APPENDIX G

Noise Impact Report

Prepared by

Urban Crossroads 260 E. Baker St. Suite 200 Costa Mesa, CA 92626

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Desert Wave

NOISE IMPACT ANALYSIS CITY OF PALM DESERT

PREPARED BY:

Bill Lawson, PE, INCE blawson@urbanxroads.com (949) 336-5979

Alex Wolfe, INCE awolfe@urbanxroads.com (949) 336-5977

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11826-03 Noise Study



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LIST OF ABBREVIATED TERMS

(1)	Reference
ADT	Average Daily Traffic
ANSI	American National Standards Institute
Calveno	California Vehicle Noise
CEQA	California Environmental Quality Act
CNEL	Community Noise Equivalent Level
dBA	A-weighted decibels
EPA	Environmental Protection Agency
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
Hz	Hertz
INCE	Institute of Noise Control Engineering
L _{eq}	Equivalent continuous (average) sound level
L _{max}	Maximum level measured over the time interval
L _{min}	Minimum level measured over the time interval
mph	Miles per hour
OPR	Office of Planning and Research
PPV	Peak particle velocity
Project	Desert Wave
REMEL	Reference Energy Mean Emission Level
RMS	Root-mean-square
VdB	Vibration Decibels



EXECUTIVE SUMMARY

Urban Crossroads, Inc. has prepared this noise study to determine the potential noise impacts and the necessary noise mitigation measures, if any, for the proposed Desert Wave development ("Project"). The Project site is located west of Desert Willow Drive, in the City of Palm Desert. It is our understanding that the Project is to consist of a 6.0-acre surf lagoon with restaurant, café, bar, and two hotels with a maximum of 350 rooms and a maximum of 88 villas. This study has been prepared to satisfy applicable City of Palm Desert standards and thresholds of significance based on guidance provided by Appendix G of the California Environmental Quality Act (CEQA) Guidelines. (1)

OFF-SITE TRAFFIC NOISE ANALYSIS

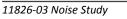
Traffic generated by the operation of the Project will influence the traffic noise levels in surrounding off-site areas. To quantify the off-site traffic noise increases on the surrounding off-site areas, the changes in traffic noise levels on 22 study-area roadway segments were calculated based on the change in the average daily traffic (ADT) volumes. The traffic noise levels provided in this analysis are based on the traffic forecasts found in the *Desert Wave Traffic Impact Analysis* prepared by Urban Crossroads, Inc. (2) To assess the off-site noise level impacts associated with the proposed Project, noise contour boundaries were developed for Existing (2019), Existing plus Ambient Growth (EA) 2022, and EA plus Cumulative (EAC) 2022 conditions.

The analysis shows that the unmitigated Project-related traffic noise level increases under all with Project traffic scenarios are considered *less than significant* impacts at land uses adjacent to the study area roadway segments.

As a part of the Environmental Impact Report for the Project, three land use alternatives were compared in terms of trip generation for the Project site, including: retail and multi-family housing, single-family detached housing, and hotel use. Based on the *Alternatives Trip Generation Summary* prepared by Urban Crossroads, Inc., all Project land use alternatives would generate fewer daily trips than those of the Project. Therefore, off-site traffic noise level increases related to the three land use alternatives are anticipated to be lower than those presented in this report for the proposed Project land use. Moreover, since Project off-site traffic noise level increases are shown in this report to result in *less than significant* noise impacts, the three land use alternatives, which would generate fewer daily trips, would therefore, also result in equivalent or lower off-site traffic noise level impacts.

OPERATIONAL NOISE ANALYSIS

Using reference noise levels to represent the expected noise sources from the Desert Wave site, this analysis estimates the Project-related stationary-source noise levels at nearby sensitive receiver locations under typical and special event conditions.





TYPICAL OPERATIONAL NOISE LEVELS

The typical activities associated with the proposed Desert Wave are anticipated to include surf lagoon/wave machine activities, outdoor pool/spa activities, parking lot vehicle movements, outdoor game activities, and roof-top air conditioning units. The typical condition operational noise analysis shows that the unmitigated Project-related stationary-source noise levels at all receiver locations will satisfy the City of Palm Desert base exterior noise level standards.

Moreover, the results of the analysis indicate that the unmitigated Project operational noise levels will not contribute a long-term operational noise level impact to the existing ambient noise environment. Therefore, the operational noise level impacts associated with the proposed 24-hour seven days per week Project activities, such as the surf lagoon/wave machine activities, outdoor pool/spa activities, parking lot vehicle movements, outdoor game activities, and roof-top air conditioning units, are considered *less than significant* under typical conditions.

SPECIAL EVENT OPERATIONAL NOISE LEVELS

Project special event operational noise levels are analyzed for compliance with City of Palm Desert Municipal Code base exterior noise level limits. Special event activities within the Project site are anticipated to include live and/or amplified music, and as such, the special event condition analysis includes all previously analyzed typical operational noise sources, with the addition of live and/or amplified music operating simultaneously. The special event condition operational noise analysis shows that the unmitigated Project-related stationary-source noise levels at all receiver locations will satisfy the City of Palm Desert base exterior noise level standards.

CONSTRUCTION NOISE ANALYSIS

Construction-related noise impacts are expected to create temporary and intermittent high-level noise conditions at receivers surrounding the Project site. Using sample reference noise levels to represent the planned construction activities of the Desert Wave site, this analysis estimates the Project-related construction noise levels at nearby sensitive receiver locations. Since the City of Palm Desert General Plan and Municipal Code do not identify specific construction noise level thresholds, a threshold is identified based on the National Institute for Occupational Safety and Health (NIOSH) limits for construction noise. The Project-related short-term construction noise levels are expected to range from 28.5 to 68.4 dBA L_{eq} and will satisfy the 85 dBA L_{eq} threshold identified by the National Institute for Occupational Safety and Health (NIOSH) at all receiver locations. Therefore, based on the results of this analysis, all nearby sensitive receiver locations will experience *less than significant* impacts due to Project construction noise levels.

CONSTRUCTION VIBRATION ANALYSIS

Construction activity can result in varying degrees of ground vibration, depending on the equipment and methods used, distance to the affected structures and soil type. It is expected that ground-borne vibration from Project construction activities would cause only intermittent, localized intrusion. This analysis shows the highest construction vibration levels are expected to approach 0.009 in/sec RMS, which is below the County of Riverside vibration standard of 0.01 in/sec RMS at all receiver locations. Therefore, the Project-related vibration impacts are considered *less than significant* during the construction activities at the Project site.

Further, the Project-related construction vibration levels do not represent levels capable of causing building damage to nearby residential homes. The FTA identifies construction vibration levels capable of building damage ranging from 0.12 to 0.5 in/sec PPV. (3) The peak Project-construction vibration levels approaching 0.013 in/sec PPV will remain below the FTA vibration levels for building damage at the residential homes near the Project site. Moreover, the impacts at the site of the closest sensitive receivers are unlikely to be sustained during the entire construction period, but will occur rather only during the times that heavy construction equipment is operating adjacent to the Project site perimeter.

SUMMARY OF SIGNIFICANCE FINDINGS

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

Anahusia	Report	Significance Findings		
Analysis	Section	Unmitigated	Mitigated	
Off-Site Traffic Noise	7	Less Than Significant	-	
Operational Noise	9	Less Than Significant	-	
Construction Noise	10	Less Than Significant	-	
Construction Vibration	10	Less Than Significant	-	

TABLE ES-1: SUMMARY OF SIGNIFICANCE FINDINGS



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1 INTRODUCTION

This noise analysis has been completed to determine the noise impacts associated with the development of the proposed Desert Wave ("Project"). This noise study briefly describes the proposed Project, provides information regarding noise fundamentals, describes the local regulatory setting, provides the study methods and procedures for traffic noise analysis, and evaluates the future exterior noise environment. In addition, this study includes an analysis of the potential Project-related long-term operational and short-term construction noise and vibration impacts.

1.1 SITE LOCATION

The proposed Desert Wave site is located west of Desert Willow Drive, in the City of Palm Desert, as shown on Exhibit 1-A.

The Project site is mostly vacant with an existing parking lot located in the northwestern corner. Existing land uses near the site include a golf course to the north, south, and east, and an existing hotel use located west of the Project site.

1.2 PROJECT DESCRIPTION

It is our understanding that the Project is to consist of a 6.0-acre surf lagoon with restaurant, café, bar, and two hotels with a maximum of 350 rooms and a maximum of 88 villas, as shown on Exhibit 1-B.

The typical on-site Project-related noise sources are expected to include: surf lagoon/wave machine activities, outdoor pool/spa activities, parking lot vehicle movements, outdoor game activities, and roof-top air conditioning units. This noise analysis is intended to describe noise level impacts associated with the expected typical and special event operational conditions at the Project site. Special event activities within the Project site are anticipated to include live and/or amplified music, and as such, the special event condition analysis includes all previously identified typical operational noise sources with the addition of live and/or amplified music operating simultaneously.

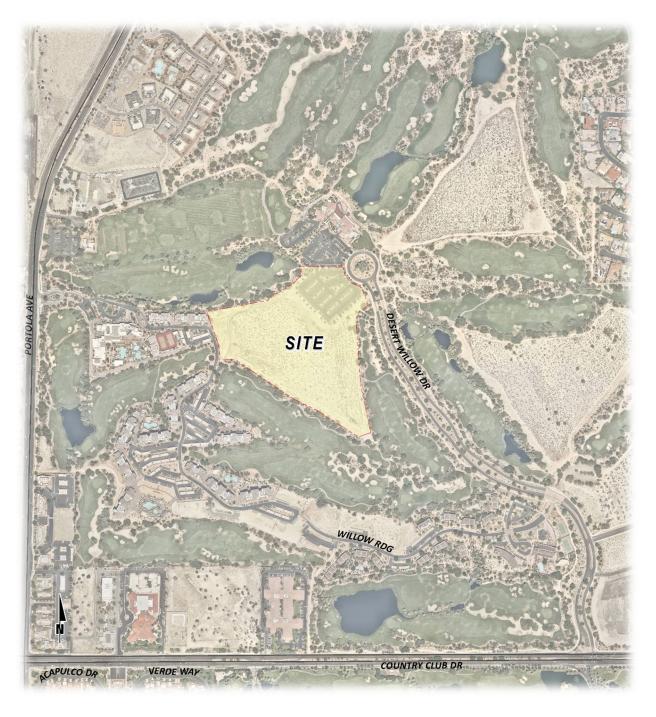


EXHIBIT 1-A: LOCATION MAP



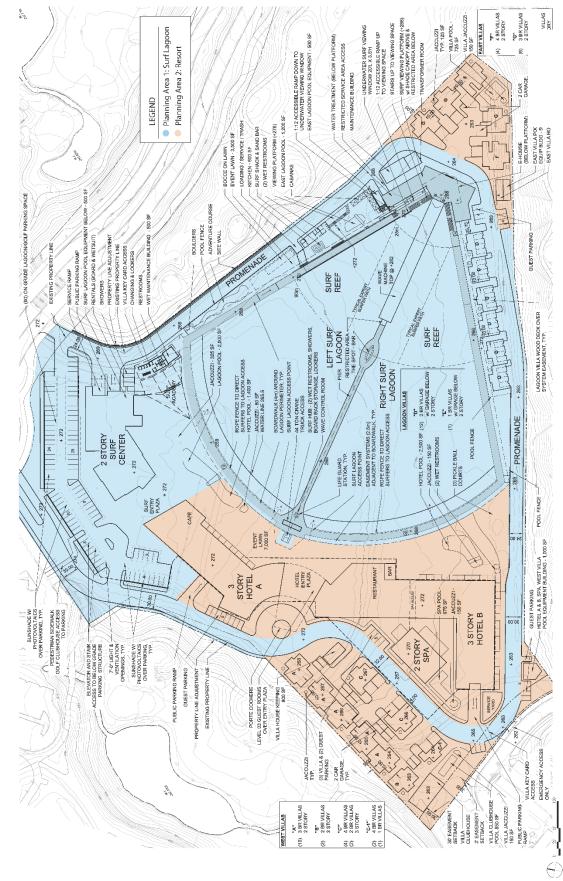


EXHIBIT 1-B: SITE PLAN

11826-03 Noise Study



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2 FUNDAMENTALS

Noise has been simply defined as "unwanted sound." Sound becomes unwanted when it interferes with normal activities, when it causes actual physical harm or when it has adverse effects on health. Noise is measured on a logarithmic scale of sound pressure level known as a decibel (dB). A-weighted decibels (dBA) approximate the subjective response of the human ear to broad frequency noise source by discriminating against very low and very high frequencies of the audible spectrum. They are adjusted to reflect only those frequencies which are audible to the human ear. Exhibit 2-A presents a summary of the typical noise levels and their subjective loudness and effects that are described in more detail below.

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

EXHIBIT 2-A: TYPICAL NOISE LEVELS

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

2.1 RANGE OF NOISE

Since the range of intensities that the human ear can detect is so large, the scale frequently used to measure intensity is a scale based on multiples of 10, the logarithmic scale. The scale for measuring intensity is the decibel scale. Each interval of 10 decibels indicates a sound energy ten times greater than before, which is perceived by the human ear as being roughly twice as loud. (4) The most common sounds vary between 40 dBA (very quiet) to 100 dBA (very loud). Normal conversation at three feet is roughly at 60 dBA, while loud jet engine noises equate to 110 dBA



at approximately 100 feet, which can cause serious discomfort. (5) Another important aspect of noise is the duration of the sound and the way it is described and distributed in time.

2.2 NOISE DESCRIPTORS

Environmental noise descriptors are generally based on averages, rather than instantaneous, noise levels. The most commonly used figure is the equivalent level (L_{eq}). Equivalent sound levels are not measured directly but are calculated from sound pressure levels typically measured in A-weighted decibels (dBA). The equivalent sound level (L_{eq}) represents a steady state sound level containing the same total energy as a time varying signal over a given sample period and is commonly used to describe the "average" noise levels within the environment.

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

2.3 SOUND PROPAGATION

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

2.3.1 GEOMETRIC SPREADING

Sound from a localized source (i.e., a stationary point source) propagates uniformly outward in a spherical pattern. The sound level attenuates (or decreases) at a rate of 6 dB for each doubling of distance from a point source. Highways consist of several localized noise sources on a defined path and hence can be treated as a line source, which approximates the effect of several point sources. Noise from a line source propagates outward in a cylindrical pattern, often referred to as cylindrical spreading. Sound levels attenuate at a rate of 3 dB for each doubling of distance from a line source. (4)

2.3.2 GROUND ABSORPTION

The propagation path of noise from a highway to a receptor is usually very close to the ground. Noise attenuation from ground absorption and reflective wave canceling adds to the attenuation associated with geometric spreading. Traditionally, the excess attenuation has also been expressed in terms of attenuation per doubling of distance. This approximation is usually



sufficiently accurate for distances of less than 200 ft. For acoustically hard sites (i.e., sites with a reflective surface between the source and the receptor, such as a parking lot or body of water), no excess ground attenuation is assumed. For acoustically absorptive or soft sites (i.e., those sites with an absorptive ground surface between the source and the receptor such as soft dirt, grass, or scattered bushes and trees), an excess ground attenuation value of 1.5 dB per doubling of distance is normally assumed. When added to the cylindrical spreading, the excess ground attenuation results in an overall drop-off rate of 4.5 dB per doubling of distance from a line source. (6)

2.3.3 ATMOSPHERIC EFFECTS

Receptors located downwind from a source can be exposed to increased noise levels relative to calm conditions, whereas locations upwind can have lowered noise levels. Sound levels can be increased at large distances (e.g., more than 500 feet) due to atmospheric temperature inversion (i.e., increasing temperature with elevation). Other factors such as air temperature, humidity, and turbulence can also have significant effects. (4)

2.3.4 SHIELDING

A large object or barrier in the path between a noise source and a receptor can substantially attenuate noise levels at the receptor. The amount of attenuation provided by shielding depends on the size of the object and the frequency content of the noise source. Shielding by trees and other such vegetation typically only has an "out of sight, out of mind" effect. That is, the perception of noise impact tends to decrease when vegetation blocks the line-of-sight to nearby residents. However, for vegetation to provide a substantial, or even noticeable, noise reduction, the vegetation area must be at least 15 feet in height, 100 feet wide and dense enough to completely obstruct the line-of sight between the source and the receiver. This size of vegetation may provide up to 5 dBA of noise reduction. The FHWA does not consider the planting of vegetation to be a noise abatement measure. (6)

2.4 NOISE CONTROL

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

2.5 Noise Barrier Attenuation

Effective noise barriers can reduce noise levels by 10 to 15 dBA, cutting the loudness of traffic noise in half. A noise barrier is most effective when placed close to the noise source or receptor. Noise barriers, however, do have limitations. For a noise barrier to work, it must be high enough and long enough to block the path of the noise source. (6)



2.6 LAND USE COMPATIBILITY WITH NOISE

Some land uses are more tolerant of noise than others. For example, schools, hospitals, churches, and residences are more sensitive to noise intrusion than are commercial or industrial developments and related activities. As ambient noise levels affect the perceived amenity or livability of a development, so too can the mismanagement of noise impacts impair the economic health and growth potential of a community by reducing the area's desirability as a place to live, shop and work. For this reason, land use compatibility with the noise environment is an important consideration in the planning and design process. The FHWA encourages State and Local government to regulate land development in such a way that noise-sensitive land uses are either prohibited from being located adjacent to a highway, or that the developments are planned, designed, and constructed in such a way that noise impacts are minimized. (7)

2.7 COMMUNITY RESPONSE TO NOISE

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

- Fear associated with noise producing activities;
- Socio-economic status and educational level;
- Perception that those affected are being unfairly treated;
- Attitudes regarding the usefulness of the noise-producing activity;
- Belief that the noise source can be controlled.

Approximately ten percent of the population has a very low tolerance for noise and will object to any noise not of their making. Consequently, even in the quietest environment, some complaints will occur. Another twenty-five percent of the population will not complain even in very severe noise environments. Thus, a variety of reactions can be expected from people exposed to any given noise environment. (8) Surveys have shown that about ten percent of the people exposed to traffic noise of 60 dBA will report being highly annoyed with the noise, and each increase of one dBA is associated with approximately two percent more people being highly annoyed. When traffic noise exceeds 60 dBA or aircraft noise exceeds 55 dBA, people may begin to complain. (8) Despite this variability in behavior on an individual level, the population can be expected to exhibit the following responses to changes in noise levels as shown on Exhibit 2-B. An increase or decrease of 1 dBA cannot be perceived except in carefully controlled laboratory experiments, a change of 3 dBA are considered *barely perceptible*, and changes of 5 dBA are considered *readily perceptible*. (6)



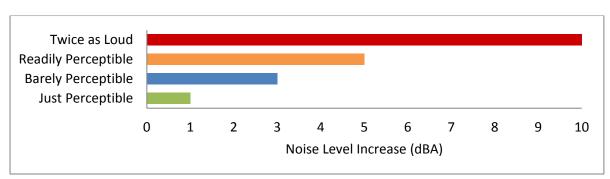


EXHIBIT 2-B: NOISE LEVEL INCREASE PERCEPTION

2.8 EXPOSURE TO HIGH NOISE LEVELS

The Occupational Safety and Health Administration (OSHA) sets legal limits on noise exposure in the workplace. The permissible exposure limit (PEL) for a worker over an eight-hour day is 90 dBA. The OSHA standard uses a 5 dBA exchange rate. This means that when the noise level is increased by 5 dBA, the amount of time a person can be exposed to a certain noise level to receive the same dose is cut in half. The National Institute for Occupational Safety and Health (NIOSH) has recommended that all worker exposures to noise should be controlled below a level equivalent to 85 dBA for eight hours to minimize occupational noise induced hearing loss. NIOSH also recommends a 3 dBA exchange rate so that every increase by 3 dBA doubles the amount of the noise and halves the recommended amount of exposure time. (9)

OSHA has implemented requirements to protect all workers in general industry (e.g. the manufacturing and the service sectors) for employers to implement a Hearing Conservation Program where workers are exposed to a time weighted average noise level of 85 dBA or higher over an eight-hour work shift. Hearing Conservation Programs require employers to measure noise levels, provide free annual hearing exams and free hearing protection, provide training, and conduct evaluations of the adequacy of the hearing protectors in use unless changes to tools, equipment and schedules are made so that they are less noisy and worker exposure to noise is less than the 85 dBA. This noise study does not evaluate the noise exposure of workers within a project or construction site based on CEQA requirements, and instead, evaluates Project-related operational and construction noise levels at the nearby sensitive receiver locations in the Project study area. Further, periodic exposure to high noise levels in short duration, such as Project construction, is typically considered an annoyance and not impactful to human health. It would take several years of exposure to high noise levels to result in hearing impairment. (10)

2.9 VIBRATION

Per the Federal Transit Administration (FTA) *Transit Noise Impact and Vibration Assessment* (3), vibration is the periodic oscillation of a medium or object. The rumbling sound caused by the vibration of room surfaces is called structure-borne noise. Sources of ground-borne vibrations include natural phenomena (e.g., earthquakes, volcanic eruptions, sea waves, landslides) or human-made causes (e.g., explosions, machinery, traffic, trains, construction equipment). Vibration sources may be continuous, such as factory machinery, or transient, such as explosions.



As is the case with airborne sound, ground-borne vibrations may be described by amplitude and frequency.

There are several different methods that are used to quantify vibration. The peak particle velocity (PPV) is defined as the maximum instantaneous peak of the vibration signal. The PPV is most frequently used to describe vibration impacts to buildings, but is not always suitable for evaluating human response (annoyance) because it takes some time for the human body to respond to vibration signals. Instead, the human body responds to average vibration amplitude often described as the root mean square (RMS). The RMS amplitude is defined as the average of the squared amplitude of the signal, and is most frequently used to describe the effect of vibration on the human body. Decibel notation (VdB) is commonly used to measure RMS. Decibel notation. Typically, ground-borne vibration generated by man-made activities attenuates rapidly with distance from the source of the vibration. Sensitive receivers for vibration include structures (especially older masonry structures), people (especially residents, the elderly, and sick), and vibration-sensitive equipment.

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

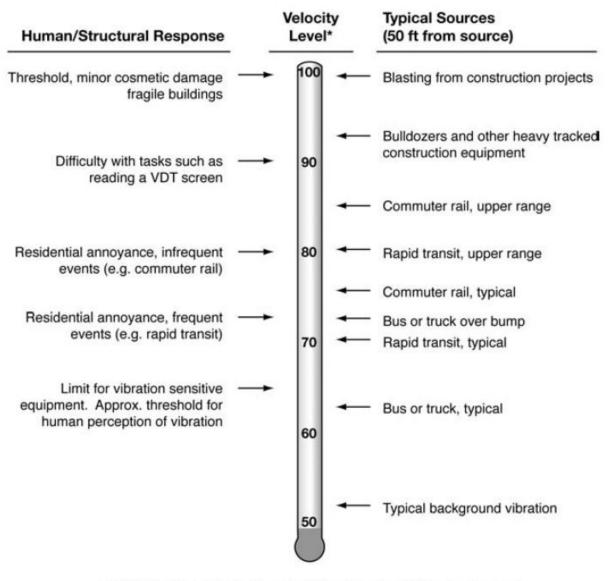


EXHIBIT 2-C: TYPICAL LEVELS OF GROUND-BORNE VIBRATION

* RMS Vibration Velocity Level in VdB relative to 10⁻⁶ inches/second

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



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3 REGULATORY SETTING

To limit population exposure to physically and/or psychologically damaging as well as intrusive noise levels, the federal government, the State of California, various county governments, and most municipalities in the state have established standards and ordinances to control noise. In most areas, automobile and truck traffic is the major source of environmental noise. Traffic activity generally produces an average sound level that remains constant with time. Air and rail traffic, and commercial and industrial activities are also major sources of noise in some areas. Federal, state, and local agencies regulate different aspects of environmental noise. Federal and state agencies generally set noise standards for mobile sources such as aircraft and motor vehicles, while regulation of stationary sources is left to local agencies.

3.1 STATE OF CALIFORNIA NOISE REQUIREMENTS

The State of California regulates freeway noise, sets standards for sound transmission, provides occupational noise control criteria, identifies noise standards, and provides guidance for local land use compatibility. State law requires that each county and city adopt a General Plan that includes a Noise Element which is to be prepared per guidelines adopted by the Governor's Office of Planning and Research (OPR). (11) The purpose of the Noise Element is to *limit the exposure of the community to excessive noise levels*.

3.2 CITY OF PALM DESERT GENERAL PLAN NOISE ELEMENT

The City of Palm Desert has adopted a Noise Element of the General Plan *to include noise control in the planning process*. (12) The Noise Element specifies the allowable exterior noise levels for new developments impacted by transportation noise sources such as arterial roads, freeways, airports and railroads. In addition, the Noise Element identifies several polices to minimize the impacts of excessive noise levels throughout the community, and establishes noise level requirements for all land uses

3.2.1 LAND USE COMPATIBILITY

The noise criteria identified in the City of Palm Desert Noise Element (Table 7.1) are guidelines to evaluate the land use compatibility of transportation related noise. The compatibility criteria, shown on Exhibit 3-A, provides the City of Palm Desert with a planning tool to gauge the compatibility of land uses relative to existing and future exterior noise levels.

The Noise Compatibility Matrix describes categories of compatibility and not specific noise standards. Commercial land uses are considered *normally acceptable* with unmitigated exterior noise levels of less than 70 dBA CNEL, and residential uses with unmitigated exterior noise levels of less than 60 dBA CNEL. For conditionally acceptable exterior noise levels, approaching 70 dBA CNEL for residential and 75 dBA CNEL commercial uses, *new construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and the needed noise insulation features are included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice. (12)*



LAND USE CATEGORY	COMMUNITY NOISE EXPOSURE Ldn or CNEL, dBA						
	55	60	65	70	75	80	85
RESIDENTIAL - LOW DENSITY SINGLE FAMILY, DUPLEX, MOBILE HOMES			Ì				
RESIDENTIAL - MULTI-FAMILY		-					
TRANSIENT LODGING - MOTELS, HOTELS						-	
SCHOOLS, LIBRARIES, CHURCHES, HOSPITALS, NURSING HOMES					_		
AUDITORIUMS, CONCERT HALLS, AMPHITHEATRES						-	
SPORTS ARENA, OUTDOOR SPECTATOR SPORTS			1		-		
PLAYGROUNDS, NEIGHBORHOOD PARKS		Ì					
GOLF COURSES, RIDING STABLES, WATER RECREATION, CEMETERIES							
OFFICE BUILDINGS, BUSINESS COMMERCIAL AND PROFESSIONAL						-	
INDUSTRIAL, MANUFACTURING, UTILITIES, AGRICULTURE						-	

EXHIBIT 3-A: NOISE COMPATIBILITY MATRIX

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

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

NORMALLY UNACCEPTABLE

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



CLEARLY UNACCEPTABLE New construction or development should generally not be undertaken.

Guidelines for the Preparation and Content of Noise Elements of the General Plan, California Office of Planning and Research, 2003.

Source: City of Palm Desert General Plan Noise Element, Table 7.1.

3.3 OPERATIONAL NOISE STANDARDS

The City of Palm Desert Municipal Code, Section 9.24.030, establishes the base exterior noise levels for receiving land uses. Exterior noise levels at residential land uses shall not exceed 55 dBA L_{eq} during the daytime hours (7:00 a.m. to 10:00 p.m.) and 45 dBA L_{eq} during the nighttime hours (10:00 p.m. to 7:00 a.m.). (13) For commercial uses, exterior noise levels shall not exceed 65 dBA L_{eq} during the daytime hours (7:00 a.m. to 10:00 p.m.) and 55 dBA L_{eq} during the nighttime hours (10:00 p.m. to 7:00 a.m.). (13) For commercial uses, exterior noise levels shall not exceed 65 dBA L_{eq} during the daytime hours (7:00 a.m. to 10:00 p.m.) and 55 dBA L_{eq} during the nighttime hours (10:00 p.m. to 7:00 a.m.). The City of Palm Desert Municipal Code base exterior noise level standards are shown on Table 3-1 and are included in Appendix 3.1.

