

**LETTER OF TRANSMITTAL**

TO: STRATEGIC LAND PARTNERSHIP  
12671 High Bluff Drive, Suite 150  
San Diego, CA 92130

DATE: November 2, 2016

JOB NO.: 2398-2016-01

SUBJECT: Vista Del Agua Specific Plan  
Noise Impact Study,  
City of Coachella (Revised 11/2/16)

ATTN: Mr. Matthew Fagan

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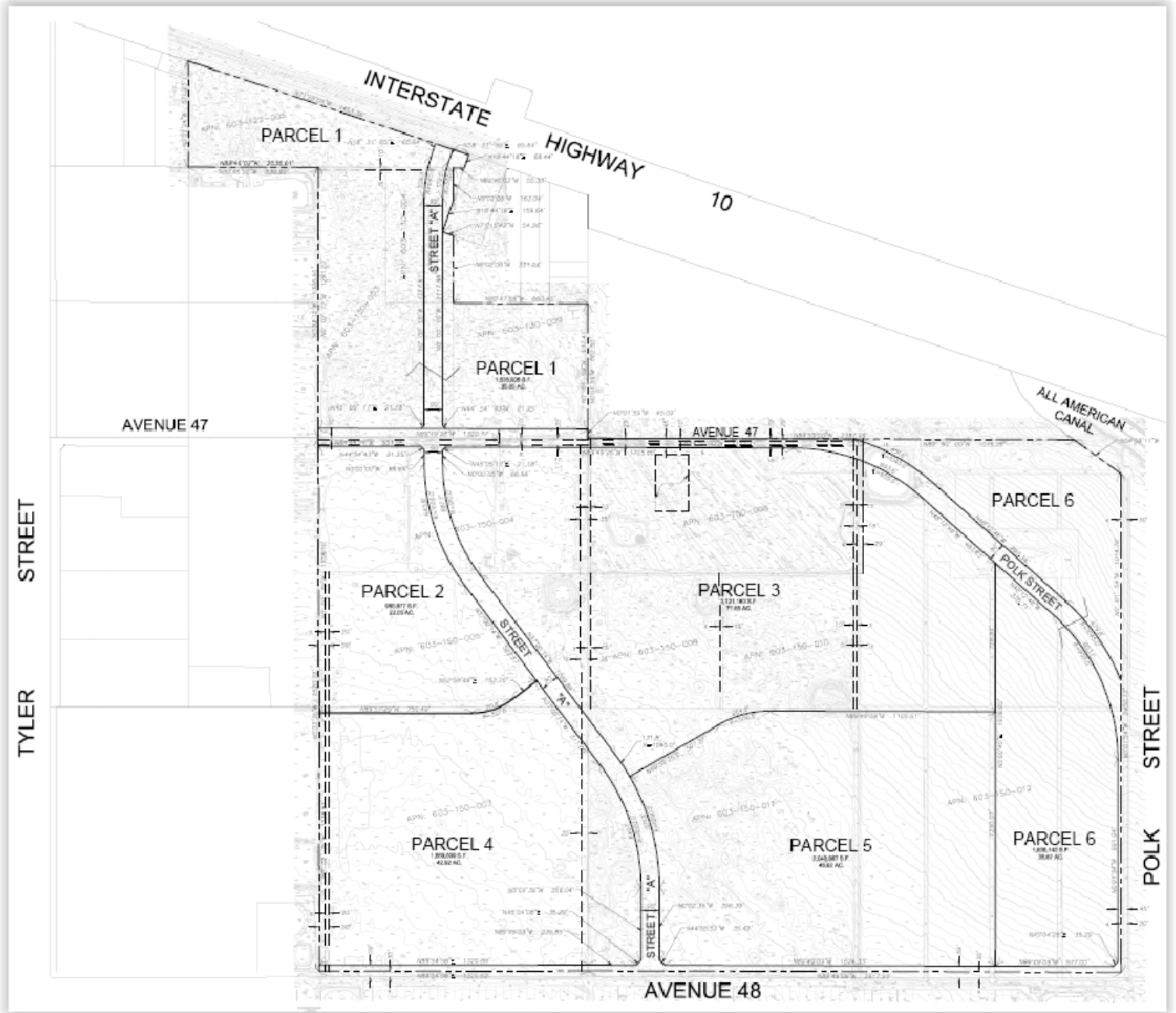
REMARKS:

Attached please find the Vista Del Agua Noise Impact Study, City of Coachella. Please call Mike Dickerson at (949) 474-0809, extension 208, if you have any questions.

BY:   
Mike Dickerson, INCE  
Noise/Air Specialist

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# VISTA DEL AGUA SPECIFIC PLAN NOISE IMPACT STUDY REVISED (11/2/16) City of Coachella, California



November 2, 2016

Mr. Matthew Fagan  
STRATEGIC LAND PARTNERSHIP  
12671 High Bluff Drive, Suite 150  
San Diego, CA 92130

**Subject: Vista Del Agua Specific Plan Noise Impact Study, City of Coachella**

Dear Mr. Fagan:

RK ENGINEERING GROUP, INC. (RK) has completed a noise assessment for the proposed Vista Del Agua Specific Plan located in the City of Coachella. The proposed project is located south of the I-10 Freeway and east of Tyler Street, as indicated on Exhibit A. The 275-acre site would consist of a mix of uses including, single family residential, multi-family residential, commercial/retail uses, and open space. The proposed development plan is illustrated in Exhibit B.

The noise study assesses three (3) scenarios: 1) Existing (with and without project); 2) Project Completion Year 2022 (with and without project); and 3) General Plan Buildout Year 2035 (with and without project). This report provides a summary of the findings, analysis procedures, and evaluation of the proposed project with respect to noise impacts to and from the project site pursuant to the City of Coachella and County of Riverside requirements. The purpose of this analysis is to review existing and future noise conditions with and without the proposed development.

RK Engineering Group, Inc. is pleased to assist STRATEGIC LAND PARTNERSHIP with the Vista Del Agua Specific Plan Noise Impact Study and looks forward to working with you again in the future. If you have any questions regarding this study, or would like further review, please do not hesitate to call us at (949) 474-0809.

Sincerely,  
RK ENGINEERING GROUP, INC.

*Michael Dickerson*

Michael Dickerson, INCE  
Noise/Air Specialist



Robert Kahn, P.E.  
Principal

Attachments

**VISTA DEL AGUA SPECIFIC PLAN  
NOISE IMPACT STUDY  
City of Coachella, California**

**Prepared for:**

STRATEGIC LAND PARTNERSHIP  
12671 High Bluff Drive, Suite 150  
San Diego, CA 92130

**Prepared by:**

RK ENGINEERING GROUP, INC.  
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Newport Beach, CA 92660

**Michael Dickerson  
Robert Kahn, P.E.**



**November 2, 2016**

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# **1.0 Introduction**

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## **1.1 Purpose of Analysis and Study Objectives**

This noise assessment was prepared to evaluate whether the potential noise impacts associated with the project would cause a significant impact to the nearest sensitive receivers. The assessment was conducted and compared to the noise standards set-forth by the Federal, State and Local agencies. Consistent with the California Environmental Quality Act (CEQA) and CEQA Guidelines, a significant impact related to noise would occur if a proposed project is determined to result in:

- Exposure of persons to or generation of noise levels in excess of standards established in the local General Plan or noise ordinance, or applicable agencies.
- Exposure of persons to or generation of excessive groundbourne vibration or groundbourne noise levels
- A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project
- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project
- For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public use airport, would the project expose people residing or working in the project area to excessive noise levels
- For a project within the vicinity of private airstrip, would the project expose people residing or working in the project area to excessive noise levels

The following is provided in this report:

- A description of the study area and the proposed project
- Information regarding the fundamentals of noise
- A description of the local noise guidelines and standards
- An exterior analysis of traffic noise impacts to the project study area
- Construction noise analysis

## **1.2 Site Location and Study Area**

The project site is located south of the I-10 Freeway and east of Tyler Street, as indicated on Exhibit A. The project site is relatively flat, located approximately at sea level and currently is vacant open space, with the exception of a light industrial facility near the northerly boundary.

The project vicinity is characterized by a rural agricultural and undeveloped desert open space. Developed properties in the vicinity include residential properties to the north and east.

### **1.3 Proposed Project Description**

The proposed project consists of approximately 275 acres of development. As shown in the preliminary land use plan (Exhibit B), the project has been divided into ten (10) Planning Areas; allowing for approximately 1,030 single family homes, 347 apartment units, 263 townhomes/condominiums, 25.84 acres of commercial/retail space, and 13.82 acres for a park. The project will likely be built out in phases over the next several years, and the final project completion date is expected to be 2022. To show the final worst case impacts upon completion, this noise impact study has analyzed the project in one (1) complete phase.

### **1.4 Project Design Features**

The Specific Plan will incorporate several Project Design Features (PDFs) as it relates to noise and is as follows:

- The Specific Plan will be constructed in compliance with all applicable provisions in the City's Municipal Code, including observing all time limitations on construction noise that exceeds Base Ambient Noise Levels.
- Based on a design-level acoustical study, all residential structures built on the project shall incorporate design measures to ensure that interior noise levels for residential development do not exceed 45 dBA, in accordance to Title 25 (California Noise Insulation Standards) and the City's Municipal Code (Section 7).
- During the preparation of construction drawings for project-specific development, the exact acoustical specifications for window glazing in buildings with unshielded first-and second-floor windows shall be determined pursuant to an acoustical study, pursuant to the requirements of the City's General Plan and the City's Municipal Code.

## **2.0 Fundamentals of Noise**

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This section of the report provides basic information about noise and presents some of the terms used within the report.

### **2.1 Sound, Noise and Acoustics**

Sound is a disturbance created by a moving or vibrating source and is capable of being detected by the hearing organs. Sound may be thought of as mechanical energy of a moving object transmitted by pressure waves through a medium to a human ear. For traffic, or stationary noise, the medium of concern is air. Noise is defined as sound that is loud, unpleasant, unexpected, or unwanted.

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### **2.2 Frequency and Hertz**

A continuous sound is described by its frequency (pitch) and its amplitude (loudness). Frequency relates to the number of pressure oscillations per second. Low-frequency sounds are low in pitch (bass sounding) and high-frequency sounds are high in pitch (squeak). These oscillations per second (cycles) are commonly referred to as Hertz (Hz). The human ear can hear from the bass pitch starting out at 20 Hz all the way to the high pitch of 20,000 Hz.

### **2.3 Sound Pressure Levels and Decibels**

The amplitude of a sound determines its loudness. The loudness of sound increases or decreases as the amplitude increases or decreases. Sound pressure amplitude is measured in units of micro-Newton per square inch meter ( $N/m^2$ ), also called micro-Pascal ( $\mu Pa$ ). One  $\mu Pa$  is approximately one hundred billionths (0.0000000001) of normal atmospheric pressure. Sound pressure level (SPL or  $L_p$ ) is used to describe in logarithmic units the ratio of actual sound pressures to a reference pressure squared. These units are called decibels abbreviated dB.

### **2.4 Addition of Decibels**

Because decibels are on a logarithmic scale, sound pressure levels cannot be added or subtracted by simple plus or minus addition. When two sounds of equal SPL are combined, they will produce an SPL 3 dB greater than the original single SPL. In other words, sound energy must be doubled to produce a 3 dB increase. If two sounds differ by approximately 10 dB, the higher sound level is the predominant sound.

## **2.5 Human Response to Changes in Noise Levels**

In general the healthy human ear is most sensitive to sounds between 1,000 Hz and 5,000 Hz, (A-weighted scale) and it perceives a sound within that range as being more intense than a sound with a higher or lower frequency with the same magnitude. For purposes of this report as well as with most environmental documents, the A-scale weighting is typically reported in terms of A-weighted decibel (dBA). Typically the human ear can barely perceive the change in noise level of 3 dB. A change in 5 dB is readily perceptible, and a change in 10 dB is perceived as being twice or half as loud. As previously discussed, a doubling of sound energy results in a 3 dB increase in sound, which means that a doubling of sound energy (e.g. doubling the volume of traffic on a highway) would result in a barely perceptible change in sound level.

## **2.6 Noise Descriptors**

Noise in our daily environment fluctuates over time. Some noise levels occur in regular patterns other are random. Some noise levels are constant while others are sporadic. Noise descriptors were created to describe the different time-varying noise levels. The following indicates the most commonly used noise descriptors and gives a brief definition.

### ***A-Weighted Sound Level***

The sound pressure level in decibels as measured on a sound level meter using the A-weighted filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the response of the human ear. A numerical method of rating human judgment of loudness.

### ***Ambient Noise Level***

The composite of noise from all sources, near and far. In this context, the ambient noise level constitutes the normal or existing level of environmental noise at a given location.

### ***Community Noise Equivalent Level (CNEL)***

The average equivalent A-weighted sound level during a 24-hour day, obtained after addition of five (5) decibels to sound levels in the evening from 7:00 to 10:00 PM and after addition of ten (10) decibels to sound levels in the night before 7:00 AM and after 10:00 PM.

### ***Decibel (dB)***

A unit for measuring the amplitude of a sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micro-pascals.

### ***dB(A)***

A-weighted sound level (see definition above).

### ***Equivalent Sound Level (LEQ)***

The sound level corresponding to a steady noise level over a given sample period with the same amount of acoustic energy as the actual time varying noise level. The energy average noise level during the sample period.

### ***Habitable Room***

Any room meeting the requirements of the Uniform Building Code or other applicable regulations which is intended to be used for sleeping, living, cooking or dining purposes, excluding such enclosed spaces as closets, pantries, bath or toilet rooms, service rooms, connecting corridors, laundries, unfinished attics, foyers, storage spaces, cellars, utility rooms, and similar spaces.

### ***L(n)***

The A-weighted sound level exceeded during a certain percentage of the sample time. For example, L10 in the sound level exceeded 10 percent of the sample time. Similarly L50, L90 and L99, etc.

### ***Noise***

Any unwanted sound or sound which is undesirable because it interferes with speech and hearing, or is intense enough to damage hearing, or is otherwise annoying. The State Noise Control Act defines noise as "...excessive undesirable sound..."

## **2.7 Traffic Noise Prediction**

Noise levels associated with traffic depends on a variety of factors: (1) volume of traffic, (2) speed of traffic, (3) auto, medium truck (2–3 axle) and heavy truck percentage (4 axle and greater), and sound propagation. The greater the volume of traffic, higher speeds and truck percentages equate to a louder volume in noise. A doubling of the Average Daily Traffic (ADT) along a roadway will increase noise levels by approximately 3 dB; reasons for this are discussed in the sections above.

### ***Outdoor Living Area***

Outdoor spaces that are associated with residential land uses typically used for passive recreational activities or other noise-sensitive uses. Such spaces include patio areas, barbecue areas, jacuzzi areas, etc. associated with residential uses; outdoor patient recovery or resting areas associated with hospitals, convalescent hospitals, or rest homes; outdoor areas associated with places of worship which have a significant role in services or other noise-sensitive activities; and outdoor school facilities routinely used for educational purposes which may be adversely impacted by noise. Outdoor areas usually not included in this definition are: front yard areas, driveways, greenbelts, maintenance areas and storage areas associated with residential land uses; exterior areas at hospitals that are not used for patient activities; outdoor areas associated with places of worship and principally

used for short-term social gatherings; and, outdoor areas associated with school facilities that are not typically associated with educational uses prone to adverse noise impacts (for example, school play yard areas).

### *Percent Noise Levels*

See L(n).

### *Sound Level (Noise Level)*

The weighted sound pressure level obtained by use of a sound level meter having a standard frequency-filter for attenuating part of the sound spectrum.

### *Sound Level Meter*

An instrument, including a microphone, an amplifier, an output meter, and frequency weighting networks for the measurement and determination of noise and sound levels.

### *Single Event Noise Exposure Level (SENEL)*

The dBA level which, if it lasted for one (1) second, would produce the same A-weighted sound energy as the actual event.

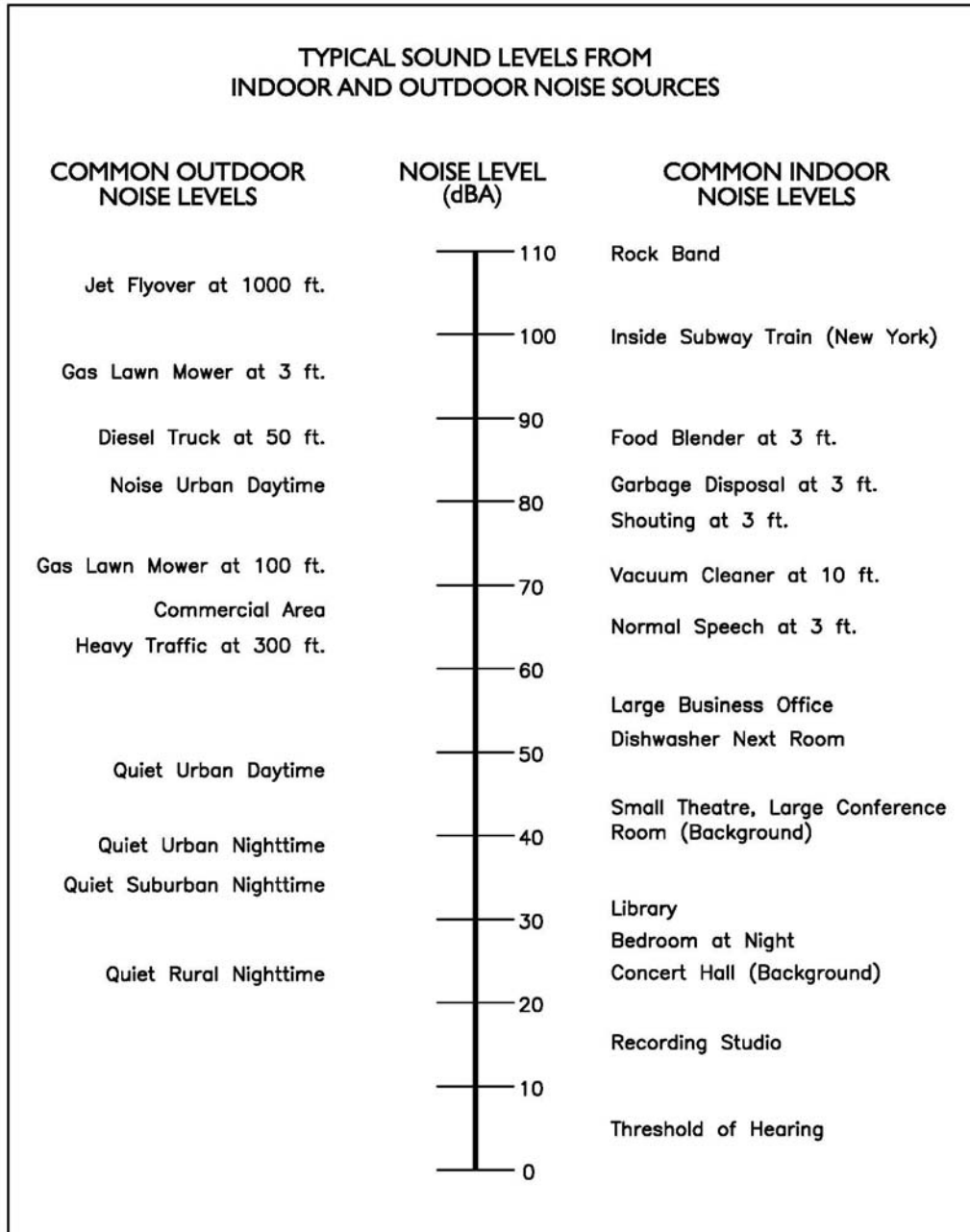
## **2.8 Sound Propagation**

As sound propagates from a source it spreads geometrically. Sound from a small, localized source (i.e., a point source) radiates uniformly outward as it travels away from the source in a spherical pattern. The sound level attenuates at a rate of 6 dB per doubling of distance. The movement of vehicles down a roadway makes the source of the sound appear to propagate from a line (i.e., line source) rather than a point source. This line source results in the noise propagating from a roadway in a cylindrical spreading versus a spherical spreading that results from a point source. The sound level attenuates for a line source at a rate of 3 dB per doubling of distance.

As noise propagates from the source, it is affected by the ground and atmosphere. Noise models use hard site (reflective surfaces) and soft site (absorptive surfaces) to help calculate predicted noise levels. Hard site conditions assume no excessive ground absorption between the noise source and the receiver. Soft site conditions such as grass, soft dirt or landscaping attenuate noise at a rate of 1.5 dB per doubling of distance. When added to the geometric spreading, the excess ground attenuation results in an overall noise attenuation of 4.5 dB per doubling of distance for a line source and 7.5 dB per doubling of distance for a point source.

Research has demonstrated that atmospheric conditions can have a significant effect on noise levels when noise receivers are located 200 feet from a noise source. Wind, temperature, air humidity and turbulence can further impact how far sound can travel.

This noise assessment was prepared to evaluate whether the potential noise impacts associated with the project would cause a significant impact to the nearest sensitive receptor.



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## **3.0 Ground-Bourne Vibration Fundamentals**

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Ground-borne vibrations consist of rapidly fluctuating motions within the ground that have an average motion of zero. The effects of ground-borne vibrations typically only cause a nuisance to people, but at extreme vibration levels, damage to buildings may occur. Although ground-borne vibration can be felt outdoors, it is typically only an annoyance to people indoors where the associated effects of the shaking of a building can be notable. Ground-borne noise is an effect of ground-borne vibration and only exists indoors, since it is produced from noise radiated from the motion of the walls and floors of a room and may also consist of the rattling of windows or dishes on shelves.

### **3.1 Vibration Descriptors**

Several different methods are used to quantify vibration amplitude.

#### *PPV*

Known as the peak particle velocity (PPV) which is the maximum instantaneous peak in vibration velocity, typically given in inches per second.

#### *RMS*

Known as root mean squared (RMS) can be used to denote vibration amplitude

#### *VdB*

A commonly used abbreviation to describe the vibration level (VdB) for a vibration source.

### **3.2 Vibration Perception**

Typically, developed areas are continuously affected by vibration velocities of 50 VdB or lower. These continuous vibrations are not noticeable to humans whose threshold of perception is around 65 VdB. Outdoor sources that may produce perceptible vibrations are usually caused by construction equipment, steel-wheeled trains, and traffic on rough roads, while smooth roads rarely produce perceptible ground-borne noise or vibration. To counter the effects of ground-borne vibration, the Federal Transit Administration (FTA) has published guidance relative to vibration impacts. According to the FTA, fragile buildings can be exposed to ground-borne vibration levels of 0.3 inches per second without experiencing structural damage.

### **3.3 Vibration Propagation**

There are three main types of vibration propagation: surface, compression, and shear waves. Surface waves, or Rayleigh waves, travel along the ground's surface. These waves

carry most of their energy along an expanding circular wave front, similar to ripples produced by throwing a rock into a pool of water. P-waves, or compression waves, are body waves that carry their energy along an expanding spherical wave front. The particle motion in these waves is longitudinal (i.e., in a “push-pull” fashion). P-waves are analogous to airborne sound waves. S-waves, or shear waves, are also body waves that carry energy along an expanding spherical wave front. However, unlike P-waves, the particle motion is transverse, or side-to-side and perpendicular to the direction of propagation.

As vibration waves propagate from a source, the vibration energy decreases in a logarithmic nature and the vibration levels typically decrease by 6 VdB per doubling of the distance from the vibration source. As stated above, this drop-off rate can vary greatly depending on the soil but has been shown to be effective enough for screening purposes, in order to identify potential vibration impacts that may need to be studied through actual field tests.

### 3.4 Construction Related Vibration Level Prediction

Operational activities are separated into two different categories. The vibration can be transient or continuous in nature. Each category can result in varying degrees of ground vibration, depending on the equipment used on the site. Operation of equipment causes ground vibrations that spread through the ground and diminish in strength with distance. Buildings in the vicinity of the project area site respond to these vibrations with varying results ranging from no perceptible effects at the low levels to slight damage at the highest levels. The thresholds from Caltrans Transportation and Construction Induced Vibration Guidance Manual in the table below provide general guidelines as to the maximum vibration limits for when vibration becomes potentially annoying.

<b>Guideline Vibration Annoyance Potential Criteria</b>		
<b>Human Response</b>	<b>Maximum PPV (in/sec)</b>	
	<b>Transient Sources</b>	<b>Continuous/Frequent Intermittent Sources</b>
Barely perceptible	0.04	0.01
Distinctly perceptible	0.25	0.04
Strongly perceptible	0.90	0.10
Severe	2.00	0.40

Note: Transient sources create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

The Caltrans Transportation and Construction Induced Vibration Guidance Manual provide general thresholds and guidelines as to the vibration damage potential from vibratory impacts. The table below provides general vibration damage potential thresholds:

<b>Guideline Vibration Damage Potential Threshold Criteria</b>		
<b>Structure and Condition</b>	<b>Maximum PPV (in/sec)</b>	
	<b>Transient Sources</b>	<b>Continuous/Frequent Intermittent Sources</b>
Extremely fragile historic buildings, ruins ancient monuments	0.12	0.08
Fragile buildings	0.20	0.10
Historic and some old buildings	0.50	0.25
Older residential structures	0.50	0.30
New residential structures	1.00	0.50
Modern industrial/commercial buildings	2.00	0.50

Soil conditions have an impact on how vibration propagates through the ground. The Caltrans Transportation and Construction Induced Vibration Guidance Manual provides suggested "n" values based on soil class. The table below outlines the manual's suggested values and description.

<b>Suggested "n" Values Based on Soil Classes</b>		
<b>Soil Class</b>	<b>Description of Soil Material</b>	<b>Suggested Value of "n"</b>
I	Weak or soft soils: loose soils, dry or partially saturated peat and muck, mud, loose beach sand, and dune sand.	1.4
II	Most sands, sandy clays, silty clays, gravel, silts, weathered rock.	1.3
III	Hard soils: dense compacted sand, dry consolidated clay, consolidated glacial till, some exposed rock.	1.1
IV	Hard, component rock: bedrock, freshly exposed hard rock.	1.0

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## **4.0 Regulatory Setting**

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The proposed project is located in the City of Coachella which follows the County of Riverside County and noise regulations are addressed through the efforts of various federal, state and local government agencies. The agencies responsible for regulating noise are discussed below.

### **4.1 Federal Regulations**

The adverse impact of noise was officially recognized by the federal government in the Noise Control Act of 1972, which serves three purposes:

- Publicize noise emission standards for interstate commerce
- Assist state and local abatement efforts
- Promote noise education and research

The Federal Office of Noise Abatement and Control (ONAC) originally was tasked with implementing the Noise Control Act. However, it was eventually eliminated leaving other federal agencies and committees to develop noise policies and programs. Some examples of these agencies are as follows: The Department of Transportation (DOT) assumed a significant role in noise control through its various agencies. The Federal Aviation Agency (FAA) is responsible to regulate noise from aircraft and airports. The Federal Highway Administration (FHWA) is responsible to regulate noise from the interstate highway system. The Occupational Safety and Health Administration (OSHA) is responsible for the prohibition of excessive noise exposure to workers.

The federal government advocates that local jurisdiction use their land use regulatory authority to arrange new development in such a way that “noise sensitive” uses are either prohibited from being constructed adjacent to a highway or, or alternatively that the developments are planned and constructed in such a manner that potential noise impacts are minimized.

Since the federal government has preempted the setting of standards for noise levels that can be emitted by the transportation source, the City is restricted to regulating the noise generated by the transportation system through nuisance abatement ordinances and land use planning.

### **4.2 State Regulations**

Established in 1973, the California Department of Health Services Office of Noise Control (ONC) was instrumental in developing regularity tools to control and abate noise for use by local agencies. One significant model is the “Land Use Compatibility for Community Noise Environments Matrix.” The matrix allows the local jurisdiction to clearly delineate compatibility of sensitive uses with various incremental levels of noise.

The State of California has established noise insulation standards as outlined in Title 24 and the Uniform Building Code (UBC) which in some cases requires acoustical analyses to outline exterior noise levels and to ensure interior noise levels do not exceed the interior threshold. The State mandates that the legislative body of each county and city adopt a noise element as part of its comprehensive general plan. The local noise element must recognize the land use compatibility guidelines published by the State Department of Health Services. The guidelines rank noise land use compatibility in terms of normally acceptable, conditionally acceptable, normally unacceptable, and clearly unacceptable.

#### **4.3 City of Coachella**

##### *City of Coachella General Plan Noise Element*

The City of Coachella outlines their acoustical guidelines in the Compatibility Matrix (Fig.10-1) of the Noise Element from the General Plan and the Acoustical Standards (Appendix A).

Noise levels for residential single family and multi-family units are clearly compatible below 60 dBA CNEL, normally compatible below 70 dBA CNEL, normally incompatible above 70 dBA CNEL and clearly incompatible above 75 dBA CNEL.

Noise levels for commercial retail and restaurants are clearly compatible below 70 dBA CNEL, normally compatible below 80 dBA CNEL, normally incompatible above 80 dBA CNEL.

**Policy:** The City shall require noise control plans for new development located within the 60 dBA CNEL contour of the centerline of major arterial roadways.

**Policy:** The City may require an acoustical analysis in compliance with the California Administrative Code Title 25, for proposed residential developments. The analysis shall be prepared under the supervision of a person experienced in the field of acoustical engineering and shall evaluate existing and projected noise levels, as well as, recommended noise attenuation measures.

##### *City of Coachella Municipal Code*

Section 7.04.030 of the City's Municipal Code outlines the stationary residential noise standard as follows:

Daytime (6AM-10PM) exterior noise standard of 55 dBA (10-minute Leq) and a nighttime (10PM – 6AM) exterior standard of 45 dBA (10-minute Leq) for stationary sources near residential uses.

Section 7.04.030 of the City's Municipal Code outlines the stationary commercial noise standard as follows:

Daytime (6AM-10PM) exterior noise standard of 65 dBA (10-minute Leq) and a nighttime (10PM – 6AM) exterior standard of 55 dBA (10-minute Leq) for stationary sources near residential uses.

Vibration Regulation

The City does not have a specific limit for vibration.

Construction Noise Regulation

The City's Municipal Noise Code (Section 7.04.070) indicates that the project construction noise levels should be kept to a minimum by using acceptable practices where sensitive land uses are adjacent to construction zones. As stated in the municipal code, no person shall perform, nor shall any person be employed, nor shall any person cause any other person to be employed to work for which a building permit is required by the city in any work of construction, erection, demolition, alteration, repair, addition to or improvement of any building, structure, road or improvement to realty except between the hours as set forth as follows:

October 1st through April 30th

Monday—Friday: 6:00 a.m. to 5:30 p.m.

Saturday: 8:00 a.m. to 5:00 p.m.

Sunday: 8:00 a.m. to 5:00 p.m.

Holidays: 8:00 a.m. to 5:00 p.m.

May 1st through September 30th

Monday—Friday: 5:00 a.m. to 7:00 p.m.

Saturday: 8:00 a.m. to 5:00 p.m.

Sunday: 8:00 a.m. to 5:00 p.m.

Holidays: 8:00 a.m. to 5:00 p.m.

Emergency work and/or unusual conditions may cause work to be permitted with the consent of the city manager, or his or her designee, upon recommendation of the building director or the city engineer.

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## **5.0 Study Method and Procedure**

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To determine the existing noise level environment, RK conducted three (3) short-term noise measurements at the project study area. The following describes the measurement procedures, measurements locations, results, noise modeling methods and assumptions to determine the existing and future noise level impact.

### **5.1 Measurement Procedure and Criteria**

Noise measurements are taken to determine the existing noise levels. A noise receiver or receptor is any location in the noise analysis in which noise might produce an impact. The following criteria are used to select measurement locations and receptors:

- Locations expected to receive the highest noise impacts, such as first row of houses
- Locations that are acoustically representative and equivalent of the area of concern
- Human land usage
- Sites clear of major obstruction and contamination

RK conducted the sound level measurements in accordance to the City of Coachella, County of Riverside and CalTrans technical noise specifications. All measurements equipment meets American National Standards Institute (ANSI) specifications for sound level meters (S1.4-1983 identified in Chapter 19.68.020.AA). The following gives a brief description of the Caltrans Technical Noise Supplement procedures for sound level measurements:

- Microphones for sound level meters were placed 5-feet above the ground for all measurements
- Sound level meters were calibrated (Larson Davis CAL 200) before and after each measurement
- Following the calibration of equipment, a wind screen was placed over the microphone
- Frequency weighting was set on "A" and slow response
- Results of the long-term noise measurements were recorded on field data sheets
- During any short-term noise measurements any noise contaminations such as barking dogs, local traffic, lawn mowers, or aircraft fly-overs were noted
- Temperature and sky conditions were observed and documented

#### **5.1.1 Noise Measurements**

Noise measurements were conducted June 17, 2014 using a Larson Davis 700 type II sound level meter. The Leq, Lmin, Lmax, L2, L8, L25 and L50 were recorded over a 10-minute interval. The information was utilized to define the noise characteristics for the project.

### **5.1.2 Noise Measurement Locations**

The noise monitoring locations for the Vista Del Agua Specific Plan site were selected based on the proximity to the location to I-10 Freeway and adjacent sensitive receptors. Short-term noise monitoring location (ST-1) is located along the project site's southerly property line, along Avenue 48, and represents ambient noise levels in the vicinity of the measurement location. ST-2 is located along the project site's southeasterly property line, near the intersection of Polk Street and Avenue 48, and represents noise levels within the vicinity of the measurement location. ST-3 is located along the project site's northerly property line, along Vista Del Sur, and represents ambient noise levels within the vicinity. Appendix B includes photos, field sheets and measured noise data.

### **5.1.3 Noise Measurement Timing and Climate**

The short-term noise measurements were recorded during daytime hours between 10AM – 12PM on June 17, 2014. Noise measurements were conducted in 10-minute intervals during the indicated time schedule.

The climate data was noted during the measurements and is indicated in the field sheets within Appendix B.

## **5.2 Traffic Noise Modeling**

Traffic noise from vehicular traffic was projected using a version of the FHWA Traffic Noise Prediction Model (FHWA-RD-77-108). The FHWA model arrives at the predicted noise level through a series of adjustments to the key input parameters. Traffic data, traffic volumes, and percentages were obtained using the Traffic Impact Study (prepared by RK Engineering Group, Inc.) and vehicle mix data from the City of Coachella and County of Riverside Traffic Noise Parameters (see Appendix A). The referenced traffic data utilized for the study is indicated in Appendix C.

The following outlines the key adjustments made to the computer model for the roadway inputs:

- Roadway classification – (e.g. freeway, major arterial, arterial, secondary, collector, etc),
- Roadway Active Width – (distance between the center of the outer most travel lanes on each side of the roadway)
- Average Daily Traffic (ADT) Volumes, Travel Speeds, Percentages of automobiles, medium trucks, and heavy trucks
- Roadway grade and angle of view
- Site Conditions (e.g. soft vs. hard)
- Percentage of total ADT which flows each hour throughout a 24-hour period

Tables 1 and 2 show the roadway parameters, vehicle distribution, and scenarios utilized for this study.

The following outlines key adjustments to the computer model for the project site parameter inputs:

- Vertical and horizontal distances (Sensitive receptor distance from noise source)
- Noise barrier vertical and horizontal distances (Noise barrier distance from sound source and receptor).
- Traffic noise source spectra
- Topography

RK estimated the traffic noise levels at 100 feet from the centerline of the analyzed roadway and the roadway noise contours. The noise model assumes a flat topography condition (which is a worst-case scenario). The project noise calculation worksheet outputs are provided in Appendix D.

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## **6.0 Existing Noise Environment**

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Ambient noise measurements were conducted at various locations at the project site. Three (3) short term ambient measurements were conducted at or near the site to evaluate the existing noise conditions. Exhibit C shows the measurement locations. Noise measurement data indicates that traffic noise propagating from the I-10 Freeway is the primary source of noise impacting the project site along the northerly boundary. The existing roadways in the vicinity of the site are generally unimproved dirt roads, or low volume rural 2 lane undivided roads, and traffic noise is not predominant throughout most of the site away from the I-10 Freeway.

There are no existing residences in the immediate vicinity of the project site; however, there is two (2) existing residences to the west of the project site (approximately 75 feet to the west), and approximately 1,000 feet setback from the centerline of Tyler Street. There are no noise-sensitive outdoor living areas between the centerline of the road and the structure. The project site however backs up these two receptors.

### **6.1 Short-Term Noise Measurement Results**

The results of the short-term noise data are presented in Table 3. The noise data indicates the daytime (7AM – 10PM) ambient noise level. The noise measurement data indicates that the average noise level near the site area ranges from 50.4 to 68.2 dBA Leq. The maximum measured noise level was 91.9 dBA Lmax.

The sites are exposed to typical traffic noise from the local roadway network. Noise levels vary depending on distance from centerline of roadway, time of day, and traffic speeds and activities.

### **6.2 Modeled Existing Traffic Noise Levels**

The noise contours of the nearby existing roadways were calculated using the FHWA Traffic Noise Prediction Model (FHWA-RD-77-108) in order to provide a baseline of the existing traffic noise levels. The distances to the 55, 60, 65, 70 dBA CNEL noise contours were calculated. In addition, the noise level at 100 feet from the centerline was calculated and representative of the nearest homes along the study area roadways. The existing traffic (without project) noise levels along the roadways are presented in Table 4.

The calculated existing noise contours in Table 4 demonstrate that the noise level at 100 feet from the centerline for the analyzed roadways, range from 35.9 to 46.8 dBA CNEL. The noise level approximately 500 feet south of the I-10 freeway was calculated to be 61.2 dBA CNEL.

As shown in Table 4, existing traffic noise levels along roadway segments in the project vicinity are low, with 70 dBA confined within the roadway right-of-way (ROW) with the exception of traffic noise level adjacent to the I-10 Freeway, where the 70 dBA CNEL

extends up to 174 feet from the roadway centerline. The existing traffic noise level conditions are conservative and do not take into account any topography and or existing walls along the roadway segments. The noise levels were generated for comparative purposes.

## **7.0 Future Noise Environment Impacts and Mitigation**

### **7.1 Future Exterior Noise**

Each future noise source related to the project was analyzed and compared to the CEQA guidelines. The sections below analyze the exterior noise levels and provide mitigation measures that would reduce noise levels. This assessment evaluates the potential noise impacts from the proposed Vista Del Agua Specific Plan project to the surrounding land uses and compares the results to the City's/County's Noise Standards.

#### **7.1.1 Traffic Source Noise**

The potential off-site noise impacts caused by the increase in vehicular traffic from the operation of the proposed project on the nearby roadways were calculated for the following scenarios and conditions:

*Existing Year with Project Condition:* This scenario refers to existing year traffic noise conditions with (plus) project generated traffic noise and is demonstrated in Table 5. Table 6 compares the existing without project to the existing with project condition and shows the change in noise level as a result of the proposed project.

*Project Completion Year 2022 Without Project Condition:* This scenario refers to the Project Completion Year 2022 traffic noise conditions consisting of future traffic generated by ambient growth and known development projects in the project study areas, without the proposed project generated traffic noise and is demonstrated in Table 7.

*Project Completion Year 2022 With Project Condition:* This scenario refers to Project Completion Year 2022 traffic noise conditions with (plus) project generated traffic noise and is demonstrated in Table 8. Table 9 compares the Project Completion Year 2022 without project to the Project Completion Year 2022 with project condition and shows the change in noise level as a result of the proposed project.

*General Plan Buildout Year 2035 Without Project Condition:* This scenario refers to the 2035 traffic noise conditions consisting of future traffic generated by ambient growth and known development projects in the project study areas, without the proposed project generated traffic noise and is demonstrated in Table 10.

*General Plan Buildout Year 2035 With Project Condition:* This scenario refers to the 2035 traffic noise conditions consisting of future traffic generated by ambient growth and known development projects in the project study areas, with (plus) the proposed project generated traffic noise and is demonstrated in Table 11. Table 12 compares the noise level contours for the without and with project 2035 project condition and shows the change in noise level as a result of the proposed project.

### Off-Site Traffic Noise Impact

The project-related vehicle trips would be distributed to area roadways. Tables 6, 9, and 12 show that the largest increase in noise levels are along Avenue 47 and Avenue 48, between Tyler Street and Polk Street, where there will be an increase of up to 27.7 dBA CNEL. It should be noted these roads are currently unimproved dirt roads with little existing traffic volume and no sensitive receptors. Due to the existing vacant land condition on the project site and in the immediate project vicinity, the vehicular traffic volumes are small and less than 1,000 vehicles a day along roadway segments in the project vicinity. If all project-related vehicular traffic is imposed to these roadway segments, the scenarios of Existing Plus Project and 2022 Plus Project traffic conditions would result in substantial increases in traffic noise levels along the majority of the roadway segments leading to the project site. However, the project will likely be developed over time, these Existing Plus Project scenarios would not likely occur for roadway segments in the project vicinity.

For the future (2035) with project scenarios, the following off-site roadway segments would experience traffic noise level increases exceeding 3 dBA:

- Avenue 47 between Tyler Street and Street A: 2035 (+21.2 dBA)
- Avenue 47 between Street A and Polk Street: 2035 (+17.1 dBA)

However, any existing sensitive receptors along Avenue 47 between Tyler Street and Polk Street are located below the 65 dBA CNEL contour. Therefore, no potential noise impacts would occur along these roadway segments.

There are two (2) sensitive receptors along Tyler Street between Vista Del Sur and Avenue 47 but the structures are located at least 600 feet from the centerline. These existing sensitive receptors are located within 65 to 70 dBA CNEL contour of the I-10 Freeway. These receptors would not be exposed to traffic noise from Tyler Street exceeding 65 dBA CNEL and therefore no potential impacts would occur as a result of the proposed project and no mitigation measures would be required for off-site sensitive land uses.

