The energy average of the A-weighted sound levels occurring during a 24-hour period, with 10 dB added to the A-weighted sound levels occurring during the period from 10 PM to 7 AM. The L_{dn} and the CNEL are similar noise descriptors and rarely differ by more than 1 dBA.

- **Community Noise Equivalent Level (CNEL).** The energy average of the A-weighted sound levels occurring during a 24-hour period, with 5 dB added to the A-weighted sound levels occurring during the period from 7 to 10 PM and 10 dB added to the A-weighted sound levels occurring during the period from 10 PM to 7 AM.

- **Sensitive Receptor.** Noise- and vibration-sensitive receptors include land uses where quiet environments are necessary for enjoyment and public health and safety. Residences, schools, motels and hotels, libraries, religious institutions, hospitals, and nursing homes are examples.

L_{dn} and CNEL values rarely differ by more than 1 dB. As a matter of practice, L_{dn} and CNEL values are considered to be equivalent and are treated as such in this assessment.

Characteristics of Sound

Sound is a pressure wave transmitted through the air. When an object vibrates, it radiates part of its energy as acoustical pressure in the form of a sound wave. Sound can be described in terms of amplitude (loudness), frequency (pitch), or duration (time). The standard unit of measurement of the loudness of sound is the decibel (dB). The human hearing system is not equally sensitive to sound at all frequencies. Sound waves below 16 Hz are not heard at all and are "felt" more as a vibration. Similarly, while people with extremely sensitive hearing can hear sounds as high as 20,000 Hz, most people cannot hear above 15,000 Hz. In all cases, hearing acuity falls off rapidly above about 10,000 Hz and

below about 200 Hz. Since the human ear is not equally sensitive to sound at all frequencies, a special frequency-dependent rating scale is usually used to relate noise to human sensitivity. The A-weighted decibel scale (dBA) performs this compensation by discriminating against frequencies in a manner approximating the sensitivity of the human ear.

Because of the physical characteristics of noise transmission and noise perception, the relative loudness of sound does not closely match the actual amounts of sound energy. Table 1, Change in Sound Pressure Level, dB, presents the subjective effect of changes in sound pressure levels. Typical human hearing can detect changes of approximately 3 dBA or greater under normal conditions. Changes of 1 to 3 dBA are detectable under quiet, controlled conditions and changes of less than 1 dBA are usually indiscernible. A change of 5 dBA or greater is typically noticeable to most people in an exterior environment and a change of 10 dBA is perceived as a doubling (or halving) of the noise.

Table 1
Change in Sound Pressure Level, dB

Change in Apparent Loudness	
± 3 dB	Threshold of human perceptibility
± 5 dB	Clearly noticeable change in noise level
± 10 dB	Half or twice as loud
± 20 dB	Much quieter or louder

Source: Bies and Hansen 2003.

Point and Line Sources

Noise may be generated from a point source, such as a piece of construction equipment, or from a line source, such as a road containing moving vehicles. Because noise spreads in an ever-widening pattern, the given amount of noise striking an object, such as an eardrum, is reduced with distance from the source. This is known as "spreading loss." The typical spreading loss for point source noise is 6 dBA per doubling of the distance from the noise source.

A line source of noise, such as vehicles proceeding down a roadway, would also be reduced with distance, but the rate of reduction is affected by of both distance and the type of terrain over which the noise passes. Hard sites, such as developed areas with paving, reduce noise at a rate of 3 dBA per doubling of the distance while soft sites, such as undeveloped areas, open space and vegetated areas reduce noise at a rate of 4.5 dBA per doubling of the distance. These represent the extremes and most areas would actually contain a combination of hard and soft elements with the noise reduction placed somewhere in between these two factors. Unfortunately, the only way to actually determine the absolute amount of attenuation that an area provides is through field measurement under operating conditions with subsequent noise level measurements conducted at varying distances from a constant noise source.

Objects that block the line of sight attenuate the noise source if the receptor is located within the "shadow" of the blockage (such as behind a sound wall). If a receptor is located behind the wall, but has a view of the source, the wall would do little to reduce the noise. Additionally, a receptor located on the same side of the wall as the noise source may experience an increase in the perceived noise level, as the wall would reflect noise back to the receptor compounding the noise.

Noise Metrics

Several rating scales (or noise "metrics") exist to analyze adverse effects of noise, including traffic-generated noise, on a community. These scales include the equivalent noise level (L_{eq}), the community noise equivalent level (CNEL) and the day/night noise level (L_{dn}). L_{eq} is a measurement of the sound energy level averaged over a specified time period.

The CNEL noise metric is based on 24 hours of measurement. CNEL differs from L_{eq} in that it applies a time-weighted factor designed to emphasize noise events that occur during the evening and nighttime hours (when quiet time and sleep disturbance is of particular concern). Noise occurring during the daytime period (7:00 AM to 7:00 PM) receives no penalty. Noise produced during the evening time period (7:00 to 10:00 PM) is penalized by 5 dB, while nighttime (10:00 PM to 7:00 AM) noise is penalized by 10 dB. The L_{dn} noise metric is similar to the CNEL metric except that the period from 7:00 to 10:00 PM receives no penalty. Both the CNEL and L_{dn} metrics yield approximately the same 24-hour value (within 1 dB) with the CNEL being the more restrictive (i.e., higher) of the two.

Psychological and Physiological Effects of Noise

Physical damage to human hearing begins at prolonged exposure to noise levels higher than 85 dBA. Exposure to high noise levels affects the entire system, with prolonged noise exposure in excess of 75 dBA increasing body tensions, thereby affecting blood pressure and functions of the heart and the nervous system. In comparison, extended periods of noise exposure above 90 dBA would result in permanent cell damage. Table 2 shows typical noise levels from various noise sources.

Table 2
Typical Noise Levels from Noise Sources

Common Outdoor Activities	***Noise Level (dBA)***	***Common Indoor Activities***
	110	Rock Band
Jet Flyover at 1,000 feet		
	100	
Gas Lawn Mower at three feet		
	90	
Diesel Truck at 50 feet, at 50 mph		Food Blender at 3 feet
	80	Garbage Disposal at 3 feet
Noisy Urban Area, Daytime		
	70	Vacuum Cleaner at 10 feet
Commercial Area		Normal speech at 3 feet
Heavy Traffic at 300 feet	60	
		Large Business Office
Quiet Urban Daytime	50	Dishwasher Next Room
Quiet Urban Nighttime	40	Theater, Large Conference Room (background)
Quiet Suburban Nighttime		
	30	Library
Quiet Rural Nighttime		Bedroom at Night, Concert Hall (background)
	20	
		Broadcast/Recording Studio
	10	
Lowest Threshold of Human Hearing	0	Lowest Threshold of Human Hearing

Source: California Department of Transportation 2009.

Vibration

Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. Vibration is normally associated with activities such as railroads or vibration-intensive stationary sources, but can also be associated with construction equipment, such as jackhammers, pile drivers, and hydraulic hammers. Vibration displacement is the distance that a point on a surface moves away from its original static position. The instantaneous speed that a point on a surface moves is described as the velocity, and the rate of change of the speed is described as the acceleration. Each of these descriptors can be used to correlate vibration to human response, building damage, and acceptable equipment vibration levels. During the construction of a building, the operation of construction equipment could cause groundborne vibration. The three main wave types of concern in the propagation of groundborne vibrations are surface or Rayleigh waves, compression or P-waves, and shear or S-waves.

- Surface or Rayleigh waves travel along the ground surface. They carry most of their energy along an expanding cylindrical wave front, similar to the ripples produced by throwing a rock into a lake. The particle motion is more or less perpendicular to the direction of propagation (known as retrograde elliptical).
- Compression or P-waves are body waves that carry their energy along an expanding

spherical wave front. The particle motion in these waves is longitudinal, in a push-pull motion. P-waves are analogous to airborne sound waves.

- Shear or S-waves are also body waves, carrying their energy along an expanding spherical wave front. Unlike P-waves, however, the particle motion is transverse, or perpendicular to the direction of propagation.

The peak particle velocity (PPV) or the root mean square (RMS) velocity is usually used to describe vibration amplitudes. PPV is defined as the maximum instantaneous peak of the vibration signal and RMS is defined as the square root of the average of the squared amplitude of the signal. PPV is more appropriate for evaluating potential building damage, whereas RMS is typically more suitable for evaluating human response.

The units for PPV and RMS velocity are normally inches per second (in/sec). Often, vibration is presented and discussed in dB units to compress the range of numbers required to describe the vibration. All PPV and RMS velocity are in in/sec and all vibration levels in this study are in dB relative to 1 micro-inch per second (abbreviated as VdB). The threshold of perception is approximately 65 VdB. Typically groundborne vibration generated by manmade activities attenuates rapidly with distance from the source of the vibration. Manmade vibration problems are usually confined to short distances (500 feet or less) from the source.

Construction generally includes a wide range of activities that can generate groundborne vibration. In general, demolition of structures generates the highest vibrations. Vibratory compactors or rollers, pile drivers, and pavement breakers can generate perceptible amounts of vibration at distances within 200 feet of the vibration sources. Heavy trucks can also generate groundborne vibrations that vary, depending on vehicle type, weight, and pavement conditions. Potholes, pavement joints, discontinuities, differential settlement of pavement, etc., all increase the vibration levels from vehicles passing over a road surface. Construction vibration is normally of greater concern than vibration of normal traffic on streets and freeways with smooth pavement conditions. Trains generate substantial quantities of vibration due to their engines, steel wheels, and heavy loads.

Operation of construction equipment generates vibrations that spread through the ground and diminish in amplitude (strength) with distance from the source. The effect on buildings near a construction site varies depending on soil type, ground strata, and receptor building construction. The generation of vibration can range from no perceptible effects at the lowest vibration levels, to low rumbling sounds and perceptible vibrations at moderate levels, to slight damage at the highest levels. Ground vibrations from construction activities rarely reach levels that can damage structures, but can achieve the perceptible ranges in buildings close to a construction site.

Sensitive Receptors

Certain land uses are particularly sensitive to noise and vibration. Noise- and vibration-sensitive uses include land uses where quiet environments are necessary for enjoyment and public health and safety. Residences, schools, guest lodging, libraries, religious institutions, hospitals, nursing homes, and passive recreation areas are generally more sensitive to noise than commercial and industrial land use.

NOISE AND VIBRATION REGULATORY ENVIRONMENT

Noise

To limit exposure of people to intrusive and physically and/or psychologically damaging noise levels, the federal government, the State of California, some county governments, and most municipalities in the state have established standards and ordinances to control noise.

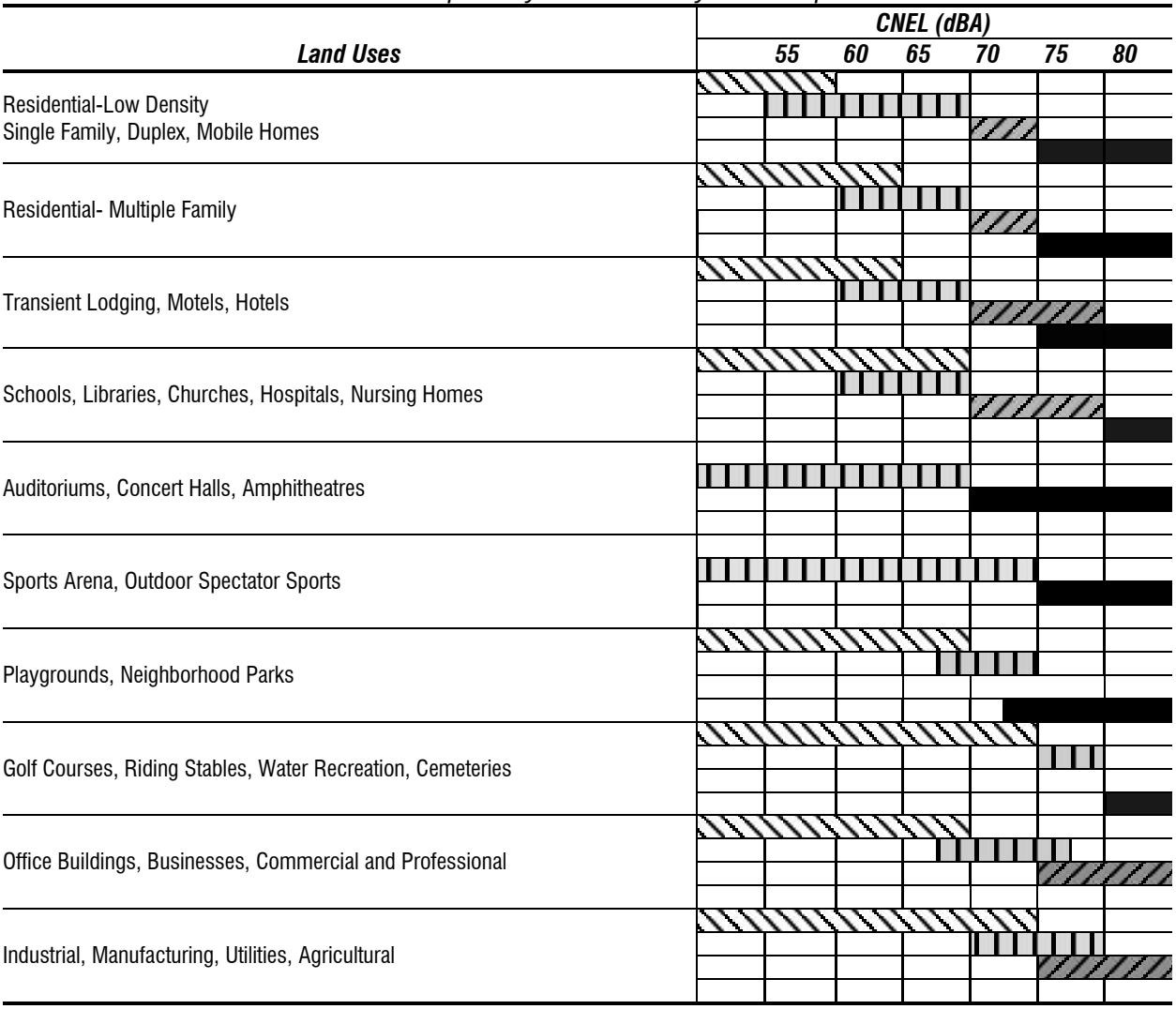
The United States Environmental Protection Agency (USEPA) has developed general guidelines for recommended maximum noise levels to protect public health and welfare and the hearing of workers exposed to occupational noise.

State

Cities and counties in California are preempted by federal law from controlling noise generated from most mobile sources, including noise generated by vehicles and trucks on the roadway, trains on the railroad, and airplanes. Table 3 shows a land use compatibility chart for community noise adopted by the State of California as part of General Plan Guidelines.[1] This table provides urban planners with a tool to gauge the compatibility of new land uses relative to existing and future noise levels. As shown in the table, hotels, motels, and other transient lodging are normally acceptable land uses up to a noise level of 65 dBA CNEL.

[1] California Office of Noise Control, *Guidelines for the Preparation and Content of Noise Elements of the General Plan,* February 1976. Included in the State of California General Plan Guidelines.

Table 3
Land Use Compatibility for Community Noise Exposure



Explanatory Notes

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

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

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

Clearly Unacceptable:
New construction or development should generally not be undertaken.

Source: California Office of Noise Control, Guidelines for the Preparation and Content of Noise Elements of the General Plan, February 1976. Included in the State of California General Plan Guidelines.

Local – City of Cupertino

The Noise Ordinance is designed to control unnecessary, excessive, and annoying sounds by setting limits that cannot be exceeded at adjacent properties. The Noise Ordinance requirements are not applicable to mobile noise sources (such as cars and heavy trucks) that are traveling on public roadways. Control of the mobile noise sources on public roads is preempted by federal and State laws. However, the Noise Ordinance does apply to vehicles while they are on private property.

Section 10.48.020 of the City's Municipal Code states that the noise control program established by Municipal Code Chapter 10.48, Community Noise Control, of Title 10, Public Peace, Safety, and Morals, shall be administered by and is the responsibility of, the Noise Control Officer (NCO).

Section 10.48.021 of the City's Municipal Code states that the NCO shall have, in addition to any other vested authority, the power to:

A. Review of Public and Private Projects. Review of public and private projects, subject to mandatory review or approval by other departments, for compliance with this ordinance, if such projects are likely to cause noise in violation of Municipal Code Chapter 10.48;

B. Inspections. Upon presentation of proper credentials and with permission of the property owner or occupant, enter and investigate a potential ordinance violation on any property or place, and inspect any report or records at any reasonable time. If permission is refused or cannot be obtained, a search warrant may be obtained from a court of competent jurisdiction upon showing of probable cause to believe that a violation of this chapter may exist. Such inspection may include administration of any necessary tests.

Section 10.48.022 of the City's Municipal Code requires the NCO, within a reasonable time after the effective date of the ordinance codified in Municipal Code Chapter 10.48, to:

A. Guidelines, Testing Methods and Procedures. Develop and promulgate guidelines, testing methods and procedures as required. Any noise measurement procedure used in enforcement of Municipal Code Chapter 10.48 which tends to underestimate the actual noise level of the source being measured shall not invalidate the enforcement action;

B. Investigate and Pursue Violations. In consonance with provisions of Municipal Code Chapter 10.48, investigate and pursue possible violations;

C. Delegation of Authority. Delegate functions, where appropriate under Municipal Code Chapter 10.48, to other personnel and to other departments, subject to approval of the City Manager.

Section 10.48.023 of the City's Municipal Code establishes the duties and responsibilities of other departments:

A. Departmental Actions. All City departments shall, to the fullest extent consistent with other law, carry out their programs in such a manner as to further the policy and intent of Municipal Code Chapter 10.48.

B. Project Approval. All departments whose duty it is to review and approve new projects, or changes to existing projects, that may result in the production of disturbing noise, shall consult with the NCO prior to any such approval.

C. Contracts. Any written contract, agreement, purchase order, or other instrument whereby the City is committed to the expenditure of $5,000 dollars or more in return for goods or services, and which involves noise-producing activities, shall contain provisions requiring compliance with Municipal Code Chapter 10.48.

Section 10.48.029 of the City's Municipal Code allows construction conducted by the homeowner or resident of a single dwelling, using domestic construction tools is allowed on holidays between the hours of 9:00 a.m. and 6:00 p.m.

Section 10.48.030 of the City's Municipal Code states that provisions of Municipal Code Chapter 10.48 shall not apply to the emission of sound for the purpose of alerting persons to the existence of an emergency, or the emission of sound in the performance of emergency work.