The City of Palm Desert Municipal Code identifies base exterior noise level standards which do not account for the existing ambient noise level. Existing ambient noise levels in the Project study area are shown to exceed the base exterior standards at some measurement locations (described in Table 5-1), and as such, the ambient level would become the adjusted exterior noise level standards per Section 9.24.030(C) of the City of Palm Desert Municipal Code. However, this analysis relies on the more restrictive base exterior noise level standards of the City of Palm Desert Municipal Code rather than adjusted exterior noise levels which may reflect higher existing ambient conditions.

Jurisdiction Land Use		Time Period	Base Exterior Noise Level Standard (dBA) ²	
		Daytime (7:00 a.m 10:00 p.m.)	55	
City of		Nighttime (10:00 p.m 7:00 a.m.)	45	
Palm Desert ¹		Daytime (7:00 a.m 10:00 p.m.)	65	
		Nighttime (10:00 p.m 7:00 a.m.)	55	

TABLE 3-1: BASE EXTERIOR NOISE LEVEL STANDARDS

¹ Source: City of Palm Desert Municipal Code, Section 9.24.030 (Appendix 3.1).

² L_{eq} represents a steady state sound level containing the same total energy as a time varying signal over a given sample period.

3.4 CONSTRUCTION NOISE STANDARDS

To control noise impacts associated with the construction of the proposed Project, the City of Palm Desert has established limits to the hours of operation. However, neither the City of Palm Desert General Plan nor Municipal Code establish numeric maximum acceptable construction source noise levels at potentially affected receivers, which would allow for a quantified determination of what CEQA constitutes a *substantial temporary or periodic noise increase*.

To evaluate whether the Project will generate potentially significant construction noise levels at off-site sensitive receiver locations, a construction-related noise level threshold is adopted from the *Criteria for Recommended Standard: Occupational Noise Exposure* prepared by the National Institute for Occupational Safety and Health (NIOSH). (14) A division of the U.S. Department of Health and Human Services, NIOSH identifies a noise level threshold based on the duration of



exposure to the source. The construction related noise level threshold starts at 85 dBA for more than eight hours per day, and for every 3 dBA increase, the exposure time is cut in half. This results in noise level thresholds of 88 dBA for more than four hours per day, 92 dBA for more than one hour per day, 96 dBA for more than 30 minutes per day, and up to 100 dBA for more than 15 minutes per day. (14) For the purposes of this analysis, the lowest, more conservative construction noise level threshold of 85 dBA L_{eq} is used as an acceptable threshold for construction noise at the nearby sensitive receiver locations. Since this construction-related noise level threshold represents the energy average of the noise source over a given time, they are expressed as L_{eq} noise levels. Therefore, the noise level threshold of 85 dBA L_{eq} over a period of eight hours or more is used to evaluate the potential Project-related construction noise level impacts at the nearby sensitive receiver locations.

The Occupational Safety and Health Administration (OSHA) requires hearing protection be provided by employers in workplaces where the noise levels may, over long periods of exposure to high noise levels, endanger the hearing of their employees. Standard 29 CFR, Part 1910 indicates the noise levels under which a hearing conservation program is required to be provided to workers exposed to high noise levels. (9) This analysis does not evaluate the noise exposure of construction workers within the Project site based on CEQA requirements, and instead, evaluates the Project-related construction noise levels at the nearby sensitive receiver locations in the Project study area. Further, periodic exposure to high noise levels in short duration, such as Project construction, is typically considered an annoyance and not impactful to human health. It would take several years of exposure to high noise levels to result in hearing impairment. (10)

3.5 VIBRATION STANDARDS

The City of Palm Desert does not have vibration standards for temporary construction, but the County of Riverside's General Plan Noise Element does contain the human reaction to typical vibration levels. Vibration levels with peak particle velocity of 0.787 inches per second are considered readily perceptible and above 0.1968 in/sec are considered annoying to people in buildings. Further, County of Riverside General Plan Policy N 16.3 identifies a motion velocity perception threshold for vibration due to passing trains of 0.01 inches per second (in/sec) over the range of one to 100 Hz, which is used in this noise study to assess potential impacts due to Project construction vibration levels. (12)



4 SIGNIFICANCE CRITERIA

The following significance criteria are based on currently adopted guidance provided by Appendix G of the California Environmental Quality Act (CEQA) Guidelines. (1) For the purposes of this report, impacts would be potentially significant if the Project results in or causes:

- A. Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?
- B. Generation of excessive ground-borne vibration or ground-borne noise levels?
- C. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

While the City of Palm Desert General Plan Guidelines provide direction on noise compatibility and establish noise standards by land use type that are sufficient to assess the significance of noise impacts, they do not define the levels at which increases are considered substantial for use under Guideline A. CEQA Appendix G Guideline C applies to nearby public and private airports, if any, and the Project's land use compatibility.

CEQA GUIDELINES NOT FURTHER ANALYZED

The Project site is located approximately 8.3 miles southeast of Palm Springs International Airport, and roughly 14.7 miles northwest of Jacqueline Cochran Airport, and as such, would not be exposed to excessive aircraft noise levels. Therefore, impacts are considered *less than significant* and no further noise analysis is conducted in relation to Guideline C.

4.1 NOISE-SENSITIVE RECEIVERS

Noise level increases resulting from the Project are evaluated based on the Appendix G CEQA Guidelines described above at the closest sensitive receiver locations. Under CEQA, consideration must be given to the magnitude of the increase, the existing ambient noise levels, and the location of noise-sensitive receivers to determine if a noise increase represents a significant adverse environmental impact. This approach recognizes *that there is no single noise increase that renders the noise impact significant.* (15)

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

In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will typically be judged. The Federal Interagency Committee on Noise (FICON) (16) developed guidance to be used for the assessment of project-generated increases



in noise levels that consider the ambient noise level. The FICON recommendations are based on studies that relate aircraft noise levels to the percentage of persons highly annoyed by aircraft noise. Although the FICON recommendations were specifically developed to assess aircraft noise impacts, these recommendations are often used in environmental noise impact assessments involving the use of cumulative noise exposure metrics, such as the average-daily noise level (CNEL) and equivalent continuous noise level (L_{eq}).

As previously stated, the approach used in this noise study recognizes *that there is no single noise increase that renders the noise impact significant*, based on a 2008 California Court of Appeal ruling on Gray v. County of Madera. (15) For example, if the ambient noise environment is quiet (<60 dBA) and the new noise source greatly increases the noise levels, an impact may occur if the noise criteria may be exceeded. Therefore, for this analysis, FICON identifies a *readily perceptible* 5 dBA or greater project-related noise level increase is considered a significant impact when the noise criteria for a given land use is exceeded. Per the FICON, in areas where the without project noise levels range from 60 to 65 dBA, a 3 dBA *barely perceptible* noise level increase appears to be appropriate for most people. When the without project noise levels already exceed 65 dBA, any increase in community noise louder than 1.5 dBA or greater is considered a significant impact if the noise criteria for a given land use is exceeded, since it likely contributes to an existing noise exposure exceedance. Table 4-1 below provides a summary of the potential noise impact significance criteria, based on guidance from FICON.

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

TABLE 4-1: SIGNIFICANCE OF NOISE IMPACTS AT NOISE-SENSITIVE RECEIVERS

Federal Interagency Committee on Noise (FICON), 1992.

4.2 NON-NOISE-SENSITIVE RECEIVERS

The City of Palm Desert General Plan Noise Element, Table 7.1 was used to establish the satisfactory noise levels of significance for non-noise-sensitive land uses in the Project study area. As previously shown on Exhibit 3-A, the *normally acceptable* exterior noise levels for non-noise-sensitive land uses is 70 dBA CNEL. Noise levels greater than 70 dBA CNEL are considered *conditionally acceptable*. (12)

To determine if Project-related traffic noise level increases are significant at off-site non-noisesensitive land uses, a *readily perceptible* 5 dBA and *barely perceptible* 3 dBA criteria were used. When the without Project noise levels at the non-noise-sensitive land uses are below the *normally acceptable* 70 dBA CNEL compatibility criteria, a *readily perceptible* 5 dBA or greater noise level increase is considered a significant impact. When the without Project noise levels are greater than the *normally acceptable* 70 dBA CNEL land use compatibility criteria, a *barely perceptible* 3 dBA or greater noise level increase is considered a significant impact since the noise level criteria is already exceeded. The noise level increases used to determine significant impacts



for non-noise-sensitive land uses is generally consistent with the FICON noise level increase thresholds s for noise-sensitive land uses but instead rely on the City of Palm Desert General Plan Noise Element, Table 7.1, *normally acceptable* 70 dBA CNEL exterior noise level criteria.

4.3 SIGNIFICANCE CRITERIA SUMMARY

Noise impacts shall be considered significant if any of the following occur as a direct result of the proposed development. Table 4-2 shows the significance criteria summary matrix.

OFF-SITE TRAFFIC NOISE

- When the noise levels at existing and future noise-sensitive land uses (e.g. residential, etc.):
 - are less than 60 dBA CNEL and the Project creates a *readily perceptible* 5 dBA CNEL or greater Project-related noise level increase; or
 - range from 60 to 65 dBA CNEL and the Project creates a *barely perceptible* 3 dBA CNEL or greater Project-related noise level increase; or
 - already exceed 65 dBA CNEL, and the Project creates a community noise level impact of greater than 1.5 dBA CNEL (FICON, 1992).
- When the noise levels at existing and future non-noise-sensitive land uses (e.g., office, commercial, industrial):
 - are less than the City of Palm Desert General Plan Noise Element, Table 7.1, normally acceptable 70 dBA CNEL and the Project creates a readily perceptible 5 dBA CNEL or greater Project related noise level increase; or
 - are greater than the City of Palm Desert General Plan Noise Element, Table 7.1, *normally acceptable* 70 dBA CNEL and the Project creates a *barely perceptible* 3 dBA CNEL or greater Project noise level increase.

OPERATIONAL NOISE & VIBRATION

- If Project-related operational (stationary-source) noise levels exceed:
 - $\circ~$ the exterior 55 dBA L_{eq} daytime or 45 dBA L_{eq} nighttime noise level standards at nearby sensitive residential receiver locations; or
 - \circ the exterior 65 dBA L_{eq} daytime or 55 dBA L_{eq} nighttime noise level standards at nearby commercial receiver locations (City of Palm Desert Municipal Code, Section 9.24.030).
- If the existing ambient noise levels at the nearby noise-sensitive receivers near the Project site:
 - $\circ~$ are less than 60 dBA L_{eq} and the Project creates a readily perceptible 5 dBA L_{eq} or greater Project-related noise level increase; or
 - $\circ~$ range from 60 to 65 dBA L_{eq} and the Project creates a barely perceptible 3 dBA L_{eq} or greater Project-related noise level increase; or
 - already exceed 65 dBA L_{eq} and the Project creates a community noise level impact of greater than 1.5 dBA L_{eq} (FICON, 1992).



CONSTRUCTION NOISE & VIBRATION

- If Project-related construction activities create noise levels which exceed the 85 dBA L_{eq} acceptable noise level threshold at the nearby sensitive receiver locations (NIOSH, Criteria for Recommended Standard: Occupational Noise Exposure).
- If short-term Project-generated construction vibration levels exceed the County of Riverside vibration standard of 0.01 in/sec RMS at sensitive receiver locations (County of Riverside General Plan Noise Element, Policy N 16.3).

Analysia		Condition(c)	Significance Criteria		
Analysis	Land Use	Condition(s)	Daytime	Nighttime	
		if ambient is < 60 dBA CNEL	≥ 5 dBA CNEL Project increase		
Off-Site	Noise- Sensitive ¹	if ambient is 60 - 65 dBA CNEL	≥ 3 dBA CNEL Project increase		
Traffic		if ambient is > 65 dBA CNEL	≥ 1.5 dBA CNE	L Project increase	
Noise	Non-Noise- Sensitive ²	if ambient is < 70 dBA CNEL	≥ 5 dBA CNEL Project increase		
		if ambient is > 70 dBA CNEL ≥ 3 dBA CNEL Project increas			
	Noise- Sensitive	Exterior Noise Level Standards ³ See Table 3-:		able 3-1.	
Operational		if ambient is < 60 dBA L_{eq}^{1}	≥ 5 dBA L _{eq} Project increase		
Noise		if ambient is 60 - 65 dBA L_{eq}^1	≥ 3 dBA L _{eq} Project increa		
		if ambient is > 65 dBA L_{eq}^{1}	if ambient is > 65 dBA $L_{eq}^1 \ge 1.5$ dBA L_{eq} Project		
Construction	Noise-	Noise Level Threshold ⁵ 85 dBA		dBA L _{eq}	
Noise & Vibration	Sensitive	Vibration Level Threshold ⁴	reshold ⁴ 0.01 in/sec RMS		

TABLE 4-2: SIGNIFICANCE CRITERIA SUMMARY

¹ Source: FICON, 1992.

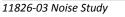
² Source: City of Palm Desert General Plan, Table 7.1.

³ Source: City of Palm Desert Municipal Code, Section 9.24.030 (Appendix 3.1).

⁴ Source: County of Riverside General Plan Noise Element, Policy N 16.3.

⁵ Acceptable threshold for construction noise based on the Criteria for Recommended Standard: Occupational Noise Exposure prepared by the National Institute for Occupational Safety and Health.

"Daytime" = 7:00 a.m. to 10:00 p.m.; "Nighttime" = 10:00 p.m. to 7:00 a.m.





5 EXISTING NOISE LEVEL MEASUREMENTS

To assess the existing noise level environment, 24-hour noise level measurements were taken at six locations in the Project study area. The receiver locations were selected to describe and document the existing noise environment within the Project study area. Exhibit 5-A provides the boundaries of the Project study area and the noise level measurement locations. To fully describe the existing noise conditions, noise level measurements were collected by Urban Crossroads, Inc. on Tuesday, January 22nd, 2019. Appendix 5.1 includes study area photos.

5.1 MEASUREMENT PROCEDURE AND CRITERIA

To describe the existing noise environment, the hourly noise levels were measured during typical weekday conditions over a 24-hour period. By collecting individual hourly noise level measurements, it is possible to describe the daytime and nighttime hourly noise levels and calculate the 24-hour CNEL. The long-term noise readings were recorded using Piccolo Type 2 integrating sound level meter and dataloggers. The Piccolo sound level meters were calibrated using a Larson-Davis calibrator, Model CAL 150. All noise meters were programmed in "slow" mode to record noise levels in "A" weighted form. The sound level meters and microphones were equipped with a windscreen during all measurements. All noise level measurement equipment satisfies the American National Standards Institute (ANSI) standard specifications for sound level meters ANSI S1.4-2014/IEC 61672-1:2013. (17)

5.2 NOISE MEASUREMENT LOCATIONS

The long-term noise level measurements were positioned as close to the nearest sensitive receiver locations as possible to assess the existing ambient hourly noise levels surrounding the Project site. Both Caltrans and the FTA recognize that it is not reasonable to collect noise level measurements that can fully represent every part of a private yard, patio, deck, or balcony normally used for human activity when estimating impacts for new development projects. This is demonstrated in the Caltrans general site location guidelines which indicate that, *sites must be free of noise contamination by sources other than sources of interest. Avoid sites located near sources such as barking dogs, lawnmowers, pool pumps, and air conditioners unless it is the express intent of the analyst to measure these sources. (4) Further, FTA guidance states, that it is not necessary nor recommended that existing noise exposure be determined by measuring at every noise-sensitive location in the project area. Rather, the recommended approach is to characterize the noise environment for clusters of sites based on measurements or estimates at representative locations in the community. (3)*

Based on recommendations of Caltrans and the FTA, it is not necessary to collect measurements at each individual building or residence, because each receiver measurement represents a group of buildings that share acoustical equivalence. (3) In other words, the area represented by the receiver shares similar shielding, terrain, and geometric relationship to the reference noise source. Receivers represent a location of noise sensitive areas and are used to estimate the future noise level impacts. Collecting reference ambient noise level measurements at the nearby sensitive receiver locations allows for a comparison of the before and after Project noise levels



and is necessary to assess potential noise impacts due to the Project's contribution to the ambient noise levels.

5.3 NOISE MEASUREMENT RESULTS

The noise measurements presented below focus on the average or equivalent sound levels (L_{eq}). The equivalent sound level (L_{eq}) represents a steady state sound level containing the same total energy as a time varying signal over a given sample period. Table 5-1 identifies the hourly daytime (7:00 a.m. to 10:00 p.m.) and nighttime (10:00 p.m. to 7:00 a.m.) noise levels at each noise level measurement location. Appendix 5.2 provides a summary of the existing hourly ambient noise levels described below:

- Location L1 represents the noise levels on Portola Avenue west of the Project site, near existing single-family residential homes. The noise level measurements collected show an overall 24-hour exterior noise level of 71.7 dBA CNEL. The energy (logarithmic) average daytime noise level was calculated at 69.4 dBA L_{eq} with an average nighttime noise level of 63.4 dBA L_{eq} .
- Location L2 represents the noise levels within The Westin Desert Willow Villas, near the northeastern corner of the Project site boundaries. The noise level measurements collected show an overall 24-hour exterior noise level of 53.4 dBA CNEL. The energy (logarithmic) average daytime noise level was calculated at 49.3 dBA L_{eq} with an average nighttime noise level of 46.1 dBA L_{eq}.
- Location L3 represents the noise levels on Desert Willow Drive, near the eastern boundary of the Project site and existing golf courses. The 24-hour CNEL indicates that the overall exterior noise level is 59.1 dBA CNEL. The energy (logarithmic) average daytime noise level was calculated at 55.7 dBA L_{eq} with an average nighttime noise level of 51.8 dBA L_{eq}.
- Location L4 represents the noise levels on Desert Willow Drive, southeast of the Project site, near Embarc Palm Desert Resort. The noise level measurements collected show an overall 24-hour exterior noise level of 55.0 dBA CNEL. The energy (logarithmic) average daytime noise level was calculated at 49.7 dBA L_{eq} with an average nighttime noise level of 48.2 dBA L_{eq}.
- Location L5 represents the noise levels on Willow Ridge within Embarc Palm Desert Resort, south of the Project site boundaries. The 24-hour CNEL indicates that the overall exterior noise level is 55.0 dBA CNEL. The energy (logarithmic) average daytime noise level was calculated at 49.0 dBA L_{eq} with an average nighttime noise level of 48.3 dBA L_{eq}.
- Location L6 represents the noise levels on Willow Ridge, within The Westin Desert Willow Villas Resort, near the southwestern boundary of the Project site. The noise level measurements collected show an overall 24-hour exterior noise level of 55.2 dBA CNEL. The energy (logarithmic) average daytime noise level was calculated at 52.3 dBA L_{eq} with an average nighttime noise level of 47.3 dBA L_{eq}.

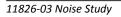




Table 5-1 provides the (energy average) noise levels used to describe the daytime and nighttime ambient conditions. These daytime and nighttime energy average noise levels represent the average of all hourly noise levels observed during these time periods expressed as a single number. Appendix 5.2 provides summary worksheets of the noise levels for each hour as well as the minimum, maximum, L₁, L₂, L₅, L₈, L₂₅, L₅₀, L₉₀, L₉₅, and L₉₉ percentile noise levels observed during the daytime and nighttime periods.

The background ambient noise levels in the Project study area are dominated by the transportation-related noise associated with study area roadways in addition to background stationary noise sources such as existing hotel and golf course activities. This includes the auto and heavy truck activities on study area roadway segments near the noise level measurement locations. The 24-hour existing noise level measurement results are shown on Table 5-1.

Location ¹	Description	Energy Average Noise Level (dBA L _{eq}) ²		CNEL
		Daytime	Nighttime	
L1	Located on Portola Avenue west of the Project site, near existing single-family residential homes.	69.4	63.4	71.7
L2	Located within The Westin Desert Willow Villas, near the northeastern corner of the Project site boundaries.	49.3	46.1	53.4
L3	Located on Desert Willow Drive, near the eastern boundary of the Project site and existing golf courses.	55.7	51.8	59.1
L4	Located on Desert Willow Drive, southeast of the Project site, near Embarc Palm Desert Resort.	49.7	48.2	55.0
L5	Located on Willow Ridge within Embarc Palm Desert Resort, south of the Project site boundaries.	49.0	48.3	55.0
L6	Located on Willow Ridge, within The Westin Desert Willow Villas Resort, near the southwestern boundary of the Project site.	52.3	47.3	55.2

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

¹ See Exhibit 5-A for the noise level measurement locations.

² Energy (logarithmic) average levels. The long-term 24-hour measurement worksheets are included in Appendix 5.2.

"Daytime" = 7:00 a.m. to 10:00 p.m.; "Nighttime" = 10:00 p.m. to 7:00 a.m.



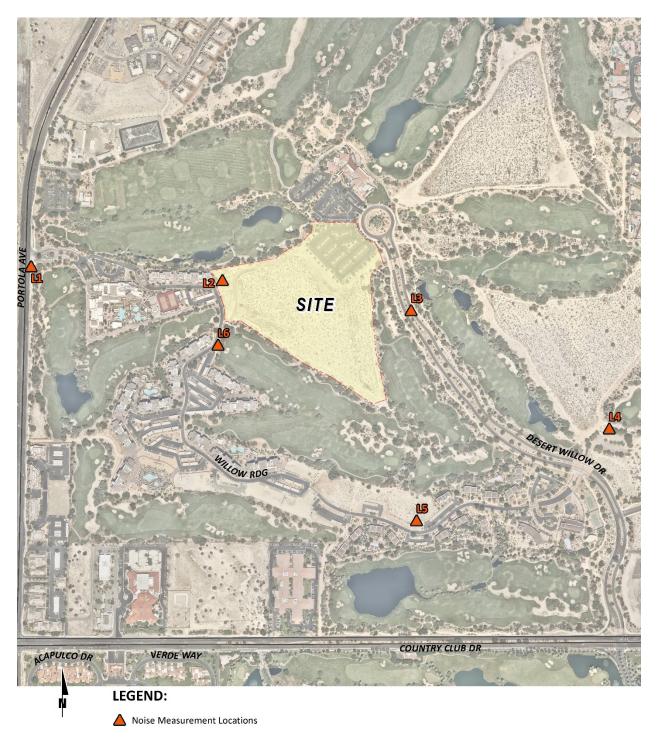


EXHIBIT 5-A: NOISE MEASUREMENT LOCATIONS



6 METHODS AND PROCEDURES

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

6.1 FHWA TRAFFIC NOISE PREDICTION MODEL

The expected roadway noise level increases from vehicular traffic were calculated by Urban Crossroads, Inc. using a computer program that replicates the Federal Highway Administration (FHWA) Traffic Noise Prediction Model- FHWA-RD-77-108. (18) The FHWA Model arrives at a predicted noise level through a series of adjustments to the Reference Energy Mean Emission Level (REMEL). In California the national REMELs are substituted with the California Vehicle Noise (Calveno) Emission Levels. (19) Adjustments are then made to the REMEL to account for: the roadway classification (e.g., collector, secondary, major or arterial), the roadway active width (i.e., the distance between the center of the outermost travel lanes on each side of the roadway), the total average daily traffic (ADT), the travel speed, the percentages of automobiles, medium trucks, and heavy trucks in the traffic volume, the roadway grade, the angle of view (e.g., whether the roadway view is blocked), the site conditions ("hard" or "soft" relates to the absorption of the ground, pavement, or landscaping), and the percentage of total ADT which flows each hour throughout a 24-hour period. Research conducted by Caltrans has shown that the use of soft site conditions is appropriate for the application of the FHWA traffic noise prediction model used in this analysis. (20)

6.2 OFF-SITE TRAFFIC NOISE PREDICTION MODEL INPUTS

Table 6-1 presents the roadway parameters used to assess the Project's off-site transportation noise impacts. Table 6-1 identifies the 22 study area roadway segments, the distance from the centerline to adjacent land use based on the functional roadway classifications per the City of Palm Desert General Plan Circulation Element, and the posted vehicle speeds. Where posted vehicle speeds are unavailable, the 40 mph speed identified in the County of Riverside Office of Industrial Hygiene Noise Study Guidelines is used. The ADT volumes used in this study are presented on Table 6-2 and were obtained from the *Desert Wave Traffic Impact Analysis*, for the following traffic scenarios: Existing (2019), Existing plus Ambient Growth (EA) 2022, and EA plus Cumulative (EAC) 2022 conditions. (2)



ID	Roadway	Segment	Adjacent Planned (Existing) Land Use ¹	Distance From Centerline To Nearest Adjacent Land Use (Feet) ²	Vehicle Speed (mph) ³
1	Monterey Av.	s/o Country Club Dr.	SRC	76'	55
2	Portola Av.	n/o Country Club Dr.	GC & RN / Employment	64'	55
3	Portola Av.	s/o Country Club Dr.	GC & RN / Nbrhd (Public)	64'	50
4	Cook St.	n/o I-10 WB Ramps	Employment (Vacant)	76'	50
5	Cook St.	s/o I-10 EB Ramps	Nbrhd / Employment	76'	50
6	Cook St.	s/o Gerald Ford Dr.	NC / Institutional	76'	50
7	Cook St.	s/o Frank Sinatra Dr.	GC & RN / R&E	76'	50
8	Cook St.	n/o Country Club Dr.	SRC /GC & RN (Commercial)	76'	50
9	Cook St.	s/o Country Club Dr.	GC & RN / R&E	76'	50
10	Cook St.	s/o Hovley Ln.	Employment	64'	50
11	El Dorado Dr.	n/o Country Club Dr.	GC & RN	64'	50
12	El Dorado Dr.	s/o Country Club Dr.	GC & RN	64'	50
13	Tamarisk Row Dr.	n/o Country Club Dr.	GC & RN	30'	55
14	Oasis Club Dr.	s/o Country Club Dr.	GC & RN	64'	55
15	Country Club Dr.	w/o Monterey Av.	NC / SRC	55'	50
16	Country Club Dr.	e/o Monterey Av.	NC / SRC	76'	50
17	Country Club Dr.	e/o Portola Av.	Employment / GC & RN	64'	50
18	Country Club Dr.	e/o Desert Willow Dr.	SRC	64'	50
19	Country Club Dr.	e/o Cook St.	GC & RN	76'	50
20	Country Club Dr.	e/o El Dorado Dr.	GC & RN	64'	50
21	Country Club Dr.	e/o Oasis Club Dr.	GC & RN (Residential)	64'	50
22	Hovley Ln.	e/o Cook St.	Employment	64'	45

TABLE 6-1: OFF-SITE ROADWAY PARAMETERS

¹ Source: City of Palm Desert General Plan Land Use Element (Figure 3.1).

² Distance to adjacent land use is based upon the right-of-way distances for each functional roadway classification provided in the General Plan Circulation Element.

³ Source: Desert Wave Traffic Impact Analysis, Urban Crossroads, Inc.