The projected noise levels at 100' are theoretical and do not take into consideration the effect of topography, noise barriers, structures or other factors which will reduce the actual noise level in the outdoor living areas. Also, the analysis is conservative since hard site conditions were assumed. These factors can reduce the actual noise levels by 5 to 10 dBA or more from what is shown in the projected noise levels at 100'. Therefore, the levels that are shown are for comparative purposes only to show the difference in projected noise levels without and with the project.



**As shown in Tables 6, 9, and 12 the increase in noise levels, as a result of the project, would result in more than a 3 dBA change; however, project-related traffic noise would not expose existing sensitive receptors to noise levels in excess of 65 dBA CNEL. Therefore, the impact is less than significant and no mitigation is required.**

### *On-Site Traffic Noise Impact*

Tables 7 through 12 show the Existing Plus Project, Project Completion Year 2022 and General Plan Buildout Year 2035 scenarios traffic noise levels. For the future (2022 and 2035) with project scenarios, the following on-site roadway segments would experience traffic noise level increases exceeding 3 dBA:

- Avenue 47 between Tyler Street and Street A: 2022 (+27.0 dBA), 2035 (+21.2 dBA)
- Avenue 47 between Street A and Polk Street: 2022 (+22.9 dBA), 2035 (+17.1 dBA)
- Avenue 48 between Tyler Street and Street A: 2022 (+22.5 dBA)
- Avenue 48 between Street A and Polk Street: 2022 (+19.7), 2035 (+17.1 dBA)

There are no existing noise-sensitive land uses on the project site; therefore, no land uses would be exposed to substantial traffic noise increases, and no potential substantial traffic noise level increase impacts would occur along these roadway segments. The impact is less than significant.

For the proposed project, the following roadway segments would have potential traffic noise impacts on the proposed on-site uses: I-10 Freeway, Avenue 47 between Tyler Street and Street A, Avenue 47 between Street A and Polk Street, Avenue 48 between Tyler Street and Street A and Avenue 48 between Street A and Polk Street.

**I-10 Freeway.** Based upon Table 4, retail spaces (PA 1) would be located within the 70 to 75 dBA CNEL contour of the I-10 Freeway and would be exposed to traffic noise within the normally compatible standard of 75 dBA CNEL for commercial uses (See Figure 10-1: Coachella Land Use/Noise Compatibility Matrix). Commercial spaces and open space are not considered noise-sensitive and would not be required to have any mitigation measures along I-10.

**Avenue 47.** Based upon Table 11, dwelling units proposed within PA2, PA3, PA6 and PA8 that are within 231, 73, and 23 feet of Avenue 47 centerline would be exposed to traffic noise exceeding the 60, 65, and 70 dBA CNEL, respectively, exterior noise standards for residential uses. In order to reduce exterior noise levels to 60 dBA CNEL or lower, the following sound wall heights need to be implemented for residential units with outdoor living areas (backyards and patio) along this segment of Avenue 47 are within the potential impact zone:

- Areas Exceeding 70 dBA CNEL (within 23 feet from centerline of Avenue 47): 8 foot for ground level outdoor living areas such as backyards or patios.
- Areas Exceeding 65 dBA CNEL (within 73 feet from centerline of Avenue 47): 6 foot for ground level outdoor living areas such as backyards or patios.
- Areas Exceeding 60 dBA CNEL (within 231 feet from centerline of Avenue 47): 5 foot for ground level outdoor living areas such as backyards or patios.

**Avenue 48.** Based upon Table 11, dwelling units proposed within PA5, PA7 and PA10 that are within 390, 123, and 39 feet of Avenue 48 centerline would be exposed to traffic noise exceeding the 60, 65, and 70 dBA CNEL, respectively, exterior noise standards for residential uses. In order to reduce exterior noise levels to 60 dBA CNEL or lower, the following sound wall heights need to be implemented for residential units with outdoor living areas (backyards and patio) along this segment of Avenue 48 are within the potential impact zone:

- Areas Exceeding 70 dBA CNEL (within 39 feet from centerline of Avenue 48): 8 foot for ground level outdoor living areas such as backyards or patios.
- Areas Exceeding 65 dBA CNEL (within 123 feet from centerline of Avenue 48): 6 foot for ground level outdoor living areas such as backyards or patios.
- Areas Exceeding 60 dBA CNEL (within 390 feet from centerline of Avenue 48): 5 foot for ground level outdoor living areas such as backyards or patios.

**Street A.** Based upon Table 11, dwelling units proposed within PA5, PA6 and PA7 that are within 181, 57, and 18 feet of Street A centerline would be exposed to traffic noise exceeding the 60, 65, and 70 dBA CNEL, respectively, exterior noise standards for residential uses. In order to reduce exterior noise levels to 60 dBA CNEL or lower, the following sound wall heights need to be implemented for residential units with outdoor living areas (backyards and patio) along this segment of Street A are within the potential impact zone:

- Areas Exceeding 70 dBA CNEL (within 18 feet from centerline of Street A): 8 foot for ground level outdoor living areas such as backyards or patios.
- Areas Exceeding 65 dBA CNEL (within 57 feet from centerline of Street A): 6 foot for ground level outdoor living areas such as backyards or patios.
- Areas Exceeding 60 dBA CNEL (within 181 feet from centerline of Street A): 5 foot for ground level outdoor living areas such as backyards or patios.

### **7.1.2 Stationary Source Noise**

There would be no on-site stationary sources that would generate noise levels at adjacent land uses such that the 65 dBA maximum instantaneous noise level (L<sub>max</sub>) nighttime noise threshold (10:00 p.m.–7:00 a.m.) at the nearest sensitive receptor locations would be exceeded. Therefore, no mitigation measures are required to reduce the long-term on-site noise levels.

### **7.1.3 Airport Source Noise**

The Jacqueline Cochran Regional Airport is located approximately 4 miles south of the project site, in the Unincorporated area of Thermal in Riverside County. The referenced contours are located in Appendix E. The project site is located outside of the noise contours for the airport and airport source noise would not have an impact upon the project.

### **7.2 Future Interior Noise**

Based on the data provided in the Environmental Protection Agency's (EPA) Protective Noise Levels (EPA 550/9-79-100, Nov 1979), standard homes in Southern California provide at least 12 dBA of noise exterior to interior noise attenuation with windows open and 20 dBA with windows closed.

Therefore, residences would need to be exposed to exterior noise levels exceeding 65 dBA CNEL (45 dBA + 20 dBA = 65 dBA) to potentially exceed the interior noise standard of 45 dBA CNEL with windows closed. A windows closed condition is defined as: the interior noise level with the windows closed. Upgrades are required for residential structures that would experience interior noise levels exceeding the 45 dBA CNEL noise standard when windows are closed (e.g. higher grade of insulation in outdoor walls, and/or double-paned windows and air condition units).

Site-specific noise analyses for the Tentative Tracts and Multi-Family projects are required to fine-tune noise reduction features, prior to approval of future implementing projects. The site-specific noise analyses must demonstrate the interior noise level will not exceed the City's/County's 45 dBA CNEL noise limit. Potential mitigation may include a "windows closed" condition and possibly upgraded windows (increased STC window/door ratings).

### **7.3 Summary of Mitigation Requirements**

Exhibit D outlines the noise mitigation recommendations and is as follows:

For dwelling units proposed along Avenue 47 the following mitigation measures need to be implemented with outdoor living areas:

- Areas Exceeding 70 dBA CNEL (within 23 feet from centerline of Avenue 47): 8 foot for ground level outdoor living areas such as backyards or patios.
- Areas Exceeding 65 dBA CNEL (within 73 feet from centerline of Avenue 47): 6 foot for ground level outdoor living areas such as backyards or patios.

For dwelling units proposed along Avenue 48 the following mitigation measures need to be implemented with outdoor living areas:

- Areas Exceeding 70 dBA CNEL (within 39 feet from centerline of Avenue 48): 8 foot for ground level outdoor living areas such as backyards or patios.
- Areas Exceeding 65 dBA CNEL (within 123 feet from centerline of Avenue 48): 6 foot for ground level outdoor living areas such as backyards or patios.

For dwelling units proposed along Street A the following mitigation measures need to be implemented with outdoor living areas:

- Areas Exceeding 70 dBA CNEL (within 18 feet from centerline of Street A): 8 foot for ground level outdoor living areas such as backyards or patios.
- Areas Exceeding 65 dBA CNEL (within 57 feet from centerline of Street A): 6 foot for ground level outdoor living areas such as backyards or patios.

## **8.0 Construction Noise Impacts**

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The degree of construction noise may vary for different areas of the project site and also vary depending on the construction activities. Noise levels associated with the construction will vary with the different phases of construction.

### **8.1 Construction Noise**

The Environmental Protection Agency (EPA) has compiled data regarding the noise generated characteristics of typical construction activities. The data is presented in Table 13. These noise levels would diminish rapidly with distance from the construction site at a rate of 6 dBA per doubling of distance. For example, a noise level of 86 dBA measured 50 feet from the noise source would reduce to 80 dBA at 100 feet. At 200 feet from the noise source the noise level would reduce to 74 dBA. At 400 feet the noise source would reduce by another 6 dBA to 68 dBA. Contractors are required to comply with the City of Coachella's Noise Ordinance during as construction described in Appendix A.

#### **Construction Traffic**

The proposed project would result in short-term noise impacts associated with construction activities. Two types of short-term noise impacts could occur during construction of the proposed project. First, construction crew commute and the transport of construction equipment and materials to the site for the proposed project would incrementally increase noise levels on access roads leading to the site. Truck traffic associated with project construction would be limited to within the permitted construction hours, as listed in the City's Municipal Code, Sub-Chapter 7.04.070, Construction Activities, and identified in the project design features. Although there would be a relatively high single-event noise exposure potential at a maximum of 87 dBA L<sub>max</sub> at 50 ft. from passing trucks, causing possible short-term intermittent annoyances, the effect on ambient noise levels would be less than 1 dBA when averaged over one hour or 24 hours. In other words, the changes in noise levels over 1 hour or 24 hours attributable to passing trucks would not be perceptible to the normal human ear. Therefore, short-term construction-related impacts associated with worker commute and equipment transport on local streets leading to the project site would result in a less than significant impact on noise-sensitive receptors along the access routes.

#### **Construction Activities**

The site preparation phase, which includes grading and paving, tends to generate the highest noise levels, since the noisiest construction equipment is earthmoving equipment. Earthmoving equipment includes excavating machinery such as backhoes, bulldozers, and front loaders. Earthmoving and compacting equipment includes compactors, scrapers, and graders. Typical operating cycles for these types of construction equipment may involve 1 or 2 minutes of full power operation followed by 3 or 4 minutes at lower power settings. Construction of the proposed project is expected to require the use of scrapers, bulldozers, motor grader, and water and pickup trucks. Noise associated with the use of construction

equipment is estimated to reach between 79 and 89 dBA Lmax at a distance of 50 ft. from the active construction area for the grading phase. The maximum noise level generated by each scraper is assumed to be approximately 87 dBA Lmax at 50 ft. from the scraper in operation. Each bulldozer would also generate approximately 85 dBA Lmax at 50 ft. The maximum noise level generated by the sound sources with equal strength increases the noise level by 3 dBA. The worst-case combined noise level during this phase of construction would be 91 dBA Lmax at a distance of 50 ft. from an active construction area.

The closest sensitive receptors to the project's construction area are two (2) residences located along Tyler Street near the western boundary of the project site at a distance of 75 ft. At this distance, these receptor locations would be exposed to construction noise levels of up to 88 dBA Lmax during site preparation. In addition, residences constructed in earlier project phases within 100 ft. of an active construction area would be exposed to construction noise levels of up to 85 dBA Lmax during site preparation of later phases. After site preparation is completed for each individual Specific Plan phase, other construction activities would generate lower noise levels. Noise generated during construction phases would be in compliance with the time periods specified in the City's Municipal Code.

The City has established certain hours during the day when construction can occur to minimize potential disturbance to sensitive receptors. The project will comply with these allowable hours. In addition, construction noise sources are not stationary, and therefore, high noise levels would not persist in one particular location. Although the noise reduction potential will be project and site specific, the Section 8.3 outlines measures would further reduce noise impacts during the project construction period to less than significant.

## **8.2 Construction Vibration**

The effects of vibration on structures have been the subject of extensive research. The Federal Transit Administration has compiled data regarding the vibration levels for various construction equipment and activities and is detailed in Table 14. Much of the work orientated in the mining industry, where vibration from blasting is critical. The Transportation and Construction Induced Vibration Guidance Manual for the California Department of Transportation has various recommended vibration thresholds for various types of projects and land uses. According to the Konan Vibration Criteria for Historic and Sensitive Buildings the criteria for transient vibration sources should not exceed 0.3 peak particle velocity (PPV) (*Section 6 – Structures, Table 11*). 0.035 inches per second is barely perceptible.

Construction activities can produce vibration that may be felt by adjacent land uses. The construction of the proposed project would not require the use of equipment such as pile drivers, which are known to generate substantial construction vibration levels. The primary source vibration during construction may be from a bull dozer. A large bull dozer has a vibration impact of 0.089 inches per second PPV at 25 feet. The distance of the construction equipment will be further than 75 feet from any existing structure. At a

distance of 75 feet the vibration level would be 0.027 VdB, which is within the range of perception but below any risk of architectural damage. The level is would be less than significant.

### **8.3 Construction Noise Reduction Measures**

A number of noise reduction measures are recommended to further minimize noise impacts.

1. Construction must follow the City's Municipal Noise Code (Section 7.04.070) which indicates that project construction noise level should be kept to a minimum by using acceptable practices where sensitive land uses are adjacent to construction zones. The following outlines the acceptable construction times:

October 1st through April 30th

Monday—Friday: 6:00 a.m. to 5:30 p.m.

Saturday: 8:00 a.m. to 5:00 p.m.

Sunday: 8:00 a.m. to 5:00 p.m.

Holidays: 8:00 a.m. to 5:00 p.m.

May 1st through September 30th

Monday—Friday: 5:00 a.m. to 7:00 p.m.

Saturday: 8:00 a.m. to 5:00 p.m.

Sunday: 8:00 a.m. to 5:00 p.m.

Holidays: 8:00 a.m. to 5:00 p.m.

2. Stationary construction noise sources such as generators or pumps should be located at least 300 feet from sensitive land uses, as feasible.
3. Construction staging areas should be located as far from noise sensitive land uses as feasible.
4. During construction, the contractor shall ensure all construction equipment is equipped with appropriate noise attenuating devices. The use of manufacturer-certified mufflers would generally reduce the construction equipment noise by 8 to 10 dBA.

5. Idling equipment shall be turned off when not in use.
6. Equipment shall be maintained so that vehicles and their loads are secured from rattling and banging.



## 9.0 CEQA Guideline Analysis

The following California Environmental Quality Act (CEQA) Guidelines Checklist summarizes the impacts in regards to noise impacts. This initial analysis may be used to determine if an Environmental Impact Report (EIR) is required

NOISE. Would the project result in:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
(a) Exposure of persons to or generation of noise levels in excess of standards established in the local General Plan or noise ordinance, or applicable standards of other agencies?		X		
(b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?				X
(c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?			X	
(d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?			X	
(e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?				X
(f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?				X

a) *Exposure of persons to or generation of noise levels in excess of standards established in the local General Plan or noise ordinance, or applicable standards of other agencies?*

**Response: Less than Significant with Mitigation Incorporated, see Section 7.0 of report.**

b) *Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?*

**Response: No Impact, see Section 7.1, 7.2 and 8.0.**

c) *A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?*

**Response: Less than Significant, see Section 7.0 of the report.**

d) *A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?*

**Response: Less than Significant, see Section 7.1 of report.**

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

**Response: No Impact, the project site is not located within an airport land use plan area. The nearest airport is Jaqueline Cochran Regional Airport, approximately 4 miles from the site. The project site is not located within the noise contours of the airport. Therefore, the project will not expose people residing or working in an airport land use plan area to excessive noise levels.**

f) *For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?*

**Response: No Impact, the project is not located within the vicinity of a private airstrip. Therefore, the project will not expose people residing or working in the area of a private airstrip to excessive noise levels.**

## **10.0 References**

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State of California General Plan Guidelines: 1998. Governor's Office of Planning and Research

City of Coachella. City of Coachella General Plan Update Noise Element. May 2013

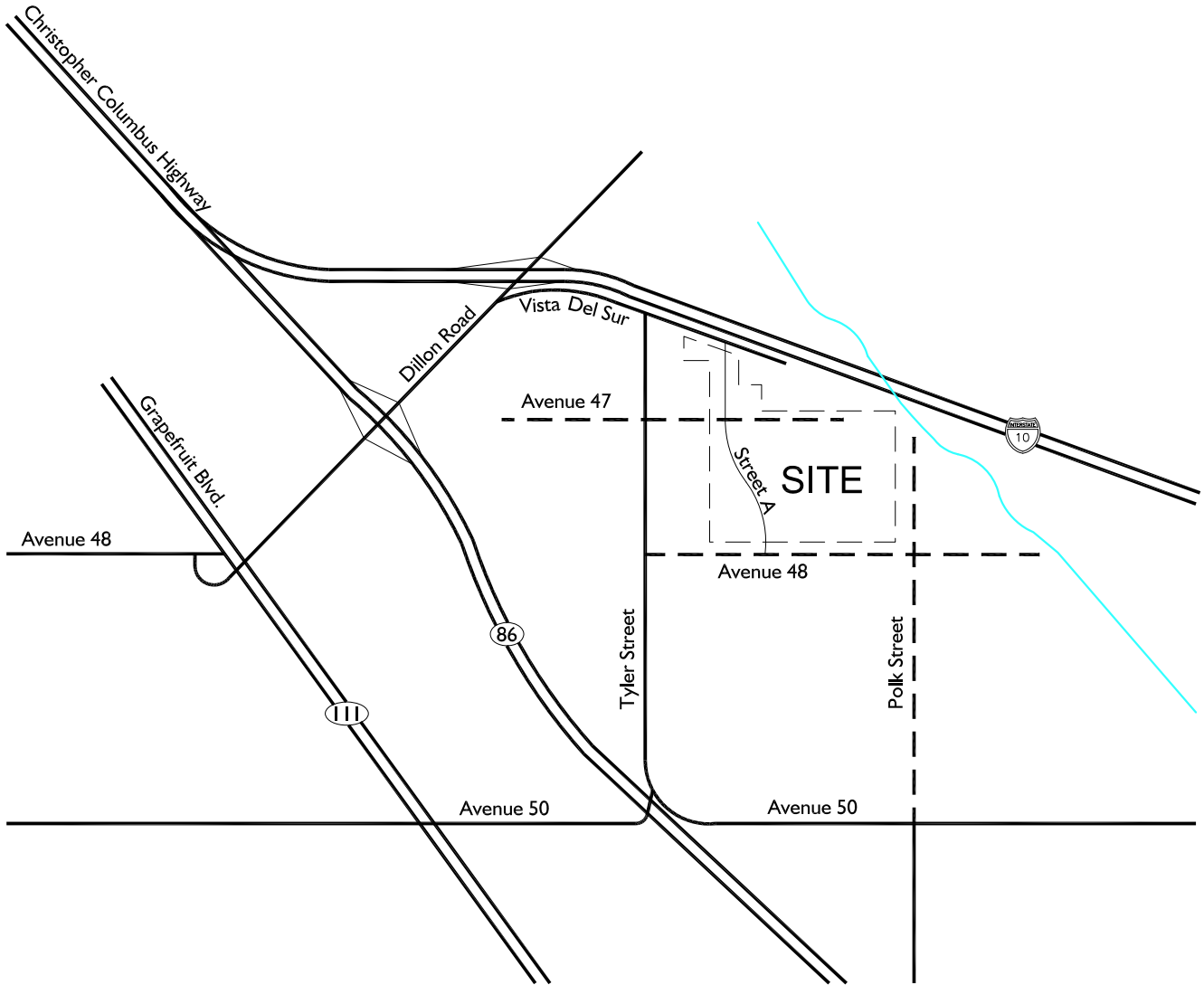
City of Coachella. City of Coachella Code of Ordinances. Updated September 17, 2013.

Federal Highway Administration, Highway Traffic Noise Prediction Model, FHWA RD-77-108, 1978

RK Engineering Group, *Traffic Analysis*, August 2014

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# Exhibit A Location Map



### Legend:

- - = Dirt Road
- - - = Canal



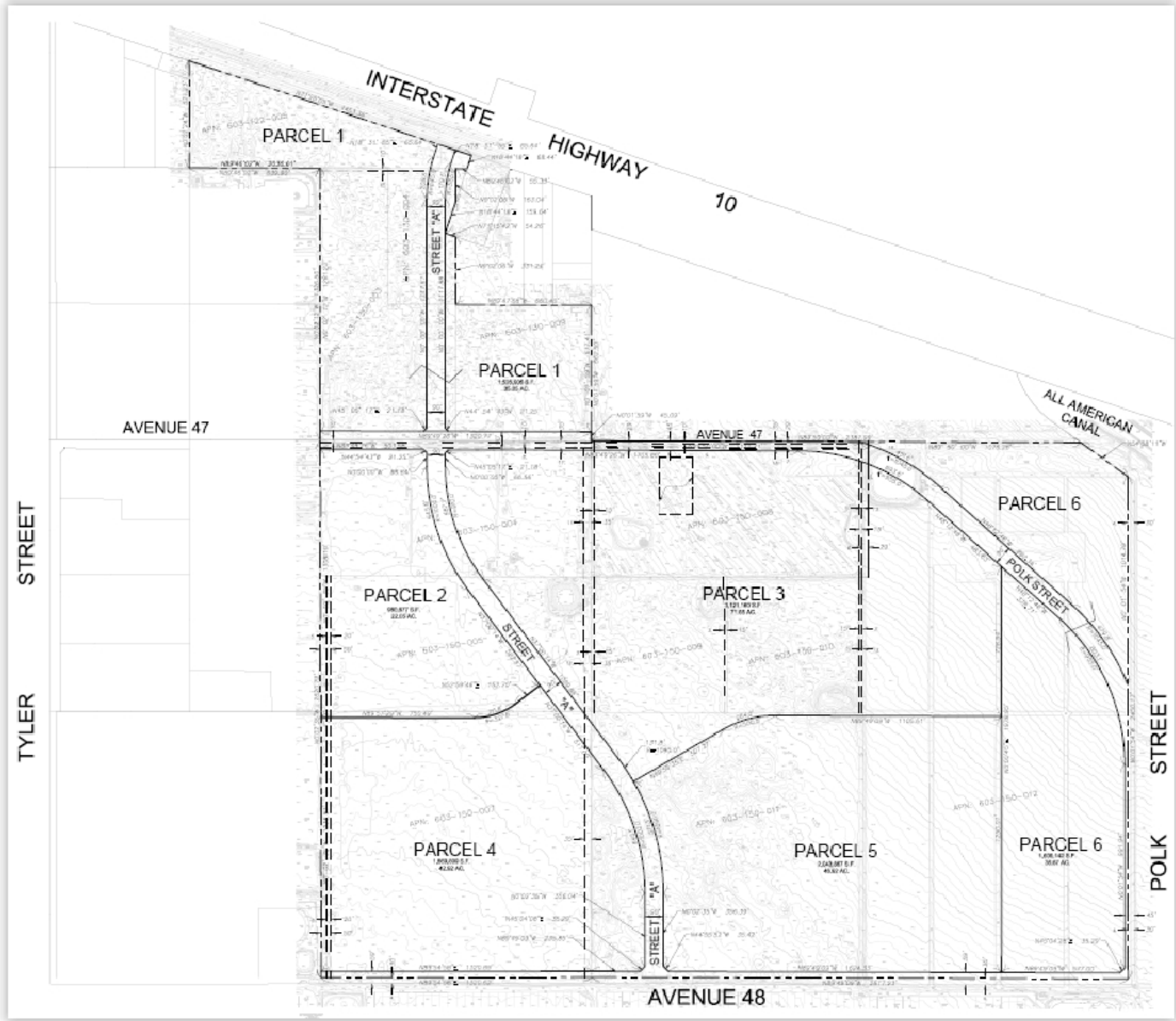
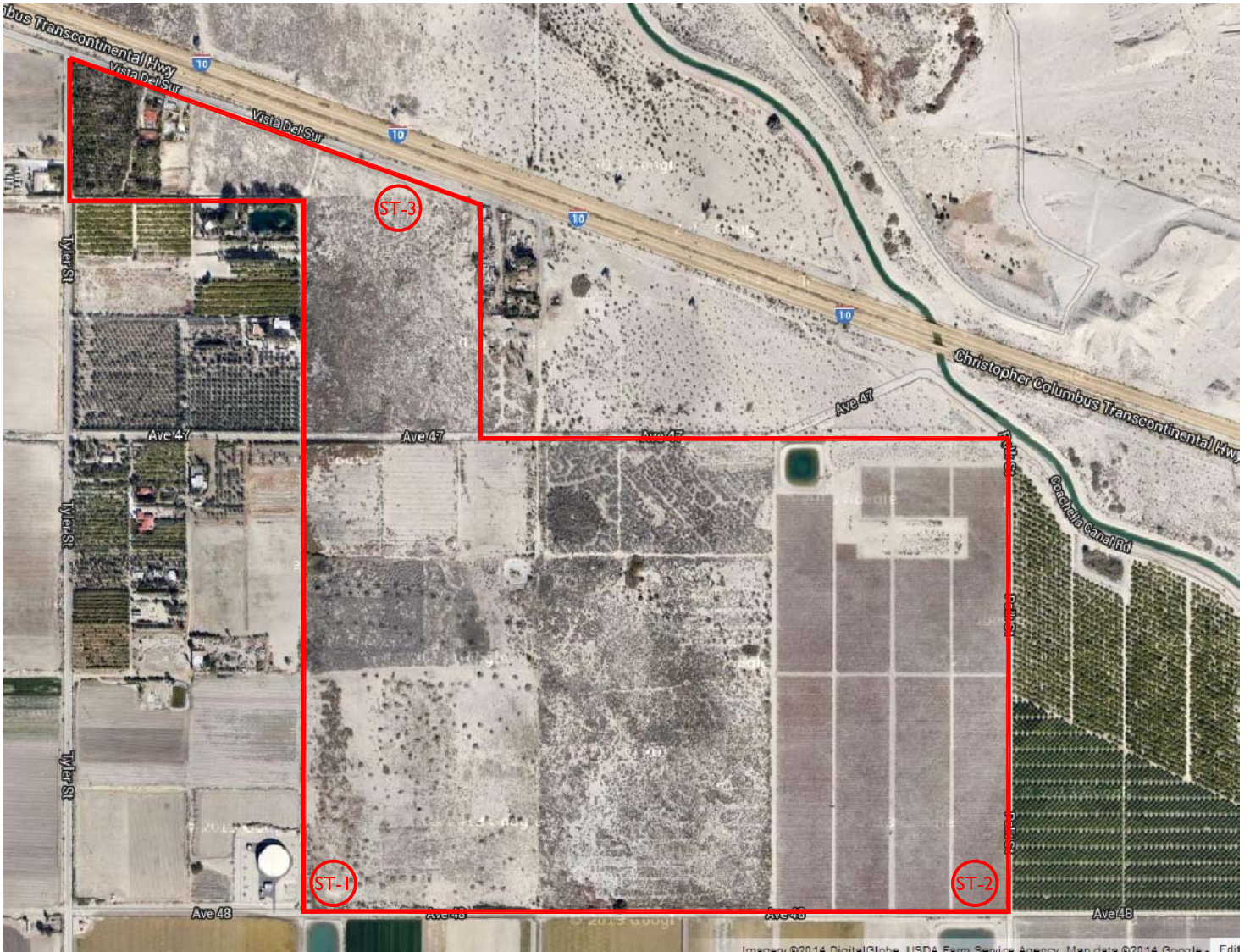


Exhibit C  
**Noise Monitoring Locations**



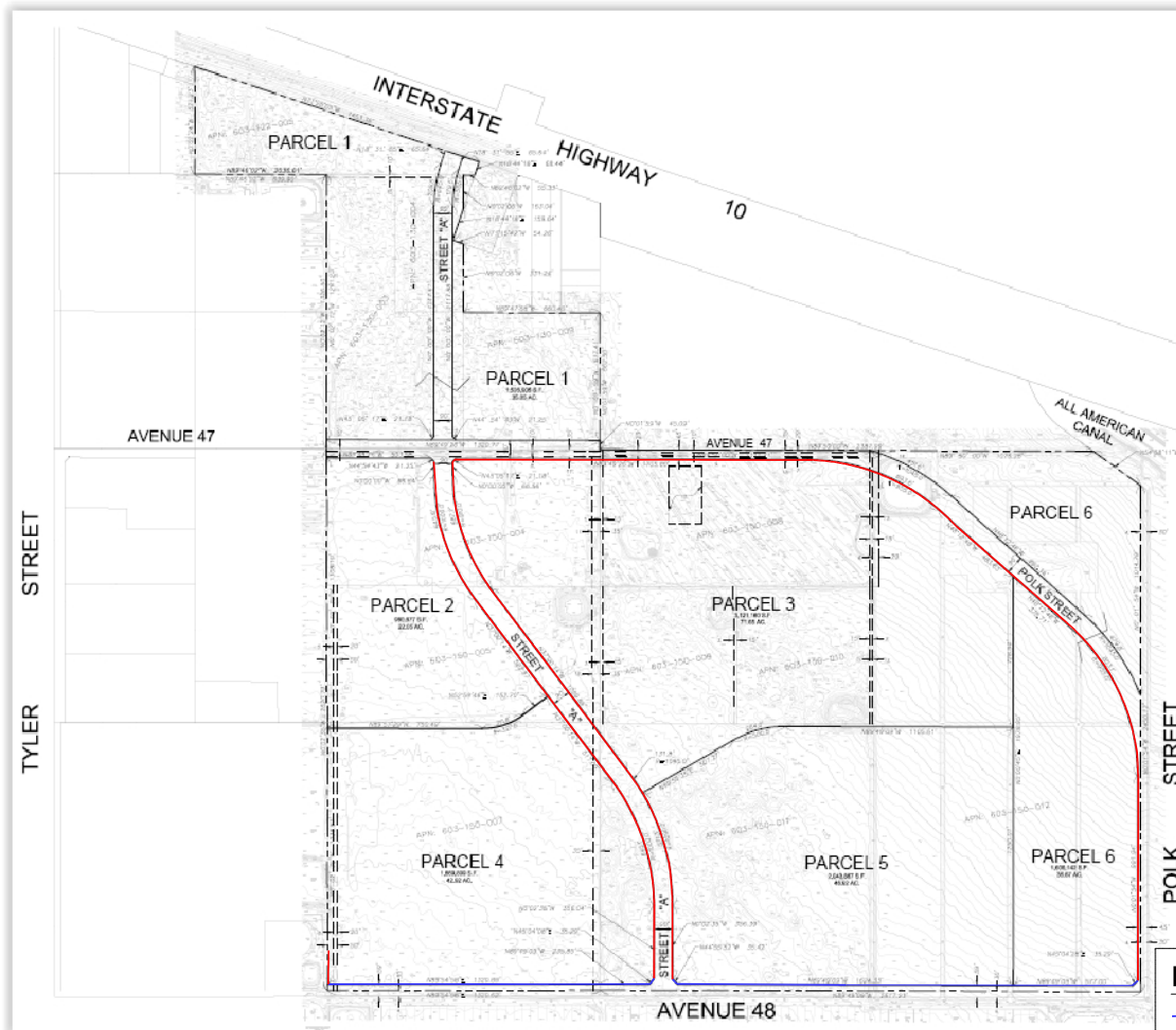
**Legend:**

**(ST-1)** = Noise Monitoring Location





# Exhibit D Recommendations



## Recommendations

For dwelling units proposed along Avenue 47 the following mitigation measures need to be implemented with outdoor living areas:

- Areas Exceeding 70 dBA CNEL (within 23 feet from centerline of Avenue 47): 8 foot for ground level outdoor living areas such as backyards or patios.
- Areas Exceeding 65 dBA CNEL (within 73 feet from centerline of Avenue 47): 6 foot for ground level outdoor living areas such as backyards or patios.

For dwelling units proposed along Avenue 48 the following mitigation measures need to be implemented with outdoor living areas:

- Areas Exceeding 70 dBA CNEL (within 39 feet from centerline of Avenue 48): 8 foot for ground level outdoor living areas such as backyards or patios.
- Areas Exceeding 65 dBA CNEL (within 123 feet from centerline of Avenue 48): 6 foot for ground level outdoor living areas such as backyards or patios.

For dwelling units proposed along Street A the following mitigation measures need to be implemented with outdoor living areas:

- Areas Exceeding 70 dBA CNEL (within 18 feet from centerline of Street A): 8 foot for ground level outdoor living areas such as backyards or patios.
- Areas Exceeding 65 dBA CNEL (within 57 feet from centerline of Street A): 6 foot for ground level outdoor living areas such as backyards or patios.

## Legend:

- = Recommended 8 Foot Wall
- = Recommended 6 Foot Wall

**\*\*Note:** For illustrative purposes only. Site-specific noise analysis for tentative tracts and multi-family projects are required to fine-tune noise reduction features, prior to the approval of future implementing projects.





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# Tables

**TABLE 1**  
**Arterial Highway Hourly Traffic Flow Distribution**

**Major, Arterial, Expressway Vehicle Distribution (Truck Mix)<sup>1</sup>**

<b>Motor-Vehicle Type</b>	<b>Daytime % (7 AM - 7 PM)</b>	<b>Evening % (7 PM - 10 PM)</b>	<b>Night % (10 PM - 7 AM)</b>	<b>Total % of Traffic Flow</b>
Automobiles	77.5	14.0	10.5	92.00
Medium Trucks	48.0	2.0	50.0	3.00
Heavy Trucks	48.0	50.0	50.0	5.00

**Secondary and Collectors Vehicle Distribution (Truck Mix)<sup>2</sup>**

<b>Motor-Vehicle Type</b>	<b>Daytime % (7 AM - 7 PM)</b>	<b>Evening % (7 PM - 10 PM)</b>	<b>Night % (10 PM - 7 AM)</b>	<b>Total % of Traffic Flow</b>
Automobiles	77.5	12.9	9.6	97.42
Medium Trucks	84.8	4.9	10.3	1.84
Heavy Trucks	86.5	2.7	10.8	0.74

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<sup>1</sup> Vehicle percentages utilized from Riverside County Traffic Data, Traffic Modeling Requirements.

<sup>2</sup> Vehicle percentages are typical for southern California roadway.

**TABLE 2**  
**Project Average Daily Traffic Volumes and Traffic Speeds**

Roadway	Segment	Average Daily Traffic <sup>1</sup>							Travel Speeds <sup>2</sup>
		Existing	Project	Existing Plus Project	Buildout 2022 without Project	Buildout 2022 With Project	Forecast Year 2035 without Project	Forecast Year 2035 with Project	
Vista Del Sur	Dillon Road to Tyler Street	589	2,814	3,403	683	3,497	6,637	9,451	25/40
	Tyler Street to Street A	145	2,814	2,959	168	2,982	6,171	8,985	25/40
Avenue 47	Dillon Road to Tyler Street	53	7,800	7,853	28,349	36,149	28,363	36,163	25/40
	Tyler Street to Street A	53	10,040	10,093	61	10,101	75	10,115	25/40
	Street A to Polk Street	53	3,808	3,808	61	3,869	75	3,883	25/40
Avenue 48	Tyler Street to Street A	53	3,472	3,525	61	3,533	12,507	15,979	25/40
	Street A to Polk Street	79	2,641	2,720	92	2,733	13,338	15,979	25/40
Tyler Street	Vista Del Sur to Avenue 47	476	0	476	552	552	676	676	25/40
	Avenue 47 to Avenue 48	475	2,578	3,053	11,745	14,323	11,869	14,447	25/40
	Avenue 48 to Avenue 50	541	5,710	6,251	12,854	18,564	12,994	18,704	25/40
Street A	Vista Del Sur to Avenue 47	n/a	7,921	7,921	N/A	7,921	N/A	7,921	25/40
	Avenue 47 to Avenue 48	n/a	3,577	3,577	N/A	3,577	N/A	3,577	25/40
Polk Street	Avenue 47 to Avenue 48	145	998	1,143	168	1,166	21,951	22,949	25/40
	Avenue 48 to Avenue 50	647	2,434	3,081	751	3,185	11,985	14,419	25/40
Interstate 10	East of Dillon Road	24,600	N/A	N/A	31,250	N/A	40,855	N/A	65

<sup>1</sup> ADTs were obtained from the Vista Del Agua Traffic Impact Analysis, prepared by RK Engineering Group (Appendix C).

<sup>2</sup> 25/40 = Existing/Buildout classification speed limits. A prima facie speed limit of 25 mph has been assumed for all existing unimproved roadway segments, unless otherwise posted.

**TABLE 3**  
**Noise Level Measurements<sup>1,2</sup>**

Site No.	Time Started	Leq	L <sub>min</sub>	L <sub>max</sub>	L <sub>2</sub>	L <sub>8</sub>	L <sub>25</sub>	L <sub>50</sub>	Comments
1	10:55 AM	66.7	37.9	91.9	66.1	45.4	41.7	39.4	Noise meter was placed at the southern property line along Avenue 48. It should be noted a tractor drove adjacent to the noise meter at 10:57 AM.
2	11:07 AM	50.4	46.2	72.2	53.2	46.4	47.2	47.0	Noise meter was placed along the southeastern property line, at the intersection of Avenue 48 and Polk Street.
3	11:20 AM	68.2	46.2	79.9	77.0	73.5	67.4	62.9	Noise meter was placed at the northern property line along Vista Del Sur. Meter was approximately 150 feet south of the I-10 Freeway. Ambient noise was captured from the adjacent freeway traffic.

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<sup>1</sup> Short term noise measurements were taken for ten minute periods.

<sup>2</sup> Noise measurements were taken on June 17, 2014. Field measurement data and photographs are provided in Appendix B.

**TABLE 4**

**Existing (Without Project) Exterior Noise Levels Along Roadways (dBA CNEL)<sup>1</sup>**

Roadway <sup>2</sup>	Segment	CNEL at 100 Ft (dBA)	Distance to Contour (Ft) <sup>3</sup>			
			70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	55 dBA CNEL
Vista Del Sur	Dillon Road to Tyler Street	46.4	0	1	4	14
	Tyler Street to Street A	40.3	0	0	1	3
Avenue 47	Dillon Road to Tyler Street	35.9	0	0	0	1
	Tyler Street to Street A	35.9	0	0	0	1
	Street A to Polk Street	35.9	0	0	0	1
Avenue 48	Tyler Street to Street A	35.9	0	0	0	1
	Street A to Polk Street	37.7	0	0	1	2
Tyler Street	Vista Del Sur to Avenue 47	45.5	0	1	4	11
	Avenue 47 to Avenue 48	45.5	0	1	4	11
	Avenue 48 to Avenue 50	46.0	0	1	4	13
Street A <sup>4</sup>	Vista Del Sur to Avenue 47	N/A	N/A	N/A	N/A	N/A
	Avenue 47 to Avenue 48	N/A	N/A	N/A	N/A	N/A
Polk Street	Avenue 47 to Avenue 48	40.3	0	0	1	3
	Avenue 48 to Avenue 50	46.8	0	2	5	15

FREEWAY ANALYSIS						
Roadway <sup>2</sup>	Segment	CNEL at 500 Ft (dBA)	Distance to Contour (Ft) <sup>3</sup>			
			70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	55 dBA CNEL
Interstate 10	East of Dillon Road	61.2	174	375	807	1,739

<sup>1</sup> Exterior noise levels calculated at 5 feet above ground level.

<sup>2</sup> Noise levels calculated from centerline of subject roadway.

<sup>3</sup> Refer to Appendix D for projected noise level calculations.

<sup>4</sup> Future planned roadway as part of project, does not currently exist.

**TABLE 5**  
**Existing (With Project) Exterior Noise Levels Along Roadways (dBA CNEL)<sup>1</sup>**

Roadway <sup>2</sup>	Segment	CNEL at 100 Ft (dBA)	Distance to Contour (Ft) <sup>3</sup>			
			70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	55 dBA CNEL
Vista Del Sur	Dillon Road to Tyler Street	54.0	3	8	25	80
	Tyler Street to Street A	58.3	7	21	68	214
Avenue 47	Dillon Road to Tyler Street	62.5	18	57	179	567
	Tyler Street to Street A	63.6	23	73	230	729
	Street A to Polk Street	59.5	9	28	88	279
Avenue 48	Tyler Street to Street A	59.1	8	25	80	255
	Street A to Polk Street	57.9	6	20	62	196
Tyler Street	Vista Del Sur to Avenue 47	45.5	0	1	4	11
	Avenue 47 to Avenue 48	53.6	2	7	23	72
	Avenue 48 to Avenue 50	56.7	5	15	56	147
Street A <sup>4</sup>	Vista Del Sur to Avenue 47	62.6	18	57	181	572
	Avenue 47 to Avenue 48	59.1	8	26	82	258
Polk Street	Avenue 47 to Avenue 48	54.2	3	8	26	83
	Avenue 48 to Avenue 50	53.6	2	7	23	72

<sup>1</sup> Exterior noise levels calculated at 5 feet above ground level.

<sup>2</sup> Noise levels calculated from centerline of subject roadway.

<sup>3</sup> Refer to Appendix D for projected noise level calculations.

<sup>4</sup> Future planned roadway as part of project, does not currently exist.

