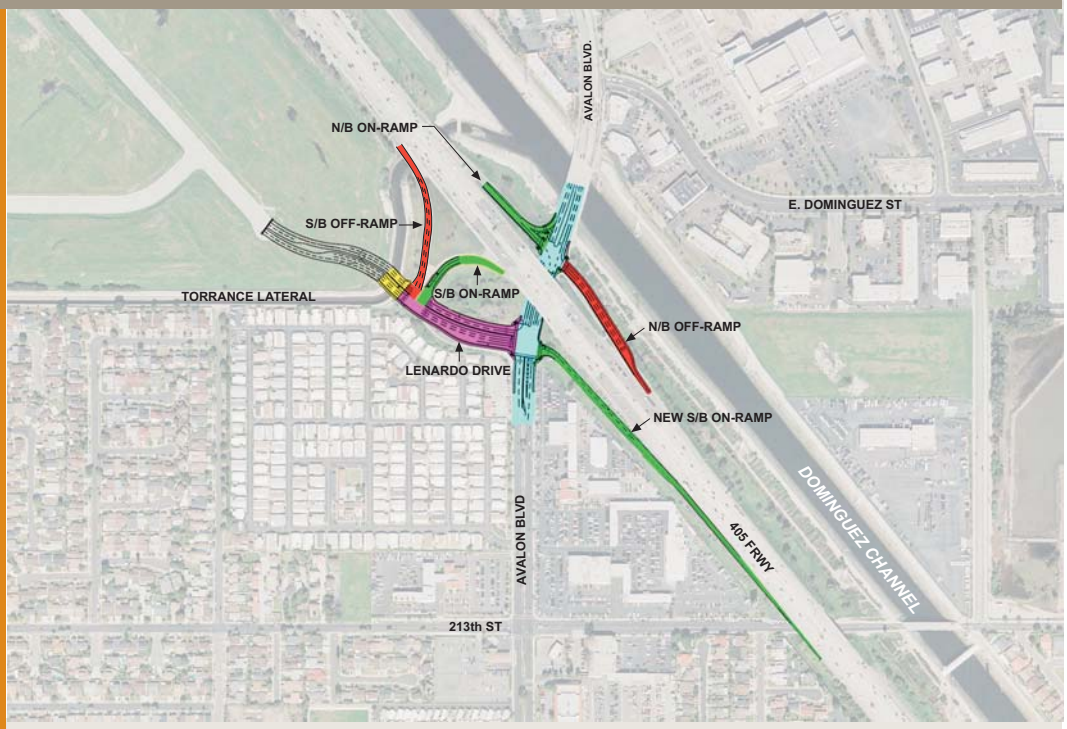

Noise Impacts Technical Report of I-405/Avalon Boulevard Interchange Improvements

Interstate 405/Avalon Boulevard Interchange
City of Carson, Caltrans-District 7, Los Angeles County, California, 07-LA-405_PM 10.8/11.4

EA: 233900

June 2007

NOISE TECHNICAL REPORT

I-405/AVALON BOULEVARD INTERCHANGE IN THE CITY OF CARSON

LOCATIONS

Caltrans – District #7
Los Angeles County

Along the I-405 Freeway, approximately 1.36 miles southeast (south by route orientation) of the I-405 interchange with Main Street and 0.69 miles northwest (north by route orientation) of the interchange with Carson Street. Also located approximately 1.7 miles southeast of the interchange of the I-405 and I-110 Freeways. Post mile 10.8 to 11.4.

U.S. Geological Survey (USGS) 7.5-minute Torrance quadrangle topographic map in an unsectioned portion, T. 3 S., R. 13 W.

EA 233900

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JUNE 2007

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LIST OF ABBREVIATED WORDS

Caltrans	California Department of Transportation
CIDH	Cast-in-Drilled-Hole
dBA	A-Weighted sound pressure level
FHWA	Federal Highway Administration
I-405	Interstate 405
$L_{eq}(h)$	Hourly energy averaged sound pressure level
NAC	Noise Abatement Criteria
PPV	Peak Particle Velocity
Protocol	Traffic Noise Analysis Protocol
TeNS	Technical Noise Supplement
TNM	Traffic Noise Model

SUMMARY

The City of Carson proposes to improve the configuration of the existing interchange of Avalon Boulevard at Interstate 405 (I-405) in the City of Carson. The proposed improvements would enhance traffic flows in the project vicinity with improvements and/or realignments of existing ramps in three of the intersection quadrants and addition of a new ramp in the fourth.

The Project consists of one Build Alternative and one No-Build Alternative. Other alternative actions for this project have been considered, including a second build alternative that was described in a 1996 Project Study Report (PSR) for the project; however the proposed Build Alternative has been concluded to be the only feasible alternative for the project.

The proposed Build Alternative would improve the configuration of the existing interchange of Avalon Boulevard at I-405. The intersection would be redesigned to link the site of the Carson Marketplace project to the interchange and Avalon Boulevard with an extension of Lenardo Drive to Avalon Boulevard. The existing southbound ramps lying between the Carson Marketplace site and Avalon Boulevard would be realigned and a new southbound ramp would be provided east of Avalon Boulevard. In addition the northbound on and off ramps would be improved to increase their capacity and turning movements. Minor modifications would be made along Avalon Boulevard to provide an appropriate interface with the new ramps.

Under the No-Build Alternative, there would be no alterations to the existing intersection. Roadway capacity would remain unchanged. There would be no changes to the physical environment. Traffic levels would continue to increase with deterioration of service levels.

Traffic noise impacts associated with the proposed Interstate 405 Avalon Boulevard Interchange Improvements (Project) were evaluated using the Caltrans' "*Traffic Noise Analysis Protocol for New Highway and Highway Reconstruction Projects*", August 2006 and the "Technical Noise Supplement", *A Technical Supplement To The Traffic Noise Analysis Protocol*, October 1998. The evaluation included a screening analysis using the Noise Analysis Screening Procedure Checklist and a detailed noise analysis using the Federal Highway Administration (FHWA) Traffic Noise Model (TNM).

As part of the screening procedure an inventory of existing land uses was conducted in order to determine appropriate locations for both the noise survey of the existing environment and prediction of future sound levels. Six locations were chosen for documenting the current noise levels in the project area. These locations, identified as R1 through R7 are shown in project site plan in Section 1.1. The existing peak hour traffic noise levels ranged from 56.4 dBA at receptor R1 to 73.8 dBA at receptor R5. A summary table for the measured ambient noise levels has been included (Table 6) in Section 2.2.1 of this Technical Report.

Traffic volumes for future (year 2030) conditions, Build and No-Build Alternatives, were used to predict the peak hour noise levels. Future predicted peak hour noise in the Project area without the project ranged from approximately 56.3 to 71.2 decibels. With the proposed Build Alternative, traffic noise levels at most areas of the mobile home park (represented by receptors R2 to R4) would be reduced from existing conditions because of the new Lenardo bridge, which will provide partial acoustical shielding to the freeway I-405. The measured noise data and the predicted future traffic noise levels indicate that the existing and future conditions noise levels at the single family residential neighborhood south of 213th Street (receptor R5) are above Caltrans' Noise Abatement Criteria (NAC) of 67 decibels. The traffic noise analysis shows that the project is expected to increase noise level at receptor R5 by a maximum of 0.7 decibels. A 3.0 m (10 feet) high sound wall, as shown on Figure 4, of Section 2.3.2.4, Noise Abatement Analysis, is recommended to reduce the freeway noise to meet the NAC for the residential neighborhood south of 213th Street.

Construction activities are estimated to reach as high as 85 decibels at the adjacent residential communities and are expected to increase the existing ambient noise levels by as much as 30 dBA. Minimization measures are recommended as described in Section 2.4.3 to minimize the construction noise and control vibration.

CHAPTER 1. INTRODUCTION

1.1 PROJECT HISTORY

1.1.1 Introduction

The City of Carson proposes to improve the configuration of the existing interchange of Avalon Boulevard at Interstate 405 (I-405) in the City of Carson. The proposed improvements would enhance traffic flows in the project vicinity with improvements and/or realignments of existing ramps in three of the intersection quadrants and addition of a new ramp in the fourth.

As indicated in Figure 1, *Project Components, Project Location and Noise Measurement Locations*, on page 4. The project is located within the City of Carson in the County of Los Angeles. It lies approximately 1.36 miles southeast (south by route orientation) of the I-405 interchange with Main Street and 0.69 miles northwest (north by route orientation) of the interchange with Carson Street. It is also located approximately 1.7 miles southeast of the interchange of the I-405 and I-110 Freeways. The Project lies within Caltrans District 7.

The project site is situated in a built urban area, surrounded by an array of commercial uses, with residential and service uses lying in a larger perimeter. One large vacant parcel lies next to the project site. This site is intended for development of the Carson marketplace, a 168-acre, mixed-use development with neighborhood commercial, regional commercial, commercial recreation/entertainment, restaurant, hotel, and residential uses.

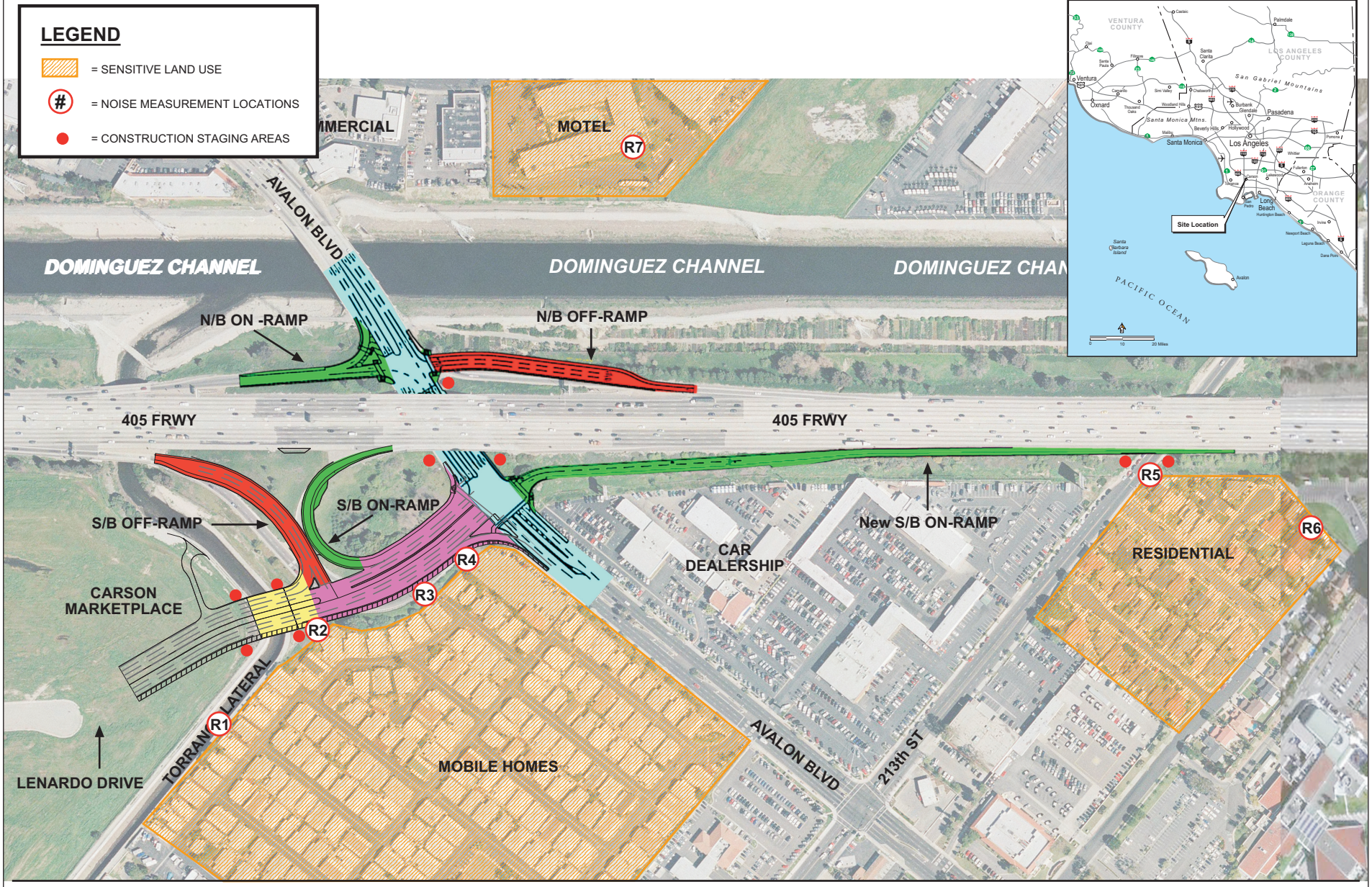
1.2 PROJECT DESCRIPTION

1.2.1 Introduction

The Project consists of one Build Alternative and one No-Build Alternative.

1.2.2 Proposed Build Alternative

The proposed Build Alternative would improve the configuration of the existing interchange of Avalon Boulevard at I-405. The intersection would be redesigned to link the site of the Carson Marketplace project to the interchange and Avalon Boulevard with an extension of Lenardo Drive to Avalon Boulevard. The existing southbound ramps lying between the Carson Marketplace site and Avalon Boulevard would be realigned



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0 150 300 600 Feet

Caltrans District 7, Los Angeles County, I-405/Avalon Boulevard Interchange, PM 10.8/11.4
Source: DMJM Harris, 2007.

Figure 1
Project Components, Project Location, and Noise Measurement Locations

and a new southbound ramp would be provided east of Avalon Boulevard. In addition the northbound on- and off-ramps would be improved to increase their capacity and turning movements. Minor modifications would be made along Avalon Boulevard to provide an appropriate interface with the new ramps.

More specifically, the proposed project includes improvements to each of the four quadrants and Avalon Boulevard as follows:

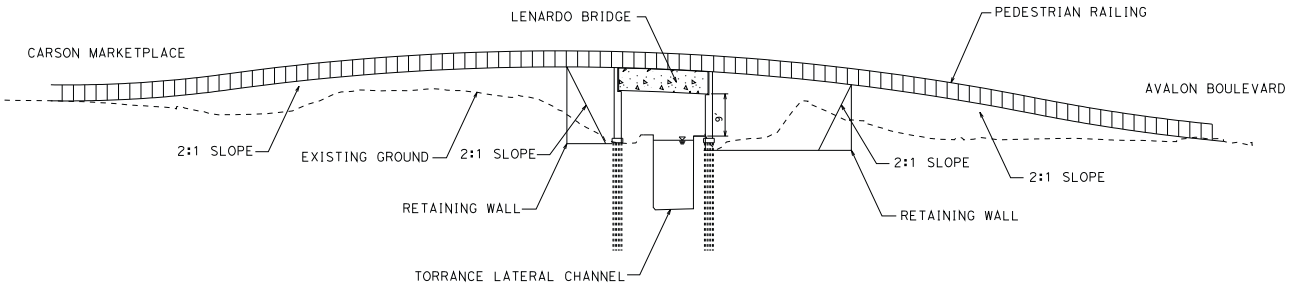
1.2.2.1 Southwest Quadrant

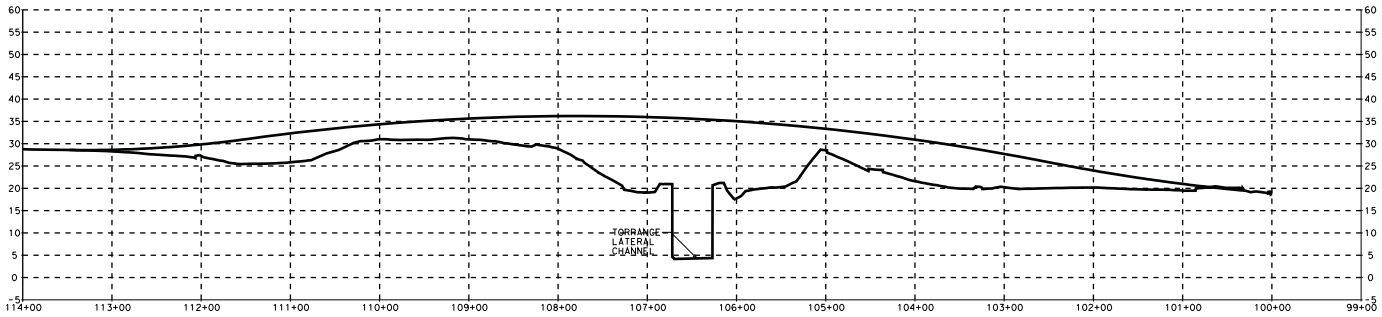
Lenardo Drive would be configured to link with the existing ramps, and extend from the Carson Marketplace site to Avalon Boulevard. The extension of Lenardo Drive would link the Carson Marketplace project with the intersection and the neighboring roadway network to the east, north and south. The extension of Lenardo Drive would require the construction of a new bridge over the Torrance Lateral flood control channel. See Figure 2 on page 6. The existing I-405 southbound off-ramp to Avalon Boulevard would be realigned and reconstructed to connect to the extended Lenardo Drive, east of the Torrance Lateral storm west of Avalon Boulevard.

The existing southbound loop on-ramp would be realigned next to the terminus of the reconstructed southbound off-ramp. This on-ramp would provide southbound freeway access for traffic from southbound Avalon Boulevard, via queuing on westbound Lenardo Drive.

1.2.2.2 Southeast Quadrant

A new I-405 southbound on-ramp would be constructed from the intersection at Avalon Boulevard to the freeway, connecting in the general area of the 213th Street Bridge, approximately 1,700 feet to the south. This new on-ramp would provide freeway access for traffic from northbound Avalon Boulevard and from eastbound Lenardo Drive (i.e., the traffic leaving the Carson Marketplace site). Construction of the ramp would require the re-grading of the existing slope along the south side of the I-450 Freeway and the addition of fill material to build a new bench sloping up from the Avalon Boulevard to the freeway. The merge to the southbound mainline of the freeway would require the widening of the existing 213th Street Bridge by a maximum of approximately 8 feet.





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No scale

Figure 2
Conceptual Design of the Lenardo Drive Bridge

Source: DMJM Harris, 2007.

1.2.2.3 Northeast Quadrant

The I-405 northbound off-ramp to Avalon Boulevard would be widened and realigned to allow for full movements, i.e. movements to both northbound and southbound Avalon Boulevard. Currently traffic is restricted to proceeding north on Avalon Boulevard. The widening would require cutting into the existing slope along the southern edge of the ramp and re-contouring it with a slight increase in the width of the bench along the northern edge of the ramp.

1.2.2.4 Northwest Quadrant

The I-405 northbound on-ramp would be realigned at Avalon Boulevard to allow for two left-turn lanes from northbound Avalon Boulevard. The southbound Avalon Boulevard right-turn lane to the ramp would be signalized. The widening would require adding fill on the north side of the ramp to increase the width of the bench.

1.2.2.5 Avalon Boulevard

Implementation of the above improvements would require changes to Avalon Boulevard to accommodate additional turning movements associated with the new ramps. These changes include modifications to medians and lane stripping. In addition, the existing sidewalk on Avalon Boulevard would need be moved to a location placed behind the existing structure columns that support the I-405 bridge over Avalon Boulevard. This relocation would require cutting into the side of the slope along Avalon Boulevard, and constructing a retaining wall to support the slope.

1.2.3 No-Build Alternative

If the Project were not built, there would be no alterations to the existing intersection. Roadway capacity would remain unchanged. There would be no changes to the physical environment.

CHAPTER 2. NOISE ANALYSIS

2.1 ENVIRONMENTAL SETTING

2.1.1 Noise and Vibration Basics

2.1.1.1 Noise

Sound is something that can be heard. Noise is generally defined as unwanted sound. Although sound can be easily measured, the perceptibility of sound is subjective and the physical response to sound complicates the analysis of its impact on people. People judge the relative magnitude of sound in subjective terms such as “noisiness” or “loudness.” Sound pressure is measured and quantified using a logarithmic ratio, the scale of which gives the level of sound in decibels (dB). The human hearing system is not equally sensitive to sound at all frequencies. Therefore, to approximate this human, frequency-dependent response, the A-weighted system is used to adjust measured sound levels. The A-weighted sound level is expressed as “dBA.” This scale de-emphasizes low frequencies to which human hearing is less sensitive and focuses on mid- to high-range frequencies. Due to the physical characteristics of noise transmission and reception, an increase of 10 dBA is normally required to achieve a doubling of the “loudness,” as perceived by the human ear. In addition, a 3-dBA increase is recognizable to most people in the context of the community noise environment. A change in noise level will usually not be detectable unless the new noise source is at least as loud as the ambient conditions. Typical A-weighted sound levels measured for various sources, as well as people’s responses to these levels, are provided in Table 1 on page 9.

Objects that obstruct the line-of-sight between a noise source and a receiver reduce the noise level if the receiver is located within the “shadow” of the obstruction, such as behind a sound wall. This type of sound attenuation is known as “barrier insertion loss.” If a receiver is located behind the wall but still has a view of the source (i.e., line-of-sight not fully blocked), some barrier insertion loss would still occur, however to a lesser extent. Additionally, a receiver located on the same side of the wall as a noise source may actually experience an increase in the perceived noise level as the wall reflects noise back to the receiver, thereby compounding the noise.

Community noise levels, including traffic noise, usually change continuously during the day. To describe the time variation in noise exposure, the equivalent sound level (L_{eq}) is normally used. The L_{eq} is the equivalent steady-state A-weighted sound level that would contain the same acoustical energy as the time-varying A-weighted

Table 1

Sound Levels and Human Response

Noise Source	Noise Level (dBA)	Response
Military Jet Takeoff (50 ft.) Civil Defense Siren (100 ft.)	130	Pain Threshold
Commercial Jet Takeoff (200 ft.)	120	
Unmuffled Motorcycle Auto Horn (3 ft.) Riveting Machine	110	Physical Discomfort
Diesel Pile Driver (100 ft.) Ambulance Siren (100 ft.) Garbage Truck (3 ft.)	100	Very Loud and Annoying Hearing Damage (Steady 8-Hour Exposure)
Heavy Truck (50 ft.) Pneumatic Drill (50 ft.)	90	
Freight Train (50 ft.) Shouting (3 ft.)	80	Annoying
Freeway Traffic (50 ft.) Vacuum Cleaner (3 ft.) Power Mower (100 ft.)	70	Telephone Use Difficult
Dishwashers Air Conditioning Units (20 ft.)	60	Intrusive
Light Auto Traffic (100 ft.)	50	
Living Room Bedroom	40	Quiet
Library Soft Whisper (5 ft.)	30	Very Quiet
Broadcasting Studio	20	Just Audible

Source: Melville C. Branch, R. Dale Beland et al., 1970, Outdoor Noise in the Metropolitan Environment, p. 2.

sound level during the same time interval. FHWA and Caltrans use L_{eq} noise descriptor to describe traffic noise impacts.

Other values typically noted during a noise survey are the L_{min} and L_{max}. These values represent the minimum and maximum noise levels observed during a measurement period. Maximum and minimum noise levels, as compared to the L_{eq}, are a function of the characteristics of the noise source. For example, sources such as compressors, generators, and transformers have maximum and minimum noise levels that are similar to their L_{eq} levels since noise levels for steady-state noise sources do

not substantially fluctuate. However, as another example, vehicular noise levels along local roadways result in substantially different minimum and maximum noise levels when compared to the L_{eq} since noise levels fluctuate during pass by events.

2.1.1.2 Vibration

Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. Vibration velocity is most often described in terms of peak particle velocity (PPV) or in terms of root-mean-square (rms) vibration decibels (VdB) for purposes of ground-borne vibration analysis. Ground-borne vibration is generally a concern inside buildings and is rarely perceived as a problem outdoors. Vibration energy propagates from a source through intervening soil and rock layers, to the foundations of nearby buildings and from the foundation throughout the building structure. Building vibration may be perceived by the occupants as motion of building surfaces, rattling of items on shelves or hanging on walls, or as a low-frequency rumbling noise. The rumble noise is caused by the vibrating walls, floors and ceilings radiating sound waves.

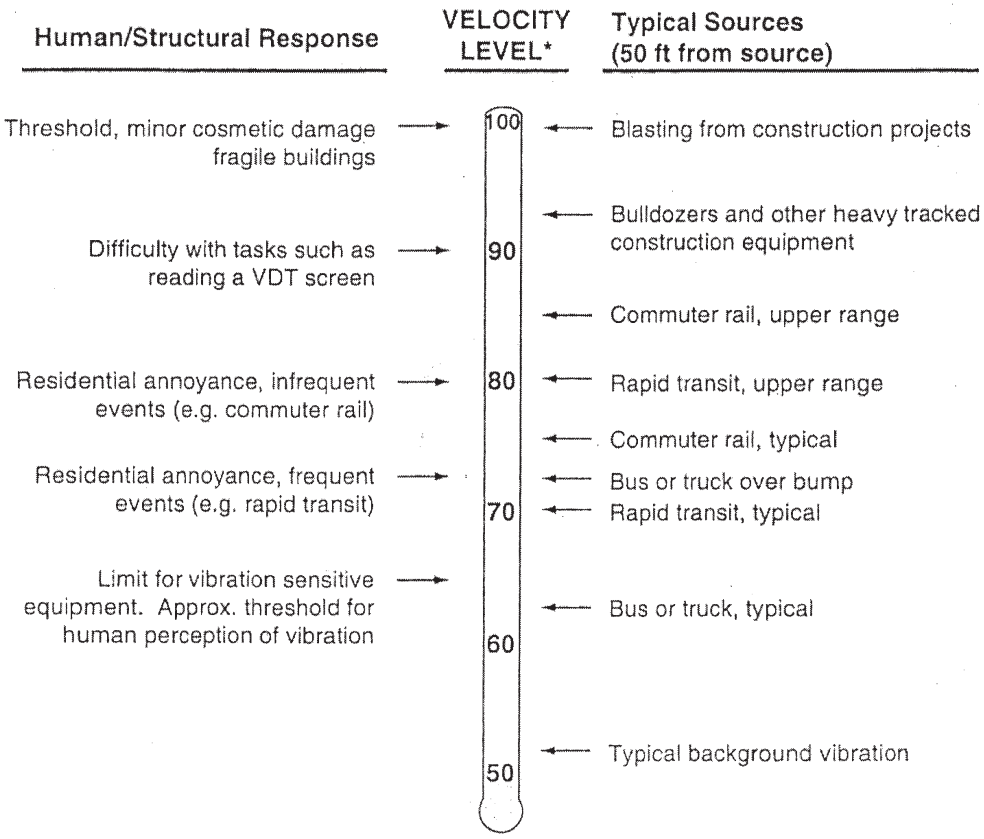
Typical sources of ground-borne vibration are construction equipment, steel-wheeled trains, and occasional traffic on rough roads. Problems from ground-borne vibration and noise from these sources are usually localized to areas within 100 feet from the vibration source, although there are examples of ground-borne vibration causing interference out to distances greater than 200 feet.