"GC" = Golf Course; "NC" = Neighborhood Center; "RN" = Resort Neighborhood; "R&E" = Resort & Entertainment; "SRC" = Suburban Retail Center



				Ave	rage Daily T	raffic (1,00	0's)1	
	Roadway		Existin	g 2019	EA 2	022	EAC	2022
ID		Segment	Without Project	With Project	Without Project	With Project	Without Project	With Project
1	Monterey Av.	s/o Country Club Dr.	35.1	35.4	37.9	38.2	0.0	0.0
2	Portola Av.	n/o Country Club Dr.	15.1	15.4	16.8	17.1	0.0	0.0
3	Portola Av.	s/o Country Club Dr.	20.7	21.0	22.4	22.7	0.0	0.0
4	Cook St.	n/o I-10 WB Ramps	7.6	7.9	13.6	13.9	0.0	0.0
5	Cook St.	s/o I-10 EB Ramps	32.0	33.7	35.1	36.8	0.0	0.0
6	Cook St.	s/o Gerald Ford Dr.	23.9	25.6	26.7	28.4	0.0	0.0
7	Cook St.	s/o Frank Sinatra Dr.	24.5	26.4	25.6	27.5	0.0	0.0
8	Cook St.	n/o Country Club Dr.	27.2	28.3	29.2	30.3	0.0	0.0
9	Cook St.	s/o Country Club Dr.	28.5	29.3	30.8	31.6	0.0	0.0
10	Cook St.	s/o Hovley Ln.	28.5	29.1	30.6	31.2	0.0	0.0
11	El Dorado Dr.	n/o Country Club Dr.	4.6	4.9	4.5	4.8	0.0	0.0
12	El Dorado Dr.	s/o Country Club Dr.	5.5	5.8	5.6	5.9	0.0	0.0
13	Tamarisk Row Dr.	n/o Country Club Dr.	8.1	8.4	9.5	9.8	0.0	0.0
14	Oasis Club Dr.	s/o Country Club Dr.	6.6	6.9	6.7	7.0	0.0	0.0
15	Country Club Dr.	w/o Monterey Av.	20.9	21.2	22.4	22.7	0.0	0.0
16	Country Club Dr.	e/o Monterey Av.	22.5	23.1	23.5	24.1	0.0	0.0
17	Country Club Dr.	e/o Portola Av.	22.3	23.5	22.6	23.8	0.0	0.0
18	Country Club Dr.	e/o Desert Willow Dr.	22.5	24.4	22.4	24.3	0.0	0.0
19	Country Club Dr.	e/o Cook St.	21.3	23.0	21.4	23.1	0.0	0.0
20	Country Club Dr.	e/o El Dorado Dr.	20.6	21.7	21.3	22.4	0.0	0.0
21	Country Club Dr.	e/o Oasis Club Dr.	23.1	23.7	24.5	25.1	0.0	0.0
22	Hovley Ln.	e/o Cook St.	17.4	17.7	30.9	31.2	0.0	0.0

TABLE 6-2: AVERAGE DAILY TRAFFIC VOLUMES

¹ Source: Desert Wave Traffic Impact Analysis, Urban Crossroads, Inc.

"EA" = Existing plus Ambient Growth; "EAC" = EA plus Cumulative

Table 6-3 provides the time of day (daytime, evening, and nighttime) vehicle splits, and Table 6-4 shows the traffic flow by vehicle type (vehicle mix).



Vahiele Ture		Time of Day Splits ¹		Total of Time of
Vehicle Type	Daytime	Evening	Nighttime	Day Splits
Autos	77.50%	12.90%	9.60%	100.00%
Medium Trucks	84.80%	4.90%	10.30%	100.00%
Heavy Trucks	86.50%	2.70%	10.80%	100.00%

TABLE 6-3: TIME OF DAY VEHICLE SPLITS

¹ Source: Typical Southern California vehicle mix.

"Daytime" = 7:00 a.m. to 7:00 p.m.; "Evening" = 7:00 p.m. to 10:00 p.m.; "Nighttime" = 10:00 p.m. to 7:00 a.m.

TABLE 6-4: DAILY VEHICLE MIX

Classification		Total		
Classification	Autos	Medium Trucks	Heavy Trucks	Total
All Roadways ¹	97.42%	1.84%	0.74%	100.00%

¹ Source: Typical Southern California vehicle mix & the County of Riverside Office of Industrial Hygiene.

6.3 VIBRATION ASSESSMENT

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

However, while vehicular traffic is rarely perceptible, construction has the potential to result in varying degrees of temporary ground vibration, depending on the specific construction activities and equipment used. Ground vibration levels associated with various types of construction equipment are summarized on Table 6-5. Based on the representative vibration levels presented for various construction equipment types, it is possible to estimate the human response (annoyance) using the following vibration assessment methods defined by the FTA. To describe the human response (annoyance) associated with vibration impacts the FTA provides the following equation: $PPV_{equip} = PPV_{ref} \times (25/D)^{1.5}$



Equipment	PPV (in/sec) at 25 feet
Small bulldozer	0.003
Jackhammer	0.035
Loaded Trucks	0.076
Large bulldozer	0.089

TABLE 6-5: VIBRATION SOURCE LEVELS FOR CONSTRUCTION EQUIPMENT

Source: Federal Transit Administration, Transit Noise and Vibration Impact Assessment, September 2018.



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7 OFF-SITE TRANSPORTATION NOISE IMPACTS

To assess the off-site transportation CNEL noise level impacts associated with the proposed Project, noise contours were developed based on the *Desert Wave Traffic Impact Analysis*. (2) Noise contour boundaries represent the equal levels of noise exposure and are measured in CNEL from the center of the roadway. Noise contours were developed for the following traffic scenarios:

- Existing (2019) Without / With Project:
 - This scenario refers to the Existing present-day noise conditions, without and with the proposed Project.
- Existing plus Ambient Growth (EA) 2022 Without / With Project:
 - This scenario below refers to the background noise conditions at future Year 2022 without and with the proposed Project plus ambient growth.
- EA plus Cumulative (EAC) 2022 Without / With Project:
 - This scenario below refers to the background noise conditions at future Year 2022 without and with the proposed Project plus ambient growth, and includes all cumulative projects identified in the *Traffic Impact Analysis*.

7.1 TRAFFIC NOISE CONTOURS

Noise contours were used to assess the Project's incremental traffic-related noise impacts at land uses adjacent to roadways conveying Project traffic. The noise contours represent the distance to noise levels of a constant value and are measured from the center of the roadway for the 70, 65, and 60 dBA noise levels. The noise contours do not consider the effect of any existing noise barriers or topography that may attenuate ambient noise levels. In addition, because the noise contours reflect modeling of vehicular noise on area roadways, they appropriately do not reflect noise contributions from the surrounding stationary noise sources within the Project study area. Tables 7-1 through 7-6 present a summary of the exterior traffic noise levels, without barrier attenuation, for the study area roadway segments analyzed from the without Project to the with Project conditions in each of the following timeframes: Existing (2019), Existing plus Ambient Growth (EA) 2022, and EA plus Cumulative (EAC) 2022. Appendix 7.1 includes a summary of the traffic noise level contours of the traffic noise level contours for each of the traffic scenarios.



			Adjacent	CNEL at Nearest	Distance to Contour from Centerline (Feet)		
ID	Road	Segment	Planned (Existing) Land Use ¹	Adjacent Land Use (dBA) ²	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Monterey Av.	s/o Country Club Dr.	SRC	74.2	200	631	1996
2	Portola Av.	n/o Country Club Dr.	GC & RN / Employment	71.1	83	261	826
3	Portola Av.	s/o Country Club Dr.	GC & RN / Nbrhd (Public)	71.4	89	281	889
4	Cook St.	n/o I-10 WB Ramps	Employment (Vacant)	66.5	RW	107	339
5	Cook St.	s/o I-10 EB Ramps	Nbrhd / Employment	72.7	143	452	1429
6	Cook St.	s/o Gerald Ford Dr.	NC / Institutional	71.5	107	337	1067
7	Cook St.	s/o Frank Sinatra Dr.	GC & RN / R&E	71.6	109	346	1094
8	Cook St.	n/o Country Club Dr.	SRC /GC & RN (Commercial)	72.0	121	384	1214
9	Cook St.	s/o Country Club Dr.	GC & RN / R&E	72.2	127	402	1272
10	Cook St.	s/o Hovley Ln.	Employment	72.8	122	387	1224
11	El Dorado Dr.	n/o Country Club Dr.	GC & RN	64.9	RW	RW	198
12	El Dorado Dr.	s/o Country Club Dr.	GC & RN	65.7	RW	75	236
13	Tamarisk Row Dr.	n/o Country Club Dr.	GC & RN	71.2	40	126	400
14	Oasis Club Dr.	s/o Country Club Dr.	GC & RN	67.5	RW	114	361
15	Country Club Dr.	w/o Monterey Av.	NC / SRC	72.6	100	316	998
16	Country Club Dr.	e/o Monterey Av.	NC / SRC	71.2	100	318	1005
17	Country Club Dr.	e/o Portola Av.	Employment / GC & RN	71.8	96	303	958
18	Country Club Dr.	e/o Desert Willow Dr.	SRC	71.8	97	306	967
19	Country Club Dr.	e/o Cook St.	GC & RN	71.0	95	301	951
20	Country Club Dr.	e/o El Dorado Dr.	GC & RN	71.4	88	280	885
21	Country Club Dr.	e/o Oasis Club Dr.	GC & RN (Residential)	71.9	99	314	992
22	Hovley Ln.	e/o Cook St.	Employment	69.5	RW	181	574

TABLE 7-1: EXISTING WITHOUT PROJECT CONDITIONS NOISE CONTOURS

² The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the nearest adjacent land use.



			Adjacent	CNEL at Nearest	Distance to Contour from Centerline (Feet)		
ID	Road	Segment	Planned (Existing) Land Use ¹	Adjacent Land Use (dBA) ²	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Monterey Av.	s/o Country Club Dr.	SRC	74.2	201	637	2013
2	Portola Av.	n/o Country Club Dr.	GC & RN / Employment	71.2	84	266	843
3	Portola Av.	s/o Country Club Dr.	GC & RN / Nbrhd (Public)	71.5	90	285	902
4	Cook St.	n/o I-10 WB Ramps	Employment (Vacant)	66.7	RW	112	353
5	Cook St.	s/o I-10 EB Ramps	Nbrhd / Employment	73.0	150	476	1505
6	Cook St.	s/o Gerald Ford Dr.	NC / Institutional	71.8	114	361	1143
7	Cook St.	s/o Frank Sinatra Dr.	GC & RN / R&E	71.9	118	373	1179
8	Cook St.	n/o Country Club Dr.	SRC /GC & RN (Commercial)	72.2	126	400	1264
9	Cook St.	s/o Country Club Dr.	GC & RN / R&E	72.4	131	414	1308
10	Cook St.	s/o Hovley Ln.	Employment	72.9	125	395	1250
11	El Dorado Dr.	n/o Country Club Dr.	GC & RN	65.2	RW	67	210
12	El Dorado Dr.	s/o Country Club Dr.	GC & RN	65.9	RW	79	249
13	Tamarisk Row Dr.	n/o Country Club Dr.	GC & RN	71.4	41	131	415
14	Oasis Club Dr.	s/o Country Club Dr.	GC & RN	67.7	RW	119	378
15	Country Club Dr.	w/o Monterey Av.	NC / SRC	72.7	101	320	1013
16	Country Club Dr.	e/o Monterey Av.	NC / SRC	71.3	103	326	1031
17	Country Club Dr.	e/o Portola Av.	Employment / GC & RN	72.0	101	319	1009
18	Country Club Dr.	e/o Desert Willow Dr.	SRC	72.1	105	331	1048
19	Country Club Dr.	e/o Cook St.	GC & RN	71.3	103	325	1027
20	Country Club Dr.	e/o El Dorado Dr.	GC & RN	71.6	93	295	932
21	Country Club Dr.	e/o Oasis Club Dr.	GC & RN (Residential)	72.0	102	322	1018
22	Hovley Ln.	e/o Cook St.	Employment	69.6	RW	184	583

TABLE 7-2: EXISTING WITH PROJECT CONDITIONS NOISE CONTOURS

² The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the nearest adjacent land use.



			Adjacent	CNEL at Nearest	Distance to Contour from Centerline (Feet)		
ID	Road	Segment	Planned (Existing) Land Use ¹	Adjacent Land Use (dBA) ²	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Monterey Av.	s/o Country Club Dr.	SRC	74.4	210	665	2104
2	Portola Av.	n/o Country Club Dr.	GC & RN / Employment	71.3	86	273	864
3	Portola Av.	s/o Country Club Dr.	GC & RN / Nbrhd (Public)	71.6	93	295	932
4	Cook St.	n/o I-10 WB Ramps	Employment (Vacant)	66.6	RW	110	348
5	Cook St.	s/o I-10 EB Ramps	Nbrhd / Employment	72.8	144	456	1442
6	Cook St.	s/o Gerald Ford Dr.	NC / Institutional	71.4	106	335	1058
7	Cook St.	s/o Frank Sinatra Dr.	GC & RN / R&E	71.5	108	340	1076
8	Cook St.	n/o Country Club Dr.	SRC /GC & RN (Commercial)	72.1	124	392	1241
9	Cook St.	s/o Country Club Dr.	GC & RN / R&E	72.4	133	422	1335
10	Cook St.	s/o Hovley Ln.	Employment	73.0	127	402	1271
11	El Dorado Dr.	n/o Country Club Dr.	GC & RN	64.8	RW	RW	193
12	El Dorado Dr.	s/o Country Club Dr.	GC & RN	65.8	RW	76	241
13	Tamarisk Row Dr.	n/o Country Club Dr.	GC & RN	71.4	41	130	410
14	Oasis Club Dr.	s/o Country Club Dr.	GC & RN	67.6	RW	116	367
15	Country Club Dr.	w/o Monterey Av.	NC / SRC	72.8	105	331	1046
16	Country Club Dr.	e/o Monterey Av.	NC / SRC	71.4	104	329	1040
17	Country Club Dr.	e/o Portola Av.	Employment / GC & RN	71.8	97	306	967
18	Country Club Dr.	e/o Desert Willow Dr.	SRC	71.8	96	303	958
19	Country Club Dr.	e/o Cook St.	GC & RN	70.9	93	295	933
20	Country Club Dr.	e/o El Dorado Dr.	GC & RN	71.4	89	281	889
21	Country Club Dr.	e/o Oasis Club Dr.	GC & RN (Residential)	72.1	103	325	1027
22	Hovley Ln.	e/o Cook St.	Employment	69.7	RW	190	600

TABLE 7-3: EA 2022 WITHOUT PROJECT CONDITIONS NOISE CONTOURS

² The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the nearest adjacent land use.



			Adjacent	CNEL at Nearest	Distance to Contour from Centerline (Feet)		
ID	Road	Segment	Planned (Existing) Land Use ¹	Adjacent Land Use (dBA) ²	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Monterey Av.	s/o Country Club Dr.	SRC	74.5	212	671	2121
2	Portola Av.	n/o Country Club Dr.	GC & RN / Employment	71.4	88	279	881
3	Portola Av.	s/o Country Club Dr.	GC & RN / Nbrhd (Public)	71.7	95	299	945
4	Cook St.	n/o I-10 WB Ramps	Employment (Vacant)	66.8	RW	114	362
5	Cook St.	s/o I-10 EB Ramps	Nbrhd / Employment	73.0	152	480	1518
6	Cook St.	s/o Gerald Ford Dr.	NC / Institutional	71.7	113	359	1134
7	Cook St.	s/o Frank Sinatra Dr.	GC & RN / R&E	71.8	116	367	1161
8	Cook St.	n/o Country Club Dr.	SRC /GC & RN (Commercial)	72.3	129	408	1290
9	Cook St.	s/o Country Club Dr.	GC & RN / R&E	72.6	137	433	1371
10	Cook St.	s/o Hovley Ln.	Employment	73.1	130	410	1297
11	El Dorado Dr.	n/o Country Club Dr.	GC & RN	65.1	RW	65	206
12	El Dorado Dr.	s/o Country Club Dr.	GC & RN	66.0	RW	80	253
13	Tamarisk Row Dr.	n/o Country Club Dr.	GC & RN	71.5	42	134	425
14	Oasis Club Dr.	s/o Country Club Dr.	GC & RN	67.8	RW	121	383
15	Country Club Dr.	w/o Monterey Av.	NC / SRC	72.9	106	335	1060
16	Country Club Dr.	e/o Monterey Av.	NC / SRC	71.5	107	337	1067
17	Country Club Dr.	e/o Portola Av.	Employment / GC & RN	72.0	102	322	1018
18	Country Club Dr.	e/o Desert Willow Dr.	SRC	72.1	104	329	1040
19	Country Club Dr.	e/o Cook St.	GC & RN	71.2	101	319	1009
20	Country Club Dr.	e/o El Dorado Dr.	GC & RN	71.7	94	296	936
21	Country Club Dr.	e/o Oasis Club Dr.	GC & RN (Residential)	72.2	105	333	1052
22	Hovley Ln.	e/o Cook St.	Employment	69.8	RW	193	610

TABLE 7-4: EA 2022 WITH PROJECT CONDITIONS NOISE CONTOURS

² The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the nearest adjacent land use.



			Adjacent	CNEL at Nearest	Distance to Contour from Centerline (Feet)		
ID	Road	Segment	Planned (Existing) Land Use ¹	Adjacent Land Use (dBA) ²	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Monterey Av.	s/o Country Club Dr.	SRC	74.5	216	682	2155
2	Portola Av.	n/o Country Club Dr.	GC & RN / Employment	71.6	92	291	919
3	Portola Av.	s/o Country Club Dr.	GC & RN / Nbrhd (Public)	71.8	96	304	962
4	Cook St.	n/o I-10 WB Ramps	Employment (Vacant)	69.0	RW	192	607
5	Cook St.	s/o I-10 EB Ramps	Nbrhd / Employment	73.1	157	496	1567
6	Cook St.	s/o Gerald Ford Dr.	NC / Institutional	71.9	119	377	1191
7	Cook St.	s/o Frank Sinatra Dr.	GC & RN / R&E	71.8	114	361	1143
8	Cook St.	n/o Country Club Dr.	SRC /GC & RN (Commercial)	72.3	130	412	1304
9	Cook St.	s/o Country Club Dr.	GC & RN / R&E	72.6	138	435	1375
10	Cook St.	s/o Hovley Ln.	Employment	73.1	131	416	1314
11	El Dorado Dr.	n/o Country Club Dr.	GC & RN	64.8	RW	RW	193
12	El Dorado Dr.	s/o Country Club Dr.	GC & RN	65.8	RW	76	241
13	Tamarisk Row Dr.	n/o Country Club Dr.	GC & RN	71.9	47	148	469
14	Oasis Club Dr.	s/o Country Club Dr.	GC & RN	67.6	RW	116	367
15	Country Club Dr.	w/o Monterey Av.	NC / SRC	72.9	107	338	1070
16	Country Club Dr.	e/o Monterey Av.	NC / SRC	71.4	105	332	1049
17	Country Club Dr.	e/o Portola Av.	Employment / GC & RN	71.8	97	307	971
18	Country Club Dr.	e/o Desert Willow Dr.	SRC	71.8	96	304	962
19	Country Club Dr.	e/o Cook St.	GC & RN	71.0	96	302	955
20	Country Club Dr.	e/o El Dorado Dr.	GC & RN	71.6	91	289	915
21	Country Club Dr.	e/o Oasis Club Dr.	GC & RN (Residential)	72.2	105	333	1052
22	Hovley Ln.	e/o Cook St.	Employment	72.0	102	322	1018

TABLE 7-5: EAC 2022 WITHOUT PROJECT CONDITIONS NOISE CONTOURS

² The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the nearest adjacent land use.



			Adjacent	CNEL at Nearest	Distance to Contour from Centerline (Feet)		
ID	Road	Segment	Planned (Existing) Land Use ¹	Adjacent Land Use (dBA) ²	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Monterey Av.	s/o Country Club Dr.	SRC	74.6	217	687	2172
2	Portola Av.	n/o Country Club Dr.	GC & RN / Employment	71.6	94	296	936
3	Portola Av.	s/o Country Club Dr.	GC & RN / Nbrhd (Public)	71.8	98	308	975
4	Cook St.	n/o I-10 WB Ramps	Employment (Vacant)	69.1	RW	196	621
5	Cook St.	s/o I-10 EB Ramps	Nbrhd / Employment	73.3	164	520	1643
6	Cook St.	s/o Gerald Ford Dr.	NC / Institutional	72.2	127	401	1267
7	Cook St.	s/o Frank Sinatra Dr.	GC & RN / R&E	72.1	123	388	1228
8	Cook St.	n/o Country Club Dr.	SRC /GC & RN (Commercial)	72.5	135	428	1353
9	Cook St.	s/o Country Club Dr.	GC & RN / R&E	72.7	141	446	1411
10	Cook St.	s/o Hovley Ln.	Employment	73.2	134	424	1340
11	El Dorado Dr.	n/o Country Club Dr.	GC & RN	65.1	RW	65	206
12	El Dorado Dr.	s/o Country Club Dr.	GC & RN	66.0	RW	80	253
13	Tamarisk Row Dr.	n/o Country Club Dr.	GC & RN	72.1	48	153	484
14	Oasis Club Dr.	s/o Country Club Dr.	GC & RN	67.8	RW	121	383
15	Country Club Dr.	w/o Monterey Av.	NC / SRC	72.9	108	343	1084
16	Country Club Dr.	e/o Monterey Av.	NC / SRC	71.5	108	340	1076
17	Country Club Dr.	e/o Portola Av.	Employment / GC & RN	72.0	102	323	1022
18	Country Club Dr.	e/o Desert Willow Dr.	SRC	72.1	104	330	1044
19	Country Club Dr.	e/o Cook St.	GC & RN	71.3	103	326	1031
20	Country Club Dr.	e/o El Dorado Dr.	GC & RN	71.8	96	304	962
21	Country Club Dr.	e/o Oasis Club Dr.	GC & RN (Residential)	72.3	108	341	1078
22	Hovley Ln.	e/o Cook St.	Employment	72.1	103	325	1028

TABLE 7-6: EAC 2022 WITH PROJECT CONDITIONS NOISE CONTOURS

² The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the nearest adjacent land use.



7.2 EXISTING CONDITIONS PROJECT TRAFFIC NOISE LEVEL CONTRIBUTIONS

An analysis of existing traffic noise levels plus traffic noise generated by the proposed Project has been included in this report. However, the analysis of existing traffic noise levels plus traffic noise generated by the proposed Project scenario will not actually occur since the Project would not be fully constructed and operational until Year 2022 cumulative conditions.

Table 7-1 shows the Existing without Project conditions CNEL noise levels. The Existing without Project exterior noise levels are expected to range from 64.9 to 74.2 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-2 shows the Existing with Project conditions will range from 65.2 to 74.2 dBA CNEL. Table 7-7 shows that the Project off-site traffic noise level increases will range from 0.0 to 0.4 dBA CNEL.



ID	Road	Segment	Adjacent Planned (Existing) Land Use ¹	CN La	Noise- Sensitive Land Use?		
				No Project	With Project	Project Addition	Use?
1	Monterey Av.	s/o Country Club Dr.	SRC	74.2	74.2	0.0	No
2	Portola Av.	n/o Country Club Dr.	GC & RN / Employment	71.1	71.2	0.1	Yes
3	Portola Av.	s/o Country Club Dr.	GC & RN / Nbrhd (Public)	71.4	71.5	0.1	Yes
4	Cook St.	n/o I-10 WB Ramps	Employment (Vacant)	66.5	66.7	0.2	No
5	Cook St.	s/o I-10 EB Ramps	Nbrhd / Employment	72.7	73.0	0.2	No
6	Cook St.	s/o Gerald Ford Dr.	NC / Institutional	71.5	71.8	0.3	No
7	Cook St.	s/o Frank Sinatra Dr.	GC & RN / R&E	71.6	71.9	0.3	Yes
8	Cook St.	n/o Country Club Dr.	SRC /GC & RN (Commercial)	72.0	72.2	0.2	Yes
9	Cook St.	s/o Country Club Dr.	GC & RN / R&E	72.2	72.4	0.1	Yes
10	Cook St.	s/o Hovley Ln.	Employment	72.8	72.9	0.1	No
11	El Dorado Dr.	n/o Country Club Dr.	GC & RN	64.9	65.2	0.3	Yes
12	El Dorado Dr.	s/o Country Club Dr.	GC & RN	65.7	65.9	0.2	Yes
13	Tamarisk Row Dr.	n/o Country Club Dr.	GC & RN	71.2	71.4	0.2	Yes
14	Oasis Club Dr.	s/o Country Club Dr.	GC & RN	67.5	67.7	0.2	Yes
15	Country Club Dr.	w/o Monterey Av.	NC / SRC	72.6	72.7	0.1	Yes
16	Country Club Dr.	e/o Monterey Av.	NC / SRC	71.2	71.3	0.1	Yes
17	Country Club Dr.	e/o Portola Av.	Employment / GC & RN	71.8	72.0	0.2	Yes
18	Country Club Dr.	e/o Desert Willow Dr.	SRC	71.8	72.1	0.4	No
19	Country Club Dr.	e/o Cook St.	GC & RN	71.0	71.3	0.3	Yes
20	Country Club Dr.	e/o El Dorado Dr.	GC & RN	71.4	71.6	0.2	Yes
21	Country Club Dr.	e/o Oasis Club Dr.	GC & RN (Residential)	71.9	72.0	0.1	Yes
22	Hovley Ln.	e/o Cook St.	Employment	69.5	69.6	0.1	Yes

TABLE 7-7: UNMITIGATED EXISTING WITH PROJECT TRAFFIC NOISE LEVEL INCREASES

¹ Source: City of Palm Desert General Plan Land Use Element (Figure 3.1).

² The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the nearest adjacent land use.



7.3 EA 2022 PROJECT TRAFFIC NOISE LEVEL CONTRIBUTIONS

Table 7-3 presents the Existing plus Ambient Growth (EA) without Project conditions CNEL noise levels. The EA without Project exterior noise levels are expected to range from 64.8 to 74.4 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-4 shows the EA with Project conditions will range from 65.1 to 75.1 dBA CNEL. Table 7-8 shows that the Project off-site traffic noise level increases will range from 0.0 to 0.4 dBA CNEL. Based on the significance criteria for off-site traffic noise presented in Table 4-2, land uses adjacent to the study area roadway segments would experience *less than significant* noise level impacts due to unmitigated Project-related traffic noise levels.

ID	Road	Segment		CNEL at Adjacent Land Use (dBA) ¹			Threshold Exceeded? ²
			No Project	With Project	Project Addition	Use?	
1	Monterey Av.	s/o Country Club Dr.	74.4	74.5	0.0	No	No
2	Portola Av.	n/o Country Club Dr.	71.3	71.4	0.1	Yes	No
3	Portola Av.	s/o Country Club Dr.	71.6	71.7	0.1	Yes	No
4	Cook St.	n/o I-10 WB Ramps	66.6	66.8	0.2	No	No
5	Cook St.	s/o I-10 EB Ramps	72.8	73.0	0.2	No	No
6	Cook St.	s/o Gerald Ford Dr.	71.4	71.7	0.3	No	No
7	Cook St.	s/o Frank Sinatra Dr.	71.5	71.8	0.3	Yes	No
8	Cook St.	n/o Country Club Dr.	72.1	72.3	0.2	Yes	No
9	Cook St.	s/o Country Club Dr.	72.4	72.6	0.1	Yes	No
10	Cook St.	s/o Hovley Ln.	73.0	73.1	0.1	No	No
11	El Dorado Dr.	n/o Country Club Dr.	64.8	65.1	0.3	Yes	No
12	El Dorado Dr.	s/o Country Club Dr.	65.8	66.0	0.2	Yes	No
13	Tamarisk Row Dr.	n/o Country Club Dr.	71.4	71.5	0.2	Yes	No
14	Oasis Club Dr.	s/o Country Club Dr.	67.6	67.8	0.2	Yes	No
15	Country Club Dr.	w/o Monterey Av.	72.8	72.9	0.1	Yes	No
16	Country Club Dr.	e/o Monterey Av.	71.4	71.5	0.1	Yes	No
17	Country Club Dr.	e/o Portola Av.	71.8	72.0	0.2	Yes	No
18	Country Club Dr.	e/o Desert Willow Dr.	71.8	72.1	0.4	No	No
19	Country Club Dr.	e/o Cook St.	70.9	71.2	0.3	Yes	No
20	Country Club Dr.	e/o El Dorado Dr.	71.4	71.7	0.2	Yes	No
21	Country Club Dr.	e/o Oasis Club Dr.	72.1	72.2	0.1	Yes	No
22	Hovley Ln.	e/o Cook St.	69.7	69.8	0.1	Yes	No

TABLE 7-8: UNMITIGATED EA WITH PROJECT TRAFFIC NOISE IMPACTS

¹ The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the nearest adjacent land use. ² Significance Criteria (Section 4).