**TABLE 6**  
**Change in Existing Noise Levels as a Result of Project (dBA CNEL)**

Roadway	Segment	CNEL at 100 Feet dBA			
		Existing Without Project	Existing With Project	Change in Noise Level	Potential Significant Impact <sup>1</sup>
Vista Del Sur	Dillon Road to Tyler Street	46.4	54.0	7.6	NO
	Tyler Street to Street A	40.3	58.3	18.0	NO
Avenue 47	Dillon Road to Tyler Street	35.9	62.5	26.6	NO
	Tyler Street to Street A	35.9	63.6	27.7	NO
	Street A to Polk Street	35.9	59.5	23.6	NO
Avenue 48	Tyler Street to Street A	35.9	59.1	23.2	NO
	Street A to Polk Street	37.7	57.9	20.2	NO
Tyler Street	Vista Del Sur to Avenue 47	45.5	45.5	0.0	NO
	Avenue 47 to Avenue 48	45.5	53.6	8.1	NO
	Avenue 48 to Avenue 50	46.0	56.7	10.7	NO
Street A	Vista Del Sur to Avenue 47	N/A	62.6	N/A	NO
	Avenue 47 to Avenue 48	N/A	59.1	N/A	NO
Polk Street	Avenue 47 to Avenue 48	40.3	54.2	13.9	NO
	Avenue 48 to Avenue 50	46.8	53.6	6.8	NO

<sup>1</sup> It takes a change of 3 dBA or more to hear a noticeable change in noise level. The projected noise levels at 100' are theoretical and do not take into consideration the effect of topography, noise barriers, structures or other factors which will reduce the actual noise level in the outdoor living areas. These factors can reduce the actual noise levels by 5-10+ dBA from what is shown in the projected noise levels at 100'. Therefore, the levels that are shown are for comparative purposes only to show the difference in projected noise levels without and with the project.

**TABLE 7**  
**Project Completion Year 2022 (Without Project)**  
**Exterior Noise Levels Along Roadways (dBA CNEL)<sup>1</sup>**

Roadway <sup>2</sup>	Segment	CNEL at 100 Ft (dBA)	Distance to Contour (Ft) <sup>3</sup>			
			70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	55 dBA CNEL
Vista Del Sur	Dillon Road to Tyler Street	44.8	1	2	5	16
	Tyler Street to Street A	41.0	0	0	1	4
Avenue 47	Dillon Road to Tyler Street	68.1	65	205	647	2,047
	Tyler Street to Street A	36.6	0	0	0	1
	Street A to Polk Street	36.6	0	0	0	1
Avenue 48	Tyler Street to Street A	36.6	0	0	0	1
	Street A to Polk Street	38.3	0	0	1	2
Tyler Street	Vista Del Sur to Avenue 47	51.0	1	4	13	40
	Avenue 47 to Avenue 48	64.3	27	85	268	848
	Avenue 48 to Avenue 50	64.7	29	93	294	928
Street A <sup>4</sup>	Vista Del Sur to Avenue 47	N/A	N/A	N/A	N/A	N/A
	Avenue 47 to Avenue 48	N/A	N/A	N/A	N/A	N/A
Polk Street	Avenue 47 to Avenue 48	41.0	0	0	1	4
	Avenue 48 to Avenue 50	47.5	1	2	6	18

FREEWAY ANALYSIS						
Roadway <sup>2</sup>	Segment	CNEL at 670 Ft (dBA) <sup>5</sup>	Distance to Contour (Ft) <sup>3</sup>			
			70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	55 dBA CNEL
Interstate 10	East of Dillon Road	62.3	204	439	947	2,039

<sup>1</sup> Exterior noise levels calculated at 5 feet above ground level.

<sup>2</sup> Noise levels calculated from centerline of subject roadway.

<sup>3</sup> Refer to Appendix D for projected noise level calculations.

<sup>4</sup> Future planned roadway as part of project, does not currently exist.

<sup>5</sup> The freeway analysis show projected noise levels to the nearest residential area of the site



**TABLE 8**  
**Project Completion Year 2022 (With Project)**  
**Exterior Noise Levels Along Roadways (dBA CNEL)<sup>1</sup>**

Roadway <sup>2</sup>	Segment	CNEL at 100 Ft (dBA)	Distance to Contour (Ft) <sup>3</sup>			
			70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	55 dBA CNEL
Vista Del Sur	Dillon Road to Tyler Street	54.1	3	8	26	82
	Tyler Street to Street A	58.3	7	22	68	215
Avenue 47	Dillon Road to Tyler Street	69.2	83	261	826	2,611
	Tyler Street to Street A	63.6	23	73	231	729
	Street A to Polk Street	59.5	9	28	88	279
Avenue 48	Tyler Street to Street A	59.1	8	26	81	255
	Street A to Polk Street	58.0	6	20	62	197
Tyler Street	Vista Del Sur to Avenue 47	51.0	1	4	13	40
	Avenue 47 to Avenue 48	65.1	33	103	327	1,034
	Avenue 48 to Avenue 50	66.3	42	134	424	1,341
Street A <sup>4</sup>	Vista Del Sur to Avenue 47	62.6	18	57	181	572
	Avenue 47 to Avenue 48	59.1	8	26	82	258
Polk Street	Avenue 47 to Avenue 48	54.3	3	8	27	84
	Avenue 48 to Avenue 50	53.7	2	7	24	75

<sup>1</sup> Exterior noise levels calculated at 5 feet above ground level.

<sup>2</sup> Noise levels calculated from centerline of subject roadway.

<sup>3</sup> Refer to Appendix D for projected noise level calculations.

<sup>4</sup> Future planned roadway as part of project, does not currently exist.

**TABLE 9**  
**Change in Project Completion Year 2022 Noise Levels**  
**as a Result of Project (dBA CNEL)**

Roadway	Segment	CNEL at 100 Feet dBA			
		Year 2022 Without Project	Year 2022 With Project	Change in Noise Level	Potential Significant Impact <sup>1</sup>
Vista Del Sur	Dillon Road to Tyler Street	44.8	54.1	9.3	NO
	Tyler Street to Street A	41.0	58.3	17.3	NO
Avenue 47	Dillon Road to Tyler Street	68.1	69.2	1.1	NO
	Tyler Street to Street A	36.6	63.6	27.0	NO
	Street A to Polk Street	36.6	59.5	22.9	NO
Avenue 48	Tyler Street to Street A	36.6	59.1	22.5	NO
	Street A to Polk Street	38.3	58.0	19.7	NO
Tyler Street	Vista Del Sur to Avenue 47	51.0	51.0	0.0	NO
	Avenue 47 to Avenue 48	64.3	65.1	0.8	NO
	Avenue 48 to Avenue 50	64.7	66.3	1.6	NO
Street A	Vista Del Sur to Avenue 47	N/A	62.6	N/A	NO
	Avenue 47 to Avenue 48	N/A	59.1	N/A	NO
Polk Street	Avenue 47 to Avenue 48	41.0	54.3	13.3	NO
	Avenue 48 to Avenue 50	47.5	53.7	6.2	NO

<sup>1</sup> It takes a change of 3 dBA or more to hear a noticeable change in noise level. The projected noise levels at 100' are theoretical and do not take into consideration the effect of topography, noise barriers, structures or other factors which will reduce the actual noise level in the outdoor living areas. These factors can reduce the actual noise levels by 5-10+ dBA from what is shown in the projected noise levels at 100'. Therefore, the levels that are shown are for comparative purposes only to show the difference in projected noise levels without and with the project.

**TABLE 10**  
**General Plan Buildout Year 2035 (Without Project)**  
**Exterior Noise Levels Along Roadways (dBA CNEL)<sup>1</sup>**

Roadway <sup>2</sup>	Segment	CNEL at 100 Ft (dBA)	Distance to Contour (Ft) <sup>3</sup>			
			70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	55 dBA CNEL
Vista Del Sur	Dillon Road to Tyler Street	61.8	15	48	152	479
	Tyler Street to Street A	61.5	14	45	141	446
Avenue 47	Dillon Road to Tyler Street	68.1	65	205	648	2,048
	Tyler Street to Street A	42.4	0	1	2	5
	Street A to Polk Street	42.3	0	1	2	5
Avenue 48	Tyler Street to Street A	64.8	31	97	305	965
	Street A to Polk Street	65.1	33	103	326	1,030
Tyler Street	Vista Del Sur to Avenue 47	51.9	2	5	15	49
	Avenue 47 to Avenue 48	64.3	27	86	271	857
	Avenue 48 to Avenue 50	64.7	30	94	297	938
Street A <sup>4</sup>	Vista Del Sur to Avenue 47	N/A	N/A	N/A	N/A	N/A
	Avenue 47 to Avenue 48	N/A	N/A	N/A	N/A	N/A
Polk Street	Avenue 47 to Avenue 48	67.3	54	169	536	1,695
	Avenue 48 to Avenue 50	59.9	10	31	97	306

FREEWAY ANALYSIS						
Roadway <sup>2</sup>	Segment	CNEL at 670 Ft (dBA) <sup>5</sup>	Distance to Contour (Ft) <sup>3</sup>			
			70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	55 dBA CNEL
Interstate 10	East of Dillon Road	63.4	244	526	1,134	2,443

<sup>1</sup> Exterior noise levels calculated at 5 feet above ground level.

<sup>2</sup> Noise levels calculated from centerline of subject roadway.

<sup>3</sup> Refer to Appendix D for projected noise level calculations.

<sup>4</sup> Future planned roadway as part of project, does not currently exist.

<sup>5</sup> The freeway analysis show projected noise levels to the nearest residential area of the site

**TABLE 11**  
**General Plan Buildout Year 2035 (With Project)**  
**Exterior Noise Levels Along Roadways (dBA CNEL)<sup>1</sup>**

Roadway <sup>2</sup>	Segment	CNEL at 100 Ft (dBA)	Distance to Contour (Ft) <sup>3</sup>			
			70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	55 dBA CNEL
Vista Del Sur	Dillon Road to Tyler Street	63.3	22	68	216	682
	Tyler Street to Street A	63.1	21	65	205	649
Avenue 47	Dillon Road to Tyler Street	69.2	83	261	826	2,612
	Tyler Street to Street A	63.6	23	73	231	730
	Street A to Polk Street	59.4	9	27	87	275
Avenue 48	Tyler Street to Street A	65.9	39	123	390	1,234
	Street A to Polk Street	65.9	39	123	390	1,234
Tyler Street	Vista Del Sur to Avenue 47	51.9	2	5	15	49
	Avenue 47 to Avenue 48	65.2	33	104	330	1,043
	Avenue 48 to Avenue 50	66.3	43	135	427	1,351
Street A <sup>4</sup>	Vista Del Sur to Avenue 47	62.6	18	57	181	572
	Avenue 47 to Avenue 48	59.1	8	26	82	258
Polk Street	Avenue 47 to Avenue 48	67.5	56	177	560	1,772
	Avenue 48 to Avenue 50	60.7	12	37	117	369

<sup>1</sup> Exterior noise levels calculated at 5 feet above ground level.

<sup>2</sup> Noise levels calculated from centerline of subject roadway.

<sup>3</sup> Refer to Appendix D for projected noise level calculations.

<sup>4</sup> Future planned roadway as part of project, does not currently exist.

**TABLE 12**  
**Change in General Plan Buildout Year 2035 Noise Levels**  
**as a Result of Project (dBA CNEL)**

Roadway	Segment	CNEL at 100 Feet dBA			
		Year 2035 Without Project	Year 2035 With Project	Change in Noise Level	Potential Significant Impact <sup>1</sup>
Vista Del Sur	Dillon Road to Tyler Street	61.8	63.3	1.5	NO
	Tyler Street to Street A	61.5	63.1	1.6	NO
Avenue 47	Dillon Road to Tyler Street	68.1	69.2	1.1	NO
	Tyler Street to Street A	42.4	63.6	21.2	NO
	Street A to Polk Street	42.3	59.4	17.1	NO
Avenue 48	Tyler Street to Street A	64.8	65.9	1.1	NO
	Street A to Polk Street	65.1	65.9	0.8	NO
Tyler Street	Vista Del Sur to Avenue 47	51.9	51.9	0.0	NO
	Avenue 47 to Avenue 48	64.3	65.2	0.9	NO
	Avenue 48 to Avenue 50	64.7	66.3	1.6	NO
Street A	Vista Del Sur to Avenue 47	N/A	62.6	N/A	NO
	Avenue 47 to Avenue 48	N/A	59.1	N/A	NO
Polk Street	Avenue 47 to Avenue 48	67.3	67.5	0.2	NO
	Avenue 48 to Avenue 50	59.9	60.7	0.8	NO

<sup>1</sup> It takes a change of 3 dBA or more to hear a noticeable change in noise level. The projected noise levels at 100' are theoretical and do not take into consideration the effect of topography, noise barriers, structures or other factors which will reduce the actual noise level in the outdoor living areas. These factors can reduce the actual noise levels by 5-10+ dBA from what is shown in the projected noise levels at 100'. Therefore, the levels that are shown are for comparative purposes only to show the difference in projected noise levels without and with the project.

**TABLE 13**  
**Typical Construction Noise Levels<sup>1</sup>**

**EQUIPMENT POWERED BY INTERNAL COMBUSTION ENGINES**

Type	Noise Levels (dBA) at 50 Feet
<b>Earth Moving</b>	
Compactors (Rollers)	73 - 76
Front Loaders	73 - 84
Backhoes	73 - 92
Tractors	75 - 95
Scrapers, Graders	78 - 92
Pavers	85 - 87
Trucks	81 - 94
<b>Materials Handling</b>	
Concrete Mixers	72 - 87
Concrete Pumps	81 - 83
Cranes (Movable)	72 - 86
Cranes (Derrick)	85 - 87
<b>Stationary</b>	
Pumps	68 - 71
Generators	71 - 83
Compressors	75 - 86

**IMPACT EQUIPMENT**

Type	Noise Levels (dBA) at 50 Feet
Pneumatic Wrenches	82 - 87
Jack Hammers, Rock Drills	80 - 99
Pile Drivers (Peak)	95-105

**OTHER**

Type	Noise Levels (dBA) at 50 Feet
Vibrators	68 - 82
Saws	71 - 82

<sup>1</sup> Referenced Noise Levels from the Environmental Protection Agency (EPA)

**Table 14**  
**Vibration Source Levels for Construction Equipment<sup>1</sup>**

<b>Equipment</b>	<b>Peak Particle Velocity (inches/second) at 25 feet</b>	<b>Approximate Vibration Level (LV) at 25 feet</b>
Pile driver (impact)	1.518 (upper range)	112
	0.644 (typical)	104
Pile driver (sonic)	0.734 upper range	105
	0.170 typical	93
Clam shovel drop (slurry wall)	0.202	94
Hydromill	0.008 in soil	66
(slurry wall)	0.017 in rock	75
Vibratory Roller	0.210	94
Hoe Ram	0.089	87
Large bulldozer	0.089	87
Caisson drill	0.089	87
Loaded trucks	0.076	86
Jackhammer	0.035	79
Small bulldozer	0.003	58

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<sup>1</sup> Transit Noise and Vibration Impact Assessment, Federal Transit Administration, May 2006.

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# Appendices

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## **Appendix A**

City of Coachella  
Noise Element  
&  
Noise Ordinance

## INTRODUCTION

The Noise Element of the General Plan is a comprehensive program for including noise control in the planning process. It is a tool for local planners to use in achieving and maintaining land uses that are compatible with environmental noise levels. The Noise Element identifies noise sensitive land uses and noise sources, and defines areas of noise impact for the purpose of developing and implementing programs to ensure that Coachella residents will be protected from excessive noise intrusion.

Approximately 1,339 acres (27.7%) of Coachella's 4,924 acres of non-agricultural or vacant land are residential, and those are considered the most noise-sensitive. Other noise-sensitive land uses include schools, hospitals and other long-term care medical facilities, libraries and parks.

The predominant noise source in Coachella, as in most communities, is motor vehicles. The city includes a range of facilities including regional freeways, major highways and other arterials, and collector and local streets. The highest volume roadways in the city are SR111, which runs northwest to southeast through the community and is referred to as Indio Boulevard north of Harrison Street and Grapefruit Boulevard south of Harrison Street; the SR86S freeway, which parallels SR111 about one mile east on the other side of the Whitewater River; and Harrison Street, which runs north to south through the middle of Coachella from SR111 and beyond the southern city limits. Other major sources of noise in Coachella include the railway that runs through Coachella along the east side of SR111 and factories, processing and distribution facilities such as the Coronet Concrete plant located on the northwest corner of Grapefruit Boulevard and 1<sup>st</sup> Street. Other, less significant noise sources in Coachella include aircraft overflights, air conditioning units and other mechanical equipment on buildings, landscaping equipment and human speech. None of these sources significantly contribute to overall noise levels when compared to traffic noise. The airport closest to Coachella is Jacqueline Cochran Regional Airport, located approximately two miles south of central Coachella on the south side of Airport Boulevard. Additional details on the noise environment, measurement locations, and projected future noise contours can be found in Appendix A.

## OUR COMMUNITY'S GOALS

As Coachella continues to grow, traffic levels and traffic-related noise is expected to increase. As demonstrated in this Noise Element, noise levels are forecast to exceed City standards in some areas if not properly attenuated. The goals and policies below reflect the City's fundamental responsibility and desire to protect and preserve the health, safety and welfare of the community from excessive noise, as defined in the City's Land Use/Noise Compatibility Matrix, shown in Figure 10-1: Coachella Land Use/Noise Compatibility Matrix.

**Figure 10-1: Coachella Land Use/Noise Compatibility Matrix**

Figure 10-1 shows which land uses are satisfactory within different noise environments. Green indicates an acceptable noise level within which a use could be located. Red indicates an unacceptable noise level within which a use could be located.

LAND USE CATEGORIES		CNEL					
CATEGORIES	USES	55	60	65	70	75	80
RESIDENTIAL	Single Family, Duplex, Multiple Family	Green	Green	Yellow	Yellow	Orange	Red
RESIDENTIAL	Mobile Homes	Green	Green	Yellow	Orange	Orange	Red
COMMERCIAL - Regional, District	Hotel, Motel, Transient Lodging	Green	Green	Yellow	Yellow	Orange	Red
COMMERCIAL - Regional, Village District, Special	Commercial Retail, Bank, Restaurant, Movie Theater	Green	Green	Green	Green	Yellow	Orange
COMMERCIAL INDUSTRIAL	Office Building, Research and Development, Professional Offices, City Office Building	Green	Green	Green	Yellow	Orange	Red
COMMERCIAL - Recreation INSTITUTIONAL - Civic Center	Amphitheater, Concert Hall Auditorium, Meeting Hall	Yellow	Yellow	Orange	Orange	Red	Red
COMMERCIAL - Recreation	Children's Amusement Park, Miniature Golf Course, Go-cart Track, Equestrian Center, Sports Club	Green	Green	Green	Yellow	Yellow	Red
COMMERCIAL - General, Special INDUSTRIAL, INSTITUTIONAL	Automobile Service Station, Auto Dealership, Manufacturing, Warehousing, Wholesale, Utilities	Green	Green	Green	Green	Yellow	Yellow
INSTITUTIONAL - General	Hospital, Church, Library, School Classroom	Green	Green	Yellow	Orange	Orange	Red
OPEN SPACE	Parks	Green	Green	Green	Yellow	Orange	Red
OPEN SPACE	Golf Course, Cemeteries, Nature Centers, Wildlife Reserves, Wildlife Habitat	Green	Green	Green	Green	Yellow	Orange
AGRICULTURE	Agriculture	Green	Green	Green	Green	Green	Green

**INTERPRETATION**

**ZONE A (GREEN)  
CLEARLY COMPATIBLE** Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal construction, without any special noise insulation requirements.

**ZONE B (YELLOW)  
NORMALLY COMPATIBLE** New construction or development should be undertaken only after an analysis of the noise reduction requirements is made and needed noise insulation features included in the design are determined. Conventional construction, with closed windows and fresh air supply systems or air conditioning will normally suffice.

**ZONE C (ORANGE)  
NORMALLY INCOMPATIBLE** New construction or development should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

**ZONE D (RED)  
CLEARLY INCOMPATIBLE** New construction or development should generally not be undertaken.

\* Construction of new residential uses will not be allowed within the 65 dBA CNEL contour for airport noise.

# GOALS AND POLICIES

**Goal 1. Land Use Planning and Design.** A community where noise compatibility between differing types of land uses is ensured through land use planning and design strategies.

## Policies

- 1.1 **Noise Compatibility.** Use the City's Land Use/Noise Compatibility Matrix shown in Figure 10-1 as a guide for planning and development decisions.
- 1.2 **Noise Analysis and Mitigation.** Require projects involving new development or modifications to existing development to implement mitigation measures, where necessary, to reduce noise levels to at least the normally compatible range shown in the City's Land Use/Noise Compatibility Matrix in Figure 10-1. Mitigation measures should focus on architectural features, building design and construction, rather than site design features such as excessive setbacks, berms and sound walls, to maintain compatibility with adjacent and surrounding uses.
- 1.3 **Mixed Use.** Require mixed-use structures and areas be designed to prevent transfer of noise from commercial uses to residential uses, and ensure a 45 dBA CNEL level or lower for all interior living spaces.
- 1.4 **County and Regional Plans.** Periodically review county and regional plans for transportation facilities and airport operation, to identify and mitigate the potential impact of noise on future development.
- 1.5 **Airport Land Use Planning.** Comply with all applicable policies contained in the Riverside County General Plan Noise Element relating to airport noise, including those policies requiring compliance with the airport land use noise compatibility criteria contained in the airport land use compatibility plan for Jacqueline Cochran Regional Airport; and those policies prohibiting new residential land uses, except construction of single-family dwellings on legal residential lots of record, within the 60 dB CNEL contour of this airport.
- 1.6 **Land Use and Community Design.** Except in cases where noise levels are in the clearly incompatible range as shown in the City's Land Use/Noise Compatibility Matrix shown in Figure 10-1, prioritize the building design and character policies in the Land Use and Community Design Element over those in the Noise Element to ensure that new development meets the design vision of the City.

**Goal 2. Stationary Source Noise. A community where excessive noise from stationary sources is minimized.**

**Policies**

- 2.1 Noise Ordinance.** Minimize noise conflicts between neighboring properties through enforcement of applicable regulations such as the City’s noise ordinance.
- 2.2 Noise Control.** Minimize stationary noise impacts on sensitive receptors and noise emanating from construction activities, private developments/residences, landscaping activities, night clubs and bars and special events.
- 2.3 Entertainment Uses.** Require entertainment, restaurants, and bars engage in responsible management and operation to control activities of their patrons on-site, within reasonable and legally justifiable proximity to minimize noise impacts on adjacent residences and other noise-sensitive receptors, require mitigation, as needed, for development of entertainment uses near noise-sensitive receptors.
- 2.4 Industrial Uses.** Require industrial uses engage in responsible operational practices that minimize noise impacts on adjacent residences and other noise-sensitive receptors require mitigation as needed for development of industrial uses near noise-sensitive receptors.

**Goal 3. Mobile Source Noise. A community where excessive noise from mobile sources is minimized.**

**Policies**

- 3.1 Roadway Noise.** Where roadway noise exceeds the normally compatible range shown in the City’s Land Use/Noise Compatibility Matrix shown in Figure 10-1, implement policies listed under Goal 1 to reduce the impacts of roadway noise on noise-sensitive receptors.
- 3.2 Traffic Calming.** Where roadway noise exceeds the normally compatible range shown in the City’s Land Use/Noise Compatibility Matrix shown in Figure 10-1, consider the implementation of traffic calming measures such as reduced speed limits or roadway design features to reduce noise levels through reduced vehicle speeds and/or diversion of vehicle traffic.
- 3.3 Railway Noise.** Ensure noise from rail lines is taken into account during the land use planning and site development processes.

- **Chapter 7.04 - NOISE CONTROL**

**Sections:**

FOOTNOTE(S):

--- (1) ---

**Editor's note—** Ord. No. 1022, adopted Nov. 17, 2010, amended ch. 7.04 in its entirety to read as herein set out. Former ch. 7.04 pertained to similar subject matter, consisted of §§ 7.04.010—7.04.140, and derived from Ord. 940.

- **7.24.010 - Purpose.**

The city council finds and declares that:

A.

Inadequately controlled noise presents a growing danger to the health and welfare of the residents of the city of Coachella;

B.

The making and creation of excessive, unnecessary or unusually loud noises within the limits of the city of Coachella is a condition that has existed for some time, however, the extent and volume of such noises is increasing;

C.

The making, creation or maintenance of such excessive, unnecessary, unnatural or unusually loud noises that are prolonged, unusual and unnatural in their time, place and use affect and are a detriment to public health, comfort, convenience, safety, welfare and prosperity of the residents of the city of Coachella;

D.

Every person is entitled to an environment in which the noise is not detrimental to his life, health, or enjoyment of property; and

E.

The necessity in the public interest for the provisions and prohibitions hereinafter contained and enacted, is declared as a matter of legislative determination and public policy, and it is further declared that the provisions and prohibitions hereinafter contained and enacted are in pursuance of and for the purpose of securing and promoting the public health, comfort, convenience, safety, welfare and prosperity and the peace and quiet of the residents of the city of Coachella.

*(Ord. No. 1022, § 1, 11-17-10; Ord. No. 1024, 11-17-10)*

- **7.04.020 - Definitions.**

[As used in this chapter, the following terms have the meanings given:]

"A-weighted sound level" means the sound pressure level in decibels as measured on a sound level meter using the A-weighting network. The level to read is designated db(A) or dBA.

"Ambient noise level" means the all-encompassing noise level associated with a given environment, being a composite of sounds from all sources, excluding the alleged offensive noise, at the location and approximate time at which a comparison with the alleged offensive noise is to be made.

"Amplified music" means instrumental and/or vocal music amplified through electronic means.

"Average sound level" means a sound level typical of the sound levels at a certain place during a given period of time; also, means an equivalent continuous sound level.

"Commercial establishments" includes, but is not limited to, any nightclub, restaurant, sports bar, industrial, retail or business establishment or combination thereof.

"Construction equipment" means any tools, machinery or equipment used in connection with construction operations, including all types of "special construction" equipment as defined in the pertinent sections of the California Vehicle Code when used in the construction process on any construction site, home improvement site or property maintenance site, regardless of whether such site be located on-highway or off-highway.

"Cumulative period" means an additive period of time composed of individual time segments which may be continuous or interrupted.

"Decibel" means a unit measure of sound level noise.

"Disturbance" means any disturbance of the peace as defined by California Penal Code Section 415 or as otherwise defined herein.

"Disturbing, excessive or offensive noise" means any sound or noise from any source in excess of the sound level or noise level set forth in [Section 7.04.030](#).

"Emergency machinery," "vehicle" or "work" means any machinery, vehicle or work used, employed or performed in an effort to protect, provide or restore safe conditions in the community or for the citizenry, or work by private or public utilities when restoring utility service.

"Fixed noise source" means a stationary device which creates sounds which are fixed or motionless including, but not limited to, industrial and commercial machinery and equipment, pumps, fans, compressors, generators, air conditioners and refrigeration equipment.

"Gathering" means any convergence of five or more persons.

"Impact noise" means the noise produced by the collision of one mass in motion with a second mass which may be either in motion or in rest.

"Noise level" means the same as "sound level." The terms may be used interchangeably herein.

"Peace officer" means a duly appointed officer of the city, as defined in California Penal Code, Sections 830, et seq.

"Person" means a person, firm, association, copartnership, joint venture, corporation or any entity, public or private in nature.

"Portable powered blower" means any mechanically powered device, regardless of the source of power, which is not stationary, and used for the purpose of blowing leaves, dirt or other debris off sidewalks, lawns or other surfaces.

"Premises" means any real property or location at which a gathering may be held.

"Sound level" (noise level) in decibels is the quantity measured using the frequency weighting of A of a sound level meter as defined herein.

"Sound level meter" means an instrument meeting American National Standard Institute's Standard SL. 4-1974 for type 1 or type 2 sound level meters or an instrument and the associated recording and analyzing equipment which will provide equivalent data.

*(Ord. No. 1022, § 1, 11-17-10; Ord. No. 1024, 11-17-10)*

- **7.04.030 - Sound level limits as related to fixed noise sources.**

A.

Regardless of whether an objective measurement by sound level meter is involved, it shall be unlawful for any person to make, continue, or cause to be made or continued, within the city limits any disturbing excessive or offensive noise or vibration which causes discomfort or annoyance to any reasonable person of normal sensitivity residing in the area or that is plainly audible at a distance greater than fifty (50) feet from the sources point for any purpose. The following ten-minute average sound level limits, unless otherwise specifically indicated, shall apply as indicated in the following table as it relates to a fixed noise source or leaf blowers pursuant to [Section 7.04.075](#)



Zone	Time	Applicable Ten-Minute Average Decibel Limit (A-weighted)
Residential—All zones	6:00 a.m. to 10:00 p.m.	55
	10:00 p.m. to 6:00 a.m.	45
Commercial—All zones	6:00 a.m. to 10:00 p.m.	65
	10:00 p.m. to 6:00 a.m.	55

B.

If the measured ambient noise level exceeds the applicable limit as noted in the table in subsection (A) of this section, the allowable average sound level shall be the ambient noise level. The ambient noise level shall be measured when the alleged noise violation sources are not operating.

C.

The sound level limit between two zoning districts shall be measured at the higher allowable district.

*(Ord. No. 1022, § 1, 11-17-10; Ord. No. 1024, 11-17-10)*

• **7.04.040 - Prohibited noise generally.**

A.

It is unlawful for any person or property owner within the city of Coachella to make, cause, or continue to make or cause, loud, excessive, impulsive or intrusive sound or noise that annoys or disturbs persons of ordinary sensibilities.

B.

The factors, standards, and conditions that may be considered in determining whether a violation of the provisions of this section has been committed, include, but are not limited to, the following:

1.

The level of the noise;

2.

The level and intensity of the background (ambient) noise, if any;

3. The proximity of the noise to residential or commercial sleeping areas;
4. The nature, density and zoning of the area within which the noise emanates;
5. The density of inhabitation of the area within which the noise emanates;
6. The time of day and night the noise occurs;
7. The duration of the noise;
8. Whether the nature of the noise is natural or unnatural;
9. Whether the noise is constant, recurrent or intermittent; and
10. Whether the noise is produced by a commercial or noncommercial activity.

*(Ord. No. 1022, § 1, 11-17-10; Ord. No. 1024, 11-17-10)*

- **7.04.050 - Disturbing, excessive, offensive noises—Declaration of certain acts constituting.**

The following activities, are declared to be deemed disturbing, excessive or offensive noises and any of the following shall constitute prima facie evidence of a violation:

A.

Horns, Signaling Devices, Muffler Systems, Car Alarms, Etc. Unnecessary use or operation of horns, signaling devices, uncontrolled muffler noises, car alarms on vehicles of all types, including motorcycles, and other equipment.

1.

The operation of any such sound production or reproduction device, radio receiving set, musical instrument, drum, phonograph, television set, machine, loudspeaker and sound amplifier or similar machine or device in such a manner as to be plainly audible at a distance of fifty (50) feet or more from the building, structure or vehicle in which located, or from the source point.

2.

The operation of any sound amplifier, which is part of, or connected to, any radio, stereo receiver, compact disc player, cassette tape player, or other similar device when operated in such a manner as to be plainly audible at a distance of fifty (50) feet from

the source point or when operated in such a manner as to cause a person to be aware of vibration at a distance of fifty (50) feet or more from the source point.

B.

Uses Restricted. The use, operation, or permitting to be played, used or operated, any sound production or reproduction device, radio receiving set, musical instrument, drums, phonograph, television set, loudspeakers and sound amplifiers or other machine or device for the producing or reproducing of sound in such a manner as to disturb the peace, quiet, and comfort of any reasonable person of normal sensitiveness.

C.

Prima Facie Violations. Any of the following shall constitute evidence of a prima facie violation of this section:

1.

The operation of any such sound production or reproduction device, radio receiving set, musical instrument, drum, phonograph, television set, machine, loudspeaker and sound amplifier or similar machine or device in such a manner as to be plainly audible at a distance of fifty (50) feet from the building, structure or vehicle in which located, or from the source point.

2.

The operation of any sound amplifier, which is part of, or connected to, any radio, stereo receiver, compact disc player, cassette tape player, or other similar device when operated in such a manner as to be plainly audible at a distance of fifty (50) feet from the source point or when operated in such a manner as to cause a person to be aware of vibration at a distance of fifty (50) feet from the source point.

D.

Enforcement of Prima Facie Violations. Any peace officer, as defined in California Penal Code, Sections 830, et seq., and/or the city manager or his or her designees, who are authorized to enforce the provisions of this chapter and who encounters evidence of a prima facie violation of this section whereby the component(s) amplifying or transmitting the sound in such a manner as to disturb the peace, quiet, or comfort of any reasonable person of normal sensitivity in any area of the city shall be empowered to issue a citation and/or to confiscate and impound as evidence, any or all of the components amplifying or transmitting the sound.

*(Ord. No. 1022, § 1, 11-17-10; Ord. No. 1024, 11-17-10)*

• **7.04.060 - Special provisions—Exemptions.**

The following activities shall be exempted from the provisions of this chapter:

A.

School bands, school athletic and school entertainment events;

B.

Outdoor gatherings, public dances, shows and sporting and entertainment events; provided, the events are authorized by the city;

C.

Activities conducted in public parks and public playgrounds;

D.

Any mechanical device, apparatus or equipment used, related to or connected with emergency machinery, vehicle or work;

E.

All mechanical devices, apparatus or equipment which are utilized for the protection or salvage of agricultural crops during periods of potential or actual frost damage or other adverse weather conditions;

F.

Mobile noise sounds associated with agricultural operations provided such operations do not take place between the hours of 8:00 p.m. and 7:00 a.m. on weekdays, including Saturdays, or at any time on Sunday or a federal holiday;

G.

Mobile noise sources associated with agricultural pest control through pesticide application;

H.

Carillon chimes between the hours of 8:00 a.m. to 7:00 p.m.;

I.

For noise sources associated with property maintenance, refer to [Section 7.04.075](#), "property maintenance activities";

J.

For noise sources associated with construction activities, refer to [Section 7.04.070](#), "construction activities"; and

K.

The provisions of this regulation shall not preclude the construction, operation, maintenance and repairs of equipment, apparatus or facilities of park and recreation departments, public work projects or essential public services and facilities, including those of public utilities subject to the regulatory jurisdiction of the California Public Utilities Commission.

*(Ord. No. 1022, § 1, 11-17-10; Ord. No. 1024, 11-17-10)*

- **7.04.070 - Construction activities.**

No person shall perform, nor shall any person be employed, nor shall any person cause any other person to be employed to work for which a building permit is required by the city in any work of construction, erection, demolition, alteration, repair, addition to or improvement of any building, structure, road or improvement to realty except between the hours as set forth as follows:

October 1st through April 30th

Monday—Friday: 6:00 a.m. to 5:30 p.m.

Saturday: 8:00 a.m. to 5:00 p.m.

Sunday: 8:00 a.m. to 5:00 p.m.

Holidays: 8:00 a.m. to 5:00 p.m.

May 1st through September 30th

Monday—Friday: 5:00 a.m. to 7:00 p.m.

Saturday: 8:00 a.m. to 5:00 p.m.

Sunday: 8:00 a.m. to 5:00 p.m.

Holidays: 8:00 a.m. to 5:00 p.m.

Emergency work and/or unusual conditions may cause work to be permitted with the consent of the city manager, or his or her designee, upon recommendation of the building director or the city engineer.

*(Ord. No. 1022, § 1, 11-17-10; Ord. No. 1024, 11-17-10)*

• **7.04.075 - Property maintenance activities.**

A.

Noise sources associated with property maintenance activity and all portable blowers, lawnmowers, edgers or similar devices shall be prohibited except during the following hours:

October 1st through April 30th

Monday—Sunday: 9:00 a.m. to 5:30 p.m.

Holidays: Not allowed.

May 1st through September 30th

Monday—Friday: 8:00 a.m. to 5:30 p.m.

Saturday and Sunday: 9:00 a.m. to 5:30 p.m.

Holidays: Not allowed.

Notwithstanding the hours of permitted operations, such equipment that constitutes a public nuisance may be abated as otherwise provided in this Code.

B.

No person shall willfully make or continue, or willfully cause to be made or continued, any noise from any portable powered blower at a level which exceeds seventy (70) decibels dBA measured at the midpoint of a wall area twenty (20) feet long and ten (10) feet high and at the

horizontal distance fifty (50) feet away from the midpoint of the wall, or not more than seventy-six (76) decibels dBA at a horizontal distance of twenty-four (24) feet using a sound level meter.

C.

No portable powered blower shall be operated in a manner which will permit dirt, dust, debris, leaves, grass clippings, cuttings, or trimmings from trees or shrubs to be blown or deposited onto neighboring property or public right-of-way. All waste shall be removed and disposed of in a sanitary manner by the use or property occupant.

D.

Leaf blowers shall not be operated within a horizontal distance of ten (10) feet of any operable window, door, or mechanical air intake opening or duct.

*(Ord. No. 1022, § 1, 11-17-10; Ord. No. 1024, 11-17-10)*

- **7.04.080 - Schools, hospitals and churches—Special provisions.**

It is unlawful for any person to create any noise which causes the noise level at any school, hospital or church while the same is in use, to exceed the noise limits, as specified in subsection (A) of [Section 7.04.030](#), prescribed for the assigned noise zone in which the school, hospital or church is located, or which noise level unreasonably disturbs or annoys patients in the hospital.

*(Ord. No. 1022, § 1, 11-17-10; Ord. No. 1024, 11-17-10)*

- **7.04.090 - Air conditioning, refrigeration and pool equipment.**

The noise standards enumerated in [Section 7.04.030](#) shall be increased by eight dBA when the alleged offensive noise source is an air conditioning or refrigeration system or associated equipment which was installed prior to the effective date of the ordinance codified in this chapter. Installation of new equipment must be certified to be within the provisions of this chapter. Installation of new equipment must be certified to be within the provisions of this chapter for night and day operation noise level.

*(Ord. No. 1022, § 1, 11-17-10; Ord. No. 1024, 11-17-10)*

- **7.04.100 - Noise level measurement.**

A.

The location selected for measuring exterior noise levels between residential properties shall be at the property line of the affected residential property. Affected residential property shall be the address from which the complaint was received. Interior noise measurement shall be made within the affected residential unit. The measurement shall be made at a point at least four feet from the wall, ceiling or floor nearest the noise source.

The location selected for measuring exterior noise levels between nonresidential properties shall be at the property line of the affected property.

B.

The location selected for measuring exterior noise levels between two zoning districts shall be at the boundary of the two districts.

*(Ord. No. 1022, § 1, 11-17-10; Ord. No. 1024, 11-17-10)*

- **7.04.110 - Interference with authorized personnel is prohibited.**

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

*(Ord. No. 1022, § 1, 11-17-10; Ord. No. 1024, 11-17-10)*

- **7.04.120 - Pre-existing noise source—Time extension.**

Those commercial and/or industrial noise sources in existence prior to the date of adoption of the ordinance codified in this chapter, which noise sources are an integral part of a building, structure or similar fixed and permanent installation if in compliance with local zoning structures, shall be granted a three-year period from the date of adoption with which to comply with the provisions of the chapter. If, at the end of the three-year period, it can be shown that compliance with the provisions herein constitutes a hardship in terms of technical and economic feasibility, the time to comply may be extended on an annual basis until such time as compliance may be affected.

*(Ord. No. 1022, § 1, 11-17-10; Ord. No. 1024, 11-17-10)*

- **7.04.130 - Violation—Infractions.**

Any person violating any of the provisions of this chapter shall be deemed guilty of an infraction.

*(Ord. No. 1022, § 1, 11-17-10; Ord. No. 1024, 11-17-10)*

- **7.04.140 - Continuing or subsequent violations—Misdemeanor.**

Any person having been convicted of a violation of any provisions of this chapter who thereafter commits a violation of the same provisions of this chapter shall be guilty of a misdemeanor.

*(Ord. No. 1022, § 1, 11-17-10; Ord. No. 1024, 11-17-10)*

- **7.04.150 - Severability.**

If any provision of this chapter is held to be unconstitutional or otherwise invalid by any court of competent jurisdiction, the remaining provisions of this chapter shall not be invalidated.