Section 10.48.031 of the City's Municipal Code establishes special exceptions from Municipal Code Chapter 10.48:

A. The NCO shall have the authority, consistent with this section, to grant special exceptions which may be requested.

B. Any person seeking a special exception pursuant to this section shall file an application with the NCO. The application shall contain information which demonstrates that bringing the source of sound, or activity for which the special exception is sought, into compliance with this chapter would constitute an unreasonable hardship on the applicant, on the community, or on other persons. Prior to issuance of an exception, the NCO shall notify owners and/or occupants of nearby properties which may be affected by such exceptions. Any individual who claims to be adversely affected by allowance of the special exceptions may file a statement with the NCO containing any information to support his claim. If the NCO finds that a sufficient controversy exists regarding an application, a public hearing may be held.

C. In determining whether to grant or deny the application, the NCO shall balance the hardship to the applicant, the community, and other persons of not granting the special exception against the adverse impact on the health, safety, and welfare of persons affected, the adverse impact on property affected, and any other adverse impacts of granting the special exception. Applicants for special exceptions and persons contesting special exceptions may be required to submit any information the NCO may reasonably require. In granting or denying an application, the NCO shall place on public file a copy of the decision and the reasons for denying or granting the special exception.

D. Special exceptions shall be granted by notice to the applicant containing all necessary conditions, including a time limit on the permitted activity. The special exception shall not become effective until all conditions are agreed to by the applicant. Noncompliance with any condition of the special exception shall terminate it and subject the person holding it to those provisions of this chapter regulating the source of sound or activity for which the special exception was granted.

E. Application for extension of time limits specified in special exceptions or for modification of other substantial conditions shall be treated like applications for initial special exceptions under subsection B of this section.

Section 10.48.032 of the City's Municipal Code states that appeals of any decision of the NCO shall be made to the City Council.

Section 10.48.040 of the City's Municipal Code sets daytime and nighttime maximum noise levels for residential and non-residential land uses, presented in Table 4 below.

Table 4

Ambient Base Noise Levels

Land use at point of origin	***Maximum Noise Level at Complaint Site of Receiving Property (A-Decibels)***	
	Nighttime	***Daytime***
Residential	50	60
Non-residential	55	65

Section 10.48.050 of the City's Municipal Code allows brief noise incidents exceeding the limits shown in Table 4 above during the daytime period only; providing, that the sum of the noise duration in minutes plus the excess noise level does not exceed twenty in a two-hour period. A noise increment of 5 dBA is allowed for up to 15 minutes in a 2-hour period, or an increment of 10 dBA for up to 10 minutes in a 2-hour period, or an increment of 15 dBA for up to 5 minutes in a 2-hour period, or an increment of 20 dBA for up to 1 minute in a 2-hour period.

Section 10.48.041 of the City's Municipal Code limits the use of motorized equipment for landscape maintenance activities to the hours of 8:00 a.m. to 8:00 p.m. on weekdays, and 9:00 a.m. to 6:00 p.m. on weekends and holidays, with the exception of landscape maintenance activities for public schools, public and private golf courses, and public facilities, which are allowed to begin at 7:00 a.m. The use of motorized equipment for landscape maintenance activities during these hours is exempted from the limits of Section 10.48.040; provided, that reasonable efforts are made by the user to minimize the disturbances to nearby residents by, for example, installation of appropriate mufflers or noise baffles, running equipment only the minimal period necessary, and locating equipment so as to generate minimum noise levels on adjoining properties.

Section 10.48.052 of the City's Municipal Code allows outdoor events open to the general public on nonresidential property, such as parades, rallies, fairs, concerts and special sales and promotional events, involving generation of noise levels higher than would normally occur, by use of the human voice, public address systems, musical instruments, electronic amplification systems, and similar sound-producing activities, upon obtaining an appropriate permit from the city, and subject to the following general limitations:

- The event shall not produce noise levels above 70 dBA on any residential property for a period longer than three hours during daytime.

- The event shall not produce noise levels above 60 dBA on any residential property during the period from eight p.m. to eleven p.m., and above 55 dBA for any other nighttime period.

- Continuous or repeated peak noise levels above 95 dBA shall not be produced at any location where persons may be continuously exposed.

The conditions imposed upon the event or activity in the permit issued by the City, regarding maximum noise level, location of noise sources, or duration of activity, for example, may be more limiting than this

section, to protect certain individuals, areas or nearby activities which would otherwise be disturbed, and these permit conditions, when in conflict with this section, are overriding.

Section 10.48.053 of the City's Municipal Code allows grading, construction, and demolition activities to exceed the noise limits of Section 10.48.040 during the daytime hours (7:00 a.m. to 8:00 p.m. on weekdays and 9:00 a.m. to 6:00 p.m. on weekends), provided that the equipment utilized has high-quality noise muffler and abatement devices installed and in good condition. In addition, the activity must meet one of the following two criteria:

1. No individual device produces a noise level more than 87 dBA at a distance of 25 feet (7.5 meters); or

2. The noise level on any nearby property does not exceed 80 dBA.

This section also prohibits construction activities within seven hundred fifty feet of a residential area on Saturdays, Sundays and holidays, and during the nighttime period (8:00 p.m. to midnight, and from midnight to 7:00 a.m., and periods on weekends from 6:00 p.m. to midnight and from midnight to 9:00 a.m.), unless it meets the nighttime standards of Section 10.48.040 listed in Table 4 above.

Section 10.48.054 of the City's Municipal Code prohibits noise produced in any multiple-family dwelling unit from producing a noise level exceeding 45 dBA five feet from any wall in any adjoining unit during the period between 7:00 a.m. and 10:00 p.m., or exceeding 40 dBA during hours from 10:00 p.m. to 7:00 a.m. the following day.

Section 10.48.055 of the City's Municipal Code prohibits motor vehicles, including automobiles, trucks, motorcycles, motor scooters and trailers or other equipment towed by a motor vehicle, from remaining in one location with the engine or auxiliary motors running for more than three minutes in any hour, in an area other than on a public right-of-way, unless:

- The regular noise limits of Section 10.48.040 are met while the engine and/or auxiliary motors are running; or

- The vehicle is in use for provision of police, fire, medical, or other emergency services.

Section 10.48.056 of the City's Municipal Code establishes the ownership or operation of a motor vehicle, including automobiles, trucks, motorcycles and other similar devices of a type subject to registration, as defined in California Vehicle Code, which has a faulty, defective, deteriorated, modified, replaced, or no exhaust and/or muffler system, and which produces an excessive and disturbing noise level, as defined in California Vehicle Code Sections 27150 and 27151, as a violation of Municipal Code Chapter 10.48.

The Stationary Vehicle Test Procedure, as adopted by the California Highway Patrol, may be utilized as prima facie evidence of violation of this section.

Section 10.48.057 of the City's Municipal Code establishes ownership or operation of the following as a violation of Municipal Code Chapter 10.48:

- Any off-road recreational vehicle, including all-terrain vehicles, dirt bikes, dune buggies and other similar devices, as defined in Division 16.5 of the California Vehicle Code, which has a faulty, defective, deteriorated, modified, replaced, or no exhaust and/or muffler system, and which produces an excessive and disturbing noise level, as specified in California Vehicle Code Section 38365;

- Any off-road recreational vehicle producing a noise level:

    1. Exceeding 98 dBA within twenty inches of any component at an intermediate engine speed of 2,000 to 4,000 revolutions per minute in a stationary position; or

    2. Exceeding 80 dBA under any condition of acceleration, speed, grade, and load at a distance of 50 feet. At greater or lesser measurement distances, the maximum noise level changes by 4 dB for each doubling or halving of distance. The sound level meter shall be set for FAST response for this measurement.

Section 10.48.061 of the City's Municipal Code establishes it as unlawful and a nuisance for any person to keep, maintain or permit upon any lot or parcel of land within the City under his control any animal, including any fowl, which by any sound or cry shall habitually disturb the peace and comfort of any person in the reasonable and comfortable enjoyment of life or property.

Section 10.48.062 of the City's Municipal Code establishes it as unlawful and a nuisance for any person to make or allow vehicular deliveries or pickups to or from commercial establishments (defined as any store, factory, manufacturing, or industrial plant used for the sale, manufacturing, fabrication, assembly or storage of goods, wares and merchandise) by the use of private roads, alleys or other ways located on either side or the back of any building housing the commercial establishment where such private road, alley or other way lies between the building and any adjacent parcel of land zoned for residential purposes, between the hours of 8:00 p.m. and 8:00 a.m. weekdays (Monday through Friday) and 6:00 p.m. and 9:00 a.m. on weekends (Saturday and Sunday) and holidays except as may be permitted under Section 10.48.029.

Section 10.48.070 of the City's Municipal Code states that any person who violates the provisions of this chapter shall be guilty of a misdemeanor and upon conviction thereof shall be punished as provided in Chapter 1.12.

Vibration

Cupertino General Plan Policy 6-62, Construction and Maintenance Activities, requires construction contractors to use the best available technology to minimize excessive noise and vibration from construction equipment such as pile drivers, jack hammers, and vibratory rollers. Methods to reduce vibration during construction would include the use of smaller equipment, use of well-maintained equipment, use of static rollers instead of vibratory rollers, and drilling of piles as opposed to pile driving. The City's Municipal Code, however, establishes no specific vibration regulations. In addition, there are no applicable state regulations.

For the purpose of this analysis, thresholds provided by the Federal Transit Administration (FTA) are utilized. The human reaction to various levels of vibration varies from person to persons and is highly subjective. Table 5 shows the level at which vibration becomes perceptible based on various types of land uses that are sensitive to vibration.

Table 5
Vibration Perceptibility

Land Use Category	***Max L_v (VdB)[1]***	***Description***
Workshop	90	Distinctly felt vibration. Appropriate to workshops and nonsensitive areas
Office	84	Felt vibration. Appropriate to offices and non-sensitive areas.
Residential – Daytime	78	Barely felt vibration. Adequate for computer equipment.
Residential – Nighttime	72	Vibration not felt, but groundborne noise may be audible inside quiet rooms.

Source: FTA 2006.
[1] As measured in 1/3 octave bands of frequency over the frequency ranges of 8 to 80 Hz.

In addition to the vibration standards for human annoyance, the FTA also has vibration standards for architectural damage, as shown in Table 6. Architectural damage is possible when the peak particle velocity (PPV) exceeds 0.2 inch per second. This criterion is the threshold at which there is a risk of damage to residential buildings. For structures of reinforced concrete, steel, or timber, architectural damage is possible when the PPV exceeds 0.5 inch per second.

Table 6
Groundborne Vibration Impact Criteria, Architectural Damage

Building Category		***PPV (inches per second)[1]***	***VdB***
I.	Reinforced concrete, steel, or timber (no plaster)	0.5	102
II.	Engineered concrete and masonry (no plaster)	0.3	98
III.	Nonengineered timber and masonry buildings	0.2	94
IV.	Buildings extremely susceptible to vibration damage	0.12	90

Source: FTA 2006.
[1] RMS velocity calculated from vibration level (VdB) using the reference of one micro-inch per second.

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and potentially causing injuries to people and/or damaging property. The largest body of water within the area is the Stevens Creek Reservoir. Stevens Creek Dam meets current dam safety standards and the probability of its failure is minimal (**Figure HS-6**).

The watersheds in the Santa Cruz Mountain Range feed into four major streambeds that traverse the City: Permanente Creek, Stevens Creek, Regnart Creek, and Calabazas Creek. (**Figure HS-7**). Stevens Creek and its streamside are among the natural elements that have the most influence on Cupertino's character. These creeks collect surface runoff and channel it to the Bay. However, they also pose potential flooding risks if water levels exceed the top of bank as a result of heavy runoff.

The City and the Santa Clara Valley Water District are actively involved in programs to minimize the risk of flooding. The City developed an approach to land use for the non-urbanized flood plain of Stevens Creek south of Stevens Creek Boulevard in the Land Use Element. This ensures the preservation of the 100-year flood plain and the protection of the riparian corridor along this portion of Stevens Creek. The City and the Water District also developed a flood management program for the flood plain of Stevens Creek between Interstate 280 and Stevens Creek Boulevard while preserving the natural environment of Stevens Creek. Structural improvements, while not preferred, may be necessary, to protect properties from a 100-year flood.

Noise

The noise environment is an accumulation of many different sources, ranging from human voices to major sources such as freeway traffic. The degree to which noise becomes an annoyance depends on a variety of factors including noise level, time of day, background sounds, and surrounding land use.

Community Noise Fundamentals

The three elements of community noise are noise level, noise spectrum, and variation in noise level with time. Noise level is measured in decibels (dB). Noise is composed of various frequencies within a noise spectrum that define the character of the noise. Since human hearing is more sensitive to the higher speech frequencies, the A-weighted frequency network is applied, in accordance with national and international standards, to adjust the measured noise level to more closely relate to human perception of loudness.

Noise environments have different characteristics that vary with duration and time of day; for instance a freeway may emit a fairly constant noise level for long periods while an airport may emit many short-term high level noise events punctuated by extended periods of quiet. To provide a standard measure for community noise exposure that takes into account the time-varying characteristics, the State of California adopted the Community Noise Equivalent Level (CNEL) as the standard metric. The CNEL is a 24-hour energy average metric that penalizes evening and nighttime noise, and provides a uniform measure for time-varying noise environments.

Noise Environment

The noise environment can generally be divided into two categories: transportation-related and non-transportation related noise. Traffic noise is the greatest contributor to noise pollution in Cupertino and one of the most difficult to control through local effort. Two major freeways (Interstate 280 and Highway 85) and four major corridors (Stevens Creek Boulevard, De Anza Boulevard, Homestead Road, and Foothill Boulevard) cross Cupertino. These roadways are utilized not only by local residents and employees, but also by commuters to destinations beyond Cupertino. Heavy-duty trucking operations to and from the Hanson Permanente Cement Plant and Stevens Creek

Quarry located in the western foothills near Stevens Creek Boulevard and Foothill Boulevard are also a significant transportation-related noise contributor.

Cupertino receives some aircraft noise from facilities within the region including San Jose International Airport, Moffett Federal Airfield and Palo Alto Airport; however, the Cupertino city limit does not fall within the identified noise contours of any airport. One railroad line passes through the Monta Vista neighborhood and connects with the Hanson Permanente Cement Plant. This freight railway operates at very low frequencies, with approximately three train trips in each direction per week, usually during the daytime or early evening.

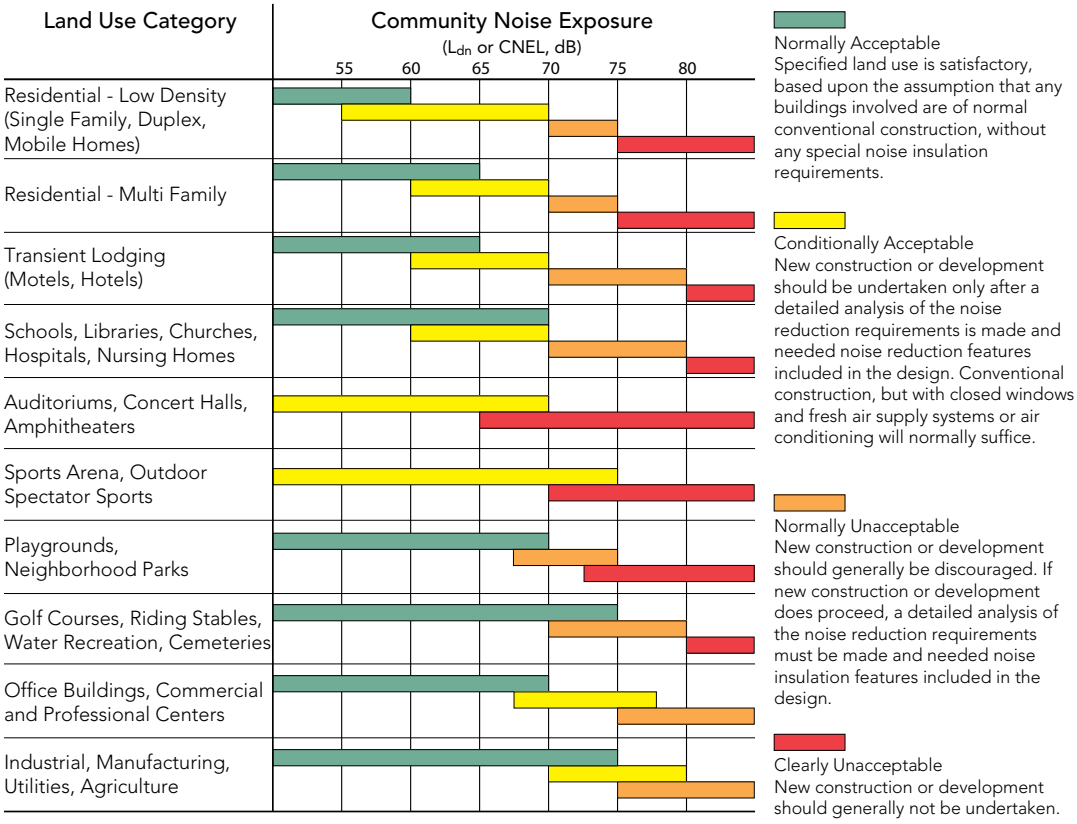
Non-transportation noise varies from stationary equipment (e.g., air conditioning units) to construction activity. Regulation to minimize excessive noise from non-transportation sources includes compliance with the City's noise standards that limit certain noise-generating activity during evening and early morning, when ambient noise levels tend to be lower. Advancements in technology to muffle sound also reduce noise from construction equipment and stationary equipment such as compressors and generators.

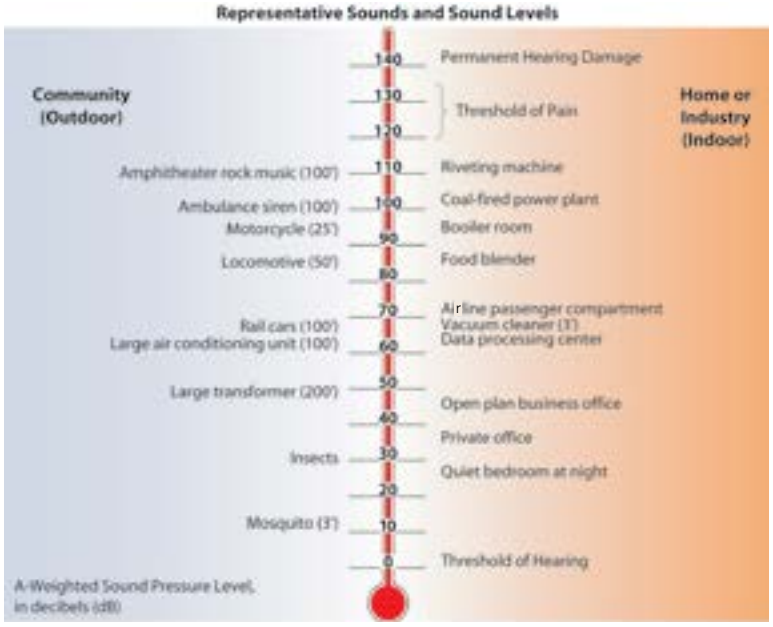
Land Use Compatibility

The Cupertino Municipal Code, Title 10, outlines the maximum noise levels on receiving properties based upon land use types (**Figure HS-8**). Land use decisions and the development review process play a large role in minimizing noise impacts on sensitive land uses. Noise compatibility may be achieved by avoiding the location of conflicting land uses adjacent to one another and incorporating buffers and noise control techniques including setbacks, landscaping, building transitions, site design, and building construction techniques. Selection of the appropriate noise control technique will vary depending on the level of noise that needs to be reduced as well as the location and intended land use.