Both construction and operation of development projects can generate ground-borne vibration. In general, demolition of structures during construction generates the highest vibrations. Construction equipment such as vibratory compactors, heavy trucks, and pavement breakers can generate perceptible vibration during construction activities at distances of 10 to 25 feet. Pile drivers can generate perceptible vibration at up to 100 feet. Figure 3 on page 11 shows common vibration sources and the human and structural response to ground-borne vibration. The threshold for human perception of vibration identified by the Federal Transit Administration (FTA) is shown to be approximately 65 VdB. The background vibration velocity level in residential areas is usually 50 vibration decibels (VdB) or lower, well below the 65 VdB threshold. Although the perceptibility threshold is about 65 VdB, human response to vibration is not usually significant unless the vibration exceeds 70 VdB.

2.2 REGULATORY SETTING

2.2.1 Regulatory Framework

Many government agencies have established noise standards and guidelines to protect people from potential hearing damage and various other adverse physiological



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

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Figure 3
Common Vibration Sources and the Human and Structural Response to Ground-Borne Vibration

Source: U.S. DOT. Federal Transit Administration, 1995.

and social effects associated with noise and ground-borne vibration. Standards and guidelines that may be applicable to this project (e.g., freeway traffic noise) are discussed below.

2.2.1.1 Applicable Federal Policies

2.2.1.1.1 Noise

The Federal Highway Administration (FHWA) has developed guidelines for establishing noise impacts to near by sensitive receptors. Noise Abatement Criteria (NAC) was established by the FHWA to balance between what is desirable and what is feasible in terms of noise control. The NAC is based on the Federal Highway Administration (FHWA) *Procedures for Abatement of Highway Traffic Noise and Construction Noise (23 CFR Part 772).* Although NACs should not be viewed as federal standards or desirable noise standards, they could be used for determining potential project impacts. The NAC for each land use activity category is shown in Table 2 on page 13.

2.2.1.1.2 Vibration

The Federal Transit Administration (FTA) has adopted vibration criteria/ guidelines/recommendations for ground-borne vibration based on the building types that neighbor roadway/transit corridors. Based on the FTA's document "Transit Noise and Vibration Impacts Assessments," April 1995, construction-period vibration levels of 0.2 inch-per-second should be considered as damage threshold criterion for "fragile" buildings and 0.12 inch-per-second for "extremely fragile" historic buildings. These vibration threshold criteria are stated in Peak Particle Velocity (PPV) which is most applicable to construction related vibration sources (i.e., machinery and equipment). The vibration criteria with respect to building damage to "well engineered" structures from construction activities is noted in Caltrans technical publication "Transportation Related Earthborne Vibrations, Caltrans Experience", July 24, 1992. As stated therein, a vibration level of 2.0 inch-per-second PPV is recommended as a safe criterion for well engineered structures.

2.2.1.2 Applicable State of California Policies

2.2.1.2.1 Noise

For freeway traffic noise level, Caltrans also uses Noise Abatement Criteria (NAC), similar to the FHWA, to determine when a traffic noise impact would occur. The NAC is based on the Federal Highway Administration (FHWA) *Procedures for Abatement of Highway Traffic Noise and Construction Noise (23 CFR Part 772).* The

Table 2

Noise Abatement Criteria (NAC)
Hourly A-Weighted Sound Level (dBA)

Activity Category	Leq (h) (hourly)	Description of Activity Category
A	57 (exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	67 (exterior)	Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.
C	72 (exterior)	Developed lands, properties or activities not included in Categories A or B above.
D	--	Undeveloped lands.
E	52 (interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

Source: Highway Traffic Noise Analysis and Abatement Policy and Guidance, (FHWA 1995); and Traffic Noise Analysis Protocol for New Highway and Highway Reconstruction Projects, (Caltrans 2006)

NAC for each land use activity category is shown in Table 2 on page 13. In accordance with Caltrans, traffic noise impacts occur when one or more of the following occur:

1. Substantial Noise Increase – A noise increase is substantial when the predicted noise levels with the project exceed the existing noise levels by 12 dBA Leq(h).

2. Approach or Exceed the NAC – When the predicted noise levels with the project approach within 1dBA, or exceed the NAC. For example, in residential uses (Category B) a predicted traffic noise level of 66 dBA is considered approach the NAC.

2.2.1.2.2 Vibration

There are no adopted State policies or standards for ground-borne vibration. In most circumstances common vibrations related to roadway traffic and construction activities pose no threat to buildings or structures. However, Caltrans recommends that

extreme care be taken when sustained pile driving occurs within 25 feet of any building, and 50-100 feet of a historic building or any building in poor condition.

Tables 3 and 4 on page 15, respectively, provide guidelines for assessing potential vibration impacts with respect to annoyance and building damage, per Caltrans' guidance manual.[1]

2.2.1.3.2 City of Carson Municipal Code

The City of Carson adopted the "Los Angeles County Noise Ordinance" as the City's Noise Control Ordinance in 1995.[2] The adopted Noise Ordinance Standards, derived from Los Angeles County Code Section 12.08.390 (Exterior Noise Standards) and Section 12.08.400 (Interior Noise Standards), establish exterior and interior noise standards to regulate operational (post-construction) intrusive noises (e.g., stationary mechanical equipment, vehicles other than those traveling on public streets) within specific land use zones. As specified in the Carson Municipal Code (CMC), vehicles traveling on public streets (including freeway) are not subjected to the City's Noise Ordinance. Therefore, Caltrans' noise standards, NAC, will be used to assess noise impacts.

Section 5502(c) of the CMC provides exterior noise standards that regulate construction noise near residential uses. Noise standards for non-scheduled, intermittent, short-term operations (less than 20 days), as well as standards for repetitively scheduled and relatively long-term construction operations (periods of 21 days or more) of equipment are summarized in Table 5 on page 16. As indicated in Table 5, the Ordinance provides two sets of limits on construction noise: (1) between the hours of 7:00 A.M. and 8:00 P.M., Monday through Saturdays; and (2) between the hours of 8:00 P.M. and 7:00 A.M. and on Sundays and on legal holidays.

2.2.1.3.3 Vibration

The City of Carson currently does not have adopted policies or standards for construction ground-borne vibration. The only applicable policy in the General Plan Noise Element is Policy N-8.1, which requires that the design of mixed-use structures incorporate techniques to prevent transfer of noise and vibration from the commercial

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[1] *"Transportation- and Construction- Induced Vibration Guidance Manual", Prepared for California Department of Transportation, Noise, Vibration, and Hazardous Waste Management Office, Sacramento, CA. Jones & Stokes, 2004.*

[2] *Section 5500 of the Carson Municipal Code adopts Chapter 12.08 of Title 12 for the Los Angeles County Code, as amended and in effect on August 1, 1995, as the Noise Control Ordinance for the City of Carson.*

Table 3

Vibration Annoyance Potential Criteria

Human Response	Maximum PPV (in/sec)	
	Transient [a] Sources	Continuous/Frequent Intermittent [b] Sources
Barely perceptible	0.04	0.01
Distinctly perceptible	0.25	0.04
Strongly perceptible	0.90	0.10
Severe	2.00	0.40

Notes:

[a] *Transient sources create a single isolated vibration, such as blasting or drop balls.*

[b] *Continuous/Frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.*

Source: Caltrans, Transportation- and Construction-Induced Vibration Guidance Manual, 2004.

Table 4

Vibration Damage Potential Threshold Criteria

Structure and Condition	Maximum PPV (in/sec)	
	Transient [a] Sources	Continuous/Frequent Intermittent [b] Sources
Extremely fragile historic buildings, ruins, ancient monuments	0.12	0.08
Fragile buildings	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structures	0.5	0.3
New residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5

Notes:

[a] *Transient sources create a single isolated vibration, such as blasting or drop balls.*

[b] *Continuous/Frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.*

Source: Caltrans, Transportation- and Construction-Induced Vibration Guidance Manual, 2004.

uses to the residential uses. The Los Angeles County Noise Regulation (LAMC Section 12.08.350) provides a presumed perception limit of 0.01 inch per second for sources of ground-borne vibrations during long-term activities.

Table 5

Maximum Construction Noise Limits

Construction Time	Maximum Allowed Noise Level (dBA)	
	Single-Family Residential	Multi-Family Residential
a. Maximum noise levels for nonscheduled, intermittent, short-term operation of 20 days or less for construction equipment.		
Daily, except Sundays and legal holidays, 7:00 A.M. to 8:00 P.M.	75	80
Daily, 8:00 P.M. to 7:00 A.M. and all day Sunday and legal holidays	60	64
b. Maximum noise level for repetitively scheduled and relatively long-term operation (periods of 21 days or more) of construction equipment		
Daily, except Sundays and legal holidays, 7:00 A.M. to 8:00 P.M.	65	70
Daily, 8:00 P.M. to 7:00 A.M. and all day Sunday and legal holidays	55	60

Source: Carson Municipal Code Section 5502(c).

2.3 FREEWAY NOISE ANALYSIS

The project noise analysis followed Caltrans' Traffic Noise Analysis Protocol (Protocol) and Technical Noise Supplement (TeNS). The Noise Analysis Protocol is also consistent with the requirements of the Federal Highway Administration (FHWA) and is designed to evaluate the potential traffic generated noise impacts as well as determining reasonable and feasible noise abatement and/or mitigation for the Project.

2.3.1 Screening Analysis

As shown in Figure 1, there are two residential communities adjacent to the I-405 in the proposed Project area. One is a mobile home park located just south of the Avalon Boulevard southbound off-ramp. The other is a small cluster of single-family residential homes located adjacent to the I-405 southbound just on the south side of 213th Street. With respect to freeway noise, the first row of homes usually has the most exposure to the traffic noise. Second and subsequent rows of homes are partially shielded from the freeway by the first row homes. In addition, there is also a motel located on E. Dominguez Street about 550 feet east of the existing I-405 NB off-ramp.

Appropriate locations for 24-hour noise measurements were selected based on the inventory of existing land uses in the Project vicinity. Four locations were chosen for 24-hour noise measurements and two locations were selected for short-term (15-minute) noise measurements. Locations of the noise measurements are shown on Figure 1. All monitoring locations had a direct line-of-sight to the I-405.

The existing ambient noise measurements were conducted using Larson-Davis Model 820 integrating sound level meters (SLM). The sound level meters are Type 1 as defined by ANSI Standard S1.4-1983 and S1.25-1991. The SLM microphones were mounted on a tripod approximately 5 feet above local grade and minimum 10 feet away from nearby reflecting surfaces. A Larson-Davis Model CA250 acoustic calibrator was used to calibrator the SLM before each measurement and check after the measurement, per manufacturer's specifications. The SLMs were programmed to record the A-Weighted Leq (averaged) sound levels. Field prepared log sheets including field sketch of measurement locations and meteorological conditions are provided in Appendix B. Also included in Appendix B are calibration expiration dates of the measurement instruments.

A summary of the measurement data is included in Table 6 on page 18 and detailed hourly data are provided in Appendix B. The peak hour traffic noise levels, shown in Table 6, are reported based on the 24-hour noise measurement data. It should be noted that the peak hour traffic noise levels (i.e., highest traffic noise levels) are not necessarily coincide with the peak hour traffic volume (i.e., highest traffic volume). This is because during the peak hour traffic volume, the traffic flow could be congested and thus result in lower noise level. The peak hour traffic noise level normally occurred just before or after the traffic congested. The existing noise environments at the monitoring locations are primarily controlled by traffic on I-405.

Based on the screening process, a detailed noise analysis is required because; a) there are two residential properties with potentially impacted receivers and b) the proposed Project is located along an existing freeway alignment and noise levels are not more than 5 dBA below the NAC. The Caltrans "Noise Analysis Screening Checklist" has been included in Appendix A.

2.3.2 Detailed Analysis

A detailed noise analysis was conducted for the Project based on the results of the Screening Analysis, discussed in Section 2.3.1.

Table 6

Summary of Measured Ambient Noise Levels – Existing Condition, dBA, $L_{eq}(h)$

Receptor - Description	Measurement Date MM/DD/YY Time of Day (start-finish)	Range of Sound Levels [a] $L_{eq}(h)$	Peak Hour Traffic Noise Levels [b] $L_{eq}(h)$
R1 – Mobile Home Park	8/12/06 (12 A.M. to 12 A.M.)	48.7 – 59.3	56.4
R2 – Mobile Home Park	8/12/06 (12 A.M. to 12 A.M.)	55.8 – 61.8	61.8
R3 – Mobile Home Park	8/15/06 (12 A.M. to 12 A.M.)	57.0 – 63.9	63.9
R4 – Mobile Home Park	8/17/06 (12 A.M. to 12 A.M.)	57.7 – 68.3	68.3
R5 – 213th Street Residence	8/17/06 (12 A.M. to 12 A.M.)	65.0 – 73.8	73.8
R6 – Home at the end of Desford Street[c]	11/21/06 (9:55 A.M. to 10:10 A.M.)	63.6[d]	64.6
R7 – Quality Inn on E. Dominguez Street east of I-405	11/21/06 (11:04 A.M. to 11:19 A.M.)	62.1[d]	63.1

Notes:

[a] *Individual Hourly data are provided in Appendix B.*

[b] *Peak hour traffic noise level is based on the nearby 24-hour measurements, which occurred at 9:00 A.M.*

[c] *There is an existing 8-foot high wall at the end of Desford Street, which provides shielding to the freeway sound. The microphone was place on the residential side.*

[d] *Short-term 15-min measurement.*

Source: PCR Services Corporation, 2006.

2.3.2.1 Model Calibration

A model calibration test was performed to establish the TNM noise prediction model accuracy specific to the project. The existing landscape, freeway topography, and existing traffic counts were modeled by the TNM program. Traffic counts were collected from video recorded during a 15-minute noise measurement; speed in the corridor was estimated by driving the corridor prior to the noise measurements. The results of the observed traffic counts are included in Table 7 on page 19 and each count was adjusted for an hourly observation. Basically, the actual counts represented 15 minutes of traffic volume and the hourly volume is four times of the actual counts.

Table 7

Hourly Adjusted Traffic Counts for Model Calibration

Noise Model Calibration Traffic Counts

		15-Minute Traffic Count			Hourly Adjusted Count[a]		
Date / Time	Roadway Segments	Autos	Medium Trucks[b]	Heavy Trucks[c]	Autos	Medium Trucks	Heavy Trucks
	I-405 Southbound	1567	86	66	6268	344	264
	I-405 Northbound	1779	76	52	7116	304	208
11:30 – 11:45 A.M.	Avalon Blvd. SB Off-Ramp	177	8	5	708	32	20
	Avalon Blvd. SB On-Ramp	37	6	0	148	24	0

Notes:
[a] *Hourly adjusted count = 15-minute count x 4.*
[b] *Medium Truck – 2 axle trucks based on field observations.*
[c] *Heavy Truck – 3 or more axles trucks based on field observations.*

Source: PCR Services Corporation, 2006.

Roadway and residential receiver geometry data (i.e., X, Y, and Z coordinates with respect to the Freeway's site) were based on drawings and information provided by DMJM Harris the project engineer. The Project noise model was calibrated, using the actual measured noise data. The calibration (deviation) levels are within the acceptable tolerance of the computer noise model. Details regarding site description, actual and modeled noise levels have been included in Table 8 on page 20. The computer noise model input and output data are provided in Appendix C.

2.3.2.2 Predicted Existing and Future Noise Levels

The existing (year 2006) and future (year 2030) peak hour traffic volumes and fleet mix for the I-405, as provided by Kaku Associates (the project traffic consultant) were utilized to predict existing and future traffic noise. Review of the traffic data and the 24-hour noise measurements; indicate that the A.M. peak hour traffic was the loudest. The results of the modeled existing and future noise levels have been included in Table 9 on page 20.

Table 8

Noise Model Calibration Results

Receptor[a]	Measured L_{eq}(h) dBA	Modeled[b] L_{eq}(h) dBA	Calibration Factors[c]
R2 – Mobile Home Park	58.7	61.2	+2.5
R3 – Mobile Home Park	60.8	64.0	+3.2
R4 – Mobile Home Park	63.9	65.2	+1.3

Notes:
[a] *R2, R3 and R4 represent receptors closest to the freeway and ramps thus less influenced by other noise sources (other than freeway traffic noise).*
[b] *Modeled levels include the calibration factors.*
[c] *Overall calibration factors.*

Source: PCR Services Corporation, 2006.

Table 9

Modeled Existing vs. Future Peak Hour Traffic Noise Levels, L_{eq}(h)

Receptor	Measured Existing (2006)	Modeled Existing (2006)	Future (2030) Without Project	Future (2030) With Project	Net Change: Future No Project - Existing	Net Change: Future With Project – Existing
R1 – Mobile Home Park	56.4	55.6	56.3	57.0	+0.7	+1.4
R2 – Mobile Home Park	61.8	61.5	62.6	61.3	+1.1	-0.2
R3 – Mobile Home Park	63.9	64.6	65.8	62.8	+1.2	-1.8
R4 – Mobile Home Park	**68.3**	65.8	67.0	65.6	+1.2	-0.2
R5 – 213th Street Residence	**73.8**	**70.7**	**71.2**	**71.4**	+0.5	+0.7
R6 – Home at end to Desford Street	64.6	64.4	64.9	65.0	+0.5	+0.6
R7 – Quality Inn on E. Dominguez Street east of I-405	63.1	62.9	63.4	63.5	+0.5	+0.6

Note:
Bold Text *(sound levels) indicate receptors where noise levels exceed Caltrans Noise Abatement Criteria, 67 dBA.*

Source: PCR Services Corporation, 2007.

2.3.2.3 Impacts Assessment

Potential noise impacts from the proposed Project were established based on Caltrans' noise abatement criteria thresholds. The results of the noise prediction for the

future environment with the project built indicate that the project will actually reduce the noise levels at mobile home park locations, with the exception of location R1, and that the noise levels are below the threshold of 66 decibels for residential areas, as shown in Table 9. This is due to the fact that the new Lenardo Drive Bridge provides some acoustical shielding to the I-405 from the mobile home park. For residential units south of 213th Street, the predicted future noise levels with project built are expected to increase compared with the existing conditions, by less than one decibel. However, the traffic noise levels will be above the NAC, of 67 dBA, for residential use**.**

2.3.2.4 Noise Abatement Analysis

As required by the Caltrans Traffic Noise Analysis Protocol, noise abatement was considered for the residential area just west of I-405 and south of 213th Street. Noise abatement measures may include, but are not limited to: (1) avoidance; (2) constructing a sound wall (noise barriers) or berms; (3) acquiring property; (4) traffic management measures; and (5) insulation and/or air-conditioning of the impacted structures.

Although each noise abatement procedure can reduce noise impacts, there are limitations for the implementation of each option. Avoidance is typically implemented where there are alternative alignments. The construction of noise barriers and berms is typically the most cost effective form of noise abatement. However, the construction of a berm requires a significant amount of space. The acquisition of property is typically not feasible for noise abatement because it requires the purchase of all homes within 250-500 feet of the roadway. Traffic control measures include the reduction of speed, and the restriction of heavy truck traffic. Per Caltrans' Protocol, the use of insulation and air conditioning is mainly used for public and nonprofit institutions.

The summary of the sound wall analysis is provided in Table 10 on page 22. As indicated in Table 10, a 3.0 m (10 feet) high sound wall, located at the freeway shoulder, would be required to reduce the traffic noise level to meet Caltrans' standard (NAC). The extent of the sound wall is illustrated on Figure 4 on page 23.

2.4 CONSTRUCTION NOISE AND VIBRATION ANALYSIS

2.4.1 Construction Noise

Noise impacts from project construction activity is a function of the sound generated by construction equipment, the location and sensitivity of nearby land uses, and the timing and duration of the noise-generating activities. The primary noise from the construction activities would be generated by vehicles and equipment involved during various stages of construction operations. Construction activities that typically generate the highest noise levels are site grading and excavation, which include use of

Table 10

Sound Wall Analysis, $L_{eq}(h)$

Receptor [a]	Modeled Traffic Noise Levels dBA $L_{eq}(h)$			Modeled Future (2030) Noise Level with Sound Wall [b] dBA $L_{eq}(h)$		
	Existing (2006)	Future (2030) Without Project	Future (2030) with Project	1.8 m (6 ft.) wall	2.4 m (8 ft.) wall	3.0 m (10 ft.) wall
R5 – 213th Street Residence	70.7	71.2	71.4	66.1[c]	65.2[d]	64.4
R5b – 213th Street Residence, 2nd Row of Homes	69.5	70.0	70.1	66.6	66.2	65.1[c]

Notes:

[a] *Only residences near 213th Street (R5 and R5b) required noise abatement measures. Therefore, other Receptors are not included in this table.*

[b] *Approximately 230 m (750 feet) long noise barrier at the south bound freeway shoulder, from approximately Sta. 559.5 to Sta. 567.0.*

[c] *Noise barrier must provide minimum 5 dBA noise reduction in order to be considered feasible.*

[d] *Minimum 2.4 m high wall is required to intercept the line-of-sight of truck exhaust stack (3.5 m or 11.5 feet) to the receiver.*

Source: PCR Services Corporation, 2006.

heavy equipment (i.e., bulldozers, loaders, concrete trucks). The project is planned to use CDIH piles; therefore, impact pile driving is not included in the analysis

The proposed project construction is estimated to last less than two years. The project will be constructed in four stages as described in Table 11 on page 24. Based on published noise data for various type of construction equipment from the FTA[3] and based on measurement of previous projects, noise levels in the range of 75 to 85 dBA L_{eq} (at the distance of 15 m (50 feet) from center of construction activities) can be expected.

There are two residential communities near the project construction site. The majority of the construction activities will be near the mobile home park, represented by receptors R1 to R4. The small cluster of homes south of 213th Street, represented by receptors R5 and R6, will be exposed to some construction noise, but with shorter duration. Estimated construction noise levels are provided in Table 12 on page 24. The residences at the mobile home park (R1 to R4) would be exposed to highest construction noise level, up to 85 dBA, as they are closest to the construction activities.

[3] *Transit Noise and Vibration Impact Assessment, FTA 1995.*

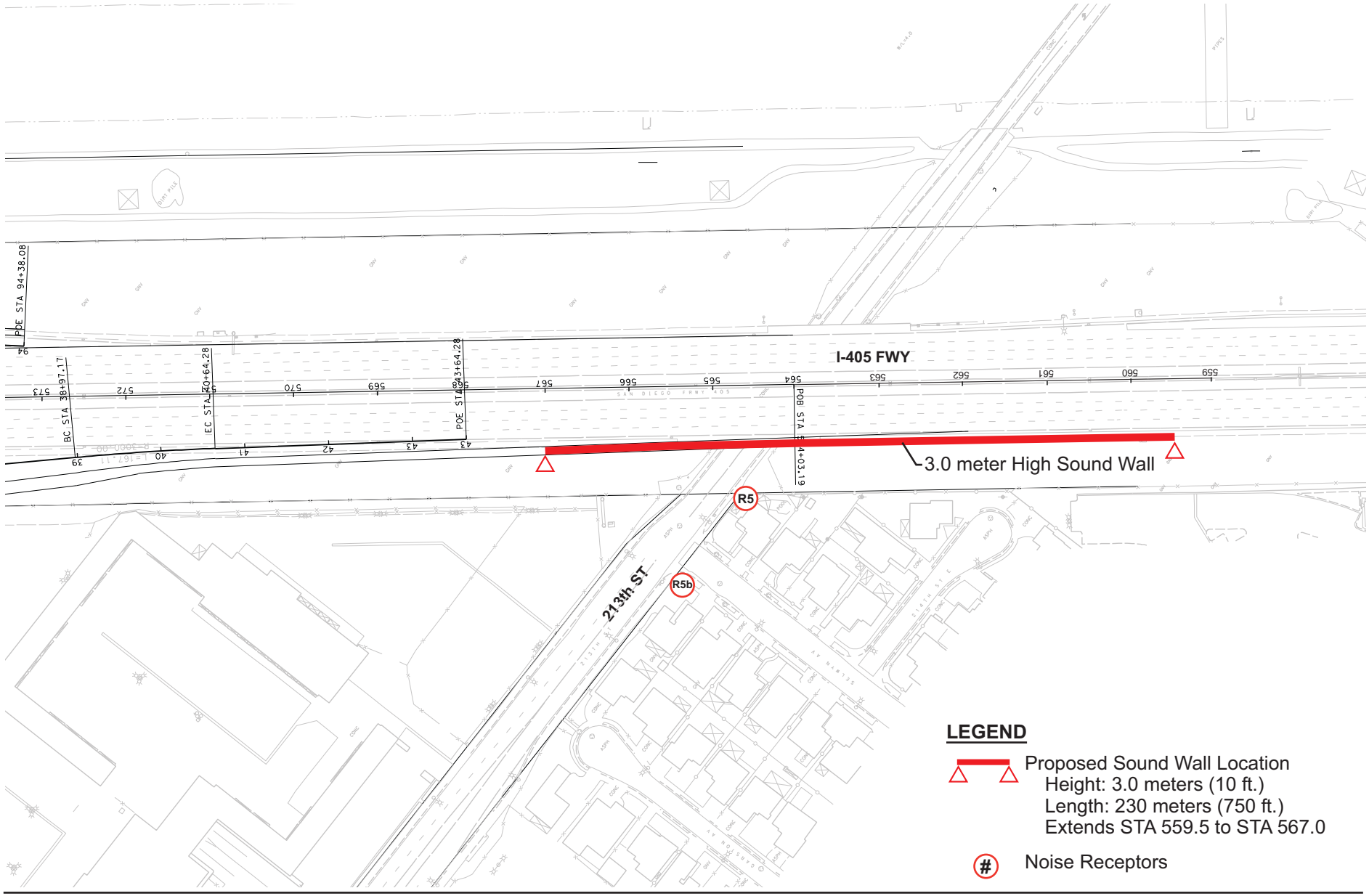


Figure 4
Proposed Sound Wall Location

Table 11

Construction Phases

Stage	Description
Stage 1	Construct (1) new I-405 southbound on-ramp at Avalon Blvd, (2) Lenardo Drive Bridge, (3) LADPW flood control access ramps, (4) Lenardo Drive from Avalon Boulevard to Carson Market Place, and (5) widen eastside of N/B Avalon Boulevard
Stage 2	(1) complete Lenardo Drive, (2) connect Lenardo Drive to Avalon Drive (3) reconstruct S/B I-405 On-ramp, (4) join S/B I-405 Off-ramp to Lenardo Drive, and (5) demolish existing S/B I-405 Off-ramp at Avalon Boulevard
Stage 3	Widen the existing I-405 northbound (1) on-ramp and (2) off-ramp at Avalon Boulevard
Stage 4	(1) light roadway demolition on Avalon Blvd, (2) construct medians, (3) pave Avalon Boulevard, (4) stripe, (5) install traffic striping, lighting and signals, and (6) reconstruct sidewalk.