*(Ord. No. 1022, § 1, 11-17-10; Ord. No. 1024, 11-17-10)*



## **Appendix B**

Photographs and  
Field Measurements

### Field Sheet

<b>Project:</b> Vista Del Agua Noise Study		<b>Engineer:</b> Mario Gutierrez		<b>Date:</b> 6/17/2014
				<b>JN:</b> 2398-2014-02
<b>Measurement Address:</b> Avenue 47/48			<b>City:</b> Coachella	
			<b>Site No.:</b> 1-4	
<b>Sound Level Meter:</b> LD-712 Serial # A0520		<b>Calibration Record:</b> Input, dB/ Reading, dB/ Offset, dB/ Time Before 114.0/ 114.0/ 26.9/ 10:50 AM After 114.0/ 114.0/ 26.3/ 11:30 AM		<b>Notes:</b> Temp: 100° Windspeed: -- Direction: -- Skies: CLEAR Camera: Photo Nos.
<b>Calibrator:</b> LD-250 250 Serial # 1322		Before / / / After / / /		
<b>Meter Settings:</b> <input checked="" type="checkbox"/> A-WTD <input type="checkbox"/> LINEAR <input checked="" type="checkbox"/> SLOW <input type="checkbox"/> 1/1 OCT <input checked="" type="checkbox"/> INTERVALS <u>10</u> - MINUTE <input type="checkbox"/> C-WTD <input type="checkbox"/> IMPULSE <input type="checkbox"/> FAST <input type="checkbox"/> 1/3 OCT <input checked="" type="checkbox"/> L <sub>N</sub> PERCENTILE VALUES				

<b>Notes:</b>										Measurement Type: Long-term _____ Short-term <u>  X  </u>	
		Start Time	Stop Time	Leq	Lmin	Lmax	L2	L8	L25	L50	
Locations	1	10:55 AM	11:05 AM	66.7	37.9	91.9	66.1	45.4	41.7	39.4	
	Comments: Noise meter was placed at the southern property line along Avenue 48. It should be noted a tractor drove adjacent to the noise meter at 10:57 AM.										
	2	11:07 AM	11:17 AM	50.4	46.2	72.2	53.2	46.4	47.2	47	
	Comments: Noise meter was placed along the southeastern property line, at the intersection of Avenue 48 and Polk Street.										
	3	11:20 AM	11:30 AM	68.2	46.2	79.9	77.0	73.5	67.4	62.9	
Comments: Noise meter was placed at the northern property line along Vista Del Sur. Meter was approximately 150 feet south of the I-10 Freeway. Ambient noise was captured from the adjacent freeway traffic.											
4											
5											

### Field Sheet - ST1 Location Photos

<b>Project:</b> Vista Del Agua Noise Study	<b>Engineer:</b> Mario Gutierrez	<b>Date:</b> 6/17/2014
<b>Measurement Address:</b>	<b>City:</b> Coachella	<b>JN:</b> 2398-2014-02
Noise meter was placed at the southern property line along Avenue 48.		<b>Site No.:</b> 1



### Field Sheet - ST2 Location Photos

<b>Project:</b> Vista Del Agua Noise Study	<b>Engineer:</b> Mario Gutierrez	<b>Date:</b> 6/17/2014
<b>Measurement Address:</b>	<b>City:</b> Coachella	<b>JN:</b> 2398-2014-02
Noise meter was placed along the southeastern property line, at the intersection of Avenue 48 and Polk Street.		<b>Site No.:</b> 2





### Field Sheet - ST3 Location Photos

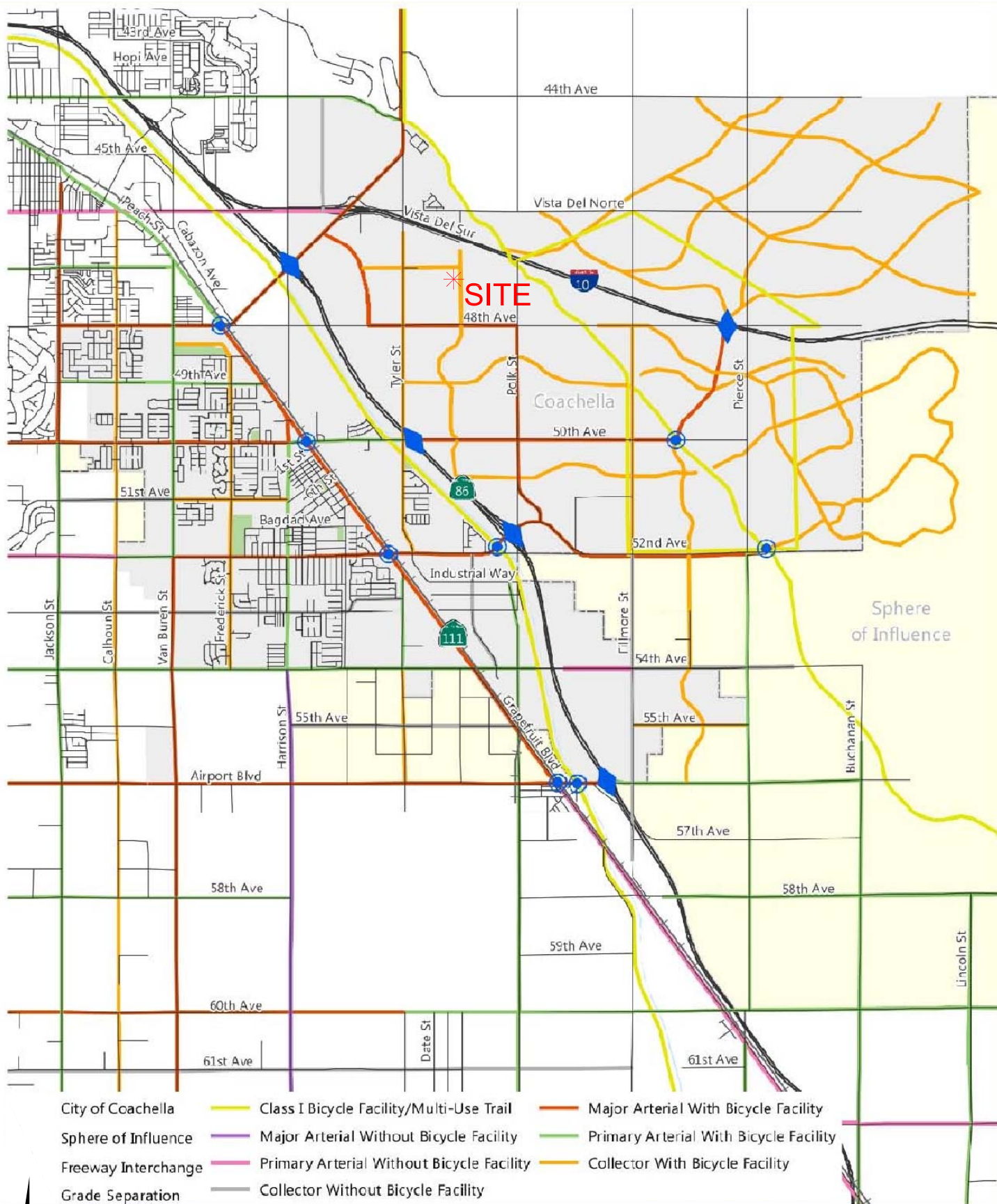
<b>Project:</b> Vista Del Agua Noise Study	<b>Engineer:</b> Mario Gutierrez	<b>Date:</b> 6/17/2014
<b>Measurement Address:</b>	<b>City:</b> Coachella	<b>JN:</b> 2398-2014-02
Noise meter was placed at the northern property line along Vista Del Sur.		<b>Site No.:</b> 3



## **Appendix C**

Traffic Data

# City of Coachella Transportation Network



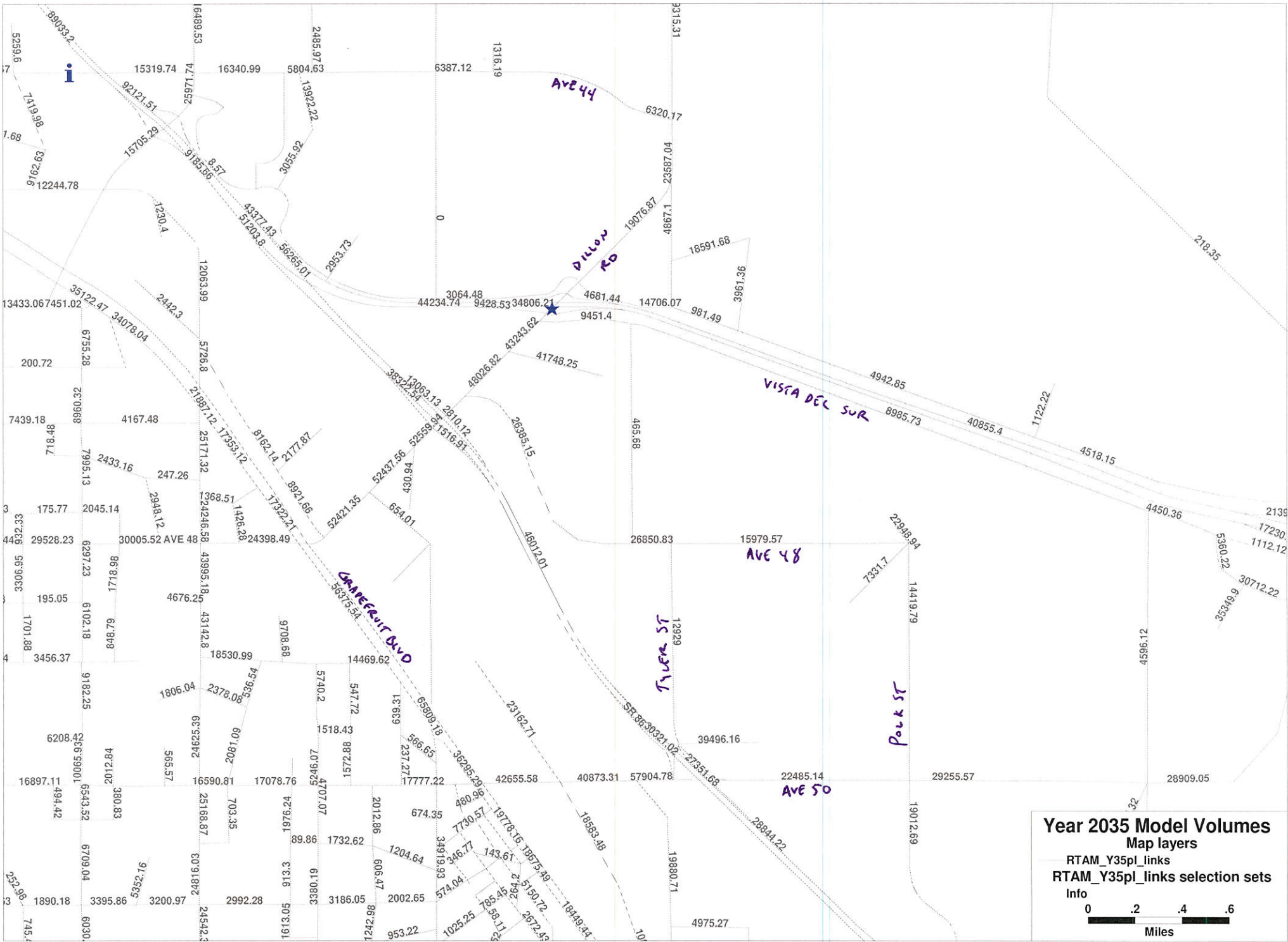
**ADT TABLE**  
**Vist Del Agua**

Segment	Limits	ADT							
		Existing	Project	Existing Plus Project	Cumulative Projects	Without Project	Year 2022 With Project	Without Project	2035 With Project
Vista Del Sur	Dillon Road to Tyler Street	589	2,814	3,403	0	683	3,497	6,637	9,451
Vista Del Sur	Tyler Street to Street A	145	2,814	2,959	0	168	2,982	6,171	8,985
Avenue 47	Dillon Road to Tyler Street	53	7,800	7,853	28,288	28,349	36,149	28,363	36,163
Avenue 47	Tyler Street to Street A	53	10,040	10,093	0	61	10,101	75	10,115
Avenue 47	Street A to Polk Street	53	3,808	3,861	0	61	3,869	75	3,883
Avenue 48	Tyler Street to Street A	53	3,472	3,525	0	61	3,533	12,507	15,979
Avenue 48	Street A to Polk Street	79	2,641	2,720	0	92	2,733	13,338	15,979
Tyler Street	Vista Del Sur to Avenue 47	476	0	476	0	552	552	676	676
Tyler Street	Avenue 47 to Avenue 48	475	2,578	3,053	11,194	11,745	14,323	11,869	14,447
Tyler Street	Avenue 48 to Avenue 50	541	5,710	6,251	12,226	12,854	18,564	12,994	18,704
Street A	Vista Del Sur to Avenue 47	0	7,921	7,921	0	0	7,921	0	7,921
Street A	Avenue 47 to Avenue 48	0	3,577	3,577	0	0	3,577	0	3,577
Polk Street	Avenue 47 to Avenue 48	145	998	1,143	0	168	1,166	21,951	22,949
Polk Street	Avenue 48 to Avenue 50	647	2,434	3,081	0	751	3,185	11,985	14,419

<sup>1</sup> ADTs referenced from the Vista Del Agua Traffic Impact Analysis, prepared by RK Engineering Group

<sup>2</sup> For roadway segments in which the 2035 projected traffic volume was less than previous phase volume, a 2 % per year growth rate was applied. This method is consistent with the parameters outlined in the traffic analysis.





Ave 44

Dillon Rd

Vista Del Sur

Ave 48

Tulea St

Polk St

Craneville Blvd

i



RTE	DIST	CNTY	POST MILE	L E G	DESCRIPTION	VEHICLE AADT TOTAL	TRUCK AADT TOTAL	TRUCK % TOT VEH	TRUCK AADT TOTAL				% TRUCK AADT				EAL 2-WAY (1000)	YEAR VER/ EST
									2	3	4	5+	2	3	4	5+		
010	08	RIV	R14.76	B	EAST RAMSEY STREET	108000	17280	16	3283	1365	864	11768	19	7.9	5	68.1	4427	86E
010	08	RIV	R14.76	A	EAST RAMSEY STREET	111000	20313	18.3	2844	1625	1219	14625	14	8	6	72	5474	86V
010	08	RIV	R25.201	B	JCT. RTE. 111	91000	17290	19	2766	1383	1037	12103	16	8	6	70	4552	86E
010	08	RIV	R25.201	A	JCT. RTE. 111	79000	17301	21.9	4844	1038	692	10727	28	6	4	62	4068	86E
010	08	RIV	29.691	B	JCT. RTE. 62 NORTH	79000	17301	21.9	5017	900	450	10934	29	5.2	2.6	63.2	4097	84E
010	08	RIV	29.691	A	JCT. RTE. 62 NORTH	77000	20174	26.2	5306	767	545	13557	26.3	3.8	2.7	67.2	5014	84E
010	08	RIV	33.129	B	INDIAN AVENUE	77000	19250	25	3831	770	558	14091	19.9	4	2.9	73.2	5148	84E
010	08	RIV	33.129	A	INDIAN AVENUE	79000	18644	23.6	2908	746	466	14524	15.6	4	2.5	77.9	5250	84E
010	08	RIV	R52.342	B	JEFFERSON STREE/INDIO BOULEVARD	81000	26325	32.5	4080	711	527	21007	15.5	2.7	2	79.8	7533	83V
010	08	RIV	R52.342	A	JEFFERSON STREE/INDIO BOULEVARD	66000	22308	33.8	3413	848	535	17512	15.3	3.8	2.4	78.5	6318	83V
010	08	RIV	R57.831	B	INDIO, JCT. RTE. 86 SOUTH	51000	15922	31.22	2159	357	201	13206	13.56	2.24	1.26	82.94	4694	04E
010	08	RIV	R57.831	A	INDIO, JCT. RTE. 86 SOUTH	24000	8309	34.62	1080	166	100	6963	13	2	1.2	83.8	2470	04E
010	08	RIV	R58.89	A	DILLON ROAD	22000	8716	39.62	1140	169	96	7311	13.08	1.94	1.1	83.88	2592	04V
010	08	RIV	R105.087B	B	JCT. RTE. 177 NORTH	22500	8876	39.45	1161	172	98	7445	13.08	1.94	1.1	83.88	2639	04E
010	08	RIV	R105.087A	A	JCT. RTE. 177 NORTH	21000	9116	43.41	1179	177	100	7659	12.93	1.94	1.1	84.02	2715	04E
010	08	RIV	R149.15	B	JCT. RTE. 78 SOUTH	22000	8294	37.7	1000	168	126	7000	12.06	2.03	1.52	84.4	2484	12E
010	08	RIV	R149.15	A	JCT. RTE. 78 SOUTH	23800	8687	36.5	1148	193	106	7239	13.22	2.22	1.22	83.33	2571	12E
010	08	RIV	R154.167B	B	JCT. RTE. 95 NORTH	24000	8503	35.43	1124	189	104	7086	13.22	2.22	1.22	83.33	2517	04E
010	08	RIV	R154.167A	A	JCT. RTE. 95 NORTH	25000	9038	36.15	1226	202	114	7496	13.56	2.24	1.26	82.94	2664	04E
010	08	RIV	R156.492B	B	ARIZONA STATE LINE	24500	8840	36.08	1199	198	111	7332	13.56	2.24	1.26	82.94	2606	04E

## **Appendix D**

Traffic Noise  
Calculation Worksheets

**FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO**

PROJECT: Vista Del Agua Specific Plan Noise Impact Study, City of Coachella  
 ROADWAY: Vista Del Sur  
 SEGMENT: Dillon Road to Tyler Street  
 LOCATION: City of Coachella

JOB #: 2398-2014-02  
 DATE: 28-Oct-14  
 ENGINEER: M. Dickerson

SCENARIO: Existing Conditions - W/O Project

**NOISE INPUT DATA**

**ROADWAY CONDITIONS**

ADT = 589  
 SPEED = 25  
 PK HR % = 10  
 NEAR LANE/FAR LANE DIST = 12  
 ROAD ELEVATION = 0  
 GRADE = 0  
 PK HR VOL = 59

**RECEIVER INPUT DATA**

RECEIVER DISTANCE = 100  
 DIST C/L TO WALL = 0  
 RECEIVER HEIGHT = 5  
 WALL DISTANCE FROM RECEIVER = 100  
 PAD ELEVATION = 0  
 ROADWAY VIEW:  
     LF ANGLE = -90  
     RT ANGLE = 90  
     DF ANGLE = 180

**SITE CONDITIONS**

AUTOMOBILES 10  
 MED TRUCKS 10 (HARD SITE=10, SOFT SITE=15)  
 HVY TRUCKS 10

**WALL INFORMATION**

HTH WALL 0 FT  
 AMBIENT = 0  
 BARRIER = 0 (0=WALL,1=BERM)

**VEHICLE MIX DATA**

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

**MISC. VEHICLE INFO**

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	99.9	--
MEDIUM TRUCKS=	4.00	99.8	--
HEAVY TRUCKS =	8.01	99.9	0.0

**NOISE OUTPUT DATA**

**NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)**

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	44.7	42.8	41.0	34.9	43.6	44.2
MEDIUM TRUCKS	39.1	37.6	31.2	29.7	38.1	38.4
HEAVY TRUCKS	41.0	39.6	30.6	31.8	40.2	40.3
<b>VEHICULAR NOISE</b>	<b>47.0</b>	<b>45.3</b>	<b>41.8</b>	<b>37.5</b>	<b>46.0</b>	<b>46.4</b>

**NOISE CONTOUR (FT)**

NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	0	1	4	14
LDN	0	1	4	13

**FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO**

PROJECT: Vista Del Agua Specific Plan Noise Impact Study, City of Coachella  
 ROADWAY: Vista Del Sur  
 SEGMENT: Tyler Street to Street A  
 LOCATION: City of Coachella

JOB #: 2398-2014-02  
 DATE: 29-Oct-14  
 ENGINEER: M. Dickerson

SCENARIO: Existing Conditions - W/O Project

**NOISE INPUT DATA**

**ROADWAY CONDITIONS**

ADT = 145  
 SPEED = 25  
 PK HR % = 10  
 NEAR LANE/FAR LANE DIST = 12  
 ROAD ELEVATION = 0  
 GRADE = 0  
 PK HR VOL = 15

**RECEIVER INPUT DATA**

RECEIVER DISTANCE = 100  
 DIST C/L TO WALL = 0  
 RECEIVER HEIGHT = 5  
 WALL DISTANCE FROM RECEIVER = 100  
 PAD ELEVATION = 0  
 ROADWAY VIEW:  
     LF ANGLE = -90  
     RT ANGLE = 90  
     DF ANGLE = 180

**SITE CONDITIONS**

AUTOMOBILES 10  
 MED TRUCKS 10 (HARD SITE=10, SOFT SITE=15)  
 HVY TRUCKS 10

**WALL INFORMATION**

HTH WALL 0 FT  
 AMBIENT = 0  
 BARRIER = 0 (0=WALL,1=BERM)

**VEHICLE MIX DATA**

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

**MISC. VEHICLE INFO**

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	99.9	--
MEDIUM TRUCKS=	4.00	99.8	--
HEAVY TRUCKS =	8.01	99.9	0.0

**NOISE OUTPUT DATA**

**NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)**

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	38.6	36.7	34.9	28.9	37.5	38.1
MEDIUM TRUCKS	33.0	31.5	25.1	23.6	32.0	32.3
HEAVY TRUCKS	34.9	33.5	24.5	25.7	34.1	34.2
<b>VEHICULAR NOISE</b>	<b>40.9</b>	<b>39.2</b>	<b>35.7</b>	<b>31.4</b>	<b>39.9</b>	<b>40.3</b>

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	0	0	1	3
LDN	0	0	1	3

**FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO**

PROJECT: Vista Del Agua Specific Plan Noise Impact Study, City of Coachella  
 ROADWAY: Avenue 47  
 SEGMENT: Dillon Road to Tyler Street  
 LOCATION: City of Coachella

JOB #: 2398-2014-02  
 DATE: 29-Oct-14  
 ENGINEER: M. Dickerson

SCENARIO: Existing Conditions - W/O Project

**NOISE INPUT DATA**

**ROADWAY CONDITIONS**

ADT = 53  
 SPEED = 25  
 PK HR % = 10  
 NEAR LANE/FAR LANE DIST = 12  
 ROAD ELEVATION = 0  
 GRADE = 0  
 PK HR VOL = 5

**RECEIVER INPUT DATA**

RECEIVER DISTANCE = 100  
 DIST C/L TO WALL = 0  
 RECEIVER HEIGHT = 5  
 WALL DISTANCE FROM RECEIVER = 100  
 PAD ELEVATION = 0  
 ROADWAY VIEW:  
     LF ANGLE = -90  
     RT ANGLE = 90  
     DF ANGLE = 180

**SITE CONDITIONS**

AUTOMOBILES 10  
 MED TRUCKS 10 (HARD SITE=10, SOFT SITE=15)  
 HVY TRUCKS 10

**WALL INFORMATION**

HTH WALL 0 FT  
 AMBIENT = 0  
 BARRIER = 0 (0=WALL,1=BERM)

**VEHICLE MIX DATA**

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

**MISC. VEHICLE INFO**

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	99.9	--
MEDIUM TRUCKS=	4.00	99.8	--
HEAVY TRUCKS =	8.01	99.9	0.0

**NOISE OUTPUT DATA**

**NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)**

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	34.2	32.3	30.5	24.5	33.1	33.7
MEDIUM TRUCKS	28.6	27.1	20.8	19.2	27.7	27.9
HEAVY TRUCKS	30.6	29.2	20.1	21.4	29.7	29.8
<b>VEHICULAR NOISE</b>	<b>36.5</b>	<b>34.8</b>	<b>31.3</b>	<b>27.0</b>	<b>35.5</b>	<b>35.9</b>

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	0	0	0	1
LDN	0	0	0	1

## FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Vista Del Agua Specific Plan Noise Impact Study, City of Coachella  
 ROADWAY: Avenue 47  
 SEGMENT: Tyler Street to Street A  
 LOCATION: City of Coachella

JOB #: 2398-2014-02  
 DATE: 29-Oct-14  
 ENGINEER: M. Dickerson

SCENARIO: Existing Conditions - W/O Project

### NOISE INPUT DATA

#### ROADWAY CONDITIONS

ADT = 53  
 SPEED = 25  
 PK HR % = 10  
 NEAR LANE/FAR LANE DIST = 12  
 ROAD ELEVATION = 0  
 GRADE = 0  
 PK HR VOL = 5

#### RECEIVER INPUT DATA

RECEIVER DISTANCE = 100  
 DIST C/L TO WALL = 0  
 RECEIVER HEIGHT = 5  
 WALL DISTANCE FROM RECEIVER = 100  
 PAD ELEVATION = 0  
 ROADWAY VIEW:  
     LF ANGLE = -90  
     RT ANGLE = 90  
     DF ANGLE = 180

#### SITE CONDITIONS

AUTOMOBILES 10  
 MED TRUCKS 10 (HARD SITE=10, SOFT SITE=15)  
 HVY TRUCKS 10

#### WALL INFORMATION

HTH WALL 0 FT  
 AMBIENT = 0  
 BARRIER = 0 (0=WALL,1=BERM)

#### VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

#### MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	99.9	--
MEDIUM TRUCKS=	4.00	99.8	--
HEAVY TRUCKS =	8.01	99.9	0.0

### NOISE OUTPUT DATA

#### NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	34.2	32.3	30.5	24.5	33.1	33.7
MEDIUM TRUCKS	28.6	27.1	20.8	19.2	27.7	27.9
HEAVY TRUCKS	30.6	29.2	20.1	21.4	29.7	29.8
<b>VEHICULAR NOISE</b>	<b>36.5</b>	<b>34.8</b>	<b>31.3</b>	<b>27.0</b>	<b>35.5</b>	<b>35.9</b>

#### NOISE CONTOUR (FT)

NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	0	0	0	1
LDN	0	0	0	1

**FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO**

PROJECT: Vista Del Agua Specific Plan Noise Impact Study, City of Coachella  
 ROADWAY: Avenue 47  
 SEGMENT: Street A to Polk Street  
 LOCATION: City of Coachella

JOB #: 2398-2014-02  
 DATE: 29-Oct-14  
 ENGINEER: M. Dickerson

SCENARIO: Existing Conditions - W/O Project

**NOISE INPUT DATA**

**ROADWAY CONDITIONS**

ADT = 53  
 SPEED = 25  
 PK HR % = 10  
 NEAR LANE/FAR LANE DIST = 12  
 ROAD ELEVATION = 0  
 GRADE = 0  
 PK HR VOL = 5

**RECEIVER INPUT DATA**

RECEIVER DISTANCE = 100  
 DIST C/L TO WALL = 0  
 RECEIVER HEIGHT = 5  
 WALL DISTANCE FROM RECEIVER = 100  
 PAD ELEVATION = 0  
 ROADWAY VIEW:  
     LF ANGLE = -90  
     RT ANGLE = 90  
     DF ANGLE = 180

**SITE CONDITIONS**

AUTOMOBILES 10  
 MED TRUCKS 10 (HARD SITE=10, SOFT SITE=15)  
 HVY TRUCKS 10

**WALL INFORMATION**

HTH WALL 0 FT  
 AMBIENT = 0  
 BARRIER = 0 (0=WALL,1=BERM)

**VEHICLE MIX DATA**

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

**MISC. VEHICLE INFO**

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	99.9	--
MEDIUM TRUCKS=	4.00	99.8	--
HEAVY TRUCKS =	8.01	99.9	0.0

**NOISE OUTPUT DATA**

**NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)**

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	34.2	32.3	30.5	24.5	33.1	33.7
MEDIUM TRUCKS	28.6	27.1	20.8	19.2	27.7	27.9
HEAVY TRUCKS	30.6	29.2	20.1	21.4	29.7	29.8
<b>VEHICULAR NOISE</b>	<b>36.5</b>	<b>34.8</b>	<b>31.3</b>	<b>27.0</b>	<b>35.5</b>	<b>35.9</b>

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	0	0	0	1
LDN	0	0	0	1



**FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO**

PROJECT: Vista Del Agua Specific Plan Noise Impact Study, City of Coachella  
 ROADWAY: Avenue 48  
 SEGMENT: Tyler Street to Street A  
 LOCATION: City of Coachella

JOB #: 2398-2014-02  
 DATE: 28-Oct-14  
 ENGINEER: M. Dickerson

SCENARIO: Existing Conditions - W/O Project

**NOISE INPUT DATA**

**ROADWAY CONDITIONS**

ADT = 53  
 SPEED = 25  
 PK HR % = 10  
 NEAR LANE/FAR LANE DIST = 12  
 ROAD ELEVATION = 0  
 GRADE = 0  
 PK HR VOL = 5

**RECEIVER INPUT DATA**

RECEIVER DISTANCE = 100  
 DIST C/L TO WALL = 0  
 RECEIVER HEIGHT = 5  
 WALL DISTANCE FROM RECEIVER = 100  
 PAD ELEVATION = 0  
 ROADWAY VIEW:  
     LF ANGLE = -90  
     RT ANGLE = 90  
     DF ANGLE = 180

**SITE CONDITIONS**

AUTOMOBILES 10  
 MED TRUCKS 10 (HARD SITE=10, SOFT SITE=15)  
 HVY TRUCKS 10

**WALL INFORMATION**

HTH WALL 0 FT  
 AMBIENT = 0  
 BARRIER = 0 (0=WALL,1=BERM)

**VEHICLE MIX DATA**

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

**MISC. VEHICLE INFO**

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	99.9	--
MEDIUM TRUCKS=	4.00	99.8	--
HEAVY TRUCKS =	8.01	99.9	0.0

**NOISE OUTPUT DATA**

**NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)**

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	34.2	32.3	30.5	24.5	33.1	33.7
MEDIUM TRUCKS	28.6	27.1	20.8	19.2	27.7	27.9
HEAVY TRUCKS	30.6	29.2	20.1	21.4	29.7	29.8
<b>VEHICULAR NOISE</b>	<b>36.5</b>	<b>34.8</b>	<b>31.3</b>	<b>27.0</b>	<b>35.5</b>	<b>35.9</b>

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	0	0	0	1
LDN	0	0	0	1

## FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Vista Del Agua Specific Plan Noise Impact Study, City of Coachella  
 ROADWAY: Avenue 48  
 SEGMENT: Street A to Polk Street  
 LOCATION: City of Coachella

JOB #: 2398-2014-02  
 DATE: 28-Oct-14  
 ENGINEER: M. Dickerson

SCENARIO: Existing Conditions - W/O Project

### NOISE INPUT DATA

#### ROADWAY CONDITIONS

ADT = 79  
 SPEED = 25  
 PK HR % = 10  
 NEAR LANE/FAR LANE DIST = 12  
 ROAD ELEVATION = 0  
 GRADE = 0  
 PK HR VOL = 8

#### RECEIVER INPUT DATA

RECEIVER DISTANCE = 100  
 DIST C/L TO WALL = 0  
 RECEIVER HEIGHT = 5  
 WALL DISTANCE FROM RECEIVER = 100  
 PAD ELEVATION = 0  
 ROADWAY VIEW:  
     LF ANGLE = -90  
     RT ANGLE = 90  
     DF ANGLE = 180

#### SITE CONDITIONS

AUTOMOBILES 10  
 MED TRUCKS 10 (HARD SITE=10, SOFT SITE=15)  
 HVY TRUCKS 10

#### WALL INFORMATION

HTH WALL 0 FT  
 AMBIENT = 0  
 BARRIER = 0 (0=WALL,1=BERM)

#### VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

#### MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	99.9	--
MEDIUM TRUCKS=	4.00	99.8	--
HEAVY TRUCKS =	8.01	99.9	0.0

### NOISE OUTPUT DATA

#### NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	35.9	34.0	32.3	26.2	34.8	35.4
MEDIUM TRUCKS	30.4	28.8	22.5	20.9	29.4	29.6
HEAVY TRUCKS	32.3	30.9	21.9	23.1	31.5	31.6
<b>VEHICULAR NOISE</b>	<b>38.3</b>	<b>36.6</b>	<b>33.1</b>	<b>28.7</b>	<b>37.3</b>	<b>37.7</b>

#### NOISE CONTOUR (FT)

NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	0	0	1	2
LDN	0	0	1	2

**FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO**

PROJECT: Vista Del Agua Specific Plan Noise Impact Study, City of Coachella  
 ROADWAY: Tyler Street  
 SEGMENT: Vista Del Sur to Avenue 47  
 LOCATION: City of Coachella

JOB #: 2398-2014-02  
 DATE: 28-Oct-14  
 ENGINEER: M. Dickerson

SCENARIO: Existing Conditions - W/O Project

**NOISE INPUT DATA**

**ROADWAY CONDITIONS**

ADT = 476  
 SPEED = 25  
 PK HR % = 10  
 NEAR LANE/FAR LANE DIST = 12  
 ROAD ELEVATION = 0  
 GRADE = 0  
 PK HR VOL = 48

**RECEIVER INPUT DATA**

RECEIVER DISTANCE = 100  
 DIST C/L TO WALL = 0  
 RECEIVER HEIGHT = 5  
 WALL DISTANCE FROM RECEIVER = 100  
 PAD ELEVATION = 0  
 ROADWAY VIEW:  
     LF ANGLE = -90  
     RT ANGLE = 90  
     DF ANGLE = 180

**SITE CONDITIONS**

AUTOMOBILES 10  
 MED TRUCKS 10 (HARD SITE=10, SOFT SITE=15)  
 HVY TRUCKS 10

**WALL INFORMATION**

HTH WALL 0 FT  
 AMBIENT = 0  
 BARRIER = 0 (0=WALL,1=BERM)

**VEHICLE MIX DATA**

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

**MISC. VEHICLE INFO**

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	99.9	--
MEDIUM TRUCKS=	4.00	99.8	--
HEAVY TRUCKS =	8.01	99.9	0.0

**NOISE OUTPUT DATA**

**NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)**

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	43.7	41.8	40.1	34.0	42.6	43.2
MEDIUM TRUCKS	38.2	36.6	30.3	28.7	37.2	37.4
HEAVY TRUCKS	40.1	38.7	29.7	30.9	39.3	39.4
<b>VEHICULAR NOISE</b>	<b>46.1</b>	<b>44.4</b>	<b>40.9</b>	<b>36.5</b>	<b>45.1</b>	<b>45.5</b>

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	0	1	4	11
LDN	0	1	3	10

**FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO**

PROJECT: Vista Del Agua Specific Plan Noise Impact Study, City of Coachella  
 ROADWAY: Tyler Street  
 SEGMENT: Avenue 47 to Avenue 48  
 LOCATION: City of Coachella

JOB #: 2398-2014-02  
 DATE: 28-Oct-14  
 ENGINEER: M. Dickerson

SCENARIO: Existing Conditions - W/O Project

**NOISE INPUT DATA**

**ROADWAY CONDITIONS**

ADT = 475  
 SPEED = 25  
 PK HR % = 10  
 NEAR LANE/FAR LANE DIST = 12  
 ROAD ELEVATION = 0  
 GRADE = 0  
 PK HR VOL = 48

**RECEIVER INPUT DATA**

RECEIVER DISTANCE = 100  
 DIST C/L TO WALL = 0  
 RECEIVER HEIGHT = 5  
 WALL DISTANCE FROM RECEIVER = 100  
 PAD ELEVATION = 0  
 ROADWAY VIEW:  
     LF ANGLE = -90  
     RT ANGLE = 90  
     DF ANGLE = 180

**SITE CONDITIONS**

AUTOMOBILES 10  
 MED TRUCKS 10 (HARD SITE=10, SOFT SITE=15)  
 HVY TRUCKS 10

**WALL INFORMATION**

HTH WALL 0 FT  
 AMBIENT = 0  
 BARRIER = 0 (0=WALL,1=BERM)

**VEHICLE MIX DATA**

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

**MISC. VEHICLE INFO**

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	99.9	--
MEDIUM TRUCKS=	4.00	99.8	--
HEAVY TRUCKS =	8.01	99.9	0.0

**NOISE OUTPUT DATA**

**NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)**

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	43.7	41.8	40.1	34.0	42.6	43.2
MEDIUM TRUCKS	38.1	36.6	30.3	28.7	37.2	37.4
HEAVY TRUCKS	40.1	38.7	29.6	30.9	39.2	39.4
<b>VEHICULAR NOISE</b>	<b>46.1</b>	<b>44.4</b>	<b>40.8</b>	<b>36.5</b>	<b>45.0</b>	<b>45.5</b>

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	0	1	4	11
LDN	0	1	3	10

**FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO**

PROJECT: Vista Del Agua Specific Plan Noise Impact Study, City of Coachella  
 ROADWAY: Tyler Street  
 SEGMENT: Avenue 48 to Avenue 50  
 LOCATION: City of Coachella

JOB #: 2398-2014-02  
 DATE: 28-Oct-14  
 ENGINEER: M. Dickerson

SCENARIO: Existing Conditions - W/O Project

**NOISE INPUT DATA**

**ROADWAY CONDITIONS**

ADT = 541  
 SPEED = 25  
 PK HR % = 10  
 NEAR LANE/FAR LANE DIST = 12  
 ROAD ELEVATION = 0  
 GRADE = 0  
 PK HR VOL = 54

**RECEIVER INPUT DATA**

RECEIVER DISTANCE = 100  
 DIST C/L TO WALL = 0  
 RECEIVER HEIGHT = 5  
 WALL DISTANCE FROM RECEIVER = 100  
 PAD ELEVATION = 0  
 ROADWAY VIEW:  
     LF ANGLE = -90  
     RT ANGLE = 90  
     DF ANGLE = 180

**SITE CONDITIONS**

AUTOMOBILES 10  
 MED TRUCKS 10 (HARD SITE=10, SOFT SITE=15)  
 HVY TRUCKS 10

**WALL INFORMATION**

HTH WALL 0 FT  
 AMBIENT = 0  
 BARRIER = 0 (0=WALL,1=BERM)

**VEHICLE MIX DATA**

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

**MISC. VEHICLE INFO**

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	99.9	--
MEDIUM TRUCKS=	4.00	99.8	--
HEAVY TRUCKS =	8.01	99.9	0.0

**NOISE OUTPUT DATA**

**NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)**

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	44.3	42.4	40.6	34.6	43.2	43.8
MEDIUM TRUCKS	38.7	37.2	30.8	29.3	37.8	38.0
HEAVY TRUCKS	40.7	39.2	30.2	31.5	39.8	39.9
<b>VEHICULAR NOISE</b>	<b>46.6</b>	<b>44.9</b>	<b>41.4</b>	<b>37.1</b>	<b>45.6</b>	<b>46.0</b>

**NOISE CONTOUR (FT)**

NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	0	1	4	13
LDN	0	1	4	12

**FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO**

PROJECT: Vista Del Agua Specific Plan Noise Impact Study, City of Coachella  
 ROADWAY: Polk Street  
 SEGMENT: Avenue 47 to Avenue 48  
 LOCATION: City of Coachella

JOB #: 2398-2014-02  
 DATE: 28-Oct-14  
 ENGINEER: M. Dickerson

SCENARIO: Existing Conditions - W/O Project

**NOISE INPUT DATA**

**ROADWAY CONDITIONS**

ADT = 145  
 SPEED = 25  
 PK HR % = 10  
 NEAR LANE/FAR LANE DIST = 12  
 ROAD ELEVATION = 0  
 GRADE = 0  
 PK HR VOL = 15

**RECEIVER INPUT DATA**

RECEIVER DISTANCE = 100  
 DIST C/L TO WALL = 0  
 RECEIVER HEIGHT = 5  
 WALL DISTANCE FROM RECEIVER = 100  
 PAD ELEVATION = 0  
 ROADWAY VIEW:  
     LF ANGLE = -90  
     RT ANGLE = 90  
     DF ANGLE = 180

**SITE CONDITIONS**

AUTOMOBILES 10  
 MED TRUCKS 10 (HARD SITE=10, SOFT SITE=15)  
 HVY TRUCKS 10

**WALL INFORMATION**

HTH WALL 0 FT  
 AMBIENT = 0  
 BARRIER = 0 (0=WALL,1=BERM)

**VEHICLE MIX DATA**

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

**MISC. VEHICLE INFO**

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	99.9	--
MEDIUM TRUCKS=	4.00	99.8	--
HEAVY TRUCKS =	8.01	99.9	0.0

**NOISE OUTPUT DATA**

**NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)**

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	38.6	36.7	34.9	28.9	37.5	38.1
MEDIUM TRUCKS	33.0	31.5	25.1	23.6	32.0	32.3
HEAVY TRUCKS	34.9	33.5	24.5	25.7	34.1	34.2
<b>VEHICULAR NOISE</b>	<b>40.9</b>	<b>39.2</b>	<b>35.7</b>	<b>31.4</b>	<b>39.9</b>	<b>40.3</b>

**NOISE CONTOUR (FT)**

NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	0	0	1	3
LDN	0	0	1	3

## FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Vista Del Agua Specific Plan Noise Impact Study, City of Coachella  
 ROADWAY: Polk Street  
 SEGMENT: Avenue 48 to Avenue 50  
 LOCATION: City of Coachella

JOB #: 2398-2014-02  
 DATE: 28-Oct-14  
 ENGINEER: M. Dickerson

SCENARIO: Existing Conditions - W/O Project

### NOISE INPUT DATA

#### ROADWAY CONDITIONS

ADT = 647  
 SPEED = 25  
 PK HR % = 10  
 NEAR LANE/FAR LANE DIST = 12  
 ROAD ELEVATION = 0  
 GRADE = 0  
 PK HR VOL = 65

#### RECEIVER INPUT DATA

RECEIVER DISTANCE = 100  
 DIST C/L TO WALL = 0  
 RECEIVER HEIGHT = 5  
 WALL DISTANCE FROM RECEIVER = 100  
 PAD ELEVATION = 0  
 ROADWAY VIEW:  
     LF ANGLE = -90  
     RT ANGLE = 90  
     DF ANGLE = 180

#### SITE CONDITIONS

AUTOMOBILES 10  
 MED TRUCKS 10 (HARD SITE=10, SOFT SITE=15)  
 HVY TRUCKS 10

#### WALL INFORMATION

HTH WALL 0 FT  
 AMBIENT = 0  
 BARRIER = 0 (0=WALL,1=BERM)

#### VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

#### MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	99.9	--
MEDIUM TRUCKS=	4.00	99.8	--
HEAVY TRUCKS =	8.01	99.9	0.0

### NOISE OUTPUT DATA

#### NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	45.1	43.2	41.4	35.3	44.0	44.6
MEDIUM TRUCKS	39.5	38.0	31.6	30.1	38.5	38.8
HEAVY TRUCKS	41.4	40.0	31.0	32.2	40.6	40.7
<b>VEHICULAR NOISE</b>	<b>47.4</b>	<b>45.7</b>	<b>42.2</b>	<b>37.9</b>	<b>46.4</b>	<b>46.8</b>