7.4 EAC 2022 PROJECT TRAFFIC NOISE LEVEL CONTRIBUTIONS

Table 7-5 presents the Existing plus Ambient Growth plus Cumulative (EAC) without Project conditions CNEL noise levels. The EAC without Project exterior noise levels are expected to range from 64.8 to 74.5 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-6 shows the EAC with Project conditions will range from 65.1 to 74.6 dBA CNEL. Table 7-9 shows that the Project off-site traffic noise level increases will range from 0.0 to 0.4 dBA CNEL. Based on the significance criteria for off-site traffic noise presented in Table 4-2, land uses adjacent to the study area roadway segments would experience *less than significant* noise level impacts due to unmitigated Project-related traffic noise levels.

ID	Road	Segment	CNEL at Adjacent Land Use (dBA) ¹			Noise- Sensitive Land Use?	Threshold Exceeded? ²
			No Project	With Project	Project Addition	Use?	
1	Monterey Av.	s/o Country Club Dr.	74.5	74.6	0.0	No	No
2	Portola Av.	n/o Country Club Dr.	71.6	71.6	0.1	Yes	No
3	Portola Av.	s/o Country Club Dr.	71.8	71.8	0.1	Yes	No
4	Cook St.	n/o I-10 WB Ramps	69.0	69.1	0.1	No	No
5	Cook St.	s/o I-10 EB Ramps	73.1	73.3	0.2	No	No
6	Cook St.	s/o Gerald Ford Dr.	71.9	72.2	0.3	No	No
7	Cook St.	s/o Frank Sinatra Dr.	71.8	72.1	0.3	Yes	No
8	Cook St.	n/o Country Club Dr.	72.3	72.5	0.2	Yes	No
9	Cook St.	s/o Country Club Dr.	72.6	72.7	0.1	Yes	No
10	Cook St.	s/o Hovley Ln.	73.1	73.2	0.1	No	No
11	El Dorado Dr.	n/o Country Club Dr.	64.8	65.1	0.3	Yes	No
12	El Dorado Dr.	s/o Country Club Dr.	65.8	66.0	0.2	Yes	No
13	Tamarisk Row Dr.	n/o Country Club Dr.	71.9	72.1	0.1	Yes	No
14	Oasis Club Dr.	s/o Country Club Dr.	67.6	67.8	0.2	Yes	No
15	Country Club Dr.	w/o Monterey Av.	72.9	72.9	0.1	Yes	No
16	Country Club Dr.	e/o Monterey Av.	71.4	71.5	0.1	Yes	No
17	Country Club Dr.	e/o Portola Av.	71.8	72.0	0.2	Yes	No
18	Country Club Dr.	e/o Desert Willow Dr.	71.8	72.1	0.4	No	No
19	Country Club Dr.	e/o Cook St.	71.0	71.3	0.3	Yes	No
20	Country Club Dr.	e/o El Dorado Dr.	71.6	71.8	0.2	Yes	No
21	Country Club Dr.	e/o Oasis Club Dr.	72.2	72.3	0.1	Yes	No
22	Hovley Ln.	e/o Cook St.	72.0	72.1	0.0	Yes	No

TABLE 7-9: UNMITIGATED EAC WITH PROJECT TRAFFIC NOISE IMPACTS

¹ The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the nearest adjacent land use. ² Significance Criteria (Section 4).



7.5 EIR ALTERNATIVE OFF-SITE TRAFFIC NOISE LEVELS

As a part of the Environmental Impact Report for the Project, three land use alternatives were compared in terms of trip generation for the Project site, including: retail and multi-family housing, single-family detached housing, and hotel use. Based on the *Alternatives Trip Generation Summary* prepared by Urban Crossroads, Inc., all Project land use alternatives would generate fewer daily trips than those of the Project. Therefore, off-site traffic noise level increases related to the three land use alternatives are anticipated to be lower than those presented in this report for the proposed Project land use. Moreover, since Project off-site traffic noise level increases are shown in this report to result in *less than significant* noise impacts, the three land use alternatives, which would generate fewer daily trips, would therefore, also result in equivalent or lower off-site traffic noise level impacts.



8 SENSITIVE RECEIVER LOCATIONS

To assess the potential for long-term operational and short-term construction noise impacts, the following sensitive receiver locations, as shown on Exhibit 8-A, were identified as representative locations for analysis. Sensitive receivers are generally defined as locations where people reside or where the presence of unwanted sound could otherwise adversely affect the use of the land. Noise-sensitive land uses are generally considered to include schools, hospitals, single-family dwellings, mobile home parks, churches, libraries, and recreation areas.

Sensitive receiver locations in the Project study area include residential uses and non-noisesensitive receiver locations include hotel and commercial uses, as described below. Other sensitive land uses in the Project study area that are located at greater distances than those identified in this noise study will experience lower noise levels than those presented in this report due to the additional attenuation from distance and the shielding of intervening structures.

- R1: Located approximately 1,306 feet west of the Project site, R1 represents existing residential homes west of Portola Avenue. A 24-hour noise measurement was taken near this location, L1, to describe the existing ambient noise environment.
- R2: Location R2 represents the existing hotel and resort use located west of the Project site at roughly 10 feet. A 24-hour noise measurement was taken near this location, L2, to describe the existing ambient noise environment.
- R3: Location R3 represents the existing hotel and resort use south of the Project site at approximately 364 feet. A 24-hour noise measurement near this location, L6, is used to describe the existing ambient noise environment.
- R4: Location R4 represents the existing hotel and resort use located roughly 720 feet south of the Project site. A 24-hour noise measurement near this location, L7, is used to describe the existing ambient noise environment.
- R5: Located approximately 1,652 feet east of the Project site, R5 represents existing residential homes west of Cook Street. A 24-hour noise measurement was taken near this location, L4, to describe the existing ambient noise environment.
- R6: Location R6 represents the existing residential homes located north of the Project site at roughly 1,136 feet, east of Portola Avenue. A 24-hour noise measurement was taken near this location, L2, to describe the existing ambient noise environment.



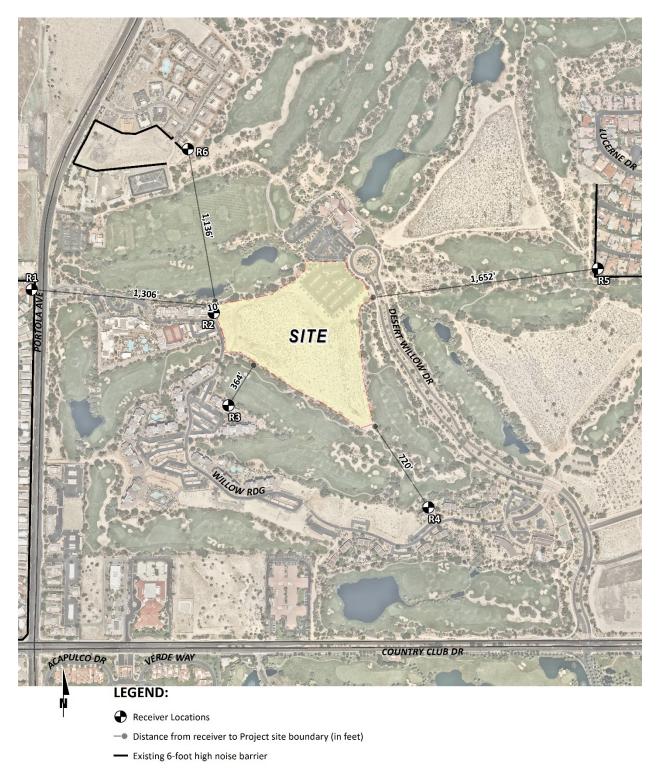


EXHIBIT 8-A: SENSITIVE RECEIVER LOCATIONS



9 OPERATIONAL NOISE IMPACTS

This section analyzes the potential stationary-source operational noise impacts at the nearby receiver locations, identified in Section 8, resulting from operation of the proposed Desert Wave Project. Exhibit 9-A identifies the representative receiver locations and noise source locations used to assess the operational noise levels.

9.1 **REFERENCE NOISE LEVELS**

To estimate the Project operational noise impacts, reference noise level measurements were collected from similar types of activities to represent the noise levels expected with the development of the proposed Project. This section provides a detailed description of the reference noise level measurements shown on Table 9-1 used to estimate the Project operational noise impacts. It is important to note that the following projected noise levels assume the worst-case noise environment with the surf lagoon/wave machine activities, outdoor pool/spa activities, parking lot vehicle movements, outdoor game activities, and roof-top air conditioning units all operating simultaneously. These noise level impacts will likely vary throughout the day.

9.1.1 SURF LAGOON/WAVE MACHINE ACTIVITY

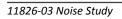
Reference noise level measurements were provided by Wave Garden based on measurements collected at the Wave Garden Demo Facility in Aizarnazabal, Spain in August 2017. The noise level measurements represent the typical noise levels generated by the wave machine including two waves at eight seconds each. The reference noise level used in this analysis is 83.6 dBA L_{eq} at a uniform reference distance of 50 feet. To present a conservative analysis, this noise study assumes the surf lagoon and wave machine would operate continuously and at a constant rate throughout both the daytime and nighttime hours, when in reality, activity is anticipated to vary based on demand within the operational hours of 6:00 a.m. to 12:00 a.m.

9.2.2 OUTDOOR POOL/SPA ACTIVITY

To determine the noise levels associated with outdoor hotel pool and spa activity, Urban Crossroads collected a reference noise level measurement on March 16^{th} , 2005 at the Westin Hotel in the City of Rancho Mirage. The measured reference noise level at 50 feet is 57.8 dBA L_{eq} . The outdoor pool/spa activity noise levels include a waterfall, people talking, and children and adults swimming and playing in a pool.

9.2.3 PARKING LOT VEHICLE MOVEMENTS (AUTOS)

To determine the noise levels associated with parking lot vehicle movements, Urban Crossroads collected a reference noise level measurement over a 24-hour period on May 17^{th} , 2017 at the parking lot for the Staybridge Suites in the City of Lake Forest. The peak hour of activity over the 24-hour noise level measurement period is used as the reference noise level for parking lot vehicle movements for the purpose of this analysis. The measured reference noise level at 50 feet from parking lot vehicle movements was measured at 50.0 dBA L_{eq}. The parking lot noise levels are mainly due to cars pulling in and out of spaces and people talking.





9.1.4 OUTDOOR GAME ACTIVITIES

To represent the potential noise level impacts associated with the Project's outdoor game field activities, a reference noise level measurement was collected on Wednesday, October 8th, 2014 at the Founders Park in the unincorporated community of Ladera Ranch in the County of Orange. The reference noise levels collected at the Founders Park are expected to overestimate the noise level activities within the outdoor fields and game areas at the Project site, since the reference noise level measurement includes parents speaking on cell phones, kids playing, and background youth soccer games, with coaches shouting instructions and people cheering and clapping. Using the uniform reference distance of 50 feet, the reference playground activity noise level is 43.4 dBA L_{eq}.

9.1.5 ROOF-TOP AIR CONDITIONING UNITS

To assess the impacts created by the roof-top air conditioning units at the Project buildings, reference noise levels measurements were taken over a four-day total duration at the Santee Walmart on July 27^{th} , 2015. Located at 170 Town Center Parkway in the City of Santee, the noise level measurements describe mechanical roof-top air conditioning units on the roof of an existing Walmart store, in addition to background noise levels from additional roof-top units. The reference noise level represents Lennox SCA120 series 10-ton model packaged air conditioning units. At 5 feet from the closest roof-top air conditioning unit, the highest exterior noise level from all four days of the measurement period was measured at 77.2 dBA L_{eq}. Using the uniform reference noise level measurement reflect peak summer cooling requirements with measured temperatures approaching 96 degrees Fahrenheit (°F) with average daytime temperatures of 82°F.

9.1.6 SPECIAL EVENTS: OUTDOOR EVENT ACTIVITY

To assess the noise impacts during outdoor special event activities, such as live or amplified music, reference noise levels measurements were taken at a live, amplified music concert and community event on September 19th, 2013. Located at the entrance of Clubhouse 2 of the Gate 12 Outdoor Event Space in the City of Laguna Woods, the noise level measurements describe a community concert including a stage, sound amplifying equipment (e.g. speakers), and unamplified crowd noise. At approximately 5 feet from the stage, the exterior noise levels were measured at 86.8 dBA L_{eq}. This equates to a reference noise level of 66.8 dBA L_{eq} at 50 feet from the noise source.



Noise Source	Duration	Ref. Noise Distance		Hourly Activity (Mins.) ⁷		Reference Noise Level (dBA L _{eq})		Sound Power
Noise Source	(hh:mm:ss)	(Feet)	Height (Feet)	Daytime	Nighttime	@ Ref. Dist.	@ 50 Feet	Level (dBA) ⁸
Typical Operational Activities								
Surf Lagoon/Wave Machine ¹	00:00:16	160'	6'	60	60	73.5	83.6	115.3
Outdoor Pool/Spa Activity ²	00:10:00	5'	4'	60	60	77.8	57.8	89.5
Parking Lot Vehicle Movements ³	01:00:00	20'	5'	60	60	58.0	50.0	84.6
Outdoor Game Activities ⁴	00:15:00	5'	5'	60	60	63.4	43.4	78.0
Roof-Top Air Conditioning Units ⁵	96:00:00	5'	5'	39	28	77.2	57.2	88.9
Additional Special Event Activities								
Outdoor Event Activity ⁶	00:01:20	5'	8'	60	60	86.8	66.8	101.4

TABLE 9-1: REFERENCE NOISE LEVEL MEASUREMENTS

¹ Source: Wave Garden Cove Noise Measurements, 8/11/2017.

 $^{\rm 2}$ As measured by Urban Crossroads, Inc. on 3/16/2005 at the Westin Hotel in the City of Rancho Mirage.

³ As measured by Urban Crossroads, Inc. on 5/17/2017 at the Staybridge Suites in the City of Lake Forest.

⁴ As measured by Urban Crossroads, Inc. on 10/8/2014 by Urban Crossroads, Inc. at the Founder's Park in the unincorporated community of Ladera Ranch in the County of Orange.

⁵ As measured by Urban Crossroads, Inc. on 7/27/2015 at the Santee Walmart located at 170 Town Center Parkway.

⁶ As measured by Urban Crossroads, Inc. on 9/19/2013 at an outdoor live amplified music event at the Gate 12 Outdoor Event Space in the City of Laguna Woods.

⁷ Anticipated minutes of activity within a given hour based on the reference noise source activity.

⁸ Calculated using the CadnaA noise model at the reference distance to the noise source.

9.2 CADNAA NOISE PREDICTION MODEL

To fully describe the exterior operational noise levels from the Project, Urban Crossroads, Inc. developed a noise prediction model using the CadnaA (Computer Aided Noise Abatement) computer program. CadnaA can analyze the noise level of multiple types of noise sources and calculates the noise levels at any location using the spatially accurate Project site plan and includes the effects of topography, buildings, and multiple barriers in its calculations using the latest standards to predict outdoor noise impacts.

Using the spatially accurate Project site plan and flown aerial imagery from Nearmap, a CadnaA noise prediction model of the Project study area was developed. The noise model provides a three-dimensional representation of the Project study area using the following key data inputs:

- Ground absorption;
- Multiple reflections at buildings and barriers;
- Reference noise level sources by type (area, point, etc.) and noise source height;
- Multiple noise receiver locations and heights;
- Topography and earthen berms;
- Barrier and building heights.



Based on these data inputs, the CadnaA noise prediction model will calculate the distance from each noise source to the noise receiver locations, using the ground absorption, distance, and barrier/building attenuation inputs to provide a summary of noise level calculations at each receiver location and the partial noise level contributions by noise source. The reference sound power level (PWL) for the highest noise source expected at the Project site was input into the CadnaA noise prediction model. While sound pressure levels (e.g. L_{eq}) quantify in decibels the intensity of given sound sources at a reference distance, sound power levels (PWL) are connected to the sound source and are independent of distance. Sound pressure levels vary substantially with distance from the source, and also diminish as a result of intervening obstacles and barriers, air absorption, wind, and other factors. Sound power is the acoustical energy emitted by the sound source and is an absolute value that is not affected by the environment.

The operational noise level calculations provided in this noise study account for the distance attenuation provided due to geometric spreading, when sound from a localized stationary source (i.e., a point source) propagates uniformly outward in a spherical pattern. Soft site conditions are used in the operational noise analysis which result in noise levels that attenuate (or decrease) at a rate of 7.5 dBA for each doubling of distance from a point source, based on existing conditions in the Project study area. Appendix 9.1 includes the CadnaA noise model inputs and calculation data.

9.3 TYPICAL PROJECT OPERATIONAL NOISE LEVELS

As indicated on Table 9-2, the typical Project-only operational noise levels will range from 30.1 to 49.2 dBA L_{eq} at the receiver locations. Table 9-2 also shows the operational noise levels associated with Desert Wave Project will satisfy the City of Palm Desert base exterior noise level standards at all nearby receiver locations.

		Noise Level	Threshold Exceeded? ³					
Receiver	Land	at Receiver	Resid	ential	Commercial			
Location ¹	Use	Locations (dBA L _{eq}) ²	Daytime (55 dBA L _{eq})	Nighttime (45 dBA L _{eq})	Daytime (65 dBA L _{eq})	Nighttime (55 dBA L _{eq})		
R1	Residential	30.1	No	No	-	-		
R2	Commercial	49.2	-	-	No	No		
R3	Commercial	46.3	-	-	No	No		
R4	Commercial	42.9	-	-	No	No		
R5	Residential	38.5	No	No	-	-		
R6	Residential	36.8	No	No	-	-		

 TABLE 9-2:
 UNMITIGATED TYPICAL PROJECT-ONLY OPERATIONAL NOISE LEVELS

¹ See Exhibit 9-A for the receiver and noise source locations.

² Estimated Project operational noise levels with typical activities (Appendix 9.1).

³ Do the estimated Project operational noise levels meet the operational noise level standards?

"Daytime" = 7:00 a.m. to 10:00 p.m.; "Nighttime" = 10:00 p.m. to 7:00 a.m.



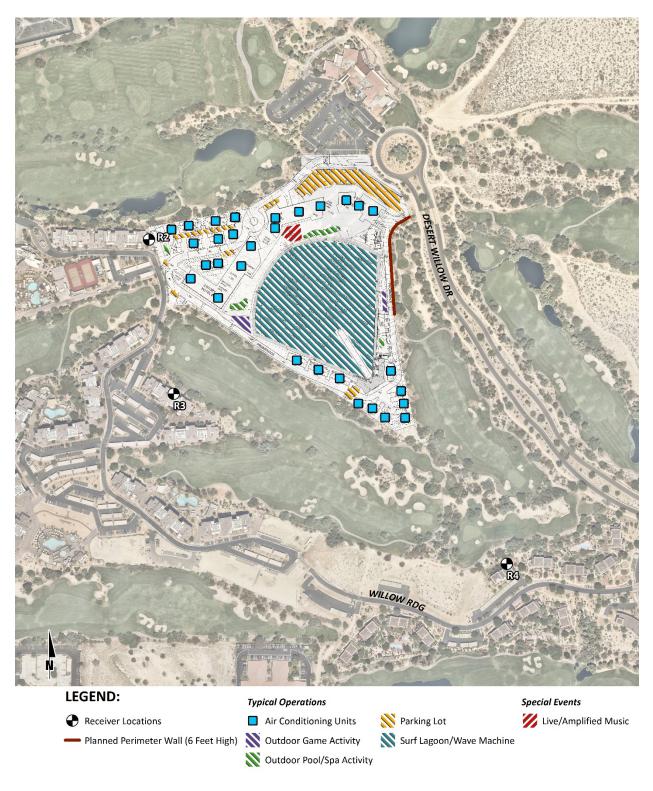


EXHIBIT 9-A: OPERATIONAL NOISE SOURCE LOCATIONS



9.4 Typical Project Operational Noise Level Contributions

To describe the Project operational noise level contributions, the Project operational noise levels are combined with the existing ambient noise levels measurements for the nearby receiver locations potentially impacted by Project operational noise sources. Since the units used to measure noise, decibels (dB), are logarithmic units, the Project-operational and existing ambient noise levels cannot be combined using standard arithmetic equations. (4) Instead, they must be logarithmically added using the following base equation:

 $SPL_{Total} = 10log_{10}[10^{SPL1/10} + 10^{SPL2/10} + \dots 10^{SPLn/10}]$

Where "SPL1," "SPL2," etc. are equal to the sound pressure levels being combined, or in this case, the Project-operational and existing ambient noise levels. The difference between the combined Project and ambient noise levels describe the Project noise level contributions to the existing ambient noise environment. Noise levels that would be experienced at receiver locations when Project-source noise is added to the daytime and nighttime ambient conditions are presented on Tables 9-3 and 9-4, respectively.

As indicated on Tables 9-3 and 9-4, the Project will generate unmitigated daytime operational noise level increase of up to 3.0 dBA L_{eq} and a nighttime operational noise level increases of up to 4.8 dBA L_{eq} at the nearby receiver locations, which will satisfy the significance criteria presented in Table 4-2. Since the Project-related operational noise level contributions will satisfy the operational noise level increase significance criteria presented in Table 4-2 under long-range typical operational conditions, the increases at the receiver locations will be *less than significant*.

vor	Land	Total Project	Moos	Reference	Combined	Project	Threshold

TABLE 9-3: UNMITIGATED TYPICAL PROJECT DAYTIME NOISE LEVEL CONTRIBUTIONS

Receiver Location ¹	Land Use	Total Project Operational Noise Level ²	Meas. Location ³	Reference Ambient Noise Levels ⁴	Combined Project and Ambient ⁵	Project Increase ⁶	Threshold ⁷	Threshold Exceeded? ⁷
R1	Residential	30.1	L1	69.4	69.4	0.0	1.5	No
R2	Commercial	49.2	L2	49.3	52.3	3.0	5.0	No
R3	Commercial	46.3	L6	52.3	53.3	1.0	5.0	No
R4	Commercial	42.9	L5	49.0	50.0	1.0	5.0	No
R5	Residential	38.5	L4	49.7	50.0	0.3	5.0	No
R6	Residential	36.8	L2	49.3	49.5	0.2	5.0	No

¹ See Exhibit 9-A for the sensitive receiver locations.

² Total Project operational noise levels as shown on Table 9-3.

³ Reference noise level measurement locations as shown on Exhibit 5-A.

⁴ Observed daytime ambient noise levels as shown on Table 5-1.

⁵ Represents the combined ambient conditions plus the Project activities.

⁶ The noise level increase expected with the addition of the proposed Project activities.

⁷ Significance Criteria as defined in Section 4.

TABLE 9-4: UNMITIGATED TYPICAL PROJECT NIGHTTIME NOISE LEVEL CONTRIBUTIONS

Receiver Location ¹	Land Use	Total Project Operational Noise Level ²	Meas. Location ³	Reference Ambient Noise Levels⁴	Combined Project and Ambient ⁵	Project Increase ⁶	Threshold ⁷	Threshold Exceeded? ⁷
R1	Residential	30.1	L1	63.4	63.4	0.0	3.0	No
R2	Commercial	49.2	L2	46.1	50.9	4.8	5.0	No
R3	Commercial	46.3	L6	47.3	49.8	2.5	5.0	No
R4	Commercial	42.9	L5	48.3	49.4	1.1	5.0	No
R5	Residential	38.5	L4	48.2	48.6	0.4	5.0	No
R6	Residential	36.8	L2	46.1	46.6	0.5	5.0	No

¹ See Exhibit 9-A for the sensitive receiver locations.

² Total Project operational noise levels as shown on Table 9-3.

³ Reference noise level measurement locations as shown on Exhibit 5-A.

⁴ Observed nighttime ambient noise levels as shown on Table 5-1.

⁵ Represents the combined ambient conditions plus the Project activities.

⁶ The noise level increase expected with the addition of the proposed Project activities.

⁷ Significance Criteria as defined in Section 4.



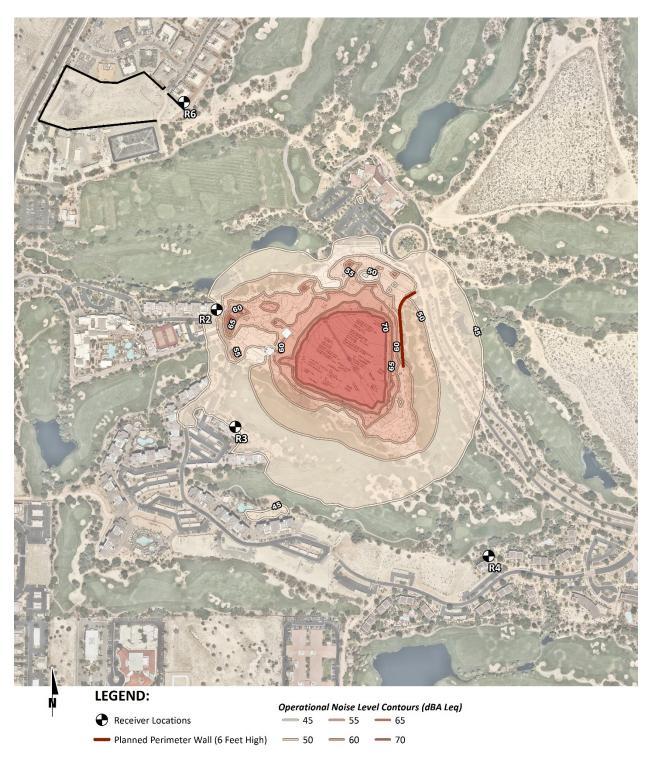


EXHIBIT 9-B: UNMITIGATED TYPICAL PROJECT OPERATIONAL NOISE LEVEL CONTOURS



9.5 SPECIAL EVENT PROJECT OPERATIONAL NOISE COMPLIANCE

Project short-term special event operational noise levels are analyzed for compliance with City of Palm Desert Municipal Code base exterior noise level limits. Special event activities within the Project site are anticipated to include live and/or amplified music, and as such, this special event condition analysis includes all previously analyzed typical operational noise sources, with the addition of live and/or amplified music operating simultaneously. The special event condition operational noise analysis shows that the unmitigated Project-related stationary-source noise levels at all receiver locations will range from 30.1 to 49.2 dBA L_{eq}, as shown on Table 9-5, and will satisfy the City of Palm Desert base exterior noise level standards.

 TABLE 9-5: UNMITIGATED SPECIAL EVENT PROJECT-ONLY OPERATIONAL NOISE LEVELS

	Noise Lev		Threshold Exceeded? ³					
Receiver	Land	at Receiver	Resid	ential	Commercial			
Location ¹ Use		Locations (dBA L _{eq}) ²	Daytime (55 dBA L _{eq})	Nighttime (45 dBA L _{eq})	Daytime (65 dBA L _{eq})	Nighttime (55 dBA L _{eq})		
R1	Residential	30.1	No	No	-	-		
R2	Commercial	49.2	-	-	No	No		
R3	Commercial	46.5	-	-	No	No		
R4	Commercial	43.2	-	-	No	No		
R5	Residential	38.7	No	No	-	-		
R6	Residential	36.9	No	No	-	-		

¹ See Exhibit 9-A for the receiver and noise source locations.

² Estimated Project operational noise levels with special event activities (Appendix 9.1).

³ Do the estimated Project operational noise levels meet the operational noise level standards?

"Daytime" = 7:00 a.m. to 10:00 p.m.; "Nighttime" = 10:00 p.m. to 7:00 a.m.

Off-site parking is also proposed as part of Project special event activities, however, this analysis focuses on the worst-case, short-term on-site Project operational activities since the live and/or amplified music represents a new noise source in the Project study area. It is our understanding that off-site parking would be provided in an existing parking lot area on the northwest corner of Cook Street and Country Club Drive where an existing commercial shopping center parking lot and vacant land exist today, and as such, off-site parking lot vehicle movements are not anticipated to produce noise levels greater than those associated with existing ambient traffic volumes and commercial parking and stationary-source activities under existing conditions.