Source: DMJM Harris, 2006.

Table 12

Estimated Construction Noise

Receptor	Estimated Maximum Construction Noise Levels[a] at various stages of construction (see Table 11 for the description) dBA $L_{eq}(h)$			
	Stage 1	Stage 2	Stage 3	Stage 4
R1 – Mobile Home Park	80	80	50	70
R2 – Mobile Home Park	85	85	55	75
R3 – Mobile Home Park	85	85	55	75
R4 – Mobile Home Park	85	85	55	75
R5 – 213th Street Residence	80	50	50	50
R6 – Home at end to Desford Street	70	50	50	50
R7 – Quality Inn on E. Dominguez Street east of I-405	50	50	65	50

[a] *Estimated noise levels are based in using CIDH piles. If impact pile driving is used, construction noise level could be 5 to 15 dBA louder, during pile driving.*

Source: PCR Services Corporation, 2006

Construction activities are expected to increase the ambient noise level at the nearby residential receptors. However, it would be on a short-term basis and intermittent, during the project construction duration.

2.4.2 Construction Vibration

Construction vibration impacts were evaluated based on guidelines provided by Caltrans in the *"Transportation- and Construction-Induced Vibration Guidance Manual"* (Jones & Stokes, 2004). Ground borne vibration at the affected structure is determined by the level of vibration generated at the source and the relative distance to the receiver. The amount of ground borne vibration being transmitted into the occupied building is also dependent on the type/size of the building. This is due to the coupling loss between the building foundation and the ground. Generally, the heavier the building construction, the greater the vibration coupling loss.

Construction activity can result in varying degrees of ground vibration, depending on the equipment and methods employed (e.g., impact pile driving, sonic pile driving, etc.). The construction activity that typically generates the most severe vibration levels is impact pile driving. For the Lenardo Bridge, pile placement would be required for the pile design option that is being considered for the project. Pile design options are also being considered for the 213th Street bridge widening. Due to the close proximity of the residential units (i.e., mobile home park), the project may use cast-in-drilled-hole (CIDH) piles to minimize the ground borne vibration typically associated with impact pile driving. However, an alternative method, such as impact pile driving and vibratory pile driving, would be required if the CIDH pile is not feasible and if the pile design option were to be implemented.

It is also possible for some types of heavy vehicles and excavation activities, such as large bulldozers and vibratory rollers, to generate sufficient ground-borne vibration levels to be perceptible or noticeable in buildings that are located nearby.

Typical vibration levels generated by construction equipment can be found on Table 12 of the Caltrans' guidance manual (Jones & Stokes 2004). The ground vibration produced by the operation of a loaded trucks, large bulldozer, and vibratory roller range from 0.04 to 0.20 inch/second (PPV) at a distance of 7.6 m (25 feet). The nearest residential receptor to the construction activity, the mobile home park, is located approximately 15 m (50 feet) from the project construction area. It is estimated that ground vibration level at that location could reach as high as 0.10 inch/second (PPV) and would be perceptible using Caltrans' guidelines. However, it would also be less than the 0.2 threshold for fragile structures, as cited in Table 4, above.

As discussed, the project may use CIDH piles or an alternative pile placement method (e.g., impact pile driving) for the Lenardo Drive and 213th Street bridges. The project construction related pile driving (impact pile driving) vibrations impacts on the residential housing across from the 213th Street Bridge and Mobile home park across

from the Lenardo Drive Bridge are estimated to produces 0.17 inch/sec PPV and 0.13 inch/sec PPV, respectively. As stated by the Caltrans Technical Advisory document (Jones & Stokes 2004, "Transportation- and Construction-Induced Guidance Manual," page 12), "extreme care must be taken when sustained pile driving occur within 7.6m (25 feet) of any building, and 15-30m (50-100 feet) of historical building or building in poor condition." The residential housing and the mobile home park would both be located between 50 feet and 100 feet of the potential pile driving subject to final design location of the piles. There area no historical buildings in the vicinity of the project site.

In addition, if pile driving were to be selected as a construction method, such pile driving would occur in close proximity to the existing Torrance Lateral flood control channel, which may incur a high level of vibration, if the impact pile driver method is used. Current vibration damage threshold criteria as provided by Caltrans' do not address impact for structures such as the channel retaining wall. Therefore, if impact pile driving method is selected, further study shall be conducted to evaluate any potential impact to the existing flood control channel retaining wall.

2.4.3 Minimization/Avoidance/Mitigation

2.4.3.1 Measures for Construction Noise Impacts

As indicated in Section 2.3.1, construction activities would increase the ambient noise levels at the nearby residential communities. The following mitigation measures are recommended to minimize the potential noise impacts:

1. Noise generating construction activities within 50 m (165 feet) of the residential units shall be restricted to hours between 7:00 A.M. and 8:00 P.M. Monday through Friday and 8:00 A.M. and 6:00 P.M. on Saturday. No noise-generating construction activities shall take place on Sundays and holidays

2. Noise-generating equipment operated at the project site shall be equipped with effective noise control devises, i.e., mufflers, lagging, and/or motor enclosures. Noise from each piece of construction equipment shall not exceed 86 dBA (L_{max}) at a distance of 15 m (50 feet). All equipment shall be properly maintained to assure that no additional noise, due to worn or improperly maintained parts, would be generated.

3. Effective temporary noise barriers, when they are feasible, shall be used to block the line-of-site between the construction equipment and the noise-sensitive receptors.

2.4.3.2 Measures for Construction Vibration

As described above, impacts from pile driving are not necessarily expected to be adverse. However, if pile driving is to be used for either the Lenardo Drive Bridge or 213th Street bridge improvements the actual vibration occurring at neighboring structures would vary depending on the soil conditions, and the method of pile driving. There are a variety of pile driving techniques (e.g. impact, sonic, etc) and operational procedures that can cause variations in the vibration levels that they produce. The final construction method must be verified regarding conditions adjacent to any pile driving activity:

4. Pile driving procedures shall only be implemented only upon further engineering review, based upon an assessment of the site soils, distance to existing structures, and review of the characteristics of the Torrance Lateral.

I-405/Avalon Boulevard Interchange Project

Noise Report Appendices

Provided by PCR Services Corporation

June 2007

Appendix A

- Screening Analysis

NOISE ANALYSIS SCREENING PROCEDURE CHECKLIST

Dist _____ **Co** _____ **Rte** _____ **P.KM.** _____ **E.A** _____

1. Are there potentially impacted receivers in the vicinity of project?

   Yes X *(continue)*

   No ___ *(Stop. Passed screening procedure. Check step 7).*

2. Is the proposed project along an existing alignment or realignment?

   Yes X *(continue)*

   No ___ *(Stop. Did not pass screening procedure. Check step 8).*

3. Will shielding of critical receivers be the same or improved after the project?

   Yes X (continue)

   No ___ *(Stop. Did not pass screening procedure. Check step 8).*

4. Measure existing worst hourly noise levels at critical receivers. Measured existing worst hourly noise level ($L_{eq}(h)$) is _____ dBA.

5. Is the above noise level more than 5 dBA below the NAC?

   Yes ___ *(continue)*

   No X *(Stop. Did not pass screening procedure. Check step 8).*

6. Is the result of the following expression less than 3 dBA?

$$10\text{Log}_{10}\left[\frac{V_{E(FUTURE)}}{V_{E(EXISTING)}}\right]+15\text{Log}_{10}\left[\frac{D_{E(EXISTING)}}{D_{E(FUTURE)}}\right]<3\text{dBA}$$

Where: $V_{E(FUTURE)}$ = Number of Equivalent Vehicles per hour for project design year.

$V_{E(EXISTING)}$ = Number of Equivalent Vehicles per hour before the project.

$D_{E(EXISTING)}$ = Equivalent Lane Distance before the project.

$D_{E(FUTURE)}$ = Equivalent Lane Distance after the project.

(See Sec. N-4300 "Method of Calculating Equivalent Lane Distance" to determine D_E, and Sec. N-4400 "Method of Calculating Equivalent Vehicles" to determine V^E.)

Yes ___ *(Passed the screening procedure. Check step 7.)*

No ___ *(Did not pass screening procedure. Check step 8.)*

Note: The ratio $D_{E(EXISTING)}/D_{E(FUTURE)}$ should not exceed 4:1 *(See Note in Section. N-4100)).* The ratio for this project is: :1.

THE PROPOSED PROJECT: *(Check one)*

7. ___ **PASSED** the screening procedure. No further analysis is necessary.

8. X **DID NOT PASS** the screening procedure. Detailed analyses discussed in Sections N-5000 and N-6000 are recommended.

Prepared By: PCR Sevices Corporation Date: 10/25/06

Reference: Technical Noise Supplement
A Technical Supplement to the Traffic Noise Analysis Protocol, October 1998. California Department of Transportation, Environmental Program, Environmental Engineering-Noise Air Quality and Hazardous Waste Management Office

Appendix B

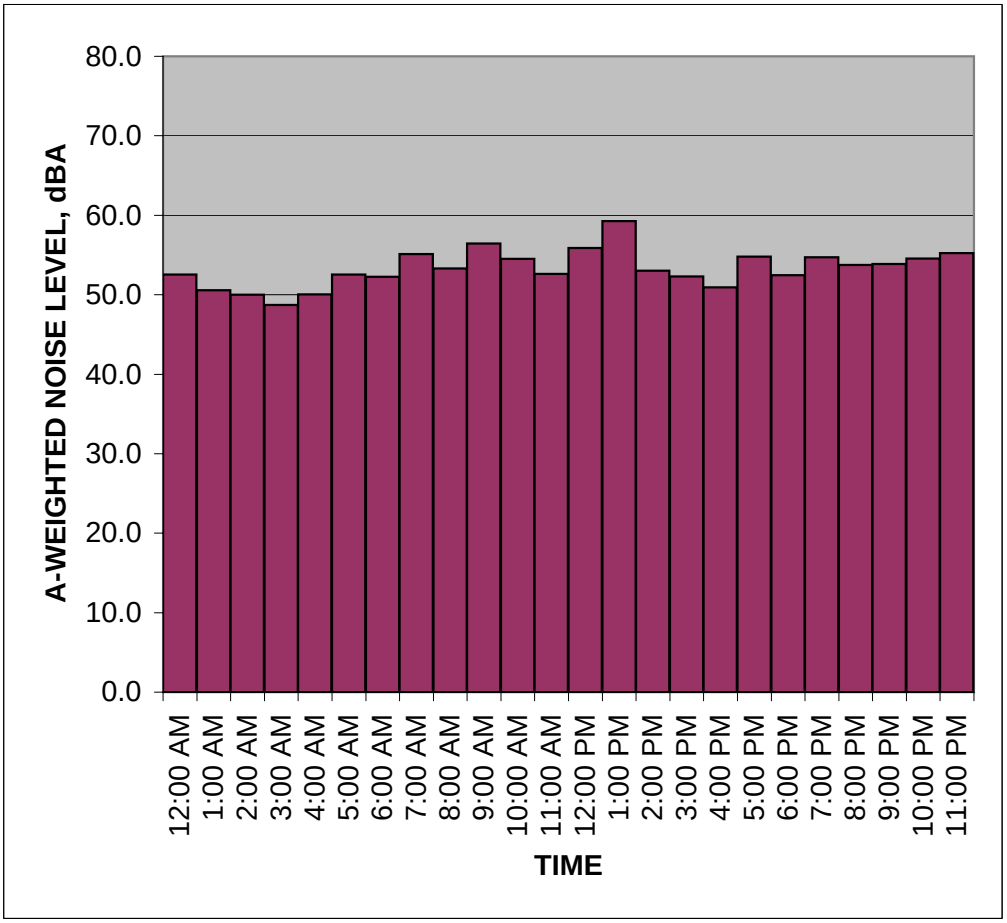
- Measured Noise Data

Measured Ambient Noise Levels

Project: Carson Ramps Improvement Project
Location: R1 - Mobile Home Park #1
Sources: Traffic Noise

Date: August 12, 2006

TIME	HNL, dB(A)
12:00 AM	52.5
1:00 AM	50.6
2:00 AM	50.0
3:00 AM	48.7
4:00 AM	50.0
5:00 AM	52.5
6:00 AM	52.3
7:00 AM	55.1
8:00 AM	53.3
9:00 AM	56.4
10:00 AM	54.5
11:00 AM	52.6
12:00 PM	55.9
1:00 PM	59.3
2:00 PM	53.0
3:00 PM	52.3
4:00 PM	50.9
5:00 PM	54.8
6:00 PM	52.5
7:00 PM	54.7
8:00 PM	53.7
9:00 PM	53.9
10:00 PM	54.6
11:00 PM	55.2
CNEL, dB(A):	**59.5**



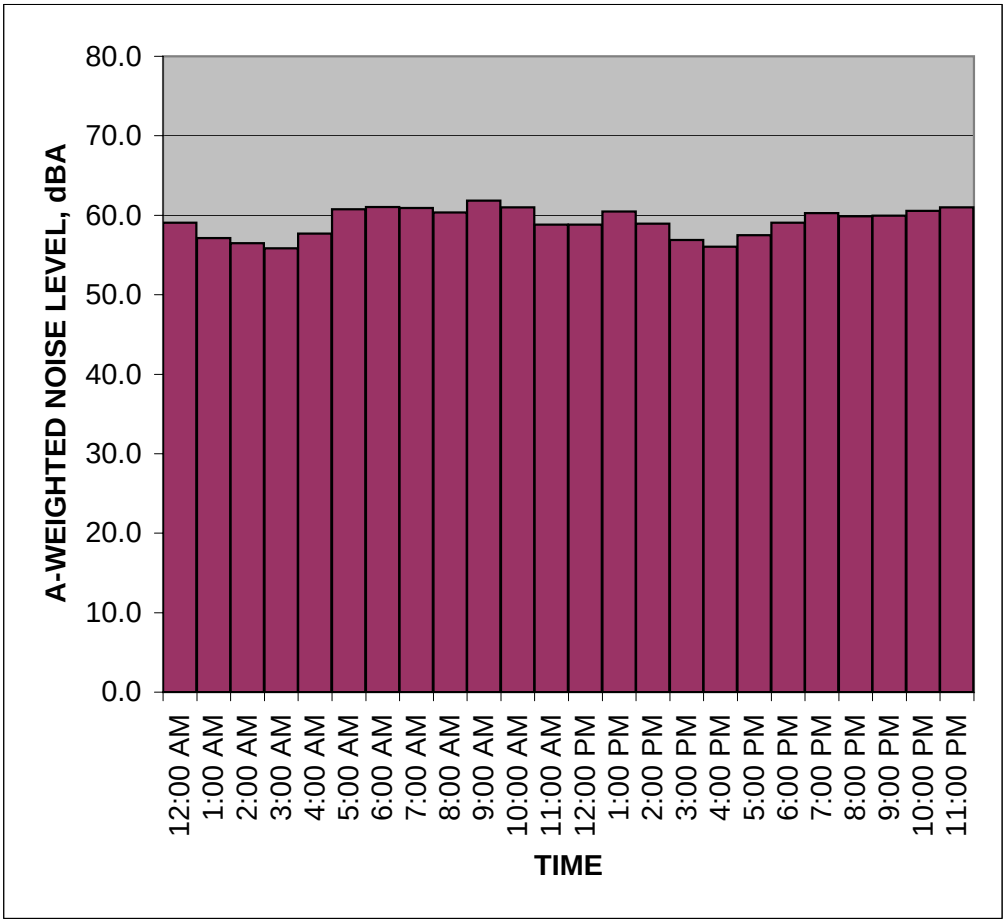
NOTES:

Measured Ambient Noise Levels

Project: Carson Ramps Improvement Project
Location: R2 - Mobile Home Park #2
Sources: Traffic Noise

Date: August 12, 2006

TIME	HNL, dB(A)
12:00 AM	59.1
1:00 AM	57.1
2:00 AM	56.5
3:00 AM	55.8
4:00 AM	57.7
5:00 AM	60.8
6:00 AM	61.0
7:00 AM	60.9
8:00 AM	60.4
9:00 AM	61.8
10:00 AM	61.0
11:00 AM	58.8
12:00 PM	58.8
1:00 PM	60.5
2:00 PM	59.0
3:00 PM	56.9
4:00 PM	56.1
5:00 PM	57.5
6:00 PM	59.1
7:00 PM	60.3
8:00 PM	59.9
9:00 PM	59.9
10:00 PM	60.6
11:00 PM	61.0
CNEL, dB(A):	**66.0**



NOTES:

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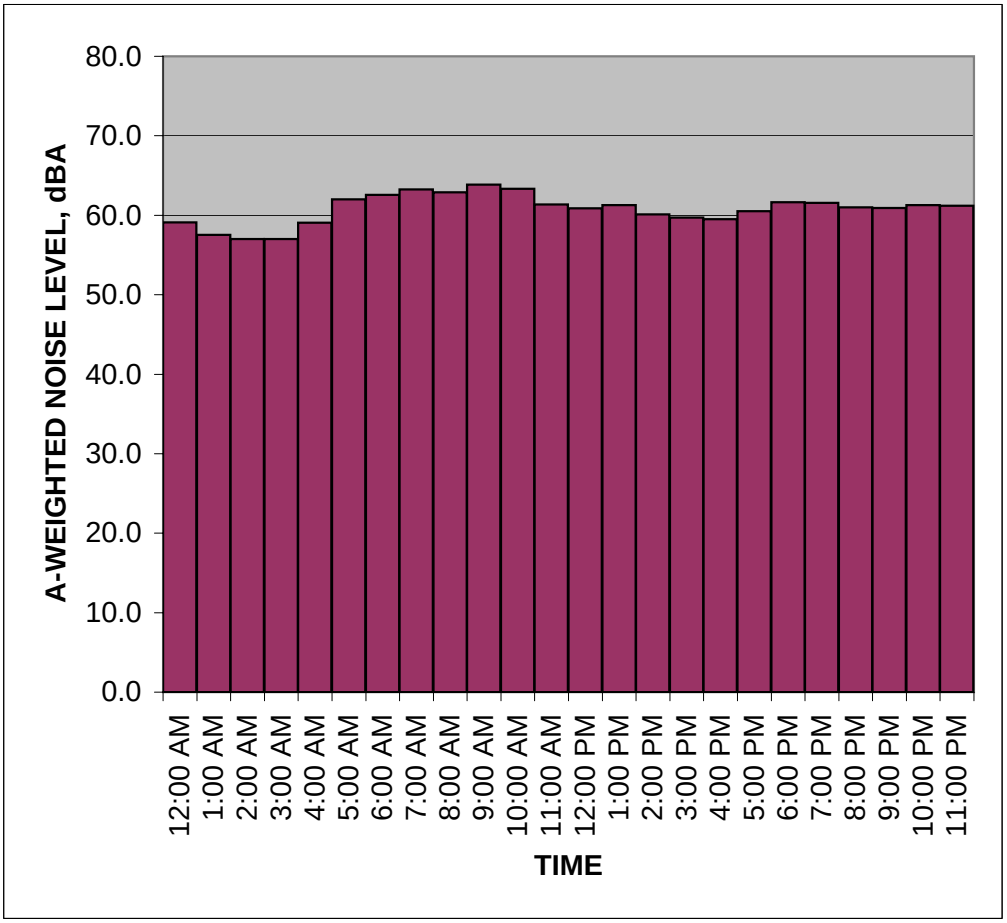
Measured Ambient Noise Levels

Project: Carson Ramps Improvement Project
Location: R3 - Mobile Home Park #3
Sources: Traffic Noise

Date: August 15, 2006

TIME	HNL, dB(A)
12:00 AM	59.1
1:00 AM	57.6
2:00 AM	57.0
3:00 AM	57.0
4:00 AM	59.1
5:00 AM	62.0
6:00 AM	62.6
7:00 AM	63.3
8:00 AM	62.9
9:00 AM	63.9
10:00 AM	63.4
11:00 AM	61.4
12:00 PM	60.9
1:00 PM	61.3
2:00 PM	60.1
3:00 PM	59.7
4:00 PM	59.5
5:00 PM	60.5
6:00 PM	61.6
7:00 PM	61.6
8:00 PM	61.0
9:00 PM	60.9
10:00 PM	61.3
11:00 PM	61.2
CNEL, dB(A):	**67.1**



NOTES:

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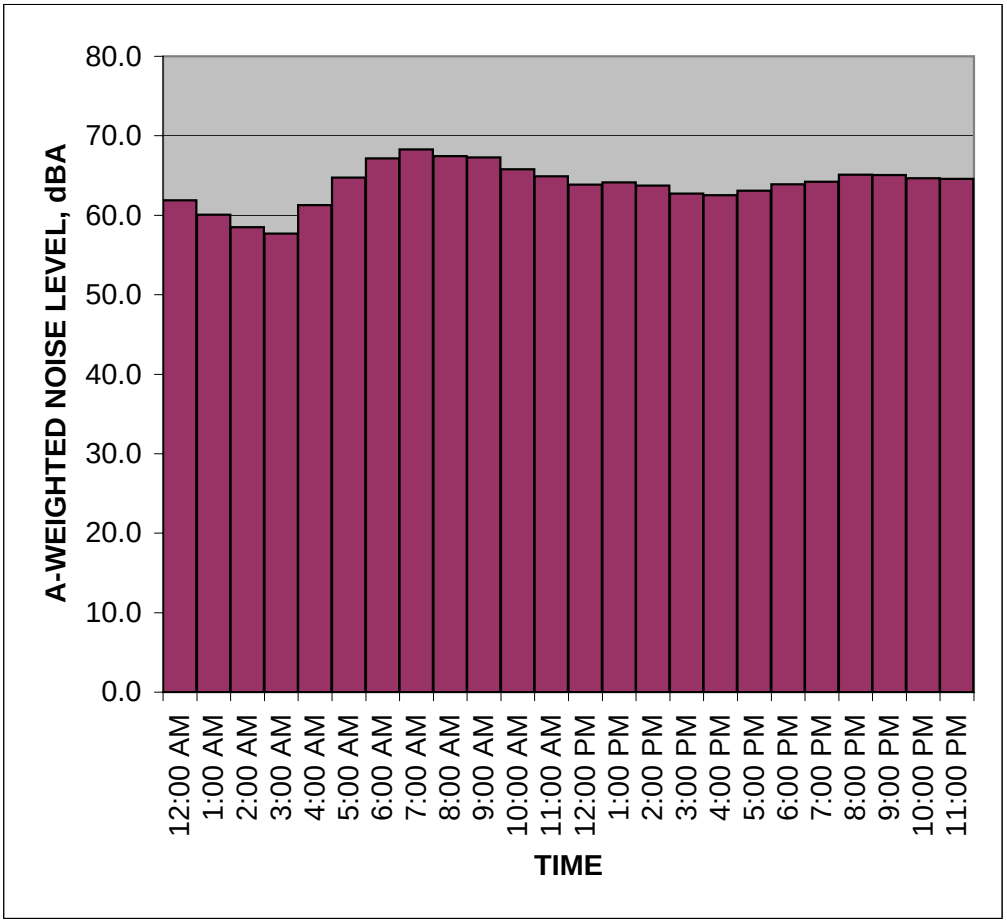
Measured Ambient Noise Levels

Project: Carson Ramps Improvement Project
Location: R4 - Mobile Home Park #4
Sources: Traffic Noise

Date: August 17, 2006

TIME	HNL, dB(A)
12:00 AM	61.9
1:00 AM	60.1
2:00 AM	58.5
3:00 AM	57.7
4:00 AM	61.3
5:00 AM	64.8
6:00 AM	67.2
7:00 AM	68.3
8:00 AM	67.4
9:00 AM	67.3
10:00 AM	65.8
11:00 AM	64.9
12:00 PM	63.8
1:00 PM	64.1
2:00 PM	63.7
3:00 PM	62.7
4:00 PM	62.5
5:00 PM	63.1
6:00 PM	63.9
7:00 PM	64.2
8:00 PM	65.1
9:00 PM	65.1
10:00 PM	64.7
11:00 PM	64.6
CNEL, dB(A):	**70.4**



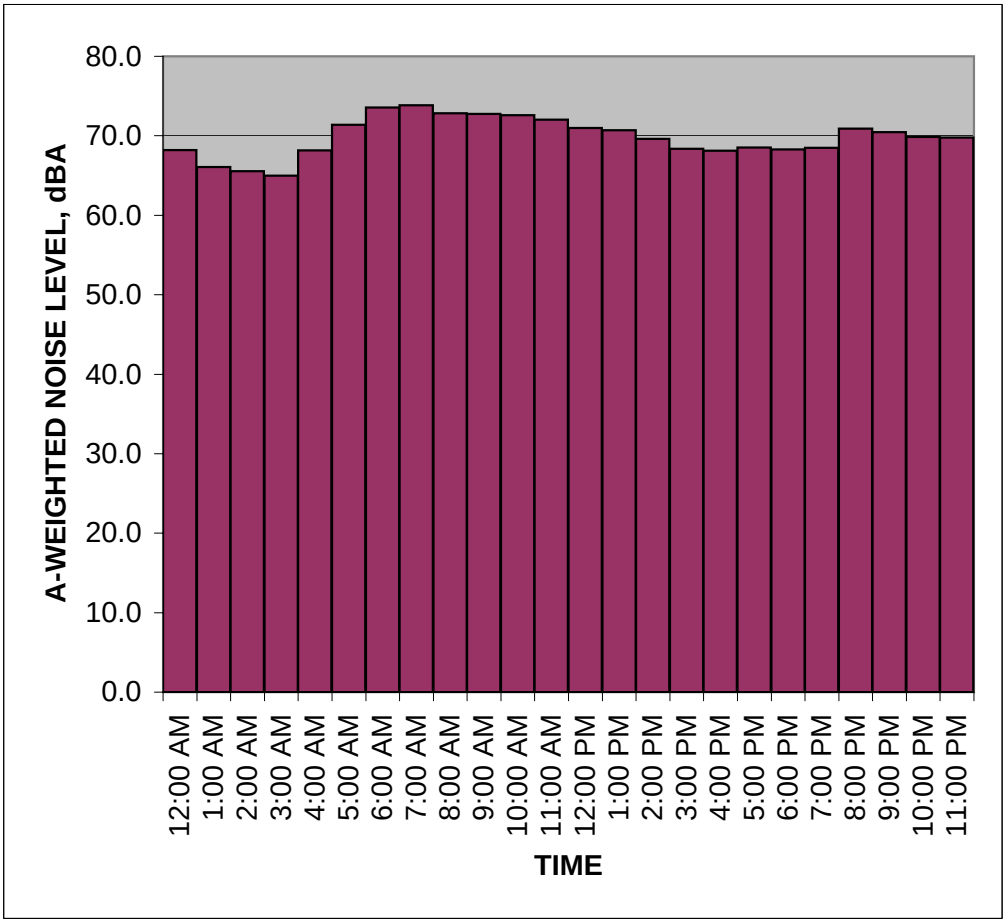
NOTES:

Measured Ambient Noise Levels

Project: Carson Ramps Improvement Project
Location: R5 - 213th Street and I-405
Sources: Traffic Noise

Date: August 17, 2006

TIME	HNL, dB(A)
12:00 AM	68.2
1:00 AM	66.1
2:00 AM	65.5
3:00 AM	65.0
4:00 AM	68.2
5:00 AM	71.4
6:00 AM	73.6
7:00 AM	73.8
8:00 AM	72.8
9:00 AM	72.8
10:00 AM	72.6
11:00 AM	72.0
12:00 PM	71.0
1:00 PM	70.7
2:00 PM	69.6
3:00 PM	68.4
4:00 PM	68.1
5:00 PM	68.5
6:00 PM	68.3
7:00 PM	68.5
8:00 PM	70.9
9:00 PM	70.4
10:00 PM	69.9
11:00 PM	69.8
CNEL, dB(A):	**76.4**



NOTES:

Carson Ramps Field Log Locations and Corresponding Locations in Report

Field Log Location Description	Corresponding Receiver
Fence (1)	R1
Pole 1	R2
Pole 2	R3
Pole 4	R4
213th Street Bridge	R5
Desford Street Inside SW	R6
Quality Inn Backlot	R7

R1

Noise Monitoring Field Log

Project:	Carson Ramps	**Date**	8/14/04
Location:	Fence (1)	**Field Crew (Initials)**	EY/JB
Latitude:	0382786	**SLM Number**	1
Longitude:	3745046		

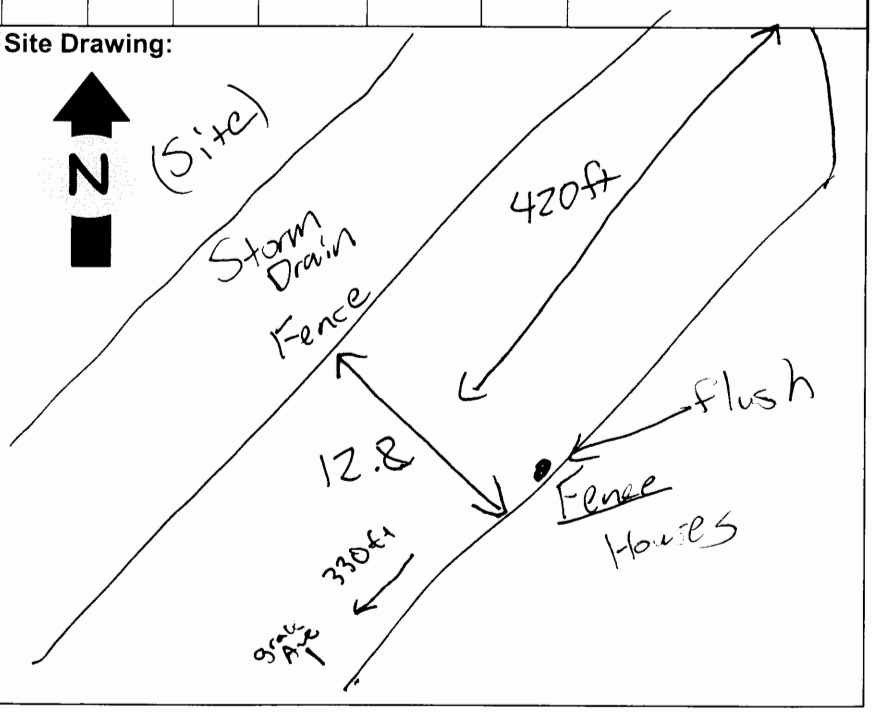
Pre-Monitoring Data	
Calibration $Level_{Start}$ (dBA)	114.0
Battery $Level_{Start}$ (%)	184%
Relative $Humidity_{Start}$ (%)	48%
$Temp_{Start}$ (F)	81.1° F

Post-Monitoring Data			
Calibration $Level_{End}$ (dBA)	113.5		
Battery $Level_{End}$ (%)	170		
RH_{Max} (%)	48	RH_{Min} (%)	27
$Temp_{Max}$ (F)	81.7	$Temp_{Min}$ (F)	62.1

Time											
Start	**Stop**	**L1**	**L10**	**L25**	**L50**	**L90**	**L99**	**Lmin**	**Lmax**	**Leq**	**Notes**

Notes:

Site Drawing:



RZ

Noise Monitoring Field Log

Project:	Caesars Ramps	**Date**	8/14/06	
Location:	Pole 1	**Field Crew (Initials)**		EY/JB
Latitude:	11S 0382928	**SLM Number**	2	
Longitude:	3745037			

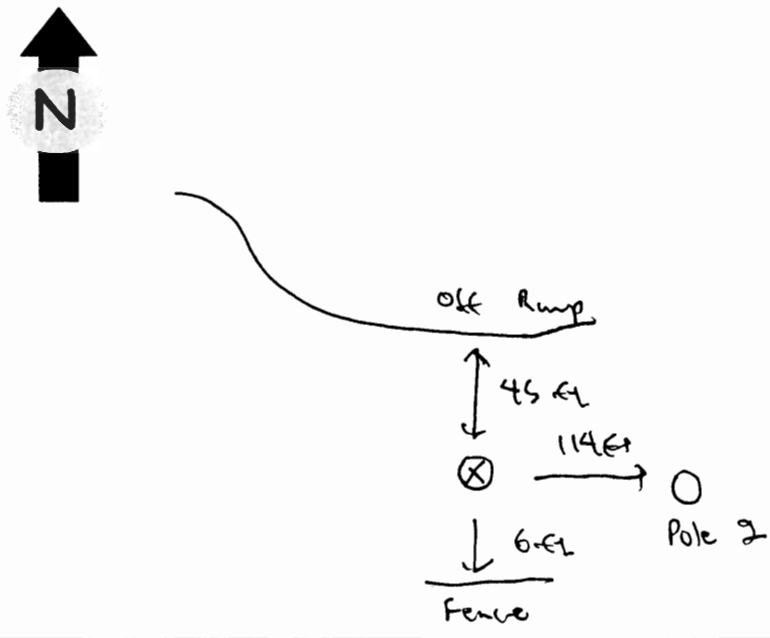
Pre-Monitoring Data	
Calibration $Level_{Start}$ (dBA)	114.0
Battery $Level_{Start}$ (%)	184%
Relative $Humidity_{Start}$ (%)	38%
$Temp_{Start}$ (F)	85.8°F

Post-Monitoring Data			
Calibration $Level_{End}$ (dBA)	113.8		
Battery $Level_{End}$ (%)	173		
RH_{Max} (%)	39	RH_{Min} (%)	17
$Temp_{Max}$ (F)	102.9	$Temp_{Min}$ (F)	57.2

Time											
Start	**Stop**	**L1**	**L10**	**L25**	**L50**	**L90**	**L99**	**Lmin**	**Lmax**	**Leq**	**Notes**

Notes:

Site Drawing:



R3

Noise Monitoring Field Log

Project:	Carson Ramp	**Date**	8/14/06
Location:	Pole 2	**Field Crew (Initials)**	JB/EY
Latitude:	LS 0382959	**SLM Number**	~~1~~ 3
Longitude:	3745004		

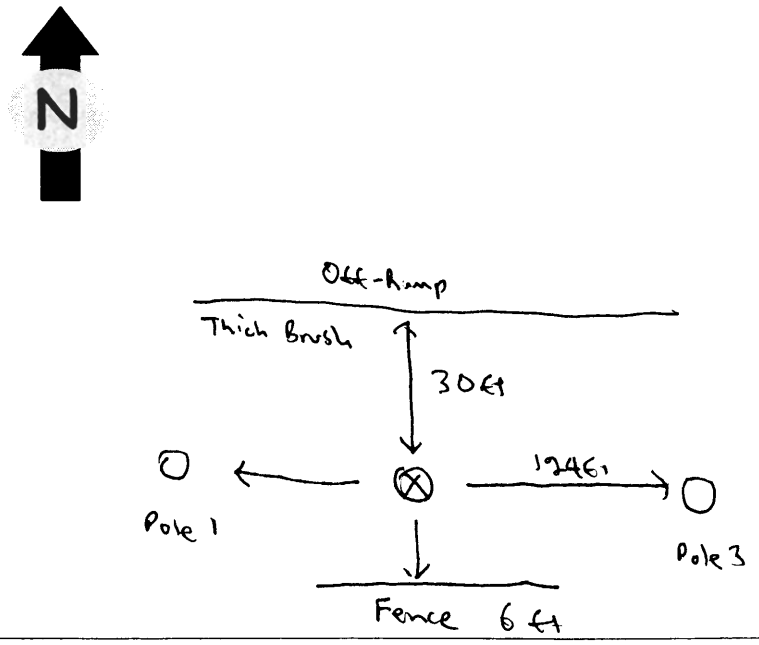
Pre-Monitoring Data	
Calibration $Level_{Start}$ (dBA)	114.0
Battery $Level_{Start}$ (%)	192%
Relative $Humidity_{Start}$ (%)	40%
$Temp_{Start}$ (F)	84.2

Post-Monitoring Data			
Calibration $Level_{End}$ (dBA)	113.6		
Battery $Level_{End}$ (%)	177		
RH_{Max} (%)	40	RH_{Min} (%)	30
$Temp_{Max}$ (F)	85.8	$Temp_{Min}$ (F)	61.9

Time											
Start	**Stop**	**L1**	**L10**	**L25**	**L50**	**L90**	**L99**	**Lmin**	**Lmax**	**Leq**	**Notes**

Notes:

Site Drawing:



R4

Noise Monitoring Field Log

Project:	Carson Ramps	**Date**	8/16
Location:	Pole 4	**Field Crew (Initials)**	JB/EV
Latitude:	See 8/14	**SLM Number**	4
Longitude:			

Pre-Monitoring Data	
Calibration $Level_{Start}$ (dBA)	113.9
Battery $Level_{Start}$ (%)	172%
Relative $Humidity_{Start}$ (%)	33%
$Temp_{Start}$ (F)	86.9

Post-Monitoring Data			
Calibration $Level_{End}$ (dBA)	113.8		
Battery $Level_{End}$ (%)	164		
RH_{Max} (%)	35	RH_{Min} (%)	12
$Temp_{Max}$ (F)	109.2	$Temp_{Min}$ (F)	58.3

Time											
Start	**Stop**	**L1**	**L10**	**L25**	**L50**	**L90**	**L99**	**Lmin**	**Lmax**	**Leq**	**Notes**

Notes:

Running

Site Drawing:

See: 8/14
SLM #4
No Data

R5

Noise Monitoring Field Log

Project:	Carson Ranges	**Date**	8/16/06
Location:	213st Bridge	**Field Crew (Initials)**	EY/SB
Latitude:	11S 0383424	**SLM Number**	3
Longitude:	3744608		

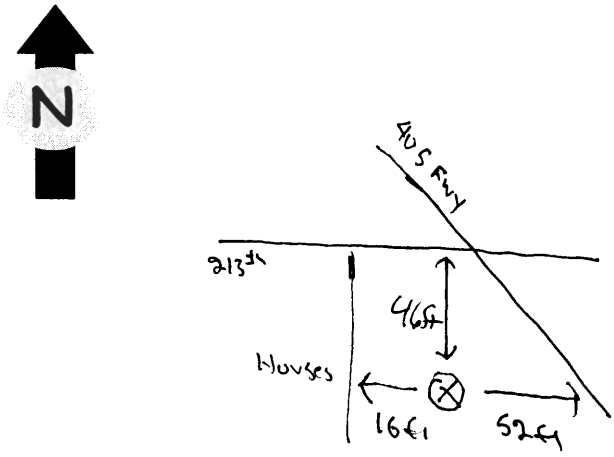
Pre-Monitoring Data	
Calibration $Level_{Start}$ (dBA)	114.0
Battery $Level_{Start}$ (%)	~~1745~~ 179%
Relative $Humidity_{Start}$ (%)	44 %
$Temp_{Start}$ (F)	80.1 °F

Post-Monitoring Data			
Calibration $Level_{End}$ (dBA)	113.9		
Battery $Level_{End}$ (%)	169		
RH_{Max} (%)	48	RH_{Min} (%)	23
$Temp_{Max}$ (F)	100.8	$Temp_{Min}$ (F)	60.4

Time											
Start	**Stop**	**L1**	**L10**	**L25**	**L50**	**L90**	**L99**	**Lmin**	**Lmax**	**Leq**	**Notes**

Notes:

Site Drawing:



R-6

PCR Services Corporation
Environmental & Architectural Acoustics
233 Wilshire Blvd., Suite 130, Santa Monica, CA 90401

Environmental Noise Survey

PCR

Client: | Job No:

Job Title: Carson Ramps | Sheet No:

Location: Desford St Inside SW

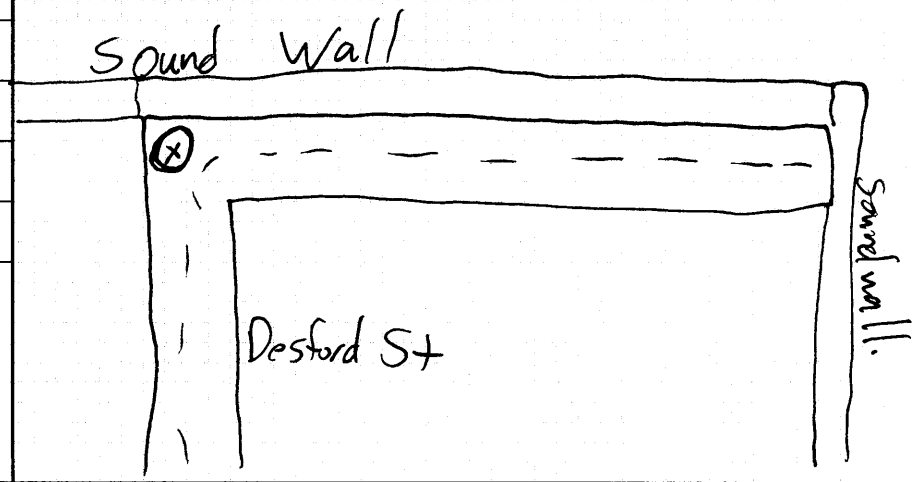
Made By: JB | Date: 11/21

Sound Meter: 4 | S/N:

Calibrator: | S/N:

Calibration Before: | Calibration After:

Notes:



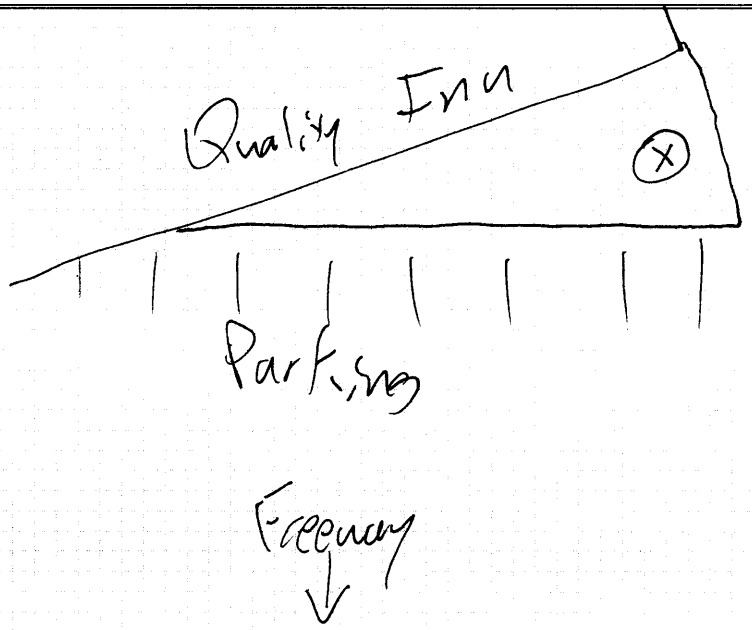
Time		Wind		Noise Level, dB(A)									Comments
Start	Finish	Speed	Dir'n	L99	L90	L50	L25	L10	L1	Lmin	Lmax	Leq	
10:15	10:30	8	E										

R-7

PCR Services Corporation
Environmental & Architectural Acoustics
233 Wilshire Blvd., Suite 130, Santa Monica, CA 90401

Environmental Noise Survey

Client:	Job No:
Job Title: Carson Ramps	Sheet No:
Location: Quality Inn - Back lot	
Made By: JB	Date: 11/21
Sound Meter: 4	S/N:
Calibrator:	S/N:
Calibration Before:	Calibration After:
Notes:	



Time		Wind		Noise Level, dB(A)									Comments
Start	Finish	Speed	Dir'n	L99	L90	L50	L25	L10	L1	Lmin	Lmax	Leq	
11:15	11:30	6	E										

Appendix C

- Computer Model (TNM) Input and Output Data
  - **C-1** Traffic Mix Assumptions From Traffic Consultants
  - **C-2** Calibration
  - **C-3** Existing
  - **C-4** Future No Project
  - **C-5** Future With project
  - **C-6** Future With Project and Abatement

C-1

- Traffic Mix Assumptions From Traffic Consultants

Gary Schalman

From: Tom Gaul [tgaul@kakuinc.com]
Sent: Wednesday, November 29, 2006 6:27 PM
To: Gary Schalman
Cc: Everest Yan; Anjum Bawa
Subject: 405/Avalon - Future Fleet Mix (ref: 2041)

Gary -

The fleet mix used by PCR Services for the freeway and ramp noise analyses was based on information from the Caltrans truck counts contained in the "2004 Annual Average Daily Truck Traffic on the California State Highway System" (Caltrans, November 2006) as posted on the Caltrans website at http://www.dot.ca.gov/hq/traffops/saferesr/trafdata/index.htm

For the I-405 in the vicinity of Avalon Boulevard, this data indicated that heavy duty trucks (defined as 3-axle or more) constituted 2.6% of the average annual daily traffic (AADT) and that medium duty trucks (defined as 2-axle) constituted 2.4% of the AADT in 2004. For the purpose of the future year noise modeling, it was assumed that these percentages would remain constant in future years. No independent modeling of future truck volumes has been done for the I-405/Avalon interchange project, and we feel that assuming continuation of the existing fleet mix into the future is appropriate for this purpose.

Let me know if you have any questions. Thanks!

- Tom Gaul
Kaku Associates, Inc.

C-2

- Calibration

PCR Services 5 February 2007
EY & SB TNM 2.5

INPUT: ROADWAYS
PROJECT/CONTRACT: Carson Ramp
RUN: Calibration with Adjustment Factors

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with the approval of FHWA

Roadway Name	Width	Points Name	No.	Coordinates (pavement) X	Y	Z	Flow Control Control Device	Speed Constraint	Percent Vehicles Affected	Segment Pvmt Type	On Struct?
	m			m	m	m		km/h	%		
I-405 NB-South_of_Avalon	3.7	point27	27	1,976,205.2	536,965.9	10.50				Average	
		point26	26	1,976,000.1	537,218.7	10.70				Average	
		point25	25	1,975,973.9	537,250.9	10.90				Average	
		point24	24	1,975,855.4	537,396.7	11.30				Average	
		point23	23	1,975,744.1	537,533.7	11.40				Average	
		point22	22	1,975,627.4	537,677.4	11.60					
I-405 SB-North_of_Avalon	3.7	point28	28	1,975,312.0	538,028.0	8.00				Average	
		point29	29	1,975,431.0	537,883.2	9.10				Average	
		point30	30	1,975,457.4	537,850.4	9.30				Average	
		point31	31	1,975,579.5	537,700.5	11.50				Average	
		point32	32	1,975,609.6	537,663.2	11.60					
Avalon-SB On-Ramp	3.7	point51	51	1,975,595.5	537,660.8	5.60				Average	
		point50	50	1,975,585.0	537,629.8	5.70				Average	
		point49	49	1,975,564.9	537,616.1	6.10				Average	
		point48	48	1,975,539.4	537,618.1	6.20				Average	
		point47	47	1,975,494.2	537,626.2	6.40				Average	
		point46	46	1,975,475.5	537,640.2	6.60				Average	
		point45	45	1,975,464.8	537,662.6	7.00				Average	
		point44	44	1,975,465.4	537,685.3	7.50				Average	
		point43	43	1,975,476.9	537,706.4	8.20				Average	
		point42	42	1,975,498.0	537,720.2	9.00				Average	
		point41	41	1,975,522.5	537,721.6	9.60				Average	
		point40	40	1,975,547.8	537,711.9	10.20				Average	
		point39	39	1,975,575.5	537,690.3	11.10				Average	
		point38	38	1,975,587.6	537,677.1	11.40					

Avalon-SB_Off-Ramp	3.7	point52	52	1,975,304.9	538,023.7	8.00				Average	
		point53	53	1,975,371.6	537,942.1	8.30				Average	
		point54	54	1,975,424.8	537,868.2	9.00				Average	
		point55	55	1,975,450.5	537,829.5	9.30				Average	
		point56	56	1,975,462.1	537,793.1	9.60				Average	
		point57	57	1,975,463.5	537,758.2	9.10				Average	
		point58	58	1,975,453.0	537,681.4	8.40				Average	
		point59	59	1,975,454.1	537,660.6	8.10				Average	
		point60	60	1,975,461.1	537,641.3	7.80				Average	
		point61	61	1,975,474.8	537,625.3	7.20				Average	
		point62	62	1,975,492.5	537,614.8	6.90				Average	
		point63	63	1,975,523.1	537,608.9	6.20				Average	
		point64	64	1,975,581.4	537,598.9	5.90					
Avalon Blvd	3.7	point65	65	1,975,589.1	537,247.1	5.20	Signal	0.00	100	Average	
		point66	66	1,975,588.5	537,510.1	6.10				Average	
		point67	67	1,975,592.0	537,602.6	6.10				Average	
		point68	68	1,975,603.1	537,650.4	6.10					
I-405 SB-South_of_Avalon	3.7	point69	69	1,975,609.6	537,663.2	11.60				Average	
		point33	33	1,975,726.5	537,519.9	11.40				Average	
		point34	34	1,975,837.8	537,382.5	11.30				Average	
		point35	35	1,975,948.8	537,245.8	10.90				Average	
		point36	36	1,975,971.6	537,217.8	10.70				Average	
		point37	37	1,976,182.5	536,957.3	10.50					
I-405 NB-North_of_Avalon	3.7	point70	70	1,975,627.4	537,677.4	11.60				Average	
		point21	21	1,975,597.0	537,714.6	11.50				Average	
		point20	20	1,975,475.8	537,863.7	9.30				Average	
		point19	19	1,975,448.6	537,897.2	9.10				Average	
		point18	18	1,975,331.2	538,043.2	8.00					

PCR Services **5 February 2007**
EY & SB **TNM 2.5**

INPUT: TRAFFIC FOR LAeq1h Volumes
PROJECT/CONTRACT: **Carson Ramp**
RUN: **Calibration with Adjustment Factors**

Roadway	Points		Segment									
Name	Name	No.	Autos		MTrucks		HTrucks		Buses		Motorcycles	
			V	S	V	S	V	S	V	S	V	S
			veh/hr	km/h	veh/hr	km/h	veh/hr	km/h	veh/hr	km/h	veh/hr	km/h
I-405 NB-South_of_Avalon	point27	27	7116	105	304	100	208	90	0	0	0	0
	point26	26	7116	105	304	100	208	90	0	0	0	0
	point25	25	7116	105	304	100	208	90	0	0	0	0
	point24	24	7116	105	304	100	208	90	0	0	0	0
	point23	23	7116	105	304	100	208	90	0	0	0	0
	point22	22										
I-405 SB-North_of_Avalon	point28	28	6268	105	344	100	264	90	0	0	0	0
	point29	29	6268	105	344	100	264	90	0	0	0	0
	point30	30	6268	105	344	100	264	90	0	0	0	0
	point31	31	6268	105	344	100	264	90	0	0	0	0
	point32	32										
Avalon-SB On-Ramp	point51	51	148	50	24	45	0	0	0	0	0	0
	point50	50	148	50	24	45	0	0	0	0	0	0
	point49	49	148	50	24	45	0	0	0	0	0	0
	point48	48	148	50	24	45	0	0	0	0	0	0
	point47	47	148	50	24	45	0	0	0	0	0	0
	point46	46	148	50	24	45	0	0	0	0	0	0
	point45	45	148	50	24	45	0	0	0	0	0	0
	point44	44	148	50	24	45	0	0	0	0	0	0
	point43	43	148	50	24	45	0	0	0	0	0	0
	point42	42	148	50	24	45	0	0	0	0	0	0
	point41	41	148	50	24	45	0	0	0	0	0	0
	point40	40	148	50	24	45	0	0	0	0	0	0

	point39	39	148	50	24	45	0	0	0	0	0	0
	point38	38										
Avalon-SB_Off-Ramp	point52	52	708	50	32	45	20	40	0	0	0	0
	point53	53	708	50	32	45	20	40	0	0	0	0
	point54	54	708	50	32	45	20	40	0	0	0	0
	point55	55	708	50	32	45	20	40	0	0	0	0
	point56	56	708	50	32	45	20	40	0	0	0	0
	point57	57	708	50	32	45	20	40	0	0	0	0
	point58	58	708	50	32	45	20	40	0	0	0	0
	point59	59	708	50	32	45	20	40	0	0	0	0
	point60	60	708	50	32	45	20	40	0	0	0	0
	point61	61	708	50	32	45	20	40	0	0	0	0
	point62	62	708	50	32	45	20	40	0	0	0	0
	point63	63	708	50	32	45	20	40	0	0	0	0
	point64	64										
Avalon Blvd	point65	65	2623	55	72	50	66	45	0	0	0	0
	point66	66	2623	55	72	50	66	45	0	0	0	0
	point67	67	2623	55	72	50	66	45	0	0	0	0
	point68	68										
I-405 SB-South_of_Avalon	point69	69	6268	105	344	100	264	0	0	0	0	0
	point33	33	6268	105	344	100	264	90	0	0	0	0
	point34	34	6268	105	344	100	264	90	0	0	0	0
	point35	35	6268	105	344	100	264	90	0	0	0	0
	point36	36	6268	105	344	100	264	90	0	0	0	0
	point37	37										
I-405 NB-North_of_Avalon	point70	70	7116	105	304	100	208	90	0	0	0	0
	point21	21	7116	105	304	100	208	90	0	0	0	0
	point20	20	7116	105	304	100	208	90	0	0	0	0
	point19	19	7116	105	304	100	208	90	0	0	0	0
	point18	18										

PCR Services **5 February 2007**
EY & SB **TNM 2.5**

INPUT: BARRIERS
PROJECT/CONTRACT: **Carson Ramp**
RUN: **Calibration with Adjustment Factors**