Figure HS-8

Land Use Compatibility for Community Noise Environments





LOOKING FORWARD

As Cupertino's resident and employee population grows, the City must identify ways to ensure public safety and support the community's high quality of life. Innovative site design and construction techniques are needed to reduce noise in developments near major corridors and where uses are mixed to ensure compatibility. Fire protection and public safety should be enhanced in a manner that provides a high quality of service while continuing to be fiscally responsible. The following are ways the City will address key challenges and opportunities facing Cupertino:

1. **Noise.** As State, regional and local policies encourage mixed-use development near corridors, the City should look to ways to reduce noise impacts on residences near and in such developments through site design, landscaping and construction techniques. Additionally, the City should review locations and site design for sensitive uses including schools, childcare facilities and hospitals to ensure that they are not negatively impacted by noise.

2. **Project Design and Operations.** Measures such as project and building design, emergency access, operations and maintenance of property, can help developments promote public and fire safety. Such measures will also allow the providers to maintain a high service level, while accommodating future growth.

3. **Community Participation.** The City and service providers should enhance community participation through new and existing programs such as neighborhood watch, emergency preparedness and school programs.

4. **Shared Resources.** The City can enhance emergency, fire safety and public safety services by coordinating programs with service providers and neighboring cities through shared services, mutual aid and agreements.

Policy HS-7.6: Stability of Existing Water Storage Facilities

Assure the structural integrity of water storage facilities.

Strategy HS-7.6.1: Coordination with other Agencies. Work closely with the San Jose Water Company and owners of other water storage facilities to develop and implement a program to monitor the stability of all existing water storage facilities and related improvements, such as: distribution lines, connections and other system-components.

Noise

The City seeks to ensure that the community continues to enjoy a high quality of life through reduce noise pollution, effective project design and noise management operations.

GOAL HS-8
MINIMIZE NOISE IMPACTS ON THE COMMUNITY AND MAINTAIN A COMPATIBLE NOISE ENVIRONMENT FOR EXISTING AND FUTURE LAND USES

Policy HS-8.1: Land Use Decision Evaluation

Use the Land Use Compatibility for Community Noise Environments chart, the Future Noise Contour Map (see Figure D-1 in Appendix D) and the City Municipal Code to evaluate land use decisions.

Policy HS-8.2: Building and Site Design

Minimize noise impacts through appropriate building and site design.

Strategy HS-8.2.1: Commercial Delivery Areas. Locate delivery areas for new commercial and industrial

developments away from existing or planned homes.

Strategy HS-8.2.2: Noise Control Techniques. Require analysis and implementation of techniques to control the effects of noise from industrial equipment and processes for projects near low-intensity residential uses.

Strategy HS-8.2.3: Sound Wall Requirements. Exercise discretion in requiring sound walls to be sure that all other measures of noise control have been explored and that the sound wall blends with the neighborhood. Sound walls should be designed and landscaped to fit into the environment.

Policy HS-8.3: Construction and Maintenance Activities

Regulate construction and maintenance activities. Establish and enforce reasonable allowable periods of the day, during weekdays, weekends and holidays for construction activities. Require construction contractors to use the best available technology to minimize excessive noise and vibration from construction equipment such as pile drivers, jack hammers, and vibratory rollers.

Policy HS-8.4: Freeway Design and Neighborhood Noise

Ensure that roads and development along Highway 85 and Interstate 280 are designed and improved in a way that minimizes neighborhood noise.

Policy HS-8.5: Neighborhoods

Review residents' needs for convenience and safety and prioritize them over the convenient movement of commute or through traffic where practical.

Policy HS-8.6: Traffic Calming Solutions to Street Noise

Evaluate solutions to discourage through traffic in neighborhoods through enhanced paving and modified street design.

Strategy HS-8.6.1: Local Improvement. Modify street design to minimize noise impact to neighbors.

Policy HS-8.7: Reduction of Noise from Trucking Operations

Work to carry out noise mitigation measures to diminish noise along Foothill and Stevens Creek Boulevards from the quarry and cement plant trucking operations. These measures include regulation of truck speed, the volume of truck activity, and trucking activity hours to avoid late evening and early morning. Alternatives to truck transport, specifically rail, are strongly encouraged when feasible.

Strategy HS-8.7.1: Restrictions in the County's Use Permit. Coordinate with the County to restrict the number of trucks, their speed and noise levels along Foothill and Stevens Creek Boulevards, to the extent allowed in the Use Permit. Ensure that restrictions are monitored and enforced by the County.

Strategy HS-8.7.2: Road Improvements to Reduce Truck Impacts. Consider road improvements such as medians, landscaping, noise attenuating asphalt, and other methods to reduce quarry truck impacts.

CHAPTER 10.48: COMMUNITY NOISE CONTROL*

Section

* Prior ordinance history: Ords. 1022, 1066, 1107, 1149, 1179 and 1278.

10.48.010 Definitions.

For purposes of this chapter:

"Commercial area" means commercially-zoned property as defined in the community zoning ordinance.

"Commercial establishment" means any store, factory, manufacturing or industrial plant used for the sale, manufacturing, fabrication, assembly or storage of goods, wares and merchandise.

"Construction" means any site preparation, assembly, erection, repair, substantial alteration, or similar action, of public or private property, rights-of-way, structures, utilities or similar property, including vehicle pick-up or delivery of construction materials or demolition debris but excluding demolition and grading.

"Daytime" means the period from seven a.m. to eight p.m. on weekdays, and the period from nine a.m. to six p.m. on weekends.

"Decibel (dB)" means a unit for measuring relative sound pressure, logarithmically referenced to a pressure of twenty micronewtons per square meter.

"Demolition" means any dismantling, intentional destruction or removal of structures, utilities, public or private right-of-way surfaces, or similar property.

"Emergency" means any occurrence or set of circumstances involving actual or imminent physical danger, crisis, trauma, or property damage which demands immediate action.

"Emergency work" means any work performed for the purpose of preventing or alleviating the physical danger, trauma, or property damage threatened or caused by an emergency, or restoration of conditions and property to their status prior to the emergency.

"Holidays" means the following days: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Christmas Day.

"Industrial area" means industrially-zoned property as defined in the community zoning ordinance.

"Muffler" means a device for reducing or dissipating the sound of escaping gases, or other types of noise, from a mechanical device or engine.

"Multiple-family dwelling unit" means a residential structure containing separate living quarters for two or more families, each unit with similar and common access to the outside.

"NCO" means noise control officer.

"Nighttime" means periods of weekdays from eight p.m. to twelve midnight, and from midnight to seven a.m., and periods on weekends from six p.m. to midnight and from midnight to nine a.m.

"Noise" means any sound which annoys or disturbs humans or which causes or tends to cause an adverse psychological or physiological effect on humans.

"Noise Control Officer (NCO)" means the municipal agency, department or individual having lead responsibility for implementation and enforcement of this chapter, as designated by the City Manager and approved by the City Council.

"Noise disturbance" means any sound which:

1. Endangers or injures the safety or health of humans or animals; or
2. Annoys or disturbs a reasonable person of normal sensitivities; or
3. Endangers or damages personal or real property.

"Noise level" means the same as sound level.

"Nonresidential area" means land zoned for other than residential uses, such as commercial, professional office, industrial or public, as defined in the zoning ordinance, but not including public rights-of-way.

"Person" means any individual, association, partnership, corporation, or public agency, and includes any associated officer, employee or department.

"Property boundary" means an imaginary line along the ground surface, and its vertical extension, which separates the real property owned by one person from that owned by another person.

"Public area" means any property or structures thereon which are owned, utilized, or controlled by a governmental entity.

"Public right-of-way" means any street, avenue, boulevard, highway, parkway, alley or similar place which is owned or controlled by a governmental entity.

"Residential area" means residentially zoned land as defined in the community zoning ordinance.

"Sound" means a rapid variation in air pressure, which, because of its magnitude and frequency, can be heard by a human with average hearing ability.

"Sound level" means the maximum continuous or repeated peak value measured by the use of a sound level meter and the "A" weighting network, as specified in American National Standards Institute specifications for sound level meters (ANSI S IA - 1971, or the latest revision). The reading obtained in decibels is designated dBA. If the meter response characteristic is not indicated, "SLOW" response shall be used.

"Sound level meter" means an instrument which includes a microphone, amplifier, RMS detector, integrator or time averager, output meter, and weighting networks used to measure sound levels, and meets American National Standards Institute specification S 1.4 - 1971, or latest revision, for Type 1, Type 2 or Type 2A operation.

"Weekday" means any day, Monday through Friday, that is not one of the holidays.

"Weekend" means Saturdays and Sundays that are not holidays.

"Vehicular deliveries or pickups" means the delivery or pickup or the arrival for the delivery or pickup of goods, wares, merchandise and waste material by the use of motor vehicles, including, but not limited to, the operation of motorized commercial ground-sweeping or waste-removal machinery, whether portable or self-propelled.

(Ord. 1871, (part), 2001)

10.48.011 Notice of Violation.

Except in the case where there is clear evidence that a person is acting in good faith and with all deliberate speed to comply with provisions of this chapter after a verbal or written warning of a violation, the continuing violation shall be cause for either a citation, complaint, or an abatement order to be issued by the Noise Control Officer, or other responsible official.

(Ord. 1871, (part), 2001)

10.48.013 Multiple Section Application.

In the event that more than one section of this chapter apply generally and simultaneously to a given noise source or incident, the least restrictive regulation shall be in effect, and the most restrictive limit shall not be invoked, except as sources and incidents are specifically identified in the most restrictive limit which is applicable.

(Ord. 1871, (part), 2001)

10.48.014 Other Remedies.

No provision of this chapter shall be construed to impair any common law or statutory cause of action, or legal remedy therefrom, of any person for injury or damage arising from any violation of this chapter or from other law. The provisions of this chapter are not intended to affect in any manner, violations or arrests of persons for a violation of Section 415 of the California Penal Code or any other provision of

State law. The unavailability of a sound level meter to enforce the provisions of this chapter does not preclude the enforcement of any provision of State law.

(Ord. 1871, (part), 2001)

10.48.020 Lead Agency/Official.

The noise control program established by this chapter shall be administered by and the responsibility of, the Noise Control Officer (NCO).

(Ord. 1871, (part), 2001)

10.48.021 Powers of the Noise Control Officer.

In order to implement and enforce this chapter and for the general purpose of noise abatement and control, the NCO shall have, in addition to any other vested authority, the power to:

A. Review of Public and Private Projects. Review of public and private projects, subject to mandatory review or approval by other departments, for compliance with this ordinance, if such projects are likely to cause noise in violation of this chapter;

B. Inspections. Upon presentation of proper credentials and with permission of the property owner or occupant, enter and investigate a potential ordinance violation on any property or place, and inspect any report or records at any reasonable time. If permission is refused or cannot be obtained, a search warrant may be obtained from a court of competent jurisdiction upon showing of probable cause to believe that a violation of this chapter may exist. Such inspection may include administration of any necessary tests.

(Ord. 1871, (part), 2001)

10.48.022 Duties of the Noise Control Officer.

In order to implement and enforce this chapter effectively, the NCO shall within a reasonable time after the effective date of the ordinance codified in this chapter:

A. Guidelines, Testing Methods and Procedures. Develop and promulgate guidelines, testing methods and procedures as required. Any noise measurement procedure used in enforcement of this chapter which tends to underestimate the actual noise level of the source being measured shall not invalidate the enforcement action;

B. Investigate and Pursue Violations. In consonance with provisions of this chapter, investigate and pursue possible violations;

C. Delegation of Authority. Delegate functions, where appropriate under this chapter, to other personnel and to other departments, subject to approval of the City Manager.

(Ord. 1871, (part), 2001)

10.48.023 Duties and Responsibilities of Other Departments.

A. Departmental Actions. All City departments shall, to the fullest extent consistent with other law, carry out their programs in such a manner as to further the policy and intent of this chapter.

B. Project Approval. All departments whose duty it is to review and approve new projects, or changes to existing projects, that may result in the production of disturbing noise, shall consult with the NCO prior to any such approval.

C. Contracts. Any written contract, agreement, purchase order, or other instrument whereby the City is committed to the expenditure of five thousand dollars or more in return for goods or services, and which involves noise-producing activities, shall contain provisions requiring compliance with this chapter.

(Ord. 1871, (part), 2001)

10.48.029 Homeowner or Resident-Conducted Construction Work Exception.

Construction conducted by the homeowner or resident of a single dwelling, using domestic construction tools is allowed on holidays between the hours of nine a.m. and six p.m.

(Ord. 1871, (part), 2001)

10.48.030 Emergency Exception.

The provisions of this chapter shall not apply to the emission of sound for the purpose of alerting persons to the existence of an emergency, or the emission of sound in the performance of emergency work.

(Ord. 1871, (part), 2001)

10.48.031 Special Exceptions.

A. The NCO shall have the authority, consistent with this section, to grant special exceptions which may be requested.

B. Any person seeking a special exception pursuant to this section shall file an application with the NCO. The application shall contain information which demonstrates that bringing the source of sound, or activity for which the special exception is sought, into compliance with this chapter would constitute an unreasonable hardship on the applicant, on the community, or on other persons. Prior to issuance of an exception, the NCO shall notify owners and/or occupants of nearby properties which may be affected by such exceptions. Any individual who claims to be adversely affected by allowance of the special exceptions may file a statement with the NCO containing any information to support his claim. If the NCO finds that a sufficient controversy exists regarding an application, a public hearing may be held.

C. In determining whether to grant or deny the application, the NCO shall balance the hardship to the applicant, the community, and other persons of not granting the special exception against the adverse impact on the health, safety, and welfare of persons affected, the adverse impact on property affected, and any other adverse impacts of granting the special exception. Applicants for special exceptions and persons contesting special exceptions may be required to submit any information the NCO may reasonably require. In granting or denying an application, the NCO shall place on public file a copy of the decision and the reasons for denying or granting the special exception.

D. Special exceptions shall be granted by notice to the applicant containing all necessary conditions, including a time limit on the permitted activity. The special exception shall not become effective until all conditions are agreed to by the applicant. Noncompliance with any condition of the special exception shall terminate it and subject the person holding it to those provisions of this chapter regulating the source of sound or activity for which the special exception was granted.

E. Application for extension of time limits specified in special exceptions or for modification of other substantial conditions shall be treated like applications for initial special exceptions under subsection B of this section.

(Ord. 1871, (part), 2001)

10.48.032 Appeals.

Appeals of any decision of the NCO shall be made to the City Council.

(Ord. 1871, (part), 2001)

10.48.040 Daytime and Nighttime Maximum Noise Levels.

Individual noise sources, or the combination of a group of noise sources located on the same property, shall not produce a noise level exceeding those specified on property zoned as follows, unless specifically provided in another section of this chapter:

Land Use at Point of Origin	**Maximum Noise Level at Complaint Site of Receiving Property**	
	Nighttime	Daytime
Residential	50 dBA	60 dBA
Nonresidential	55 dBA	65 dBA

(Ord. 1921, (part), 2003; Ord. 1871, (part), 2001)

10.48.050 Brief Daytime Incidents.

A. During the daytime period only, brief noise incidents exceeding limits in other sections of this chapter are allowed; providing, that the sum of the noise duration in minutes plus the excess noise level does not exceed twenty in a two-hour period. For example, the following combinations would be allowable:

Noise Increment Above Normal Standard	Noise Duration in 2-Hour Period
5 DBA	15 minutes
10 dBA	10 minutes
15 dBA	5 minutes
19 dBA	1 minute

B. For multifamily dwelling interior noise, Section 10.48.054, the sum of excess noise level and duration in minutes of a brief daytime incident shall not exceed ten in any two-hour period, measured at the receiving location.

C. Section 10.48.050A does not apply to Section 10.48.055 (Motor Vehicle Idling).

(Ord. 1871, (part), 2001)

10.48.051 Landscape Maintenance Activities.

The use of motorized equipment for landscape maintenance activities shall be limited to the hours of 8:00 a.m. to 8:00 p.m. on weekdays, and 9:00 a.m. to 6:00 p.m. on weekends and holidays, with the exception of landscape maintenance activities for public schools, public and private golf courses, and public facilities, which are allowed to begin at 7:00 a.m. The use of motorized equipment for landscape maintenance activities during these hours is exempted from the limits of Section 10.48.040; provided, that reasonable efforts are made by the user to minimize the disturbances to nearby residents by, for example, installation of appropriate mufflers or noise baffles, running equipment only the minimal

period necessary, and locating equipment so as to generate minimum noise levels on adjoining properties.

(Ord. 1921, (part), 2003; Ord. 1871, (part), 2001)

10.48.052 Outdoor Public Events.

A. Outdoor events open to the general public on nonresidential property, such as parades, rallies, fairs, concerts and special sales and promotional events, involving generation of noise levels higher than would normally occur, by use of the human voice, public address systems, musical instruments, electronic amplification systems, and similar soundproducing activities, are allowed upon obtaining an appropriate permit from the city, and subject to the following general limitations:

1. The event shall not produce noise levels above seventy dBA on any residential property for a period longer than three hours during daytime.

2. The event shall not produce noise levels above sixty dBA on any residential property during the period from eight p.m. to eleven p.m., and above fifty-five dBA for any other nighttime period.

3. Continuous or repeated peak noise levels above ninety-five dBA shall not be produced at any location where persons may be continuously exposed.

B. The conditions imposed upon the event or activity in the permit issued by the City, regarding maximum noise level, location of noise sources, or duration of activity, for example, may be more limiting than this section, to protect certain individuals, areas or nearby activities which would otherwise be disturbed, and these permit conditions, when in conflict with this section, are overriding.