#### NOISE CONTOUR (FT)

NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	0	2	5	15
LDN	0	1	4	14

**FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO**

PROJECT: Vista Del Agua Specific Plan Noise Impact Study, City of Coachella  
 ROADWAY: Vista Del Sur  
 SEGMENT: Dillon Road to Tyler Street  
 LOCATION: City of Coachella

JOB #: 2398-2014-02  
 DATE: 29-Oct-14  
 ENGINEER: M. Dickerson

SCENARIO: Existing Conditions - With Project

**NOISE INPUT DATA**

**ROADWAY CONDITIONS**

ADT = 3,403  
 SPEED = 25  
 PK HR % = 10  
 NEAR LANE/FAR LANE DIST = 12  
 ROAD ELEVATION = 0  
 GRADE = 0  
 PK HR VOL = 340

**RECEIVER INPUT DATA**

RECEIVER DISTANCE = 100  
 DIST C/L TO WALL = 0  
 RECEIVER HEIGHT = 5  
 WALL DISTANCE FROM RECEIVER = 100  
 PAD ELEVATION = 0  
 ROADWAY VIEW:  
     LF ANGLE = -90  
     RT ANGLE = 90  
     DF ANGLE = 180

**SITE CONDITIONS**

AUTOMOBILES 10  
 MED TRUCKS 10 (HARD SITE=10, SOFT SITE=15)  
 HVY TRUCKS 10

**WALL INFORMATION**

HTH WALL 0 FT  
 AMBIENT = 0  
 BARRIER = 0 (0=WALL,1=BERM)

**VEHICLE MIX DATA**

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

**MISC. VEHICLE INFO**

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	99.9	--
MEDIUM TRUCKS=	4.00	99.8	--
HEAVY TRUCKS =	8.01	99.9	0.0

**NOISE OUTPUT DATA**

**NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)**

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	52.3	50.4	48.6	42.6	51.2	51.8
MEDIUM TRUCKS	46.7	45.2	38.8	37.3	45.7	46.0
HEAVY TRUCKS	48.7	47.2	38.2	39.4	47.8	47.9
<b>VEHICULAR NOISE</b>	<b>54.6</b>	<b>52.9</b>	<b>49.4</b>	<b>45.1</b>	<b>53.6</b>	<b>54.0</b>

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	3	8	25	80
LDN	2	7	23	72



**FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO**

PROJECT: Vista Del Agua Specific Plan Noise Impact Study, City of Coachella  
 ROADWAY: Vista Del Sur  
 SEGMENT: Tyler Street to Street A  
 LOCATION: City of Coachella

JOB #: 2398-2014-02  
 DATE: 29-Oct-14  
 ENGINEER: M. Dickerson

SCENARIO: Existing Conditions - With Project

**NOISE INPUT DATA**

**ROADWAY CONDITIONS**

ADT = 2,959  
 SPEED = 40  
 PK HR % = 10  
 NEAR LANE/FAR LANE DIST = 40  
 ROAD ELEVATION = 0  
 GRADE = 0  
 PK HR VOL = 296

**RECEIVER INPUT DATA**

RECEIVER DISTANCE = 100  
 DIST C/L TO WALL = 0  
 RECEIVER HEIGHT = 5  
 WALL DISTANCE FROM RECEIVER = 100  
 PAD ELEVATION = 0  
 ROADWAY VIEW:  
     LF ANGLE = -90  
     RT ANGLE = 90  
     DF ANGLE = 180

**SITE CONDITIONS**

AUTOMOBILES 10  
 MED TRUCKS 10 (HARD SITE=10, SOFT SITE=15)  
 HVY TRUCKS 10

**WALL INFORMATION**

HTH WALL 0 FT  
 AMBIENT = 0  
 BARRIER = 0 (0=WALL,1=BERM)

**VEHICLE MIX DATA**

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

**MISC. VEHICLE INFO**

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	98.0	--
MEDIUM TRUCKS=	4.00	98.0	--
HEAVY TRUCKS =	8.01	98.0	0.0

**NOISE OUTPUT DATA**

**NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)**

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	57.6	55.7	54.0	47.9	56.5	57.1
MEDIUM TRUCKS	49.4	47.8	41.5	39.9	48.4	48.6
HEAVY TRUCKS	50.0	48.6	39.5	40.8	49.2	49.3
<b>VEHICULAR NOISE</b>	<b>58.8</b>	<b>57.1</b>	<b>54.4</b>	<b>49.2</b>	<b>57.8</b>	<b>58.3</b>

**NOISE CONTOUR (FT)**

NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	7	21	68	214
LDN	6	19	60	190

**FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO**

PROJECT: Vista Del Agua Specific Plan Noise Impact Study, City of Coachella  
 ROADWAY: Avenue 47  
 SEGMENT: Dillon Road to Tyler Street  
 LOCATION: City of Coachella

JOB #: 2398-2014-02  
 DATE: 29-Oct-14  
 ENGINEER: M. Dickerson

SCENARIO: Existing Conditions - With Project

**NOISE INPUT DATA**

**ROADWAY CONDITIONS**

ADT = 7,853  
 SPEED = 40  
 PK HR % = 10  
 NEAR LANE/FAR LANE DIST = 40  
 ROAD ELEVATION = 0  
 GRADE = 0  
 PK HR VOL = 785

**RECEIVER INPUT DATA**

RECEIVER DISTANCE = 100  
 DIST C/L TO WALL = 0  
 RECEIVER HEIGHT = 5  
 WALL DISTANCE FROM RECEIVER = 100  
 PAD ELEVATION = 0  
 ROADWAY VIEW:  
     LF ANGLE = -90  
     RT ANGLE = 90  
     DF ANGLE = 180

**SITE CONDITIONS**

AUTOMOBILES 10  
 MED TRUCKS 10 (HARD SITE=10, SOFT SITE=15)  
 HVY TRUCKS 10

**WALL INFORMATION**

HTH WALL 0 FT  
 AMBIENT = 0  
 BARRIER = 0 (0=WALL,1=BERM)

**VEHICLE MIX DATA**

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

**MISC. VEHICLE INFO**

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	98.0	--
MEDIUM TRUCKS=	4.00	98.0	--
HEAVY TRUCKS =	8.01	98.0	0.0

**NOISE OUTPUT DATA**

**NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)**

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	61.9	60.0	58.2	52.1	60.8	61.4
MEDIUM TRUCKS	53.6	52.1	45.7	44.2	52.6	52.9
HEAVY TRUCKS	54.2	52.8	43.8	45.0	53.4	53.5
<b>VEHICULAR NOISE</b>	<b>63.1</b>	<b>61.3</b>	<b>58.6</b>	<b>53.5</b>	<b>62.0</b>	<b>62.5</b>

**NOISE CONTOUR (FT)**

NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	18	57	179	567
LDN	16	51	160	505

**FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO**

PROJECT: Vista Del Agua Specific Plan Noise Impact Study, City of Coachella  
 ROADWAY: Avenue 47  
 SEGMENT: Tyler Street to Street A  
 LOCATION: City of Coachella

JOB #: 2398-2014-02  
 DATE: 29-Oct-14  
 ENGINEER: M. Dickerson

SCENARIO: Existing Conditions - With Project

**NOISE INPUT DATA**

**ROADWAY CONDITIONS**

ADT = 10,093  
 SPEED = 40  
 PK HR % = 10  
 NEAR LANE/FAR LANE DIST = 40  
 ROAD ELEVATION = 0  
 GRADE = 0  
 PK HR VOL = 1,009

**RECEIVER INPUT DATA**

RECEIVER DISTANCE = 100  
 DIST C/L TO WALL = 0  
 RECEIVER HEIGHT = 5  
 WALL DISTANCE FROM RECEIVER = 100  
 PAD ELEVATION = 0  
 ROADWAY VIEW:  
     LF ANGLE = -90  
     RT ANGLE = 90  
     DF ANGLE = 180

**SITE CONDITIONS**

AUTOMOBILES 10  
 MED TRUCKS 10 (HARD SITE=10, SOFT SITE=15)  
 HVY TRUCKS 10

**WALL INFORMATION**

HTH WALL 0 FT  
 AMBIENT = 0  
 BARRIER = 0 (0=WALL,1=BERM)

**VEHICLE MIX DATA**

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

**MISC. VEHICLE INFO**

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	98.0	--
MEDIUM TRUCKS=	4.00	98.0	--
HEAVY TRUCKS =	8.01	98.0	0.0

**NOISE OUTPUT DATA**

**NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)**

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	63.0	61.1	59.3	53.2	61.9	62.5
MEDIUM TRUCKS	54.7	53.2	46.8	45.3	53.7	54.0
HEAVY TRUCKS	55.3	53.9	44.9	46.1	54.5	54.6
<b>VEHICULAR NOISE</b>	<b>64.2</b>	<b>62.4</b>	<b>59.7</b>	<b>54.6</b>	<b>63.1</b>	<b>63.6</b>

**NOISE CONTOUR (FT)**

NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	23	73	230	729
LDN	21	65	205	649

**FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO**

PROJECT: Vista Del Agua Specific Plan Noise Impact Study, City of Coachella  
 ROADWAY: Avenue 47  
 SEGMENT: Street A to Polk Street  
 LOCATION: City of Coachella

JOB #: 2398-2014-02  
 DATE: 29-Oct-14  
 ENGINEER: M. Dickerson

SCENARIO: Existing Conditions - With Project

**NOISE INPUT DATA**

**ROADWAY CONDITIONS**

ADT = 3,861  
 SPEED = 40  
 PK HR % = 10  
 NEAR LANE/FAR LANE DIST = 40  
 ROAD ELEVATION = 0  
 GRADE = 0  
 PK HR VOL = 386

**RECEIVER INPUT DATA**

RECEIVER DISTANCE = 100  
 DIST C/L TO WALL = 0  
 RECEIVER HEIGHT = 5  
 WALL DISTANCE FROM RECEIVER = 100  
 PAD ELEVATION = 0  
 ROADWAY VIEW:  
     LF ANGLE = -90  
     RT ANGLE = 90  
     DF ANGLE = 180

**SITE CONDITIONS**

AUTOMOBILES 10  
 MED TRUCKS 10 (HARD SITE=10, SOFT SITE=15)  
 HVY TRUCKS 10

**WALL INFORMATION**

HTH WALL 0 FT  
 AMBIENT = 0  
 BARRIER = 0 (0=WALL,1=BERM)

**VEHICLE MIX DATA**

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

**MISC. VEHICLE INFO**

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	98.0	--
MEDIUM TRUCKS=	4.00	98.0	--
HEAVY TRUCKS =	8.01	98.0	0.0

**NOISE OUTPUT DATA**

**NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)**

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	58.8	56.9	55.1	49.1	57.7	58.3
MEDIUM TRUCKS	50.5	49.0	42.6	41.1	49.6	49.8
HEAVY TRUCKS	51.2	49.7	40.7	42.0	50.3	50.4
<b>VEHICULAR NOISE</b>	<b>60.0</b>	<b>58.2</b>	<b>55.5</b>	<b>50.4</b>	<b>59.0</b>	<b>59.5</b>

**NOISE CONTOUR (FT)**

NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	9	28	88	279
LDN	8	25	79	248

**FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO**

PROJECT: Vista Del Agua Specific Plan Noise Impact Study, City of Coachella  
 ROADWAY: Avenue 48  
 SEGMENT: Tyler Street to Street A  
 LOCATION: City of Coachella

JOB #: 2398-2014-02  
 DATE: 29-Oct-14  
 ENGINEER: M. Dickerson

SCENARIO: Existing Conditions - With Project

**NOISE INPUT DATA**

**ROADWAY CONDITIONS**

ADT = 3,525  
 SPEED = 40  
 PK HR % = 10  
 NEAR LANE/FAR LANE DIST = 40  
 ROAD ELEVATION = 0  
 GRADE = 0  
 PK HR VOL = 353

**RECEIVER INPUT DATA**

RECEIVER DISTANCE = 100  
 DIST C/L TO WALL = 0  
 RECEIVER HEIGHT = 5  
 WALL DISTANCE FROM RECEIVER = 100  
 PAD ELEVATION = 0  
 ROADWAY VIEW: LF ANGLE -90  
 RT ANGLE 90  
 DF ANGLE 180

**SITE CONDITIONS**

AUTOMOBILES 10  
 MED TRUCKS 10 (HARD SITE=10, SOFT SITE=15)  
 HVY TRUCKS 10

**WALL INFORMATION**

HTH WALL 0 FT  
 AMBIENT = 0  
 BARRIER = 0 (0=WALL,1=BERM)

**VEHICLE MIX DATA**

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

**MISC. VEHICLE INFO**

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	98.0	--
MEDIUM TRUCKS=	4.00	98.0	--
HEAVY TRUCKS =	8.01	98.0	0.0

**NOISE OUTPUT DATA**

**NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)**

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	58.4	56.5	54.7	48.7	57.3	57.9
MEDIUM TRUCKS	50.1	48.6	42.2	40.7	49.2	49.4
HEAVY TRUCKS	50.8	49.3	40.3	41.6	49.9	50.0
<b>VEHICULAR NOISE</b>	<b>59.6</b>	<b>57.8</b>	<b>55.1</b>	<b>50.0</b>	<b>58.6</b>	<b>59.1</b>

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	8	25	80	255
LDN	7	23	72	227

**FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO**

PROJECT: Vista Del Agua Specific Plan Noise Impact Study, City of Coachella  
 ROADWAY: Avenue 48  
 SEGMENT: Street A to Polk Street  
 LOCATION: City of Coachella

JOB #: 2398-2014-02  
 DATE: 29-Oct-14  
 ENGINEER: M. Dickerson

SCENARIO: Existing Conditions - With Project

**NOISE INPUT DATA**

**ROADWAY CONDITIONS**

ADT = 2,720  
 SPEED = 40  
 PK HR % = 10  
 NEAR LANE/FAR LANE DIST = 40  
 ROAD ELEVATION = 0  
 GRADE = 0  
 PK HR VOL = 272

**RECEIVER INPUT DATA**

RECEIVER DISTANCE = 100  
 DIST C/L TO WALL = 0  
 RECEIVER HEIGHT = 5  
 WALL DISTANCE FROM RECEIVER = 100  
 PAD ELEVATION = 0  
 ROADWAY VIEW:  
     LF ANGLE = -90  
     RT ANGLE = 90  
     DF ANGLE = 180

**SITE CONDITIONS**

AUTOMOBILES 10  
 MED TRUCKS 10 (HARD SITE=10, SOFT SITE=15)  
 HVY TRUCKS 10

**WALL INFORMATION**

HTH WALL 0 FT  
 AMBIENT = 0  
 BARRIER = 0 (0=WALL,1=BERM)

**VEHICLE MIX DATA**

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

**MISC. VEHICLE INFO**

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	98.0	--
MEDIUM TRUCKS=	4.00	98.0	--
HEAVY TRUCKS =	8.01	98.0	0.0

**NOISE OUTPUT DATA**

**NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)**

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	57.3	55.4	53.6	47.5	56.2	56.8
MEDIUM TRUCKS	49.0	47.5	41.1	39.6	48.0	48.3
HEAVY TRUCKS	49.6	48.2	39.2	40.4	48.8	48.9
<b>VEHICULAR NOISE</b>	<b>58.5</b>	<b>56.7</b>	<b>54.0</b>	<b>48.9</b>	<b>57.4</b>	<b>57.9</b>

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	6	20	62	196
LDN	6	17	55	175

**FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO**

PROJECT: Vista Del Agua Specific Plan Noise Impact Study, City of Coachella  
 ROADWAY: Tyler Street  
 SEGMENT: Vista Del Sur to Avenue 47  
 LOCATION: City of Coachella

JOB #: 2398-2014-02  
 DATE: 29-Oct-14  
 ENGINEER: M. Dickerson

SCENARIO: Existing Conditions - With Project

**NOISE INPUT DATA**

**ROADWAY CONDITIONS**

ADT = 476  
 SPEED = 25  
 PK HR % = 10  
 NEAR LANE/FAR LANE DIST = 12  
 ROAD ELEVATION = 0  
 GRADE = 0  
 PK HR VOL = 48

**RECEIVER INPUT DATA**

RECEIVER DISTANCE = 100  
 DIST C/L TO WALL = 0  
 RECEIVER HEIGHT = 5  
 WALL DISTANCE FROM RECEIVER = 100  
 PAD ELEVATION = 0  
 ROADWAY VIEW: LF ANGLE -90  
 RT ANGLE 90  
 DF ANGLE 180

**SITE CONDITIONS**

AUTOMOBILES 10  
 MED TRUCKS 10 (HARD SITE=10, SOFT SITE=15)  
 HVY TRUCKS 10

**WALL INFORMATION**

HTH WALL 0 FT  
 AMBIENT = 0  
 BARRIER = 0 (0=WALL,1=BERM)

**VEHICLE MIX DATA**

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

**MISC. VEHICLE INFO**

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	99.9	--
MEDIUM TRUCKS=	4.00	99.8	--
HEAVY TRUCKS =	8.01	99.9	0.0

**NOISE OUTPUT DATA**

**NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)**

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	43.7	41.8	40.1	34.0	42.6	43.2
MEDIUM TRUCKS	38.2	36.6	30.3	28.7	37.2	37.4
HEAVY TRUCKS	40.1	38.7	29.7	30.9	39.3	39.4
<b>VEHICULAR NOISE</b>	<b>46.1</b>	<b>44.4</b>	<b>40.9</b>	<b>36.5</b>	<b>45.1</b>	<b>45.5</b>

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	0	1	4	11
LDN	0	1	3	10

**FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO**

PROJECT: Vista Del Agua Specific Plan Noise Impact Study, City of Coachella  
 ROADWAY: Tyler Street  
 SEGMENT: Avenue 47 to Avenue 48  
 LOCATION: City of Coachella

JOB #: 2398-2014-02  
 DATE: 29-Oct-14  
 ENGINEER: M. Dickerson

SCENARIO: Existing Conditions - With Project

**NOISE INPUT DATA**

**ROADWAY CONDITIONS**

ADT = 3,053  
 SPEED = 25  
 PK HR % = 10  
 NEAR LANE/FAR LANE DIST = 12  
 ROAD ELEVATION = 0  
 GRADE = 0  
 PK HR VOL = 305

**RECEIVER INPUT DATA**

RECEIVER DISTANCE = 100  
 DIST C/L TO WALL = 0  
 RECEIVER HEIGHT = 5  
 WALL DISTANCE FROM RECEIVER = 100  
 PAD ELEVATION = 0  
 ROADWAY VIEW:  
     LF ANGLE = -90  
     RT ANGLE = 90  
     DF ANGLE = 180

**SITE CONDITIONS**

AUTOMOBILES 10  
 MED TRUCKS 10 (HARD SITE=10, SOFT SITE=15)  
 HVY TRUCKS 10

**WALL INFORMATION**

HTH WALL 0 FT  
 AMBIENT = 0  
 BARRIER = 0 (0=WALL,1=BERM)

**VEHICLE MIX DATA**

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

**MISC. VEHICLE INFO**

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	99.9	--
MEDIUM TRUCKS=	4.00	99.8	--
HEAVY TRUCKS =	8.01	99.9	0.0

**NOISE OUTPUT DATA**

**NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)**

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	51.8	49.9	48.2	42.1	50.7	51.3
MEDIUM TRUCKS	46.2	44.7	38.4	36.8	45.3	45.5
HEAVY TRUCKS	48.2	46.8	37.7	39.0	47.3	47.5
<b>VEHICULAR NOISE</b>	<b>54.1</b>	<b>52.4</b>	<b>48.9</b>	<b>44.6</b>	<b>53.1</b>	<b>53.6</b>

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	2	7	23	72
LDN	2	7	21	65



## FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Vista Del Agua Specific Plan Noise Impact Study, City of Coachella  
 ROADWAY: Tyler Street  
 SEGMENT: Avenue 48 to Avenue 50  
 LOCATION: City of Coachella

JOB #: 2398-2014-02  
 DATE: 29-Oct-14  
 ENGINEER: M. Dickerson

SCENARIO: Existing Conditions - With Project

### NOISE INPUT DATA

#### ROADWAY CONDITIONS

ADT = 6,251  
 SPEED = 25  
 PK HR % = 10  
 NEAR LANE/FAR LANE DIST = 12  
 ROAD ELEVATION = 0  
 GRADE = 0  
 PK HR VOL = 625

#### RECEIVER INPUT DATA

RECEIVER DISTANCE = 100  
 DIST C/L TO WALL = 0  
 RECEIVER HEIGHT = 5  
 WALL DISTANCE FROM RECEIVER = 100  
 PAD ELEVATION = 0  
 ROADWAY VIEW:  
     LF ANGLE = -90  
     RT ANGLE = 90  
     DF ANGLE = 180

#### SITE CONDITIONS

AUTOMOBILES 10  
 MED TRUCKS 10 (HARD SITE=10, SOFT SITE=15)  
 HVY TRUCKS 10

#### WALL INFORMATION

HTH WALL 0 FT  
 AMBIENT = 0  
 BARRIER = 0 (0=WALL,1=BERM)

#### VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

#### MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	99.9	--
MEDIUM TRUCKS=	4.00	99.8	--
HEAVY TRUCKS =	8.01	99.9	0.0

### NOISE OUTPUT DATA

#### NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	54.9	53.0	51.3	45.2	53.8	54.4
MEDIUM TRUCKS	49.3	47.8	41.5	39.9	48.4	48.6
HEAVY TRUCKS	51.3	49.9	40.8	42.1	50.4	50.6
<b>VEHICULAR NOISE</b>	<b>57.3</b>	<b>55.5</b>	<b>52.0</b>	<b>47.7</b>	<b>56.2</b>	<b>56.7</b>

#### NOISE CONTOUR (FT)

NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	5	15	46	147
LDN	4	13	42	133

**FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO**

PROJECT: Vista Del Agua Specific Plan Noise Impact Study, City of Coachella  
 ROADWAY: Street A  
 SEGMENT: Vista Del Sur to Avenue 47  
 LOCATION: City of Coachella

JOB #: 2398-2014-02  
 DATE: 29-Oct-14  
 ENGINEER: M. Dickerson

SCENARIO: Existing Conditions - With Project

**NOISE INPUT DATA**

**ROADWAY CONDITIONS**

ADT = 7,921  
 SPEED = 40  
 PK HR % = 10  
 NEAR LANE/FAR LANE DIST = 40  
 ROAD ELEVATION = 0  
 GRADE = 0  
 PK HR VOL = 792

**RECEIVER INPUT DATA**

RECEIVER DISTANCE = 100  
 DIST C/L TO WALL = 0  
 RECEIVER HEIGHT = 5  
 WALL DISTANCE FROM RECEIVER = 100  
 PAD ELEVATION = 0  
 ROADWAY VIEW:  
     LF ANGLE = -90  
     RT ANGLE = 90  
     DF ANGLE = 180

**SITE CONDITIONS**

AUTOMOBILES 10  
 MED TRUCKS 10 (HARD SITE=10, SOFT SITE=15)  
 HVY TRUCKS 10

**WALL INFORMATION**

HTH WALL 0 FT  
 AMBIENT = 0  
 BARRIER = 0 (0=WALL,1=BERM)

**VEHICLE MIX DATA**

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

**MISC. VEHICLE INFO**

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	98.0	--
MEDIUM TRUCKS=	4.00	98.0	--
HEAVY TRUCKS =	8.01	98.0	0.0

**NOISE OUTPUT DATA**

**NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)**

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	61.9	60.0	58.3	52.2	60.8	61.4
MEDIUM TRUCKS	53.6	52.1	45.8	44.2	52.7	52.9
HEAVY TRUCKS	54.3	52.9	43.8	45.1	53.4	53.6
<b>VEHICULAR NOISE</b>	<b>63.1</b>	<b>61.3</b>	<b>58.6</b>	<b>53.5</b>	<b>62.1</b>	<b>62.6</b>

**NOISE CONTOUR (FT)**

NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	18	57	181	572
LDN	16	51	161	510

## FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Vista Del Agua Specific Plan Noise Impact Study, City of Coachella  
 ROADWAY: Street A  
 SEGMENT: Avenue 47 to Avenue 48  
 LOCATION: City of Coachella

JOB #: 2398-2014-02  
 DATE: 29-Oct-14  
 ENGINEER: M. Dickerson

SCENARIO: Existing Conditions - With Project

### NOISE INPUT DATA

#### ROADWAY CONDITIONS

ADT = 3,577  
 SPEED = 40  
 PK HR % = 10  
 NEAR LANE/FAR LANE DIST = 40  
 ROAD ELEVATION = 0  
 GRADE = 0  
 PK HR VOL = 358

#### RECEIVER INPUT DATA

RECEIVER DISTANCE = 100  
 DIST C/L TO WALL = 0  
 RECEIVER HEIGHT = 5  
 WALL DISTANCE FROM RECEIVER = 100  
 PAD ELEVATION = 0  
 ROADWAY VIEW:  
     LF ANGLE = -90  
     RT ANGLE = 90  
     DF ANGLE = 180

#### SITE CONDITIONS

AUTOMOBILES 10  
 MED TRUCKS 10 (HARD SITE=10, SOFT SITE=15)  
 HVY TRUCKS 10

#### WALL INFORMATION

HTH WALL 0 FT  
 AMBIENT = 0  
 BARRIER = 0 (0=WALL,1=BERM)

#### VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

#### MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	98.0	--
MEDIUM TRUCKS=	4.00	98.0	--
HEAVY TRUCKS =	8.01	98.0	0.0

### NOISE OUTPUT DATA

#### NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	58.5	56.6	54.8	48.7	57.4	58.0
MEDIUM TRUCKS	50.2	48.7	42.3	40.8	49.2	49.5
HEAVY TRUCKS	50.8	49.4	40.4	41.6	50.0	50.1
<b>VEHICULAR NOISE</b>	<b>59.7</b>	<b>57.9</b>	<b>55.2</b>	<b>50.1</b>	<b>58.6</b>	<b>59.1</b>

#### NOISE CONTOUR (FT)

NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	8	26	82	258
LDN	7	23	73	230

## FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Vista Del Agua Specific Plan Noise Impact Study, City of Coachella  
 ROADWAY: Polk Street  
 SEGMENT: Avenue 47 to Avenue 48  
 LOCATION: City of Coachella

JOB #: 2398-2014-02  
 DATE: 29-Oct-14  
 ENGINEER: M. Dickerson

SCENARIO: Existing Conditions - With Project

### NOISE INPUT DATA

#### ROADWAY CONDITIONS

ADT = 1,143  
 SPEED = 40  
 PK HR % = 10  
 NEAR LANE/FAR LANE DIST = 40  
 ROAD ELEVATION = 0  
 GRADE = 0  
 PK HR VOL = 114

#### RECEIVER INPUT DATA

RECEIVER DISTANCE = 100  
 DIST C/L TO WALL = 0  
 RECEIVER HEIGHT = 5  
 WALL DISTANCE FROM RECEIVER = 100  
 PAD ELEVATION = 0  
 ROADWAY VIEW:  
     LF ANGLE = -90  
     RT ANGLE = 90  
     DF ANGLE = 180

#### SITE CONDITIONS

AUTOMOBILES 10  
 MED TRUCKS 10 (HARD SITE=10, SOFT SITE=15)  
 HVY TRUCKS 10

#### WALL INFORMATION

HTH WALL 0 FT  
 AMBIENT = 0  
 BARRIER = 0 (0=WALL,1=BERM)

#### VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

#### MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	98.0	--
MEDIUM TRUCKS=	4.00	98.0	--
HEAVY TRUCKS =	8.01	98.0	0.0

### NOISE OUTPUT DATA

#### NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	53.5	51.6	49.8	43.8	52.4	53.0
MEDIUM TRUCKS	45.2	43.7	37.4	35.8	44.3	44.5
HEAVY TRUCKS	45.9	44.5	35.4	36.7	45.0	45.1
<b>VEHICULAR NOISE</b>	<b>54.7</b>	<b>52.9</b>	<b>50.2</b>	<b>45.1</b>	<b>53.7</b>	<b>54.2</b>

#### NOISE CONTOUR (FT)

NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	3	8	26	83
LDN	2	7	23	74

**FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO**

PROJECT: Vista Del Agua Specific Plan Noise Impact Study, City of Coachella  
 ROADWAY: Polk Street  
 SEGMENT: Avenue 48 to Avenue 50  
 LOCATION: City of Coachella

JOB #: 2398-2014-02  
 DATE: 29-Oct-14  
 ENGINEER: M. Dickerson

SCENARIO: Existing Conditions - With Project

**NOISE INPUT DATA**

**ROADWAY CONDITIONS**

ADT = 3,081  
 SPEED = 25  
 PK HR % = 10  
 NEAR LANE/FAR LANE DIST = 12  
 ROAD ELEVATION = 0  
 GRADE = 0  
 PK HR VOL = 308

**RECEIVER INPUT DATA**

RECEIVER DISTANCE = 100  
 DIST C/L TO WALL = 0  
 RECEIVER HEIGHT = 5  
 WALL DISTANCE FROM RECEIVER = 100  
 PAD ELEVATION = 0  
 ROADWAY VIEW:  
     LF ANGLE = -90  
     RT ANGLE = 90  
     DF ANGLE = 180

**SITE CONDITIONS**

AUTOMOBILES 10  
 MED TRUCKS 10 (HARD SITE=10, SOFT SITE=15)  
 HVY TRUCKS 10

**WALL INFORMATION**

HTH WALL 0 FT  
 AMBIENT = 0  
 BARRIER = 0 (0=WALL,1=BERM)

**VEHICLE MIX DATA**

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

**MISC. VEHICLE INFO**

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	99.9	--
MEDIUM TRUCKS=	4.00	99.8	--
HEAVY TRUCKS =	8.01	99.9	0.0

**NOISE OUTPUT DATA**

**NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)**

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	51.9	50.0	48.2	42.1	50.8	51.4
MEDIUM TRUCKS	46.3	44.8	38.4	36.9	45.3	45.5
HEAVY TRUCKS	48.2	46.8	37.8	39.0	47.4	47.5
<b>VEHICULAR NOISE</b>	<b>54.2</b>	<b>52.5</b>	<b>49.0</b>	<b>44.6</b>	<b>53.2</b>	<b>53.6</b>

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	2	7	23	72
LDN	2	7	21	66

**FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO**

PROJECT: Vista Del Agua Specific Plan Noise Impact Study, City of Coachella  
 ROADWAY: Vista Del Sur  
 SEGMENT: Dillon Road to Tyler Street  
 LOCATION: City of Coachella

JOB #: 2398-2014-02  
 DATE: 29-Oct-14  
 ENGINEER: M. Dickerson

SCENARIO: Opening Year 2022 - Without Project

**NOISE INPUT DATA**

**ROADWAY CONDITIONS**

ADT = 683  
 SPEED = 25  
 PK HR % = 10  
 NEAR LANE/FAR LANE DIST = 12  
 ROAD ELEVATION = 0  
 GRADE = 0  
 PK HR VOL = 68

**RECEIVER INPUT DATA**

RECEIVER DISTANCE = 100  
 DIST C/L TO WALL = 0  
 RECEIVER HEIGHT = 5  
 WALL DISTANCE FROM RECEIVER = 100  
 PAD ELEVATION = 0  
 ROADWAY VIEW:  
     LF ANGLE = -90  
     RT ANGLE = 90  
     DF ANGLE = 180

**SITE CONDITIONS**

AUTOMOBILES 10  
 MED TRUCKS 10 (HARD SITE=10, SOFT SITE=15)  
 HVY TRUCKS 10

**WALL INFORMATION**

HTH WALL 0 FT  
 AMBIENT = 0  
 BARRIER = 0 (0=WALL,1=BERM)

**VEHICLE MIX DATA**

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

**MISC. VEHICLE INFO**

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	99.9	--
MEDIUM TRUCKS=	4.00	99.8	--
HEAVY TRUCKS =	8.01	99.9	0.0

**NOISE OUTPUT DATA**

**NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)**

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	45.3	43.4	41.6	35.6	44.2	44.8
MEDIUM TRUCKS	39.7	38.2	31.9	30.3	38.8	39.0
HEAVY TRUCKS	41.7	40.3	31.2	32.5	40.8	41.0
<b>VEHICULAR NOISE</b>	<b>47.6</b>	<b>45.9</b>	<b>42.4</b>	<b>38.1</b>	<b>46.6</b>	<b>47.1</b>

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	1	2	5	16
LDN	0	1	5	15

**FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO**

PROJECT: Vista Del Agua Specific Plan Noise Impact Study, City of Coachella  
 ROADWAY: Vista Del Sur  
 SEGMENT: Tyler Street to Street A  
 LOCATION: City of Coachella

JOB #: 2398-2014-02  
 DATE: 29-Oct-14  
 ENGINEER: M. Dickerson

SCENARIO: Opening Year 2022 - Without Project

**NOISE INPUT DATA**

**ROADWAY CONDITIONS**

ADT = 168  
 SPEED = 25  
 PK HR % = 10  
 NEAR LANE/FAR LANE DIST = 12  
 ROAD ELEVATION = 0  
 GRADE = 0  
 PK HR VOL = 17

**RECEIVER INPUT DATA**

RECEIVER DISTANCE = 100  
 DIST C/L TO WALL = 0  
 RECEIVER HEIGHT = 5  
 WALL DISTANCE FROM RECEIVER = 100  
 PAD ELEVATION = 0  
 ROADWAY VIEW:  
     LF ANGLE = -90  
     RT ANGLE = 90  
     DF ANGLE = 180

**SITE CONDITIONS**

AUTOMOBILES 10  
 MED TRUCKS 10 (HARD SITE=10, SOFT SITE=15)  
 HVY TRUCKS 10

**WALL INFORMATION**

HTH WALL 0 FT  
 AMBIENT = 0  
 BARRIER = 0 (0=WALL,1=BERM)

**VEHICLE MIX DATA**

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

**MISC. VEHICLE INFO**

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	99.9	--
MEDIUM TRUCKS=	4.00	99.8	--
HEAVY TRUCKS =	8.01	99.9	0.0

**NOISE OUTPUT DATA**

**NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)**

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	39.2	37.3	35.6	29.5	38.1	38.7
MEDIUM TRUCKS	33.6	32.1	25.8	24.2	32.7	32.9
HEAVY TRUCKS	35.6	34.2	25.1	26.4	34.7	34.9
<b>VEHICULAR NOISE</b>	<b>41.6</b>	<b>39.8</b>	<b>36.3</b>	<b>32.0</b>	<b>40.5</b>	<b>41.0</b>

**NOISE CONTOUR (FT)**

NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	0	0	1	4
LDN	0	0	1	4

**FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO**

PROJECT: Vista Del Agua Specific Plan Noise Impact Study, City of Coachella  
 ROADWAY: Avenue 47  
 SEGMENT: Dillon Road to Tyler Street  
 LOCATION: City of Coachella

JOB #: 2398-2014-02  
 DATE: 29-Oct-14  
 ENGINEER: M. Dickerson

SCENARIO: Opening Year 2022 - Without Project

**NOISE INPUT DATA**

**ROADWAY CONDITIONS**

ADT = 28,349  
 SPEED = 40  
 PK HR % = 10  
 NEAR LANE/FAR LANE DIST = 40  
 ROAD ELEVATION = 0  
 GRADE = 0  
 PK HR VOL = 2,835

**RECEIVER INPUT DATA**

RECEIVER DISTANCE = 100  
 DIST C/L TO WALL = 0  
 RECEIVER HEIGHT = 5  
 WALL DISTANCE FROM RECEIVER = 100  
 PAD ELEVATION = 0  
 ROADWAY VIEW:  
     LF ANGLE = -90  
     RT ANGLE = 90  
     DF ANGLE = 180

**SITE CONDITIONS**

AUTOMOBILES 10  
 MED TRUCKS 10 (HARD SITE=10, SOFT SITE=15)  
 HVY TRUCKS 10

**WALL INFORMATION**

HTH WALL 0 FT  
 AMBIENT = 0  
 BARRIER = 0 (0=WALL,1=BERM)

**VEHICLE MIX DATA**

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

**MISC. VEHICLE INFO**

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	98.0	--
MEDIUM TRUCKS=	4.00	98.0	--
HEAVY TRUCKS =	8.01	98.0	0.0

**NOISE OUTPUT DATA**

**NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)**

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	67.5	65.6	63.8	57.7	66.4	67.0
MEDIUM TRUCKS	59.2	57.7	51.3	49.8	58.2	58.4
HEAVY TRUCKS	59.8	58.4	49.4	50.6	59.0	59.1
<b>VEHICULAR NOISE</b>	<b>68.7</b>	<b>66.9</b>	<b>64.2</b>	<b>59.0</b>	<b>67.6</b>	<b>68.1</b>

**NOISE CONTOUR (FT)**

NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	65	205	647	2047
LDN	58	182	577	1824



**FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO**

PROJECT: Vista Del Agua Specific Plan Noise Impact Study, City of Coachella  
 ROADWAY: Avenue 47  
 SEGMENT: Tyler Street to Street A  
 LOCATION: City of Coachella

JOB #: 2398-2014-02  
 DATE: 29-Oct-14  
 ENGINEER: M. Dickerson

SCENARIO: Opening Year 2022 - Without Project

**NOISE INPUT DATA**

**ROADWAY CONDITIONS**

ADT = 61  
 SPEED = 25  
 PK HR % = 10  
 NEAR LANE/FAR LANE DIST = 12  
 ROAD ELEVATION = 0  
 GRADE = 0  
 PK HR VOL = 6

**RECEIVER INPUT DATA**

RECEIVER DISTANCE = 100  
 DIST C/L TO WALL = 0  
 RECEIVER HEIGHT = 5  
 WALL DISTANCE FROM RECEIVER = 100  
 PAD ELEVATION = 0  
 ROADWAY VIEW:  
     LF ANGLE = -90  
     RT ANGLE = 90  
     DF ANGLE = 180

**SITE CONDITIONS**

AUTOMOBILES 10  
 MED TRUCKS 10 (HARD SITE=10, SOFT SITE=15)  
 HVY TRUCKS 10

**WALL INFORMATION**

HTH WALL 0 FT  
 AMBIENT = 0  
 BARRIER = 0 (0=WALL,1=BERM)

**VEHICLE MIX DATA**

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

**MISC. VEHICLE INFO**

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	99.9	--
MEDIUM TRUCKS=	4.00	99.8	--
HEAVY TRUCKS =	8.01	99.9	0.0

**NOISE OUTPUT DATA**

**NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)**

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	34.9	33.0	31.2	25.1	33.8	34.4
MEDIUM TRUCKS	29.3	27.8	21.4	19.9	28.3	28.5
HEAVY TRUCKS	31.2	29.8	20.8	22.0	30.4	30.5
<b>VEHICULAR NOISE</b>	<b>37.2</b>	<b>35.5</b>	<b>32.0</b>	<b>27.6</b>	<b>36.2</b>	<b>36.6</b>

**NOISE CONTOUR (FT)**

NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	0	0	0	1
LDN	0	0	0	1

## FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Vista Del Agua Specific Plan Noise Impact Study, City of Coachella  
 ROADWAY: Avenue 47  
 SEGMENT: Street A to Polk Street  
 LOCATION: City of Coachella

JOB #: 2398-2014-02  
 DATE: 29-Oct-14  
 ENGINEER: M. Dickerson

SCENARIO: Opening Year 2022 - Without Project

### NOISE INPUT DATA

#### ROADWAY CONDITIONS

ADT = 61  
 SPEED = 25  
 PK HR % = 10  
 NEAR LANE/FAR LANE DIST = 12  
 ROAD ELEVATION = 0  
 GRADE = 0  
 PK HR VOL = 6

#### RECEIVER INPUT DATA

RECEIVER DISTANCE = 100  
 DIST C/L TO WALL = 0  
 RECEIVER HEIGHT = 5  
 WALL DISTANCE FROM RECEIVER = 100  
 PAD ELEVATION = 0  
 ROADWAY VIEW:  
     LF ANGLE = -90  
     RT ANGLE = 90  
     DF ANGLE = 180

#### SITE CONDITIONS

AUTOMOBILES 10  
 MED TRUCKS 10 (HARD SITE=10, SOFT SITE=15)  
 HVY TRUCKS 10

#### WALL INFORMATION

HTH WALL 0 FT  
 AMBIENT = 0  
 BARRIER = 0 (0=WALL,1=BERM)

#### VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

#### MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	99.9	--
MEDIUM TRUCKS=	4.00	99.8	--
HEAVY TRUCKS =	8.01	99.9	0.0

### NOISE OUTPUT DATA

#### NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	34.8	32.9	31.2	25.1	33.7	34.3
MEDIUM TRUCKS	29.2	27.7	21.4	19.8	28.3	28.5
HEAVY TRUCKS	31.2	29.8	20.7	22.0	30.3	30.5
<b>VEHICULAR NOISE</b>	<b>37.1</b>	<b>35.4</b>	<b>31.9</b>	<b>27.6</b>	<b>36.1</b>	<b>36.6</b>

#### NOISE CONTOUR (FT)

NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	0	0	0	1
LDN	0	0	0	1

**FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO**

PROJECT: Vista Del Agua Specific Plan Noise Impact Study, City of Coachella  
 ROADWAY: Avenue 48  
 SEGMENT: Tyler Street to Street A  
 LOCATION: City of Coachella

JOB #: 2398-2014-02  
 DATE: 29-Oct-14  
 ENGINEER: M. Dickerson

SCENARIO: Opening Year 2022 - Without Project

**NOISE INPUT DATA**

**ROADWAY CONDITIONS**

ADT = 61  
 SPEED = 25  
 PK HR % = 10  
 NEAR LANE/FAR LANE DIST = 12  
 ROAD ELEVATION = 0  
 GRADE = 0  
 PK HR VOL = 6