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10 CONSTRUCTION IMPACTS

This section analyzes potential impacts resulting from the short-term construction activities associated with the development of the Project. Exhibit 10-A shows the construction noise source locations in relation to the nearby sensitive receiver locations previously described in Section 8.

10.1 CONSTRUCTION NOISE LEVELS

Noise generated by the Project construction equipment will include a combination of trucks, power tools, concrete mixers, and portable generators that when combined can reach high levels. The number and mix of construction equipment is expected to occur in the following stages, based on similar projects in the City of Palm Desert:

- Site Preparation
- Grading
- Building Construction
- Architectural Coating
- Paving

This construction noise analysis was prepared using reference noise level measurements taken by Urban Crossroads, Inc. to describe the typical construction activity noise levels for each stage of Project construction. The construction reference noise level measurements represent a list of typical construction activity noise levels. Noise levels generated by heavy construction equipment can range from approximately 68 dBA to more than 80 dBA when measured at 50 feet. However, these noise levels diminish with distance from the construction site at a rate of 6 dBA per doubling of distance. For example, a noise level of 80 dBA measured at 50 feet from the noise source to the receiver would be reduced to 74 dBA at 100 feet from the source to the receiver, and would be further reduced to 68 dBA at 200 feet from the source to the receiver. The construction stages and equipment are based on CalEEMod input data provided by Terran Nova Planning & Research, Inc. (21)

10.2 CONSTRUCTION REFERENCE NOISE LEVELS

To describe the Project construction noise levels, measurements were collected for similar activities at several construction sites. Table 10-1 provides a summary of the construction reference noise level measurements. Since the reference noise levels were collected at varying distances of 30 feet and 50 feet, all construction noise level measurements presented on Table 10-1 have been adjusted for consistency to describe a uniform reference distance of 50 feet.





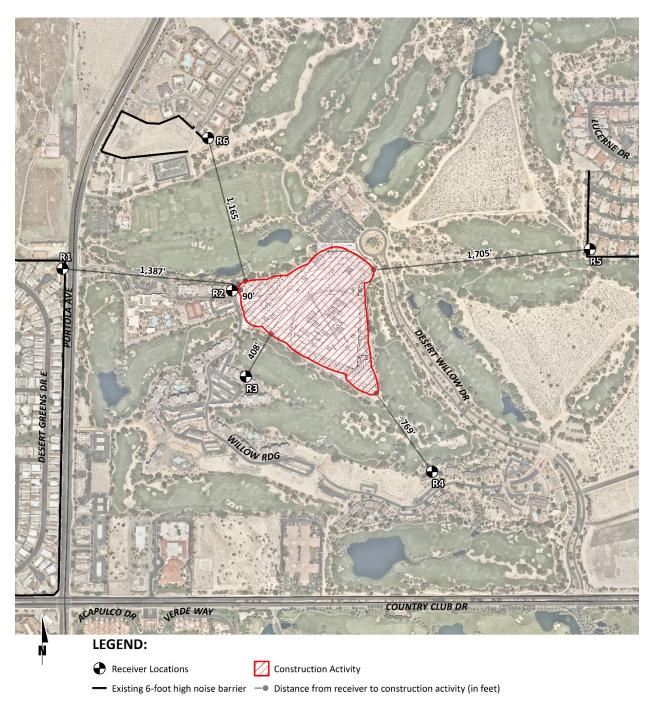


EXHIBIT 10-A: CONSTRUCTION NOISE SOURCE LOCATIONS



ID	Noise Source	Duration (h:mm:ss)	Reference Distance From Source (Feet)	Reference Noise Levels @ Reference Distance (dBA L _{eq})	Reference Noise Levels @ 50 Feet (dBA L _{eq}) ⁵
1	Truck Pass-Bys & Dozer Activity ¹	0:01:15	30'	63.6	59.2
2	Dozer Activity ¹	0:01:00	30'	68.6	64.2
3	Construction Vehicle Maintenance Activities ²	0:01:00	30'	71.9	67.5
4	Foundation Trenching ²	0:01:01	30'	72.6	68.2
5	Rough Grading Activities ²	0:05:00	30'	77.9	73.5
6	Framing ³	0:02:00	30'	66.7	62.3
7	Concrete Mixer Truck Movements ⁴	0:01:00	50'	71.2	71.2
8	Concrete Paver Activities ⁴	0:01:00	30'	70.0	65.6
9	Concrete Mixer Pour & Paving Activities ⁴	0:01:00	30'	70.3	65.9
10	Concrete Mixer Backup Alarms & Air Brakes ⁴	0:00:20	50'	71.6	71.6
11	Concrete Mixer Pour Activities ⁴	1:00:00	50'	67.7	67.7

TABLE 10-1: CONSTRUCTION REFERENCE NOISE LEVELS

¹As measured by Urban Crossroads, Inc. on 10/14/15 at a business park construction site located at the northwest corner of Barranca Parkway and Alton Parkway in the City of Irvine.

² As measured by Urban Crossroads, Inc. on 10/20/15 at a construction site located in Rancho Mission Viejo.

³As measured by Urban Crossroads, Inc. on 10/20/15 at a residential construction site located in Rancho Mission Viejo.

⁴ Reference noise level measurements were collected from a nighttime concrete pour at an industrial construction site, located at 27334 San Bernardino Avenue in the City of Redlands, between 1:00 a.m. to 2:00 a.m. on 7/1/15.

⁵Reference noise levels are calculated at 50 feet using a drop off rate of 6 dBA per doubling of distance (point source).

10.3 CONSTRUCTION NOISE ANALYSIS

Using the reference construction equipment noise levels, calculations of the Project construction noise level impacts at the nearby sensitive receiver locations were completed. Tables 10-2 to 10-6 present the short-term construction noise levels for each stage of construction. Table 10-7 provides a summary of the construction noise levels by stage at the nearby noise-sensitive receiver locations. Based on the stages of construction, the noise impacts associated with the proposed Project are expected to create temporarily high noise levels at the nearby receiver locations. To assess the worst-case construction noise levels, this analysis shows the highest noise impacts when the equipment with the highest reference noise level is operating at the closest point from the edge of primary construction activity to each receiver location.



Reference Construction Activity ¹	Reference Noise Level @ 50 Feet (dBA L _{eq})	
Truck Pass-Bys & Dozer Activity	59.2	
Dozer Activity	64.2	
Highest Reference Noise Level at 50 Feet (dBA L_{eq}):	64.2	

TABLE 10-2: SITE PREPARATION EQUIPMENT NOISE LEVELS

Receiver Location	Distance to Construction Activity (Feet) ²	Distance Attenuation (dBA L _{eq}) ³	Estimated Noise Barrier Attenuation (dBA L _{eq}) ⁴	Construction Noise Level (dBA L _{eq})
R1	1,387'	-28.9	-5.0	30.3
R2	90'	-5.1	0.0	59.1
R3	408'	-18.2	0.0	45.9
R4	769'	-23.7	0.0	40.4
R5	1,705'	-30.7	-5.0	28.5
R6	1,165'	-27.3	0.0	36.8

¹ Reference construction noise level measurements taken by Urban Crossroads, Inc.

 $^{\rm 2}$ Distance from the nearest point of construction activity to the nearest receiver.

³ Point (stationary) source drop off rate of 6.0 dBA per doubling of distance.



Reference Construction Activity ¹	Reference Noise Level @ 50 Feet (dBA L _{eq})
Truck Pass-Bys & Dozer Activity	59.2
Dozer Activity	64.2
Rough Grading Activities	73.5
Highest Reference Noise Level at 50 Feet (dBA L _{eq}):	73.5

TABLE 10-3: GRADING EQUIPMENT NOISE LEVELS

Receiver Location	Distance to Construction Activity (Feet) ²	Distance Attenuation (dBA L _{eq}) ³	Estimated Noise Barrier Attenuation (dBA L _{eq}) ⁴	Construction Noise Level (dBA L _{eq})
R1	1,387'	-28.9	-5.0	39.6
R2	90'	-5.1	0.0	68.4
R3	408'	-18.2	0.0	55.2
R4	769'	-23.7	0.0	49.7
R5	1,705'	-30.7	-5.0	37.8
R6	1,165'	-27.3	0.0	46.1

¹ Reference construction noise level measurements taken by Urban Crossroads, Inc.

² Distance from the nearest point of construction activity to the nearest receiver.

³ Point (stationary) source drop off rate of 6.0 dBA per doubling of distance.



Reference Construction Activity ¹	Reference Noise Level @ 50 Feet (dBA L _{eq})
Construction Vehicle Maintenance Activities	67.5
Foundation Trenching	68.2
Framing	62.3
Highest Reference Noise Level at 50 Feet (dBA L_{eq}):	68.2

TABLE 10-4: BUILDING CONSTRUCTION EQUIPMENT NOISE LEVELS

Receiver Location	Distance to Construction Activity (Feet) ²	Distance Attenuation (dBA L _{eq}) ³	Estimated Noise Barrier Attenuation (dBA L _{eq}) ⁴	Construction Noise Level (dBA L _{eq})
R1	1,387'	-28.9	-5.0	34.3
R2	90'	-5.1	0.0	63.1
R3	408'	-18.2	0.0	49.9
R4	769'	-23.7	0.0	44.4
R5	1,705'	-30.7	-5.0	32.5
R6	1,165'	-27.3	0.0	40.8

¹ Reference construction noise level measurements taken by Urban Crossroads, Inc.

² Distance from the nearest point of construction activity to the nearest receiver.

³ Point (stationary) source drop off rate of 6.0 dBA per doubling of distance.



Reference Construction Activity ¹	Reference Noise Level @ 50 Feet (dBA L _{eq})
Construction Vehicle Maintenance Activities	67.5
Framing	62.3
Highest Reference Noise Level at 50 Feet (dBA L_{eq}):	67.5

TABLE 10-5: ARCHITECTURAL COATING EQUIPMENT NOISE LEVELS

Receiver Location	Distance to Construction Activity (Feet) ²	Distance Attenuation (dBA L _{eq}) ³	Estimated Noise Barrier Attenuation (dBA L _{eq}) ⁴	Construction Noise Level (dBA L _{eq})
R1	1,387'	-28.9	-5.0	33.6
R2	90'	-5.1	0.0	62.4
R3	408'	-18.2	0.0	49.2
R4	769'	-23.7	0.0	43.7
R5	1,705'	-30.7	-5.0	31.8
R6	1,165'	-27.3	0.0	40.1

¹ Reference construction noise level measurements taken by Urban Crossroads, Inc.

 $^{\rm 2}$ Distance from the nearest point of construction activity to the nearest receiver.

³ Point (stationary) source drop off rate of 6.0 dBA per doubling of distance.

Reference Construction Activity ¹	Reference Noise Level @ 50 Feet (dBA L _{eq})
Concrete Mixer Truck Movements	71.2
Concrete Paver Activities	65.6
Concrete Mixer Pour & Paving Activities	65.9
Concrete Mixer Backup Alarms & Air Brakes	71.6
Concrete Mixer Pour Activities	67.7
Highest Reference Noise Level at 50 Feet (dBA L_{eq}):	71.6

TABLE 10-6: PAVING EQUIPMENT NOISE LEVELS

Receiver Location	Distance to Construction Activity (Feet) ²	Distance Attenuation (dBA L _{eq}) ³	Estimated Noise Barrier Attenuation (dBA L _{eq}) ⁴	Construction Noise Level (dBA L _{eq})
R1	1,387'	-28.9	-5.0	37.7
R2	90'	-5.1	0.0	66.5
R3	408'	-18.2	0.0	53.4
R4	769'	-23.7	0.0	47.9
R5	1,705'	-30.7	-5.0	35.9
R6	1,165'	-27.3	0.0	44.3

¹ Reference construction noise level measurements taken by Urban Crossroads, Inc.

 $^{\rm 2}$ Distance from the nearest point of construction activity to the nearest receiver.

³ Point (stationary) source drop off rate of 6.0 dBA per doubling of distance.

⁴ Estimated barrier attenuation from existing barriers/berms in the Project study area.

10.4 CONSTRUCTION NOISE THRESHOLDS OF SIGNIFICANCE

The construction noise analysis shows that the highest construction noise levels will occur when construction activities take place at the closest point from primary Project construction activity to each of the nearby receiver locations. As shown on Table 10-7, the unmitigated construction noise levels are expected to range from 28.5 to $68.4 \text{ dBA } L_{eq}$ at the nearby receiver locations.



	Construction Noise Level (dBA L _{eq})														
Receiver Location ¹	Site Preparation	Grading	Architectural Coating	Paving	Highest Activity Noise Levels ²										
R1	30.3	39.6	34.3	33.6	37.7	39.6									
R2	59.1	68.4	63.1	62.4	66.5	68.4									
R3	45.9	55.2	49.9	49.2	53.4	55.2									
R4	40.4	49.7	44.4	43.7	47.9	49.7									
R5	28.5	37.8	32.5	31.8	35.9	37.8									
R6	36.8	46.1	40.8	40.1	44.3	46.1									

TABLE 10-7: UNMITIGATED CONSTRUCTION EQUIPMENT NOISE LEVEL SUMMARY (DBA LEQ)

¹Noise receiver locations are shown on Exhibit 10-A.

² Estimated construction noise levels during peak operating conditions.

To evaluate whether the Project will generate potentially significant short-term noise levels at off-site sensitive receiver locations a construction-related the NIOSH noise level threshold of 85 dBA L_{eq} is used as acceptable thresholds for construction noise at the nearby sensitive receiver locations. Table 10-8 shows the highest construction noise levels at the potentially impacted receiver locations are expected to approach 68.4 dBA L_{eq} and will satisfy the NIOSH 85 dBA L_{eq} significance threshold during temporary Project construction activities. The noise impact due to unmitigated Project construction noise levels is, therefore, considered a *less than significant* impact at all nearby receiver locations.

TABLE 10-8: CONSTRUCTION EQUIPMENT NOISE LEVEL COMPLIANCE (DBA LEQ)

	Const	ruction Noise Levels (dB	SA L _{eq})
Receiver Location ¹	Highest Construction Noise Levels ²	Threshold ³	Threshold Exceeded? ⁴
R1	39.6	85	No
R2	68.4	85	No
R3	55.2	85	No
R4	49.7	85	No
R5	37.8	85	No
R6	46.1	85	No

¹Noise receiver locations are shown on Exhibit 10-A.

² Estimated construction noise levels during peak operating conditions, as shown on Table 10-7.

³ Construction noise thresholds as shown on Table 4-2.

⁴ Do the estimated Project construction noise levels satisfy the construction noise level threshold?



10.5 CONSTRUCTION VIBRATION IMPACTS

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

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

Ground-borne vibration levels resulting from construction activities occurring within the Project site were estimated by data published by the Federal Transit Administration. Construction activities that would have the potential to generate low levels of ground-borne vibration within the Project site include grading. Using the vibration source level of construction equipment provided on Table 6-5 and the construction vibration assessment methodology published by the FTA, it is possible to estimate the Project vibration impacts. Table 10-9 presents the expected Project related vibration levels at the nearby receiver locations.

At distances ranging from 90 to 1,705 feet from Project construction activities, construction vibration velocity levels are expected to approach 0.009 in/sec RMS and will remain below the County of Riverside threshold of 0.01 in/sec RMS at all receiver locations, as shown on Table 10-9. Therefore, the Project-related vibration impacts are considered *less than significant* during the construction activities at the Project site.

Further, the Project-related construction vibration levels do not represent levels capable of causing building damage to nearby residential homes. The FTA identifies construction vibration levels capable of building damage ranging from 0.12 to 0.5 in/sec PPV. (3) The peak Project-construction vibration levels shown on Table 10-9, approaching 0.013 in/sec PPV, are below the FTA vibration levels for building damage at the residential homes near the Project site. Moreover, the impacts at the site of the closest sensitive receivers are unlikely to be sustained during the entire construction period, but will occur rather only during the times that heavy construction equipment is operating adjacent to the Project site perimeter.



	Distance to		Receiver	PPV Levels	s (in/sec)²		RMS		
Receiver ¹	Const. Activity (Feet)	Small Bulldozer	Jack- hammer	Loaded Trucks	Large Bulldozer	Peak Vibration	Velocity Levels (in/sec) ³	Threshold	Threshold Exceeded? ⁴
R1	1,387'	0.000	0.000	0.000	0.000	0.000	0.000	0.01	No
R2	90'	0.000	0.005	0.011	0.013	0.013	0.009	0.01	No
R3	408'	0.000	0.001	0.001	0.001	0.001	0.001	0.01	No
R4	769'	0.000	0.000	0.000	0.001	0.001	0.000	0.01	No
R5	1,705'	0.000	0.000	0.000	0.000	0.000	0.000	0.01	No
R6	1,165'	0.000	0.000	0.000	0.000	0.000	0.000	0.01	No

TABLE 10-9: PROJECT CONSTRUCTION VIBRATION LEVELS

¹Receiver locations are shown on Exhibit 10-A.

² Based on the Vibration Source Levels of Construction Equipment included on Table 6-5.

³ Vibration levels in PPV are converted to RMS velocity using a 0.71 conversion factor identified in the Caltrans Transportation and Construction Vibration Guidance Manual, September 2013.

⁴ Does the vibration level exceed the maximum acceptable vibration threshold?



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11 REFERENCES

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- 20. **California Department of Transportation.** *Traffic Noise Attenuation as a Function of Ground and Vegetation Final Report.* June 1995. FHWA/CA/TL-95/23.

21. Terra Nova Planning & Research, Inc. Desert Wave CalEEMod Construction Data. January 2019.



12 CERTIFICATION

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

Bill Lawson, P.E., INCE Principal URBAN CROSSROADS, INC. 260 E. Baker Street, Suite 200 Costa Mesa, CA 92626 (949) 336-5979 blawson@urbanxroads.com



EDUCATION

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

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

PROFESSIONAL REGISTRATIONS

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

PROFESSIONAL AFFILIATIONS

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

PROFESSIONAL CERTIFICATIONS

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



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APPENDIX 3.1:

CITY OF PALM DESERT MUNICIPAL CODE



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Palm Desert Municipal Code											
Up		Pre <u>v</u> ious	<u>N</u> ext	<u>M</u> ain	<u>C</u> ollapse	<u>S</u> earch	<u>P</u> rint	No F <u>r</u> ames			
Title 9 PUBLIC PEACE, MORALS AND WELFARE											
Chapt	ter 9.24 NO	ISE CONTROL									

9.24.010 Purpose.

The city council finds and declares that:

A. Inadequately controlled noise presents a growing danger to the health and welfare of the residents of the city of Palm Desert; and

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

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

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

E. The necessity in the public interest for the provisions and prohibitions hereinafter contained and enacted, is declared as a matter of legislative determination and public policy, and it is further declared that the provisions and prohibitions hereinafter contained and enacted are in pursuance of and for the purpose of securing and promoting the public health, comfort, convenience, safety, welfare and prosperity and the peace and quiet of the residents of the city of Palm Desert. (Ord. 1170 § 1, 2008; Ord. 1169 § 1, 2008; Ord. 420, 1985)

9.24.020 Definitions

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

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

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

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

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

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

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

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

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

"Disturbing, excessive or offensive noise" means any sound or noise from any source in excess of the sound level or noise level set forth in Section 9.24.030.

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

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

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

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

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

"Peace officer" means a duly appointed officer of the City, as defined in California Penal Code, Chapter 4.5, Sections 830 et seq.

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

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

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

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

"Sound level meter" means an instrument meeting American National Standard Institute's Standard SL. 4-1974 for type 1 or type 2 sound level meters or an instrument and the associated recording and analyzing equipment which will provide equivalent data. (Ord. 1170 § 1, 2008; Ord. 1169 § 1, 2008; Ord. 842 § 1, 1997; Ord. 691 § 1, 1992; Ord. 420, 1985)

9.24.030 Sound level limits.

A. The following ten-minute average sound level limits, unless otherwise specifically indicated, shall apply as indicated in the following table as it relates to a fixed noise source or pool equipment pursuant to Section 25.16.110 or leaf blowers pursuant to Section 9.24.075.

Zone	Time	Applicable Ten- Minute Average Decibel Limit (A- Weighted)
Residential—All Zones	7 a.m. to 10 p.m.	55
	10 p.m. to 7 a.m.	45
Public Institutional	7 a.m. to 10 p.m.	65
	10 p.m. to 7 a.m.	55
Commercial	7 a.m. to 10 p.m.	65
	10 p.m. to 7 a.m.	55

Manufa 2/25/2019al	7 a.m. to 10 p.m.	70
Agricultural	10 p.m. to 7 a.m.	55

Chapter 9.24 NOISE CONTROL

B. If the measured ambient noise level exceeds the applicable limit as noted in the table in subsection A of this section, the allowable average sound level shall be the ambient noise level.

C. The sound level limit between two zoning districts shall be measured at the higher allowable district. (Ord. 1246 § 1, 2012; Ord. 1170 § 1, 2008; Ord. 1169 § 1, 2008; Ord. 1126A § 1, 2006; Ord. 1125 § 1, 2006; Ord. 691 § 2, 1992; Ord. 647 § 1, 1991; Ord. 420, 1985)

9.24.040 Prohibited noise generally.

A. It is unlawful for any person or property owner within the city of Palm Desert to make, cause, or continue to make or cause loud, excessive, impulsive or intrusive sound or noise that annoys or disturbs persons of ordinary sensibilities of a distance of greater than fifty feet from property line.

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

1. The level of the noise;

- 2. The level and intensity of the background (ambient) noise, if any;
- 3. The proximity of the noise to residential or commercial sleeping areas;
- 4. The nature, density and zoning of the area within which the noise emanates;
- 5. The density of inhabitation of the area within which the noise emanates;
- 6. The time of day and night the noise occurs;
- 7. The duration of the noise;
- 8. Whether the nature of the noise is natural or unnatural;
- 9. Whether the noise is constant, recurrent or intermittent;

10. Whether the noise is produced by a commercial or noncommercial activity. (Ord. 1246 § 2, 2012; Ord. 1170 § 1, 2008; Ord. 1169 § 1, 2008; Ord. 691 § 3, 1992; Ord. 420, 1985)

9.24.050 Disturbing, excessive, offensive noises—Declaration of certain acts constituting.

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

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

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

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

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

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

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

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

D. Enforcement of Prima Facie Violations. Any peace officer, as defined in California Penal Code, Chapter 4.5 Sections 830 et seq., and/or the city manager or designees who are authorized to enforce the provisions of this chapter and who encounters evidence of a prima facie violation of this section whereby the component(s) amplifying or transmitting the sound in such a manner as to disturb the peace, quiet, or comfort of any reasonable person of normal sensitivity in any area of the city shall be empowered to issue a citation and/or to confiscate and impound as evidence, any or all of the components amplifying or transmitting the sound. (Ord. 1170 § 1, 2008; Ord. 1169 § 1, 2008; Ord. 420, 1985)

9.24.060 Special provisions—Exemptions.

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

- A. School bands, school athletic and school entertainment events;
- B. Outdoor gatherings, public dances, shows and sporting and entertainment events; provided, the events are authorized by the city;
- C. Activities conducted in public parks and public playgrounds;
- D. Any mechanical device, apparatus or equipment used, related to or connected with emergency machinery, vehicle or work;

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

F. Mobile noise sounds associated with agricultural operations provided such operations do not take place between the hours of eight p.m. and seven a.m. on weekdays, including Saturday, or at any time on Sunday or a federal holiday;

- G. Mobile noise sources associated with agricultural pest control through pesticide application;
- H. Noise sources associated with property maintenance. Refer to Section 9.24.075, Property maintenance activities;

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

J. Carillon chimes between the hours of eight a.m. to seven p.m. http://www.qcode.us/codes/palmdesert/ K. 2/25/2019 urces associated with construction activities. Refer to 9.24.070, Consthapter & 2/24iNeS/8Er CONTROL 2008; Ord. 1169 § 1, 2008; Ord. 1076 § 1, 2005; Ord. 842 § 2, 1997; Ord. 754 § 1, 1994; Ord. 691 § 5, 1992; Ord. 539 § 1, 1988; Ord. 420, 1985)

9.24.065 Parking lot sweepers.

No person shall operate, or permit to be operated, a parking lot sweeper between the hours of ten p.m. to seven a.m. in or adjacent to any residential zone. Emergency work and/or unusual conditions may cause parking lot cleaning to be permitted with the consent of the city manager. (Ord. 1179 § 1, 2009; Ord. 1178 § 2, 2008; Ord. 691 § 6, 1992)

9.24.070 Construction activities.

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

October 1st through April 30th

Monday through Friday:Seven a.m. to five-thirty p.m.Saturday:Eight a.m. to five p.m.Sunday:NoneGovernment code holidays:None

May 1st through September 30th

Monday through Friday:	Five-thirty a.m. to seven p.m.
Saturday:	Eight a.m. to five p.m.
Sunday:	None
Government code holidays:	None

Emergency work and/or unusual conditions may cause work to be permitted with the consent of the city manager upon recommendation of the building director or the city engineer. (Ord. 1330 § 1, 2017; Ord. 1170 § 1, 2008; Ord. 1169 § 1, 2008; Ord. 752 § 1, 1994; Ord. 420, 1985)

9.24.075 Property maintenance activities.

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

October 1st through April 30th

Monday through Sunday:	Nine a.m. to five-thirty p.m.
Government code holidays:	Not allowed

May 1st through September 30th

Monday through Friday:	Eight a.m. to five-thirty p.m.								
Saturday and Sunday:	Nine a.m. to five-thirty p.m.								
Government code holidays:	Not allowed								

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

With the exception of blowers, all maintenance activities associated with golf courses and/or tennis courts can operate from five-thirty a.m. to seven p.m., seven days a week.

B. All municipal maintenance activities are not subject to subsection A.

C. No person shall willfully make or continue, or willfully cause to be made or continued, any noise from any portable powered blower at a level which exceeds seventy decibels (dBA) measured at the midpoint of a wall area twenty feet long and ten feet high and at the horizontal distance fifty feet away from the midpoint of the wall, or not more than seventy-six decibels (dBA) at a horizontal distance of twenty-four feet using a sound level meter.