Barrier									Points										
Name	Type	Height		If Wall	If Berm			Add'tnl	Name	No.	Coordinates (bottom)			Height	Segment				
		Min	Max	$ per	$ per	Top	Run:Rise	$ per			X	Y	Z	at	Seg Ht Perturbs			On	Important
				Unit	Unit	Width		Unit						Point	Incre-	#Up	#Dn	Struct?	Reflec-
				Area	Vol.			Length							ment				tions?
		m	m	$/sq m	$/cu m	m	m:m	$/m			m	m	m	m	m				
Avalon-SB-Shoulder	W	0.00	30.48	0.00				0.00	point20	20	1,975,300.9	538,021.1	7.92	0.00	0.00	0	0		
									point21	21	1,975,366.8	537,941.2	8.23	0.00	0.00	0	0		
									point22	22	1,975,420.4	537,867.1	8.78	0.00	0.00	0	0		
									point23	23	1,975,446.2	537,828.2	8.99	0.00	0.00	0	0		
									point24	24	1,975,458.0	537,793.9	9.14	0.00	0.00	0	0		
									point25	25	1,975,459.8	537,759.5	9.14	0.00	0.00	0	0		
									point26	26	1,975,448.6	537,683.1	8.53	0.00	0.00	0	0		
									point27	27	1,975,449.0	537,659.9	8.38	0.00	0.00	0	0		
									point28	28	1,975,456.4	537,638.1	7.92	0.00	0.00	0	0		
									point29	29	1,975,470.2	537,620.1	7.62	0.00	0.00	0	0		
									point30	30	1,975,486.9	537,609.0	7.32	0.00	0.00	0	0		
									point31	31	1,975,521.4	537,601.6	6.40	0.00					
I-405-Shoulder_2	W	0.00	30.48	0.00				0.00	point44	44	1,975,428.5	537,870.8	8.99	0.00	0.00	0	0		
									point45	45	1,975,428.8	537,870.7	9.83	0.00	0.00	0	0		
									point46	46	1,975,557.5	537,709.1	10.67	0.00					
I-405-Median	W	0.00	30.48	0.00				0.00	point47	47	1,975,322.4	538,036.7	10.52	0.76	0.00	0	0		
									point48	48	1,975,439.8	537,890.7	10.73	0.76	0.00	0	0		
									point49	49	1,975,466.9	537,857.2	10.85	0.76	0.00	0	0		
									point50	50	1,975,588.0	537,708.1	11.28	0.76	0.00	0	0		
									point51	51	1,975,618.4	537,670.9	11.43	0.76	0.00	0	0		
									point52	52	1,975,735.2	537,527.2	11.64	0.76	0.00	0	0		
									point53	53	1,975,846.5	537,390.2	11.52	0.76	0.00	0	0		
									point54	54	1,975,965.0	537,244.4	9.30	0.76	0.00	0	0		
									point55	55	1,975,991.2	537,212.2	9.14	0.76	0.00	0	0		
									point56	56	1,976,196.4	536,959.4	7.99	0.76					
I-405-Shoulder-Structure	W	0.00	30.48	0.00				0.00	point57	57	1,975,581.0	537,681.3	11.43	0.00	0.00	0	0		
									point58	58	1,975,582.5	537,679.6	11.64	0.00	0.00	0	0		
									point59	59	1,975,617.2	537,636.9	11.58	0.00					
I-405-Shoulder_3	W	0.00	30.48	0.00				0.00	point60	60	1,975,617.2	537,636.9	11.58	0.00	0.00	0	0		
									point61	61	1,975,718.0	537,512.1	11.43	0.00	0.00	0	0		
									point62	62	1,975,829.0	537,375.2	11.28	0.00	0.00	0	0		
									point63	63	1,975,930.1	537,252.9	10.85	0.00	0.00	0	0		
									point64	64	1,975,963.2	537,212.6	10.73	0.00	0.00	0	0		
									point65	65	1,976,176.6	536,955.2	10.52	0.00					
Wall at end of Desford Street	W	0.00	30.48	0.00				0.00	point66	66	1,975,975.6	537,167.8	6.04	2.44	0.00	0	0		

									point67	67	1,975,991.4	537,146.9	6.04	2.44	0.00	0	0		
									point68	68	1,975,990.9	537,106.8	6.13	2.44	0.00	0	0		
									point69	69	1,975,990.2	537,066.6	5.82	2.44					

PCR Services 5 February 2007
EY & SB TNM 2.5

INPUT: RECEIVERS
PROJECT/CONTRACT: Carson Ramp
RUN: Calibration with Adjustment Factors

Receiver Name	No.	#DUs	Coordinates (ground) X	Y	Z	Height above Ground	Input Sound Levels and Criteria: Existing LAeq1h	Impact Criteria LAeq1h	Impact Criteria Sub'l	NR Goal	Active in Calc.
			m	m	m	m	dBA	dBA	dB	dB	
R2 - Mobile Home Park #1	6	1	1,975,432.6	537,641.1	6.83	1.50	58.70	66	10.0	8.0	Y
R3 - Mobile Home Park #1	7	1	1,975,467.0	537,607.6	6.92	1.50	60.80	66	10.0	8.0	Y
R4 - Mobile Home Park #1	8	1	1,975,507.5	537,594.8	7.16	1.50	63.90	66	10.0	8.0	Y

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INPUT: RECEIVER ADJUSTMENT FACTORS
PROJECT/CONTRACT: **Carson Ramp**
RUN: **Calibration with Adjustment Factors**

Receiver Name	No.	Individual Roadway Segment Adjustment Factors			
		Roadway	Segment		
		Name	Name	No.	Adj. Factor
					dB
R2 - Mobile Home Park #1	6	I-405 NB-North_of_Avalo	point70	70	-5.0
		I-405 NB-North_of_Avalo	point21	21	-5.0
		I-405 NB-North_of_Avalo	point20	20	-5.0
		I-405 NB-North_of_Avalo	point19	19	-5.0
		I-405 SB-North_of_Avalo	point28	28	-5.0
		I-405 SB-North_of_Avalo	point29	29	-5.0
		I-405 SB-North_of_Avalo	point30	30	-5.0
		I-405 SB-North_of_Avalo	point31	31	-5.0
		I-405 NB-South_of_Aval	point27	27	-5.0
		I-405 NB-South_of_Aval	point26	26	-5.0
		I-405 NB-South_of_Aval	point25	25	-5.0
		I-405 NB-South_of_Aval	point24	24	-5.0
		I-405 NB-South_of_Aval	point23	23	-5.0
		I-405 SB-South_of_Aval	point69	69	-5.0
		I-405 SB-South_of_Aval	point33	33	-5.0
		I-405 SB-South_of_Aval	point34	34	-5.0
		I-405 SB-South_of_Aval	point35	35	-5.0
		I-405 SB-South_of_Aval	point36	36	-5.0
R3 - Mobile Home Park #1	7	I-405 SB-North_of_Avalo	point28	28	-5.0
		I-405 SB-North_of_Avalo	point29	29	-5.0
		I-405 SB-North_of_Avalo	point30	30	-5.0
		I-405 SB-North_of_Avalo	point31	31	-5.0
		I-405 NB-North_of_Avalo	point70	70	-5.0

		I-405 NB-North_of_Avalo	point21	21	-5.0
		I-405 NB-North_of_Avalo	point20	20	-5.0
		I-405 NB-North_of_Avalo	point19	19	-5.0
		I-405 NB-South_of_Aval	point27	27	-5.0
		I-405 NB-South_of_Aval	point26	26	-5.0
		I-405 NB-South_of_Aval	point25	25	-5.0
		I-405 NB-South_of_Aval	point24	24	-5.0
		I-405 NB-South_of_Aval	point23	23	-5.0
		I-405 SB-South_of_Aval	point69	69	-5.0
		I-405 SB-South_of_Aval	point33	33	-5.0
		I-405 SB-South_of_Aval	point34	34	-5.0
		I-405 SB-South_of_Aval	point35	35	-5.0
		I-405 SB-South_of_Aval	point36	36	-5.0
R4 - Mobile Home Park #1	8	I-405 SB-North_of_Avalo	point28	28	-5.0
		I-405 SB-North_of_Avalo	point29	29	-5.0
		I-405 SB-North_of_Avalo	point30	30	-5.0
		I-405 SB-North_of_Avalo	point31	31	-5.0
		I-405 NB-North_of_Avalo	point70	70	-5.0
		I-405 NB-North_of_Avalo	point21	21	-5.0
		I-405 NB-North_of_Avalo	point20	20	-5.0
		I-405 NB-North_of_Avalo	point19	19	-5.0
		I-405 NB-South_of_Aval	point27	27	-5.0
		I-405 NB-South_of_Aval	point26	26	-5.0
		I-405 NB-South_of_Aval	point25	25	-5.0
		I-405 NB-South_of_Aval	point24	24	-5.0
		I-405 NB-South_of_Aval	point23	23	-5.0
		I-405 SB-South_of_Aval	point69	69	-5.0
		I-405 SB-South_of_Aval	point33	33	-5.0
		I-405 SB-South_of_Aval	point34	34	-5.0
		I-405 SB-South_of_Aval	point35	35	-5.0
		I-405 SB-South_of_Aval	point36	36	-5.0

PCR Services
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TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: Carson Ramp
RUN: Calibration with Adjustment Factors
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 20 deg C, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Noise Reduction Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
R2 - Mobile Home Park #1	6	1	58.7	61.2	66	2.5	10	----	61.2	0.0	8	-8.0
R3 - Mobile Home Park #1	7	1	60.8	64.0	66	3.2	10	----	64.0	0.0	8	-8.0
R4 - Mobile Home Park #1	8	1	63.9	65.2	66	1.3	10	----	65.2	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB
All Selected	3	0.0	0.0	0.0
All Impacted	0	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

C-3

- Existing

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INPUT: ROADWAYS
PROJECT/CONTRACT: Carson Ramp
RUN: Existing (2006)

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with the approval of FHWA

Roadway		Points									
Name	Width	Name	No.	Coordinates (pavement)			Flow Control			Segment	
				X	Y	Z	Control Device	Speed Constraint	Percent Vehicles Affected	Pvmt Type	On Struct?
	m			m	m	m		km/h	%		
I-405 NB-South_of_Avalon	3.7	point27	27	1,976,205.2	536,965.9	10.50				Average	
		point26	26	1,976,000.1	537,218.7	10.70				Average	
		point25	25	1,975,973.9	537,250.9	10.90				Average	
		point24	24	1,975,855.4	537,396.7	11.30				Average	
		point23	23	1,975,744.1	537,533.7	11.40				Average	
		point22	22	1,975,627.4	537,677.4	11.60					
I-405 SB-North_of_Avalon	3.7	point28	28	1,975,312.0	538,028.0	8.00				Average	
		point29	29	1,975,431.0	537,883.2	9.10				Average	
		point30	30	1,975,457.4	537,850.4	9.30				Average	
		point31	31	1,975,579.5	537,700.5	11.50				Average	
		point32	32	1,975,609.6	537,663.2	11.60					
Avalon-SB On-Ramp	3.7	point51	51	1,975,595.5	537,660.8	5.60				Average	
		point50	50	1,975,585.0	537,629.8	5.70				Average	
		point49	49	1,975,564.9	537,616.1	6.10				Average	
		point48	48	1,975,539.4	537,618.1	6.20				Average	
		point47	47	1,975,494.2	537,626.2	6.40				Average	
		point46	46	1,975,475.5	537,640.2	6.60				Average	
		point45	45	1,975,464.8	537,662.6	7.00				Average	
		point44	44	1,975,465.4	537,685.3	7.50				Average	
		point43	43	1,975,476.9	537,706.4	8.20				Average	
		point42	42	1,975,498.0	537,720.2	9.00				Average	
		point41	41	1,975,522.5	537,721.6	9.60				Average	
		point40	40	1,975,547.8	537,711.9	10.20				Average	
		point39	39	1,975,575.5	537,690.3	11.10				Average	
		point38	38	1,975,587.6	537,677.1	11.40					

Avalon-SB_Off-Ramp	3.7	point52	52	1,975,304.9	538,023.7	8.00				Average	
		point53	53	1,975,371.6	537,942.1	8.30				Average	
		point54	54	1,975,424.8	537,868.2	9.00				Average	
		point55	55	1,975,450.5	537,829.5	9.30				Average	
		point56	56	1,975,462.1	537,793.1	9.60				Average	
		point57	57	1,975,463.5	537,758.2	9.10				Average	
		point58	58	1,975,453.0	537,681.4	8.40				Average	
		point59	59	1,975,454.1	537,660.6	8.10				Average	
		point60	60	1,975,461.1	537,641.3	7.80				Average	
		point61	61	1,975,474.8	537,625.3	7.20				Average	
		point62	62	1,975,492.5	537,614.8	6.90				Average	
		point63	63	1,975,523.1	537,608.9	6.20				Average	
		point64	64	1,975,581.4	537,598.9	5.90					
Avalon Blvd	3.7	point65	65	1,975,589.1	537,247.1	5.20	Signal	0.00	100	Average	
		point66	66	1,975,588.5	537,510.1	6.10				Average	
		point67	67	1,975,592.0	537,602.6	6.10				Average	
		point68	68	1,975,603.1	537,650.4	6.10					
I-405 SB-South_of_Avalon	3.7	point69	69	1,975,609.6	537,663.2	11.60				Average	
		point33	33	1,975,726.5	537,519.9	11.40				Average	
		point34	34	1,975,837.8	537,382.5	11.30				Average	
		point35	35	1,975,948.8	537,245.8	10.90				Average	
		point36	36	1,975,971.6	537,217.8	10.70				Average	
		point37	37	1,976,182.5	536,957.3	10.50					
I-405 NB-North_of_Avalon	3.7	point70	70	1,975,627.4	537,677.4	11.60				Average	
		point21	21	1,975,597.0	537,714.6	11.50				Average	
		point20	20	1,975,475.8	537,863.7	9.30				Average	
		point19	19	1,975,448.6	537,897.2	9.10				Average	
		point18	18	1,975,331.2	538,043.2	8.00					

PCR Services Corporation **5 February 2007**
EY & SB **TNM 2.5**

INPUT: TRAFFIC FOR LAeq1h Volumes
PROJECT/CONTRACT: **Carson Ramp**
RUN: **Existing (2006)**

Roadway	Points		Segment									
Name	Name	No.	Autos		MTrucks		HTrucks		Buses		Motorcycles	
			V	S	V	S	V	S	V	S	V	S
			veh/hr	km/h	veh/hr	km/h	veh/hr	km/h	veh/hr	km/h	veh/hr	km/h
I-405 NB-South_of_Avalon	point27	27	6025	105	165	100	152	100	0	0	0	0
	point26	26	6025	105	165	100	152	100	0	0	0	0
	point25	25	6025	105	165	100	152	100	0	0	0	0
	point24	24	6025	105	165	100	152	100	0	0	0	0
	point23	23	6025	105	165	100	152	100	0	0	0	0
	point22	22										
I-405 SB-North_of_Avalon	point28	28	6337	105	173	100	160	100	0	0	0	0
	point29	29	6337	105	173	100	160	100	0	0	0	0
	point30	30	6337	105	173	100	160	100	0	0	0	0
	point31	31	6337	105	173	100	160	100	0	0	0	0
	point32	32										
Avalon-SB On-Ramp	point51	51	275	50	8	45	7	40	0	0	0	0
	point50	50	275	50	8	45	7	40	0	0	0	0
	point49	49	275	50	8	45	7	40	0	0	0	0
	point48	48	275	50	8	45	7	40	0	0	0	0
	point47	47	275	50	8	45	7	40	0	0	0	0
	point46	46	275	50	8	45	7	40	0	0	0	0
	point45	45	275	50	8	45	7	40	0	0	0	0
	point44	44	275	50	8	45	7	40	0	0	0	0
	point43	43	275	50	8	45	7	40	0	0	0	0
	point42	42	275	50	8	45	7	40	0	0	0	0
	point41	41	275	50	8	45	7	40	0	0	0	0
	point40	40	275	50	8	45	7	40	0	0	0	0

	point39	39	275	50	8	45	7	40	0	0	0	0
	point38	38										
Avalon-SB_Off-Ramp	point52	52	1034	50	28	45	26	40	0	0	0	0
	point53	53	1034	50	28	45	26	40	0	0	0	0
	point54	54	1034	50	28	45	26	40	0	0	0	0
	point55	55	1034	50	28	45	26	40	0	0	0	0
	point56	56	1034	50	28	45	26	40	0	0	0	0
	point57	57	1034	50	28	45	26	40	0	0	0	0
	point58	58	1034	50	28	45	26	40	0	0	0	0
	point59	59	1034	50	28	45	26	40	0	0	0	0
	point60	60	1034	50	28	45	26	40	0	0	0	0
	point61	61	1034	50	28	45	26	40	0	0	0	0
	point62	62	1034	50	28	45	26	40	0	0	0	0
	point63	63	1034	50	28	45	26	40	0	0	0	0
	point64	64										
Avalon Blvd	point65	65	2834	55	78	50	72	50	0	0	0	0
	point66	66	2834	55	78	50	72	50	0	0	0	0
	point67	67	2834	55	78	50	72	50	0	0	0	0
	point68	68										
I-405 SB-South_of_Avalon	point69	69	6087	105	167	100	154	100	0	0	0	0
	point33	33	6087	105	167	100	154	100	0	0	0	0
	point34	34	6087	105	167	100	154	100	0	0	0	0
	point35	35	6087	105	167	100	154	100	0	0	0	0
	point36	36	6087	105	167	100	154	100	0	0	0	0
	point37	37										
I-405 NB-North_of_Avalon	point70	70	6722	105	184	100	170	100	0	0	0	0
	point21	21	6722	105	184	100	170	100	0	0	0	0
	point20	20	6722	105	184	100	170	100	0	0	0	0
	point19	19	6722	105	184	100	170	100	0	0	0	0
	point18	18										

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INPUT: BARRIERS
PROJECT/CONTRACT: Carson Ramp
RUN: Existing (2006)

Barrier									Points										
Name	Type	Height		If Wall	If Berm			Add'tnl	Name	No.	Coordinates (bottom)			Height	Segment				
		Min	Max	$ per	$ per	Top	Run:Rise	$ per			X	Y	Z	at	Seg Ht Perturbs			On	Important
				Unit	Unit	Width		Unit						Point	Incre-	#Up	#Dn	Struct?	Reflec-
				Area	Vol.			Length							ment				tions?
		m	m	$/sq m	$/cu m	m	m:m	$/m			m	m	m	m	m				
Avalon-SB-Shoulder	W	0.00	30.48	0.00				0.00	point20	20	1,975,300.9	538,021.1	7.92	0.00	0.00	0	0		
									point21	21	1,975,366.8	537,941.2	8.23	0.00	0.00	0	0		
									point22	22	1,975,420.4	537,867.1	8.78	0.00	0.00	0	0		
									point23	23	1,975,446.2	537,828.2	8.99	0.00	0.00	0	0		
									point24	24	1,975,458.0	537,793.9	9.14	0.00	0.00	0	0		
									point25	25	1,975,459.8	537,759.5	9.14	0.00	0.00	0	0		
									point26	26	1,975,448.6	537,683.1	8.53	0.00	0.00	0	0		
									point27	27	1,975,449.0	537,659.9	8.38	0.00	0.00	0	0		
									point28	28	1,975,456.4	537,638.1	7.92	0.00	0.00	0	0		
									point29	29	1,975,470.2	537,620.1	7.62	0.00	0.00	0	0		
									point30	30	1,975,486.9	537,609.0	7.32	0.00	0.00	0	0		
									point31	31	1,975,521.4	537,601.6	6.40	0.00					
I-405-Shoulder_2	W	0.00	30.48	0.00				0.00	point44	44	1,975,428.5	537,870.8	8.99	0.00	0.00	0	0		
									point45	45	1,975,428.8	537,870.7	9.83	0.00	0.00	0	0		
									point46	46	1,975,557.5	537,709.1	10.67	0.00					
I-405-Median	W	0.00	30.48	0.00				0.00	point47	47	1,975,322.4	538,036.7	10.52	0.76	0.00	0	0		
									point48	48	1,975,439.8	537,890.7	10.73	0.76	0.00	0	0		
									point49	49	1,975,466.9	537,857.2	10.85	0.76	0.00	0	0		
									point50	50	1,975,588.0	537,708.1	11.28	0.76	0.00	0	0		
									point51	51	1,975,618.4	537,670.9	11.43	0.76	0.00	0	0		
									point52	52	1,975,735.2	537,527.2	11.64	0.76	0.00	0	0		
									point53	53	1,975,846.5	537,390.2	11.52	0.76	0.00	0	0		
									point54	54	1,975,965.0	537,244.4	9.30	0.76	0.00	0	0		
									point55	55	1,975,991.2	537,212.2	9.14	0.76	0.00	0	0		
									point56	56	1,976,196.4	536,959.4	7.99	0.76					
I-405-Shoulder-Structure	W	0.00	30.48	0.00				0.00	point57	57	1,975,581.0	537,681.3	11.43	0.00	0.00	0	0		
									point58	58	1,975,582.5	537,679.6	11.64	0.00	0.00	0	0		
									point59	59	1,975,617.2	537,636.9	11.58	0.00					
I-405-Shoulder_3	W	0.00	30.48	0.00				0.00	point60	60	1,975,617.2	537,636.9	11.58	0.00	0.00	0	0		
									point61	61	1,975,718.0	537,512.1	11.43	0.00	0.00	0	0		
									point62	62	1,975,829.0	537,375.2	11.28	0.00	0.00	0	0		
									point63	63	1,975,930.1	537,252.9	10.85	0.00	0.00	0	0		
									point64	64	1,975,963.2	537,212.6	10.73	0.00	0.00	0	0		
									point65	65	1,976,176.6	536,955.2	10.52	0.00					
Wall at end of Desford Street	W	0.00	30.48	0.00				0.00	point66	66	1,975,975.6	537,167.8	6.04	2.44	0.00	0	0		

									point67	67	1,975,991.4	537,146.9	6.04	2.44	0.00	0	0		
									point68	68	1,975,990.9	537,106.8	6.13	2.44	0.00	0	0		
									point69	69	1,975,990.2	537,066.6	5.82	2.44					

PCR Services Corporation **5 February 2007**
EY & SB **TNM 2.5**

INPUT: BUILDING ROWS
PROJECT/CONTRACT: **Carson Ramp**
RUN: **Existing (2006)**

Building Row Name	Average Height	Building Percent	Points No.	Coordinates (ground) X	Y	Z
	m	%		m	m	m
Homes on Desford Street.	6.60	80	1	1,975,989.0	537,124.4	6.00
			2	1,975,885.0	537,124.4	6.00
1st Row	6.00	65	3	1,975,970.9	537,158.3	6.60
			4	1,975,921.4	537,218.7	6.60
Homes On Selwyn - 2nd Row	3.60	80	5	1,975,919.6	537,219.3	6.60
			6	1,975,922.1	537,127.8	6.60
Homes on Selwyn - 3rd Row	3.60	80	7	1,975,870.9	537,221.5	6.80
			8	1,975,874.6	537,126.9	6.80

PCR Services Corporation 5 February 2007
EY & SB TNM 2.5

INPUT: RECEIVERS
PROJECT/CONTRACT: Carson Ramp
RUN: Existing (2006)

Receiver Name	No.	#DUs	Coordinates (ground) X	Y	Z	Height above Ground	Input Sound Levels and Criteria Existing LAeq1h	Impact Criteria LAeq1h	Impact Criteria Sub'l	NR Goal	Active in Calc.
			m	m	m	m	dBA	dBA	dB	dB	
R1 - Mobile Home Park #1	5	1	1,975,330.6	537,656.3	6.55	1.50	56.40	66	10.0	8.0	Y
R2 - Mobile Home Park #1	6	1	1,975,432.6	537,641.1	6.83	1.50	61.80	66	10.0	8.0	Y
R3 - Mobile Home Park #1	7	1	1,975,467.0	537,607.6	6.92	1.50	63.90	66	10.0	8.0	Y
R4 - Mobile Home Park #1	8	1	1,975,507.5	537,594.8	7.16	1.50	68.30	66	10.0	8.0	Y
R5 - 213th Street	9	1	1,975,937.9	537,215.5	6.10	1.50	73.80	66	10.0	8.0	Y
R6 - End of Desford St.	16	1	1,975,985.1	537,085.1	6.04	1.50	64.60	66	10.0	8.0	Y
R7 - Quality Inn	18	1	1,975,869.8	537,689.2	6.40	1.50	63.10	66	10.0	8.0	Y
R5b - 213th Street 2nd Row	20	1	1,975,888.1	537,218.3	6.64	1.50	0.00	66	10.0	8.0	Y
R5c - 21314 Selwyn Ave.	21	1	1,975,934.6	537,183.7	6.89	1.50	0.00	66	10.0	8.0	Y
R5d - 850 E. 214th St.	22	1	1,975,943.0	537,139.8	6.10	1.50	0.00	66	10.0	8.0	Y
R5e - 21304 Garston Ave.	23	1	1,975,858.6	537,219.4	6.58	1.50	0.00	66	10.0	8.0	Y
R5f - 21314 Garston Ave.	24	1	1,975,859.6	537,179.8	6.89	1.50	0.00	66	10.0	8.0	Y
R5g - 21325 Selwyn Ave.	25	1	1,975,892.2	537,153.7	6.16	1.50	0.00	66	10.0	8.0	Y

PCR Services Corporation			**5 February 2007**		
EY & SB			**TNM 2.5**		
INPUT: RECEIVER ADJUSTMENT FACTORS					
PROJECT/CONTRACT:	**Carson Ramp**				
RUN:	**Existing (2006)**				
Receiver					
Name	**No.**	**Individual Roadway Segment Adjustment Factors**			
		Roadway	**Segment**		
		Name	**Name**	**No.**	**Adj. Factor**
					dB
R1 - Mobile Home Park #1	5	I-405 NB-South_of_Aval	point27	27	-5.0
		I-405 NB-South_of_Aval	point26	26	-5.0
		I-405 NB-South_of_Aval	point25	25	-5.0
		I-405 NB-South_of_Aval	point24	24	-5.0
		I-405 NB-South_of_Aval	point23	23	-5.0
		I-405 SB-North_of_Avalo	point28	28	-5.0
		I-405 SB-North_of_Avalo	point29	29	-5.0
		I-405 SB-North_of_Avalo	point30	30	-5.0
		I-405 SB-North_of_Avalo	point31	31	-5.0
		I-405 SB-South_of_Aval	point69	69	-5.0
		I-405 SB-South_of_Aval	point33	33	-5.0
		I-405 SB-South_of_Aval	point34	34	-5.0
		I-405 SB-South_of_Aval	point35	35	-5.0
		I-405 SB-South_of_Aval	point36	36	-5.0
		I-405 NB-North_of_Avalo	point70	70	-5.0
		I-405 NB-North_of_Avalo	point21	21	-5.0
		I-405 NB-North_of_Avalo	point20	20	-5.0
		I-405 NB-North_of_Avalo	point19	19	-5.0
R2 - Mobile Home Park #1	6	I-405 NB-South_of_Aval	point27	27	-5.0
		I-405 NB-South_of_Aval	point26	26	-5.0
		I-405 NB-South_of_Aval	point25	25	-5.0
		I-405 NB-South_of_Aval	point24	24	-5.0
		I-405 NB-South_of_Aval	point23	23	-5.0