(Ord. 1871, (part), 2001)

10.48.053 Grading, Construction and Demolition.

A. Grading, construction and demolition activities shall be allowed to exceed the noise limits of Section 10.48.040 during daytime hours; provided, that the equipment utilized has high-quality noise muffler and abatement devices installed and in good condition, and the activity meets one of the following two criteria:

1. No individual device produces a noise level more than eighty-seven dBA at a distance of twenty-five feet (7.5 meters); or

2. The noise level on any nearby property does not exceed eighty dBA.

B. Notwithstanding Section 10.48.053A, it is a violation of this chapter to engage in any grading, street construction, demolition or underground utility work within seven hundred fifty feet of a residential area on Saturdays, Sundays and holidays, and during the nighttime period, except as provided in Section 10.48.030.

C. Construction, other than street construction, is prohibited on holidays, except as provided in Sections 10.48.029 and 10.48.030.

D. Construction, other than street construction, is prohibited during nighttime periods unless it meets the nighttime standards of Section 10.48.040.

E. The use of helicopters as a part of a construction and/or demolition activity shall be restricted to between the hours of nine a.m. and six thirty p.m. Monday through Friday only, and prohibited on the weekends and holidays. The notice shall be given at least twenty-four hours in advance of said usage. In cases of emergency, the twenty-four hour period may be waived.

(Ord. 1871, (part), 2001)

10.48.054 Interior Noise in Multiple-Family Dwellings.

Noise produced in any multiple-family dwelling unit shall not produce a noise level exceeding 45 dBA five feet from any wall in any adjoining unit during the period between seven a.m. and ten p.m., or exceeding 40 dBA during hours from ten p.m. to seven a.m. the following day.

(Ord. 1871, (part), 2001)

10.48.055 Motor Vehicle Idling.

Motor vehicles, including automobiles, trucks, motorcycles, motor scooters and trailers or other equipment towed by a motor vehicle, shall not be allowed to remain in one location with the engine or auxiliary motors running for more than three minutes in any hour, in an area other than on a public right-of-way, unless:

A. The regular noise limits of Section 10.48.040 are met while the engine and/or auxiliary motors are running; or

B. The vehicle is in use for provision of police, fire, medical, or other emergency services.

(Ord. 1871, (part), 2001)

10.48.056 Noise from Registered Motor Vehicles.

A. It is a violation of this chapter to own or operate a motor vehicle, including automobiles, trucks, motorcycles and other similar devices of a type subject to registration, as defined in California Vehicle Code, which has a faulty, defective, deteriorated, modified, replaced, or no exhaust and/or muffler system, and which produces an excessive and disturbing noise level, as defined in California Vehicle Code Sections 27150 and 27151.

B. The Stationary Vehicle Test Procedure, as adopted by the California Highway Patrol, may be utilized as prima facie evidence of violation of this section.

(Ord. 1871, (part), 2001)

10.48.057 Noise from Off-Road Recreational Vehicles.

It is a violation of this chapter to own or operate:

A. Any off-road recreational vehicle, including all-terrain vehicles, dirt bikes, dune buggies and other similar devices, as defined in Division 16.5 of the California Vehicle Code, which has a faulty, defective, deteriorated, modified, replaced, or no exhaust and/or muffler system, and which produces an excessive and disturbing noise level, as specified in California Vehicle Code Section 38365;

B. Any off-road recreational vehicle producing a noise level:

1. Exceeding ninety-eight dBA within twenty inches of any component at an intermediate engine speed of two thousand to four thousand revolutions per minute in a stationary position; or

2. Exceeding eighty dBA under any condition of acceleration, speed, grade, and load at a distance of fifty feet. At greater or lesser measurement distances, the maximum noise level changes by four dB for each doubling or halving of distance. The sound level meter shall be set for FAST response for this measurement.

(Ord. 1871, (part), 2001)

10.48.060 Noise Disturbances.

No person shall unreasonably make, continue, or cause to be made or continued, any noise disturbance as defined in Section 10.48.010.

(Ord. 1871, (part), 2001)

10.48.061 Animals and Birds.

It is unlawful and a nuisance for any person to keep, maintain or permit upon any lot or parcel of land within the City under his control any animal, including any fowl, which by any sound or cry shall habitually disturb the peace and comfort of any person in the reasonable and comfortable enjoyment of life or property.

(Ord. 1871, (part), 2001)

10.48.062 Nighttime Deliveries and Pickups.

It is unlawful and a nuisance for any person to make or allow vehicular deliveries or pickups to or from commercial establishments (defined as any store, factory, manufacturing, or industrial plant used for the sale, manufacturing, fabrication, assembly or storage of goods, wares and merchandise) by the use of private roads, alleys or other ways located on either side or the back of any building housing the commercial establishment where such private road, alley or other way lies between the building and any adjacent parcel of land zoned for residential purposes, between the hours of eight p.m. and eight a.m.

weekdays (Monday through Friday) and six p.m. and nine a.m. on weekends (Saturday and Sunday) and holidays except as may be permitted under Section 10.48.029.

(Ord. 1871, (part), 2001)

10.48.070 Violation–Penalty.

Any person who violates the provisions of this chapter shall be guilty of a misdemeanor and upon conviction thereof shall be punished as provided in Chapter 1.12.

(Ord. 1886, (part), 2001; Ord. 1871, (part), 2001)

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COCU-06 Hamptons Redevelopment

EXISTING NO PROJECT

#	ROADWAY	SEGMENT	ADT	POSTED SPEED LIMIT	LANE DISTANCE	SITE CONDITION	LANES	GRADE (%)
1	Wolfe Road	El Camino Real to Fremont	28,325	35	84	Soft	6D	**0%**
2	Wolfe Road	Fremont to Marion	23,205	35	48	Soft	4D	**0%**
3	Wolfe Road	Marion to Inverness	21,420	35	36	Soft	4U	**0%**
4	Wolfe Road	Inversenn to Homestead	19,075	35	36	Soft	4U	**0%**
5	Wolfe Road	Homestead to AC2	28,870	35	48	Soft	4D	**0%**
6	Wolfe Road	AC2 to Pruneridge	28,870	35	48	Soft	4D	**0%**
7	Wolfe Road	Pruneridge to I-280 NB	31,305	35	48	Soft	4D	**0%**
8	Wolfe Road	I-280 NB to I-280 SB	30,905	35	48	Soft	4D	**0%**
9	Wolfe Road	I-280 SB to Vallco	31,205	35	84	Soft	6D	**0%**
10	Wolfe Road	Vallco to Stevens Creek	26,215	35	48	Soft	4D	**0%**
11	Stevens Creek Blvd	De Anza to Miller	26,715	35	84	Soft	6D	**0%**
12	Stevens Creek Blvd	Miller to Tantau	25,645	35	84	Soft	6D	**0%**
13	Homestead Road	Wolfe Road to Tantau	14,630	35	48	Soft	4D	**0%**
14	Homestead Road	Tantau to Lawrence	18,805	35	48	Soft	4D	**0%**
15					#N/A	Soft		**0%**
16					#N/A	Soft		**0%**
17					#N/A	Soft		**0%**
18					#N/A	Soft		**0%**
19					#N/A	Soft		**0%**
20					#N/A	Soft		**0%**
21					#N/A	Soft		**0%**
22					#N/A	Soft		**0%**
23					#N/A	Soft		**0%**
24					#N/A	Soft		**0%**
25					#N/A	Soft		**0%**
26					#N/A	Soft		**0%**
27					#N/A	Soft		**0%**
28					#N/A	Soft		**0%**
29					#N/A	Soft		**0%**
30					54	Soft		**0%**

ANALYST
NJF

ROAD CLASSIFICATION	SPEED	LANE DISTANCE
2U	40	12
4U	40	36
4D	45	48
6D	45	84
2D	40	24

		73.6	75.55%
		13.6	13.96%
		10.22	10.49%

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.42%	DAY	75.5%
% MT	1.84%	EVENING	14.0%
% HT	0.74%	NIGHT	10.5%

Source: Riverside, County of, Department of Public Health, Office of Industrial Hygiene. 2009, November. For Determining and Mitigating Traf

Riverside County Fleet Mix: Secondary, Collectors, or Smaller

Vehicle	Overall %	Day (7 AM to	Evening (7	Night (10 PM to 7 AM)
Auto	97%	73.60	13.60	10.22
Medium Truck	2%	0.90	0.04	0.90
Heavy Truck	1%	0.35	0.04	0.35
		74.85	13.68	11.47

COCU-06 Hamptons Redevelopment
EXISTING NO PROJECT CONDITIONS NOISE CONTOURS RESULT SUMMARY TABLE

					DISTACE TO NOISE CONTOUR (FT.)		
#	ROADWAY	SEGMENT	TRAFIC VOLUMES	LEVEL AT 50 FT.	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Wolfe Road	El Camino Real to Fremont	28,325	73.9	90	195	420
2	Wolfe Road	Fremont to Marion	23,205	69.9	49	106	227
3	Wolfe Road	Marion to Inverness	21,420	69.1	44	94	203
4	Wolfe Road	Inversenn to Homestead	19,075	68.6	40	87	188
5	Wolfe Road	Homestead to AC2	28,870	70.8	57	122	263
6	Wolfe Road	AC2 to Pruneridge	28,870	70.8	57	122	263
7	Wolfe Road	Pruneridge to I-280 NB	31,305	71.2	60	129	278
8	Wolfe Road	I-280 NB to I-280 SB	30,905	71.1	59	128	275
9	Wolfe Road	I-280 SB to Vallco	31,205	74.3	97	208	448
10	Wolfe Road	Vallco to Stevens Creek	26,215	70.4	53	115	247
11	Stevens Creek Blvd	De Anza to Miller	26,715	73.6	87	188	404
12	Stevens Creek Blvd	Miller to Tantau	25,645	73.4	85	182	393
13	Homestead Road	Wolfe Road to Tantau	14,630	67.9	36	78	167
14	Homestead Road	Tantau to Lawrence	18,805	69.0	43	92	198
15	0	0	0	#NUM!	#NUM!	#NUM!	#NUM!
16	0	0	0	#NUM!	#NUM!	#NUM!	#NUM!
17	0	0	0	#NUM!	#NUM!	#NUM!	#NUM!
18	0	0	0	#NUM!	#NUM!	#NUM!	#NUM!
19	0	0	0	#NUM!	#NUM!	#NUM!	#NUM!
20	0	0	0	#NUM!	#NUM!	#NUM!	#NUM!
21	0	0	0	#NUM!	#NUM!	#NUM!	#NUM!
22	0	0	0	#NUM!	#NUM!	#NUM!	#NUM!
23	0	0	0	#NUM!	#NUM!	#NUM!	#NUM!
24	0	0	0	#NUM!	#NUM!	#NUM!	#NUM!
25	0	0	0	#NUM!	#NUM!	#NUM!	#NUM!
26	0	0	0	#NUM!	#NUM!	#NUM!	#NUM!
27	0	0	0	#NUM!	#NUM!	#NUM!	#NUM!
28	0	0	0	#NUM!	#NUM!	#NUM!	#NUM!
29	0	0	0	#NUM!	#NUM!	#NUM!	#NUM!
30	0	0	0	#NUM!	#NUM!	#NUM!	#NUM!

Scenario: EXISTING NO PROJECT
Roadway: Wolfe Road
Segment: El Camino Real to Fremont

Project: COCU-06 Hamptons Redevelo
Analyst: NJF
Date: 04-Jan-16

ROADWAY INPUTS	
ADT	28,325
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	84
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1737	33	13	1284	24	10	322	6	2
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	1.7	-15.6	-19.5	0.3	-16.9	-20.9	-5.7	-22.9	-26.9
Distance	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	70.6	63.1	64.4	69.3	61.8	63.1	63.3	55.8	57.1
VEHICULAR NOISE	DAY=	72.1	Leq	EVENING=	70.8	Leq	NIGHT=	64.8	Leq

RESULTS						
NOISE LEVELS AT	50	FEET FROM CENTERLINE (dBA):			**Ldn=**	**73.2**
					CNEL=	**73.9**
NOISE CONTOUR:				*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):			**Ldn:**	**82**	**177**	**382**
			CNEL:	**90**	**195**	**420**

Scenario: EXISTING NO PROJECT
Roadway: Wolfe Road
Segment: Fremont to Marion

Project: COCU-06 Hamptons Redevelo
Analyst: NJF
Date: 04-Jan-16

ROADWAY INPUTS	
ADT	23,205
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	48
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1423	27	11	1052	20	8	264	5	2
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	0.8	-16.5	-20.4	-0.5	-17.8	-21.7	-6.5	-23.8	-27.7
Distance	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	66.6	59.1	60.4	65.3	57.8	59.1	59.3	51.8	53.1
VEHICULAR NOISE	DAY=	68.1	Leq	EVENING=	66.8	Leq	NIGHT=	60.8	Leq

RESULTS						
NOISE LEVELS AT	50	FEET FROM CENTERLINE (dBA):			**Ldn=**	**69.2**
					CNEL=	**69.9**
NOISE CONTOUR:				*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):			**Ldn:**	**45**	**96**	**207**
			CNEL:	**49**	**106**	**227**

Scenario: EXISTING NO PROJECT
Roadway: Wolfe Road
Segment: Marion to Inverness

Project: COCU-06 Hamptons Redevelo
Analyst: NJF
Date: 04-Jan-16

ROADWAY INPUTS	
ADT	21,420
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	36
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA

	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1314	25	10	971	18	7	243	5	2
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	0.4	-16.8	-20.8	-0.9	-18.1	-22.1	-6.9	-24.1	-28.1
Distance	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	65.9	58.4	59.6	64.6	57.1	58.3	58.6	51.1	52.3
VEHICULAR NOISE	DAY=	67.4	Leq	EVENING=	66.1	Leq	NIGHT=	60.1	Leq

RESULTS

NOISE LEVELS AT 50 FEET FROM CENTERLINE (dBA): **Ldn= 68.5**
CNEL= 69.1

NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**40**	**85**	**184**
	CNEL:	**44**	**94**	**203**

Scenario: EXISTING NO PROJECT
Roadway: Wolfe Road
Segment: Inversenn to Homestead

Project: COCU-06 Hamptons Redevelo
Analyst: NJF
Date: 04-Jan-16

ROADWAY INPUTS	
ADT	19,075
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	36
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1170	22	9	865	16	7	217	4	2
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	-0.1	-17.3	-21.3	-1.4	-18.6	-22.6	-7.4	-24.6	-28.6
Distance	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	65.4	57.9	59.1	64.1	56.6	57.8	58.1	50.5	51.8
VEHICULAR NOISE	DAY=	66.9	Leq	EVENING=	65.6	Leq	NIGHT=	59.6	Leq

RESULTS						
NOISE LEVELS AT	50	FEET FROM CENTERLINE (dBA):			**Ldn=**	**68.0**
					CNEL=	**68.6**
NOISE CONTOUR:				*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):			**Ldn:**	**37**	**79**	**170**
			CNEL:	**40**	**87**	**188**

Scenario: EXISTING NO PROJECT
Roadway: Wolfe Road
Segment: Homestead to AC2

Project: COCU-06 Hamptons Redevelo
Analyst: NJF
Date: 04-Jan-16

ROADWAY INPUTS	
ADT	28,870
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	48
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1771	33	13	1309	25	10	328	6	2
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	1.7	-15.5	-19.5	0.4	-16.8	-20.8	-5.6	-22.8	-26.8
Distance	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	67.6	60.1	61.3	66.3	58.8	60.0	60.3	52.7	54.0
VEHICULAR NOISE	DAY=	69.1	Leq	EVENING=	67.8	Leq	NIGHT=	61.8	Leq

RESULTS					
NOISE LEVELS AT	50	FEET FROM CENTERLINE (dBA):		**Ldn=**	**70.2**
				CNEL=	**70.8**
NOISE CONTOUR:				*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):			**Ldn:**	**51**	**111**	**239**
			CNEL:	**57**	**122**	**263**

Scenario: EXISTING NO PROJECT
Roadway: Wolfe Road
Segment: AC2 to Pruneridge

Project: COCU-06 Hamptons Redevelo
Analyst: NJF
Date: 04-Jan-16

ROADWAY INPUTS	
ADT	28,870
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	48
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1771	33	13	1309	25	10	328	6	2
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	1.7	-15.5	-19.5	0.4	-16.8	-20.8	-5.6	-22.8	-26.8
Distance	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	67.6	60.1	61.3	66.3	58.8	60.0	60.3	52.7	54.0
VEHICULAR NOISE	DAY=	69.1	Leq	EVENING=	67.8	Leq	NIGHT=	61.8	Leq

RESULTS					
NOISE LEVELS AT	50	FEET FROM CENTERLINE (dBA):		**Ldn=**	**70.2**
				CNEL=	**70.8**
NOISE CONTOUR:				*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):			**Ldn:**	**51**	**111**	**239**
			CNEL:	**57**	**122**	**263**

Scenario: EXISTING NO PROJECT
Roadway: Wolfe Road
Segment: Pruneridge to I-280 NB

Project: COCU-06 Hamptons Redevelo
Analyst: NJF
Date: 04-Jan-16

ROADWAY INPUTS	
ADT	31,305
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	48
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1920	36	15	1419	27	11	355	7	3
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	2.1	-15.2	-19.1	0.8	-16.5	-20.4	-5.2	-22.5	-26.4
Distance	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	67.9	60.4	61.7	66.6	59.1	60.4	60.6	53.1	54.4
VEHICULAR NOISE	DAY=	69.4	Leq	EVENING=	68.1	Leq	NIGHT=	62.1	Leq

RESULTS					
NOISE LEVELS AT	50	FEET FROM CENTERLINE (dBA):		**Ldn=**	**70.5**
				CNEL=	**71.2**
NOISE CONTOUR:				*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):			**Ldn:**	**54**	**117**	**252**
			CNEL:	**60**	**129**	**278**

Scenario: EXISTING NO PROJECT
Roadway: Wolfe Road
Segment: I-280 NB to I-280 SB

Project: COCU-06 Hamptons Redevelo
Analyst: NJF
Date: 04-Jan-16

ROADWAY INPUTS	
ADT	30,905
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	48
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1896	36	14	1401	26	11	351	7	3
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	2.0	-15.2	-19.2	0.7	-16.5	-20.5	-5.3	-22.5	-26.5
Distance	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	67.9	60.4	61.6	66.6	59.1	60.3	60.6	53.0	54.3
VEHICULAR NOISE	DAY=	69.4	Leq	EVENING=	68.1	Leq	NIGHT=	62.1	Leq