D. No portable powered blower shall be operated in a manner which will permit dirt, dust, debris, leaves, grass clippings, cuttings, or trimmings from trees or shrubs to be blown or deposited onto neighboring property or public right-of-way. All waste shall be removed and disposed of in a sanitary manner by the use or property occupant. (Ord. 1243 § 3, 2012; Ord. 1170 § 1, 2008; Ord. 1169 § 1, 2008; Ord. 1076 § 1, 2005; Ord. 842 § 3, 1997)

9.24.080 Refuse and waste collection hours.

The city contractor for collection of refuse and waste shall be authorized to provide service as indicated in the following table:

- A. Commercial.
- 1. Collection during winter months shall be between six a.m. and six p.m.
- 2. Collection during summer months shall be between five-thirty a.m. and six p.m.
- B. Residential
- 1. Collection during winter months shall be between six-thirty a.m. and six p.m.
- 2. Collection during summer months shall be between five-thirty a.m. and six p.m. (Ord. 1170 § 1, 2008; Ord. 1169 § 1, 2008; Ord. 420, 1985)

It i2/25/2019 for any person to create any noise which causes the noise level at an **Chapter Bo24** its **Constitution** for the same is in use, to exceed the noise limits, as specified in subsection A of Section 9.24.030, prescribed for the assigned noise zone in which the school, hospital or church is located, or which noise level unreasonably disturbs or annoys patients in the hospital. (Ord. 1170 § 1, 2008; Ord. 1169 § 1, 2008; Ord. 420, 1985)

9.24.100 Air conditioning and refrigeration equipment.

The noise standards enumerated in Section 9.24.030 shall be increased by eight dBA when the alleged offensive noise source is an air conditioning or refrigeration system or associated equipment which was installed prior to the effective date of December 1, 1985. Installation of new equipment must be certified to be within the provisions of this chapter for night and day operation noise level. (Ord. 1246 § 3, 2012; Ord. 1170 § 1, 2008; Ord. 1169 § 1, 2008; Ord. 420, 1985)

9.24.110 Noise level measurement.

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

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

B. The location selected for measuring exterior noise levels between two zoning districts shall be at the boundary of the two districts. (Ord. 1170 § 1, 2008; Ord. 1169 § 1, 2008; Ord. 1126A § 2, 2006; Ord. 1125 § 2, 2006; Ord. 420, 1985)

9.24.120 Interference with authorized personnel is prohibited.

No person shall interfere with, oppose or resist any authorized person charged with enforcement of this chapter while such person is engaged in the performance of his or her duty. (Ord. 1170 § 1, 2008; Ord. 1169 § 1, 2008; Ord. 420, 1985)

9.24.140 Pre-existing noise source—Time extension.

Those commercial and/or industrial noise sources in existence prior to the date of adoption of the ordinance codified in this chapter, which noise sources are an integral part of a building, structure or similar fixed and permanent installation if in compliance with local zoning structures, shall be granted a three-year period from the date of adoption with which to comply with the provisions of the chapter. If, at the end of the three-year period, it can be shown that compliance with the provisions herein constitutes a hardship in terms of technical and economic feasibility, the time to comply may be extended on an annual basis until such time as compliance may be affected. (Ord. 1170 § 1, 2008; Ord. 1169 § 1, 2008; Ord. 420, 1985)

9.24.150 Violation—Infractions.

Any person violating any of the provisions of this chapter shall be deemed guilty of an infraction. (Ord. 1170 § 1, 2008; Ord. 1169 § 1, 2008; Ord. 420, 1985)

9.24.160 Continuing or subsequent violations—Misdemeanor.

Any person having been convicted of a violation of any provisions of this chapter who thereafter commits a violation of the same provisions of this chapter shall be guilty of a misdemeanor. (Ord. 1170 § 1, 2008; Ord. 1169 § 1, 2008; Ord. 420, 1985)

9.24.170 Severability.

If any provision of this chapter is held to be unconstitutional or otherwise invalid by any court of competent jurisdiction, the remaining provisions of this chapter shall not be invalidated. (Ord. 1170 § 1, 2008; Ord. 1169 § 1, 2008; Ord. 420, 1985)

View the mobile version.

APPENDIX 5.1:

STUDY AREA PHOTOS



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L1 East



L1 North



L1 South



L1 West



L2 East



L2 North





L2 West



L3 East



L3 North



L3 South



L3 West



L4 East



L4 North



L4 South



L4 West



L5 Northeast



L5 Southeast



L5 Southwest



L6 East



L6 North



L6 South



L6 West



L5 West

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APPENDIX 5.2:

NOISE LEVEL MEASUREMENT WORKSHEETS



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	JN: Analyst:				5'T9		21 22		Adj.	10.0	10.0	10.0	10.0	10.0	10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.0 0.2	5.0	10.0	10.0	r _{eq} (uDA)	Daytime	69 4		24-Hour CNEL (dBA)	 	71.7	
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el Measur	enue west of ential homes	A Readings (u		4. 6	59 		11	Hour Beginning	%87	55.0	56.0	56.0	0.22 65.0	70.0	74.0	76.0	73.0	0.67	73.0	73.0	73.0	75.0	75.0	74.0	74.0	70.0	68.0	66.0	60.0	L8%	76.0	73.9	68.0	71.0	69.7 EE 0	74.0	61.9
· Noise Lev	n Portola Av -family resid	Hourly L _{eq} dBA Rea		<u>9.8</u>			9 10		L5%	61.0	61.0	58.0	68.0 68.0	72.0	75.0	77.0	/6.0	75.0	74.0	74.0	74.0	76.0	76.0	75.0	74.0	71.0	70.0	68.0	64.0	%C1	77.0	75.1	70.0	73.0	71.3	58.0 75.0	65.3
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	o ←	48.1	68.0	40.7	60.09	56.0	49.0	47.0	45.0	44.0	42.0	41.0	40.0	48.1	10.0	58.1
	2	49.4	69.7	40.8	58.0	57.0	54.0	52.0	48.0	46.0	43.0	42.0	42.0	49.4	10.0	59.4
Night	m ▼	43.7	59.3	39.0	52.0	49.0	46.0	45.0	43.0	42.0	40.0	39.0	39.0	43.7	10.0	53.7
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Evening	20 21	45.1 47.6	64.7 72 5	39.0 36.7	57.0	53.0	48.0 51.0	47.0	42.0	40.0	39.0 39.0	39.0	39.0	45.1 47.6	5.0	50.1 57.6
	22	44.8	56.4	36.0	54.0	53.0	50.0	49.0	43.0	40.0	39.0	38.0	36.0	44.8	10.0	54.8
Night	23	42.0	54.7	36.0	48.0	47.0	46.0	45.0	43.0	40.0	38.0	36.0	36.0	42.0	10.0	52.0
Timeframe	Hour	L _{eq}	L _{max}	L _{min}	11%	12%	L5%	%87	125%	720%	%067	<i>195%</i>	%667		L _{eq} (dBA)	
	Min Max	48.4 59.2	73.7 87.2	38.7 44.5	54.0 70.0	51.0 67.0	49.0 64.0	49.0 62.0	45.0 54.0	42.0 50.0	39.0 47.0	39.0 46.0	39.0 45.0	24-Hour	Daytime	Nighttime
rgy A	Energy Average	56.5		Average:	67.0	64.8	61.3	59.0	50.6	46.6	43.7	43.1	42.3	9 7 1		L 1 0
	Min	45.1	64.7	36.7	57.0	53.0	48.0	47.0	42.0	40.0	39.0	39.0	38.0	0.4.0	1.00	0.10
Builing	Max	48.1	75.2	39.0	58.0	56.0	51.0	49.0	44.0	42.0	40.0	40.0	39.0	24-1	24-Hour CNEL (dBA)	(BA)
rgy A	Energy Average	47.1	Ave	Average:	57.3	54.7	49.3	47.7	43.0	41.3	39.3	39.3	38.7			
Night	Min Max	41.7 57.6	53.5 82.8	36.0 45.4	48.0 70.0	46.0 67.0	44.0 63.0	43.0 60.0	42.0 53.0	40.0 50.0	38.0 47.0	36.0 46.0	36.0 46.0		59.1	

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Date: T Project: D	Tuesday, January 22, 2 Desert Wave Ventures	Tuesday, January 22, 2019 Desert Wave Ventures	6]		τοτ	Location: L ¹ Si	4 - Locate te, near E	L4 - Located on Desert Willow Drive, southeast of the Project site, near Embarc Palm Desert Resort.	Willow Driv Desert Res	ve, southe sort.	ast of the	Project	Meter:	Meter: Piccolo I				JN: Analyst:	11826 R. Saber
								Hourly L eq	Hourly L _{eq} dBA Readings (unadjusted)	ngs (unadju	usted)								
85.0 80.0 75.0																			
70.0 65.0 55.0																			
Hourl 40.00 145.00 100 100 100 100 100 100 100 100 100	47'3	48.5 48.2	5.44	1.74	25'J	<u>ζ.84</u>	1.81	T.S2	9' 7 5	S.74	<mark>49.9</mark>	<mark>6.84</mark>	<mark>4.04</mark> 8.74	5.84	2. <mark>24</mark>	8. <u>44</u> 8. <u>24</u>	8.24 8.74	Þ.44	45.9
35.0	0	1 2	ε	4	5 6		∞	6	10 11	. 12	13	14	15 16	5 17	18	19 20	0 21	22	23
Timeframe	Hour					11%	%61	15%	Hour 18%	Hour Beginning		1 50%	%Ub I	195%	%661			Adi	Adi. I
		- eq 41 3	50 G	38.6		46.0	45.0	44.0	43.0	41.0		40.0	39 ()	39.0	39.0		- eq 41 3	10.0	51 3
	р с і	48.5	50.2 66.2	40.5	_	58.0	56.0	52.0	50.0	47.0		45.0	42.0	41.0	40.0		48.5	10.0	58.5
	2	48.2	62.2	41.0		57.0	55.0	52.0	51.0	47.0		46.0	43.0	42.0	41.0		48.2	10.0	58.2
Night	ς, γ	44.5	59.5 22.2	39.2		51.0	50.0	48.0	47.0	44.0		43.0	40.0	40.0	39.0		44.5 	10.0	54.5
	4 v	47.1 51.8	60.8 70.0	40.4	_	55.0 63.0	53.0 59.0	51.0	50.0	47.0 50.0		45.0 47.0	42.0 44.0	41.0 44.0	40.0		47.1 51.8	10.0 10.0	57.1 61.8
	6	52.1	69.8	44.8		62.0	59.0	54.0	54.0	50.0		48.0	46.0	46.0	45.0		52.1	10.0	62.1
	7	48.7	63.7	42.7		57.0	55.0	52.0	51.0	48.0		46.0	44.0	44.0	43.0		48.7	0.0	48.7
	8	48.1	64.9	40.6		56.0	54.0	52.0	51.0	48.0		46.0	43.0	43.0	41.0		48.1	0.0	48.1
	6	52.1	67.6 -2.1	41.5		62.0	60.0	57.0	55.0	51.0		48.0	44.0	44.0	42.0		52.1	0.0	52.1
	10	53.3 EA 6	70.0	43.1		62.0 62.0	60.0 61 0	58.0	57.0	53.0		50.0	46.0	45.0	44.0		53.3 EA 6	0.0	53.3 EA 6
	12	47.5	63.0	38.6		57.0	01.0 55.0	52.0	50.0	47.0		45.0	41.0	40.0	39.0		47.5	0.0	47.5
	13	49.9	67.7	41.3		58.0	56.0	54.0	53.0	49.0		47.0	44.0	43.0	42.0		49.9	0.0	49.9
	14	48.9	66.4	40.5		57.0	55.0	53.0	52.0	48.0		46.0	43.0	42.0	41.0		48.9	0.0	48.9
	15 16	49.4 47.6	62.8 62.0	41.5		58.0	56.0	54.0	52.0	49.0		47.0	44.0	44.0	43.0		49.4 47.6	0.0	49.4
	17	48.5	02.0 65.0	40.5		58.0	56.0	52.0	50.0	47.0		45.0	43.0	43.0	41.0		48.5	0.0	48.5
	18	45.2	57.3	39.2		52.0	51.0	50.0	49.0	45.0		43.0	40.0	40.0	39.0		45.2	0.0	45.2
	19	44.8	62.6	39.2		54.0	51.0	47.0	45.0	43.0		42.0	41.0	40.0	40.0		44.8	5.0	49.8
Evening	20	45.8 47 a	64.4 62.2	37.6		56.0 58.0	53.0 56.0	48.0 53.0	47.0 51.0	44.0		42.0	40.0	39.0	39.0		45.8 47 a	5.0	50.8 57 a
	22	44.4	52.6	37.5	-	51.0	51.0	50.0	49.0	44.0		41.0	39.0	39.0	39.0		44.4	10.0	54.4
Night	23	42.9	55.4	37.5		48.0	47.0	46.0	45.0	43.0		42.0	39.0	37.0	37.0			10.0	52.9
Timeframe	Hour	L _{eq}	L _{max}	L _{min}		11%	L2%	r5%	%87	L25%		720%	%067	767	%667	10	7	L _{eq} (dBA)	
	Min	45.2 EA 6	57.3 70 F	38.6		52.0 62.0	51.0 61 0	50.0	49.0	45.0		43.0 5 2 0	40.0	40.0	39.0		24-Hour	Daytime	Nighttime
ergy Av	Energy Average	50.3		Average:		57.8	55.9	53.6	52.3	48.9		46.8	43.6	43.1	41.7		c		
	Min	44.8	62.2	37.6		54.0	51.0	47.0	45.0	43.0		42.0	40.0	39.0	39.0	4 4 7	Ņ	43.1	4 8. Z
Evening	Мах	47.9	64.4	39.2		58.0	56.0	53.0	51.0	47.0		44.0	41.0	40.0	40.0		24-Ho	24-Hour CNEL (dBA)	(BA)
ergy Av	Energy Average	46.4	Ave	Average:		56.0	53.3	49.3	47.7	44.7		42.7	40.3	39.7	39.3				
Night	Min Max	41.3 52.1	50.9 70.0	37.5 44.8		46.0 63.0	45.0 59.0	44.0 56.0	43.0 54.0	41.0 50.0		40.0 48.0	39.0 46.0	37.0 46.0	37.0 45.0			55.0	

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11826	R. Saber					43.2	23		Adj. L _{eq}	53.0	60.6 50.4	59.1 54.2	55.2	59.1	62.9	47.4	50.7	51.0	53.1 48.8	49.6	48.1	47.8	40.9 49.4	45.8	51.7	50.9 51.7	54.9	53.2		Nighttime	18 2		5A)]
:Nr						6'77	1 22		Adj.	10.0	10.0	10.0	10.0	10.0	10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.0	5.0	10.0	10.0	r eq (uDA)	Daytime	10 D	>	z4-nour CNEL (aBA)		55. 0	
						4 <mark>.</mark> 34	20 21		L _{eq}	43.0	50.6	49.1	45.2	49.1	52.9	47.4	50.7	51.0	53.1 18 8	49.6	48.1	47.8	40.9 49.4	45.8	46.7	45.9 46.7	44.9			24-Hour	18 7		Z4-H0	_		
						<mark>۲.94</mark>	19		%667	39.0	41.0	42.0 39.0	40.0	44.0	48.0	44.0 43.0	42.0	43.0	44.0 41.0	42.0	42.0	42.0	43.U 42.0	39.0	41.0	39.0 39.0	39.0	38.0	39.0				41.U	<u>39.7</u> 38.0	48.0	41.1
	-					<mark>4.94</mark> 8 <mark>.24</mark>	17 18		195%	39.0	42.0	42.0	41.0	44.0	49.0	43.0	43.0	44.0	45.0 42.0	43.0	42.0	42.0	43.0 43.0	40.0	41.0	39.0 39.0	39.0		40.0	45.0	42.9	39.0	41.U	39.0	49.0	41.7
Meter: Piccolo I						6 <mark>.9</mark> 4	16		T %067	-		43.0 43.0 4				43.0			47.0 47.0 4				43.0 43.0 2			39.0 3		-	41.0 4				42.0 2		_	42.1 4
						<mark>1.84</mark> 8.74	14 15			-																									_	
it Summa alm Desert		ted)				9.64	13		; T20%	41.0		46.0				46.0			51.0				45.0			42.0	42.0	-	43.0					42.0	_	44.3
24-Hour Noise Level Measurement Summary L5 - Located on Willow Ridge within Embarc Palm Desert	boundaries.	dings (unadjusted)				8.84	12	Begir	125%	42.0	46.0	48.0	45.0	49.0	53.0	47.0	49.0	50.0	53.0	48.0	47.0	46.0	46.0	45.0	45.0	44.0	44.0	44.0	45.0 45.0	53.0	48.0	44.0	45.0	44.3	53.0	46.1
Level Me	oject site b	Hourly L _{eq} dBA Readii				0'TS	10 11		<i>78%</i>	44.0	50.0	53.0	48.0	52.0	55.0	50.0	52.0	53.0	56.0	51.0	50.0	50.0	49.0 51.0	49.0	47.0	47.0	49.0	46.0	49.0	56.0	51.2	47.0	47.0	41.0	55.0	49.2
24-Hour Noise Level M Located on Willow Ridge wi	Resort, south of the Project site	Hourly L e				<mark>7.02</mark>	- б		L5%	45.0	51.0	55.0 48.0	49.0	53.0	56.0	51.0	54.0	55.0	57.0 53.0	53.0	51.0	52.0	53.0 53.0	50.0	49.0	48.0 49.0	50.0	46.0	50.0	57.0	52.6	48.0	49.0	48./	56.0	50.3
						<mark>5.94</mark>	7 8		L2%	47.0	58.0	57.0	51.0	55.0	57.0	52.0	59.0	58.0	58.0	56.0	55.0	55.0	56.0	52.0	54.0	56.0	51.0	48.0	52.0	59.0	55.3	52.0	0.02	47.0	58.0	52.8
Location:						6.22	9		11%	49.0	63.0 52.0	58.0 52 D	52.0	56.0	57.0	53.0	63.0	60.0	60.0 58 0	58.0	58.0	57.0	59.0 59.0	52.0	56.0	59.0 59.0	52.0	49.0	52.0	63.0	57.3	56.0	59.0	49.0	63.0	54.2
						49.1	4		L _{min}	39.1	40.9	41.1 30.2	39.3	42.3	48.3	42.2	41.0	43.0	43.5 40.8	41.7	41.0	41.2	42.1 41.8	39.2	40.7	39.2 38.6	39.1	36.3	L min 39.2	43.5		38.6 10.7	40.7	1ge: 36.3		ige:
						44.2	- m		L _{max}	70.6	72.0	61.0 60 7	58.3	59.3	60.7	04.3 59.2	67.2	69.7	65.9 65.4	70.8	69.3	64.4	62.8 68.4	60.7	65.5	65.8	54.4	52.2	L max 59.2	70.8	Average	65.5 Cr.o	8.cd	Average 52.2	72.0	Average:
Tuesdav, January 22, 2019	entures					£.04	1 2		L _{eq}	43.0	50.6	49.1 AA 7	45.2	49.1	52.9	47.4	50.7	51.0	53.1 A8 8	49.6	48.1	47.8	40.9 49.4	45.8	46.7	45.9 46.7	44.9	43.2	L eq 45.8	53.1	49.4	45.9	46./	46.4 43.0	52.9	48.3
esdav, Janua	Desert Wave Ventures					43.0	- 0		Hour	0	← (7 6	0 4	5	9	~ ∞	9 6	10	11 1	13	14	15 16	10 17	18	19	21 21	22	23	Min	Max	rage	Min	Max	Min	Max	rage
Date: Tu	Project: De		85.0 80.0 1	A8b) 1	∧ ୮ ª	Hour 45.0 40.0	35.0 +		Timeframe			Night	0							Day						Evening	Nirch+	INIGNT	ilmejrame	Day	Energy Average	Evening	Enormy Avo	Energy Average Mir	Night	Energy Average

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R. Saber		0.44.0	23	Adj. L _{ea}	50.2	58.3	50.U 51.8	52.3	58.0 62.7	51.9	52.8	54.1 EE 0	52.2	56.0	51.6	51.6 51.6	52.1	50.7 49.6	54.3	53.8	53.1 57 5	54.0		Nighttime	0 7 7	47.0	dBA)		
Analyst:		5.74 1.84	21 22	Adj.	10.0	10.0	10.0 10.0	10.0	10.0 10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.0	5.0	10.0	10.0	L eq (dBA)	Daytime	с с ц	C-7C	24-Hour CNEL (dBA)		7.7
		8.84	20 2	L ea	40.2	48.3	46.U 41.8	42.3	48.0 52.7	51.9	52.8	54.1 EE 0	52.2	56.0	51.6	51.6	52.1	50.7 49.6	49.3	48.8	48.1 47 5	44.0		24-Hour	C 1 0	0.1C	24-H		
		5.91	19	%667	36.0	39.0 20.0	39.0 36.0	39.0	41.0 42.0	42.0	42.0	42.0	43.0	41.0	40.0	40.0	41.0	40.0 36.0	39.0	39.0	36.0 36.0	36.0	%667	36.0 43.0			39.0	38.0 36.0	42.0
		7.02 9.94	17 18	195%	36.0	39.0 20.0	39.0 38.0	39.0	42.0 43.0	43.0	43.0	43.0	45.0	42.0	42.0	41.0	42.0	41.0 38.0	39.0	39.0	36.0	36.0	L95%	38.0 45.0	42.2	36.0	39.0	38.0 36.0	43.0
		τ.ς	16	%067	36.0	39.0 20.0	39.0 39.0	39.0	42.0 44.0	44.0	43.0	44.0 AF 0	45.0	43.0	43.0	42.0 42.0	43.0	42.0 39.0	40.0	39.0	36.0	36.0		39.0 45.0	42.9	38.0	40.0	36.0	44.0
Project site. Hourly L dBA Readinas (unadiusted)		9'TS 1'TS	14 15	r20% r	_		39.0		44.0			49.0				46.0		46.0			42.0			44.0 52.0				39.0	+
usted)		9.12	13 Jg	10	_		44.0 4 40.0 3		46.0 4 53.0 4			54.0 4				51.0 4 51.0 4		51.0 4 49.0 4			47.0 4 45.0 4			49.0 4 56.0 5				39.0 3	+
idinas (unadiusted)		0.92 2.22	11 12 Hour Beginning																		-						+	+	
Hourly L dBA Rea		6.22	10 H						0 51.0 0 58.0						0 55.0			0 55.0 54.0						0 54.0 0 59.0		0 53.0	+	┢	_
Project site. Hourly		T.42	8	T2%	41.0		43.0		53.0 59.0			59.0				57.0 57.0		56.0 55.0			53.0			55.0 61.0				41.0	
		6'TS	٢	L2%	46.0	56.0	0.cc 48.0	47.0	55.0 60.0	59.0	59.0	61.0	58.0 58.0	60.0	58.0	0.92 59.0	59.0	58.0	57.0	57.0	0.02	52.0	L2%	57.0 64.0	59.3	56.0	57.0	7.02 46.0	60.0
		Z.22	9	L1%	49.0	60.0 FE 0	50.0 50.0	49.0	57.0 60.0	60.0	60.0	64.0 65 0	59.0	63.0	60.0	60.0 60.0	60.09	60.0 59.0	58.0	58.0	0.82	55.0	L1%	59.0 65.0	60.8	58.0	58.0	0.8c	60.0
		45.3	4	L min	36.0	38.9	38.9 36.0	38.4	40.7 41.7	40.9	40.8	40.6	42.0	39.0	39.0	39.0	40.7	40.3 36.0	39.0	38.7	36.0	36.0	L _{min}	36.0 42.0	Average:	36.0	39.0	Average:	
		41.8	ε	L max	58.0	69.69 5.8 7	60.7	58.6	66.0 63.4	63.0	66.0	70.8	70.8	82.4	72.9	6.4.5 70.9	71.3	66.1 70.2	63.8	64.9	2.cd 68.8	65.0	L _{max}	63.0 82.4		63.8	65.2	58 0 AV	69.6
		0.84 46.0	1 2	L ea	40.2	48.3	46.U 41.8	42.3	48.0 52.7	51.9	52.8	54.1 EE 0	52.2	56.0	51.6	51.6 51.6	52.1	50.7 49.6	49.3	48.8	48.1 47 5	44.0	L _{eq}	49.6 56.0	52.9	48.1	49.3	48.8	52.7
		40.2	0	Hour	0	с і с	3 6	4	6 5	7	8	9 0	11	12	13	14 15	16	17 18	19	20	21 27	23	Hour	Min Max	Average	Min	Max	Average Min	Max
רוטלבנו.	(A8b) № I γ I 800,000 800,000 800,000 800,000 800,000 800,000			Timeframe			Night							Dav	ر م					Evening		Night	Timeframe	Day	Energy Average	Evening		Energy Average Mir	Night Max

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APPENDIX 7.1:

OFF-SITE TRAFFIC NOISE CONTOURS



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	FHWA	-RD-77-108	HIGI	HWAY I	NOISE PF	EDICTIO	N MOD	EL			
Scenario: Existin Road Name: Monte Road Segment: s/o Co	ey Av.	,				Project Na Job Nun			Wave		
SITE SPECIFI	C INPU	UT DATA				NO	ISE M	ODE		s	
Highway Data					Site Con	ditions (H	lard = 1	10, So	ft = 15)		
Average Daily Traffic (Ad Peak Hour Percentag Peak Hour Volun	ie:	100 vehicle 10% 510 vehicle				dium Truci avy Trucks	ks (2 A		10 10 10		
Vehicle Spee	d:	55 mph		-	Vehicle I						
Near/Far Lane Distan	e:	78 feet		ŀ		nix cleType	1	Dav	Evening	Night	Daily
Site Data					veni			7.5%	12.9%	9.6%	
Barrier Heig		0.0 feet			Me	dium Truc	cks: 8	4.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berr	n):	0.0			H	leavy Truc	cks: 8	6.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barn		76.0 feet			Noise So	urce Elev	ations	(in fe	et)		
Centerline Dist. to Observ		76.0 feet				Autos:	0.0	00			
Barrier Distance to Observ		0.0 feet			Mediur	n Trucks:	2.2	97			
Observer Height (Above Pa Pad Elevati	·	5.0 feet			Heav	y Trucks:	8.0	06	Grade Ad	iustmen	t: 0.0
Road Elevation		0.0 feet		-	Lano Equ	ivalent D	Vietano	o (in f	inot)		
Road Elevation Road Gray		0.0 feet		ŀ	Lane Ly	Autos:	65.4		eel)		
Left Vie		0.0%			Modiur	n Trucks:	65.2				
Right Vie		90.0 degree 90.0 degree				y Trucks:	65.3				
FHWA Noise Model Calcula	tions										
VehicleType REME	. T	raffic Flow	Di	stance	Finite	Road	Fresne	2	Barrier Att	en Be	rm Atten
Autos: 7	.78	2.63		-1.2	24	0.00	-	4.73	0.0	000	0.00
Medium Trucks: 8	2.40	-14.61		-1.2	23	0.00	-	4.88	0.0	000	0.000
Heavy Trucks: 8	6.40	-18.56		-1.2	23	0.00	-	5.25	0.0	000	0.00
Unmitigated Noise Levels (withou	t Topo and	barri	ier attei	nuation)						
VehicleType Leq Peak		Leq Day		Leq E	vening	Leq Ni			Ldn		NEL
Autos:	73.2		71.3		69.5		63.5		72.1		72.
Medium Trucks:	66.6		65.1		58.7		57.2		65.6	-	65.8
Heavy Trucks:	66.6		65.2		56.1		57.4		65.8	-	65.9
Vehicle Noise:	74.8		73.0		70.0		65.2		73.7	7	74.:
Centerline Distance to Nois	e Cont	tour (in feet)								
					dBA	65 dE			0 dBA		6 dBA
			Ldn:		79	566			1,789		,657
		CI	VEL:	2	00	631			1,996	6	,312

	FHW	A-RD-77-108 H	IGHW	AY NC	DISE PRE	DICTIO	N MOE	DEL			
Scenario: E Road Name: F Road Segment: n		,	_	_		Project Na Job Nun			Wave		
SITE SPE	CIFIC INP	UT DATA							L INPUT	s	
Highway Data				Si	ite Condi	itions (H	ard =	10, Sc	oft = 15)		
Average Daily Trafi	fic (Adt): 15	,100 vehicles					A	Autos:	10		
Peak Hour Perc	centage:	10%			Medi	um Truck	ks (2 A	xles):	10		
Peak Hour	Volume: 1	,510 vehicles			Heav	y Trucks	: (3+ A	xles):	10		
Vehicle	Speed:	55 mph		V	ehicle Mi	~					
Near/Far Lane D	istance:	58 feet				eType		Dav	Evening	Night	Dailv
Site Data					Verner	Aut		77.5%			97.429
					Med	ium Truc		84.8%		10.3%	
	Height:	0.0 feet				avy Truc		86.5%		10.8%	
Barrier Type (0-Wall, Centerline Dist. to		0.0 64.0 feet									
Centerline Dist. to O		64.0 feet		N	oise Sou	rce Elev	ations	s (in fe	et)		
Barrier Distance to O		0.0 feet				Autos:	0.0	000			
Observer Height (Abo		5.0 feet			Medium		2.2				
0 1	levation:	0.0 feet			Heavy	Trucks:	8.0	006	Grade Ad	justment.	0.0
	levation:	0.0 feet		Li	ane Equi	valent D	istanc	e (in i	feet)		
	d Grade:	0.0%		-		Autos:	57.2				
		-90.0 degrees			Medium						
Rig	ht View:	90.0 degrees			Heavy	Trucks:	57.1	32			
FHWA Noise Model Ca											
		Traffic Flow	Distar		Finite R		Fresn		Barrier Att		m Atten
Autos:	71.78	-1.03		-0.66		0.00		-4.70		000	0.00
Medium Trucks:	82.40	-18.27		-0.65		0.00		-4.88		000	0.00
Heavy Trucks:	86.40	-22.23		-0.65		0.00	-	-5.31	0.0	000	0.00
Unmitigated Noise Le					<u> </u>						
	Peak Hour			eq Eve		Leq Nig			Ldn		VEL
Autos: Medium Trucks:	70.1 63.5		3.2 2.0		66.4 55.6		60.4 54.1		69.0 62.5		69. 62.
Heavy Trucks:	63.5		2.0		53.1		54.1 54.3		62.		62.
· · ·											
Vehicle Noise:	71.7		9.9		67.0		62.1		70.6	Ó.	71.
Centerline Distance to	Noise Con	tour (in feet)		70 dE	24	65 dB	4	6	0 dBA	55	dBA
			dn:	70 02		234	~	L U	740		341