		I-405 SB-North_of_Avalc	point28	28	-5.0
		I-405 SB-North_of_Avalc	point29	29	-5.0
		I-405 SB-North_of_Avalc	point30	30	-5.0
		I-405 SB-North_of_Avalc	point31	31	-5.0
		I-405 SB-South_of_Avalc	point69	69	-5.0
		I-405 SB-South_of_Avalc	point33	33	-5.0
		I-405 SB-South_of_Avalc	point34	34	-5.0
		I-405 SB-South_of_Avalc	point35	35	-5.0
		I-405 SB-South_of_Avalc	point36	36	-5.0
		I-405 NB-North_of_Avalc	point70	70	-5.0
		I-405 NB-North_of_Avalc	point21	21	-5.0
		I-405 NB-North_of_Avalc	point20	20	-5.0
		I-405 NB-North_of_Avalc	point19	19	-5.0
R3 - Mobile Home Park #1	7	I-405 NB-South_of_Avalc	point27	27	-5.0
		I-405 NB-South_of_Avalc	point26	26	-5.0
		I-405 NB-South_of_Avalc	point25	25	-5.0
		I-405 NB-South_of_Avalc	point24	24	-5.0
		I-405 NB-South_of_Avalc	point23	23	-5.0
		I-405 SB-North_of_Avalc	point28	28	-5.0
		I-405 SB-North_of_Avalc	point29	29	-5.0
		I-405 SB-North_of_Avalc	point30	30	-5.0
		I-405 SB-North_of_Avalc	point31	31	-5.0
		I-405 SB-South_of_Avalc	point69	69	-5.0
		I-405 SB-South_of_Avalc	point33	33	-5.0
		I-405 SB-South_of_Avalc	point34	34	-5.0
		I-405 SB-South_of_Avalc	point35	35	-5.0
		I-405 SB-South_of_Avalc	point36	36	-5.0
		I-405 NB-North_of_Avalc	point70	70	-5.0
		I-405 NB-North_of_Avalc	point21	21	-5.0
		I-405 NB-North_of_Avalc	point20	20	-5.0
		I-405 NB-North_of_Avalc	point19	19	-5.0
R4 - Mobile Home Park #1	8	I-405 NB-South_of_Avalc	point27	27	-5.0
		I-405 NB-South_of_Avalc	point26	26	-5.0
		I-405 NB-South_of_Avalc	point25	25	-5.0
		I-405 NB-South_of_Avalc	point24	24	-5.0
		I-405 NB-South_of_Avalc	point23	23	-5.0

		I-405 SB-North_of_Avalc	point28	28	-5.0
		I-405 SB-North_of_Avalc	point29	29	-5.0
		I-405 SB-North_of_Avalc	point30	30	-5.0
		I-405 SB-North_of_Avalc	point31	31	-5.0
		I-405 SB-South_of_Avalc	point69	69	-5.0
		I-405 SB-South_of_Avalc	point33	33	-5.0
		I-405 SB-South_of_Avalc	point34	34	-5.0
		I-405 SB-South_of_Avalc	point35	35	-5.0
		I-405 SB-South_of_Avalc	point36	36	-5.0
		I-405 NB-North_of_Avalc	point70	70	-5.0
		I-405 NB-North_of_Avalc	point21	21	-5.0
		I-405 NB-North_of_Avalc	point20	20	-5.0
		I-405 NB-North_of_Avalc	point19	19	-5.0

PCR Services Corporation 5 February 2007
EY & SB TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: Carson Ramp
RUN: Existing (2006)
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 20 deg C, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Increase over existing Crit'n Sub'l Inc	With Barrier Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Noise Reduction Goal	Noise Reduction Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
R1 - Mobile Home Park #1	5	1	56.4	55.6	66	-0.8	10	----	55.6	0.0	8	-8.0
R2 - Mobile Home Park #1	6	1	61.8	61.5	66	-0.3	10	----	61.5	0.0	8	-8.0
R3 - Mobile Home Park #1	7	1	63.9	64.6	66	0.7	10	----	64.6	0.0	8	-8.0
R4 - Mobile Home Park #1	8	1	68.3	65.8	66	-2.5	10	----	65.8	0.0	8	-8.0
R5 - 213th Street	9	1	73.8	70.7	66	-3.1	10	Snd Lvl	70.7	0.0	8	-8.0
R6 - End of Desford St.	16	1	64.6	64.4	66	-0.2	10	----	64.4	0.0	8	-8.0
R7 - Quality Inn	18	1	63.1	62.9	66	-0.2	10	----	62.9	0.0	8	-8.0
R5b - 213th Street 2nd Row	20	1	0.0	69.5	66	69.5	10	Snd Lvl	69.5	0.0	8	-8.0
R5c - 21314 Selwyn Ave.	21	1	0.0	68.5	66	68.5	10	Snd Lvl	68.5	0.0	8	-8.0
R5d - 850 E. 214th St.	22	1	0.0	68.9	66	68.9	10	Snd Lvl	68.9	0.0	8	-8.0
R5e - 21304 Garston Ave.	23	1	0.0	67.5	66	67.5	10	Snd Lvl	67.5	0.0	8	-8.0
R5f - 21314 Garston Ave.	24	1	0.0	66.0	66	66.0	10	Snd Lvl	66.0	0.0	8	-8.0
R5g - 21325 Selwyn Ave.	25	1	0.0	66.5	66	66.5	10	Snd Lvl	66.5	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Noise Reduction Avg	Noise Reduction Max
		dB	dB	dB
All Selected	13	0.0	0.0	0.0
All Impacted	7	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

C-4

- Future No Project

PCR Services Corporation 5 February 2007
EY & SB TNM 2.5

INPUT: ROADWAYS
PROJECT/CONTRACT: Carson Ramp
RUN: Future (2030) - No Project

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with the approval of FHWA

Roadway Name	Width	Points Name	No.	Coordinates (pavement) X	Y	Z	Flow Control Control Device	Speed Constraint	Percent Vehicles Affected	Segment Pvmt Type	On Struct?
	m			m	m	m		km/h	%		
I-405 NB-South_of_Avalon	3.7	point27	27	1,976,205.2	536,965.9	10.50				Average	
		point26	26	1,976,000.1	537,218.7	10.70				Average	
		point25	25	1,975,973.9	537,250.9	10.90				Average	
		point24	24	1,975,855.4	537,396.7	11.30				Average	
		point23	23	1,975,744.1	537,533.7	11.40				Average	
		point22	22	1,975,627.4	537,677.4	11.60					
I-405 SB-North_of_Avalon	3.7	point28	28	1,975,312.0	538,028.0	8.00				Average	
		point29	29	1,975,431.0	537,883.2	9.10				Average	
		point30	30	1,975,457.4	537,850.4	9.30				Average	
		point31	31	1,975,579.5	537,700.5	11.50				Average	
		point32	32	1,975,609.6	537,663.2	11.60					
Avalon-SB On-Ramp	3.7	point51	51	1,975,595.5	537,660.8	5.60				Average	
		point50	50	1,975,585.0	537,629.8	5.70				Average	
		point49	49	1,975,564.9	537,616.1	6.10				Average	
		point48	48	1,975,539.4	537,618.1	6.20				Average	
		point47	47	1,975,494.2	537,626.2	6.40				Average	
		point46	46	1,975,475.5	537,640.2	6.60				Average	
		point45	45	1,975,464.8	537,662.6	7.00				Average	
		point44	44	1,975,465.4	537,685.3	7.50				Average	
		point43	43	1,975,476.9	537,706.4	8.20				Average	
		point42	42	1,975,498.0	537,720.2	9.00				Average	
		point41	41	1,975,522.5	537,721.6	9.60				Average	
		point40	40	1,975,547.8	537,711.9	10.20				Average	
		point39	39	1,975,575.5	537,690.3	11.10				Average	
		point38	38	1,975,587.6	537,677.1	11.40					

Avalon-SB_Off-Ramp	3.7	point52	52	1,975,304.9	538,023.7	8.00				Average	
		point53	53	1,975,371.6	537,942.1	8.30				Average	
		point54	54	1,975,424.8	537,868.2	9.00				Average	
		point55	55	1,975,450.5	537,829.5	9.30				Average	
		point56	56	1,975,462.1	537,793.1	9.60				Average	
		point57	57	1,975,463.5	537,758.2	9.10				Average	
		point58	58	1,975,453.0	537,681.4	8.40				Average	
		point59	59	1,975,454.1	537,660.6	8.10				Average	
		point60	60	1,975,461.1	537,641.3	7.80				Average	
		point61	61	1,975,474.8	537,625.3	7.20				Average	
		point62	62	1,975,492.5	537,614.8	6.90				Average	
		point63	63	1,975,523.1	537,608.9	6.20				Average	
		point64	64	1,975,581.4	537,598.9	5.90					
Avalon Blvd	3.7	point65	65	1,975,589.1	537,247.1	5.20	Signal	0.00	100	Average	
		point66	66	1,975,588.5	537,510.1	6.10				Average	
		point67	67	1,975,592.0	537,602.6	6.10				Average	
		point68	68	1,975,603.1	537,650.4	6.10					
I-405 SB-South_of_Avalon	3.7	point69	69	1,975,609.6	537,663.2	11.60				Average	
		point33	33	1,975,726.5	537,519.9	11.40				Average	
		point34	34	1,975,837.8	537,382.5	11.30				Average	
		point35	35	1,975,948.8	537,245.8	10.90				Average	
		point36	36	1,975,971.6	537,217.8	10.70				Average	
		point37	37	1,976,182.5	536,957.3	10.50					
I-405 NB-North_of_Avalon	3.7	point70	70	1,975,627.4	537,677.4	11.60				Average	
		point21	21	1,975,597.0	537,714.6	11.50				Average	
		point20	20	1,975,475.8	537,863.7	9.30				Average	
		point19	19	1,975,448.6	537,897.2	9.10				Average	
		point18	18	1,975,331.2	538,043.2	8.00					

PCR Services Corporation **5 February 2007**
EY & SB **TNM 2.5**

INPUT: TRAFFIC FOR LAeq1h Volumes
PROJECT/CONTRACT: **Carson Ramp**
RUN: **Future (2030) - No Project**

Roadway	Points		Segment									
Name	Name	No.	Autos		MTrucks		HTrucks		Buses		Motorcycles	
			V	S	V	S	V	S	V	S	V	S
			veh/hr	km/h	veh/hr	km/h	veh/hr	km/h	veh/hr	km/h	veh/hr	km/h
I-405 NB-South_of_Avalon	point27	27	6670	105	183	100	169	100	0	0	0	0
	point26	26	6670	105	183	100	169	100	0	0	0	0
	point25	25	6670	105	183	100	169	100	0	0	0	0
	point24	24	6670	105	183	100	169	100	0	0	0	0
	point23	23	6670	105	183	100	169	100	0	0	0	0
	point22	22										
I-405 SB-North_of_Avalon	point28	28	7065	105	193	100	178	100	0	0	0	0
	point29	29	7065	105	193	100	178	100	0	0	0	0
	point30	30	7065	105	193	100	178	100	0	0	0	0
	point31	31	7065	105	193	100	178	100	0	0	0	0
	point32	32										
Avalon-SB On-Ramp	point51	51	622	50	17	45	16	40	0	0	0	0
	point50	50	622	50	17	45	16	40	0	0	0	0
	point49	49	622	50	17	45	16	40	0	0	0	0
	point48	48	622	50	17	45	16	40	0	0	0	0
	point47	47	622	50	17	45	16	40	0	0	0	0
	point46	46	622	50	17	45	16	40	0	0	0	0
	point45	45	622	50	17	45	16	40	0	0	0	0
	point44	44	622	50	17	45	16	40	0	0	0	0
	point43	43	622	50	17	45	16	40	0	0	0	0
	point42	42	622	50	17	45	16	40	0	0	0	0
	point41	41	622	50	17	45	16	40	0	0	0	0
	point40	40	622	50	17	45	16	40	0	0	0	0

	point39	39	622	50	17	45	16	40	0	0	0	0
	point38	38										
Avalon-SB_Off-Ramp	point52	52	1368	50	37	45	35	40	0	0	0	0
	point53	53	1368	50	37	45	35	40	0	0	0	0
	point54	54	1368	50	37	45	35	40	0	0	0	0
	point55	55	1368	50	37	45	35	40	0	0	0	0
	point56	56	1368	50	37	45	35	40	0	0	0	0
	point57	57	1368	50	37	45	35	40	0	0	0	0
	point58	58	1368	50	37	45	35	40	0	0	0	0
	point59	59	1368	50	37	45	35	40	0	0	0	0
	point60	60	1368	50	37	45	35	40	0	0	0	0
	point61	61	1368	50	37	45	35	40	0	0	0	0
	point62	62	1368	50	37	45	35	40	0	0	0	0
	point63	63	1368	50	37	45	35	40	0	0	0	0
	point64	64										
Avalon Blvd	point65	65	3276	55	90	50	83	50	0	0	0	0
	point66	66	3276	55	90	50	83	50	0	0	0	0
	point67	67	3276	55	90	50	83	50	0	0	0	0
	point68	68										
I-405 SB-South_of_Avalon	point69	69	6824	105	187	100	172	100	0	0	0	0
	point33	33	6824	105	187	100	172	100	0	0	0	0
	point34	34	6824	105	187	100	172	100	0	0	0	0
	point35	35	6824	105	187	100	172	100	0	0	0	0
	point36	36	6824	105	187	100	172	100	0	0	0	0
	point37	37										
I-405 NB-North_of_Avalon	point70	70	7562	105	207	100	191	100	0	0	0	0
	point21	21	7562	105	207	100	191	100	0	0	0	0
	point20	20	7562	105	207	100	191	100	0	0	0	0
	point19	19	7562	105	207	100	191	100	0	0	0	0
	point18	18										

PCR Services Corporation 5 February 2007
EY & SB TNM 2.5

INPUT: BARRIERS
PROJECT/CONTRACT: Carson Ramp
RUN: Future (2030) - No Project

Barrier									Points										
Name	Type	Height		If Wall	If Berm			Add'tnl	Name	No.	Coordinates (bottom)			Height	Segment				
		Min	Max	$ per	$ per	Top	Run:Rise	$ per			X	Y	Z	at	Seg Ht Perturbs			On	Important
				Unit	Unit	Width		Unit						Point	Incre-	#Up	#Dn	Struct?	Reflec-
				Area	Vol.			Length							ment				tions?
		m	m	$/sq m	$/cu m	m	m:m	$/m			m	m	m	m	m				
Avalon-SB-Shoulder	W	0.00	30.48	0.00				0.00	point20	20	1,975,300.9	538,021.1	7.92	0.00	0.00	0	0		
									point21	21	1,975,366.8	537,941.2	8.23	0.00	0.00	0	0		
									point22	22	1,975,420.4	537,867.1	8.78	0.00	0.00	0	0		
									point23	23	1,975,446.2	537,828.2	8.99	0.00	0.00	0	0		
									point24	24	1,975,458.0	537,793.9	9.14	0.00	0.00	0	0		
									point25	25	1,975,459.8	537,759.5	9.14	0.00	0.00	0	0		
									point26	26	1,975,448.6	537,683.1	8.53	0.00	0.00	0	0		
									point27	27	1,975,449.0	537,659.9	8.38	0.00	0.00	0	0		
									point28	28	1,975,456.4	537,638.1	7.92	0.00	0.00	0	0		
									point29	29	1,975,470.2	537,620.1	7.62	0.00	0.00	0	0		
									point30	30	1,975,486.9	537,609.0	7.32	0.00	0.00	0	0		
									point31	31	1,975,521.4	537,601.6	6.40	0.00					
I-405-Shoulder_2	W	0.00	30.48	0.00				0.00	point44	44	1,975,428.5	537,870.8	8.99	0.00	0.00	0	0		
									point45	45	1,975,428.8	537,870.7	9.83	0.00	0.00	0	0		
									point46	46	1,975,557.5	537,709.1	10.67	0.00					
I-405-Median	W	0.00	30.48	0.00				0.00	point47	47	1,975,322.4	538,036.7	10.52	0.76	0.00	0	0		
									point48	48	1,975,439.8	537,890.7	10.73	0.76	0.00	0	0		
									point49	49	1,975,466.9	537,857.2	10.85	0.76	0.00	0	0		
									point50	50	1,975,588.0	537,708.1	11.28	0.76	0.00	0	0		
									point51	51	1,975,618.4	537,670.9	11.43	0.76	0.00	0	0		
									point52	52	1,975,735.2	537,527.2	11.64	0.76	0.00	0	0		
									point53	53	1,975,846.5	537,390.2	11.52	0.76	0.00	0	0		
									point54	54	1,975,965.0	537,244.4	9.30	0.76	0.00	0	0		
									point55	55	1,975,991.2	537,212.2	9.14	0.76	0.00	0	0		
									point56	56	1,976,196.4	536,959.4	7.99	0.76					
I-405-Shoulder-Structure	W	0.00	30.48	0.00				0.00	point57	57	1,975,581.0	537,681.3	11.43	0.00	0.00	0	0		
									point58	58	1,975,582.5	537,679.6	11.64	0.00	0.00	0	0		
									point59	59	1,975,617.2	537,636.9	11.58	0.00					
I-405-Shoulder_3	W	0.00	30.48	0.00				0.00	point60	60	1,975,617.2	537,636.9	11.58	0.00	0.00	0	0		
									point61	61	1,975,718.0	537,512.1	11.43	0.00	0.00	0	0		
									point62	62	1,975,829.0	537,375.2	11.28	0.00	0.00	0	0		
									point63	63	1,975,930.1	537,252.9	10.85	0.00	0.00	0	0		
									point64	64	1,975,963.2	537,212.6	10.73	0.00	0.00	0	0		
									point65	65	1,976,176.6	536,955.2	10.52	0.00					
Wall at end of Desford Street	W	0.00	30.48	0.00				0.00	point66	66	1,975,975.6	537,167.8	6.04	2.44	0.00	0	0		

									point67	67	1,975,991.4	537,146.9	6.04	2.44	0.00	0	0		
									point68	68	1,975,990.9	537,106.8	6.13	2.44	0.00	0	0		
									point69	69	1,975,990.2	537,066.6	5.82	2.44					

PCR Services Corporation **5 February 2007**
EY & SB **TNM 2.5**

INPUT: BUILDING ROWS
PROJECT/CONTRACT: **Carson Ramp**
RUN: **Future (2030) - No Project**

Building Row			**Points**			
Name	**Average**	**Building**	**No.**	**Coordinates (ground)**		
	Height	**Percent**		**X**	**Y**	**Z**
	m	%		m	m	m
Homes on Desford Street.	6.60	80	1	1,975,989.0	537,124.4	6.00
			2	1,975,885.0	537,124.4	6.00
1st Row	6.00	65	3	1,975,970.9	537,158.3	6.60
			4	1,975,921.4	537,218.7	6.60
Homes On Selwyn - 2nd Row	3.60	80	5	1,975,919.6	537,219.3	6.60
			6	1,975,922.1	537,127.8	6.60
Homes on Selwyn - 3rd Row	3.60	80	7	1,975,870.9	537,221.5	6.80
			8	1,975,874.6	537,126.9	6.80

PCR Services Corporation 5 February 2007
EY & SB TNM 2.5

INPUT: RECEIVERS
PROJECT/CONTRACT: Carson Ramp
RUN: Future (2030) - No Project

Receiver Name	No.	#DUs	Coordinates (ground) X	Y	Z	Height above Ground	Input Sound Levels and Criteria: Existing LAeq1h	Impact Criteria LAeq1h	Impact Criteria Sub'l	NR Goal	Active in Calc.
			m	m	m	m	dBA	dBA	dB	dB	
R1 - Mobile Home Park #1	5	1	1,975,330.6	537,656.3	6.55	1.50	56.40	66	10.0	8.0	Y
R2 - Mobile Home Park #1	6	1	1,975,432.6	537,641.1	6.83	1.50	61.80	66	10.0	8.0	Y
R3 - Mobile Home Park #1	7	1	1,975,467.0	537,607.6	6.92	1.50	63.90	66	10.0	8.0	Y
R4 - Mobile Home Park #1	8	1	1,975,507.5	537,594.8	7.16	1.50	68.30	66	10.0	8.0	Y
R5 - 213th Street	9	1	1,975,937.9	537,215.5	6.10	1.50	73.80	66	10.0	8.0	Y
R6 - End of Desford St.	16	1	1,975,985.1	537,085.1	6.04	1.50	64.60	66	10.0	8.0	Y
R7 - Quality Inn	18	1	1,975,869.8	537,689.2	6.40	1.50	63.10	66	10.0	8.0	Y
R5b - 213th Street 2nd Row	20	1	1,975,888.1	537,218.3	6.64	1.50	0.00	66	10.0	8.0	Y
R5c - 21314 Selwyn Ave.	21	1	1,975,934.6	537,183.7	6.89	1.50	0.00	66	10.0	8.0	Y
R5d - 850 E. 214th St.	22	1	1,975,943.0	537,139.8	6.10	1.50	0.00	66	10.0	8.0	Y
R5e - 21304 Garston Ave.	23	1	1,975,858.6	537,219.4	6.58	1.50	0.00	66	10.0	8.0	Y
R5f - 21314 Garston Ave.	24	1	1,975,859.6	537,179.8	6.89	1.50	0.00	66	10.0	8.0	Y
R5g - 21325 Selwyn Ave.	25	1	1,975,892.2	537,153.7	6.16	1.50	0.00	66	10.0	8.0	Y

PCR Services Corporation **5 February 2007**
EY & SB **TNM 2.5**

INPUT: RECEIVER ADJUSTMENT FACTORS
PROJECT/CONTRACT: **Carson Ramp**
RUN: **Future (2030) - No Project**

Receiver Name	No.	Individual Roadway Segment Adjustment Factors			
		Roadway Name	Segment Name	No.	Adj. Factor dB
R1 - Mobile Home Park #1	5	I-405 NB-South_of_Aval	point27	27	-5.0
		I-405 NB-South_of_Aval	point26	26	-5.0
		I-405 NB-South_of_Aval	point25	25	-5.0
		I-405 NB-South_of_Aval	point24	24	-5.0
		I-405 NB-South_of_Aval	point23	23	-5.0
		I-405 SB-North_of_Avalo	point28	28	-5.0
		I-405 SB-North_of_Avalo	point29	29	-5.0
		I-405 SB-North_of_Avalo	point30	30	-5.0
		I-405 SB-North_of_Avalo	point31	31	-5.0
		I-405 SB-South_of_Aval	point69	69	-5.0
		I-405 SB-South_of_Aval	point33	33	-5.0
		I-405 SB-South_of_Aval	point34	34	-5.0
		I-405 SB-South_of_Aval	point35	35	-5.0
		I-405 SB-South_of_Aval	point36	36	-5.0
		I-405 NB-North_of_Avalo	point70	70	-5.0
		I-405 NB-North_of_Avalo	point21	21	-5.0
		I-405 NB-North_of_Avalo	point20	20	-5.0
		I-405 NB-North_of_Avalo	point19	19	-5.0
R2 - Mobile Home Park #1	6	I-405 NB-South_of_Aval	point27	27	-5.0
		I-405 NB-South_of_Aval	point26	26	-5.0
		I-405 NB-South_of_Aval	point25	25	-5.0
		I-405 NB-South_of_Aval	point24	24	-5.0
		I-405 NB-South_of_Aval	point23	23	-5.0

		I-405 SB-North_of_Avalc	point28	28	-5.0
		I-405 SB-North_of_Avalc	point29	29	-5.0
		I-405 SB-North_of_Avalc	point30	30	-5.0
		I-405 SB-North_of_Avalc	point31	31	-5.0
		I-405 SB-South_of_Avalc	point69	69	-5.0
		I-405 SB-South_of_Avalc	point33	33	-5.0
		I-405 SB-South_of_Avalc	point34	34	-5.0
		I-405 SB-South_of_Avalc	point35	35	-5.0
		I-405 SB-South_of_Avalc	point36	36	-5.0
		I-405 NB-North_of_Avalc	point70	70	-5.0
		I-405 NB-North_of_Avalc	point21	21	-5.0
		I-405 NB-North_of_Avalc	point20	20	-5.0
		I-405 NB-North_of_Avalc	point19	19	-5.0
R3 - Mobile Home Park #1	7	I-405 NB-South_of_Avalc	point27	27	-5.0
		I-405 NB-South_of_Avalc	point26	26	-5.0
		I-405 NB-South_of_Avalc	point25	25	-5.0
		I-405 NB-South_of_Avalc	point24	24	-5.0
		I-405 NB-South_of_Avalc	point23	23	-5.0
		I-405 SB-North_of_Avalc	point28	28	-5.0
		I-405 SB-North_of_Avalc	point29	29	-5.0
		I-405 SB-North_of_Avalc	point30	30	-5.0
		I-405 SB-North_of_Avalc	point31	31	-5.0
		I-405 SB-South_of_Avalc	point69	69	-5.0
		I-405 SB-South_of_Avalc	point33	33	-5.0
		I-405 SB-South_of_Avalc	point34	34	-5.0
		I-405 SB-South_of_Avalc	point35	35	-5.0
		I-405 SB-South_of_Avalc	point36	36	-5.0
		I-405 NB-North_of_Avalc	point70	70	-5.0
		I-405 NB-North_of_Avalc	point21	21	-5.0
		I-405 NB-North_of_Avalc	point20	20	-5.0
		I-405 NB-North_of_Avalc	point19	19	-5.0
R4 - Mobile Home Park #1	8	I-405 NB-South_of_Avalc	point27	27	-5.0
		I-405 NB-South_of_Avalc	point26	26	-5.0
		I-405 NB-South_of_Avalc	point25	25	-5.0
		I-405 NB-South_of_Avalc	point24	24	-5.0
		I-405 NB-South_of_Avalc	point23	23	-5.0

		I-405 SB-North_of_Avalc	point28	28	-5.0
		I-405 SB-North_of_Avalc	point29	29	-5.0
		I-405 SB-North_of_Avalc	point30	30	-5.0
		I-405 SB-North_of_Avalc	point31	31	-5.0
		I-405 SB-South_of_Avalc	point69	69	-5.0
		I-405 SB-South_of_Avalc	point33	33	-5.0
		I-405 SB-South_of_Avalc	point34	34	-5.0
		I-405 SB-South_of_Avalc	point35	35	-5.0
		I-405 SB-South_of_Avalc	point36	36	-5.0
		I-405 NB-North_of_Avalc	point70	70	-5.0
		I-405 NB-North_of_Avalc	point21	21	-5.0
		I-405 NB-North_of_Avalc	point20	20	-5.0
		I-405 NB-North_of_Avalc	point19	19	-5.0