RESULTS					
NOISE LEVELS AT	50	FEET FROM CENTERLINE (dBA):		**Ldn=**	**70.5**
				CNEL=	**71.1**
NOISE CONTOUR:				*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):			**Ldn:**	**54**	**116**	**250**
			CNEL:	**59**	**128**	**275**

Scenario: EXISTING NO PROJECT
Roadway: Wolfe Road
Segment: I-280 SB to Vallco

Project: COCU-06 Hamptons Redevelo
Analyst: NJF
Date: 04-Jan-16

ROADWAY INPUTS	
ADT	31,205
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	84
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1914	36	15	1415	27	11	354	7	3
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	2.1	-15.2	-19.1	0.8	-16.5	-20.4	-5.3	-22.5	-26.4
Distance	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	71.1	63.5	64.8	69.7	62.2	63.5	63.7	56.2	57.5
VEHICULAR NOISE	DAY=	72.6	Leq	EVENING=	71.3	Leq	NIGHT=	65.2	Leq

RESULTS					
NOISE LEVELS AT	50	FEET FROM CENTERLINE (dBA):		**Ldn=**	**73.7**
				CNEL=	**74.3**
NOISE CONTOUR:				*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):			**Ldn:**	**88**	**189**	**407**
			CNEL:	**97**	**208**	**448**

Scenario: EXISTING NO PROJECT
Roadway: Wolfe Road
Segment: Vallco to Stevens Creek

Project: COCU-06 Hamptons Redevelo
Analyst: NJF
Date: 04-Jan-16

ROADWAY INPUTS	
ADT	26,215
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	48
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1608	30	12	1188	22	9	298	6	2
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	1.3	-15.9	-19.9	0.0	-17.2	-21.2	-6.0	-23.2	-27.2
Distance	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	67.2	59.7	60.9	65.9	58.3	59.6	59.8	52.3	53.6
VEHICULAR NOISE	DAY=	68.7	Leq	EVENING=	67.4	Leq	NIGHT=	61.4	Leq

RESULTS					
NOISE LEVELS AT	50	FEET FROM CENTERLINE (dBA):		**Ldn=**	**69.8**
				CNEL=	**70.4**
NOISE CONTOUR:				*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):			**Ldn:**	**48**	**104**	**224**
			CNEL:	**53**	**115**	**247**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: EXISTING NO PROJECT
Roadway: Stevens Creek Blvd
Segment: De Anza to Miller
Project: COCU-06 Hamptons Redevelo
Analyst: NJF
Date: 04-Jan-16

ROADWAY INPUTS	
ADT	26,715
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	84
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1639	31	12	1211	23	9	303	6	2
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	1.4	-15.8	-19.8	0.1	-17.2	-21.1	-5.9	-23.2	-27.1
Distance	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	70.4	62.9	64.1	69.1	61.6	62.8	63.1	55.5	56.8
VEHICULAR NOISE	DAY=	71.9	Leq	EVENING=	70.6	Leq	NIGHT=	64.6	Leq

RESULTS				
NOISE LEVELS AT 50 FEET FROM CENTERLINE (dBA):			**Ldn=**	**73.0**
			CNEL=	**73.6**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**79**	**170**	**367**
	CNEL:	**87**	**188**	**404**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: EXISTING NO PROJECT
Roadway: Stevens Creek Blvd
Segment: Miller to Tantau
Project: COCU-06 Hamptons Redevelo
Analyst: NJF
Date: 04-Jan-16

ROADWAY INPUTS	
ADT	25,645
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	84
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA

	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1573	30	12	1163	22	9	291	6	2
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	1.2	-16.0	-20.0	-0.1	-17.3	-21.3	-6.1	-23.3	-27.3
Distance	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	70.2	62.7	64.0	68.9	61.4	62.6	62.9	55.4	56.6
VEHICULAR NOISE	DAY=	71.7	Leq	EVENING=	70.4	Leq	NIGHT=	64.4	Leq

RESULTS

NOISE LEVELS AT 50 FEET FROM CENTERLINE (dBA): **Ldn= 72.8** **CNEL= 73.4**

NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**77**	**166**	**357**
	CNEL:	**85**	**182**	**393**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: EXISTING NO PROJECT
Roadway: Homestead Road
Segment: Wolfe Road to Tantau
Project: COCU-06 Hamptons Redevelo
Analyst: NJF
Date: 04-Jan-16

ROADWAY INPUTS	
ADT	14,630
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	48
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA

	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	897	17	7	663	13	5	166	3	1
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	-1.2	-18.5	-22.4	-2.5	-19.8	-23.7	-8.5	-25.8	-29.7
Distance	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	64.6	57.1	58.4	63.3	55.8	57.1	57.3	49.8	51.1
VEHICULAR NOISE	DAY=	66.1	Leq	EVENING=	64.8	Leq	NIGHT=	58.8	Leq

RESULTS

NOISE LEVELS AT 50 FEET FROM CENTERLINE (dBA):			**Ldn=**	**67.2**
			CNEL=	**67.9**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**33**	**71**	**152**
	CNEL:	**36**	**78**	**167**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: EXISTING NO PROJECT
Roadway: Homestead Road
Segment: Tantau to Lawrence
Project: COCU-06 Hamptons Redevelo
Analyst: NJF
Date: 04-Jan-16

ROADWAY INPUTS	
ADT	18,805
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	48
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1153	22	9	852	16	6	214	4	2
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	-0.1	-17.4	-21.3	-1.4	-18.7	-22.6	-7.5	-24.7	-28.6
Distance	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	65.7	58.2	59.5	64.4	56.9	58.2	58.4	50.9	52.1
VEHICULAR NOISE	DAY=	67.2	Leq	EVENING=	65.9	Leq	NIGHT=	59.9	Leq

RESULTS				
NOISE LEVELS AT 50 FEET FROM CENTERLINE (dBA):			**Ldn=**	**68.3**
			CNEL=	**69.0**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**39**	**83**	**180**
	CNEL:	**43**	**92**	**198**

COCU-06 Hamptons Redevelopment

EXISTING PLUS PROJECT

#	ROADWAY	SEGMENT	ADT	POSTED SPEED LIMIT	LANE DISTANCE	SITE CONDITION	LANES	GRADE (%)
1	Wolfe Road	El Camino Real to Fremont	28,670	35	84	Soft	6D	**0%**
2	Wolfe Road	Fremont to Marion	23,720	35	48	Soft	4D	**0%**
3	Wolfe Road	Marion to Inverness	21,940	35	36	Soft	4U	**0%**
4	Wolfe Road	Inversenn to Homestead	19,595	35	36	Soft	4U	**0%**
5	Wolfe Road	Homestead to AC2	30,080	35	48	Soft	4D	**0%**
6	Wolfe Road	AC2 to Pruneridge	30,085	35	48	Soft	4D	**0%**
7	Wolfe Road	Pruneridge to I-280 NB	33,555	35	48	Soft	4D	**0%**
8	Wolfe Road	I-280 NB to I-280 SB	32,375	35	48	Soft	4D	**0%**
9	Wolfe Road	I-280 SB to Vallco	31,905	35	84	Soft	6D	**0%**
10	Wolfe Road	Vallco to Stevens Creek	26,820	35	48	Soft	4D	**0%**
11	Stevens Creek Blvd	De Anza to Miller	27,060	35	84	Soft	6D	**0%**
12	Stevens Creek Blvd	Miller to Tantau	25,735	35	84	Soft	6D	**0%**
13	Homestead Road	Wolfe Road to Tantau	14,975	35	48	Soft	4D	**0%**
14	Homestead Road	Tantau to Lawrence	19,150	35	48	Soft	4D	**0%**
15					#N/A	Soft		**0%**
16					#N/A	Soft		**0%**
17					#N/A	Soft		**0%**
18					#N/A	Soft		**0%**
19					#N/A	Soft		**0%**
20					#N/A	Soft		**0%**
21					#N/A	Soft		**0%**
22					#N/A	Soft		**0%**
23					#N/A	Soft		**0%**
24					#N/A	Soft		**0%**
25					#N/A	Soft		**0%**
26					#N/A	Soft		**0%**
27					#N/A	Soft		**0%**
28					#N/A	Soft		**0%**
29					#N/A	Soft		**0%**
30					54	Soft		**0%**

ANALYST
NJF

ROAD CLASSIFICATION	SPEED	LANE DISTANCE
2U	40	12
4U	40	36
4D	45	48
6D	45	84
2D	40	24

		73.6	75.55%
		13.6	13.96%
		10.22	10.49%

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.42%	DAY	75.5%
% MT	1.84%	EVENING	14.0%
% HT	0.74%	NIGHT	10.5%

Source: Riverside, County of, Department of Public Health, Office of Industrial Hygiene. 2009, November. For Determining and Mitigating Traf

Riverside County Fleet Mix: Secondary, Collectors, or Smaller

Vehicle	Overall %	Day (7 AM to	Evening (7	Night (10 PM to 7 AM)
Auto	97%	73.60	13.60	10.22
Medium Truck	2%	0.90	0.04	0.90
Heavy Truck	1%	0.35	0.04	0.35
		74.85	13.68	11.47

COCU-06 Hamptons Redevelopment
EXISTING PLUS PROJECT CONDITIONS NOISE CONTOURS RESULT SUMMARY TABLE

					DISTACE TO NOISE CONTOUR (FT.)		
#	ROADWAY	SEGMENT	TRAFIC VOLUMES	LEVEL AT 50 FT.	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Wolfe Road	El Camino Real to Fremont	28,670	73.9	91	197	423
2	Wolfe Road	Fremont to Marion	23,720	70.0	50	107	231
3	Wolfe Road	Marion to Inverness	21,940	69.2	44	96	206
4	Wolfe Road	Inversenn to Homestead	19,595	68.7	41	89	191
5	Wolfe Road	Homestead to AC2	30,080	71.0	58	126	270
6	Wolfe Road	AC2 to Pruneridge	30,085	71.0	58	126	270
7	Wolfe Road	Pruneridge to I-280 NB	33,555	71.5	63	135	291
8	Wolfe Road	I-280 NB to I-280 SB	32,375	71.3	61	132	284
9	Wolfe Road	I-280 SB to Vallco	31,905	74.4	98	211	455
10	Wolfe Road	Vallco to Stevens Creek	26,820	70.5	54	116	251
11	Stevens Creek Blvd	De Anza to Miller	27,060	73.7	88	189	407
12	Stevens Creek Blvd	Miller to Tantau	25,735	73.4	85	183	394
13	Homestead Road	Wolfe Road to Tantau	14,975	68.0	37	79	170
14	Homestead Road	Tantau to Lawrence	19,150	69.0	43	93	200
15	0	0	0	#NUM!	#NUM!	#NUM!	#NUM!
16	0	0	0	#NUM!	#NUM!	#NUM!	#NUM!
17	0	0	0	#NUM!	#NUM!	#NUM!	#NUM!
18	0	0	0	#NUM!	#NUM!	#NUM!	#NUM!
19	0	0	0	#NUM!	#NUM!	#NUM!	#NUM!
20	0	0	0	#NUM!	#NUM!	#NUM!	#NUM!
21	0	0	0	#NUM!	#NUM!	#NUM!	#NUM!
22	0	0	0	#NUM!	#NUM!	#NUM!	#NUM!
23	0	0	0	#NUM!	#NUM!	#NUM!	#NUM!
24	0	0	0	#NUM!	#NUM!	#NUM!	#NUM!
25	0	0	0	#NUM!	#NUM!	#NUM!	#NUM!
26	0	0	0	#NUM!	#NUM!	#NUM!	#NUM!
27	0	0	0	#NUM!	#NUM!	#NUM!	#NUM!
28	0	0	0	#NUM!	#NUM!	#NUM!	#NUM!
29	0	0	0	#NUM!	#NUM!	#NUM!	#NUM!
30	0	0	0	#NUM!	#NUM!	#NUM!	#NUM!

Scenario: EXISTING PLUS PROJECT
Roadway: Wolfe Road
Segment: El Camino Real to Fremont

Project: COCU-06 Hamptons Redevelo
Analyst: NJF
Date: 04-Jan-16

ROADWAY INPUTS	
ADT	28,670
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	84
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1758	33	13	1300	25	10	326	6	2
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	1.7	-15.5	-19.5	0.4	-16.8	-20.8	-5.6	-22.9	-26.8
Distance	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	70.7	63.2	64.4	69.4	61.9	63.1	63.4	55.8	57.1
VEHICULAR NOISE	DAY=	72.2	Leq	EVENING=	70.9	Leq	NIGHT=	64.9	Leq

RESULTS						
NOISE LEVELS AT	50	FEET FROM CENTERLINE (dBA):			**Ldn=**	**73.3**
					CNEL=	**73.9**
NOISE CONTOUR:				*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):			**Ldn:**	**83**	**179**	**385**
			CNEL:	**91**	**197**	**423**

Scenario: EXISTING PLUS PROJECT
Roadway: Wolfe Road
Segment: Fremont to Marion

Project: COCU-06 Hamptons Redevelo
Analyst: NJF
Date: 04-Jan-16

ROADWAY INPUTS	
ADT	23,720
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	48
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1455	27	11	1075	20	8	269	5	2
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	0.9	-16.4	-20.3	-0.4	-17.7	-21.6	-6.4	-23.7	-27.6
Distance	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	66.7	59.2	60.5	65.4	57.9	59.2	59.4	51.9	53.2
VEHICULAR NOISE	DAY=	68.2	Leq	EVENING=	66.9	Leq	NIGHT=	60.9	Leq

RESULTS						
NOISE LEVELS AT	50	FEET FROM CENTERLINE (dBA):			**Ldn=**	**69.3**
					CNEL=	**70.0**
NOISE CONTOUR:				*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):			**Ldn:**	**45**	**97**	**210**
			CNEL:	**50**	**107**	**231**

Scenario: EXISTING PLUS PROJECT
Roadway: Wolfe Road
Segment: Marion to Inverness

Project: COCU-06 Hamptons Redevelo
Analyst: NJF
Date: 04-Jan-16

ROADWAY INPUTS	
ADT	21,940
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	36
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA

	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1346	25	10	995	19	8	249	5	2
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	0.5	-16.7	-20.7	-0.8	-18.0	-22.0	-6.8	-24.0	-28.0
Distance	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	66.0	58.5	59.7	64.7	57.2	58.4	58.7	51.2	52.4
VEHICULAR NOISE	DAY=	67.5	Leq	EVENING=	66.2	Leq	NIGHT=	60.2	Leq

RESULTS

NOISE LEVELS AT 50 FEET FROM CENTERLINE (dBA): **Ldn= 68.6**
CNEL= 69.2

NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**40**	**87**	**187**
	CNEL:	**44**	**96**	**206**

Scenario: EXISTING PLUS PROJECT
Roadway: Wolfe Road
Segment: Inversenn to Homestead

Project: COCU-06 Hamptons Redevelo
Analyst: NJF
Date: 04-Jan-16

ROADWAY INPUTS	
ADT	19,595
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	36
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1202	23	9	888	17	7	223	4	2
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	0.1	-17.2	-21.1	-1.3	-18.5	-22.5	-7.3	-24.5	-28.5
Distance	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	65.5	58.0	59.3	64.2	56.7	57.9	58.2	50.7	51.9
VEHICULAR NOISE	DAY=	67.0	Leq	EVENING=	65.7	Leq	NIGHT=	59.7	Leq

RESULTS						
NOISE LEVELS AT	50	FEET FROM CENTERLINE (dBA):			**Ldn=**	**68.1**
					CNEL=	**68.7**
NOISE CONTOUR:				*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):			**Ldn:**	**37**	**81**	**174**
			CNEL:	**41**	**89**	**191**

Scenario: EXISTING PLUS PROJECT
Roadway: Wolfe Road
Segment: Homestead to AC2

Project: COCU-06 Hamptons Redevelo
Analyst: NJF
Date: 04-Jan-16

ROADWAY INPUTS	
ADT	30,080
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	48
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA

	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1845	35	14	1364	26	10	342	6	3
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	1.9	-15.3	-19.3	0.6	-16.6	-20.6	-5.4	-22.6	-26.6
Distance	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	67.8	60.3	61.5	66.5	58.9	60.2	60.4	52.9	54.2
VEHICULAR NOISE	DAY=	69.3	Leq	EVENING=	68.0	Leq	NIGHT=	61.9	Leq

RESULTS

NOISE LEVELS AT 50 FEET FROM CENTERLINE (dBA): **Ldn= 70.4**
CNEL= 71.0

NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**53**	**114**	**246**
	CNEL:	**58**	**126**	**270**

Scenario: EXISTING PLUS PROJECT
Roadway: Wolfe Road
Segment: AC2 to Pruneridge

Project: COCU-06 Hamptons Redevelo
Analyst: NJF
Date: 04-Jan-16

ROADWAY INPUTS	
ADT	30,085
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	48
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1845	35	14	1364	26	10	342	6	3
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	1.9	-15.3	-19.3	0.6	-16.6	-20.6	-5.4	-22.6	-26.6
Distance	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	67.8	60.3	61.5	66.5	58.9	60.2	60.4	52.9	54.2
VEHICULAR NOISE	DAY=	69.3	Leq	EVENING=	68.0	Leq	NIGHT=	62.0	Leq

RESULTS					
NOISE LEVELS AT	50	FEET FROM CENTERLINE (dBA):		**Ldn=**	**70.4**
				CNEL=	**71.0**
NOISE CONTOUR:				*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):			**Ldn:**	**53**	**114**	**246**
			CNEL:	**58**	**126**	**270**

Scenario: EXISTING PLUS PROJECT
Roadway: Wolfe Road
Segment: Pruneridge to I-280 NB

Project: COCU-06 Hamptons Redevelo
Analyst: NJF
Date: 04-Jan-16

ROADWAY INPUTS	
ADT	33,555
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	48
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	2058	39	16	1521	29	12	381	7	3
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	2.4	-14.9	-18.8	1.1	-16.2	-20.1	-4.9	-22.2	-26.1
Distance	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	68.2	60.7	62.0	66.9	59.4	60.7	60.9	53.4	54.7
VEHICULAR NOISE	DAY=	69.7	Leq	EVENING=	68.4	Leq	NIGHT=	62.4	Leq

RESULTS					
NOISE LEVELS AT	50	FEET FROM CENTERLINE (dBA):		**Ldn=**	**70.8**
				CNEL=	**71.5**
NOISE CONTOUR:				*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):			**Ldn:**	**57**	**123**	**264**
			CNEL:	**63**	**135**	**291**

Scenario: EXISTING PLUS PROJECT
Roadway: Wolfe Road
Segment: I-280 NB to I-280 SB

Project: COCU-06 Hamptons Redevelo
Analyst: NJF
Date: 04-Jan-16

ROADWAY INPUTS	
ADT	32,375
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	48
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA

	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1986	38	15	1468	28	11	368	7	3
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	2.2	-15.0	-19.0	0.9	-16.3	-20.3	-5.1	-22.3	-26.3
Distance	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	68.1	60.6	61.8	66.8	59.3	60.5	60.8	53.2	54.5
VEHICULAR NOISE	DAY=	69.6	Leq	EVENING=	68.3	Leq	NIGHT=	62.3	Leq

RESULTS

NOISE LEVELS AT 50 FEET FROM CENTERLINE (dBA): **Ldn= 70.7**
CNEL= 71.3

NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**56**	**120**	**258**
	CNEL:	**61**	**132**	**284**

Scenario: EXISTING PLUS PROJECT
Roadway: Wolfe Road
Segment: I-280 SB to Vallco

Project: COCU-06 Hamptons Redevelo
Analyst: NJF
Date: 04-Jan-16

ROADWAY INPUTS	
ADT	31,905
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	84
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1957	37	15	1446	27	11	362	7	3
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	2.2	-15.1	-19.0	0.9	-16.4	-20.3	-5.2	-22.4	-26.4
Distance	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	71.2	63.6	64.9	69.8	62.3	63.6	63.8	56.3	57.6
VEHICULAR NOISE	DAY=	72.7	Leq	EVENING=	71.3	Leq	NIGHT=	65.3	Leq

RESULTS					
NOISE LEVELS AT	50	FEET FROM CENTERLINE (dBA):		**Ldn=**	**73.8**
				CNEL=	**74.4**
NOISE CONTOUR:				*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):			**Ldn:**	**89**	**192**	**413**
			CNEL:	**98**	**211**	**455**

Scenario: EXISTING PLUS PROJECT
Roadway: Wolfe Road
Segment: Vallco to Stevens Creek

Project: COCU-06 Hamptons Redevelo
Analyst: NJF
Date: 04-Jan-16

ROADWAY INPUTS	
ADT	26,820
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	48
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1645	31	12	1216	23	9	305	6	2
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	1.4	-15.8	-19.8	0.1	-17.1	-21.1	-5.9	-23.1	-27.1
Distance	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	67.3	59.8	61.0	66.0	58.4	59.7	59.9	52.4	53.7
VEHICULAR NOISE	DAY=	68.8	Leq	EVENING=	67.5	Leq	NIGHT=	61.5	Leq

RESULTS						
NOISE LEVELS AT	50	FEET FROM CENTERLINE (dBA):			**Ldn=**	**69.9**
					CNEL=	**70.5**
NOISE CONTOUR:				*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):			**Ldn:**	**49**	**106**	**228**
			CNEL:	**54**	**116**	**251**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: EXISTING PLUS PROJECT
Roadway: Stevens Creek Blvd
Segment: De Anza to Miller
Project: COCU-06 Hamptons Redevelo
Analyst: NJF
Date: 04-Jan-16

ROADWAY INPUTS	
ADT	27,060
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	84
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1660	31	13	1227	23	9	307	6	2
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	1.5	-15.8	-19.7	0.1	-17.1	-21.1	-5.9	-23.1	-27.1
Distance	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	70.4	62.9	64.2	69.1	61.6	62.9	63.1	55.6	56.9
VEHICULAR NOISE	DAY=	71.9	Leq	EVENING=	70.6	Leq	NIGHT=	64.6	Leq

RESULTS				
NOISE LEVELS AT 50 FEET FROM CENTERLINE (dBA):			**Ldn=**	**73.0**
			CNEL=	**73.7**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**80**	**172**	**370**
	CNEL:	**88**	**189**	**407**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: EXISTING PLUS PROJECT
Roadway: Stevens Creek Blvd
Segment: Miller to Tantau
Project: COCU-06 Hamptons Redevelo
Analyst: NJF
Date: 04-Jan-16

ROADWAY INPUTS	
ADT	25,735
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	84
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA

	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1578	30	12	1167	22	9	292	6	2
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	1.2	-16.0	-20.0	-0.1	-17.3	-21.3	-6.1	-23.3	-27.3
Distance	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	70.2	62.7	64.0	68.9	61.4	62.7	62.9	55.4	56.6
VEHICULAR NOISE	DAY=	71.7	Leq	EVENING=	70.4	Leq	NIGHT=	64.4	Leq

RESULTS

NOISE LEVELS AT 50 FEET FROM CENTERLINE (dBA): **Ldn= 72.8** **CNEL= 73.4**

NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**77**	**166**	**358**
	CNEL:	**85**	**183**	**394**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: EXISTING PLUS PROJECT
Roadway: Homestead Road
Segment: Wolfe Road to Tantau
Project: COCU-06 Hamptons Redevelo
Analyst: NJF
Date: 04-Jan-16

ROADWAY INPUTS	
ADT	14,975
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	48
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA

	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	918	17	7	679	13	5	170	3	1
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	-1.1	-18.4	-22.3	-2.4	-19.7	-23.6	-8.4	-25.7	-29.6
Distance	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	64.7	57.2	58.5	63.4	55.9	57.2	57.4	49.9	51.2
VEHICULAR NOISE	DAY=	66.2	Leq	EVENING=	64.9	Leq	NIGHT=	58.9	Leq

RESULTS

NOISE LEVELS AT 50 FEET FROM CENTERLINE (dBA): **Ldn= 67.3** **CNEL= 68.0**

NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**33**	**72**	**154**
	CNEL:	**37**	**79**	**170**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: EXISTING PLUS PROJECT
Roadway: Homestead Road
Segment: Tantau to Lawrence
Project: COCU-06 Hamptons Redevelo
Analyst: NJF
Date: 04-Jan-16

ROADWAY INPUTS	
ADT	19,150
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	48
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA

	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1175	22	9	868	16	7	217	4	2
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	0.0	-17.3	-21.2	-1.4	-18.6	-22.6	-7.4	-24.6	-28.6
Distance	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	65.8	58.3	59.6	64.5	57.0	58.2	58.5	51.0	52.2
VEHICULAR NOISE	DAY=	67.3	Leq	EVENING=	66.0	Leq	NIGHT=	60.0	Leq

RESULTS

NOISE LEVELS AT 50 FEET FROM CENTERLINE (dBA): **Ldn= 68.4** **CNEL= 69.0**

NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**39**	**84**	**182**
	CNEL:	**43**	**93**	**200**

COCU-06 Hamptons Redevelopment

BACKGROUND

#	ROADWAY	SEGMENT	ADT	POSTED SPEED LIMIT	LANE DISTANCE	SITE CONDITION	LANES	GRADE (%)
1	Wolfe Road	El Camino Real to Fremont	31,035	35	84	Soft	6D	**0%**
2	Wolfe Road	Fremont to Marion	26,495	35	48	Soft	4D	**0%**
3	Wolfe Road	Marion to Inverness	24,515	35	36	Soft	4U	**0%**
4	Wolfe Road	Inversenn to Homestead	22,495	35	36	Soft	4U	**0%**
5	Wolfe Road	Homestead to AC2	37,280	35	48	Soft	4D	**0%**
6	Wolfe Road	AC2 to Pruneridge	50,720	35	48	Soft	4D	**0%**
7	Wolfe Road	Pruneridge to I-280 NB	53,730	35	48	Soft	4D	**0%**
8	Wolfe Road	I-280 NB to I-280 SB	48,340	35	48	Soft	4D	**0%**
9	Wolfe Road	I-280 SB to Vallco	44,160	35	84	Soft	6D	**0%**
10	Wolfe Road	Vallco to Stevens Creek	31,590	35	48	Soft	4D	**0%**
11	Stevens Creek Blvd	De Anza to Miller	32,445	35	84	Soft	6D	**0%**
12	Stevens Creek Blvd	Miller to Tantau	35,165	35	84	Soft	6D	**0%**
13	Homestead Road	Wolfe Road to Tantau	20,005	35	48	Soft	4D	**0%**
14	Homestead Road	Tantau to Lawrence	21,725	35	48	Soft	4D	**0%**
15					#N/A	Soft		**0%**
16					#N/A	Soft		**0%**
17					#N/A	Soft		**0%**
18					#N/A	Soft		**0%**
19					#N/A	Soft		**0%**
20					#N/A	Soft		**0%**
21					#N/A	Soft		**0%**
22					#N/A	Soft		**0%**
23					#N/A	Soft		**0%**
24					#N/A	Soft		**0%**
25					#N/A	Soft		**0%**
26					#N/A	Soft		**0%**
27					#N/A	Soft		**0%**
28					#N/A	Soft		**0%**
29					#N/A	Soft		**0%**
30					54	Soft		**0%**

ANALYST
NJF

ROAD CLASSIFICATION	SPEED	LANE DISTANCE
2U	40	12
4U	40	36
4D	45	48
6D	45	84
2D	40	24

		73.6	75.55%
		13.6	13.96%
		10.22	10.49%

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.42%	DAY	75.5%
% MT	1.84%	EVENING	14.0%
% HT	0.74%	NIGHT	10.5%

Source: Riverside, County of, Department of Public Health, Office of Industrial Hygiene. 2009, November. For Determining and Mitigating Traf

Riverside County Fleet Mix: Secondary, Collectors, or Smaller

Vehicle	Overall %	Day (7 AM to	Evening (7	Night (10 PM to 7 AM)
Auto	97%	73.60	13.60	10.22
Medium Truck	2%	0.90	0.04	0.90
Heavy Truck	1%	0.35	0.04	0.35
		74.85	13.68	11.47

COCU-06 Hamptons Redevelopment
BACKGROUND CONDITIONS NOISE CONTOURS RESULT SUMMARY TABLE

					DISTACE TO NOISE CONTOUR (FT.)		
#	ROADWAY	SEGMENT	TRAFIC VOLUMES	LEVEL AT 50 FT.	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Wolfe Road	El Camino Real to Fremont	31,035	74.3	96	207	446
2	Wolfe Road	Fremont to Marion	26,495	70.4	54	115	248
3	Wolfe Road	Marion to Inverness	24,515	69.7	48	103	222
4	Wolfe Road	Inversenn to Homestead	22,495	69.3	45	97	210
5	Wolfe Road	Homestead to AC2	37,280	71.9	67	145	312
6	Wolfe Road	AC2 to Pruneridge	50,720	73.3	83	178	383
7	Wolfe Road	Pruneridge to I-280 NB	53,730	73.5	86	185	398
8	Wolfe Road	I-280 NB to I-280 SB	48,340	73.1	80	172	371
9	Wolfe Road	I-280 SB to Vallco	44,160	75.8	122	262	565
10	Wolfe Road	Vallco to Stevens Creek	31,590	71.2	60	130	279
11	Stevens Creek Blvd	De Anza to Miller	32,445	74.5	99	213	460
12	Stevens Creek Blvd	Miller to Tantau	35,165	74.8	105	225	485
13	Homestead Road	Wolfe Road to Tantau	20,005	69.2	44	96	206
14	Homestead Road	Tantau to Lawrence	21,725	69.6	47	101	218
15	0	0	0	#NUM!	#NUM!	#NUM!	#NUM!
16	0	0	0	#NUM!	#NUM!	#NUM!	#NUM!
17	0	0	0	#NUM!	#NUM!	#NUM!	#NUM!
18	0	0	0	#NUM!	#NUM!	#NUM!	#NUM!
19	0	0	0	#NUM!	#NUM!	#NUM!	#NUM!
20	0	0	0	#NUM!	#NUM!	#NUM!	#NUM!
21	0	0	0	#NUM!	#NUM!	#NUM!	#NUM!
22	0	0	0	#NUM!	#NUM!	#NUM!	#NUM!
23	0	0	0	#NUM!	#NUM!	#NUM!	#NUM!
24	0	0	0	#NUM!	#NUM!	#NUM!	#NUM!
25	0	0	0	#NUM!	#NUM!	#NUM!	#NUM!
26	0	0	0	#NUM!	#NUM!	#NUM!	#NUM!
27	0	0	0	#NUM!	#NUM!	#NUM!	#NUM!
28	0	0	0	#NUM!	#NUM!	#NUM!	#NUM!
29	0	0	0	#NUM!	#NUM!	#NUM!	#NUM!
30	0	0	0	#NUM!	#NUM!	#NUM!	#NUM!

Scenario: BACKGROUND
Roadway: Wolfe Road
Segment: El Camino Real to Fremont

Project: COCU-06 Hamptons Redevelo
Analyst: NJF
Date: 04-Jan-16

ROADWAY INPUTS	
ADT	31,035
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	84
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1903	36	14	1407	27	11	352	7	3
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	2.0	-15.2	-19.1	0.7	-16.5	-20.5	-5.3	-22.5	-26.5
Distance	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	71.0	63.5	64.8	69.7	62.2	63.5	63.7	56.2	57.5
VEHICULAR NOISE	DAY=	72.5	Leq	EVENING=	71.2	Leq	NIGHT=	65.2	Leq

RESULTS					
NOISE LEVELS AT	50	FEET FROM CENTERLINE (dBA):		**Ldn=**	**73.6**
				CNEL=	**74.3**
NOISE CONTOUR:				*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):			**Ldn:**	**87**	**188**	**405**
			CNEL:	**96**	**207**	**446**

Scenario: BACKGROUND
Roadway: Wolfe Road
Segment: Fremont to Marion

Project: COCU-06 Hamptons Redevelo
Analyst: NJF
Date: 04-Jan-16

ROADWAY INPUTS	
ADT	26,495
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	48
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1625	31	12	1201	23	9	301	6	2
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	1.4	-15.9	-19.8	0.0	-17.2	-21.1	-6.0	-23.2	-27.2
Distance	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	67.2	59.7	61.0	65.9	58.4	59.6	59.9	52.4	53.6
VEHICULAR NOISE	DAY=	68.7	Leq	EVENING=	67.4	Leq	NIGHT=	61.4	Leq

RESULTS					
NOISE LEVELS AT	50	FEET FROM CENTERLINE (dBA):		**Ldn=**	**69.8**
				CNEL=	**70.4**
NOISE CONTOUR:				*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):			**Ldn:**	**49**	**105**	**226**
			CNEL:	**54**	**115**	**248**

Scenario: BACKGROUND
Roadway: Wolfe Road
Segment: Marion to Inverness

Project: COCU-06 Hamptons Redevelo
Analyst: NJF
Date: 04-Jan-16

ROADWAY INPUTS	
ADT	24,515
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	36
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1504	28	11	1111	21	8	278	5	2
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	1.0	-16.2	-20.2	-0.3	-17.5	-21.5	-6.3	-23.5	-27.5
Distance	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	66.5	59.0	60.2	65.2	57.6	58.9	59.2	51.6	52.9
VEHICULAR NOISE	DAY=	68.0	Leq	EVENING=	66.7	Leq	NIGHT=	60.7	Leq

RESULTS					
NOISE LEVELS AT	50	FEET FROM CENTERLINE (dBA):		**Ldn=**	**69.1**
				CNEL=	**69.7**
NOISE CONTOUR:				*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):			**Ldn:**	**43**	**94**	**202**
			CNEL:	**48**	**103**	**222**

Scenario: BACKGROUND
Roadway: Wolfe Road
Segment: Inversenn to Homestead

Project: COCU-06 Hamptons Redevelo
Analyst: NJF
Date: 04-Jan-16

ROADWAY INPUTS	
ADT	22,495
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	36
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1380	26	10	1020	19	8	255	5	2
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	0.7	-16.6	-20.5	-0.7	-17.9	-21.9	-6.7	-23.9	-27.9
Distance	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	66.1	58.6	59.9	64.8	57.3	58.5	58.8	51.3	52.5
VEHICULAR NOISE	DAY=	67.6	Leq	EVENING=	66.3	Leq	NIGHT=	60.3	Leq

RESULTS					
NOISE LEVELS AT	50	FEET FROM CENTERLINE (dBA):		**Ldn=**	**68.7**
				CNEL=	**69.3**
NOISE CONTOUR:				*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):			**Ldn:**	**41**	**88**	**190**
			CNEL:	**45**	**97**	**210**

Scenario: BACKGROUND
Roadway: Wolfe Road
Segment: Homestead to AC2

Project: COCU-06 Hamptons Redevelo
Analyst: NJF
Date: 04-Jan-16

ROADWAY INPUTS	
ADT	37,280
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	48
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	2287	43	17	1690	32	13	423	8	3
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	2.8	-14.4	-18.3	1.5	-15.7	-19.7	-4.5	-21.7	-25.7
Distance	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	68.7	61.2	62.4	67.4	59.9	61.1	61.4	53.9	55.1
VEHICULAR NOISE	DAY=	70.2	Leq	EVENING=	68.9	Leq	NIGHT=	62.9	Leq

RESULTS					
NOISE LEVELS AT	50	FEET FROM CENTERLINE (dBA):		**Ldn=**	**71.3**
				CNEL=	**71.9**
NOISE CONTOUR:				*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):			**Ldn:**	**61**	**132**	**283**
			CNEL:	**67**	**145**	**312**

Scenario: BACKGROUND
Roadway: Wolfe Road
Segment: AC2 to Pruneridge

Project: COCU-06 Hamptons Redevelo
Analyst: NJF
Date: 04-Jan-16

ROADWAY INPUTS	
ADT	50,720
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	48
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA

	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	3111	59	24	2299	43	17	576	11	4
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	4.2	-13.1	-17.0	2.9	-14.4	-18.3	-3.1	-20.4	-24.3
Distance	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	70.0	62.5	63.8	68.7	61.2	62.5	62.7	55.2	56.5
VEHICULAR NOISE	DAY=	71.5	Leq	EVENING=	70.2	Leq	NIGHT=	64.2	Leq

RESULTS

NOISE LEVELS AT 50 FEET FROM CENTERLINE (dBA): **Ldn= 72.6**
CNEL= 73.3

NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**75**	**162**	**348**
	CNEL:	**83**	**178**	**383**

Scenario: BACKGROUND
Roadway: Wolfe Road
Segment: Pruneridge to I-280 NB

Project: COCU-06 Hamptons Redevelo
Analyst: NJF
Date: 04-Jan-16

ROADWAY INPUTS	
ADT	53,730
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	48
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	3295	62	25	2436	46	19	610	12	5
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	4.4	-12.8	-16.8	3.1	-14.1	-18.1	-2.9	-20.1	-24.1
Distance	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	70.3	62.8	64.0	69.0	61.5	62.7	63.0	55.4	56.7
VEHICULAR NOISE	DAY=	71.8	Leq	EVENING=	70.5	Leq	NIGHT=	64.5	Leq