**RECEIVER INPUT DATA**

RECEIVER DISTANCE = 100  
 DIST C/L TO WALL = 0  
 RECEIVER HEIGHT = 5  
 WALL DISTANCE FROM RECEIVER = 100  
 PAD ELEVATION = 0  
 ROADWAY VIEW:  
     LF ANGLE = -90  
     RT ANGLE = 90  
     DF ANGLE = 180

**SITE CONDITIONS**

AUTOMOBILES 10  
 MED TRUCKS 10 (HARD SITE=10, SOFT SITE=15)  
 HVY TRUCKS 10

**WALL INFORMATION**

HTH WALL 0 FT  
 AMBIENT = 0  
 BARRIER = 0 (0=WALL,1=BERM)

**VEHICLE MIX DATA**

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

**MISC. VEHICLE INFO**

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	99.9	--
MEDIUM TRUCKS=	4.00	99.8	--
HEAVY TRUCKS =	8.01	99.9	0.0

**NOISE OUTPUT DATA**

**NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)**

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	34.9	33.0	31.2	25.1	33.8	34.4
MEDIUM TRUCKS	29.3	27.8	21.4	19.9	28.3	28.5
HEAVY TRUCKS	31.2	29.8	20.8	22.0	30.4	30.5
<b>VEHICULAR NOISE</b>	<b>37.2</b>	<b>35.5</b>	<b>32.0</b>	<b>27.6</b>	<b>36.2</b>	<b>36.6</b>

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	0	0	0	1
LDN	0	0	0	1

## FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Vista Del Agua Specific Plan Noise Impact Study, City of Coachella  
 ROADWAY: Avenue 48  
 SEGMENT: Street A to Polk Street  
 LOCATION: City of Coachella

JOB #: 2398-2014-02  
 DATE: 29-Oct-14  
 ENGINEER: M. Dickerson

SCENARIO: Opening Year 2022 - Without Project

### NOISE INPUT DATA

#### ROADWAY CONDITIONS

ADT = 92  
 SPEED = 25  
 PK HR % = 10  
 NEAR LANE/FAR LANE DIST = 12  
 ROAD ELEVATION = 0  
 GRADE = 0  
 PK HR VOL = 9

#### RECEIVER INPUT DATA

RECEIVER DISTANCE = 100  
 DIST C/L TO WALL = 0  
 RECEIVER HEIGHT = 5  
 WALL DISTANCE FROM RECEIVER = 100  
 PAD ELEVATION = 0  
 ROADWAY VIEW:  
     LF ANGLE = -90  
     RT ANGLE = 90  
     DF ANGLE = 180

#### SITE CONDITIONS

AUTOMOBILES 10  
 MED TRUCKS 10 (HARD SITE=10, SOFT SITE=15)  
 HVY TRUCKS 10

#### WALL INFORMATION

HTH WALL 0 FT  
 AMBIENT = 0  
 BARRIER = 0 (0=WALL,1=BERM)

#### VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

#### MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	99.9	--
MEDIUM TRUCKS=	4.00	99.8	--
HEAVY TRUCKS =	8.01	99.9	0.0

### NOISE OUTPUT DATA

#### NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	36.6	34.7	32.9	26.9	35.5	36.1
MEDIUM TRUCKS	31.0	29.5	23.1	21.6	30.0	30.3
HEAVY TRUCKS	33.0	31.5	22.5	23.7	32.1	32.2
<b>VEHICULAR NOISE</b>	<b>38.9</b>	<b>37.2</b>	<b>33.7</b>	<b>29.4</b>	<b>37.9</b>	<b>38.3</b>

#### NOISE CONTOUR (FT)

NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	0	0	1	2
LDN	0	0	1	2

**FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO**

PROJECT: Vista Del Agua Specific Plan Noise Impact Study, City of Coachella  
 ROADWAY: Tyler Street  
 SEGMENT: Vista Del Sur to Avenue 47  
 LOCATION: City of Coachella

JOB #: 2398-2014-02  
 DATE: 29-Oct-14  
 ENGINEER: M. Dickerson

SCENARIO: Opening Year 2022 - Without Project

**NOISE INPUT DATA**

**ROADWAY CONDITIONS**

ADT = 552  
 SPEED = 40  
 PK HR % = 10  
 NEAR LANE/FAR LANE DIST = 40  
 ROAD ELEVATION = 0  
 GRADE = 0  
 PK HR VOL = 55

**RECEIVER INPUT DATA**

RECEIVER DISTANCE = 100  
 DIST C/L TO WALL = 0  
 RECEIVER HEIGHT = 5  
 WALL DISTANCE FROM RECEIVER = 100  
 PAD ELEVATION = 0  
 ROADWAY VIEW:  
     LF ANGLE = -90  
     RT ANGLE = 90  
     DF ANGLE = 180

**SITE CONDITIONS**

AUTOMOBILES 10  
 MED TRUCKS 10 (HARD SITE=10, SOFT SITE=15)  
 HVY TRUCKS 10

**WALL INFORMATION**

HTH WALL 0 FT  
 AMBIENT = 0  
 BARRIER = 0 (0=WALL,1=BERM)

**VEHICLE MIX DATA**

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

**MISC. VEHICLE INFO**

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	98.0	--
MEDIUM TRUCKS=	4.00	98.0	--
HEAVY TRUCKS =	8.01	98.0	0.0

**NOISE OUTPUT DATA**

**NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)**

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	50.3	48.5	46.7	40.6	49.2	49.9
MEDIUM TRUCKS	42.1	40.6	34.2	32.7	41.1	41.3
HEAVY TRUCKS	42.7	41.3	32.3	33.5	41.9	42.0
<b>VEHICULAR NOISE</b>	<b>51.6</b>	<b>49.8</b>	<b>47.1</b>	<b>41.9</b>	<b>50.5</b>	<b>51.0</b>

**NOISE CONTOUR (FT)**

NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	1	4	13	40
LDN	1	4	11	36

**FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO**

PROJECT: Vista Del Agua Specific Plan Noise Impact Study, City of Coachella  
 ROADWAY: Tyler Street  
 SEGMENT: Avenue 47 to Avenue 48  
 LOCATION: City of Coachella

JOB #: 2398-2014-02  
 DATE: 29-Oct-14  
 ENGINEER: M. Dickerson

SCENARIO: Opening Year 2022 - Without Project

**NOISE INPUT DATA**

**ROADWAY CONDITIONS**

ADT = 11,745  
 SPEED = 40  
 PK HR % = 10  
 NEAR LANE/FAR LANE DIST = 40  
 ROAD ELEVATION = 0  
 GRADE = 0  
 PK HR VOL = 1,175

**RECEIVER INPUT DATA**

RECEIVER DISTANCE = 100  
 DIST C/L TO WALL = 0  
 RECEIVER HEIGHT = 5  
 WALL DISTANCE FROM RECEIVER = 100  
 PAD ELEVATION = 0  
 ROADWAY VIEW:  
     LF ANGLE = -90  
     RT ANGLE = 90  
     DF ANGLE = 180

**SITE CONDITIONS**

AUTOMOBILES 10  
 MED TRUCKS 10 (HARD SITE=10, SOFT SITE=15)  
 HVY TRUCKS 10

**WALL INFORMATION**

HTH WALL 0 FT  
 AMBIENT = 0  
 BARRIER = 0 (0=WALL,1=BERM)

**VEHICLE MIX DATA**

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

**MISC. VEHICLE INFO**

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	98.0	--
MEDIUM TRUCKS=	4.00	98.0	--
HEAVY TRUCKS =	8.01	98.0	0.0

**NOISE OUTPUT DATA**

**NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)**

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	63.6	61.7	60.0	53.9	62.5	63.1
MEDIUM TRUCKS	55.3	53.8	47.5	45.9	54.4	54.6
HEAVY TRUCKS	56.0	54.6	45.5	46.8	55.1	55.3
<b>VEHICULAR NOISE</b>	<b>64.8</b>	<b>63.0</b>	<b>60.3</b>	<b>55.2</b>	<b>63.8</b>	<b>64.3</b>

**NOISE CONTOUR (FT)**

NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	27	85	268	848
LDN	24	76	239	756

**FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO**

PROJECT: Vista Del Agua Specific Plan Noise Impact Study, City of Coachella  
 ROADWAY: Tyler Street  
 SEGMENT: Avenue 48 to Avenue 50  
 LOCATION: City of Coachella

JOB #: 2398-2014-02  
 DATE: 29-Oct-14  
 ENGINEER: M. Dickerson

SCENARIO: Opening Year 2022 - Without Project

**NOISE INPUT DATA**

**ROADWAY CONDITIONS**

ADT = 12,854  
 SPEED = 40  
 PK HR % = 10  
 NEAR LANE/FAR LANE DIST = 40  
 ROAD ELEVATION = 0  
 GRADE = 0  
 PK HR VOL = 1,285

**RECEIVER INPUT DATA**

RECEIVER DISTANCE = 100  
 DIST C/L TO WALL = 0  
 RECEIVER HEIGHT = 5  
 WALL DISTANCE FROM RECEIVER = 100  
 PAD ELEVATION = 0  
 ROADWAY VIEW:  
     LF ANGLE = -90  
     RT ANGLE = 90  
     DF ANGLE = 180

**SITE CONDITIONS**

AUTOMOBILES 10  
 MED TRUCKS 10 (HARD SITE=10, SOFT SITE=15)  
 HVY TRUCKS 10

**WALL INFORMATION**

HTH WALL 0 FT  
 AMBIENT = 0  
 BARRIER = 0 (0=WALL,1=BERM)

**VEHICLE MIX DATA**

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

**MISC. VEHICLE INFO**

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	98.0	--
MEDIUM TRUCKS=	4.00	98.0	--
HEAVY TRUCKS =	8.01	98.0	0.0

**NOISE OUTPUT DATA**

**NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)**

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	64.0	62.1	60.4	54.3	62.9	63.5
MEDIUM TRUCKS	55.7	54.2	47.9	46.3	54.8	55.0
HEAVY TRUCKS	56.4	55.0	45.9	47.2	55.5	55.7
<b>VEHICULAR NOISE</b>	<b>65.2</b>	<b>63.4</b>	<b>60.7</b>	<b>55.6</b>	<b>64.2</b>	<b>64.7</b>

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	29	93	294	928
LDN	26	83	262	827

**FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO**

PROJECT: Vista Del Agua Specific Plan Noise Impact Study, City of Coachella  
 ROADWAY: Polk Street  
 SEGMENT: Avenue 47 to Avenue 48  
 LOCATION: City of Coachella

JOB #: 2398-2014-02  
 DATE: 29-Oct-14  
 ENGINEER: M. Dickerson

SCENARIO: Opening Year 2022 - Without Project

**NOISE INPUT DATA**

**ROADWAY CONDITIONS**

ADT = 168  
 SPEED = 25  
 PK HR % = 10  
 NEAR LANE/FAR LANE DIST = 12  
 ROAD ELEVATION = 0  
 GRADE = 0  
 PK HR VOL = 17

**RECEIVER INPUT DATA**

RECEIVER DISTANCE = 100  
 DIST C/L TO WALL = 0  
 RECEIVER HEIGHT = 5  
 WALL DISTANCE FROM RECEIVER = 100  
 PAD ELEVATION = 0  
 ROADWAY VIEW:  
     LF ANGLE = -90  
     RT ANGLE = 90  
     DF ANGLE = 180

**SITE CONDITIONS**

AUTOMOBILES 10  
 MED TRUCKS 10 (HARD SITE=10, SOFT SITE=15)  
 HVY TRUCKS 10

**WALL INFORMATION**

HTH WALL 0 FT  
 AMBIENT = 0  
 BARRIER = 0 (0=WALL,1=BERM)

**VEHICLE MIX DATA**

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

**MISC. VEHICLE INFO**

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	99.9	--
MEDIUM TRUCKS=	4.00	99.8	--
HEAVY TRUCKS =	8.01	99.9	0.0

**NOISE OUTPUT DATA**

**NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)**

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	39.2	37.3	35.6	29.5	38.1	38.7
MEDIUM TRUCKS	33.6	32.1	25.8	24.2	32.7	32.9
HEAVY TRUCKS	35.6	34.2	25.1	26.4	34.7	34.9
<b>VEHICULAR NOISE</b>	<b>41.6</b>	<b>39.8</b>	<b>36.3</b>	<b>32.0</b>	<b>40.5</b>	<b>41.0</b>

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	0	0	1	4
LDN	0	0	1	4



**FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO**

PROJECT: Vista Del Agua Specific Plan Noise Impact Study, City of Coachella  
 ROADWAY: Polk Street  
 SEGMENT: Avenue 48 to Avenue 50  
 LOCATION: City of Coachella

JOB #: 2398-2014-02  
 DATE: 29-Oct-14  
 ENGINEER: M. Dickerson

SCENARIO: Opening Year 2022 - Without Project

**NOISE INPUT DATA**

**ROADWAY CONDITIONS**

ADT = 751  
 SPEED = 25  
 PK HR % = 10  
 NEAR LANE/FAR LANE DIST = 12  
 ROAD ELEVATION = 0  
 GRADE = 0  
 PK HR VOL = 75

**RECEIVER INPUT DATA**

RECEIVER DISTANCE = 100  
 DIST C/L TO WALL = 0  
 RECEIVER HEIGHT = 5  
 WALL DISTANCE FROM RECEIVER = 100  
 PAD ELEVATION = 0  
 ROADWAY VIEW:  
     LF ANGLE = -90  
     RT ANGLE = 90  
     DF ANGLE = 180

**SITE CONDITIONS**

AUTOMOBILES 10  
 MED TRUCKS 10 (HARD SITE=10, SOFT SITE=15)  
 HVY TRUCKS 10

**WALL INFORMATION**

HTH WALL 0 FT  
 AMBIENT = 0  
 BARRIER = 0 (0=WALL,1=BERM)

**VEHICLE MIX DATA**

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

**MISC. VEHICLE INFO**

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	99.9	--
MEDIUM TRUCKS=	4.00	99.8	--
HEAVY TRUCKS =	8.01	99.9	0.0

**NOISE OUTPUT DATA**

**NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)**

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	45.7	43.8	42.1	36.0	44.6	45.2
MEDIUM TRUCKS	40.1	38.6	32.3	30.7	39.2	39.4
HEAVY TRUCKS	42.1	40.7	31.6	32.9	41.2	41.4
<b>VEHICULAR NOISE</b>	<b>48.0</b>	<b>46.3</b>	<b>42.8</b>	<b>38.5</b>	<b>47.0</b>	<b>47.5</b>

**NOISE CONTOUR (FT)**

NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	1	2	6	18
LDN	1	2	5	16

**FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO**

PROJECT: Vista Del Agua Specific Plan Noise Impact Study, City of Coachella  
 ROADWAY: Vista Del Sur  
 SEGMENT: Dillon Road to Tyler Street  
 LOCATION: City of Coachella

JOB #: 2398-2014-02  
 DATE: 29-Oct-14  
 ENGINEER: M. Dickerson

SCENARIO: Opening Year 2022 - With Project

**NOISE INPUT DATA**

**ROADWAY CONDITIONS**

ADT = 3,497  
 SPEED = 25  
 PK HR % = 10  
 NEAR LANE/FAR LANE DIST = 12  
 ROAD ELEVATION = 0  
 GRADE = 0  
 PK HR VOL = 350

**RECEIVER INPUT DATA**

RECEIVER DISTANCE = 100  
 DIST C/L TO WALL = 0  
 RECEIVER HEIGHT = 5  
 WALL DISTANCE FROM RECEIVER = 100  
 PAD ELEVATION = 0  
 ROADWAY VIEW:  
     LF ANGLE = -90  
     RT ANGLE = 90  
     DF ANGLE = 180

**SITE CONDITIONS**

AUTOMOBILES 10  
 MED TRUCKS 10 (HARD SITE=10, SOFT SITE=15)  
 HVY TRUCKS 10

**WALL INFORMATION**

HTH WALL 0 FT  
 AMBIENT = 0  
 BARRIER = 0 (0=WALL,1=BERM)

**VEHICLE MIX DATA**

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

**MISC. VEHICLE INFO**

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	99.9	--
MEDIUM TRUCKS=	4.00	99.8	--
HEAVY TRUCKS =	8.01	99.9	0.0

**NOISE OUTPUT DATA**

**NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)**

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	52.4	50.5	48.7	42.7	51.3	51.9
MEDIUM TRUCKS	46.8	45.3	38.9	37.4	45.9	46.1
HEAVY TRUCKS	48.8	47.3	38.3	39.6	47.9	48.0
<b>VEHICULAR NOISE</b>	<b>54.7</b>	<b>53.0</b>	<b>49.5</b>	<b>45.2</b>	<b>53.7</b>	<b>54.1</b>

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	3	8	26	82
LDN	2	7	24	74

## FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Vista Del Agua Specific Plan Noise Impact Study, City of Coachella  
 ROADWAY: Vista Del Sur  
 SEGMENT: Tyler Street to Street A  
 LOCATION: City of Coachella

JOB #: 2398-2014-02  
 DATE: 29-Oct-14  
 ENGINEER: M. Dickerson

SCENARIO: Opening Year 2022 - With Project

### NOISE INPUT DATA

#### ROADWAY CONDITIONS

ADT = 2,982  
 SPEED = 40  
 PK HR % = 10  
 NEAR LANE/FAR LANE DIST = 40  
 ROAD ELEVATION = 0  
 GRADE = 0  
 PK HR VOL = 298

#### RECEIVER INPUT DATA

RECEIVER DISTANCE = 100  
 DIST C/L TO WALL = 0  
 RECEIVER HEIGHT = 5  
 WALL DISTANCE FROM RECEIVER = 100  
 PAD ELEVATION = 0  
 ROADWAY VIEW:  
     LF ANGLE = -90  
     RT ANGLE = 90  
     DF ANGLE = 180

#### SITE CONDITIONS

AUTOMOBILES 10  
 MED TRUCKS 10 (HARD SITE=10, SOFT SITE=15)  
 HVY TRUCKS 10

#### WALL INFORMATION

HTH WALL 0 FT  
 AMBIENT = 0  
 BARRIER = 0 (0=WALL,1=BERM)

#### VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

#### MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	98.0	--
MEDIUM TRUCKS=	4.00	98.0	--
HEAVY TRUCKS =	8.01	98.0	0.0

### NOISE OUTPUT DATA

#### NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	57.7	55.8	54.0	47.9	56.6	57.2
MEDIUM TRUCKS	49.4	47.9	41.5	40.0	48.4	48.7
HEAVY TRUCKS	50.0	48.6	39.6	40.8	49.2	49.3
<b>VEHICULAR NOISE</b>	<b>58.9</b>	<b>57.1</b>	<b>54.4</b>	<b>49.3</b>	<b>57.8</b>	<b>58.3</b>

#### NOISE CONTOUR (FT)

NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	7	22	68	215
LDN	6	19	61	192

**FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO**

PROJECT: Vista Del Agua Specific Plan Noise Impact Study, City of Coachella  
 ROADWAY: Avenue 47  
 SEGMENT: Dillon Road to Tyler Street  
 LOCATION: City of Coachella

JOB #: 2398-2014-02  
 DATE: 29-Oct-14  
 ENGINEER: M. Dickerson

SCENARIO: Opening Year 2022 - With Project

**NOISE INPUT DATA**

**ROADWAY CONDITIONS**

ADT = 36,149  
 SPEED = 40  
 PK HR % = 10  
 NEAR LANE/FAR LANE DIST = 40  
 ROAD ELEVATION = 0  
 GRADE = 0  
 PK HR VOL = 3,615

**RECEIVER INPUT DATA**

RECEIVER DISTANCE = 100  
 DIST C/L TO WALL = 0  
 RECEIVER HEIGHT = 5  
 WALL DISTANCE FROM RECEIVER = 100  
 PAD ELEVATION = 0  
 ROADWAY VIEW:  
     LF ANGLE = -90  
     RT ANGLE = 90  
     DF ANGLE = 180

**SITE CONDITIONS**

AUTOMOBILES 10  
 MED TRUCKS 10 (HARD SITE=10, SOFT SITE=15)  
 HVY TRUCKS 10

**WALL INFORMATION**

HTH WALL 0 FT  
 AMBIENT = 0  
 BARRIER = 0 (0=WALL,1=BERM)

**VEHICLE MIX DATA**

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

**MISC. VEHICLE INFO**

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	98.0	--
MEDIUM TRUCKS=	4.00	98.0	--
HEAVY TRUCKS =	8.01	98.0	0.0

**NOISE OUTPUT DATA**

**NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)**

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	68.5	66.6	64.8	58.8	67.4	68.0
MEDIUM TRUCKS	60.2	58.7	52.4	50.8	59.3	59.5
HEAVY TRUCKS	60.9	59.5	50.4	51.7	60.0	60.1
<b>VEHICULAR NOISE</b>	<b>69.7</b>	<b>67.9</b>	<b>65.2</b>	<b>60.1</b>	<b>68.7</b>	<b>69.2</b>

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	83	261	826	2611
LDN	74	233	735	2326

**FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO**

PROJECT: Vista Del Agua Specific Plan Noise Impact Study, City of Coachella  
 ROADWAY: Avenue 47  
 SEGMENT: Tyler Street to Street A  
 LOCATION: City of Coachella

JOB #: 2398-2014-02  
 DATE: 29-Oct-14  
 ENGINEER: M. Dickerson

SCENARIO: Opening Year 2022 - With Project

**NOISE INPUT DATA**

**ROADWAY CONDITIONS**

ADT = 10,101  
 SPEED = 40  
 PK HR % = 10  
 NEAR LANE/FAR LANE DIST = 40  
 ROAD ELEVATION = 0  
 GRADE = 0  
 PK HR VOL = 1,010

**RECEIVER INPUT DATA**

RECEIVER DISTANCE = 100  
 DIST C/L TO WALL = 0  
 RECEIVER HEIGHT = 5  
 WALL DISTANCE FROM RECEIVER = 100  
 PAD ELEVATION = 0  
 ROADWAY VIEW:  
     LF ANGLE = -90  
     RT ANGLE = 90  
     DF ANGLE = 180

**SITE CONDITIONS**

AUTOMOBILES 10  
 MED TRUCKS 10 (HARD SITE=10, SOFT SITE=15)  
 HVY TRUCKS 10

**WALL INFORMATION**

HTH WALL 0 FT  
 AMBIENT = 0  
 BARRIER = 0 (0=WALL,1=BERM)

**VEHICLE MIX DATA**

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

**MISC. VEHICLE INFO**

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	98.0	--
MEDIUM TRUCKS=	4.00	98.0	--
HEAVY TRUCKS =	8.01	98.0	0.0

**NOISE OUTPUT DATA**

**NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)**

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	63.0	61.1	59.3	53.2	61.9	62.5
MEDIUM TRUCKS	54.7	53.2	46.8	45.3	53.7	54.0
HEAVY TRUCKS	55.3	53.9	44.9	46.1	54.5	54.6
<b>VEHICULAR NOISE</b>	<b>64.2</b>	<b>62.4</b>	<b>59.7</b>	<b>54.6</b>	<b>63.1</b>	<b>63.6</b>

**NOISE CONTOUR (FT)**

NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	23	73	231	729
LDN	21	65	206	650

## FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Vista Del Agua Specific Plan Noise Impact Study, City of Coachella  
 ROADWAY: Avenue 47  
 SEGMENT: Street A to Polk Street  
 LOCATION: City of Coachella

JOB #: 2398-2014-02  
 DATE: 29-Oct-14  
 ENGINEER: M. Dickerson

SCENARIO: Opening Year 2022 - With Project

### NOISE INPUT DATA

#### ROADWAY CONDITIONS

ADT = 3,869  
 SPEED = 40  
 PK HR % = 10  
 NEAR LANE/FAR LANE DIST = 40  
 ROAD ELEVATION = 0  
 GRADE = 0  
 PK HR VOL = 387

#### RECEIVER INPUT DATA

RECEIVER DISTANCE = 100  
 DIST C/L TO WALL = 0  
 RECEIVER HEIGHT = 5  
 WALL DISTANCE FROM RECEIVER = 100  
 PAD ELEVATION = 0  
 ROADWAY VIEW:  
     LF ANGLE = -90  
     RT ANGLE = 90  
     DF ANGLE = 180

#### SITE CONDITIONS

AUTOMOBILES 10  
 MED TRUCKS 10 (HARD SITE=10, SOFT SITE=15)  
 HVY TRUCKS 10

#### WALL INFORMATION

HTH WALL 0 FT  
 AMBIENT = 0  
 BARRIER = 0 (0=WALL,1=BERM)

#### VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

#### MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	98.0	--
MEDIUM TRUCKS=	4.00	98.0	--
HEAVY TRUCKS =	8.01	98.0	0.0

### NOISE OUTPUT DATA

#### NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	58.8	56.9	55.1	49.1	57.7	58.3
MEDIUM TRUCKS	50.5	49.0	42.7	41.1	49.6	49.8
HEAVY TRUCKS	51.2	49.7	40.7	42.0	50.3	50.4
<b>VEHICULAR NOISE</b>	<b>60.0</b>	<b>58.2</b>	<b>55.5</b>	<b>50.4</b>	<b>59.0</b>	<b>59.5</b>

#### NOISE CONTOUR (FT)

NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	9	28	88	279
LDN	8	25	79	249

**FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO**

PROJECT: Vista Del Agua Specific Plan Noise Impact Study, City of Coachella  
 ROADWAY: Avenue 48  
 SEGMENT: Tyler Street to Street A  
 LOCATION: City of Coachella

JOB #: 2398-2014-02  
 DATE: 29-Oct-14  
 ENGINEER: M. Dickerson

SCENARIO: Opening Year 2022 - With Project

**NOISE INPUT DATA**

**ROADWAY CONDITIONS**

ADT = 3,533  
 SPEED = 40  
 PK HR % = 10  
 NEAR LANE/FAR LANE DIST = 40  
 ROAD ELEVATION = 0  
 GRADE = 0  
 PK HR VOL = 353

**RECEIVER INPUT DATA**

RECEIVER DISTANCE = 100  
 DIST C/L TO WALL = 0  
 RECEIVER HEIGHT = 5  
 WALL DISTANCE FROM RECEIVER = 100  
 PAD ELEVATION = 0  
 ROADWAY VIEW:  
     LF ANGLE = -90  
     RT ANGLE = 90  
     DF ANGLE = 180

**SITE CONDITIONS**

AUTOMOBILES 10  
 MED TRUCKS 10 (HARD SITE=10, SOFT SITE=15)  
 HVY TRUCKS 10

**WALL INFORMATION**

HTH WALL 0 FT  
 AMBIENT = 0  
 BARRIER = 0 (0=WALL,1=BERM)

**VEHICLE MIX DATA**

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

**MISC. VEHICLE INFO**

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	98.0	--
MEDIUM TRUCKS=	4.00	98.0	--
HEAVY TRUCKS =	8.01	98.0	0.0

**NOISE OUTPUT DATA**

**NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)**

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	58.4	56.5	54.7	48.7	57.3	57.9
MEDIUM TRUCKS	50.1	48.6	42.3	40.7	49.2	49.4
HEAVY TRUCKS	50.8	49.4	40.3	41.6	49.9	50.0
<b>VEHICULAR NOISE</b>	<b>59.6</b>	<b>57.8</b>	<b>55.1</b>	<b>50.0</b>	<b>58.6</b>	<b>59.1</b>

**NOISE CONTOUR (FT)**

NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	8	26	81	255
LDN	7	23	72	227

**FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO**

PROJECT: Vista Del Agua Specific Plan Noise Impact Study, City of Coachella  
 ROADWAY: Avenue 48  
 SEGMENT: Street A to Polk Street  
 LOCATION: City of Coachella

JOB #: 2398-2014-02  
 DATE: 29-Oct-14  
 ENGINEER: M. Dickerson

SCENARIO: Opening Year 2022 - With Project

**NOISE INPUT DATA**

**ROADWAY CONDITIONS**

ADT = 2,733  
 SPEED = 40  
 PK HR % = 10  
 NEAR LANE/FAR LANE DIST = 40  
 ROAD ELEVATION = 0  
 GRADE = 0  
 PK HR VOL = 273

**RECEIVER INPUT DATA**

RECEIVER DISTANCE = 100  
 DIST C/L TO WALL = 0  
 RECEIVER HEIGHT = 5  
 WALL DISTANCE FROM RECEIVER = 100  
 PAD ELEVATION = 0  
 ROADWAY VIEW:  
     LF ANGLE = -90  
     RT ANGLE = 90  
     DF ANGLE = 180

**SITE CONDITIONS**

AUTOMOBILES 10  
 MED TRUCKS 10 (HARD SITE=10, SOFT SITE=15)  
 HVY TRUCKS 10

**WALL INFORMATION**

HTH WALL 0 FT  
 AMBIENT = 0  
 BARRIER = 0 (0=WALL,1=BERM)

**VEHICLE MIX DATA**

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

**MISC. VEHICLE INFO**

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	98.0	--
MEDIUM TRUCKS=	4.00	98.0	--
HEAVY TRUCKS =	8.01	98.0	0.0

**NOISE OUTPUT DATA**

**NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)**

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	57.3	55.4	53.6	47.6	56.2	56.8
MEDIUM TRUCKS	49.0	47.5	41.1	39.6	48.1	48.3
HEAVY TRUCKS	49.7	48.2	39.2	40.4	48.8	48.9
<b>VEHICULAR NOISE</b>	<b>58.5</b>	<b>56.7</b>	<b>54.0</b>	<b>48.9</b>	<b>57.5</b>	<b>58.0</b>

**NOISE CONTOUR (FT)**

NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	6	20	62	197
LDN	6	18	56	176



**FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO**

PROJECT: Vista Del Agua Specific Plan Noise Impact Study, City of Coachella  
 ROADWAY: Tyler Street  
 SEGMENT: Vista Del Sur to Avenue 47  
 LOCATION: City of Coachella

JOB #: 2398-2014-02  
 DATE: 29-Oct-14  
 ENGINEER: M. Dickerson

SCENARIO: Opening Year 2022 - With Project

**NOISE INPUT DATA**

**ROADWAY CONDITIONS**

ADT = 552  
 SPEED = 40  
 PK HR % = 10  
 NEAR LANE/FAR LANE DIST = 40  
 ROAD ELEVATION = 0  
 GRADE = 0  
 PK HR VOL = 55

**RECEIVER INPUT DATA**

RECEIVER DISTANCE = 100  
 DIST C/L TO WALL = 0  
 RECEIVER HEIGHT = 5  
 WALL DISTANCE FROM RECEIVER = 100  
 PAD ELEVATION = 0  
 ROADWAY VIEW:  
     LF ANGLE = -90  
     RT ANGLE = 90  
     DF ANGLE = 180

**SITE CONDITIONS**

AUTOMOBILES 10  
 MED TRUCKS 10 (HARD SITE=10, SOFT SITE=15)  
 HVY TRUCKS 10

**WALL INFORMATION**

HTH WALL 0 FT  
 AMBIENT = 0  
 BARRIER = 0 (0=WALL,1=BERM)

**VEHICLE MIX DATA**

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

**MISC. VEHICLE INFO**

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	98.0	--
MEDIUM TRUCKS=	4.00	98.0	--
HEAVY TRUCKS =	8.01	98.0	0.0

**NOISE OUTPUT DATA**

**NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)**

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	50.3	48.5	46.7	40.6	49.2	49.9
MEDIUM TRUCKS	42.1	40.6	34.2	32.7	41.1	41.3
HEAVY TRUCKS	42.7	41.3	32.3	33.5	41.9	42.0
<b>VEHICULAR NOISE</b>	<b>51.6</b>	<b>49.8</b>	<b>47.1</b>	<b>41.9</b>	<b>50.5</b>	<b>51.0</b>

**NOISE CONTOUR (FT)**

NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	1	4	13	40
LDN	1	4	11	36

## FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Vista Del Agua Specific Plan Noise Impact Study, City of Coachella  
 ROADWAY: Tyler Street  
 SEGMENT: Avenue 47 to Avenue 48  
 LOCATION: City of Coachella

JOB #: 2398-2014-02  
 DATE: 29-Oct-14  
 ENGINEER: M. Dickerson

SCENARIO: Opening Year 2022 - With Project

### NOISE INPUT DATA

#### ROADWAY CONDITIONS

ADT = 14,323  
 SPEED = 40  
 PK HR % = 10  
 NEAR LANE/FAR LANE DIST = 40  
 ROAD ELEVATION = 0  
 GRADE = 0  
 PK HR VOL = 1,432

#### RECEIVER INPUT DATA

RECEIVER DISTANCE = 100  
 DIST C/L TO WALL = 0  
 RECEIVER HEIGHT = 5  
 WALL DISTANCE FROM RECEIVER = 100  
 PAD ELEVATION = 0  
 ROADWAY VIEW:  
     LF ANGLE = -90  
     RT ANGLE = 90  
     DF ANGLE = 180

#### SITE CONDITIONS

AUTOMOBILES 10  
 MED TRUCKS 10 (HARD SITE=10, SOFT SITE=15)  
 HVY TRUCKS 10

#### WALL INFORMATION

HTH WALL 0 FT  
 AMBIENT = 0  
 BARRIER = 0 (0=WALL,1=BERM)

#### VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

#### MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	98.0	--
MEDIUM TRUCKS=	4.00	98.0	--
HEAVY TRUCKS =	8.01	98.0	0.0

### NOISE OUTPUT DATA

#### NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	64.5	62.6	60.8	54.8	63.4	64.0
MEDIUM TRUCKS	56.2	54.7	48.3	46.8	55.3	55.5
HEAVY TRUCKS	56.9	55.4	46.4	47.6	56.0	56.1
<b>VEHICULAR NOISE</b>	<b>65.7</b>	<b>63.9</b>	<b>61.2</b>	<b>56.1</b>	<b>64.6</b>	<b>65.1</b>

#### NOISE CONTOUR (FT)

NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	33	103	327	1034
LDN	29	92	291	921

## FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Vista Del Agua Specific Plan Noise Impact Study, City of Coachella  
 ROADWAY: Tyler Street  
 SEGMENT: Avenue 48 to Avenue 50  
 LOCATION: City of Coachella

JOB #: 2398-2014-02  
 DATE: 29-Oct-14  
 ENGINEER: M. Dickerson

SCENARIO: Opening Year 2022 - With Project

### NOISE INPUT DATA

#### ROADWAY CONDITIONS

ADT = 18,564  
 SPEED = 40  
 PK HR % = 10  
 NEAR LANE/FAR LANE DIST = 40  
 ROAD ELEVATION = 0  
 GRADE = 0  
 PK HR VOL = 1,856

#### RECEIVER INPUT DATA

RECEIVER DISTANCE = 100  
 DIST C/L TO WALL = 0  
 RECEIVER HEIGHT = 5  
 WALL DISTANCE FROM RECEIVER = 100  
 PAD ELEVATION = 0  
 ROADWAY VIEW:  
     LF ANGLE = -90  
     RT ANGLE = 90  
     DF ANGLE = 180

#### SITE CONDITIONS

AUTOMOBILES 10  
 MED TRUCKS 10 (HARD SITE=10, SOFT SITE=15)  
 HVY TRUCKS 10

#### WALL INFORMATION

HTH WALL 0 FT  
 AMBIENT = 0  
 BARRIER = 0 (0=WALL,1=BERM)

#### VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

#### MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	98.0	--
MEDIUM TRUCKS=	4.00	98.0	--
HEAVY TRUCKS =	8.01	98.0	0.0

### NOISE OUTPUT DATA

#### NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	65.6	63.7	61.9	55.9	64.5	65.1
MEDIUM TRUCKS	57.3	55.8	49.5	47.9	56.4	56.6
HEAVY TRUCKS	58.0	56.6	47.5	48.8	57.1	57.3
<b>VEHICULAR NOISE</b>	<b>66.8</b>	<b>65.0</b>	<b>62.3</b>	<b>57.2</b>	<b>65.8</b>	<b>66.3</b>

#### NOISE CONTOUR (FT)

NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	42	134	424	1341
LDN	38	119	378	1194

**FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO**

PROJECT: Vista Del Agua Specific Plan Noise Impact Study, City of Coachella  
 ROADWAY: Street A  
 SEGMENT: Vista Del Sur to Avenue 47  
 LOCATION: City of Coachella

JOB #: 2398-2014-02  
 DATE: 29-Oct-14  
 ENGINEER: M. Dickerson

SCENARIO: Opening Year 2022 - With Project

**NOISE INPUT DATA**

**ROADWAY CONDITIONS**

ADT = 7,921  
 SPEED = 40  
 PK HR % = 10  
 NEAR LANE/FAR LANE DIST = 40  
 ROAD ELEVATION = 0  
 GRADE = 0  
 PK HR VOL = 792

**RECEIVER INPUT DATA**

RECEIVER DISTANCE = 100  
 DIST C/L TO WALL = 0  
 RECEIVER HEIGHT = 5  
 WALL DISTANCE FROM RECEIVER = 100  
 PAD ELEVATION = 0  
 ROADWAY VIEW:  
     LF ANGLE = -90  
     RT ANGLE = 90  
     DF ANGLE = 180

**SITE CONDITIONS**

AUTOMOBILES 10  
 MED TRUCKS 10 (HARD SITE=10, SOFT SITE=15)  
 HVY TRUCKS 10

**WALL INFORMATION**

HTH WALL 0 FT  
 AMBIENT = 0  
 BARRIER = 0 (0=WALL,1=BERM)

**VEHICLE MIX DATA**

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

**MISC. VEHICLE INFO**

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	98.0	--
MEDIUM TRUCKS=	4.00	98.0	--
HEAVY TRUCKS =	8.01	98.0	0.0

**NOISE OUTPUT DATA**

**NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)**

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	61.9	60.0	58.3	52.2	60.8	61.4
MEDIUM TRUCKS	53.6	52.1	45.8	44.2	52.7	52.9
HEAVY TRUCKS	54.3	52.9	43.8	45.1	53.4	53.6
<b>VEHICULAR NOISE</b>	<b>63.1</b>	<b>61.3</b>	<b>58.6</b>	<b>53.5</b>	<b>62.1</b>	<b>62.6</b>

**NOISE CONTOUR (FT)**

NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	18	57	181	572
LDN	16	51	161	510

**FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO**

PROJECT: Vista Del Agua Specific Plan Noise Impact Study, City of Coachella  
 ROADWAY: Street A  
 SEGMENT: Avenue 47 to Avenue 48  
 LOCATION: City of Coachella

JOB #: 2398-2014-02  
 DATE: 29-Oct-14  
 ENGINEER: M. Dickerson

SCENARIO: Opening Year 2022 - With Project

**NOISE INPUT DATA**

**ROADWAY CONDITIONS**

ADT = 3,577  
 SPEED = 40  
 PK HR % = 10  
 NEAR LANE/FAR LANE DIST = 40  
 ROAD ELEVATION = 0  
 GRADE = 0  
 PK HR VOL = 358

**RECEIVER INPUT DATA**

RECEIVER DISTANCE = 100  
 DIST C/L TO WALL = 0  
 RECEIVER HEIGHT = 5  
 WALL DISTANCE FROM RECEIVER = 100  
 PAD ELEVATION = 0  
 ROADWAY VIEW:  
     LF ANGLE = -90  
     RT ANGLE = 90  
     DF ANGLE = 180

**SITE CONDITIONS**

AUTOMOBILES 10  
 MED TRUCKS 10 (HARD SITE=10, SOFT SITE=15)  
 HVY TRUCKS 10

**WALL INFORMATION**

HTH WALL 0 FT  
 AMBIENT = 0  
 BARRIER = 0 (0=WALL,1=BERM)

**VEHICLE MIX DATA**

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

**MISC. VEHICLE INFO**

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	98.0	--
MEDIUM TRUCKS=	4.00	98.0	--
HEAVY TRUCKS =	8.01	98.0	0.0

**NOISE OUTPUT DATA**

**NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)**

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	58.5	56.6	54.8	48.7	57.4	58.0
MEDIUM TRUCKS	50.2	48.7	42.3	40.8	49.2	49.5
HEAVY TRUCKS	50.8	49.4	40.4	41.6	50.0	50.1
<b>VEHICULAR NOISE</b>	<b>59.7</b>	<b>57.9</b>	<b>55.2</b>	<b>50.1</b>	<b>58.6</b>	<b>59.1</b>

**NOISE CONTOUR (FT)**

NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	8	26	82	258
LDN	7	23	73	230

## FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Vista Del Agua Specific Plan Noise Impact Study, City of Coachella  
 ROADWAY: Polk Street  
 SEGMENT: Avenue 47 to Avenue 48  
 LOCATION: City of Coachella

JOB #: 2398-2014-02  
 DATE: 29-Oct-14  
 ENGINEER: M. Dickerson

SCENARIO: Opening Year 2022 - With Project

### NOISE INPUT DATA

#### ROADWAY CONDITIONS

ADT = 1,166  
 SPEED = 40  
 PK HR % = 10  
 NEAR LANE/FAR LANE DIST = 40  
 ROAD ELEVATION = 0  
 GRADE = 0  
 PK HR VOL = 117

#### RECEIVER INPUT DATA

RECEIVER DISTANCE = 100  
 DIST C/L TO WALL = 0  
 RECEIVER HEIGHT = 5  
 WALL DISTANCE FROM RECEIVER = 100  
 PAD ELEVATION = 0  
 ROADWAY VIEW:  
     LF ANGLE = -90  
     RT ANGLE = 90  
     DF ANGLE = 180

#### SITE CONDITIONS

AUTOMOBILES 10  
 MED TRUCKS 10 (HARD SITE=10, SOFT SITE=15)  
 HVY TRUCKS 10

#### WALL INFORMATION

HTH WALL 0 FT  
 AMBIENT = 0  
 BARRIER = 0 (0=WALL,1=BERM)

#### VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

#### MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	98.0	--
MEDIUM TRUCKS=	4.00	98.0	--
HEAVY TRUCKS =	8.01	98.0	0.0

### NOISE OUTPUT DATA

#### NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	53.6	51.7	49.9	43.9	52.5	53.1
MEDIUM TRUCKS	45.3	43.8	37.4	35.9	44.4	44.6
HEAVY TRUCKS	46.0	44.5	35.5	36.8	45.1	45.2
<b>VEHICULAR NOISE</b>	<b>54.8</b>	<b>53.0</b>	<b>50.3</b>	<b>45.2</b>	<b>53.8</b>	<b>54.3</b>

#### NOISE CONTOUR (FT)

NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	3	8	27	84
LDN	2	8	24	75

**FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO**

PROJECT: Vista Del Agua Specific Plan Noise Impact Study, City of Coachella  
 ROADWAY: Polk Street  
 SEGMENT: Avenue 48 to Avenue 50  
 LOCATION: City of Coachella

JOB #: 2398-2014-02  
 DATE: 29-Oct-14  
 ENGINEER: M. Dickerson

SCENARIO: Opening Year 2022 - With Project

**NOISE INPUT DATA**

**ROADWAY CONDITIONS**

ADT = 3,185  
 SPEED = 25  
 PK HR % = 10  
 NEAR LANE/FAR LANE DIST = 12  
 ROAD ELEVATION = 0  
 GRADE = 0  
 PK HR VOL = 318

**RECEIVER INPUT DATA**

RECEIVER DISTANCE = 100  
 DIST C/L TO WALL = 0  
 RECEIVER HEIGHT = 5  
 WALL DISTANCE FROM RECEIVER = 100  
 PAD ELEVATION = 0  
 ROADWAY VIEW:  
     LF ANGLE = -90  
     RT ANGLE = 90  
     DF ANGLE = 180

**SITE CONDITIONS**

AUTOMOBILES 10  
 MED TRUCKS 10 (HARD SITE=10, SOFT SITE=15)  
 HVY TRUCKS 10

**WALL INFORMATION**

HTH WALL 0 FT  
 AMBIENT = 0  
 BARRIER = 0 (0=WALL,1=BERM)

**VEHICLE MIX DATA**

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

**MISC. VEHICLE INFO**

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	99.9	--
MEDIUM TRUCKS=	4.00	99.8	--
HEAVY TRUCKS =	8.01	99.9	0.0

**NOISE OUTPUT DATA**

**NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)**

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	52.0	50.1	48.3	42.3	50.9	51.5
MEDIUM TRUCKS	46.4	44.9	38.5	37.0	45.5	45.7
HEAVY TRUCKS	48.4	46.9	37.9	39.2	47.5	47.6
<b>VEHICULAR NOISE</b>	<b>54.3</b>	<b>52.6</b>	<b>49.1</b>	<b>44.8</b>	<b>53.3</b>	<b>53.7</b>

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	2	7	24	75
LDN	2	7	21	68

**FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO**

PROJECT: Vista Del Agua Specific Plan Noise Impact Study, City of Coachella  
 ROADWAY: Vista Del Sur  
 SEGMENT: Dillon Road to Tyler Street  
 LOCATION: City of Coachella

JOB #: 2398-2014-02  
 DATE: 29-Oct-14  
 ENGINEER: M. Dickerson

SCENARIO: Buildout Year 2035 - Without Project

**NOISE INPUT DATA**

**ROADWAY CONDITIONS**

ADT = 6,637  
 SPEED = 40  
 PK HR % = 10  
 NEAR LANE/FAR LANE DIST = 40  
 ROAD ELEVATION = 0  
 GRADE = 0  
 PK HR VOL = 664

**RECEIVER INPUT DATA**

RECEIVER DISTANCE = 100  
 DIST C/L TO WALL = 0  
 RECEIVER HEIGHT = 5  
 WALL DISTANCE FROM RECEIVER = 100  
 PAD ELEVATION = 0  
 ROADWAY VIEW:  
     LF ANGLE = -90  
     RT ANGLE = 90  
     DF ANGLE = 180

**SITE CONDITIONS**

AUTOMOBILES 10  
 MED TRUCKS 10 (HARD SITE=10, SOFT SITE=15)  
 HVY TRUCKS 10

**WALL INFORMATION**

HTH WALL 0 FT  
 AMBIENT = 0  
 BARRIER = 0 (0=WALL,1=BERM)

**VEHICLE MIX DATA**

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

**MISC. VEHICLE INFO**

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	98.0	--
MEDIUM TRUCKS=	4.00	98.0	--
HEAVY TRUCKS =	8.01	98.0	0.0

**NOISE OUTPUT DATA**

**NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)**

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	61.1	59.2	57.5	51.4	60.0	60.7
MEDIUM TRUCKS	52.9	51.4	45.0	43.4	51.9	52.1
HEAVY TRUCKS	53.5	52.1	43.1	44.3	52.7	52.8
<b>VEHICULAR NOISE</b>	<b>62.4</b>	<b>60.6</b>	<b>57.9</b>	<b>52.7</b>	<b>61.3</b>	<b>61.8</b>

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	15	48	152	479
LDN	14	43	135	427



**FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO**

PROJECT: Vista Del Agua Specific Plan Noise Impact Study, City of Coachella  
 ROADWAY: Vista Del Sur  
 SEGMENT: Tyler Street to Street A  
 LOCATION: City of Coachella

JOB #: 2398-2014-02  
 DATE: 29-Oct-14  
 ENGINEER: M. Dickerson

SCENARIO: Buildout Year 2035 - Without Project

**NOISE INPUT DATA**

**ROADWAY CONDITIONS**

ADT = 6,171  
 SPEED = 40  
 PK HR % = 10  
 NEAR LANE/FAR LANE DIST = 40  
 ROAD ELEVATION = 0  
 GRADE = 0  
 PK HR VOL = 617

**RECEIVER INPUT DATA**

RECEIVER DISTANCE = 100  
 DIST C/L TO WALL = 0  
 RECEIVER HEIGHT = 5  
 WALL DISTANCE FROM RECEIVER = 100  
 PAD ELEVATION = 0  
 ROADWAY VIEW:  
     LF ANGLE = -90  
     RT ANGLE = 90  
     DF ANGLE = 180

**SITE CONDITIONS**

AUTOMOBILES 10  
 MED TRUCKS 10 (HARD SITE=10, SOFT SITE=15)  
 HVY TRUCKS 10

**WALL INFORMATION**

HTH WALL 0 FT  
 AMBIENT = 0  
 BARRIER = 0 (0=WALL,1=BERM)

**VEHICLE MIX DATA**

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

**MISC. VEHICLE INFO**

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	98.0	--
MEDIUM TRUCKS=	4.00	98.0	--
HEAVY TRUCKS =	8.01	98.0	0.0

**NOISE OUTPUT DATA**

**NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)**

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	60.8	58.9	57.2	51.1	59.7	60.3
MEDIUM TRUCKS	52.5	51.0	44.7	43.1	51.6	51.8
HEAVY TRUCKS	53.2	51.8	42.7	44.0	52.3	52.5
<b>VEHICULAR NOISE</b>	<b>62.0</b>	<b>60.3</b>	<b>57.6</b>	<b>52.4</b>	<b>61.0</b>	<b>61.5</b>

**NOISE CONTOUR (FT)**

NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	14	45	141	446
LDN	13	40	126	397

**FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO**

PROJECT: Vista Del Agua Specific Plan Noise Impact Study, City of Coachella  
 ROADWAY: Avenue 47  
 SEGMENT: Dillon Road to Tyler Street  
 LOCATION: City of Coachella

JOB #: 2398-2014-02  
 DATE: 29-Oct-14  
 ENGINEER: M. Dickerson

SCENARIO: Buildout Year 2035 - Without Project

**NOISE INPUT DATA**

**ROADWAY CONDITIONS**

ADT = 28,363  
 SPEED = 40  
 PK HR % = 10  
 NEAR LANE/FAR LANE DIST = 40  
 ROAD ELEVATION = 0  
 GRADE = 0  
 PK HR VOL = 2,836

**RECEIVER INPUT DATA**

RECEIVER DISTANCE = 100  
 DIST C/L TO WALL = 0  
 RECEIVER HEIGHT = 5  
 WALL DISTANCE FROM RECEIVER = 100  
 PAD ELEVATION = 0  
 ROADWAY VIEW:  
     LF ANGLE = -90  
     RT ANGLE = 90  
     DF ANGLE = 180

**SITE CONDITIONS**

AUTOMOBILES 10  
 MED TRUCKS 10 (HARD SITE=10, SOFT SITE=15)  
 HVY TRUCKS 10

**WALL INFORMATION**

HTH WALL 0 FT  
 AMBIENT = 0  
 BARRIER = 0 (0=WALL,1=BERM)

**VEHICLE MIX DATA**

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

**MISC. VEHICLE INFO**

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	98.0	--
MEDIUM TRUCKS=	4.00	98.0	--
HEAVY TRUCKS =	8.01	98.0	0.0

**NOISE OUTPUT DATA**

**NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)**

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	67.5	65.6	63.8	57.7	66.4	67.0
MEDIUM TRUCKS	59.2	57.7	51.3	49.8	58.2	58.5
HEAVY TRUCKS	59.8	58.4	49.4	50.6	59.0	59.1
<b>VEHICULAR NOISE</b>	<b>68.7</b>	<b>66.9</b>	<b>64.2</b>	<b>59.0</b>	<b>67.6</b>	<b>68.1</b>

**NOISE CONTOUR (FT)**

NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	65	205	648	2048
LDN	58	182	577	1825

**FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO**

PROJECT: Vista Del Agua Specific Plan Noise Impact Study, City of Coachella  
 ROADWAY: Avenue 47  
 SEGMENT: Tyler Street to Street A  
 LOCATION: City of Coachella

JOB #: 2398-2014-02  
 DATE: 29-Oct-14  
 ENGINEER: M. Dickerson

SCENARIO: Buildout Year 2035 - Without Project

**NOISE INPUT DATA**

**ROADWAY CONDITIONS**

ADT = 75  
 SPEED = 40  
 PK HR % = 10  
 NEAR LANE/FAR LANE DIST = 40  
 ROAD ELEVATION = 0  
 GRADE = 0  
 PK HR VOL = 8

**RECEIVER INPUT DATA**

RECEIVER DISTANCE = 100  
 DIST C/L TO WALL = 0  
 RECEIVER HEIGHT = 5  
 WALL DISTANCE FROM RECEIVER = 100  
 PAD ELEVATION = 0  
 ROADWAY VIEW:  
     LF ANGLE = -90  
     RT ANGLE = 90  
     DF ANGLE = 180

**SITE CONDITIONS**

AUTOMOBILES 10  
 MED TRUCKS 10 (HARD SITE=10, SOFT SITE=15)  
 HVY TRUCKS 10

**WALL INFORMATION**

HTH WALL 0 FT  
 AMBIENT = 0  
 BARRIER = 0 (0=WALL,1=BERM)

**VEHICLE MIX DATA**

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

**MISC. VEHICLE INFO**

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	98.0	--
MEDIUM TRUCKS=	4.00	98.0	--
HEAVY TRUCKS =	8.01	98.0	0.0

**NOISE OUTPUT DATA**

**NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)**

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	41.7	39.8	38.0	32.0	40.6	41.2
MEDIUM TRUCKS	33.4	31.9	25.5	24.0	32.5	32.7
HEAVY TRUCKS	34.1	32.6	23.6	24.8	33.2	33.3
<b>VEHICULAR NOISE</b>	<b>42.9</b>	<b>41.1</b>	<b>38.4</b>	<b>33.3</b>	<b>41.9</b>	<b>42.4</b>

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	0	1	2	5
LDN	0	0	2	5

**FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO**

PROJECT: Vista Del Agua Specific Plan Noise Impact Study, City of Coachella  
 ROADWAY: Avenue 47  
 SEGMENT: Street A to Polk Street  
 LOCATION: City of Coachella

JOB #: 2398-2014-02  
 DATE: 29-Oct-14  
 ENGINEER: M. Dickerson

SCENARIO: Buildout Year 2035 - Without Project

**NOISE INPUT DATA**

**ROADWAY CONDITIONS**

ADT = 75  
 SPEED = 40  
 PK HR % = 10  
 NEAR LANE/FAR LANE DIST = 40  
 ROAD ELEVATION = 0  
 GRADE = 0  
 PK HR VOL = 8

**RECEIVER INPUT DATA**

RECEIVER DISTANCE = 100  
 DIST C/L TO WALL = 0  
 RECEIVER HEIGHT = 5  
 WALL DISTANCE FROM RECEIVER = 100  
 PAD ELEVATION = 0  
 ROADWAY VIEW:  
     LF ANGLE = -90  
     RT ANGLE = 90  
     DF ANGLE = 180

**SITE CONDITIONS**

AUTOMOBILES 10  
 MED TRUCKS 10 (HARD SITE=10, SOFT SITE=15)  
 HVY TRUCKS 10

**WALL INFORMATION**

HTH WALL 0 FT  
 AMBIENT = 0  
 BARRIER = 0 (0=WALL,1=BERM)

**VEHICLE MIX DATA**

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

**MISC. VEHICLE INFO**

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	98.0	--
MEDIUM TRUCKS=	4.00	98.0	--
HEAVY TRUCKS =	8.01	98.0	0.0

**NOISE OUTPUT DATA**

**NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)**

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	41.7	39.8	38.0	31.9	40.6	41.2
MEDIUM TRUCKS	33.4	31.9	25.5	24.0	32.4	32.7
HEAVY TRUCKS	34.0	32.6	23.6	24.8	33.2	33.3
<b>VEHICULAR NOISE</b>	<b>42.9</b>	<b>41.1</b>	<b>38.4</b>	<b>33.3</b>	<b>41.8</b>	<b>42.3</b>

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	0	1	2	5
LDN	0	0	2	5

## FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Vista Del Agua Specific Plan Noise Impact Study, City of Coachella  
 ROADWAY: Avenue 48  
 SEGMENT: Tyler Street to Street A  
 LOCATION: City of Coachella

JOB #: 2398-2014-02  
 DATE: 29-Oct-14  
 ENGINEER: M. Dickerson

SCENARIO: Buildout Year 2035 - Without Project

### NOISE INPUT DATA

#### ROADWAY CONDITIONS

ADT = 12,507  
 SPEED = 40  
 PK HR % = 10  
 NEAR LANE/FAR LANE DIST = 80  
 ROAD ELEVATION = 0  
 GRADE = 0  
 PK HR VOL = 1,251

#### RECEIVER INPUT DATA

RECEIVER DISTANCE = 100  
 DIST C/L TO WALL = 0  
 RECEIVER HEIGHT = 5  
 WALL DISTANCE FROM RECEIVER = 100  
 PAD ELEVATION = 0  
 ROADWAY VIEW:  
     LF ANGLE = -90  
     RT ANGLE = 90  
     DF ANGLE = 180

#### SITE CONDITIONS

AUTOMOBILES 10  
 MED TRUCKS 10 (HARD SITE=10, SOFT SITE=15)  
 HVY TRUCKS 10

#### WALL INFORMATION

HTH WALL 0 FT  
 AMBIENT = 0  
 BARRIER = 0 (0=WALL,1=BERM)

#### VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

#### MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	91.7	--
MEDIUM TRUCKS=	4.00	91.7	--
HEAVY TRUCKS =	8.01	91.7	0.0

### NOISE OUTPUT DATA

#### NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	64.2	62.3	60.5	54.5	63.1	63.7
MEDIUM TRUCKS	55.9	54.4	48.0	46.5	55.0	55.2
HEAVY TRUCKS	56.6	55.1	46.1	47.3	55.7	55.8
<b>VEHICULAR NOISE</b>	<b>65.4</b>	<b>63.6</b>	<b>60.9</b>	<b>55.8</b>	<b>64.3</b>	<b>64.8</b>

#### NOISE CONTOUR (FT)

NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	31	97	305	965
LDN	27	86	272	860

**FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO**

PROJECT: Vista Del Agua Specific Plan Noise Impact Study, City of Coachella  
 ROADWAY: Avenue 48  
 SEGMENT: Street A to Polk Street  
 LOCATION: City of Coachella

JOB #: 2398-2014-02  
 DATE: 29-Oct-14  
 ENGINEER: M. Dickerson

SCENARIO: Buildout Year 2035 - Without Project

**NOISE INPUT DATA**

**ROADWAY CONDITIONS**

ADT = 13,338  
 SPEED = 40  
 PK HR % = 10  
 NEAR LANE/FAR LANE DIST = 80  
 ROAD ELEVATION = 0  
 GRADE = 0  
 PK HR VOL = 1,334

**RECEIVER INPUT DATA**

RECEIVER DISTANCE = 100  
 DIST C/L TO WALL = 0  
 RECEIVER HEIGHT = 5  
 WALL DISTANCE FROM RECEIVER = 100  
 PAD ELEVATION = 0  
 ROADWAY VIEW:  
     LF ANGLE = -90  
     RT ANGLE = 90  
     DF ANGLE = 180

**SITE CONDITIONS**

AUTOMOBILES 10  
 MED TRUCKS 10 (HARD SITE=10, SOFT SITE=15)  
 HVY TRUCKS 10

**WALL INFORMATION**

HTH WALL 0 FT  
 AMBIENT = 0  
 BARRIER = 0 (0=WALL,1=BERM)

**VEHICLE MIX DATA**

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

**MISC. VEHICLE INFO**

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	91.7	--
MEDIUM TRUCKS=	4.00	91.7	--
HEAVY TRUCKS =	8.01	91.7	0.0

**NOISE OUTPUT DATA**

**NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)**

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	64.5	62.6	60.8	54.7	63.4	64.0
MEDIUM TRUCKS	56.2	54.7	48.3	46.8	55.2	55.5
HEAVY TRUCKS	56.8	55.4	46.4	47.6	56.0	56.1
<b>VEHICULAR NOISE</b>	<b>65.7</b>	<b>63.9</b>	<b>61.2</b>	<b>56.1</b>	<b>64.6</b>	<b>65.1</b>

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	33	103	326	1030
LDN	29	92	290	917

## FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Vista Del Agua Specific Plan Noise Impact Study, City of Coachella  
 ROADWAY: Tyler Street  
 SEGMENT: Vista Del Sur to Avenue 47  
 LOCATION: City of Coachella

JOB #: 2398-2014-02  
 DATE: 29-Oct-14  
 ENGINEER: M. Dickerson

SCENARIO: Buildout Year 2035 - Without Project

### NOISE INPUT DATA

#### ROADWAY CONDITIONS

ADT = 676  
 SPEED = 40  
 PK HR % = 10  
 NEAR LANE/FAR LANE DIST = 40  
 ROAD ELEVATION = 0  
 GRADE = 0  
 PK HR VOL = 68

#### RECEIVER INPUT DATA

RECEIVER DISTANCE = 100  
 DIST C/L TO WALL = 0  
 RECEIVER HEIGHT = 5  
 WALL DISTANCE FROM RECEIVER = 100  
 PAD ELEVATION = 0  
 ROADWAY VIEW:  
     LF ANGLE = -90  
     RT ANGLE = 90  
     DF ANGLE = 180

#### SITE CONDITIONS

AUTOMOBILES 10  
 MED TRUCKS 10 (HARD SITE=10, SOFT SITE=15)  
 HVY TRUCKS 10

#### WALL INFORMATION

HTH WALL 0 FT  
 AMBIENT = 0  
 BARRIER = 0 (0=WALL,1=BERM)

#### VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

#### MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	98.0	--
MEDIUM TRUCKS=	4.00	98.0	--
HEAVY TRUCKS =	8.01	98.0	0.0

### NOISE OUTPUT DATA

#### NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	51.2	49.3	47.6	41.5	50.1	50.7
MEDIUM TRUCKS	42.9	41.4	35.1	33.5	42.0	42.2
HEAVY TRUCKS	43.6	42.2	33.1	34.4	42.7	42.9
<b>VEHICULAR NOISE</b>	<b>52.4</b>	<b>50.6</b>	<b>47.9</b>	<b>42.8</b>	<b>51.4</b>	<b>51.9</b>

#### NOISE CONTOUR (FT)

NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	2	5	15	49
LDN	1	4	14	43

## FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Vista Del Agua Specific Plan Noise Impact Study, City of Coachella  
 ROADWAY: Tyler Street  
 SEGMENT: Avenue 47 to Avenue 48  
 LOCATION: City of Coachella

JOB #: 2398-2014-02  
 DATE: 29-Oct-14  
 ENGINEER: M. Dickerson

SCENARIO: Buildout Year 2035 - Without Project

### NOISE INPUT DATA

#### ROADWAY CONDITIONS

ADT = 11,869  
 SPEED = 40  
 PK HR % = 10  
 NEAR LANE/FAR LANE DIST = 40  
 ROAD ELEVATION = 0  
 GRADE = 0  
 PK HR VOL = 1,187

#### RECEIVER INPUT DATA

RECEIVER DISTANCE = 100  
 DIST C/L TO WALL = 0  
 RECEIVER HEIGHT = 5  
 WALL DISTANCE FROM RECEIVER = 100  
 PAD ELEVATION = 0  
 ROADWAY VIEW:  
     LF ANGLE = -90  
     RT ANGLE = 90  
     DF ANGLE = 180

#### SITE CONDITIONS

AUTOMOBILES 10  
 MED TRUCKS 10 (HARD SITE=10, SOFT SITE=15)  
 HVY TRUCKS 10

#### WALL INFORMATION

HTH WALL 0 FT  
 AMBIENT = 0  
 BARRIER = 0 (0=WALL,1=BERM)

#### VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

#### MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	98.0	--
MEDIUM TRUCKS=	4.00	98.0	--
HEAVY TRUCKS =	8.01	98.0	0.0

### NOISE OUTPUT DATA

#### NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	63.7	61.8	60.0	53.9	62.6	63.2
MEDIUM TRUCKS	55.4	53.9	47.5	46.0	54.4	54.7
HEAVY TRUCKS	56.0	54.6	45.6	46.8	55.2	55.3
<b>VEHICULAR NOISE</b>	<b>64.9</b>	<b>63.1</b>	<b>60.4</b>	<b>55.3</b>	<b>63.8</b>	<b>64.3</b>

#### NOISE CONTOUR (FT)

NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	27	86	271	857
LDN	24	76	241	764



## FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Vista Del Agua Specific Plan Noise Impact Study, City of Coachella  
 ROADWAY: Tyler Street  
 SEGMENT: Avenue 48 to Avenue 50  
 LOCATION: City of Coachella

JOB #: 2398-2014-02  
 DATE: 29-Oct-14  
 ENGINEER: M. Dickerson

SCENARIO: Buildout Year 2035 - Without Project

### NOISE INPUT DATA

#### ROADWAY CONDITIONS

ADT = 12,994  
 SPEED = 40  
 PK HR % = 10  
 NEAR LANE/FAR LANE DIST = 40  
 ROAD ELEVATION = 0  
 GRADE = 0  
 PK HR VOL = 1,299

#### RECEIVER INPUT DATA

RECEIVER DISTANCE = 100  
 DIST C/L TO WALL = 0  
 RECEIVER HEIGHT = 5  
 WALL DISTANCE FROM RECEIVER = 100  
 PAD ELEVATION = 0  
 ROADWAY VIEW:  
     LF ANGLE = -90  
     RT ANGLE = 90  
     DF ANGLE = 180

#### SITE CONDITIONS

AUTOMOBILES 10  
 MED TRUCKS 10 (HARD SITE=10, SOFT SITE=15)  
 HVY TRUCKS 10

#### WALL INFORMATION

HTH WALL 0 FT  
 AMBIENT = 0  
 BARRIER = 0 (0=WALL,1=BERM)

#### VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

#### MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	98.0	--
MEDIUM TRUCKS=	4.00	98.0	--
HEAVY TRUCKS =	8.01	98.0	0.0

### NOISE OUTPUT DATA

#### NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	64.1	62.2	60.4	54.3	63.0	63.6
MEDIUM TRUCKS	55.8	54.3	47.9	46.4	54.8	55.1
HEAVY TRUCKS	56.4	55.0	46.0	47.2	55.6	55.7
<b>VEHICULAR NOISE</b>	<b>65.3</b>	<b>63.5</b>	<b>60.8</b>	<b>55.7</b>	<b>64.2</b>	<b>64.7</b>

#### NOISE CONTOUR (FT)

NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	30	94	297	938
LDN	26	84	264	836

**FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO**

PROJECT: Vista Del Agua Specific Plan Noise Impact Study, City of Coachella  
 ROADWAY: Polk Street  
 SEGMENT: Avenue 47 to Avenue 48  
 LOCATION: City of Coachella

JOB #: 2398-2014-02  
 DATE: 29-Oct-14  
 ENGINEER: M. Dickerson

SCENARIO: Buildout Year 2035 - Without Project

**NOISE INPUT DATA**

**ROADWAY CONDITIONS**

ADT = 21,951  
 SPEED = 40  
 PK HR % = 10  
 NEAR LANE/FAR LANE DIST = 80  
 ROAD ELEVATION = 0  
 GRADE = 0  
 PK HR VOL = 2,195

**RECEIVER INPUT DATA**

RECEIVER DISTANCE = 100  
 DIST C/L TO WALL = 0  
 RECEIVER HEIGHT = 5  
 WALL DISTANCE FROM RECEIVER = 100  
 PAD ELEVATION = 0  
 ROADWAY VIEW: LF ANGLE -90  
 RT ANGLE 90  
 DF ANGLE 180

**SITE CONDITIONS**

AUTOMOBILES 10  
 MED TRUCKS 10 (HARD SITE=10, SOFT SITE=15)  
 HVY TRUCKS 10

**WALL INFORMATION**

HTH WALL 0 FT  
 AMBIENT = 0  
 BARRIER = 0 (0=WALL,1=BERM)

**VEHICLE MIX DATA**

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

**MISC. VEHICLE INFO**

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	91.7	--
MEDIUM TRUCKS=	4.00	91.7	--
HEAVY TRUCKS =	8.01	91.7	0.0

**NOISE OUTPUT DATA**

**NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)**

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	66.6	64.7	63.0	56.9	65.5	66.1
MEDIUM TRUCKS	58.3	56.8	50.5	48.9	57.4	57.6
HEAVY TRUCKS	59.0	57.6	48.5	49.8	58.1	58.3
<b>VEHICULAR NOISE</b>	<b>67.8</b>	<b>66.1</b>	<b>63.4</b>	<b>58.2</b>	<b>66.8</b>	<b>67.3</b>

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	54	169	536	1695
LDN	48	151	477	1510

**FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO**

PROJECT: Vista Del Agua Specific Plan Noise Impact Study, City of Coachella  
 ROADWAY: Polk Street  
 SEGMENT: Avenue 48 to Avenue 50  
 LOCATION: City of Coachella

JOB #: 2398-2014-02  
 DATE: 29-Oct-14  
 ENGINEER: M. Dickerson

SCENARIO: Buildout Year 2035 - Without Project

**NOISE INPUT DATA**

**ROADWAY CONDITIONS**

ADT = 11,985  
 SPEED = 25  
 PK HR % = 10  
 NEAR LANE/FAR LANE DIST = 80  
 ROAD ELEVATION = 0  
 GRADE = 0  
 PK HR VOL = 1,199

**RECEIVER INPUT DATA**

RECEIVER DISTANCE = 100  
 DIST C/L TO WALL = 0  
 RECEIVER HEIGHT = 5  
 WALL DISTANCE FROM RECEIVER = 100  
 PAD ELEVATION = 0  
 ROADWAY VIEW: LF ANGLE -90  
 RT ANGLE 90  
 DF ANGLE 180

**SITE CONDITIONS**

AUTOMOBILES 10  
 MED TRUCKS 10 (HARD SITE=10, SOFT SITE=15)  
 HVY TRUCKS 10

**WALL INFORMATION**

HTH WALL 0 FT  
 AMBIENT = 0  
 BARRIER = 0 (0=WALL,1=BERM)

**VEHICLE MIX DATA**

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

**MISC. VEHICLE INFO**

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	91.7	--
MEDIUM TRUCKS=	4.00	91.7	--
HEAVY TRUCKS =	8.01	91.7	0.0

**NOISE OUTPUT DATA**

**NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)**

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	58.1	56.2	54.5	48.4	57.0	57.6
MEDIUM TRUCKS	52.5	51.0	44.7	43.1	51.6	51.8
HEAVY TRUCKS	54.5	53.1	44.0	45.3	53.6	53.8
<b>VEHICULAR NOISE</b>	<b>60.5</b>	<b>58.7</b>	<b>55.2</b>	<b>50.9</b>	<b>59.4</b>	<b>59.9</b>

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	10	31	97	306
LDN	9	28	88	278

**FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO**

PROJECT: Vista Del Agua Specific Plan Noise Impact Study, City of Coachella  
 ROADWAY: Vista Del Sur  
 SEGMENT: Dillon Road to Tyler Street  
 LOCATION: City of Coachella

JOB #: 2398-2014-02  
 DATE: 29-Oct-14  
 ENGINEER: M. Dickerson

SCENARIO: Buildout Year 2035 - With Project

**NOISE INPUT DATA**

**ROADWAY CONDITIONS**

ADT = 9,451  
 SPEED = 40  
 PK HR % = 10  
 NEAR LANE/FAR LANE DIST = 40  
 ROAD ELEVATION = 0  
 GRADE = 0  
 PK HR VOL = 945

**RECEIVER INPUT DATA**

RECEIVER DISTANCE = 100  
 DIST C/L TO WALL = 0  
 RECEIVER HEIGHT = 5  
 WALL DISTANCE FROM RECEIVER = 100  
 PAD ELEVATION = 0  
 ROADWAY VIEW:  
     LF ANGLE = -90  
     RT ANGLE = 90  
     DF ANGLE = 180

**SITE CONDITIONS**

AUTOMOBILES 10  
 MED TRUCKS 10 (HARD SITE=10, SOFT SITE=15)  
 HVY TRUCKS 10

**WALL INFORMATION**

HTH WALL 0 FT  
 AMBIENT = 0  
 BARRIER = 0 (0=WALL,1=BERM)

**VEHICLE MIX DATA**

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

**MISC. VEHICLE INFO**

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	98.0	--
MEDIUM TRUCKS=	4.00	98.0	--
HEAVY TRUCKS =	8.01	98.0	0.0

**NOISE OUTPUT DATA**

**NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)**

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	62.7	60.8	59.0	53.0	61.6	62.2
MEDIUM TRUCKS	54.4	52.9	46.5	45.0	53.4	53.7
HEAVY TRUCKS	55.0	53.6	44.6	45.8	54.2	54.3
<b>VEHICULAR NOISE</b>	<b>63.9</b>	<b>62.1</b>	<b>59.4</b>	<b>54.3</b>	<b>62.8</b>	<b>63.3</b>

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	22	68	216	682
LDN	19	61	192	608

**FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO**

PROJECT: Vista Del Agua Specific Plan Noise Impact Study, City of Coachella  
 ROADWAY: Vista Del Sur  
 SEGMENT: Tyler Street to Street A  
 LOCATION: City of Coachella

JOB #: 2398-2014-02  
 DATE: 29-Oct-14  
 ENGINEER: M. Dickerson

SCENARIO: Buildout Year 2035 - With Project

**NOISE INPUT DATA**

**ROADWAY CONDITIONS**

ADT = 8,985  
 SPEED = 40  
 PK HR % = 10  
 NEAR LANE/FAR LANE DIST = 40  
 ROAD ELEVATION = 0  
 GRADE = 0  
 PK HR VOL = 899

**RECEIVER INPUT DATA**

RECEIVER DISTANCE = 100  
 DIST C/L TO WALL = 0  
 RECEIVER HEIGHT = 5  
 WALL DISTANCE FROM RECEIVER = 100  
 PAD ELEVATION = 0  
 ROADWAY VIEW:  
     LF ANGLE = -90  
     RT ANGLE = 90  
     DF ANGLE = 180

**SITE CONDITIONS**

AUTOMOBILES 10  
 MED TRUCKS 10 (HARD SITE=10, SOFT SITE=15)  
 HVY TRUCKS 10

**WALL INFORMATION**

HTH WALL 0 FT  
 AMBIENT = 0  
 BARRIER = 0 (0=WALL,1=BERM)

**VEHICLE MIX DATA**

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

**MISC. VEHICLE INFO**

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	98.0	--
MEDIUM TRUCKS=	4.00	98.0	--
HEAVY TRUCKS =	8.01	98.0	0.0

**NOISE OUTPUT DATA**

**NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)**

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	62.5	60.6	58.8	52.7	61.4	62.0
MEDIUM TRUCKS	54.2	52.7	46.3	44.8	53.2	53.5
HEAVY TRUCKS	54.8	53.4	44.4	45.6	54.0	54.1
<b>VEHICULAR NOISE</b>	<b>63.7</b>	<b>61.9</b>	<b>59.2</b>	<b>54.1</b>	<b>62.6</b>	<b>63.1</b>

**NOISE CONTOUR (FT)**

NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	21	65	205	649
LDN	18	58	183	578

## FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Vista Del Agua Specific Plan Noise Impact Study, City of Coachella  
 ROADWAY: Avenue 47  
 SEGMENT: Dillon Road to Tyler Street  
 LOCATION: City of Coachella

JOB #: 2398-2014-02  
 DATE: 29-Oct-14  
 ENGINEER: M. Dickerson

SCENARIO: Buildout Year 2035 - With Project

### NOISE INPUT DATA

#### ROADWAY CONDITIONS

ADT = 36,163  
 SPEED = 40  
 PK HR % = 10  
 NEAR LANE/FAR LANE DIST = 40  
 ROAD ELEVATION = 0  
 GRADE = 0  
 PK HR VOL = 3,616

#### RECEIVER INPUT DATA

RECEIVER DISTANCE = 100  
 DIST C/L TO WALL = 0  
 RECEIVER HEIGHT = 5  
 WALL DISTANCE FROM RECEIVER = 100  
 PAD ELEVATION = 0  
 ROADWAY VIEW:  
     LF ANGLE = -90  
     RT ANGLE = 90  
     DF ANGLE = 180

#### SITE CONDITIONS

AUTOMOBILES 10  
 MED TRUCKS 10 (HARD SITE=10, SOFT SITE=15)  
 HVY TRUCKS 10

#### WALL INFORMATION

HTH WALL 0 FT  
 AMBIENT = 0  
 BARRIER = 0 (0=WALL,1=BERM)

#### VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

#### MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	98.0	--
MEDIUM TRUCKS=	4.00	98.0	--
HEAVY TRUCKS =	8.01	98.0	0.0

### NOISE OUTPUT DATA

#### NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	68.5	66.6	64.8	58.8	67.4	68.0
MEDIUM TRUCKS	60.2	58.7	52.4	50.8	59.3	59.5
HEAVY TRUCKS	60.9	59.5	50.4	51.7	60.0	60.1
<b>VEHICULAR NOISE</b>	<b>69.7</b>	<b>67.9</b>	<b>65.2</b>	<b>60.1</b>	<b>68.7</b>	<b>69.2</b>

#### NOISE CONTOUR (FT)

NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	83	261	826	2612
LDN	74	233	736	2327

## FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Vista Del Agua Specific Plan Noise Impact Study, City of Coachella  
 ROADWAY: Avenue 47  
 SEGMENT: Tyler Street to Street A  
 LOCATION: City of Coachella

JOB #: 2398-2014-02  
 DATE: 29-Oct-14  
 ENGINEER: M. Dickerson

SCENARIO: Buildout Year 2035 - With Project

### NOISE INPUT DATA

#### ROADWAY CONDITIONS

ADT = 10,115  
 SPEED = 40  
 PK HR % = 10  
 NEAR LANE/FAR LANE DIST = 40  
 ROAD ELEVATION = 0  
 GRADE = 0  
 PK HR VOL = 1,012

#### RECEIVER INPUT DATA

RECEIVER DISTANCE = 100  
 DIST C/L TO WALL = 0  
 RECEIVER HEIGHT = 5  
 WALL DISTANCE FROM RECEIVER = 100  
 PAD ELEVATION = 0  
 ROADWAY VIEW:  
     LF ANGLE = -90  
     RT ANGLE = 90  
     DF ANGLE = 180

#### SITE CONDITIONS

AUTOMOBILES 10  
 MED TRUCKS 10 (HARD SITE=10, SOFT SITE=15)  
 HVY TRUCKS 10

#### WALL INFORMATION

HTH WALL 0 FT  
 AMBIENT = 0  
 BARRIER = 0 (0=WALL,1=BERM)

#### VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

#### MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	98.0	--
MEDIUM TRUCKS=	4.00	98.0	--
HEAVY TRUCKS =	8.01	98.0	0.0

### NOISE OUTPUT DATA

#### NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	63.0	61.1	59.3	53.2	61.9	62.5
MEDIUM TRUCKS	54.7	53.2	46.8	45.3	53.7	54.0
HEAVY TRUCKS	55.3	53.9	44.9	46.1	54.5	54.6
<b>VEHICULAR NOISE</b>	<b>64.2</b>	<b>62.4</b>	<b>59.7</b>	<b>54.6</b>	<b>63.1</b>	<b>63.6</b>

#### NOISE CONTOUR (FT)

NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	23	73	231	730
LDN	21	65	206	651

**FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO**

PROJECT: Vista Del Agua Specific Plan Noise Impact Study, City of Coachella  
 ROADWAY: Avenue 47  
 SEGMENT: Street A to Polk Street  
 LOCATION: City of Coachella

JOB #: 2398-2014-02  
 DATE: 29-Oct-14  
 ENGINEER: M. Dickerson

SCENARIO: Buildout Year 2035 - With Project

**NOISE INPUT DATA**

**ROADWAY CONDITIONS**

ADT = 3,808  
 SPEED = 40  
 PK HR % = 10  
 NEAR LANE/FAR LANE DIST = 40  
 ROAD ELEVATION = 0  
 GRADE = 0  
 PK HR VOL = 381

**RECEIVER INPUT DATA**

RECEIVER DISTANCE = 100  
 DIST C/L TO WALL = 0  
 RECEIVER HEIGHT = 5  
 WALL DISTANCE FROM RECEIVER = 100  
 PAD ELEVATION = 0  
 ROADWAY VIEW:  
     LF ANGLE = -90  
     RT ANGLE = 90  
     DF ANGLE = 180

**SITE CONDITIONS**

AUTOMOBILES 10  
 MED TRUCKS 10 (HARD SITE=10, SOFT SITE=15)  
 HVY TRUCKS 10

**WALL INFORMATION**

HTH WALL 0 FT  
 AMBIENT = 0  
 BARRIER = 0 (0=WALL,1=BERM)

**VEHICLE MIX DATA**

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

**MISC. VEHICLE INFO**

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	98.0	--
MEDIUM TRUCKS=	4.00	98.0	--
HEAVY TRUCKS =	8.01	98.0	0.0

**NOISE OUTPUT DATA**

**NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)**

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	58.7	56.8	55.1	49.0	57.6	58.2
MEDIUM TRUCKS	50.5	48.9	42.6	41.0	49.5	49.7
HEAVY TRUCKS	51.1	49.7	40.6	41.9	50.2	50.4
<b>VEHICULAR NOISE</b>	<b>59.9</b>	<b>58.2</b>	<b>55.5</b>	<b>50.3</b>	<b>58.9</b>	<b>59.4</b>

**NOISE CONTOUR (FT)**

NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	9	27	87	275
LDN	8	24	77	245



## FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Vista Del Agua Specific Plan Noise Impact Study, City of Coachella  
 ROADWAY: Avenue 48  
 SEGMENT: Tyler Street to Street A  
 LOCATION: City of Coachella

JOB #: 2398-2014-02  
 DATE: 29-Oct-14  
 ENGINEER: M. Dickerson

SCENARIO: Buildout Year 2035 - With Project

### NOISE INPUT DATA

#### ROADWAY CONDITIONS

ADT = 15,979  
 SPEED = 40  
 PK HR % = 10  
 NEAR LANE/FAR LANE DIST = 80  
 ROAD ELEVATION = 0  
 GRADE = 0  
 PK HR VOL = 1,598

#### RECEIVER INPUT DATA

RECEIVER DISTANCE = 100  
 DIST C/L TO WALL = 0  
 RECEIVER HEIGHT = 5  
 WALL DISTANCE FROM RECEIVER = 100  
 PAD ELEVATION = 0  
 ROADWAY VIEW:  
     LF ANGLE = -90  
     RT ANGLE = 90  
     DF ANGLE = 180

#### SITE CONDITIONS

AUTOMOBILES 10  
 MED TRUCKS 10 (HARD SITE=10, SOFT SITE=15)  
 HVY TRUCKS 10

#### WALL INFORMATION

HTH WALL 0 FT  
 AMBIENT = 0  
 BARRIER = 0 (0=WALL,1=BERM)

#### VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

#### MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	91.7	--
MEDIUM TRUCKS=	4.00	91.7	--
HEAVY TRUCKS =	8.01	91.7	0.0

### NOISE OUTPUT DATA

#### NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	65.3	63.4	61.6	55.5	64.2	64.8
MEDIUM TRUCKS	57.0	55.5	49.1	47.6	56.0	56.2
HEAVY TRUCKS	57.6	56.2	47.2	48.4	56.8	56.9
<b>VEHICULAR NOISE</b>	<b>66.5</b>	<b>64.7</b>	<b>62.0</b>	<b>56.8</b>	<b>65.4</b>	<b>65.9</b>

#### NOISE CONTOUR (FT)

NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	39	123	390	1234
LDN	35	110	348	1099

**FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO**

PROJECT: Vista Del Agua Specific Plan Noise Impact Study, City of Coachella  
 ROADWAY: Avenue 48  
 SEGMENT: Street A to Polk Street  
 LOCATION: City of Coachella