PCR Services Corporation
5 February 2007
EY & SB
TNM 2.5
Calculated with TNM 2.5
RESULTS: SOUND LEVELS
PROJECT/CONTRACT: Carson Ramp
RUN: Future (2030) - No Project
BARRIER DESIGN: INPUT HEIGHTS
Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.
ATMOSPHERICS: 20 deg C, 50% RH

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Increase over existing Crit'n Sub'l Inc	With Barrier Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Noise Reduction Goal	Noise Reduction Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
R1 - Mobile Home Park #1	5	1	56.4	56.3	66	-0.1	10	----	56.3	0.0	8	-8.0
R2 - Mobile Home Park #1	6	1	61.8	62.6	66	0.8	10	----	62.6	0.0	8	-8.0
R3 - Mobile Home Park #1	7	1	63.9	65.8	66	1.9	10	----	65.8	0.0	8	-8.0
R4 - Mobile Home Park #1	8	1	68.3	67.0	66	-1.3	10	Snd Lvl	67.0	0.0	8	-8.0
R5 - 213th Street	9	1	73.8	71.2	66	-2.6	10	Snd Lvl	71.2	0.0	8	-8.0
R6 - End of Desford St.	16	1	64.6	64.9	66	0.3	10	----	64.9	0.0	8	-8.0
R7 - Quality Inn	18	1	63.1	63.4	66	0.3	10	----	63.4	0.0	8	-8.0
R5b - 213th Street 2nd Row	20	1	0.0	70.0	66	70.0	10	Snd Lvl	70.0	0.0	8	-8.0
R5c - 21314 Selwyn Ave.	21	1	0.0	68.9	66	68.9	10	Snd Lvl	68.9	0.0	8	-8.0
R5d - 850 E. 214th St.	22	1	0.0	69.4	66	69.4	10	Snd Lvl	69.4	0.0	8	-8.0
R5e - 21304 Garston Ave.	23	1	0.0	68.0	66	68.0	10	Snd Lvl	68.0	0.0	8	-8.0
R5f - 21314 Garston Ave.	24	1	0.0	66.4	66	66.4	10	Snd Lvl	66.4	0.0	8	-8.0
R5g - 21325 Selwyn Ave.	25	1	0.0	67.0	66	67.0	10	Snd Lvl	67.0	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Noise Reduction Avg	Noise Reduction Max
		dB	dB	dB
All Selected	13	0.0	0.0	0.0
All Impacted	8	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

C-5

- Future With Project

PCR Services Corporation 5 February 2007
EY & SB TNM 2.5

INPUT: ROADWAYS
PROJECT/CONTRACT: Carson Ramp
RUN: Future (2030) - With Project

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with the approval of FHWA

Roadway Name	Width	Points Name	No.	Coordinates (pavement) X	Y	Z	Flow Control Control Device	Speed Constraint	Percent Vehicles Affected	Segment Pvmt Type	On Struct?
	m			m	m	m		km/h	%		
I-405 NB - South of Avalon	3.7	point27	27	1,976,205.2	536,965.9	10.50				Average	
		point26	26	1,976,000.1	537,218.7	10.70				Average	
		point25	25	1,975,973.9	537,250.9	10.90				Average	
		point24	24	1,975,855.4	537,396.7	11.30				Average	
		point23	23	1,975,744.1	537,533.7	11.40				Average	
		point22	22	1,975,627.4	537,677.4	11.60					
I-405 SB - North of Avalon	3.7	point28	28	1,975,312.0	538,028.0	8.00				Average	
		point29	29	1,975,431.0	537,883.2	9.10				Average	
		point30	30	1,975,457.4	537,850.4	9.30				Average	
		point31	31	1,975,579.5	537,700.5	11.50					
Avalon Blvd	3.7	point65	65	1,975,589.1	537,247.1	5.20	Signal	0.00	100	Average	
		point66	66	1,975,588.5	537,510.1	6.10				Average	
		point67	67	1,975,592.0	537,602.6	6.10				Average	
		point68	68	1,975,603.1	537,650.4	6.10					
Lenardo Drive EB - 1	3.7	point69	69	1,975,294.4	537,730.8	10.10				Average	
		point70	70	1,975,343.6	537,711.8	10.80				Average	
		point71	71	1,975,381.1	537,694.7	11.00				Average	Y
		point72	72	1,975,419.9	537,668.3	10.70					
Lenardo Drive EB - 2	3.7	point73	73	1,975,422.9	537,666.2	10.70				Average	
		point74	74	1,975,470.1	537,636.1	9.40				Average	
		point75	75	1,975,512.0	537,618.9	7.90				Average	
		point76	76	1,975,581.5	537,602.5	5.90					
Lenardo Drive WB - 2	3.7	point80	80	1,975,427.5	537,679.8	10.70				Average	Y
		point79	79	1,975,388.6	537,708.1	11.00				Average	Y
		point78	78	1,975,348.8	537,726.5	10.80				Average	

		point77	77	1,975,299.6	537,745.6	10.10					
Lenardo Drive WB - 1	3.7	point85	85	1,975,585.9	537,617.9	5.90				Average	
		point84	84	1,975,548.9	537,624.8	6.90				Average	
		point83	83	1,975,514.4	537,632.0	7.90				Average	
		point82	82	1,975,475.5	537,649.2	9.40				Average	
		point81	81	1,975,431.4	537,676.4	10.70					
Avalon On-Ramp (New)	3.7	point100	100	1,975,593.0	537,605.1	5.70				Average	
		point105	105	1,975,616.6	537,599.8	5.30				Average	
		point98	98	1,975,636.0	537,586.4	5.80				Average	
		point132	132	1,975,674.9	537,545.5	9.80				Average	
		point133	133	1,975,713.6	537,504.6	11.30				Average	
		point134	134	1,975,752.2	537,463.7	11.30				Average	
		point99	99	1,975,789.8	537,422.3	11.30					
Lenardo Drive Off-Ramp (New)	3.7	point118	118	1,975,371.0	537,942.4	8.50				Average	
		point117	117	1,975,425.9	537,865.5	9.30				Average	
		point116	116	1,975,449.4	537,830.4	10.10				Average	
		point115	115	1,975,460.1	537,798.2	10.10				Average	
		point114	114	1,975,462.2	537,753.7	9.90				Average	
		point113	113	1,975,454.2	537,718.9	9.80				Average	
		point112	112	1,975,431.2	537,682.3	10.50					
Lenardo Drive On-Ramp (New)	3.7	point119	119	1,975,573.1	537,691.5	10.70				Average	
		point120	120	1,975,545.5	537,709.6	10.40				Average	
		point121	121	1,975,527.9	537,715.9	9.90				Average	
		point122	122	1,975,507.9	537,720.4	9.40				Average	
		point123	123	1,975,487.8	537,714.8	9.60				Average	
		point124	124	1,975,468.8	537,696.8	10.10				Average	
		point125	125	1,975,462.5	537,675.7	9.80				Average	
		point126	126	1,975,468.9	537,658.5	8.50				Average	
		point127	127	1,975,499.9	537,642.0	7.80				Average	
		point128	128	1,975,539.1	537,630.4	6.90				Average	
		point129	129	1,975,561.5	537,629.5	6.40				Average	
		point130	130	1,975,581.5	537,639.7	6.10				Average	
		point131	131	1,975,594.6	537,658.2	5.70					
I-405 SB - South of Avalon	3.7	point135	135	1,975,579.5	537,700.5	11.50				Average	
		point32	32	1,975,609.6	537,663.2	11.60				Average	
		point33	33	1,975,726.5	537,519.9	11.40				Average	
		point34	34	1,975,837.8	537,382.5	11.30				Average	
		point35	35	1,975,948.8	537,245.8	10.90				Average	
		point36	36	1,975,971.6	537,217.8	10.70				Average	

		point37	37	1,976,182.5	536,957.3	10.50					
I-405 NB - North of Avalon	3.7	point136	136	1,975,627.4	537,677.4	11.60				Average	
		point21	21	1,975,597.0	537,714.6	11.50				Average	
		point20	20	1,975,475.8	537,863.7	9.30				Average	
		point19	19	1,975,448.6	537,897.2	9.10				Average	
		point18	18	1,975,331.2	538,043.2	8.00					

PCR Services Corporation **9 May 2007**
EY & SB **TNM 2.5**

INPUT: TRAFFIC FOR LAeq1h Volumes
PROJECT/CONTRACT: **Carson Ramp**
RUN: **Future (2030) - With Project**

Roadway	Points											
Name	Name	No.	Segment									
			Autos		MTrucks		HTrucks		Buses		Motorcycles	
			V	S	V	S	V	S	V	S	V	S
			veh/hr	km/h	veh/hr	km/h	veh/hr	km/h	veh/hr	km/h	veh/hr	km/h
I-405 NB - South of Avalon	point27	27	6907	105	189	100	175	100	0	0	0	0
	point26	26	6907	105	189	100	175	100	0	0	0	0
	point25	25	6907	105	189	100	175	100	0	0	0	0
	point24	24	6907	105	189	100	175	100	0	0	0	0
	point23	23	6907	105	189	100	175	100	0	0	0	0
	point22	22										
I-405 SB - North of Avalon	point28	28	7087	105	194	100	179	100	0	0	0	0
	point29	29	7087	105	194	100	179	100	0	0	0	0
	point30	30	7087	105	194	100	179	100	0	0	0	0
	point31	31										
Avalon Blvd	point65	65	3286	55	90	55	83	50	0	0	0	0
	point66	66	3286	55	90	55	83	50	0	0	0	0
	point67	67	3286	55	90	55	83	50	0	0	0	0
	point68	68										
Lenardo Drive EB - 1	point69	69	861	50	24	45	22	40	0	0	0	0
	point70	70	861	50	24	45	22	40	0	0	0	0
	point71	71	861	50	24	45	22	40	0	0	0	0
	point72	72										
Lenardo Drive EB - 2	point73	73	1799	50	49	45	45	40	0	0	0	0
	point74	74	1799	50	49	45	45	40	0	0	0	0
	point75	75	1799	50	49	45	45	40	0	0	0	0
	point76	76										
Lenardo Drive WB - 2	point80	80	821	50	22	45	21	40	0	0	0	0

	point79	79	821	50	22	45	21	40	0	0	0	0
	point78	78	821	50	22	45	21	40	0	0	0	0
	point77	77										
Lenardo Drive WB - 1	point85	85	1073	50	29	45	27	40	0	0	0	0
	point84	84	1073	50	29	45	27	40	0	0	0	0
	point83	83	1073	50	29	45	27	40	0	0	0	0
	point82	82	1073	50	29	45	27	40	0	0	0	0
	point81	81										
Avalon On-Ramp (New)	point100	100	487	55	13	50	12	45	0	0	0	0
	point105	105	487	55	13	50	12	45	0	0	0	0
	point98	98	487	55	13	50	12	45	0	0	0	0
	point132	132	487	55	13	50	12	45	0	0	0	0
	point133	133	487	55	13	50	12	45	0	0	0	0
	point134	134	487	55	13	50	12	45	0	0	0	0
	point99	99										
Lenardo Drive Off-Ramp (New)	point118	118	1231	50	34	45	31	40	0	0	0	0
	point117	117	1231	50	34	45	31	40	0	0	0	0
	point116	116	1231	50	34	45	31	40	0	0	0	0
	point115	115	1231	50	34	45	31	40	0	0	0	0
	point114	114	1231	50	34	45	31	40	0	0	0	0
	point113	113	1231	50	34	45	31	40	0	0	0	0
	point112	112										
Lenardo Drive On-Ramp (New)	point119	119	544	50	15	45	14	40	0	0	0	0
	point120	120	544	50	15	45	14	40	0	0	0	0
	point121	121	544	50	15	45	14	40	0	0	0	0
	point122	122	544	50	15	45	14	40	0	0	0	0
	point123	123	544	50	15	45	14	40	0	0	0	0
	point124	124	544	50	15	45	14	40	0	0	0	0
	point125	125	544	50	15	45	14	40	0	0	0	0
	point126	126	544	50	15	45	14	40	0	0	0	0
	point127	127	544	50	15	45	14	40	0	0	0	0
	point128	128	544	50	15	45	14	40	0	0	0	0
	point129	129	544	50	15	45	14	40	0	0	0	0
	point130	130	544	50	15	45	14	40	0	0	0	0
	point131	131										
I-405 SB - South of Avalon	point135	135	7063	105	193	100	178	100	0	0	0	0

	point32	32	7063	105	193	100	178	100	0	0	0	0
	point33	33	7063	105	193	100	178	100	0	0	0	0
	point34	34	7063	105	193	100	178	100	0	0	0	0
	point35	35	7063	105	193	100	178	100	0	0	0	0
	point36	36	7063	105	193	100	178	100	0	0	0	0
	point37	37										
I-405 NB - North of Avalon	point136	136	7579	105	207	100	191	100	0	0	0	0
	point21	21	7579	105	207	100	191	100	0	0	0	0
	point20	20	7579	105	207	100	191	100	0	0	0	0
	point19	19	7579	105	207	100	191	100	0	0	0	0
	point18	18										

PCR Services Corporation 5 February 2007
EY & SB TNM 2.5

INPUT: BARRIERS
PROJECT/CONTRACT: Carson Ramp
RUN: Future (2030) - With Project

Barrier									Points										
Name	Type	Height		If Wall	If Berm			Add'tnl	Name	No.	Coordinates (bottom)			Height	Segment				
		Min	Max	$ per	$ per	Top	Run:Rise	$ per			X	Y	Z	at	Seg Ht Perturbs			On	Important
				Unit	Unit	Width		Unit						Point	Incre-	#Up	#Dn	Struct?	Reflec-
				Area	Vol.			Length							ment				tions?
		m	m	$/sq m	$/cu m	m	m:m	$/m			m	m	m	m	m				
I-405-Shoulder_2	W	0.00	30.48	0.00				0.00	point44	44	1,975,428.5	537,870.8	8.99	0.00	0.00	0	0		
									point45	45	1,975,428.8	537,870.7	9.83	0.00	0.00	0	0		
									point46	46	1,975,557.5	537,709.1	10.67	0.00					
I-405-Median	W	0.00	30.48	0.00				0.00	point47	47	1,975,322.4	538,036.7	10.52	0.76	0.00	0	0		
									point48	48	1,975,439.8	537,890.7	10.73	0.76	0.00	0	0		
									point49	49	1,975,466.9	537,857.2	10.85	0.76	0.00	0	0		
									point50	50	1,975,588.0	537,708.1	11.28	0.76	0.00	0	0		
									point51	51	1,975,618.4	537,670.9	11.43	0.76	0.00	0	0		
									point52	52	1,975,735.2	537,527.2	11.64	0.76	0.00	0	0		
									point53	53	1,975,846.5	537,390.2	11.52	0.76	0.00	0	0		
									point54	54	1,975,965.0	537,244.4	9.30	0.76	0.00	0	0		
									point55	55	1,975,991.2	537,212.2	9.14	0.76	0.00	0	0		
									point56	56	1,976,196.4	536,959.4	7.99	0.76					
I-405-Shoulder-Structure	W	0.00	30.48	0.00				0.00	point57	57	1,975,581.0	537,681.3	11.43	0.00	0.00	0	0		
									point58	58	1,975,582.5	537,679.6	11.64	0.00	0.00	0	0		
									point59	59	1,975,617.2	537,636.9	11.58	0.00					
I-405-Shoulder_3	W	0.00	30.48	0.00				0.00	point60	60	1,975,617.2	537,636.9	11.58	0.00	0.00	0	0		
									point61	61	1,975,718.0	537,512.1	11.43	0.00	0.00	0	0		
									point62	62	1,975,829.0	537,375.2	11.28	0.00	0.00	0	0		
									point63	63	1,975,930.1	537,252.9	10.85	0.00	0.00	0	0		
									point64	64	1,975,963.2	537,212.6	10.73	0.00	0.00	0	0		
									point65	65	1,976,176.6	536,955.2	10.52	0.00					
Lenardo Drive Barrier	W	0.00	30.48	0.00				0.00	1	66	1,975,291.6	537,722.9	10.06	0.00	0.00	0	0		
									2	67	1,975,339.5	537,704.4	10.82	0.00	0.00	0	0		
									3	68	1,975,377.2	537,687.8	10.97	0.00	0.00	0	0	Y	
									4	69	1,975,412.8	537,663.1	10.67	0.00	0.00	0	0	Y	
									5	70	1,975,430.6	537,649.8	10.52	0.00	0.00	0	0		
									6	71	1,975,464.1	537,627.9	9.45	0.00	0.00	0	0		
									7	72	1,975,486.4	537,614.3	8.69	0.00	0.00	0	0		
									8	73	1,975,511.0	537,605.4	7.92	0.00	0.00	0	0		
									9	74	1,975,543.6	537,598.6	6.86	0.00					
Avalon Barrier (New)	W	0.00	30.48	0.00				0.00	point75	75	1,975,608.5	537,582.8	5.50	0.00	0.00	0	0		
									point76	76	1,975,627.6	537,583.6	5.80	0.00	0.00	0	0		
									point77	77	1,975,649.9	537,560.7	8.20	0.00	0.00	0	0		
									point80	80	1,975,688.1	537,520.8	9.10	0.00	0.00	0	0		

									point81	81	1,975,726.4	537,480.9	10.10	0.00	0.00	0	0		
									point78	78	1,975,764.6	537,441.1	11.00	0.00	0.00	0	0		
									point79	79	1,975,822.8	537,382.6	11.30	0.00					
Wall at end of Desford Street	W	0.00	30.48	0.00				0.00	point66	82	1,975,975.6	537,167.8	6.04	2.44	0.00	0	0		
									point67	83	1,975,991.4	537,146.9	6.04	2.44	0.00	0	0		
									point85	85	1,975,990.9	537,106.8	6.13	2.44	0.00	0	0		
									point68	84	1,975,990.2	537,066.6	5.82	2.44					

PCR Services Corporation **5 February 2007**
EY & SB **TNM 2.5**

INPUT: BUILDING ROWS
PROJECT/CONTRACT: **Carson Ramp**
RUN: **Future (2030) - With Project**

Building Row Name	Average Height	Building Percent	Points No.	Coordinates (ground) X	Y	Z
	m	%		m	m	m
Homes on Desford Street	6.60	80	1	1,975,989.0	537,124.5	6.00
			2	1,975,885.0	537,124.5	6.00
1st Row	6.00	65	3	1,975,970.9	537,158.3	6.60
			4	1,975,921.4	537,218.7	6.60
Homes On Selwyn - 2nd Row	3.60	80	5	1,975,919.6	537,219.3	6.60
			6	1,975,922.1	537,127.8	6.60
Homes on Selwyn - 3rd Row	3.60	80	7	1,975,870.9	537,221.5	6.80
			8	1,975,874.6	537,126.9	6.80

PCR Services Corporation 5 February 2007
EY & SB TNM 2.5

INPUT: RECEIVERS
PROJECT/CONTRACT: Carson Ramp
RUN: Future (2030) - With Project

Receiver Name	No.	#DUs	Coordinates (ground) X	Y	Z	Height above Ground	Input Sound Levels and Criteria: Existing LAeq1h	Impact Criteria LAeq1h	Impact Criteria Sub'l	NR Goal	Active in Calc.
			m	m	m	m	dBA	dBA	dB	dB	
R1 - Mobile Home Park #1	5	1	1,975,330.6	537,656.3	6.55	1.50	0.00	66	10.0	8.0	Y
R2 - Mobile Home Park #1	6	1	1,975,432.6	537,641.1	6.83	1.50	0.00	66	10.0	8.0	Y
R3 - Mobile Home Park #1	7	1	1,975,467.0	537,607.6	6.92	1.50	0.00	66	10.0	8.0	Y
R4 - Mobile Home Park #1	8	1	1,975,507.5	537,594.8	7.16	1.50	0.00	66	10.0	8.0	Y
R5 - 213th Street	9	1	1,975,937.9	537,215.5	6.10	1.50	0.00	66	10.0	8.0	Y
R6 - End of Desford St.	10	1	1,975,985.1	537,085.1	6.04	1.50	0.00	66	10.0	8.0	Y
R7 - Quality Inn	11	1	1,975,869.8	537,689.2	6.40	1.50	0.00	66	10.0	8.0	Y
R5b - 213th Street 2nd Row	19	1	1,975,888.1	537,218.3	6.64	1.50	0.00	66	10.0	8.0	Y
R5c - 21314 Selwyn Ave.	20	1	1,975,934.6	537,183.7	6.89	1.50	0.00	66	10.0	8.0	Y
R5d - 850 E. 214th St.	21	1	1,975,943.0	537,139.8	6.10	1.50	0.00	66	10.0	8.0	Y
R5e - 21304 Garston Ave.	22	1	1,975,858.6	537,219.4	6.58	1.50	0.00	66	10.0	8.0	Y
R5f - 21314 Garston Ave.	23	1	1,975,859.6	537,179.8	6.89	1.50	0.00	66	10.0	8.0	Y
R5h - 21325 Selwyn Ave.	24	1	1,975,892.2	537,153.7	6.16	1.50	0.00	66	10.0	8.0	Y

PCR Services Corporation 5 February 2007
EY & SB TNM 2.5

INPUT: RECEIVER ADJUSTMENT FACTORS
PROJECT/CONTRACT: Carson Ramp
RUN: Future (2030) - With Project

Receiver Name	No.	Individual Roadway Segment Adjustment Factors			
		Roadway Name	Segment Name	No.	Adj. Factor dB
R1 - Mobile Home Park #1	5	I-405 NB - South of Aval	point27	27	-5.0
		I-405 NB - South of Aval	point26	26	-5.0
		I-405 NB - South of Aval	point25	25	-5.0
		I-405 NB - South of Aval	point24	24	-5.0
		I-405 NB - South of Aval	point23	23	-5.0
		I-405 SB - North of Avalo	point28	28	-5.0
		I-405 SB - North of Avalo	point29	29	-5.0
		I-405 SB - North of Avalo	point30	30	-5.0
		I-405 SB - South of Aval	point32	32	-5.0
		I-405 SB - South of Aval	point33	33	-5.0
		I-405 SB - South of Aval	point34	34	-5.0
		I-405 SB - South of Aval	point35	35	-5.0
		I-405 SB - South of Aval	point36	36	-5.0
		I-405 NB - North of Avalo	point21	21	-5.0
		I-405 NB - North of Avalo	point20	20	-5.0
		I-405 NB - North of Avalo	point19	19	-5.0
		I-405 SB - South of Aval	point135	135	-5.0
		I-405 NB - North of Avalo	point136	136	-5.0
R2 - Mobile Home Park #1	6	I-405 NB - South of Aval	point27	27	-5.0
		I-405 NB - South of Aval	point26	26	-5.0
		I-405 NB - South of Aval	point25	25	-5.0
		I-405 NB - South of Aval	point24	24	-5.0
		I-405 NB - South of Aval	point23	23	-5.0

		I-405 SB - North of Avalo	point28	28	-5.0
		I-405 SB - North of Avalo	point29	29	-5.0
		I-405 SB - North of Avalo	point30	30	-5.0
		I-405 SB - South of Avale	point32	32	-5.0
		I-405 SB - South of Avale	point33	33	-5.0
		I-405 SB - South of Avale	point34	34	-5.0
		I-405 SB - South of Avale	point35	35	-5.0
		I-405 SB - South of Avale	point36	36	-5.0
		I-405 NB - North of Avalo	point21	21	-5.0
		I-405 NB - North of Avalo	point20	20	-5.0
		I-405 NB - North of Avalo	point19	19	-5.0
		I-405 SB - South of Avale	point135	135	-5.0
		I-405 NB - North of Avalo	point136	136	-5.0
R3 - Mobile Home Park #1	7	I-405 NB - South of Avale	point27	27	-5.0
		I-405 NB - South of Avale	point26	26	-5.0
		I-405 NB - South of Avale	point25	25	-5.0
		I-405 NB - South of Avale	point24	24	-5.0
		I-405 NB - South of Avale	point23	23	-5.0
		I-405 SB - North of Avalo	point28	28	-5.0
		I-405 SB - North of Avalo	point29	29	-5.0
		I-405 SB - North of Avalo	point30	30	-5.0
		I-405 SB - South of Avale	point32	32	-5.0
		I-405 SB - South of Avale	point33	33	-5.0
		I-405 SB - South of Avale	point34	34	-5.0
		I-405 SB - South of Avale	point35	35	-5.0
		I-405 SB - South of Avale	point36	36	-5.0
		I-405 NB - North of Avalo	point21	21	-5.0
		I-405 NB - North of Avalo	point20	20	-5.0
		I-405 NB - North of Avalo	point19	19	-5.0
		I-405 NB - North of Avalo	point136	136	-5.0
		I-405 SB - South of Avale	point135	135	-5.0
R4 - Mobile Home Park #1	8	I-405 NB - South of Avale	point27	27	-5.0
		I-405 NB - South of Avale	point26	26	-5.0
		I-405 NB - South of Avale	point25	25	-5.0
		I-405 NB - South of Avale	point24	24	-5.0
		I-405 NB - South of Avale	point23	23	-5.0

		I-405 SB - North of Avalc	point28	28	-5.0
		I-405 SB - North of Avalc	point29	29	-5.0
		I-405 SB - North of Avalc	point30	30	-5.0
		I-405 SB - South of Avalc	point32	32	-5.0
		I-405 SB - South of Avalc	point33	33	-5.0
		I-405 SB - South of Avalc	point34	34	-5.0
		I-405 SB - South of Avalc	point35	35	-5.0
		I-405 SB - South of Avalc	point36	36	-5.0
		I-405 NB - North of Avalc	point21	21	-5.0
		I-405 NB - North of Avalc	point20	20	-5.0
		I-405 NB - North of Avalc	point19	19	-5.0
		I-405 SB - South of Avalc	point135	135	-5.0
		I-405 NB - North of Avalc	point136	136	-5.0

PCR Services Corporation
9 May 2007
EY & SB
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: Carson Ramp
RUN: Future (2030) - With Project
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 20 deg C, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Increase over existing Crit'n Sub'l Inc	With Barrier Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Noise Reduction Goal	Noise Reduction Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
R1 - Mobile Home Park #1	5	1	0.0	57.0	66	57.0	10	----	57.0	0.0	8	-8.0
R2 - Mobile Home Park #1	6	1	0.0	61.3	66	61.3	10	----	61.3	0.0	8	-8.0
R3 - Mobile Home Park #1	7	1	0.0	62.8	66	62.8	10	----	62.8	0.0	8	-8.0
R4 - Mobile Home Park #1	8	1	0.0	65.6	66	65.6	10	----	65.6	0.0	8	-8.0
R5 - 213th Street	9	1	0.0	71.4	66	71.4	10	Snd Lvl	71.4	0.0	8	-8.0
R6 - End of Desford St.	10	1	0.0	65.0	66	65.0	10	----	65.0	0.0	8	-8.0
R7 - Quality Inn	11	1	0.0	63.5	66	63.5	10	----	63.5	0.0	8	-8.0
R5b - 213th Street 2nd Row	19	1	0.0	70.1	66	70.1	10	Snd Lvl	70.1	0.0	8	-8.0
R5c - 21314 Selwyn Ave.	20	1	0.0	69.1	66	69.1	10	Snd Lvl	69.1	0.0	8	-8.0
R5d - 850 E. 214th St.	21	1	0.0	69.6	66	69.6	10	Snd Lvl	69.6	0.0	8	-8.0
R5e - 21304 Garston Ave.	22	1	0.0	68.2	66	68.2	10	Snd Lvl	68.2	0.0	8	-8.0
R5f - 21314 Garston Ave.	23	1	0.0	66.6	66	66.6	10	Snd Lvl	66.6	0.0	8	-8.0
R5h - 21325 Selwyn Ave.	24	1	0.0	67.1	66	67.1	10	Snd Lvl	67.1	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Noise Reduction Avg	Noise Reduction Max
		dB	dB	dB
All Selected	13	0.0	0.0	0.0
All Impacted	7	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