RESULTS					
NOISE LEVELS AT	50	FEET FROM CENTERLINE (dBA):		**Ldn=**	**72.9**
				CNEL=	**73.5**
NOISE CONTOUR:				*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):			**Ldn:**	**78**	**168**	**362**
			CNEL:	**86**	**185**	**398**

Scenario: BACKGROUND
Roadway: Wolfe Road
Segment: I-280 NB to I-280 SB

Project: COCU-06 Hamptons Redevelo
Analyst: NJF
Date: 04-Jan-16

ROADWAY INPUTS	
ADT	48,340
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	48
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	2965	56	23	2191	41	17	549	10	4
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	4.0	-13.3	-17.2	2.7	-14.6	-18.5	-3.4	-20.6	-24.5
Distance	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	69.8	62.3	63.6	68.5	61.0	62.3	62.5	55.0	56.2
VEHICULAR NOISE	DAY=	71.3	Leq	EVENING=	70.0	Leq	NIGHT=	64.0	Leq

RESULTS					
NOISE LEVELS AT	50	FEET FROM CENTERLINE (dBA):		**Ldn=**	**72.4**
				CNEL=	**73.1**
NOISE CONTOUR:				*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):			**Ldn:**	**73**	**156**	**337**
			CNEL:	**80**	**172**	**371**

Scenario: BACKGROUND
Roadway: Wolfe Road
Segment: I-280 SB to Vallco

Project: COCU-06 Hamptons Redevelo
Analyst: NJF
Date: 04-Jan-16

ROADWAY INPUTS	
ADT	44,160
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	84
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	2708	51	21	2002	38	15	501	9	4
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	3.6	-13.7	-17.6	2.3	-15.0	-18.9	-3.7	-21.0	-24.9
Distance	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	72.6	65.0	66.3	71.3	63.7	65.0	65.2	57.7	59.0
VEHICULAR NOISE	DAY=	74.1	Leq	EVENING=	72.8	Leq	NIGHT=	66.7	Leq

RESULTS					
NOISE LEVELS AT	50	FEET FROM CENTERLINE (dBA):		**Ldn=**	**75.2**
				CNEL=	**75.8**
NOISE CONTOUR:				*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):			**Ldn:**	**111**	**238**	**513**
			CNEL:	**122**	**262**	**565**

Scenario: BACKGROUND
Roadway: Wolfe Road
Segment: Vallco to Stevens Creek

Project: COCU-06 Hamptons Redevelo
Analyst: NJF
Date: 04-Jan-16

ROADWAY INPUTS	
ADT	31,590
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	48
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA

	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1938	37	15	1432	27	11	359	7	3
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	2.1	-15.1	-19.1	0.8	-16.4	-20.4	-5.2	-22.4	-26.4
Distance	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	68.0	60.5	61.7	66.7	59.2	60.4	60.7	53.1	54.4
VEHICULAR NOISE	DAY=	69.5	Leq	EVENING=	68.2	Leq	NIGHT=	62.2	Leq

RESULTS

NOISE LEVELS AT 50 FEET FROM CENTERLINE (dBA): **Ldn= 70.6**
CNEL= 71.2

NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**55**	**118**	**254**
	CNEL:	**60**	**130**	**279**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: BACKGROUND
Roadway: Stevens Creek Blvd
Segment: De Anza to Miller

Project: COCU-06 Hamptons Redevelo
Analyst: NJF
Date: 04-Jan-16

ROADWAY INPUTS	
ADT	32,445
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	84
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA

	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1990	38	15	1471	28	11	368	7	3
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	2.2	-15.0	-19.0	0.9	-16.3	-20.3	-5.1	-22.3	-26.3
Distance	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	71.2	63.7	65.0	69.9	62.4	63.7	63.9	56.4	57.6
VEHICULAR NOISE	DAY=	72.7	Leq	EVENING=	71.4	Leq	NIGHT=	65.4	Leq

RESULTS

NOISE LEVELS AT 50 FEET FROM CENTERLINE (dBA): **Ldn= 73.8** **CNEL= 74.5**

NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**90**	**194**	**418**
	CNEL:	**99**	**213**	**460**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: BACKGROUND
Roadway: Stevens Creek Blvd
Segment: Miller to Tantau

Project: COCU-06 Hamptons Redevelo
Analyst: NJF
Date: 04-Jan-16

ROADWAY INPUTS	
ADT	35,165
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	84
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA

	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	2157	41	16	1594	30	12	399	8	3
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	2.6	-14.6	-18.6	1.3	-16.0	-19.9	-4.7	-22.0	-25.9
Distance	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	71.6	64.1	65.3	70.3	62.7	64.0	64.3	56.7	58.0
VEHICULAR NOISE	DAY=	73.1	Leq	EVENING=	71.8	Leq	NIGHT=	65.8	Leq

RESULTS

NOISE LEVELS AT 50 FEET FROM CENTERLINE (dBA): **Ldn= 74.2** **CNEL= 74.8**

NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**95**	**205**	**441**
	CNEL:	**105**	**225**	**485**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: BACKGROUND
Roadway: Homestead Road
Segment: Wolfe Road to Tantau

Project: COCU-06 Hamptons Redevelo
Analyst: NJF
Date: 04-Jan-16

ROADWAY INPUTS	
ADT	20,005
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	48
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA

	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1227	23	9	907	17	7	227	4	2
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	0.1	-17.1	-21.1	-1.2	-18.4	-22.4	-7.2	-24.4	-28.4
Distance	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	66.0	58.5	59.7	64.7	57.2	58.4	58.7	51.2	52.4
VEHICULAR NOISE	DAY=	67.5	Leq	EVENING=	66.2	Leq	NIGHT=	60.2	Leq

RESULTS

NOISE LEVELS AT 50 FEET FROM CENTERLINE (dBA): **Ldn= 68.6** **CNEL= 69.2**

NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**40**	**87**	**187**
	CNEL:	**44**	**96**	**206**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: BACKGROUND
Roadway: Homestead Road
Segment: Tantau to Lawrence

Project: COCU-06 Hamptons Redevelo
Analyst: NJF
Date: 04-Jan-16

ROADWAY INPUTS	
ADT	21,725
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	48
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA

	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1332	25	10	985	19	7	247	5	2
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	0.5	-16.7	-20.7	-0.8	-18.1	-22.0	-6.8	-24.1	-28.0
Distance	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	66.4	58.8	60.1	65.0	57.5	58.8	59.0	51.5	52.8
VEHICULAR NOISE	DAY=	67.9	Leq	EVENING=	66.5	Leq	NIGHT=	60.5	Leq

RESULTS

NOISE LEVELS AT 50 FEET FROM CENTERLINE (dBA): **Ldn= 69.0** **CNEL= 69.6**

NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**43**	**92**	**198**
	CNEL:	**47**	**101**	**218**

COCU-06 Hamptons Redevelopment

BACKGROUND PLUS PROJECT

#	ROADWAY	SEGMENT	ADT	POSTED SPEED LIMIT	LANE DISTANCE	SITE CONDITION	LANES	GRADE (%)
1	Wolfe Road	El Camino Real to Fremont	31,380	35	84	Soft	6D	**0%**
2	Wolfe Road	Fremont to Marion	27,010	35	48	Soft	4D	**0%**
3	Wolfe Road	Marion to Inverness	25,035	35	36	Soft	4U	**0%**
4	Wolfe Road	Inversenn to Homestead	23,015	35	36	Soft	4U	**0%**
5	Wolfe Road	Homestead to AC2	38,490	35	48	Soft	4D	**0%**
6	Wolfe Road	AC2 to Pruneridge	51,935	35	48	Soft	4D	**0%**
7	Wolfe Road	Pruneridge to I-280 NB	55,980	35	48	Soft	4D	**0%**
8	Wolfe Road	I-280 NB to I-280 SB	49,810	35	48	Soft	4D	**0%**
9	Wolfe Road	I-280 SB to Vallco	44,860	35	84	Soft	6D	**0%**
10	Wolfe Road	Vallco to Stevens Creek	32,195	35	48	Soft	4D	**0%**
11	Stevens Creek Blvd	De Anza to Miller	32,790	35	84	Soft	6D	**0%**
12	Stevens Creek Blvd	Miller to Tantau	35,255	35	84	Soft	6D	**0%**
13	Homestead Road	Wolfe Road to Tantau	20,350	35	48	Soft	4D	**0%**
14	Homestead Road	Tantau to Lawrence	22,070	35	48	Soft	4D	**0%**
15					#N/A	Soft		**0%**
16					#N/A	Soft		**0%**
17					#N/A	Soft		**0%**
18					#N/A	Soft		**0%**
19					#N/A	Soft		**0%**
20					#N/A	Soft		**0%**
21					#N/A	Soft		**0%**
22					#N/A	Soft		**0%**
23					#N/A	Soft		**0%**
24					#N/A	Soft		**0%**
25					#N/A	Soft		**0%**
26					#N/A	Soft		**0%**
27					#N/A	Soft		**0%**
28					#N/A	Soft		**0%**
29					#N/A	Soft		**0%**
30					54	Soft		**0%**

ANALYST
NJF

ROAD CLASSIFICATION	SPEED	LANE DISTANCE
2U	40	12
4U	40	36
4D	45	48
6D	45	84
2D	40	24

		73.6	75.55%
		13.6	13.96%
		10.22	10.49%

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.42%	DAY	75.5%
% MT	1.84%	EVENING	14.0%
% HT	0.74%	NIGHT	10.5%

Source: Riverside, County of, Department of Public Health, Office of Industrial Hygiene. 2009, November. For Determining and Mitigating Traf

Riverside County Fleet Mix: Secondary, Collectors, or Smaller

Vehicle	Overall %	Day (7 AM to	Evening (7	Night (10 PM to 7 AM)
Auto	97%	73.60	13.60	10.22
Medium Truck	2%	0.90	0.04	0.90
Heavy Truck	1%	0.35	0.04	0.35
		74.85	13.68	11.47

COCU-06 Hamptons Redevelopment

ACKGROUND PLUS PROJECT CONDITIONS NOISE CONTOURS RESULT SUMMARY TABLE

					DISTACE TO NOISE CONTOUR (FT.)		
#	ROADWAY	SEGMENT	TRAFIC VOLUMES	LEVEL AT 50 FT.	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Wolfe Road	El Camino Real to Fremont	31,380	74.3	97	209	450
2	Wolfe Road	Fremont to Marion	27,010	70.5	54	117	252
3	Wolfe Road	Marion to Inverness	25,035	69.8	48	104	225
4	Wolfe Road	Inversenn to Homestead	23,015	69.4	46	99	213
5	Wolfe Road	Homestead to AC2	38,490	72.1	69	148	319
6	Wolfe Road	AC2 to Pruneridge	51,935	73.4	84	181	389
7	Wolfe Road	Pruneridge to I-280 NB	55,980	73.7	88	190	409
8	Wolfe Road	I-280 NB to I-280 SB	49,810	73.2	82	176	379
9	Wolfe Road	I-280 SB to Vallco	44,860	75.9	123	265	571
10	Wolfe Road	Vallco to Stevens Creek	32,195	71.3	61	131	283
11	Stevens Creek Blvd	De Anza to Miller	32,790	74.5	100	215	463
12	Stevens Creek Blvd	Miller to Tantau	35,255	74.8	105	226	486
13	Homestead Road	Wolfe Road to Tantau	20,350	69.3	45	97	208
14	Homestead Road	Tantau to Lawrence	22,070	69.7	47	102	220
15	0	0	0	#NUM!	#NUM!	#NUM!	#NUM!
16	0	0	0	#NUM!	#NUM!	#NUM!	#NUM!
17	0	0	0	#NUM!	#NUM!	#NUM!	#NUM!
18	0	0	0	#NUM!	#NUM!	#NUM!	#NUM!
19	0	0	0	#NUM!	#NUM!	#NUM!	#NUM!
20	0	0	0	#NUM!	#NUM!	#NUM!	#NUM!
21	0	0	0	#NUM!	#NUM!	#NUM!	#NUM!
22	0	0	0	#NUM!	#NUM!	#NUM!	#NUM!
23	0	0	0	#NUM!	#NUM!	#NUM!	#NUM!
24	0	0	0	#NUM!	#NUM!	#NUM!	#NUM!
25	0	0	0	#NUM!	#NUM!	#NUM!	#NUM!
26	0	0	0	#NUM!	#NUM!	#NUM!	#NUM!
27	0	0	0	#NUM!	#NUM!	#NUM!	#NUM!
28	0	0	0	#NUM!	#NUM!	#NUM!	#NUM!
29	0	0	0	#NUM!	#NUM!	#NUM!	#NUM!
30	0	0	0	#NUM!	#NUM!	#NUM!	#NUM!

Scenario: BACKGROUND PLUS PROJECT
Roadway: Wolfe Road
Segment: El Camino Real to Fremont

Project: COCU-06 Hamptons Redevelo
Analyst: NJF
Date: 04-Jan-16

ROADWAY INPUTS	
ADT	31,380
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	84
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA

	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1925	36	15	1423	27	11	356	7	3
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	2.1	-15.1	-19.1	0.8	-16.5	-20.4	-5.2	-22.5	-26.4
Distance	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	71.1	63.6	64.8	69.8	62.3	63.5	63.8	56.2	57.5
VEHICULAR NOISE	DAY=	72.6	Leq	EVENING=	71.3	Leq	NIGHT=	65.3	Leq

RESULTS

NOISE LEVELS AT 50 FEET FROM CENTERLINE (dBA): **Ldn= 73.7**
CNEL= 74.3

NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**88**	**190**	**408**
	CNEL:	**97**	**209**	**450**

Scenario: BACKGROUND PLUS PROJECT
Roadway: Wolfe Road
Segment: Fremont to Marion

Project: COCU-06 Hamptons Redevelo
Analyst: NJF
Date: 04-Jan-16

ROADWAY INPUTS	
ADT	27,010
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	48
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1657	31	13	1224	23	9	307	6	2
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	1.4	-15.8	-19.7	0.1	-17.1	-21.1	-5.9	-23.1	-27.1
Distance	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	67.3	59.8	61.0	66.0	58.5	59.7	60.0	52.5	53.7
VEHICULAR NOISE	DAY=	68.8	Leq	EVENING=	67.5	Leq	NIGHT=	61.5	Leq

RESULTS					
NOISE LEVELS AT	50	FEET FROM CENTERLINE (dBA):		**Ldn=**	**69.9**
				CNEL=	**70.5**
NOISE CONTOUR:				*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):			**Ldn:**	**49**	**106**	**229**
			CNEL:	**54**	**117**	**252**

Scenario: BACKGROUND PLUS PROJECT
Roadway: Wolfe Road
Segment: Marion to Inverness

Project: COCU-06 Hamptons Redevelo
Analyst: NJF
Date: 04-Jan-16

ROADWAY INPUTS	
ADT	25,035
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	36
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA

	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1535	29	12	1135	21	9	284	5	2
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	1.1	-16.1	-20.1	-0.2	-17.4	-21.4	-6.2	-23.4	-27.4
Distance	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	66.6	59.1	60.3	65.3	57.7	59.0	59.2	51.7	53.0
VEHICULAR NOISE	DAY=	68.1	Leq	EVENING=	66.8	Leq	NIGHT=	60.8	Leq

RESULTS

NOISE LEVELS AT 50 FEET FROM CENTERLINE (dBA): **Ldn= 69.2**
CNEL= 69.8

NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**44**	**95**	**204**
	CNEL:	**48**	**104**	**225**

Scenario: BACKGROUND PLUS PROJECT
Roadway: Wolfe Road
Segment: Inversenn to Homestead

Project: COCU-06 Hamptons Redevelo
Analyst: NJF
Date: 04-Jan-16

ROADWAY INPUTS	
ADT	23,015
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	36
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1412	27	11	1043	20	8	261	5	2
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	0.8	-16.5	-20.4	-0.6	-17.8	-21.8	-6.6	-23.8	-27.8
Distance	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	66.2	58.7	59.9	64.9	57.4	58.6	58.9	51.4	52.6
VEHICULAR NOISE	DAY=	67.7	Leq	EVENING=	66.4	Leq	NIGHT=	60.4	Leq

RESULTS						
NOISE LEVELS AT	50	FEET FROM CENTERLINE (dBA):			**Ldn=**	**68.8**
					CNEL=	**69.4**
NOISE CONTOUR:				*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):			**Ldn:**	**42**	**90**	**193**
			CNEL:	**46**	**99**	**213**

Scenario: BACKGROUND PLUS PROJECT
Roadway: Wolfe Road
Segment: Homestead to AC2

Project: COCU-06 Hamptons Redevelo
Analyst: NJF
Date: 04-Jan-16

ROADWAY INPUTS	
ADT	38,490
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	48
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	2361	45	18	1745	33	13	437	8	3
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	3.0	-14.3	-18.2	1.7	-15.6	-19.5	-4.3	-21.6	-25.5
Distance	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	68.8	61.3	62.6	67.5	60.0	61.3	61.5	54.0	55.3
VEHICULAR NOISE	DAY=	70.3	Leq	EVENING=	69.0	Leq	NIGHT=	63.0	Leq

RESULTS						
NOISE LEVELS AT	50	FEET FROM CENTERLINE (dBA):			**Ldn=**	**71.4**
					CNEL=	**72.1**
NOISE CONTOUR:				*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):			**Ldn:**	**62**	**134**	**289**
			CNEL:	**69**	**148**	**319**

Scenario: BACKGROUND PLUS PROJECT
Roadway: Wolfe Road
Segment: AC2 to Pruneridge

Project: COCU-06 Hamptons Redevelo
Analyst: NJF
Date: 04-Jan-16

ROADWAY INPUTS	
ADT	51,935
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	48
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA

	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	3185	60	24	2354	44	18	590	11	4
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	4.3	-13.0	-16.9	3.0	-14.3	-18.2	-3.0	-20.3	-24.2
Distance	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	70.1	62.6	63.9	68.8	61.3	62.6	62.8	55.3	56.6
VEHICULAR NOISE	DAY=	71.6	Leq	EVENING=	70.3	Leq	NIGHT=	64.3	Leq

RESULTS

NOISE LEVELS AT 50 FEET FROM CENTERLINE (dBA): **Ldn= 72.7**
CNEL= 73.4

NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**76**	**164**	**353**
	CNEL:	**84**	**181**	**389**

Scenario: BACKGROUND PLUS PROJECT
Roadway: Wolfe Road
Segment: Pruneridge to I-280 NB

Project: COCU-06 Hamptons Redevelo
Analyst: NJF
Date: 04-Jan-16

ROADWAY INPUTS	
ADT	55,980
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	48
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA

	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	3433	65	26	2538	48	19	636	12	5
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	4.6	-12.6	-16.6	3.3	-13.9	-17.9	-2.7	-20.0	-23.9
Distance	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	70.5	62.9	64.2	69.2	61.6	62.9	63.1	55.6	56.9
VEHICULAR NOISE	DAY=	72.0	Leq	EVENING=	70.7	Leq	NIGHT=	64.6	Leq

RESULTS

NOISE LEVELS AT 50 FEET FROM CENTERLINE (dBA): **Ldn= 73.1**
CNEL= 73.7

NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**80**	**172**	**372**
	CNEL:	**88**	**190**	**409**

Scenario: BACKGROUND PLUS PROJECT
Roadway: Wolfe Road
Segment: I-280 NB to I-280 SB

Project: COCU-06 Hamptons Redevelo
Analyst: NJF
Date: 04-Jan-16

ROADWAY INPUTS	
ADT	49,810
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	48
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	3055	58	23	2258	43	17	566	11	4
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	4.1	-13.1	-17.1	2.8	-14.4	-18.4	-3.2	-20.5	-24.4
Distance	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	70.0	62.4	63.7	68.6	61.1	62.4	62.6	55.1	56.4
VEHICULAR NOISE	DAY=	71.5	Leq	EVENING=	70.2	Leq	NIGHT=	64.1	Leq

RESULTS					
NOISE LEVELS AT	50	FEET FROM CENTERLINE (dBA):		**Ldn=**	**72.6**
				CNEL=	**73.2**
NOISE CONTOUR:				*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):			**Ldn:**	**74**	**160**	**344**
			CNEL:	**82**	**176**	**379**

Scenario: BACKGROUND PLUS PROJECT
Roadway: Wolfe Road
Segment: I-280 SB to Vallco

Project: COCU-06 Hamptons Redevelo
Analyst: NJF
Date: 04-Jan-16

ROADWAY INPUTS	
ADT	44,860
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	84
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA

	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	2751	52	21	2034	38	15	509	10	4
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	3.6	-13.6	-17.5	2.3	-14.9	-18.9	-3.7	-20.9	-24.9
Distance	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	72.6	65.1	66.4	71.3	63.8	65.1	65.3	57.8	59.1
VEHICULAR NOISE	DAY=	74.1	Leq	EVENING=	72.8	Leq	NIGHT=	66.8	Leq

RESULTS

NOISE LEVELS AT 50 FEET FROM CENTERLINE (dBA): **Ldn= 75.2**
CNEL= 75.9

NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**112**	**241**	**518**
	CNEL:	**123**	**265**	**571**

Scenario: BACKGROUND PLUS PROJECT
Roadway: Wolfe Road
Segment: Vallco to Stevens Creek

Project: COCU-06 Hamptons Redevelo
Analyst: NJF
Date: 04-Jan-16

ROADWAY INPUTS	
ADT	32,195
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	48
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1975	37	15	1460	28	11	366	7	3
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	2.2	-15.0	-19.0	0.9	-16.3	-20.3	-5.1	-22.4	-26.3
Distance	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	68.1	60.5	61.8	66.8	59.2	60.5	60.7	53.2	54.5
VEHICULAR NOISE	DAY=	69.6	Leq	EVENING=	68.3	Leq	NIGHT=	62.2	Leq

RESULTS						
NOISE LEVELS AT	50	FEET FROM CENTERLINE (dBA):			**Ldn=**	**70.7**
					CNEL=	**71.3**
NOISE CONTOUR:				*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):			**Ldn:**	**55**	**119**	**257**
			CNEL:	**61**	**131**	**283**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: BACKGROUND PLUS PROJECT
Roadway: Stevens Creek Blvd
Segment: De Anza to Miller
Project: COCU-06 Hamptons Redevelo
Analyst: NJF
Date: 04-Jan-16

ROADWAY INPUTS	
ADT	32,790
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	84
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA

	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	2011	38	15	1486	28	11	372	7	3
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	2.3	-15.0	-18.9	1.0	-16.3	-20.2	-5.0	-22.3	-26.2
Distance	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	71.3	63.8	65.0	70.0	62.4	63.7	64.0	56.4	57.7
VEHICULAR NOISE	DAY=	72.8	Leq	EVENING=	71.5	Leq	NIGHT=	65.5	Leq

RESULTS

NOISE LEVELS AT 50 FEET FROM CENTERLINE (dBA): **Ldn= 73.9** **CNEL= 74.5**

NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**91**	**195**	**421**
	CNEL:	**100**	**215**	**463**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: BACKGROUND PLUS PROJECT
Roadway: Stevens Creek Blvd
Segment: Miller to Tantau
Project: COCU-06 Hamptons Redevelo
Analyst: NJF
Date: 04-Jan-16

ROADWAY INPUTS	
ADT	35,255
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	84
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA

	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	2162	41	16	1598	30	12	400	8	3
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	2.6	-14.6	-18.6	1.3	-15.9	-19.9	-4.7	-22.0	-25.9
Distance	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	71.6	64.1	65.3	70.3	62.8	64.0	64.3	56.7	58.0
VEHICULAR NOISE	DAY=	73.1	Leq	EVENING=	71.8	Leq	NIGHT=	65.8	Leq

RESULTS

NOISE LEVELS AT 50 FEET FROM CENTERLINE (dBA): **Ldn= 74.2** **CNEL= 74.8**

NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**95**	**205**	**441**
	CNEL:	**105**	**226**	**486**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: BACKGROUND PLUS PROJECT
Roadway: Homestead Road
Segment: Wolfe Road to Tantau
Project: COCU-06 Hamptons Redevelo
Analyst: NJF
Date: 04-Jan-16

ROADWAY INPUTS	
ADT	20,350
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	48
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA

	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1248	24	9	923	17	7	231	4	2
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	0.2	-17.0	-21.0	-1.1	-18.3	-22.3	-7.1	-24.3	-28.3
Distance	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	66.1	58.6	59.8	64.8	57.2	58.5	58.7	51.2	52.5
VEHICULAR NOISE	DAY=	67.6	Leq	EVENING=	66.3	Leq	NIGHT=	60.3	Leq

RESULTS

NOISE LEVELS AT 50 FEET FROM CENTERLINE (dBA): **Ldn= 68.7** **CNEL= 69.3**

NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**41**	**88**	**189**
	CNEL:	**45**	**97**	**208**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: BACKGROUND PLUS PROJECT
Roadway: Homestead Road
Segment: Tantau to Lawrence
Project: COCU-06 Hamptons Redevelo
Analyst: NJF
Date: 04-Jan-16

ROADWAY INPUTS	
ADT	22,070
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	48
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA

	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1354	26	10	1001	19	8	251	5	2
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	0.6	-16.7	-20.6	-0.7	-18.0	-21.9	-6.8	-24.0	-28.0
Distance	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	66.4	58.9	60.2	65.1	57.6	58.9	59.1	51.6	52.8
VEHICULAR NOISE	DAY=	67.9	Leq	EVENING=	66.6	Leq	NIGHT=	60.6	Leq

RESULTS

NOISE LEVELS AT 50 FEET FROM CENTERLINE (dBA): **Ldn= 69.0** **CNEL= 69.7**

NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**43**	**93**	**200**
	CNEL:	**47**	**102**	**220**

Construction Generated Vibration

Vibration Annoyance Criteria

Receptor:	Average Vibration Level - Hotels across Wolfe Road	Average Distance (feet):	600

Equipment	Approximate Velocity Level at 25 ft, VdB	Approximate Velocity Level, VdB
Vibratory Roller	94	66
Caisson Drill	87	59
Large bulldozer	87	59
Small bulldozer	58	30
Jackhammer	79	51
Loaded trucks	86	58
	Criteria	**78**

Structural Damage Criteria

Receptor:	Maximum Vibration Levels - Hotels across Wolfe Road	Closest Distance (feet):	175

Equipment	Approximate RMS a Velocity at 25 ft, inch/second	Approximate RMS Velocity Level, inch/second
Vibratory Roller	0.210	0.011
Caisson Drill	0.089	0.005
Large bulldozer	0.089	0.005
Small bulldozer	0.003	0.000
Jackhammer	0.035	0.002
Loaded trucks	0.076	0.004
	Criteria	**0.200**

[1.] Determined based on use of jackhammers or pneumatic hammers that may be used for pavement demolition at a distance of 25 feet

Notes: RMS velocity calculated from vibration level (VdB) using the reference of one microinch/second.

Source: Based on methodology from the United States Department of Transportation Federal Transit Administration, *Transit Noise and Vibration Impact Assessment*

Noise Levels During Construction

Reference Levels: Construction Noise at 50 Feet (dBA Leq)[1]

Construction Phase	Distance: Receptor to center of activity	Average Level (dBA Leq)[2]	Distance: Receptor to border of site	Maximum Level (dBA Lmax)[3]
Demolition	50	86	50	90
Demolition + Grading		89		90
Grading + Garage Construction		88		85
Garage Construction		84		84
Garage + Building Construction		85		84
Building Construction		84		84
Building Construction + Paving + Painting		86		84

Drop Off hard=0; soft=0.5
0

Construction Noise at Hotels across Wolfe Road

Construction Phase	Distance: Receptor to center of activity	Average Level (dBA Leq)[2]	Distance: Receptor to border of site	Maximum Level (dBA Lmax)[3]
Demolition	600	65	175	79
Demolition + Grading		68		79
Grading + Garage Construction		67		74
Garage Construction		62		73
Garage + Building Construction		63		73
Building Construction		62		73
Building Construction + Paving + Painting		64		73

Construction Noise at Arioso Apartments

Construction Phase	Distance: Receptor to center of activity	Average Level (dBA Leq)[2]	Distance: Receptor to border of site	Maximum Level (dBA Lmax)[3]
Demolition	800	62	400	72
Demolition + Grading		65		72
Grading + Garage Construction		64		67
Garage Construction		60		66
Garage + Building Construction		60		66
Building Construction		60		66
Building Construction + Paving + Painting		62		66

[1] Calculations based on the Roadway Construction Noise Model with the construction information provided by the applicant.
[2] Average daily noise level including all equipment in use simultaneously considering utilization factors.
[3] Maximum instanteneous noise level from the loudest equipment used during the construction phase.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 12/31/2015
Case Description: demolition

**** Receptor #1 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Receptor at 50 ft	Residential	60.0	60.0	60.0

Equipment

Description	Impact Device	Spec Usage (%)	Actual Lmax (dBA)	Receptor Lmax (dBA)	Estimated Distance (feet)	Shielding (dBA)
Concrete Saw	No	20	89.6	50.0		0.0
Excavator	No	40	80.7	50.0		0.0
Excavator	No	40	80.7	50.0		0.0
Excavator	No	40	80.7	50.0		0.0
Dozer	No	40	81.7	50.0		0.0
Dozer	No	40	81.7	50.0		0.0

Results

	Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
	Calculated (dBA)		Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Concrete Saw	89.6	82.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	80.7	76.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	80.7	76.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	80.7	76.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	81.7	77.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	81.7	77.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	89.6	86.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 12/31/2015
Case Description: grading + garage

**** Receptor #1 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Receptor at 50 ft	Residential	60.0	60.0	60.0

Equipment

Description	Impact Device	Spec Usage (%)	Actual Lmax (dBA)	Receptor Lmax (dBA)	Estimated Distance (feet)	Shielding (dBA)
Concrete Saw	No	20	89.6	50.0		0.0
Excavator	No	40	80.7	50.0		0.0
Excavator	No	40	80.7	50.0		0.0
Excavator	No	40	80.7	50.0		0.0
Dozer	No	40	81.7	50.0		0.0
Dozer	No	40	81.7	50.0		0.0
Scraper	No	40	83.6	50.0		0.0
Scraper	No	40	83.6	50.0		0.0
Backhoe	No	40	77.6	50.0		0.0
Tractor	No	40	84.0	50.0		0.0
Grader	No	40	85.0	50.0		0.0

Results

Equipment	Calculated (dBA) Lmax	Leq	Noise Limits (dBA) Day Lmax	Leq	Evening Lmax	Leq	Night Lmax	Leq	Noise Limit Exceedance (dBA) Day Lmax	Leq	Evening Lmax	Leq	Night Lmax	Leq
Concrete Saw	89.6	82.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	80.7	76.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	80.7	76.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	80.7	76.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	81.7	77.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	81.7	77.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Scraper	83.6	79.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Scraper	83.6	79.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	77.6	73.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	84.0	80.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	85.0	81.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	89.6	89.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 12/31/2015
Case Description: grading + garage

**** Receptor #1 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Receptor at 50 ft	Residential	60.0	60.0	60.0

Equipment

Description	Impact Device	Spec Usage (%)	Actual Lmax (dBA)	Receptor Lmax (dBA)	Estimated Distance (feet)	Shielding (dBA)
Excavator	No	40	80.7	50.0		0.0
Excavator	No	40	80.7	50.0		0.0
Dozer	No	40	81.7	50.0		0.0
Scraper	No	40	83.6	50.0		0.0
Scraper	No	40	83.6	50.0		0.0
Backhoe	No	40	77.6	50.0		0.0
Tractor	No	40	84.0	50.0		0.0
Grader	No	40	85.0	50.0		0.0
Generator	No	50	80.6	50.0		0.0
Backhoe	No	40	77.6	50.0		0.0

Results

Equipment	Calculated (dBA) Lmax	Calculated (dBA) Leq	Noise Limits (dBA) Day Lmax	Noise Limits (dBA) Day Leq	Noise Limits (dBA) Evening Lmax	Noise Limits (dBA) Evening Leq	Noise Limits (dBA) Night Lmax	Noise Limits (dBA) Night Leq	Noise Limit Exceedance (dBA) Day Lmax	Noise Limit Exceedance (dBA) Day Leq	Noise Limit Exceedance (dBA) Evening Lmax	Noise Limit Exceedance (dBA) Evening Leq	Noise Limit Exceedance (dBA) Night Lmax	Noise Limit Exceedance (dBA) Night Leq
Excavator	80.7	76.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	80.7	76.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	81.7	77.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Scraper	83.6	79.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Scraper	83.6	79.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	77.6	73.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	84.0	80.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	85.0	81.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

N/A														
Generator	80.6	77.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
N/A														
Backhoe	77.6	73.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
N/A														
Total	85.0	88.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
N/A														

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 12/31/2015
Case Description: grading + garage

**** Receptor #1 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Receptor at 50 ft	Residential	60.0	60.0	60.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Excavator	No	40		80.7	50.0	0.0
Backhoe	No	40		77.6	50.0	0.0
Tractor	No	40	84.0		50.0	0.0
Generator	No	50		80.6	50.0	0.0
Backhoe	No	40		77.6	50.0	0.0

Results

	Calculated (dBA)		Noise Limits (dBA)				Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Excavator	80.7	76.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	77.6	73.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	84.0	80.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Generator	80.6	77.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	77.6	73.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	84.0	84.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 12/31/2015
Case Description: garage + buillding

**** Receptor #1 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Receptor at 50 ft	Residential	60.0	60.0	60.0

Equipment

Description	Impact Device	Spec Usage (%)	Actual Lmax (dBA)	Receptor Lmax (dBA)	Estimated Distance (feet)	Shielding (dBA)
Excavator	No	40	80.7	50.0		0.0
Welder / Torch	No	40	74.0	50.0		0.0
Backhoe	No	40	77.6	50.0		0.0
Tractor	No	40	84.0	50.0		0.0
Crane	No	16	80.6	50.0		0.0
Generator	No	50	80.6	50.0		0.0
Backhoe	No	40	77.6	50.0		0.0

Results

	Calculated (dBA)		Noise Limits (dBA) Day		Evening		Night		Noise Limit Exceedance (dBA) Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Excavator	80.7	76.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Welder / Torch	74.0	70.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	77.6	73.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	84.0	80.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	80.6	72.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Generator	80.6	77.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	77.6	73.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	84.0	84.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 12/31/2015
Case Description: buillding

**** Receptor #1 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Receptor at 50 ft	Residential	60.0	60.0	60.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Welder / Torch	No	40		74.0	50.0	0.0
Backhoe	No	40		77.6	50.0	0.0
Tractor	No	40	84.0		50.0	0.0
Crane	No	16		80.6	50.0	0.0
Generator	No	50		80.6	50.0	0.0
Backhoe	No	40		77.6	50.0	0.0

Results

Equipment	Calculated (dBA) Lmax	Calculated (dBA) Leq	Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Noise Limit Exceedance (dBA) Day Lmax	Noise Limit Exceedance (dBA) Day Leq	Noise Limit Exceedance (dBA) Evening Lmax	Noise Limit Exceedance (dBA) Evening Leq	Noise Limit Exceedance (dBA) Night Lmax	Noise Limit Exceedance (dBA) Night Leq
Welder / Torch	74.0	70.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	77.6	73.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	84.0	80.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	80.6	72.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Generator	80.6	77.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	77.6	73.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	84.0	83.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 12/31/2015
Case Description: buillding + paving + painting

**** Receptor #1 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Receptor at 50 ft	Residential	60.0	60.0	60.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Paver	No	50		77.2	50.0	0.0
Paver	No	50		77.2	50.0	0.0
Paver	No	50		77.2	50.0	0.0
Paver	No	50		77.2	50.0	0.0
Roller	No	20		80.0	50.0	0.0
Roller	No	20		80.0	50.0	0.0
Compressor (air)	No	40		77.7	50.0	0.0
Welder / Torch	No	40		74.0	50.0	0.0
Backhoe	No	40		77.6	50.0	0.0
Tractor	No	40	84.0		50.0	0.0
Crane	No	16		80.6	50.0	0.0
Generator	No	50		80.6	50.0	0.0
Backhoe	No	40		77.6	50.0	0.0

Results

Equipment	Calculated (dBA) Lmax	Calculated (dBA) Leq	Noise Limits (dBA) Day Lmax	Noise Limits (dBA) Day Leq	Noise Limits (dBA) Evening Lmax	Noise Limits (dBA) Evening Leq	Noise Limits (dBA) Night Lmax	Noise Limits (dBA) Night Leq	Noise Limit Exceedance (dBA) Day Lmax	Noise Limit Exceedance (dBA) Day Leq	Noise Limit Exceedance (dBA) Evening Lmax	Noise Limit Exceedance (dBA) Evening Leq	Noise Limit Exceedance (dBA) Night Lmax	Noise Limit Exceedance (dBA) Night Leq
Paver	77.2	74.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver	77.2	74.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver	77.2	74.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver	77.2	74.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller	80.0	73.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller	80.0	73.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Compressor (air)	77.7	73.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Welder / Torch	74.0	70.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	77.6	73.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	84.0	80.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	80.6	72.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Generator	80.6	77.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	77.6	73.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	84.0	86.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A