JOB #: 2398-2014-02  
 DATE: 29-Oct-14  
 ENGINEER: M. Dickerson

SCENARIO: Buildout Year 2035 - With Project

**NOISE INPUT DATA**

**ROADWAY CONDITIONS**

ADT = 15,979  
 SPEED = 40  
 PK HR % = 10  
 NEAR LANE/FAR LANE DIST = 80  
 ROAD ELEVATION = 0  
 GRADE = 0  
 PK HR VOL = 1,598

**RECEIVER INPUT DATA**

RECEIVER DISTANCE = 100  
 DIST C/L TO WALL = 0  
 RECEIVER HEIGHT = 5  
 WALL DISTANCE FROM RECEIVER = 100  
 PAD ELEVATION = 0  
 ROADWAY VIEW:  
     LF ANGLE = -90  
     RT ANGLE = 90  
     DF ANGLE = 180

**SITE CONDITIONS**

AUTOMOBILES 10  
 MED TRUCKS 10 (HARD SITE=10, SOFT SITE=15)  
 HVY TRUCKS 10

**WALL INFORMATION**

HTH WALL 0 FT  
 AMBIENT = 0  
 BARRIER = 0 (0=WALL,1=BERM)

**VEHICLE MIX DATA**

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

**MISC. VEHICLE INFO**

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	91.7	--
MEDIUM TRUCKS=	4.00	91.7	--
HEAVY TRUCKS =	8.01	91.7	0.0

**NOISE OUTPUT DATA**

**NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)**

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	65.3	63.4	61.6	55.5	64.2	64.8
MEDIUM TRUCKS	57.0	55.5	49.1	47.6	56.0	56.2
HEAVY TRUCKS	57.6	56.2	47.2	48.4	56.8	56.9
<b>VEHICULAR NOISE</b>	<b>66.5</b>	<b>64.7</b>	<b>62.0</b>	<b>56.8</b>	<b>65.4</b>	<b>65.9</b>

**NOISE CONTOUR (FT)**

NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	39	123	390	1234
LDN	35	110	348	1099

**FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO**

PROJECT: Vista Del Agua Specific Plan Noise Impact Study, City of Coachella  
 ROADWAY: Tyler Street  
 SEGMENT: Vista Del Sur to Avenue 47  
 LOCATION: City of Coachella

JOB #: 2398-2014-02  
 DATE: 29-Oct-14  
 ENGINEER: M. Dickerson

SCENARIO: Buildout Year 2035 - With Project

**NOISE INPUT DATA**

**ROADWAY CONDITIONS**

ADT = 676  
 SPEED = 40  
 PK HR % = 10  
 NEAR LANE/FAR LANE DIST = 40  
 ROAD ELEVATION = 0  
 GRADE = 0  
 PK HR VOL = 68

**RECEIVER INPUT DATA**

RECEIVER DISTANCE = 100  
 DIST C/L TO WALL = 0  
 RECEIVER HEIGHT = 5  
 WALL DISTANCE FROM RECEIVER = 100  
 PAD ELEVATION = 0  
 ROADWAY VIEW:  
     LF ANGLE = -90  
     RT ANGLE = 90  
     DF ANGLE = 180

**SITE CONDITIONS**

AUTOMOBILES 10  
 MED TRUCKS 10 (HARD SITE=10, SOFT SITE=15)  
 HVY TRUCKS 10

**WALL INFORMATION**

HTH WALL 0 FT  
 AMBIENT = 0  
 BARRIER = 0 (0=WALL,1=BERM)

**VEHICLE MIX DATA**

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

**MISC. VEHICLE INFO**

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	98.0	--
MEDIUM TRUCKS=	4.00	98.0	--
HEAVY TRUCKS =	8.01	98.0	0.0

**NOISE OUTPUT DATA**

**NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)**

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	51.2	49.3	47.6	41.5	50.1	50.7
MEDIUM TRUCKS	42.9	41.4	35.1	33.5	42.0	42.2
HEAVY TRUCKS	43.6	42.2	33.1	34.4	42.7	42.9
<b>VEHICULAR NOISE</b>	<b>52.4</b>	<b>50.6</b>	<b>47.9</b>	<b>42.8</b>	<b>51.4</b>	<b>51.9</b>

**NOISE CONTOUR (FT)**

NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	2	5	15	49
LDN	1	4	14	43

**FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO**

PROJECT: Vista Del Agua Specific Plan Noise Impact Study, City of Coachella  
 ROADWAY: Tyler Street  
 SEGMENT: Avenue 47 to Avenue 48  
 LOCATION: City of Coachella

JOB #: 2398-2014-02  
 DATE: 29-Oct-14  
 ENGINEER: M. Dickerson

SCENARIO: Buildout Year 2035 - With Project

**NOISE INPUT DATA**

**ROADWAY CONDITIONS**

ADT = 14,447  
 SPEED = 40  
 PK HR % = 10  
 NEAR LANE/FAR LANE DIST = 40  
 ROAD ELEVATION = 0  
 GRADE = 0  
 PK HR VOL = 1,445

**RECEIVER INPUT DATA**

RECEIVER DISTANCE = 100  
 DIST C/L TO WALL = 0  
 RECEIVER HEIGHT = 5  
 WALL DISTANCE FROM RECEIVER = 100  
 PAD ELEVATION = 0  
 ROADWAY VIEW:  
     LF ANGLE = -90  
     RT ANGLE = 90  
     DF ANGLE = 180

**SITE CONDITIONS**

AUTOMOBILES 10  
 MED TRUCKS 10 (HARD SITE=10, SOFT SITE=15)  
 HVY TRUCKS 10

**WALL INFORMATION**

HTH WALL 0 FT  
 AMBIENT = 0  
 BARRIER = 0 (0=WALL,1=BERM)

**VEHICLE MIX DATA**

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

**MISC. VEHICLE INFO**

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	98.0	--
MEDIUM TRUCKS=	4.00	98.0	--
HEAVY TRUCKS =	8.01	98.0	0.0

**NOISE OUTPUT DATA**

**NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)**

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	64.5	62.6	60.9	54.8	63.4	64.0
MEDIUM TRUCKS	56.2	54.7	48.4	46.8	55.3	55.5
HEAVY TRUCKS	56.9	55.5	46.4	47.7	56.0	56.2
<b>VEHICULAR NOISE</b>	<b>65.7</b>	<b>63.9</b>	<b>61.2</b>	<b>56.1</b>	<b>64.7</b>	<b>65.2</b>

**NOISE CONTOUR (FT)**

NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	33	104	330	1043
LDN	29	93	294	929

**FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO**

PROJECT: Vista Del Agua Specific Plan Noise Impact Study, City of Coachella  
 ROADWAY: Tyler Street  
 SEGMENT: Avenue 48 to Avenue 50  
 LOCATION: City of Coachella

JOB #: 2398-2014-02  
 DATE: 29-Oct-14  
 ENGINEER: M. Dickerson

SCENARIO: Buildout Year 2035 - With Project

**NOISE INPUT DATA**

**ROADWAY CONDITIONS**

ADT = 18,704  
 SPEED = 40  
 PK HR % = 10  
 NEAR LANE/FAR LANE DIST = 40  
 ROAD ELEVATION = 0  
 GRADE = 0  
 PK HR VOL = 1,870

**RECEIVER INPUT DATA**

RECEIVER DISTANCE = 100  
 DIST C/L TO WALL = 0  
 RECEIVER HEIGHT = 5  
 WALL DISTANCE FROM RECEIVER = 100  
 PAD ELEVATION = 0  
 ROADWAY VIEW:  
     LF ANGLE = -90  
     RT ANGLE = 90  
     DF ANGLE = 180

**SITE CONDITIONS**

AUTOMOBILES 10  
 MED TRUCKS 10 (HARD SITE=10, SOFT SITE=15)  
 HVY TRUCKS 10

**WALL INFORMATION**

HTH WALL 0 FT  
 AMBIENT = 0  
 BARRIER = 0 (0=WALL,1=BERM)

**VEHICLE MIX DATA**

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

**MISC. VEHICLE INFO**

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	98.0	--
MEDIUM TRUCKS=	4.00	98.0	--
HEAVY TRUCKS =	8.01	98.0	0.0

**NOISE OUTPUT DATA**

**NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)**

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	65.6	63.7	62.0	55.9	64.5	65.2
MEDIUM TRUCKS	57.4	55.9	49.5	47.9	56.4	56.6
HEAVY TRUCKS	58.0	56.6	47.6	48.8	57.2	57.3
<b>VEHICULAR NOISE</b>	<b>66.9</b>	<b>65.1</b>	<b>62.4</b>	<b>57.2</b>	<b>65.8</b>	<b>66.3</b>

**NOISE CONTOUR (FT)**

NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	43	135	427	1351
LDN	38	120	381	1203

## FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Vista Del Agua Specific Plan Noise Impact Study, City of Coachella  
 ROADWAY: Street A  
 SEGMENT: Vista Del Sur to Avenue 47  
 LOCATION: City of Coachella

JOB #: 2398-2014-02  
 DATE: 29-Oct-14  
 ENGINEER: M. Dickerson

SCENARIO: Buildout Year 2035 - With Project

### NOISE INPUT DATA

#### ROADWAY CONDITIONS

ADT = 7,921  
 SPEED = 40  
 PK HR % = 10  
 NEAR LANE/FAR LANE DIST = 40  
 ROAD ELEVATION = 0  
 GRADE = 0  
 PK HR VOL = 792

#### RECEIVER INPUT DATA

RECEIVER DISTANCE = 100  
 DIST C/L TO WALL = 0  
 RECEIVER HEIGHT = 5  
 WALL DISTANCE FROM RECEIVER = 100  
 PAD ELEVATION = 0  
 ROADWAY VIEW:  
     LF ANGLE = -90  
     RT ANGLE = 90  
     DF ANGLE = 180

#### SITE CONDITIONS

AUTOMOBILES 10  
 MED TRUCKS 10 (HARD SITE=10, SOFT SITE=15)  
 HVY TRUCKS 10

#### WALL INFORMATION

HTH WALL 0 FT  
 AMBIENT = 0  
 BARRIER = 0 (0=WALL,1=BERM)

#### VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

#### MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	98.0	--
MEDIUM TRUCKS=	4.00	98.0	--
HEAVY TRUCKS =	8.01	98.0	0.0

### NOISE OUTPUT DATA

#### NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	61.9	60.0	58.3	52.2	60.8	61.4
MEDIUM TRUCKS	53.6	52.1	45.8	44.2	52.7	52.9
HEAVY TRUCKS	54.3	52.9	43.8	45.1	53.4	53.6
<b>VEHICULAR NOISE</b>	<b>63.1</b>	<b>61.3</b>	<b>58.6</b>	<b>53.5</b>	<b>62.1</b>	<b>62.6</b>

#### NOISE CONTOUR (FT)

NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	18	57	181	572
LDN	16	51	161	510

## FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Vista Del Agua Specific Plan Noise Impact Study, City of Coachella  
 ROADWAY: Street A  
 SEGMENT: Avenue 47 to Avenue 48  
 LOCATION: City of Coachella

JOB #: 2398-2014-02  
 DATE: 29-Oct-14  
 ENGINEER: M. Dickerson

SCENARIO: Buildout Year 2035 - With Project

### NOISE INPUT DATA

#### ROADWAY CONDITIONS

ADT = 3,577  
 SPEED = 40  
 PK HR % = 10  
 NEAR LANE/FAR LANE DIST = 40  
 ROAD ELEVATION = 0  
 GRADE = 0  
 PK HR VOL = 358

#### RECEIVER INPUT DATA

RECEIVER DISTANCE = 100  
 DIST C/L TO WALL = 0  
 RECEIVER HEIGHT = 5  
 WALL DISTANCE FROM RECEIVER = 100  
 PAD ELEVATION = 0  
 ROADWAY VIEW:  
     LF ANGLE = -90  
     RT ANGLE = 90  
     DF ANGLE = 180

#### SITE CONDITIONS

AUTOMOBILES 10  
 MED TRUCKS 10 (HARD SITE=10, SOFT SITE=15)  
 HVY TRUCKS 10

#### WALL INFORMATION

HTH WALL 0 FT  
 AMBIENT = 0  
 BARRIER = 0 (0=WALL,1=BERM)

#### VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

#### MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	98.0	--
MEDIUM TRUCKS=	4.00	98.0	--
HEAVY TRUCKS =	8.01	98.0	0.0

### NOISE OUTPUT DATA

#### NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	58.5	56.6	54.8	48.7	57.4	58.0
MEDIUM TRUCKS	50.2	48.7	42.3	40.8	49.2	49.5
HEAVY TRUCKS	50.8	49.4	40.4	41.6	50.0	50.1
<b>VEHICULAR NOISE</b>	<b>59.7</b>	<b>57.9</b>	<b>55.2</b>	<b>50.1</b>	<b>58.6</b>	<b>59.1</b>

#### NOISE CONTOUR (FT)

NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	8	26	82	258
LDN	7	23	73	230

**FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO**

PROJECT: Vista Del Agua Specific Plan Noise Impact Study, City of Coachella  
 ROADWAY: Polk Street  
 SEGMENT: Avenue 47 to Avenue 48  
 LOCATION: City of Coachella

JOB #: 2398-2014-02  
 DATE: 29-Oct-14  
 ENGINEER: M. Dickerson

SCENARIO: Buildout Year 2035 - With Project

**NOISE INPUT DATA**

**ROADWAY CONDITIONS**

ADT = 22,949  
 SPEED = 40  
 PK HR % = 10  
 NEAR LANE/FAR LANE DIST = 80  
 ROAD ELEVATION = 0  
 GRADE = 0  
 PK HR VOL = 2,295

**RECEIVER INPUT DATA**

RECEIVER DISTANCE = 100  
 DIST C/L TO WALL = 0  
 RECEIVER HEIGHT = 5  
 WALL DISTANCE FROM RECEIVER = 100  
 PAD ELEVATION = 0  
 ROADWAY VIEW:  
     LF ANGLE = -90  
     RT ANGLE = 90  
     DF ANGLE = 180

**SITE CONDITIONS**

AUTOMOBILES 10  
 MED TRUCKS 10 (HARD SITE=10, SOFT SITE=15)  
 HVY TRUCKS 10

**WALL INFORMATION**

HTH WALL 0 FT  
 AMBIENT = 0  
 BARRIER = 0 (0=WALL,1=BERM)

**VEHICLE MIX DATA**

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

**MISC. VEHICLE INFO**

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	91.7	--
MEDIUM TRUCKS=	4.00	91.7	--
HEAVY TRUCKS =	8.01	91.7	0.0

**NOISE OUTPUT DATA**

**NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)**

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	66.8	64.9	63.2	57.1	65.7	66.3
MEDIUM TRUCKS	58.5	57.0	50.7	49.1	57.6	57.8
HEAVY TRUCKS	59.2	57.8	48.7	50.0	58.3	58.5
<b>VEHICULAR NOISE</b>	<b>68.0</b>	<b>66.2</b>	<b>63.5</b>	<b>58.4</b>	<b>67.0</b>	<b>67.5</b>

**NOISE CONTOUR (FT)**

NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	56	177	560	1772
LDN	50	158	499	1578



**FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO**

PROJECT: Vista Del Agua Specific Plan Noise Impact Study, City of Coachella  
 ROADWAY: Polk Street  
 SEGMENT: Avenue 48 to Avenue 50  
 LOCATION: City of Coachella

JOB #: 2398-2014-02  
 DATE: 29-Oct-14  
 ENGINEER: M. Dickerson

SCENARIO: Buildout Year 2035 - With Project

**NOISE INPUT DATA**

**ROADWAY CONDITIONS**

ADT = 14,419  
 SPEED = 25  
 PK HR % = 10  
 NEAR LANE/FAR LANE DIST = 80  
 ROAD ELEVATION = 0  
 GRADE = 0  
 PK HR VOL = 1,442

**RECEIVER INPUT DATA**

RECEIVER DISTANCE = 100  
 DIST C/L TO WALL = 0  
 RECEIVER HEIGHT = 5  
 WALL DISTANCE FROM RECEIVER = 100  
 PAD ELEVATION = 0  
 ROADWAY VIEW: LF ANGLE -90  
 RT ANGLE 90  
 DF ANGLE 180

**SITE CONDITIONS**

AUTOMOBILES 10  
 MED TRUCKS 10 (HARD SITE=10, SOFT SITE=15)  
 HVY TRUCKS 10

**WALL INFORMATION**

HTH WALL 0 FT  
 AMBIENT = 0  
 BARRIER = 0 (0=WALL,1=BERM)

**VEHICLE MIX DATA**

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.974
MEDIUM TRUCKS	0.848	0.049	0.103	0.018
HEAVY TRUCKS	0.865	0.027	0.108	0.007

**MISC. VEHICLE INFO**

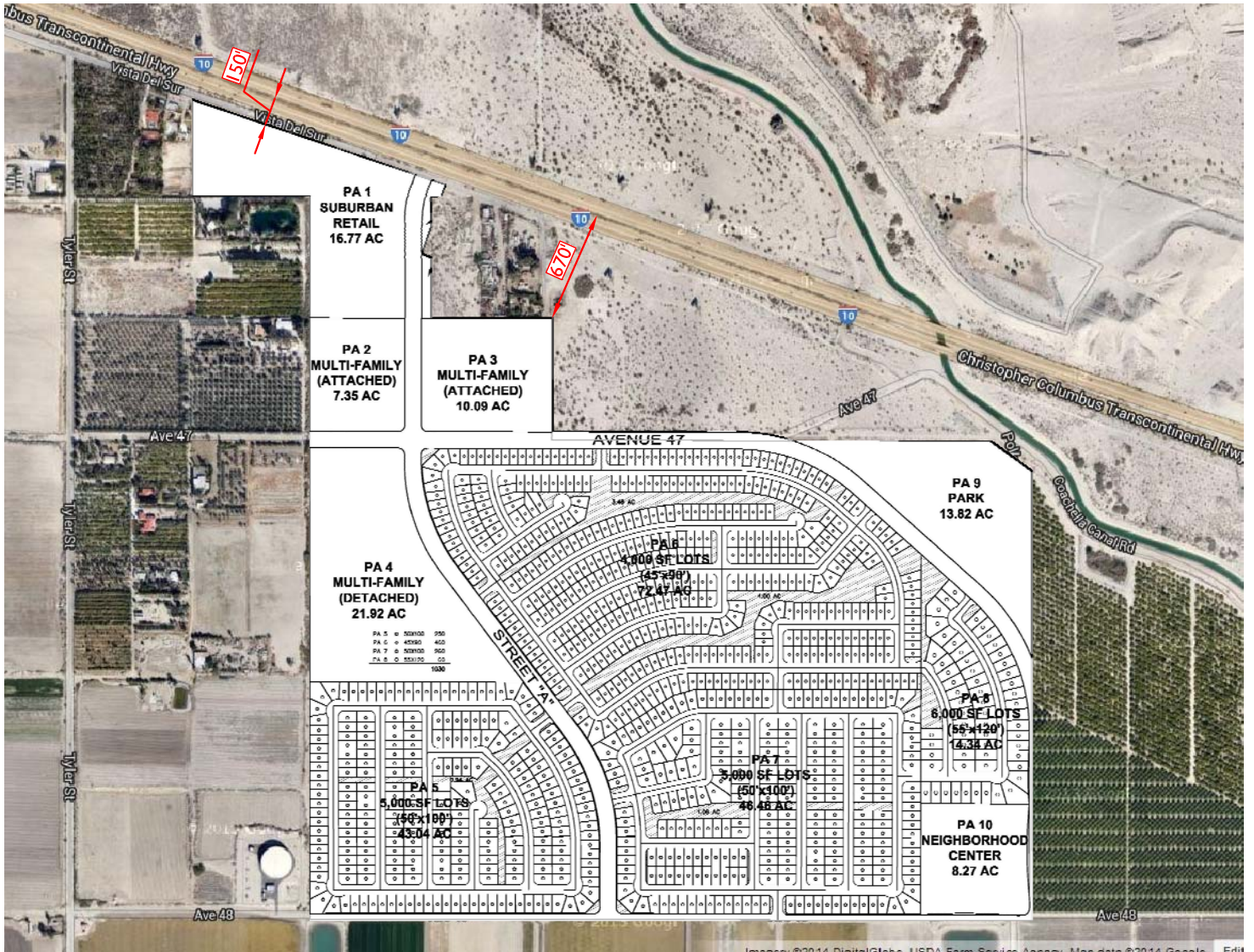
VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	91.7	--
MEDIUM TRUCKS=	4.00	91.7	--
HEAVY TRUCKS =	8.01	91.7	0.0

**NOISE OUTPUT DATA**

**NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)**

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	58.9	57.0	55.3	49.2	57.8	58.4
MEDIUM TRUCKS	53.3	51.8	45.5	43.9	52.4	52.6
HEAVY TRUCKS	55.3	53.9	44.8	46.1	54.4	54.6
<b>VEHICULAR NOISE</b>	<b>61.3</b>	<b>59.5</b>	<b>56.0</b>	<b>51.7</b>	<b>60.2</b>	<b>60.7</b>

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	12	37	117	369
LDN	11	33	106	334



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

PROJECT: **VISTA DEL AGUA SPECIFIC PLAN NOISE IMPACT STUDY**  
 ROADWAY: **INTERSTATE 10 (FREEWAY) - EXISING (YEAR 2013)**  
 LOCATION: **PLANNING AREA 3 - RESIDENTIAL**

JOB #: **2398-2014-02**  
 DATE: **30-Oct-14**  
 ENGINEER: **M. Dickerson**

**NOISE INPUT DATA**

**ROADWAY CONDITIONS**

ADT = **24,600**  
 SPEED = **65**  
 PK HR % = **10**  
 NEAR LANE/FAR LANE DIST = **105**  
 ROAD ELEVATION = **0.0**  
 GRADE = **1.0 %**  
 PK HR VOL = **2,460**

**RECEIVER INPUT DATA**

RECEIVER DISTANCE = **670**  
 DIST C/L TO WALL = **670**  
 RECEIVER HEIGHT = **5.0**  
 WALL DISTANCE FROM RECEIVER = **70**  
 PAD ELEVATION = **0.0**  
 ROADWAY VIEW: LF ANGLE= **-90**  
 RT ANGLE= **90**  
 DF ANGLE= **180**

**SITE CONDITIONS**

AUTOMOBILES = **15**  
 MEDIUM TRUCKS = **15** (10 = HARD SITE, 15 = SOFT SITE)  
 HEAVY TRUCKS = **15**

**WALL INFORMATION**

HTH WALL= **0.0**  
 AMBIENT= **0.0**  
 BARRIER = **1** (0 = WALL, 1 = BERM)

**VEHICLE MIX DATA**

VEHICLE TYPE	DAY	EVENING	NIGHT	DAILY
AUTOMOBILES	0.604	0.140	0.105	0.9100
MEDIUM TRUCKS	0.059	0.020	0.500	0.0408
HEAVY TRUCKS	0.337	0.020	0.500	0.0492

**MISC. VEHICLE INFO**

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES	2.0	667.95	--
MEDIUM TRUCKS	4.0	667.94	--
HEAVY TRUCKS	8.0	667.95	0.00

**NOISE OUTPUT DATA**

**NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)**

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	57.4	54.4	54.1	48.1	56.2	56.8
MEDIUM TRUCKS	50.1	37.0	38.3	47.5	53.4	53.4
HEAVY TRUCKS	54.4	48.9	42.7	51.9	57.9	57.9
NOISE LEVELS (dBA)	59.7	55.6	54.5	54.4	61.0	61.2

**NOISE IMPACTS (WITH TOPO AND BARRIER SHIELDING)**

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	57.4	54.4	54.1	48.1	56.2	56.8
MEDIUM TRUCKS	50.1	37.0	38.3	47.5	53.4	53.4
HEAVY TRUCKS	54.4	48.9	42.7	51.9	57.9	57.9
NOISE LEVELS (dBA)	59.7	55.6	54.5	54.4	61.0	61.2

**NOISE CONTOUR (FT)**

NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	174	375	807	1739
LDN	167	360	776	1671

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

PROJECT:	VISTA DEL AGUA SPECIFIC PLAN NOISE IMPACT STUDY	JOB #:	2398-2014-02
ROADWAY:	INTERSTATE 10 (FREEWAY) - BUILDOUT (YEAR 2022)	DATE:	4-Nov-14
LOCATION:	PLANNING AREA 3 - RESIDENTIAL	ENGINEER:	M. Dickerson

**NOISE INPUT DATA**

ROADWAY CONDITIONS		RECEIVER INPUT DATA	
ADT =	31,250	RECEIVER DISTANCE =	670
SPEED =	65	DIST C/L TO WALL =	670
PK HR % =	10	RECEIVER HEIGHT =	5.0
NEAR LANE/FAR LANE DIST =	105	WALL DISTANCE FROM RECEIVER =	70
ROAD ELEVATION =	0.0	PAD ELEVATION =	0.0
GRADE =	1.0 %	ROADWAY VIEW: LF ANGLE=	-90
PK HR VOL =	3,125	RT ANGLE=	90
		DF ANGLE=	180

SITE CONDITIONS		WALL INFORMATION	
AUTOMOBILES =	15	HTH WALL=	0.0
MEDIUM TRUCKS =	15	AMBIENT=	0.0
HEAVY TRUCKS =	15	BARRIER =	1 (0 = WALL, 1 = BERM)
	(10 = HARD SITE, 15 = SOFT SITE)		

VEHICLE MIX DATA					MISC. VEHICLE INFO			
VEHICLE TYPE	DAY	EVENING	NIGHT	DAILY				
AUTOMOBILES	0.604	0.140	0.105	0.9100				
MEDIUM TRUCKS	0.059	0.020	0.500	0.0408				
HEAVY TRUCKS	0.337	0.020	0.500	0.0492				
VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT					
AUTOMOBILES	2.0	667.95	--					
MEDIUM TRUCKS	4.0	667.94	--					
HEAVY TRUCKS	8.0	667.95	0.00					

**NOISE OUTPUT DATA**

**NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)**

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	58.5	55.5	55.1	49.1	57.2	57.9
MEDIUM TRUCKS	51.1	38.1	39.4	48.6	54.4	54.4
HEAVY TRUCKS	55.5	49.9	43.7	52.9	58.9	59.0
NOISE LEVELS (dBA)	60.7	56.6	55.6	55.4	62.0	62.3

**NOISE IMPACTS (WITH TOPO AND BARRIER SHIELDING)**

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	58.5	55.5	55.1	49.1	57.2	57.9
MEDIUM TRUCKS	51.1	38.1	39.4	48.6	54.4	54.4
HEAVY TRUCKS	55.5	49.9	43.7	52.9	58.9	59.0
NOISE LEVELS (dBA)	60.7	56.6	55.6	55.4	62.0	62.3

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	204	439	947	2039
LDN	196	422	910	1960

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

PROJECT: **VISTA DEL AGUA SPECIFIC PLAN NOISE IMPACT STUDY**  
 ROADWAY: **INTERSTATE 10 (FREEWAY) - BUILDOUT (YEAR 2035)**  
 LOCATION: **PLANNING AREA 3 - RESIDENTIAL**

JOB #: **2398-2014-02**  
 DATE: **30-Oct-14**  
 ENGINEER: **M. Dickerson**

**NOISE INPUT DATA**

**ROADWAY CONDITIONS**

ADT = **40,855**  
 SPEED = **65**  
 PK HR % = **10**  
 NEAR LANE/FAR LANE DIST = **134**  
 ROAD ELEVATION = **0.0**  
 GRADE = **1.0** %  
 PK HR VOL = **4,086**

**RECEIVER INPUT DATA**

RECEIVER DISTANCE = **670**  
 DIST C/L TO WALL = **500**  
 RECEIVER HEIGHT = **5.0**  
 WALL DISTANCE FROM RECEIVER = **70**  
 PAD ELEVATION = **0.0**  
 ROADWAY VIEW: LF ANGLE= **-90**  
 RT ANGLE= **90**  
 DF ANGLE= **180**

**SITE CONDITIONS**

AUTOMOBILES = **15**  
 MEDIUM TRUCKS = **15** (10 = HARD SITE, 15 = SOFT SITE)  
 HEAVY TRUCKS = **15**

**WALL INFORMATION**

HTH WALL= **0.0**  
 AMBIENT= **0.0**  
 BARRIER = **1** (0 = WALL, 1 = BERM)

**VEHICLE MIX DATA**

VEHICLE TYPE	DAY	EVENING	NIGHT	DAILY
AUTOMOBILES	0.604	0.140	0.105	0.9100
MEDIUM TRUCKS	0.059	0.020	0.500	0.0408
HEAVY TRUCKS	0.337	0.020	0.500	0.0492

**MISC. VEHICLE INFO**

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES	2.0	666.65	--
MEDIUM TRUCKS	4.0	666.64	--
HEAVY TRUCKS	8.0	666.65	0.00

**NOISE OUTPUT DATA**

**NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)**

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	59.6	56.7	56.3	50.3	58.4	59.0
MEDIUM TRUCKS	52.3	39.2	40.6	49.8	55.6	55.6
HEAVY TRUCKS	56.6	51.1	44.9	54.1	60.1	60.2
NOISE LEVELS (dBA)	61.9	57.8	56.7	56.6	63.2	63.4

**NOISE IMPACTS (WITH TOPO AND BARRIER SHIELDING)**

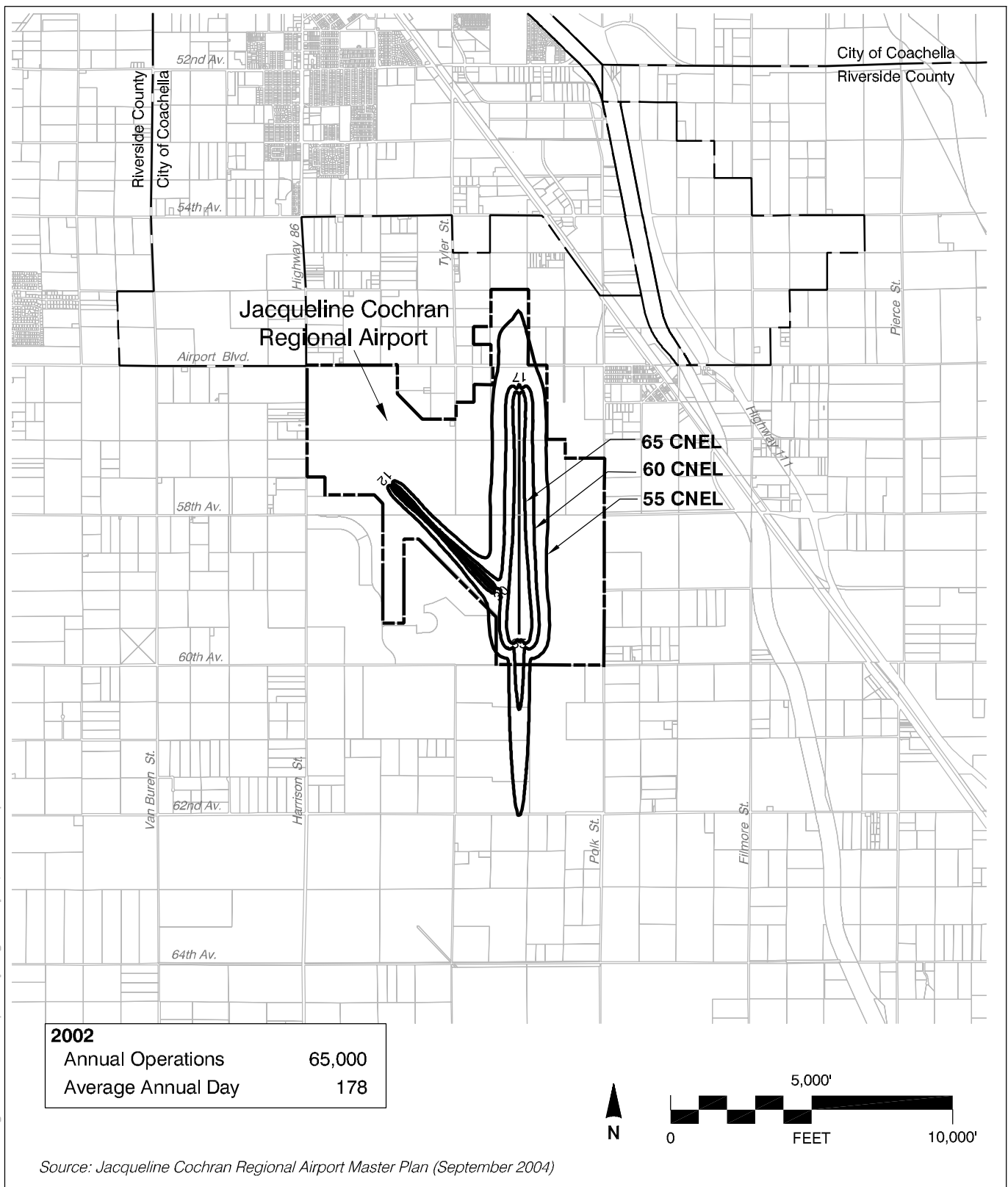
VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	59.6	56.7	56.3	50.3	58.4	59.0
MEDIUM TRUCKS	52.3	39.2	40.6	49.8	55.6	55.6
HEAVY TRUCKS	56.6	51.1	44.9	54.1	60.1	60.2
NOISE LEVELS (dBA)	61.9	57.8	56.7	56.6	63.2	63.4

**NOISE CONTOUR (FT)**

NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	244	526	1134	2443
LDN	235	506	1090	2348

## **Appendix E**

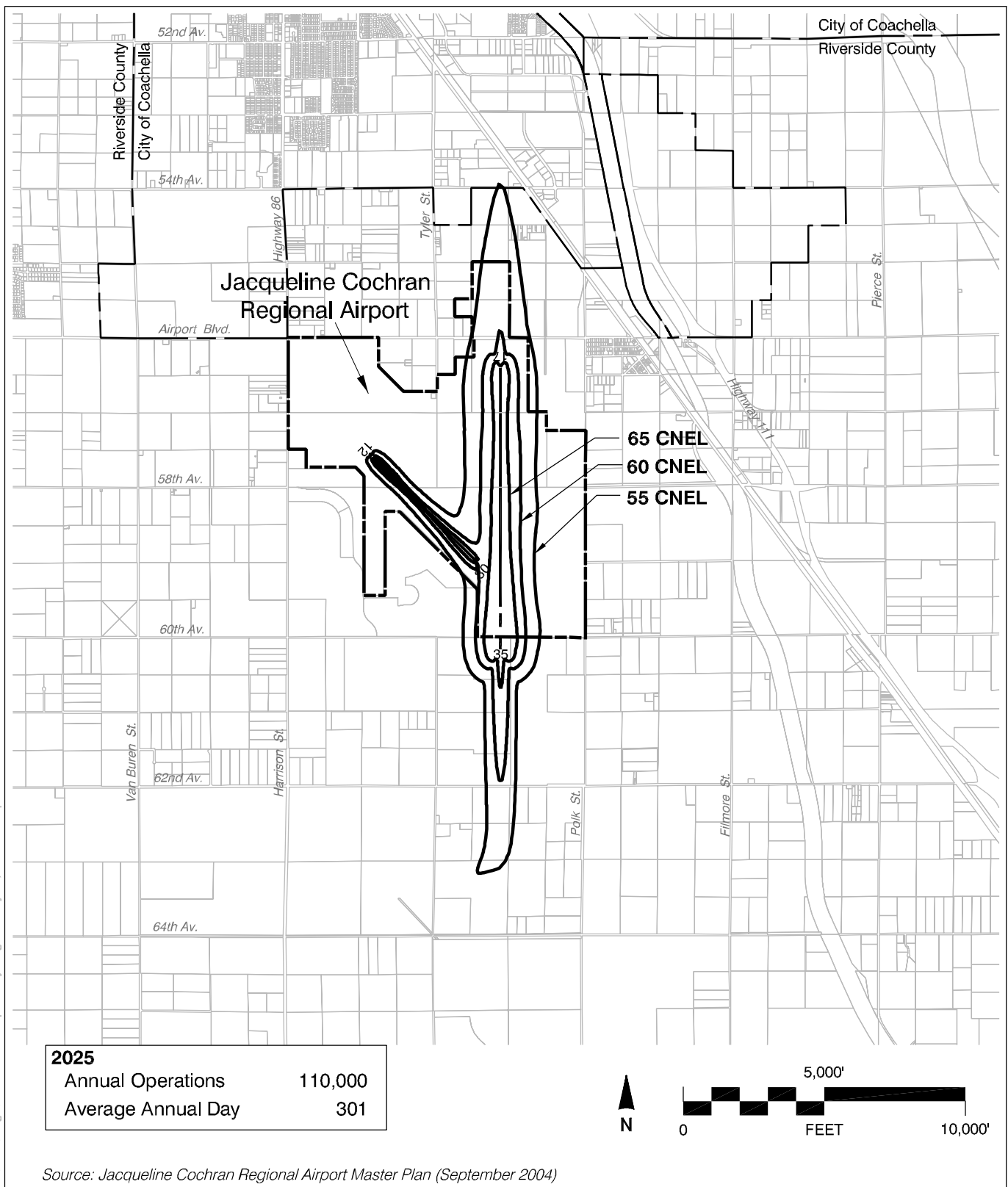
Jacqueline Cochran Regional Airport  
Noise Contours



P:\RCD\dwgs\TRIM-noise-compatibility.dwg May 04, 2005 - 4:22pm

**Exhibit JC-4**

**Existing Noise Impacts**  
**Jacqueline Cochran Regional Airport**

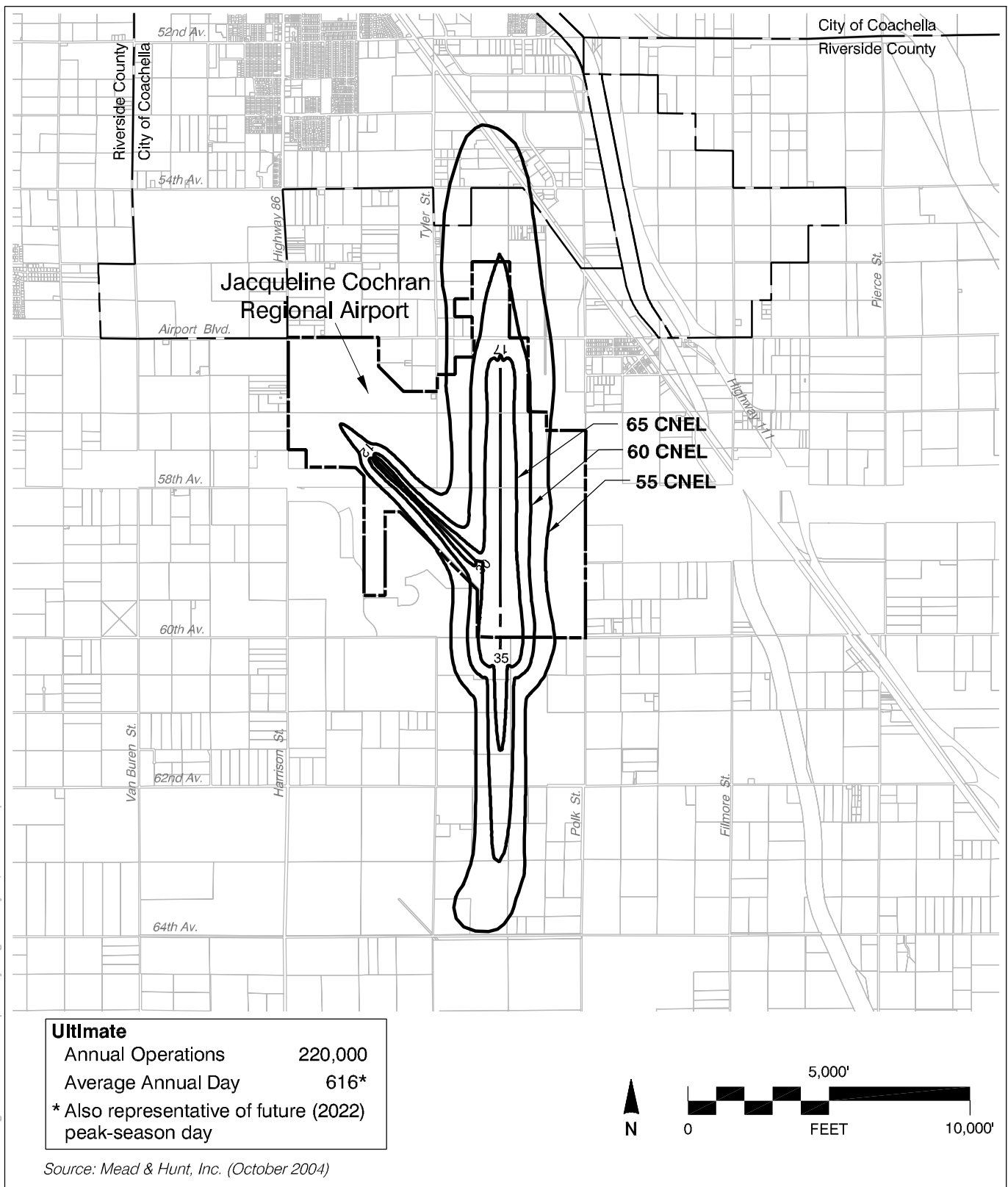


P:\RCO\Draws\TRM-noise-compatibility.dwg May 04, 2005 - 4:26pm

Exhibit JC-5

## Future Noise Impacts Jacqueline Cochran Regional Airport





P:\RCO\Drawgs\TRM-noise-compatibility.dwg May 04, 2005 - 4:29pm

Exhibit JC-6

# Ultimate Noise Impacts

## Jacqueline Cochran Regional Airport