C-6

- Future With Project and Abatement

PCR Services Corporation 5 February 2007
EY & SB TNM 2.5

INPUT: ROADWAYS Average pavement type shall be used unless
PROJECT/CONTRACT: Carson Ramp a State highway agency substantiates the use
RUN: Future (2030) - With Project & Mitigation of a different type with the approval of FHWA

Roadway		Points									
Name	Width	Name	No.	Coordinates (pavement)			Flow Control			Segment	
				X	Y	Z	Control Device	Speed Constraint	Percent Vehicles Affected	Pvmt Type	On Struct?
	m			m	m	m		km/h	%		
I-405 NB - South of Avalon	3.7	point27	27	1,976,205.2	536,965.9	10.50				Average	
		point26	26	1,976,000.1	537,218.7	10.70				Average	
		point25	25	1,975,973.9	537,250.9	10.90				Average	
		point24	24	1,975,855.4	537,396.7	11.30				Average	
		point23	23	1,975,744.1	537,533.7	11.40				Average	
		point22	22	1,975,627.4	537,677.4	11.60					
I-405 SB - North of Avalon	3.7	point28	28	1,975,312.0	538,028.0	8.00				Average	
		point29	29	1,975,431.0	537,883.2	9.10				Average	
		point30	30	1,975,457.4	537,850.4	9.30				Average	
		point31	31	1,975,579.5	537,700.5	11.50					
Avalon Blvd	3.7	point65	65	1,975,589.1	537,247.1	5.20	Signal	0.00	100	Average	
		point66	66	1,975,588.5	537,510.1	6.10				Average	
		point67	67	1,975,592.0	537,602.6	6.10				Average	
		point68	68	1,975,603.1	537,650.4	6.10					
Lenardo Drive EB - 1	3.7	point69	69	1,975,294.4	537,730.8	10.10				Average	
		point70	70	1,975,343.6	537,711.8	10.80				Average	
		point71	71	1,975,381.1	537,694.7	11.00				Average	Y
		point72	72	1,975,419.9	537,668.3	10.70					
Lenardo Drive EB - 2	3.7	point73	73	1,975,422.9	537,666.2	10.70				Average	
		point74	74	1,975,470.1	537,636.1	9.40				Average	
		point75	75	1,975,512.0	537,618.9	7.90				Average	
		point76	76	1,975,581.5	537,602.5	5.90					
Lenardo Drive WB - 2	3.7	point80	80	1,975,427.5	537,679.8	10.70				Average	Y
		point79	79	1,975,388.6	537,708.1	11.00				Average	Y
		point78	78	1,975,348.8	537,726.5	10.80				Average	

		point77	77	1,975,299.6	537,745.6	10.10					
Lenardo Drive WB - 1	3.7	point85	85	1,975,585.9	537,617.9	5.90				Average	
		point84	84	1,975,548.9	537,624.8	6.90				Average	
		point83	83	1,975,514.4	537,632.0	7.90				Average	
		point82	82	1,975,475.5	537,649.2	9.40				Average	
		point81	81	1,975,431.4	537,676.4	10.70					
Avalon On-Ramp (New)	3.7	point100	100	1,975,593.0	537,605.1	5.70				Average	
		point105	105	1,975,616.6	537,599.8	5.30				Average	
		point98	98	1,975,636.0	537,586.4	5.80				Average	
		point132	132	1,975,674.9	537,545.5	9.80				Average	
		point133	133	1,975,713.6	537,504.6	11.30				Average	
		point134	134	1,975,752.2	537,463.7	11.30				Average	
		point99	99	1,975,789.8	537,422.3	11.30					
Lenardo Drive Off-Ramp (New)	3.7	point118	118	1,975,371.0	537,942.4	8.50				Average	
		point117	117	1,975,425.9	537,865.5	9.30				Average	
		point116	116	1,975,449.4	537,830.4	10.10				Average	
		point115	115	1,975,460.1	537,798.2	10.10				Average	
		point114	114	1,975,462.2	537,753.7	9.90				Average	
		point113	113	1,975,454.2	537,718.9	9.80				Average	
		point112	112	1,975,431.2	537,682.3	10.50					
Lenardo Drive On-Ramp (New)	3.7	point119	119	1,975,573.1	537,691.5	10.70				Average	
		point120	120	1,975,545.5	537,709.6	10.40				Average	
		point121	121	1,975,527.9	537,715.9	9.90				Average	
		point122	122	1,975,507.9	537,720.4	9.40				Average	
		point123	123	1,975,487.8	537,714.8	9.60				Average	
		point124	124	1,975,468.8	537,696.8	10.10				Average	
		point125	125	1,975,462.5	537,675.7	9.80				Average	
		point126	126	1,975,468.9	537,658.5	8.50				Average	
		point127	127	1,975,499.9	537,642.0	7.80				Average	
		point128	128	1,975,539.1	537,630.4	6.90				Average	
		point129	129	1,975,561.5	537,629.5	6.40				Average	
		point130	130	1,975,581.5	537,639.7	6.10				Average	
		point131	131	1,975,594.6	537,658.2	5.70					
I-405 SB - South of Avalon	3.7	point135	135	1,975,579.5	537,700.5	11.50				Average	
		point32	32	1,975,609.6	537,663.2	11.60				Average	
		point33	33	1,975,726.5	537,519.9	11.40				Average	
		point34	34	1,975,837.8	537,382.5	11.30				Average	
		point35	35	1,975,948.8	537,245.8	10.90				Average	
		point36	36	1,975,971.6	537,217.8	10.70				Average	

		point37	37	1,976,182.5	536,957.3	10.50					
I-405 NB - North of Avalon	3.7	point136	136	1,975,627.4	537,677.4	11.60				Average	
		point21	21	1,975,597.0	537,714.6	11.50				Average	
		point20	20	1,975,475.8	537,863.7	9.30				Average	
		point19	19	1,975,448.6	537,897.2	9.10				Average	
		point18	18	1,975,331.2	538,043.2	8.00					

PCR Services Corporation **9 May 2007**
EY & SB **TNM 2.5**

INPUT: TRAFFIC FOR LAeq1h Volumes
PROJECT/CONTRACT: **Carson Ramp**
RUN: **Future (2030) - With Project & Mitigation**

Roadway	Points		Segment									
Name	Name	No.	Autos		MTrucks		HTrucks		Buses		Motorcycles	
			V	S	V	S	V	S	V	S	V	S
			veh/hr	km/h	veh/hr	km/h	veh/hr	km/h	veh/hr	km/h	veh/hr	km/h
I-405 NB - South of Avalon	point27	27	6907	105	189	100	175	100	0	0	0	0
	point26	26	6907	105	189	100	175	100	0	0	0	0
	point25	25	6907	105	189	100	175	100	0	0	0	0
	point24	24	6907	105	189	100	175	100	0	0	0	0
	point23	23	6907	105	189	100	175	100	0	0	0	0
	point22	22										
I-405 SB - North of Avalon	point28	28	7087	105	194	100	179	100	0	0	0	0
	point29	29	7087	105	194	100	179	100	0	0	0	0
	point30	30	7087	105	194	100	179	100	0	0	0	0
	point31	31										
Avalon Blvd	point65	65	3286	55	90	55	83	50	0	0	0	0
	point66	66	3286	55	90	55	83	50	0	0	0	0
	point67	67	3286	55	90	55	83	50	0	0	0	0
	point68	68										
Lenardo Drive EB - 1	point69	69	861	50	24	45	22	40	0	0	0	0
	point70	70	861	50	24	45	22	40	0	0	0	0
	point71	71	861	50	24	45	22	40	0	0	0	0
	point72	72										
Lenardo Drive EB - 2	point73	73	1799	50	49	45	45	40	0	0	0	0
	point74	74	1799	50	49	45	45	40	0	0	0	0
	point75	75	1799	50	49	45	45	40	0	0	0	0
	point76	76										
Lenardo Drive WB - 2	point80	80	821	50	22	45	21	40	0	0	0	0

	point79	79	821	50	22	45	21	40	0	0	0	0
	point78	78	821	50	22	45	21	40	0	0	0	0
	point77	77										
Lenardo Drive WB - 1	point85	85	1073	50	29	45	27	40	0	0	0	0
	point84	84	1073	50	29	45	27	40	0	0	0	0
	point83	83	1073	50	29	45	27	40	0	0	0	0
	point82	82	1073	50	29	45	27	40	0	0	0	0
	point81	81										
Avalon On-Ramp (New)	point100	100	487	55	13	50	12	45	0	0	0	0
	point105	105	487	55	13	50	12	45	0	0	0	0
	point98	98	487	55	13	50	12	45	0	0	0	0
	point132	132	487	55	13	50	12	45	0	0	0	0
	point133	133	487	55	13	50	12	45	0	0	0	0
	point134	134	487	55	13	50	12	45	0	0	0	0
	point99	99										
Lenardo Drive Off-Ramp (New)	point118	118	1231	50	34	45	31	40	0	0	0	0
	point117	117	1231	50	34	45	31	40	0	0	0	0
	point116	116	1231	50	34	45	31	40	0	0	0	0
	point115	115	1231	50	34	45	31	40	0	0	0	0
	point114	114	1231	50	34	45	31	40	0	0	0	0
	point113	113	1231	50	34	45	31	40	0	0	0	0
	point112	112										
Lenardo Drive On-Ramp (New)	point119	119	544	50	15	45	14	40	0	0	0	0
	point120	120	544	50	15	45	14	40	0	0	0	0
	point121	121	544	50	15	45	14	40	0	0	0	0
	point122	122	544	50	15	45	14	40	0	0	0	0
	point123	123	544	50	15	45	14	40	0	0	0	0
	point124	124	544	50	15	45	14	40	0	0	0	0
	point125	125	544	50	15	45	14	40	0	0	0	0
	point126	126	544	50	15	45	14	40	0	0	0	0
	point127	127	544	50	15	45	14	40	0	0	0	0
	point128	128	544	50	15	45	14	40	0	0	0	0
	point129	129	544	50	15	45	14	40	0	0	0	0
	point130	130	544	50	15	45	14	40	0	0	0	0
	point131	131										
I-405 SB - South of Avalon	point135	135	7063	105	193	100	178	100	0	0	0	0

	point32	32	7063	105	193	100	178	100	0	0	0	0
	point33	33	7063	105	193	100	178	100	0	0	0	0
	point34	34	7063	105	193	100	178	100	0	0	0	0
	point35	35	7063	105	193	100	178	100	0	0	0	0
	point36	36	7063	105	193	100	178	100	0	0	0	0
	point37	37										
I-405 NB - North of Avalon	point136	136	7579	105	207	100	191	100	0	0	0	0
	point21	21	7579	105	207	100	191	100	0	0	0	0
	point20	20	7579	105	207	100	191	100	0	0	0	0
	point19	19	7579	105	207	100	191	100	0	0	0	0
	point18	18										

PCR Services Corporation 5 February 2007
EY & SB TNM 2.5

INPUT: BARRIERS
PROJECT/CONTRACT: Carson Ramp
RUN: Future (2030) - With Project & Mitigation

Barrier									Points										
Name	Type	Height		If Wall	If Berm			Add'tnl	Name	No.	Coordinates (bottom)			Height	Segment				
		Min	Max	$ per	$ per	Top	Run:Rise	$ per			X	Y	Z	at	Seg Ht Perturbs			On	Important
				Unit	Unit	Width		Unit						Point	Incre-	#Up	#Dn	Struct?	Reflec-
				Area	Vol.			Length							ment				tions?
		m	m	$/sq m	$/cu m	m	m:m	$/m			m	m	m	m	m				
I-405-Shoulder_2	W	0.00	30.48	0.00				0.00	point44	44	1,975,428.5	537,870.8	8.99	0.00	0.00	0	0		
									point45	45	1,975,428.8	537,870.7	9.83	0.00	0.00	0	0		
									point46	46	1,975,557.5	537,709.1	10.67	0.00					
I-405-Median	W	0.00	30.48	0.00				0.00	point47	47	1,975,322.4	538,036.7	10.52	0.76	0.00	0	0		
									point48	48	1,975,439.8	537,890.7	10.73	0.76	0.00	0	0		
									point49	49	1,975,466.9	537,857.2	10.85	0.76	0.00	0	0		
									point50	50	1,975,588.0	537,708.1	11.28	0.76	0.00	0	0		
									point51	51	1,975,618.4	537,670.9	11.43	0.76	0.00	0	0		
									point52	52	1,975,735.2	537,527.2	11.64	0.76	0.00	0	0		
									point53	53	1,975,846.5	537,390.2	11.52	0.76	0.00	0	0		
									point54	54	1,975,965.0	537,244.4	9.30	0.76	0.00	0	0		
									point55	55	1,975,991.2	537,212.2	9.14	0.76	0.00	0	0		
									point56	56	1,976,196.4	536,959.4	7.99	0.76					
I-405-Shoulder-Structure	W	0.00	30.48	0.00				0.00	point57	57	1,975,581.0	537,681.3	11.43	0.00	0.00	0	0		
									point58	58	1,975,582.5	537,679.6	11.64	0.00	0.00	0	0		
									point59	59	1,975,617.2	537,636.9	11.58	0.00					
I-405-Shoulder_3	W	0.00	30.48	0.00				0.00	point60	60	1,975,617.2	537,636.9	11.58	0.00	0.00	0	0		
									point61	61	1,975,718.0	537,512.1	11.43	0.00	0.00	0	0		
									point62	62	1,975,829.0	537,375.2	11.28	0.00	0.00	0	0		
									point63	63	1,975,899.9	537,289.6	10.97	0.00					
Lenardo Drive Barrier	W	0.00	30.48	0.00				0.00	1	66	1,975,291.6	537,722.9	10.06	0.00	0.00	0	0		
									2	67	1,975,339.5	537,704.4	10.82	0.00	0.00	0	0		
									3	68	1,975,377.2	537,687.8	10.97	0.00	0.00	0	0	Y	
									4	69	1,975,412.8	537,663.1	10.67	0.00	0.00	0	0	Y	
									5	70	1,975,430.6	537,649.8	10.52	0.00	0.00	0	0		
									6	71	1,975,464.1	537,627.9	9.45	0.00	0.00	0	0		
									7	72	1,975,486.4	537,614.3	8.69	0.00	0.00	0	0		
									8	73	1,975,511.0	537,605.4	7.92	0.00	0.00	0	0		
									9	74	1,975,543.6	537,598.6	6.86	0.00					
Avalon Barrier (New)	W	0.00	30.48	0.00				0.00	point75	75	1,975,608.5	537,582.8	5.50	0.00	0.00	0	0		
									point76	76	1,975,627.6	537,583.6	5.80	0.00	0.00	0	0		
									point77	77	1,975,649.9	537,560.7	8.20	0.00	0.00	0	0		
									point80	80	1,975,688.1	537,520.8	9.10	0.00	0.00	0	0		
									point81	81	1,975,726.4	537,480.9	10.10	0.00	0.00	0	0		
									point78	78	1,975,764.6	537,441.1	11.00	0.00	0.00	0	0		

									point79	79	1,975,822.8	537,382.6	11.30	0.00						
Wall at end of Desford Street	W	0.00	30.48	0.00				0.00	point66	82	1,975,975.6	537,167.8	6.04	2.44	0.00	0	0		
									point67	83	1,975,991.4	537,146.9	6.04	2.44	0.00	0	0		
									point85	85	1,975,990.9	537,106.8	6.13	2.44	0.00	0	0		
									point68	84	1,975,990.2	537,066.6	5.82	2.44					
I-405-Shoulder_4	W	0.00	30.48	0.00				0.00	point86	86	1,976,046.2	537,110.5	10.52	0.00	0.00	0	0		
									point87	87	1,976,176.6	536,955.2	10.52	0.00					
New Soundwall	W	0.00	30.48	0.00				0.00	point88	88	1,975,899.9	537,289.6	10.97	3.00	0.00	0	0		
									point89	89	1,976,046.2	537,110.5	10.52	3.00					

PCR Services Corporation **5 February 2007**
EY & SB **TNM 2.5**

INPUT: BUILDING ROWS
PROJECT/CONTRACT: **Carson Ramp**
RUN: **Future (2030) - With Project & I**

Building Row			**Points**			
Name	**Average**	**Building**	**No.**	**Coordinates (ground)**		
	Height	**Percent**		**X**	**Y**	**Z**
	m	%		m	m	m
Homes on Desford Street	6.60	80	1	1,975,989.0	537,124.5	6.00
			2	1,975,885.0	537,124.5	6.00
1st Row	6.00	65	3	1,975,970.9	537,158.3	6.60
			4	1,975,921.4	537,218.7	6.60
Homes On Selwyn - 2nd Row	3.60	80	5	1,975,919.6	537,219.3	6.60
			6	1,975,922.1	537,127.8	6.60
Homes on Selwyn - 3rd Row	3.60	80	7	1,975,870.9	537,221.5	6.80
			8	1,975,874.6	537,126.9	6.80

PCR Services Corporation 5 February 2007
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INPUT: RECEIVERS
PROJECT/CONTRACT: Carson Ramp
RUN: Future (2030) - With Project & Mitigation

Receiver Name	No.	#DUs	Coordinates (ground) X	Y	Z	Height above Ground	Input Sound Levels and Criteria: Existing LAeq1h	Impact Criteria LAeq1h	Impact Criteria Sub'l	NR Goal	Active in Calc.
			m	m	m	m	dBA	dBA	dB	dB	
R1 - Mobile Home Park #1	5	1	1,975,330.6	537,656.3	6.55	1.50	0.00	66	10.0	8.0	Y
R2 - Mobile Home Park #1	6	1	1,975,432.6	537,641.1	6.83	1.50	0.00	66	10.0	8.0	Y
R3 - Mobile Home Park #1	7	1	1,975,467.0	537,607.6	6.92	1.50	0.00	66	10.0	8.0	Y
R4 - Mobile Home Park #1	8	1	1,975,507.5	537,594.8	7.16	1.50	0.00	66	10.0	8.0	Y
R5 - 213th Street	9	1	1,975,937.9	537,215.5	6.10	1.50	0.00	66	10.0	8.0	Y
R6 - End of Desford St.	10	1	1,975,985.1	537,085.1	6.04	1.50	0.00	66	10.0	8.0	Y
R7 - Quality Inn	11	1	1,975,869.8	537,689.2	6.40	1.50	0.00	66	10.0	8.0	Y
R5b - 213th Street 2nd Row	19	1	1,975,888.1	537,218.3	6.64	1.50	0.00	66	10.0	8.0	Y
R5c - 21314 Selwyn Ave.	20	1	1,975,934.6	537,183.7	6.89	1.50	0.00	66	10.0	8.0	Y
R5d - 850 E. 214th St.	21	1	1,975,943.0	537,139.8	6.10	1.50	0.00	66	10.0	8.0	Y
R5e - 21304 Garston Ave.	22	1	1,975,858.6	537,219.4	6.58	1.50	0.00	66	10.0	8.0	Y
R5f - 21314 Garston Ave.	23	1	1,975,859.6	537,179.8	6.89	1.50	0.00	66	10.0	8.0	Y
R5h - 21325 Selwyn Ave.	24	1	1,975,892.2	537,153.7	6.16	1.50	0.00	66	10.0	8.0	Y

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INPUT: RECEIVER ADJUSTMENT FACTORS
PROJECT/CONTRACT: Carson Ramp
RUN: Future (2030) - With Project & Mitigation

Receiver Name	No.	Individual Roadway Segment Adjustment Factors			
		Roadway Name	Segment Name	No.	Adj. Factor dB
R1 - Mobile Home Park #1	5	I-405 NB - South of Aval	point27	27	-5.0
		I-405 NB - South of Aval	point26	26	-5.0
		I-405 NB - South of Aval	point25	25	-5.0
		I-405 NB - South of Aval	point24	24	-5.0
		I-405 NB - South of Aval	point23	23	-5.0
		I-405 SB - North of Avalo	point28	28	-5.0
		I-405 SB - North of Avalo	point29	29	-5.0
		I-405 SB - North of Avalo	point30	30	-5.0
		I-405 SB - South of Aval	point32	32	-5.0
		I-405 SB - South of Aval	point33	33	-5.0
		I-405 SB - South of Aval	point34	34	-5.0
		I-405 SB - South of Aval	point35	35	-5.0
		I-405 SB - South of Aval	point36	36	-5.0
		I-405 NB - North of Avalo	point21	21	-5.0
		I-405 NB - North of Avalo	point20	20	-5.0
		I-405 NB - North of Avalo	point19	19	-5.0
		I-405 SB - South of Aval	point135	135	-5.0
		I-405 NB - North of Avalo	point136	136	-5.0
R2 - Mobile Home Park #1	6	I-405 NB - South of Aval	point27	27	-5.0
		I-405 NB - South of Aval	point26	26	-5.0
		I-405 NB - South of Aval	point25	25	-5.0
		I-405 NB - South of Aval	point24	24	-5.0
		I-405 NB - South of Aval	point23	23	-5.0

		I-405 SB - North of Avalo	point28	28	-5.0
		I-405 SB - North of Avalo	point29	29	-5.0
		I-405 SB - North of Avalo	point30	30	-5.0
		I-405 SB - South of Avale	point32	32	-5.0
		I-405 SB - South of Avale	point33	33	-5.0
		I-405 SB - South of Avale	point34	34	-5.0
		I-405 SB - South of Avale	point35	35	-5.0
		I-405 SB - South of Avale	point36	36	-5.0
		I-405 NB - North of Avalo	point21	21	-5.0
		I-405 NB - North of Avalo	point20	20	-5.0
		I-405 NB - North of Avalo	point19	19	-5.0
		I-405 SB - South of Avale	point135	135	-5.0
		I-405 NB - North of Avalo	point136	136	-5.0
R3 - Mobile Home Park #1	7	I-405 NB - South of Avale	point27	27	-5.0
		I-405 NB - South of Avale	point26	26	-5.0
		I-405 NB - South of Avale	point25	25	-5.0
		I-405 NB - South of Avale	point24	24	-5.0
		I-405 NB - South of Avale	point23	23	-5.0
		I-405 SB - North of Avalo	point28	28	-5.0
		I-405 SB - North of Avalo	point29	29	-5.0
		I-405 SB - North of Avalo	point30	30	-5.0
		I-405 SB - South of Avale	point32	32	-5.0
		I-405 SB - South of Avale	point33	33	-5.0
		I-405 SB - South of Avale	point34	34	-5.0
		I-405 SB - South of Avale	point35	35	-5.0
		I-405 SB - South of Avale	point36	36	-5.0
		I-405 NB - North of Avalo	point21	21	-5.0
		I-405 NB - North of Avalo	point20	20	-5.0
		I-405 NB - North of Avalo	point19	19	-5.0
		I-405 NB - North of Avalo	point136	136	-5.0
		I-405 SB - South of Avale	point135	135	-5.0
R4 - Mobile Home Park #1	8	I-405 NB - South of Avale	point27	27	-5.0
		I-405 NB - South of Avale	point26	26	-5.0
		I-405 NB - South of Avale	point25	25	-5.0
		I-405 NB - South of Avale	point24	24	-5.0
		I-405 NB - South of Avale	point23	23	-5.0

		I-405 SB - North of Avalc	point28	28	-5.0
		I-405 SB - North of Avalc	point29	29	-5.0
		I-405 SB - North of Avalc	point30	30	-5.0
		I-405 SB - South of Avalc	point32	32	-5.0
		I-405 SB - South of Avalc	point33	33	-5.0
		I-405 SB - South of Avalc	point34	34	-5.0
		I-405 SB - South of Avalc	point35	35	-5.0
		I-405 SB - South of Avalc	point36	36	-5.0
		I-405 NB - North of Avalc	point21	21	-5.0
		I-405 NB - North of Avalc	point20	20	-5.0
		I-405 NB - North of Avalc	point19	19	-5.0
		I-405 SB - South of Avalc	point135	135	-5.0
		I-405 NB - North of Avalc	point136	136	-5.0

PCR Services Corporation
9 May 2007
EY & SB
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: Carson Ramp
RUN: Future (2030) - With Project & Mitigation
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 20 deg C, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Increase over existing Crit'n Sub'l Inc	With Barrier Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Noise Reduction Goal	Noise Reduction Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
R1 - Mobile Home Park #1	5	1	0.0	57.0	66	57.0	10	----	57.0	0.0	8	-8.0
R2 - Mobile Home Park #1	6	1	0.0	61.3	66	61.3	10	----	61.3	0.0	8	-8.0
R3 - Mobile Home Park #1	7	1	0.0	62.8	66	62.8	10	----	62.8	0.0	8	-8.0
R4 - Mobile Home Park #1	8	1	0.0	65.6	66	65.6	10	----	65.6	0.0	8	-8.0
R5 - 213th Street	9	1	0.0	64.4	66	64.4	10	----	64.4	0.0	8	-8.0
R6 - End of Desford St.	10	1	0.0	61.5	66	61.5	10	----	61.5	0.0	8	-8.0
R7 - Quality Inn	11	1	0.0	63.5	66	63.5	10	----	63.5	0.0	8	-8.0
R5b - 213th Street 2nd Row	19	1	0.0	65.1	66	65.1	10	----	65.1	0.0	8	-8.0
R5c - 21314 Selwyn Ave.	20	1	0.0	63.5	66	63.5	10	----	63.5	0.0	8	-8.0
R5d - 850 E. 214th St.	21	1	0.0	63.2	66	63.2	10	----	63.2	0.0	8	-8.0
R5e - 21304 Garston Ave.	22	1	0.0	64.8	66	64.8	10	----	64.8	0.0	8	-8.0
R5f - 21314 Garston Ave.	23	1	0.0	63.0	66	63.0	10	----	63.0	0.0	8	-8.0
R5h - 21325 Selwyn Ave.	24	1	0.0	62.4	66	62.4	10	----	62.4	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Noise Reduction Avg	Noise Reduction Max
		dB	dB	dB
All Selected	13	0.0	0.0	0.0
All Impacted	0	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0