Monday, February 25, 2019

Scenario	c: Existing Wi	thout Project				Proiect N	ame: ſ	Desert	Wave		
	2: Portola Av.	alout i loject				Job Nui			wave		
Road Segmen		Club Dr.						1020			
	PECIFIC IN	IPUT DATA							L INPUTS	;	
lighway Data				Si	ite Con	ditions (F	lard =	10, So	oft = 15)		
Average Daily 1	raffic (Adt): 2	20,700 vehicles					A	Autos:	10		
Peak Hour I	Percentage:	10%				dium Truc					
Peak Ho	our Volume:	2,070 vehicles			Hea	avy Truck	s (3+ A	xles):	10		
Veh	icle Speed:	50 mph		V	ehicle I	Nix					
Near/Far Lar	e Distance:	58 feet		-		cleType		Day	Evening	Night	Daily
Site Data								77.5%	•	9.6%	97.429
Par	rier Heiaht:	0.0 feet			Ме	dium Tru	cks:	84.8%	4.9%	10.3%	1.849
Barrier Type (0-Wa		0.0			H	leavy Tru	cks:	86.5%	2.7%	10.8%	0.74%
Centerline Dis	. ,	64.0 feet									
Centerline Dist. t	o Observer:	64.0 feet		N	oise So	Autos:	0.0		eet)		
Barrier Distance t	o Observer:	0.0 feet									
Observer Height (A	Above Pad):	5.0 feet				n Trucks:	2.2		Grade Adji	ofmont	0.0
Pa	d Elevation:	0.0 feet			Heav	y Trucks:	8.0	06	Grade Adju	isuneni.	0.0
Roa	d Elevation:	0.0 feet		Lá	ane Equ	livalent I	Distanc	e (in	feet)		
F	Road Grade:	0.0%				Autos:	57.2	271			
	Left View:	-90.0 degree	s		Mediur	n Trucks:	57.1	17			
	Right View:	90.0 degree	s		Heav	y Trucks:	57.1	32			
HWA Noise Mode	l Calculation	s									
VehicleType	REMEL	Traffic Flow	Distan		Finite		Fresn	-	Barrier Atte		m Atten
Autos:	70.20	0.75		0.66		0.00		4.70	0.0		0.00
Medium Trucks:	81.00	-16.49		0.65		0.00		4.88	0.0		0.00
Heavy Trucks:	85.38	-20.44	-	0.65		0.00		-5.31	0.0	00	0.00
Inmitigated Noise											
VehicleType	Leq Peak Hou			q Eve	~	Leq N	<u> </u>		Ldn		VEL
		.3 6	8.4		66.6		60.6		69.2		69.
Autos:	70				56.0		54.5 55.1		62.9		63.
Autos: Medium Trucks:	63		2.4						63.4		63.
Autos: Medium Trucks: Heavy Trucks:	63 64	.3 6	2.9		53.8						
Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	63 64 72	.3 6 .0 7			53.8 67.2		62.4		71.0		71.
Autos: Medium Trucks: Heavy Trucks:	63 64 72	.3 6 .0 7	62.9 70.2	70 %	67.2	6E -11	62.4		71.0		
Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	63 64 72	.3 6 .0 7 ontour (in feet)	62.9 70.2	70 dE 80	67.2	65 dl	62.4 BA			55	71. dBA 525

	FHW	/A-RD-77-108	IIGHWA	Y NOISI	E PRED	ICTION	MODEL			
Road Nam	io: Existing Wit e: Cook St. nt: n/o I-10 WB						me: Dese ber: 1182			
SITE	SPECIFIC IN	PUT DATA				NOI	SE MOD	EL INPUT	s	
Highway Data				Site	Conditi	ons (Ha	rd = 10,	Soft = 15)		
Average Daily	Traffic (Adt):	7,600 vehicles					Auto	s: 10		
Peak Hour	Percentage:	10%			Mediun	n Trucks	s (2 Axles	;): 10		
Peak H	lour Volume:	760 vehicles			Heavy	Trucks	(3+ Axles	;): 10		
Ve	hicle Speed:	50 mph		Vohi	le Mix					
Near/Far La	ne Distance:	78 feet			Vehicle	Type	Day	Evening	Night	Daily
Site Data						Auto		•	9.6%	
Pa	rrier Height:	0.0 feet		-	Mediu	m Truck			10.3%	1.84%
Barrier Type (0-W		0.0			Heav	vy Truck	s: 86.5	% 2.7%	10.8%	0.74%
Centerline Di	. ,	76.0 feet								
Centerline Dist.		76.0 feet		NOIS			tions (in	feet)		
Barrier Distance	to Observer:	0.0 feet			ہ dium Tr	Autos:	0.000			
Observer Height	Above Pad):	5.0 feet					2.297	Grade Ad	iuotmont	
P	ad Elevation:	0.0 feet		-	leavy Ti	rucks:	8.006	Grade Ad	usuneni.	0.0
Ro	ad Elevation:	0.0 feet		Lane	Equiva	alent Di	stance (i	n feet)		
	Road Grade:	0.0%			A	Autos:	65.422			
	Left View:	-90.0 degrees		Me	dium Ti	rucks:	65.286			
	Right View:	90.0 degrees		E	leavy Ti	rucks:	65.300			
FHWA Noise Mod	el Calculations	;								
VehicleType	REMEL	Traffic Flow	Distanc	e Fi	nite Roa	ad F	resnel	Barrier Att	en Ber	m Atten
Autos:	70.20	-3.60		1.24	0	.00	-4.7	3 0.0	000	0.000
Medium Trucks:	81.00	-20.84	-1	1.23	0	.00	-4.8	8 0.0	000	0.000
Heavy Trucks:	85.38	-24.79	-'	1.23	0	.00	-5.2	5 0.0	000	0.000
Unmitigated Nois	e Levels (witho	out Topo and b								
VehicleType	Leq Peak Hou			g Evenin		Leq Nigi		Ldn		VEL
Autos:	65.		3.5	-	1.7		55.6	64.3		64.9
Medium Trucks:	58.		7.4	-	1.1		49.5	58.0		58.2
Heavy Trucks:	59.		7.9		8.9		50.1	58.		58.6
Vehicle Noise:	67.	1 6	5.3	6	2.3		57.5	66.0)	66.5
Centerline Distant	ce to Noise Co	ntour (in feet)				-				
				70 dBA		65 dBA		60 dBA		dBA
			dn:	30		96		305		64
		CN	EL:	34		107		339	1,	073

Monday, February 25, 2019

	FHWA	-RD-77-108 HIG	HWAY I	NOISE PR	EDICTIO	MODEL			
Scenario: Road Name: Road Segment:		,				me: Deser ber: 11826			
SITE SE	PECIFIC INP				NO	SE MODE		s	
Highway Data				Site Cond		ard = 10, S		-	
Average Daily Tr Peak Hour Pe Peak Hou	ercentage:	000 vehicles 10% 200 vehicles				Autos. s (2 Axles). (3+ Axles).	: 10		
	cle Speed:	50 mph	-	Vehicle N	-	(017,0000)	. 10		
Near/Far Lane	Distance:	78 feet	-		leType	Dav	Evening	Night	Daily
Site Data					Aut		•	•	97.42%
Barrie Barrier Type (0-Wal	er Height: I, 1-Berm):	0.0 feet 0.0			dium Truc eavy Truc			10.3% 10.8%	1.84% 0.74%
Centerline Dist.	to Barrier:	76.0 feet	-	Noise So	urce Elev	ations (in f	feet)		
	Observer:	76.0 feet 0.0 feet 5.0 feet 0.0 feet		Medium Heavy	Autos: Trucks: Trucks:	0.000 2.297 8.006	Grade Ad	justment:	0.0
	ad Grade:	0.0%	ŀ	Lano Lya	Autos:	65.422	1000		
		-90.0 degrees 90.0 degrees			Trucks: Trucks:	65.286 65.300			
FHWA Noise Model	Calculations								
VehicleType	REMEL T	raffic Flow Di	istance	Finite F	Road	Fresnel	Barrier Att	en Bern	n Atten
Autos:	70.20	2.64	-1.2	24	0.00	-4.73	0.0	000	0.00
Medium Trucks: Heavy Trucks:	81.00 85.38	-14.60 -18.55	-1.2 -1.2		0.00 0.00	-4.88 -5.25		000	0.00
Unmitigated Noise L	evels (withou	t Topo and barr	ier attei	nuation)					
•	eq Peak Hour	Leg Day		vening	Leg Nig	ıht	Ldn	CN	FI
Autos:	71.6	69.7		67.9		61.9	70.5	5	71.
Medium Trucks:	65.2	63.7		57.3		55.8	64.2	2	64.
Heavy Trucks:	65.6	64.2		55.1		56.4	64.7	7	64.9
Vehicle Noise:	73.3	71.6		68.5		63.7	72.3	3	72.
Centerline Distance	to Noise Con	tour (in feet)							
			70	dBA	65 dB.	4	60 dBA	55 c	<i>IBA</i>
		Ldn:	1	28	406		1,283	4,0	57
		CNEL:	1	43	452		1,429	4,5	18

	FHW	A-RD-77-108 H	HIGHW.	AY NC	DISE PRE	DICTIO	и моі	DEL			
Scenario: Exist Road Name: Cool Road Segment: s/o G	< St.	,				roject Na Job Nun			Wave		
SITE SPECII	FIC INF	PUT DATA				NO	ISE N	IODE	L INPUT	s	
Highway Data				Si	ite Condit	tions (H	ard =	10, Sc	oft = 15)		
Average Daily Traffic (Adt): 23	3,900 vehicles					1	Autos:	10		
Peak Hour Percent	age:	10%			Mediu	m Truck	ks (2 A	xles):	10		
Peak Hour Volu	ıme: 1	2,390 vehicles			Heav	/ Trucks	s (3+ A	xles):	10		
Vehicle Sp	eed:	50 mph		V	ehicle Mix	,					
Near/Far Lane Dista	nce:	78 feet			Vehicle			Day	Evening	Night	Daily
Site Data					Volliolo	Aut		77.5%	•		97.429
Barrier He	iaht:	0.0 feet			Medi	um Truc		84.8%		10.3%	
Barrier Type (0-Wall, 1-Be		0.0 feet				avy Truc		86.5%		10.8%	
Centerline Dist. to Ba		76.0 feet				,					
Centerline Dist. to Obse		76.0 feet		N	oise Sour				eet)		
Barrier Distance to Obse		0.0 feet				Autos:	0.0				
Observer Height (Above F		5.0 feet			Medium		2.2		Out de Au		
Pad Eleva		0.0 feet			Heavy	l rucks:	8.0	006	Grade Ad	justment	0.0
Road Eleva	tion:	0.0 feet		Lá	ane Equiv	alent D	istand	e (in i	feet)		
Road Gr	ade:	0.0%				Autos:	65.4	122			
Left \	/iew:	-90.0 degrees	3		Medium 1	Trucks:	65.2	286			
Right \	/iew:	90.0 degrees	6		Heavy	Trucks:	65.3	300			
FHWA Noise Model Calcu											
VehicleType REM		Traffic Flow	Distar		Finite Ro		Fresn		Barrier Att		m Atter
Autos:	70.20	1.38		-1.24		0.00		4.73		000	0.00
	81.00	-15.86		-1.23		0.00		-4.88		000	0.00
Heavy Trucks:	85.38	-19.82		-1.23		0.00		-5.25	0.0	000	0.00
Unmitigated Noise Levels					,						
	ak Hour			eq Eve		Leq Ni			Ldn		VEL
Autos:	70.3		8.4		66.7		60.6		69.2		69 63
Medium Trucks:	63.9 64.3		2.4 2.9		56.0 53.9		54.5 55.1		63.0 63.5	-	
Heavy Trucks: Vehicle Noise:	72.0		2.9							-	63.
			0.3		67.2		62.5		71.0)	71
Centerline Distance to No	oise Col	ntour (in feet)		70 dE	84	65 dB	4	6	0 dBA	55	dBA
		,	dn:	96	2/1	303		6	958		030

Monday, February 25, 2019

0-	- Evision 197	the state Descions:				Designed	1			
	 e: Existing Wi e: Cook St. 	thout Project					lame: Des mber: 118			
	e. Cook St. nt: s/o Frank S	linatra Dr				JOD INU	mber. 118	26		
ů										
	SPECIFIC IN	IPUT DATA			0/4- 0			DEL INPUTS	5	
Highway Data					Site Con	ditions (I		Soft = 15)		
• •	, ,	24,500 vehicles					Aut			
	Percentage:	10%					ks (2 Axle	·		
	our Volume:	2,450 vehicles			Hea	avy Truck	s (3+ Axle	s): 10		
	hicle Speed:	50 mph		1	Vehicle I	/ix				
Near/Far La	ne Distance:	78 feet			Vehi	cleType	Da	y Evening	Night	Daily
Site Data						AL	itos: 77.	5% 12.9%	9.6%	97.42%
Pa	rier Height:	0.0 feet			Me	dium Tru	cks: 84.	8% 4.9%	10.3%	1.84%
Barrier Type (0-W		0.0			H	leavy Tru	cks: 86.	5% 2.7%	10.8%	0.74%
Centerline Dis	. ,	76.0 feet								
Centerline Dist.		76.0 feet			Noise So		vations (i	,		
Barrier Distance	to Observer:	0.0 feet				Autos:				
Observer Height (5.0 feet				n Trucks:				
0 1	d Elevation:	0.0 feet			Heav	y Trucks:	8.006	Grade Adj	ustment:	0.0
Roa	ad Elevation:	0.0 feet		1	Lane Equ	livalent l	Distance (in feet)		
I	Road Grade:	0.0%				Autos:	65.422			
	Left View:	-90.0 degree	s		Mediur	n Trucks:	65.286			
	Right View:	90.0 degree	s		Heav	y Trucks:	65.300			
FHWA Noise Mode	el Calculation	s		_						
VehicleType	REMEL	Traffic Flow	Dista	nce	Finite	Road	Fresnel	Barrier Atte	en Ber	m Atten
Autos:	70.20	1.48		-1.24		0.00	-4.			0.00
Medium Trucks:	81.00	-15.76		-1.23	-	0.00	-4.8			0.00
Heavy Trucks:	85.38	-19.71		-1.23	3	0.00	-5.2	25 0.0	00	0.00
Unmitigated Noise										
<i>,</i>	Leq Peak Hou			.eq Ei	/ening	Leq N	0	Ldn		VEL
Autos:	70		8.6		66.8		60.7	69.4		70.0
Medium Trucks:	64		2.5		56.1		54.6	63.1		63.
Heavy Trucks:	64		3.0		54.0		55.2	63.6		63.
Vehicle Noise:	72		0.4		67.3		62.6	71.1		71.6
Centerline Distand	e to Noise Co	ontour (in feet)		70 0		65 d	DA I	60 dBA	55	dBA
								00 0200		ава 106
			.dn:	9		31		982		

	FHW	A-RD-77-108 HIC	GHWAY I	NOISE PR	EDICTIC	ON MODEL			
Road Nam	o: Existing With e: Cook St. nt: n/o Country					lame: Des mber: 118			
SITE	SPECIFIC INF	PUT DATA			NC	DISE MOD	DEL INPUT	s	
Highway Data				Site Cond	litions (l	Hard = 10,	Soft = 15)		
Average Daily	Traffic (Adt): 2	7,200 vehicles				Auto	os: 10		
Peak Hour	Percentage:	10%		Med	lium Truc	cks (2 Axle	s <i>):</i> 10		
Peak H	our Volume:	2,720 vehicles		Hea	vy Truck	s (3+ Axle	s <i>):</i> 10		
Vei	hicle Speed:	50 mph	-	Vehicle N	liv				
Near/Far Lar	ne Distance:	78 feet	-		leType	Day	Evening	Night	Daily
Site Data				Venic		10S: 77.5	•	9.6%	97.42%
				Me	dium Tru			10.3%	1.84%
Barrier Type (0-W	rier Height:	0.0 feet 0.0			eavy Tru			10.8%	0.74%
Centerline Dis	. ,	76.0 feet							
Centerline Dist		76.0 feet		Noise So		vations (ir	n feet)		
Barrier Distance		0.0 feet			Autos:				
Observer Height (5.0 feet			n Trucks:				
	d Flevation:	0.0 feet		Heavy	/ Trucks:	8.006	Grade Ad	justment:	0.0
	d Elevation:	0.0 feet	ŀ	Lane Equ	ivalent l	Distance (I	in feet)		
	Road Grade:	0.0%	ŀ		Autos		,		
	Left View:	-90.0 degrees		Medium	Trucks:	65.286			
	Right View:	90.0 degrees		Heavy	/ Trucks:	65.300			
FHWA Noise Mode	el Calculations								
VehicleType			Distance	Finite F		Fresnel	Barrier Att		n Atten
Autos:	70.20	1.94	-1.2		0.00	-4.7		000	0.000
Medium Trucks:	81.00	-15.30	-1.2	-	0.00	-4.8		000	0.000
Heavy Trucks:	85.38	-19.26	-1.2		0.00	-5.2	5 0.0	000	0.000
Unmitigated Noise VehicleType	Levels (witho Leq Peak Hour			vening	Leg N	K - la t	Ldn	0	IEL
Autos:	20.9		,	67.2	Leq N	61.2	69.8	-	70.4
Medium Trucks:	70.5 64.5		-	56.6		55.1	63.5		63.8
Heavy Trucks:	64.9			56.6		55.7	64.0		64.2
Vehicle Noise:	72.6			67.8		63.0	71.6		72.0
Centerline Distance				57.0		00.0	71.		12.0
Contenine Distant	e to morse Cor	nour (in reel)	70	dBA	65 di	BA	60 dBA	55 (dBA
		Ldn	n: 1	09	345	5	1,091	3,4	48
		CNEL	. 1:	21	384	4	1,214	. ,	40

	FH\	WA-RD-77-108	HIGHWA	Y NC	ISE PRI	EDICTIO	N MOI	DEL			
Road Nam	io: Existing Wi e: Cook St. nt: s/o Country	,			F	Project Ni Job Nuri			Wave		
SITE	SPECIFIC IN	IPUT DATA				NO	ISE N	IODE		s	
Highway Data				Si	te Cond	itions (H	lard =	10, So	ft = 15)		
Peak Hour	Traffic (Adt): 2 Percentage: lour Volume:	28,500 vehicles 10% 2,850 vehicles				ium Truci vy Trucks	ks (2 A		10 10 10		
Ve	hicle Speed:	50 mph		14	ehicle M	lu					
Near/Far La	ne Distance:	78 feet		Ve		leType		Dav	Evening	Night	Daily
Site Data					venie			77.5%	12.9%	9.6%	
		0.0 feet			Med	lium Truc		84.8%	4.9%	10.3%	
вал Barrier Type (0-W	r rier Height: 'all, 1-Berm):	0.0 feet				eavy Truc		86.5%	2.7%	10.8%	
Centerline Dis	st. to Barrier:	76.0 feet		N	oise Sou	Irce Elev	ations	: (in fe	et)		
Centerline Dist.	to Observer:	76.0 feet			0.00 000	Autos:	0.0				
Barrier Distance	to Observer:	0.0 feet			Medium		2.2				
Observer Height (Above Pad): ad Elevation:	5.0 feet 0.0 feet				Trucks:	8.0		Grade Ad	iustment	: 0.0
	ad Elevation:	0.0 feet		Lá	ane Eau	ivalent D	istand	e (in f	eet)		
	Road Grade:	0.0%				Autos:	65.4				
	Left View:	-90.0 dearee	s		Medium	Trucks:	65.2	286			
	Right View:	90.0 degree			Heavy	Trucks:	65.3	800			
FHWA Noise Mode	el Calculation	s		_							
VehicleType	REMEL	Traffic Flow	Distanc	е	Finite R	load	Fresn	el i	Barrier Att	en Ber	m Atten
Autos:	70.20	2.14		1.24		0.00		4.73	0.0		0.00
Medium Trucks:	81.00			1.23		0.00		4.88		000	0.000
Heavy Trucks:	85.38	-19.05	-	1.23		0.00		-5.25	0.0	000	0.00
Unmitigated Noise			barrier at	tenu	ation)			-			
VehicleType	Leq Peak Hou			j Eve	ening	Leq Ni			Ldn		NEL
Autos:	71		9.2		67.4		61.4		70.0		70.6
Medium Trucks:	64		3.2		56.8		55.3		63.7		64.0
Heavy Trucks:	65		3.7		54.6		55.9		64.2	-	64.4 72.2
Vehicle Noise:	72		'1.1		68.0		63.2		71.8	5	72.
Centerline Distant	ce to Noise Co	ontour (in feet)		70 25		CE -15		~	0 dBA		dD A
				70 dE		65 dE			0 dBA		dBA
			.dn: IFI :	114 127		361 402			1,143		613
		CN	EL:	127		402			1,272	4,	024

	FHW	/A-RD-77-108	HIGH	HWAY N	OISE PR	EDICTIO	N MOI	DEL			
Scenario: Existir Road Name: Cook Road Segment: s/o Ho	St.	,	_			Project N Job Nur			Wave		
SITE SPECIFI	C IN	PUT DATA							L INPUT	s	
Highway Data				5	Site Cond	litions (H	lard =	10, Sc	oft = 15)		
Average Daily Traffic (A	dt): 2	8,500 vehicles	s					Autos:	10		
Peak Hour Percenta	ge:	10%			Med	lium Truc	ks (2 A	(xles):	10		
Peak Hour Volur	ne:	2,850 vehicles	s		Hea	vy Truck	s (3+ A	(xles):	10		
Vehicle Spe	ed:	50 mph		1	/ehicle N	liv					
Near/Far Lane Distan	ce:	58 feet		-		leType		Dav	Evening	Night	Dailv
Site Data					VCIIIC			77.5%			97.429
	4.4.	0.0 ()			Me	dium Tru		84.8%		10.3%	
Barrier Heig Barrier Type (0-Wall, 1-Ber		0.0 feet 0.0				eavy Tru		86.5%		10.8%	
Centerline Dist. to Barr		64.0 feet									
Centerline Dist. to Observ		64.0 feet		1	loise So				eet)		
Barrier Distance to Observ		0.0 feet				Autos:		000			
Observer Height (Above Pa		5.0 feet				n Trucks:		297			
Pad Elevati		0.0 feet			Heavy	/ Trucks:	8.0	006	Grade Ad	justment.	0.0
Road Elevati		0.0 feet		L	ane Equ	ivalent L	Distand	ce (in i	feet)		
Road Gra	de:	0.0%				Autos:	57.2	271	1		
Left Vie	ew:	-90.0 degree	es		Medium	Trucks:	57.1	117			
Right Vie	ew:	90.0 degree			Heavy	/ Trucks:	57.1	132			
FHWA Noise Model Calcul											
VehicleType REME		Traffic Flow	Dis	stance	Finite F		Fresn	-	Barrier At		m Atter
	0.20	2.14		-0.66		0.00		-4.70		000	0.00
	1.00	-15.10		-0.65		0.00		-4.88		000	0.00
	5.38	-19.05		-0.65		0.00		-5.31	0.0	000	0.00
Unmitigated Noise Levels			<u> </u>		<u> </u>			1			
VehicleType Leq Peal Autos:	71.		, 69.8	Leq Ev	ening 68.0	Leq N	gnt 62.0		Ldn 70.0		VEL 71
Autos: Medium Trucks:	65.		69.8 63.7		68.0 57.4		55.8		70. 64.		64.
Heavy Trucks:	65.		64.3		57.4		56.5		64.		64.
Vehicle Noise:	73.										72
		-	71.6		68.6		63.8		72.	3	72
Centerline Distance to Noi	se Co	ntour (in feet)	70 a	RΔ	65 dE	RΔ	F	0 dBA	55	dBA
			Ldn:	11		348			1.099		476

Monday, February 25, 2019

Coonorio	: Existing Wit	hout Droiget				Drojoot A	lame: Des	ort Mouro		
	Existing with El Dorado E						nber: 118			
Road Segment						300 140	110e1. 110	20		
ů	,									
SITE S Highway Data	PECIFIC IN	PUT DATA			Site Con			DEL INPUTS Soft = 15)	5	
Average Daily T	roffic (Adt);	4.600 vehicles			one oon	unions (i	Auto	,		
Peak Hour F	, ,	4,000 venicies			Mo	dium Truc	ks (2 Axle			
	ur Volume:	460 vehicles					s (3+ Axle	,		
	icle Speed:	50 mph			110	avy much	3 (07 74/10	3). 10		
Near/Far Lan	· · · / · · ·	50 mpn 58 feet			Vehicle I					
	e Distance:	58 Teet			Vehi	icleType	Day	•	Night	Daily
Site Data						AL	tos: 77.	5% 12.9%	9.6%	97.42%
Barr	ier Height:	0.0 feet				edium Tru			10.3%	1.84%
Barrier Type (0-Wa	II, 1-Berm):	0.0			F	leavy Tru	cks: 86.	5% 2.7%	10.8%	0.74%
Centerline Dist	to Barrier:	64.0 feet			Noise Sc	ource Ele	vations (ii	n feet)		
Centerline Dist. to	Observer:	64.0 feet		F		Autos:		11000		
Barrier Distance to	Observer:	0.0 feet			Modiur	n Trucks:				
Observer Height (A	bove Pad):	5.0 feet				v Trucks:		Grade Adj	ustment:	0.0
Pad	d Elevation:	0.0 feet		L						
Road	d Elevation:	0.0 feet		1	Lane Eq		Distance (in feet)		
R	oad Grade:	0.0%				Autos:	57.271			
	Left View:	-90.0 degree	S			n Trucks:	*****			
	Right View:	90.0 degree	s		Heav	y Trucks:	57.132			
FHWA Noise Model	Calculations	5								
VehicleType	REMEL	Traffic Flow	Dista	nce	Finite	Road	Fresnel	Barrier Atte	en Berr	m Atten
Autos:	70.20	-5.78		-0.66	6	0.00	-4.7	70 0.0	00	0.00
Medium Trucks:	81.00	-23.02		-0.6	5	0.00	-4.8		00	0.00
Heavy Trucks:	85.38	-26.98		-0.6	5	0.00	-5.3	31 0.0	00	0.00
Unmitigated Noise	Levels (with	out Topo and I	oarrier	atten	uation)					
	.eq Peak Hou			Leq E	vening	Leq N	0	Ldn	CI	VEL
Autos:	63.		1.9		60.1		54.0	62.7		63.3
Medium Trucks:	57.		5.8		49.5		47.9	56.4		56.0
Heavy Trucks:	57.		6.3		47.3		48.5	56.9		57.0
Vehicle Noise:	65.	5 6	3.7		60.7		55.9	64.4		64.9
Centerline Distance	e to Noise Co	ntour (in feet)	T							
					dBA	65 di		60 dBA		dBA
		L	.dn:	1	8	56		177		61 25
			FI:		0	62		198		

FI	HWA-RD-77-108 I	HIGHWA	Y NOI	SE PRE	DICTIO	N MODEL			
Scenario: Existing V Road Name: El Dorado Road Segment: s/o Count	Dr.					ame: Dese nber: 1182			
SITE SPECIFIC	INPUT DATA				NO	ISE MOD	EL INPU	ſS	
Highway Data			Site	e Condi	tions (H	lard = 10, S	Soft = 15)		
Average Daily Traffic (Adt):	5,500 vehicles					Autos	: 10		
Peak Hour Percentage:	10%			Media	um Truc	ks (2 Axles): 10		
Peak Hour Volume:	550 vehicles			Heav	y Truck	s (3+ Axles): 10		
Vehicle Speed:	50 mph		Vol	nicle Mi	~				
Near/Far Lane Distance:	58 feet		ver	Vehicl		Day	Evening	Night	Daily
Site Data			-	V OI II OI		tos: 77.5	•	v	
Barrier Height:	0.0 feet			Med	ium True	cks: 84.8	% 4.9%	10.3%	6 1.84%
Barrier Type (0-Wall, 1-Berm):				He	avy Tru	cks: 86.5	% 2.7%	10.8%	6 0.74%
Centerline Dist. to Barrier:			No	ico Sou	ree Elos	ations (in	foot)		
Centerline Dist. to Observer:	64.0 feet		NO	36 300	Autos:	0.000	ieel)		
Barrier Distance to Observer:	0.0 feet			/ledium		2.297			
Observer Height (Above Pad):	5.0 feet				Trucks:	8.006	Grade A	diustmor	#· 0.0
Pad Elevation:	0.0 feet							ajustinoi	1. 0.0
Road Elevation:	0.0 feet		Lar	ne Equi	valent D	Distance (in	feet)		
Road Grade:	0.0%				Autos:	57.271			
Left View:	-90.0 degrees	5	٨	/ledium		57.117			
Right View:	90.0 degrees	5		Heavy	Trucks:	57.132			
FHWA Noise Model Calculation	ons								
VehicleType REMEL	Traffic Flow	Distan	e i	Finite R	oad	Fresnel	Barrier A	tten Be	erm Atten
Autos: 70.2	0 -5.00	-	0.66		0.00	-4.70	0	.000	0.000
Medium Trucks: 81.0	•	-	0.65		0.00	-4.88	0	.000	0.000
Heavy Trucks: 85.3	8 -26.20	-	0.65		0.00	-5.31	0	.000	0.000
Unmitigated Noise Levels (with	thout Topo and L	arrier a	tenua	tion)					
VehicleType Leq Peak H	our Leq Day	Le	q Even	ing	Leq Ni	ight	Ldn		ONEL
		2.6		60.9		54.8	63		64.0
		6.6		50.2		48.7	57	-	57.4
,		7.1		48.1		49.3	57		57.8
Vehicle Noise: 6	6.2 6	4.5		61.4		56.7	65	.2	65.7
Centerline Distance to Noise	Contour (in feet)								
			70 dBA	1	65 dE	BA	60 dBA		5 dBA
		dn:	21		67		212 236		671
	CN		24		75				747

	FH\	NA-RD-77-108	HIGHWA	Y NC	ISE PR	EDICTIO	N MO	DEL			
	o: Existing Wi e: Tamarisk F at: n/o Country	Row Dr.				Project Na Job Nun			Wave		
SITES	SPECIFIC IN	IPUT DATA				NO	ISE N	IODE	L INPUT	s	
Highway Data				S	te Cond	ditions (H	lard =	10, Sc	oft = 15)		
	Traffic (Adt): Percentage: our Volume:	8,100 vehicles 10% 810 vehicles				lium Truci vy Trucks	ks (2 A	/	10 10 10		
Vel	hicle Speed:	55 mph		V	hicle N	liv					
Near/Far Lar	ne Distance:	12 feet				cleType		Dav	Evening	Niaht	Dailv
Site Data					10/10			77.5%	•	9.6%	
Bar	rier Height:	0.0 feet			Me	dium Truc	ks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wa	all, 1-Berm):	0.0			н	eavy Truc	cks:	86.5%	2.7%	10.8%	0.74%
Centerline Dis		30.0 feet		N	oise So	urce Elev	ation	s (in fe	et)		
Centerline Dist. t		30.0 feet				Autos:	0.0	000			
Barrier Distance t		0.0 feet			Mediun	1 Trucks:	2.2	297			
Observer Height (/	,	5.0 feet			Heavy	/ Trucks:	8.0	006	Grade Ad	justmen	t: 0.0
	d Elevation:	0.0 feet									
	d Elevation:	0.0 feet		Li	ane Equ	ivalent D			eet)		
F	Road Grade:	0.0%				Autos:	29.8				
	Left View: Right View:	-90.0 degree 90.0 degree				n Trucks: / Trucks:	29.9 29.9				
FHWA Noise Mode	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Distan	се	Finite I	Road	Fresn	el	Barrier Att	en Be	rm Atten
Autos:	71.78	-3.74		2.18		0.00		4.49	0.0	000	0.00
Medium Trucks:	82.40	-20.98		2.22		0.00		-4.86	0.0	000	0.00
Heavy Trucks:	86.40	-24.93		2.22		0.00		-5.77	0.0	000	0.00
Unmitigated Noise	Levels (with	out Topo and I	barrier a	ttenu	ation)						
	Leq Peak Hou			q Eve		Leq Ni			Ldn		NEL
Autos:	70		8.3		66.6		60.5		69.1		69.
Medium Trucks:	63		2.1		55.8		54.2		62.7		62.9
Heavy Trucks:	63	-	2.3		53.2		54.5		62.8	-	63.
Vehicle Noise:	71		0.0		67.1		62.2		70.8	В	71.
Centerline Distanc	e to Noise Co	ontour (in feet)		70 /		6E -15			O dBA		dDA
		,	dn:	70 dE	5A	65 dE		6	0 dBA		i dBA
			.an: IFL:	36 40		113 126			358 400		,133 ,264
		CN	LL.	40		120			400	1	,204

	FHV	/A-RD-77-108	HIGH	WAY N	OISE PR	EDICTI	ON MC	DEL			
Scenario: Ex Road Name: Oa Road Segment: s/c	asis Club	Dr.			1	Project I Job Nu					
SITE SPEC	IFIC IN	PUT DATA				N	DISE	MODE		s	
Highway Data				s	ite Cond					-	
Average Daily Traffic	: (Adt):	6.600 vehicles	;					Autos:	10		
Peak Hour Perce		10%			Med	lium Tru	cks (2 .	Axles):	10		
Peak Hour V	olume:	660 vehicles	;		Hea	vy Truci	ks (3+ .	Axles):	10		
Vehicle S	Speed:	55 mph			ehicle M	Ilu					
Near/Far Lane Dis	stance:	58 feet				leType		Dav	Evening	Night	Daily
Site Data					venic		utos:	77.5%	0	9.6%	
					Mo	dium Tri		84.8%		10.3%	
Barrier H		0.0 feet				eavy Tru		86.5%		10.3%	
Barrier Type (0-Wall, 1-		0.0			11	cavy m	ions.	00.07	2.170	10.070	0.14
Centerline Dist. to E		64.0 feet		٨	loise Sol	urce Ele	vation	ns (in fe	eet)		
Centerline Dist. to Ob		64.0 feet				Autos	0.	000			
Barrier Distance to Ob		0.0 feet			Medium	Trucks	2.	297			
Observer Height (Above		5.0 feet			Heavy	Trucks	8.	006	Grade Ad	justment.	0.0
Pad Ele		0.0 feet			ane Equ	ivalant	Distan	ee (in	fa a fi		
Road Ele		0.0 feet		-	ane Equ	Autos		.271	leel)		
	Grade: t View:	0.0%			Medium			.271			
		-90.0 degree				Trucks		.117			
Righ	t View:	90.0 degree	s		Tieavy	TTUCKS	57	132			
FHWA Noise Model Cal	culations	;									
VehicleType RE	MEL	Traffic Flow	Dis	tance	Finite F		Fres		Barrier Att	en Ber	m Atter
Autos:	71.78	-4.63		-0.66		0.00		-4.70	0.0	000	0.00
Medium Trucks:	82.40	-21.87		-0.65		0.00		-4.88	0.0	000	0.00
Heavy Trucks:	86.40	-25.82		-0.65		0.00		-5.31	0.0	000	0.00
Unmitigated Noise Leve	els (with	out Topo and	barrie	r attenu	uation)						
VehicleType Leq F	Peak Hou	r Leq Day		Leq Ev	ening	Leq N	light		Ldn	CI	VEL
Autos:	66.	5 6	64.6		62.8		56.	8	65.4	1	66
Medium Trucks:	59.		58.4		52.0		50.		58.9		59.
Heavy Trucks:	59.	9 (58.5		49.5		50.	7	59.1	1	59.
Vehicle Noise:	68.	1 (6.3		63.4		58.	5	67.0)	67
Centerline Distance to I	Noise Co	ntour (in feet)									
				70 d	BA	65 a	BA	6	60 dBA	55	dBA
			dn:	32		10	2		324	1	023
			-un.	36		10	-			• • •	

Monday, February 25, 2019

		VA-RD-77-108 I	iiighw/								
Road Nam	io: Existing Wi e: Country Clu nt: w/o Monter	ub Dr.				Project Job Ni	Vame: I Imber:		Wave		
SITE	SPECIFIC IN	IPUT DATA							L INPUTS	5	
Highway Data				S	Site Con	ditions	'Hard =	10, Se	oft = 15)		
Average Daily	Traffic (Adt):	20,900 vehicles						Autos:	10		
Peak Hour	Percentage:	10%			Med	dium Tru	cks (2 A	(xles)	10		
Peak H	our Volume:	2,090 vehicles			Hea	avy Truc	ks (3+ A	(xles)	10		
Ve	hicle Speed:	50 mph		L.	/ehicle N	<i>Ni</i> v					
Near/Far La	ne Distance:	66 feet		-		cleType		Day	Evening	Night	Daily
Site Data								77.5%	•	9.6%	
	rier Heiaht:	0.0 feet			Me	dium Tr	ucks:	84.8%	4.9%	10.3%	5 1.84%
Barrier Type (0-W		0.0			H	leavy Tr	ucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dis	. ,	55.0 feet				,					
Centerline Dist.		55.0 feet		Λ	loise So				eet)		
Barrier Distance	to Observer:	0.0 feet				Autos		000			
Observer Height (Above Pad):	5.0 feet				n Trucks		297	Oranda Arti		
Pa	ad Elevation:	0.0 feet			Heav	y Trucks	: 8.0	006	Grade Adj	usunen	1. 0.0
Roa	ad Elevation:	0.0 feet		L	ane Equ	ıivalent	Distand	ce (in	feet)		
1	Road Grade:	0.0%				Autos	: 44.2	283			
	Left View:	-90.0 degrees			Mediun	n Trucks	: 44.0	083			
	Right View:	90.0 degrees	5		Heav	y Trucks	: 44.	103			
FHWA Noise Mode	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Distan		Finite		Fresn	-	Barrier Atte		rm Atten
Autos:	70.20	0.79		0.46		0.00		-4.67	0.0		0.000
Medium Trucks:	81.00	-16.45		0.48		0.00		-4.87	0.0		0.000
Heavy Trucks:	85.38	-20.40		0.48		0.00		-5.38	0.0	00	0.000
Unmitigated Noise											
VehicleType	Leq Peak Hou	. ,		eq Ev	ening	Leq I	·		Ldn		NEL
Autos:	71		9.6		67.8		61.7		70.4		71.0
Medium Trucks:	65		3.5		57.2		55.6		64.1 64.6		64.3
Heavy Trucks:	65		4.0		55.0		56.2				64.7
Vehicle Noise:	73		1.4		68.4		63.6		72.1		72.6
	ce to Noise Co	ontour (in feet)		70 d	DA	65 0	ID A		60 dBA	54	5 dBA
Centerline Distant									JU UDA	1 33	JUDA
Centerline Distant		,	dn:	90		28			897	-	.835

	FHW	A-RD-77-108 HIC	GHWAY I	NOISE PF	REDICTI		DEL			
Road Nam	io: Existing With ne: Country Club nt: e/o Monterey	Dr.				Name: D umber: 1		Wave		
SITE	SPECIFIC INP	UT DATA			N	OISE M	ODE	L INPUTS	5	
Highway Data				Site Con	ditions	(Hard = 1	10, So	ft = 15)		
	Traffic (Adt): 22						utos:	10		
	Percentage:	10%				icks (2 A		10		
Peak H	lour Volume: 2	,250 vehicles		He	avy Truc	:ks (3+ A	xles):	10		
	hicle Speed:	50 mph		Vehicle I	Mix					
Near/Far La	ne Distance:	78 feet			icleType	[Day	Evening	Night	Daily
Site Data							7.5%	12.9%	9.6%	
Ba	rrier Height:	0.0 feet		Me	edium Tr	ucks: 8	34.8%	4.9%	10.3%	1.84%
Barrier Type (0-W		0.0		ŀ	leavy Tr	ucks: 8	36.5%	2.7%	10.8%	0.74%
Centerline Di	st. to Barrier:	76.0 feet	ŀ	Noise Sc	ource Fl	evations	(in fe	et)		
Centerline Dist.	to Observer:	76.0 feet	ŀ		Autos			01/		
Barrier Distance	to Observer:	0.0 feet		Modiur	n Trucks					
Observer Height	(Above Pad):	5.0 feet			y Trucks			Grade Adji	ustment	0.0
Pi	ad Elevation:	0.0 feet			,			,	dournorn.	0.0
Roi	ad Elevation:	0.0 feet		Lane Eq	uivalent	Distanc	e (in f	eet)		
	Road Grade:	0.0%			Autos	: 65.4	22			
	Left View:	-90.0 degrees		Mediur	n Trucks	65.2	86			
	Right View:	90.0 degrees		Heav	y Trucks	65.3	00			
FHWA Noise Mod	el Calculations									
VehicleType	REMEL	Traffic Flow D	Distance	Finite	Road	Fresne	el I	Barrier Atte	en Ber	m Atten
Autos:	70.20	1.11	-1.2	24	0.00	-	4.73	0.0	00	0.000
Medium Trucks:	81.00	-16.13	-1.2	23	0.00	-	4.88	0.0	00	0.000
Heavy Trucks:	85.38	-20.08	-1.2	23	0.00	-	5.25	0.0	00	0.000
Unmitigated Nois	e Levels (withou	ut Topo and bar								
VehicleType	Leq Peak Hour	Leq Day	Leq E	vening	Leq	Night		Ldn		VEL
Autos:	70.1		-	66.4		60.4		69.0		69.6
Medium Trucks:				55.8		54.2		62.7		62.9
Heavy Trucks:	64.1	62.6	6	53.6		54.9		63.2		63.3
Vehicle Noise:	71.8	70.0)	67.0		62.2		70.7		71.2
Centerline Distan	ce to Noise Con	tour (in feet)								
				dBA	65 (0 dBA		dBA
		Ldn		90	28			902	,	353
		CNEL	: 1	00	31	8	1	1,005	3,	177

Monday, February 25, 2019

	FH\	WA-RD-77-108	HIGHWA	Y NOI	SE PREDICT	ION MOE	DEL			
	o: Existing W e: Country Cl at: e/o Portola	ub Dr.				Name: E umber: 1		Wave		
SITE S	SPECIFIC IN	IPUT DATA			N	IOISE M	IODEL	INPUTS		
Highway Data				Site	e Conditions	(Hard = :	10, So	ft = 15)		
Peak He	Percentage: our Volume:	10% 2,230 vehicle			Medium Tr Heavy Tru	ucks (2 A	/	10 10 10		
ver Near/Far I ar	hicle Speed:	50 mph		Vel	nicle Mix					
ivear/Far Lar	ne Distance:	58 feet			VehicleType	- 1	Day	Evening I	Vight	Daily
Site Data							77.5%	12.9%	9.6%	97.42%
Bar	rier Height:	0.0 feet			Medium T	rucks: 8	34.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wa	all, 1-Berm):	0.0			Heavy T	rucks: 8	36.5%	2.7%	10.8%	0.74%
Centerline Dis	t. to Barrier:	64.0 feet		No	se Source E	lovations	(in fo	of)		
Centerline Dist. t	to Observer:	64.0 feet		110	Auto					
Barrier Distance t	to Observer:	0.0 feet			Aedium Truck					
Observer Height (/	Above Pad):	5.0 feet			Heavy Truck			Grade Adju	stment:	0.0
Pa	d Elevation:	0.0 feet							Sumonia.	0.0
Roa	d Elevation:	0.0 feet		Lai	ne Equivalen			eet)		
F	Road Grade:	0.0%			Auto		71			
	Left View:	-90.0 degre	es	Λ	Aedium Truck	s: 57.1	17			
	Right View:	90.0 degre	es		Heavy Truck	s: 57.1	32			
FHWA Noise Mode	el Calculation	IS		1						
VehicleType	REMEL	Traffic Flow	Distan	ce .	Finite Road	Fresne		Barrier Atter	Bern	n Atten
Autos:	70.20			0.66	0.00		4.70	0.00		0.00
Medium Trucks:	81.00			0.65	0.00		4.88	0.00	-	0.000
Heavy Trucks:	85.38	-20.12	-	0.65	0.00	-	5.31	0.00	0	0.000
Unmitigated Noise	e Levels (with	out Topo and	barrier a	ttenua	tion)	,				
	Leq Peak Hou			q Ever		Night		Ldn	CN	
Autos:			68.7		67.0	60.9		69.5		70.
Medium Trucks:			62.7		56.3	54.8		63.2		63.
Heavy Trucks:			63.2		54.2	55.4		63.8		63.9
Vehicle Noise:	72	2.3	70.6		67.5	62.7		71.3		71.
Centerline Distanc	e to Noise C	ontour (in feet	<u></u>							
				70 dB/		dBA) dBA	55 c	
			Ldn: VFI :	86 96	-	72 03		860 958	2,7 3.0	

	FHV	VA-RD-77-108	HIGH	WAY N	DISE PR	EDICTIO	ON MODE	L		
	: Existing Wit : Country Clu t: e/o Desert \	ıb Dr.					lame: De mber: 118	sert Wave 326		
SITE S	PECIFIC IN	PUT DATA				N	DISE MO	DEL INPU	TS	
Highway Data				s	ite Cond	litions (Hard = 10	, Soft = 15)		
Average Daily T	raffic (Adt): 2	2,500 vehicles	S				Au	tos: 10		
Peak Hour P	Percentage:	10%			Med	lium Tru	cks (2 Axle	es): 10		
Peak Ho	ur Volume:	2,250 vehicles	S		Hea	vy Truck	s (3+ Axle	es): 10		
Veh	icle Speed:	50 mph		L.	ehicle N	liv				
Near/Far Lan	e Distance:	58 feet		v		leType	Da	y Evenin	q Night	Daily
Site Data					Venic			.5% 12.99		
				_	Mo	Al dium Tri		.5% 12.9		
	ier Height:	0.0 feet				eavy Tru		.5% 2.7%		
Barrier Type (0-Wa		0.0			п	cavy III	00	.070 2.17	10.07	0.74%
Centerline Dist		64.0 feet		٨	loise So	urce Ele	vations (in feet)		
Centerline Dist. to		64.0 feet				Autos.	0.000)		
Barrier Distance to		0.0 feet			Medium	Trucks.	2.297	,		
Observer Height (A	,	5.0 feet			Heavy	Trucks.	8.006	Grade /	Adjustmer	nt: 0.0
	d Elevation:	0.0 feet			ono Fau	ivalant	Distance	(in feet)		
	d Elevation:	0.0 feet		1	ane Equ	Autos		,		
R	oad Grade: Left View:	0.0%			Madium	Autos. Trucks.				
		-90.0 degree				/ Trucks. / Trucks.				
	Right View:	90.0 degree	es		neavy	TTUCKS.	57.134	2		
FHWA Noise Model	Calculation:	-								
VehicleType	REMEL	Traffic Flow	Dist	ance	Finite I	Road	Fresnel	Barrier /	Atten Be	erm Atten
Autos:	70.20	1.11		-0.66		0.00	-4.	70	0.000	0.000
Medium Trucks:	81.00	-16.13		-0.65		0.00	-4.		0.000	0.000
Heavy Trucks:	85.38	-20.08		-0.65		0.00	-5.	31	0.000	0.000
Unmitigated Noise	Levels (with	out Topo and	barrie	r attenı	uation)					
VehicleType L	eq Peak Hou	r Leq Day	,	Leq Ev	ening	Leq N	light	Ldn	(CNEL
Autos:	70.		68.8		67.0		60.9		9.6	70.2
Medium Trucks:	64		62.7		56.4		54.8		3.3	63.
Heavy Trucks:	64.	.6	63.2		54.2		55.4	6	3.8	63.9
Vehicle Noise:	72	.4	70.6		67.6		62.8	7	1.3	71.8
	N-! 0-	ntour (in feet)							
Centerline Distance	e to Noise Co									
Centerline Distance	e to Noise Co			70 d		65 d		60 dBA	-	5 dBA
Centerline Distance	e to Noise Co		Ldn:	70 d 87		65 d 27		60 dBA 868	-	5 dBA 2,745

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Road Nam	io: Existing W ie: Country Cl nt: e/o Cook S	ub Dr.				Project N Job Nui			Wave		
SITE : Highway Data	SPECIFIC IN	IPUT DATA		_	Sito Con	NC ditions (F				i	
* /	Tar (Carle)	04.000			Sile Com	uiuons (r		utos:	10		
• •	Percentage:	21,300 vehicles 10%	5		Mo	dium Truc			10		
	lour Volume:	2.130 vehicles				avy Truck			10		
	hicle Speed:	50 mph	,			·	3 (04 70	.103).	10		
	ne Distance:	78 feet		1	Vehicle I						
	ne Distance.	76 leel			Vehi	cleType		lay	•	Night	Daily
Site Data								7.5%		9.6%	
Bai	rrier Height:	0.0 feet				edium Tru		4.8%		10.3%	1.849
Barrier Type (0-W	/all, 1-Berm):	0.0			H	leavy Tru	cks: 8	6.5%	2.7%	10.8%	0.749
Centerline Dis	st. to Barrier:	76.0 feet			Noise So	ource Ele	vations	(in fe	et)		
Centerline Dist.	to Observer:	76.0 feet		F		Autos:	0.00				
Barrier Distance	to Observer:	0.0 feet			Mediur	n Trucks:	2.29	-			
Observer Height (Above Pad):	5.0 feet			Heav	y Trucks:	8.00		Grade Adju	istment.	: 0.0
	ad Elevation:	0.0 feet		L		·					
	ad Elevation:	0.0 feet		1	Lane Equ	uivalent L			eet)		
1	Road Grade:	0.0%				Autos:	65.42				
	Left View:	-90.0 degree				n Trucks:	65.28				
	Right View:	90.0 degree	S		Heav	y Trucks:	65.30	00			
HWA Noise Mode	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Distan	се	Finite	Road	Fresne	1 1	Barrier Atte	n Ber	m Atten
Autos:	70.20	0.88		-1.24		0.00		1.73	0.0		0.00
Medium Trucks:	81.00			-1.23	-	0.00		1.88	0.0		0.00
Heavy Trucks:	85.38	-20.32		-1.23	3	0.00	-{	5.25	0.0	00	0.00
Jnmitigated Noise											
VehicleType	Leq Peak Hou			eq Ev	/ening	Leq N	•		Ldn	Cl	NEL
Autos:	69		67.9		66.2		60.1		68.7		69
Medium Trucks:	63		61.9		55.5		54.0		62.5		62
		.8 6	52.4		53.4		54.6		63.0		63.
Heavy Trucks:					66.7		62.0		70.5		71.
Heavy Trucks: Vehicle Noise:	71		69.8		00.1						
Heavy Trucks:	71			70							
Heavy Trucks: Vehicle Noise:	71	ontour (in feet)		70 c	1BA	65 dl			0 dBA 854		dBA 700

	FHV	VA-RD-77-108	HIGH	WAY N	IOISE PI	REDICT	ION MOD	EL						
Road Nan	io: Existing Wi ie: Country Clu nt: e/o El Dora	ub Dr.					Name: D lumber: 1							
SITE	SPECIFIC IN	IPUT DATA			NOISE MODEL INPUTS									
Highway Data				:	Site Conditions (Hard = 10, Soft = 15)									
• •	Traffic (Adt): 2 Percentage:	20,600 vehicle: 10%	S		Ме	dium Tr	A ucks (2 Ax	utos: des):						
Peak H	lour Volume:	2,060 vehicles	S		He	avy Tru	cks (3+ A)	(les):	10					
Ve	hicle Speed:	50 mph		-	Vehicle I	Mise								
Near/Far La	ne Distance:	58 feet		-		icleType		Day	Evening	Night	Daily			
Site Data				-	ven			7.5%	•		97.42%			
						ر edium T		4.8%		9.0%				
	rrier Height:	0.0 feet						4.8%		10.3%				
Barrier Type (0-V	. ,	0.0			,	leavy T	rucks: 8	0.5%	5 2.1%	10.8%	0.74%			
Centerline Di		64.0 feet		1	Noise So	ource E	levations	(in f	eet)					
Centerline Dist.		64.0 feet				Auto	s: 0.00	00	,					
Barrier Distance	to Observer:	0.0 feet			Mediu	m Truck	s: 2.29	97						
Observer Height	(Above Pad):	5.0 feet			Heav	y Truck	s: 8.00	06	Grade Adj	ustmen	: 0.0			
P	ad Elevation:	0.0 feet												
Ro	ad Elevation:	0.0 feet		1	Lane Eq		t Distance	-	feet)					
	Road Grade:	0.0%				Auto								
	Left View:	-90.0 degree	es			m Truck								
	Right View:	90.0 degree	es		Heav	y Truck	s: 57.13	32						
FHWA Noise Mod	el Calculation	s												
VehicleType	REMEL	Traffic Flow	Dist	ance	Finite	Road	Fresne	e/	Barrier Atte	en Be	m Atten			
Autos:	70.20	0.73		-0.66	6	0.00		4.70	0.0	00	0.000			
Medium Trucks:	81.00	-16.51		-0.65	5	0.00		4.88	0.0	00	0.000			
Heavy Trucks:	85.38	-20.46		-0.65		0.00	4	5.31	0.0	00	0.000			
Unmitigated Nois														
VehicleType	Leq Peak Hou			Leq E	vening	Leq	Night		Ldn		NEL			
Autos:	70		68.4		66.6		60.6		69.2		69.8			
Medium Trucks:	63		62.3		56.0		54.4		62.9		63.1			
Heavy Trucks:	64	.3	62.8		53.8		55.1		63.4		63.5			
Vehicle Noise:	72	.0	70.2		67.2		62.4		70.9)	71.4			
Centerline Distan	ce to Noise Co	ontour (in feet)											
					dBA		dBA	(60 dBA		dBA			
			Ldn:	7			51		795		513			
		CI	VEL:	8	8	2	80		885	2	798			

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	FHWA	-RD-77-108	HIGI	HWAY I	NOISE PF	EDICTIO	n Moe	DEL			
<i>Scenario:</i> Existin <i>Road Name:</i> Countr <i>Road Segment:</i> e/o Oa	, Club I	Dr.				Project Na Job Nur			Wave		
SITE SPECIFIC	: INPU	JT DATA				NO	ISE N	IODE	L INPUT	s	
Highway Data					Site Con	ditions (H	lard =	10, So	oft = 15)		
Average Daily Traffic (Ad Peak Hour Percentag Peak Hour Volum	e:	100 vehicle 10% 310 vehicle				dium Truci avy Trucks	ks (2 A		10 10 10		
Vehicle Spee	d:	50 mph		F	Vehicle I	liv					
Near/Far Lane Distand	e:	58 feet		-		cleType		Dav	Evening	Night	Daily
Site Data					veni			77.5%	0	9.6%	
Barrier Heigi		0.0 feet			Me	dium Truc	ks: 8	34.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berr	n):	0.0			H	leavy Truc	cks: 8	36.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barri		64.0 feet			Noise So	urce Elev	ations	; (in fe	et)		
Centerline Dist. to Observ		64.0 feet				Autos:	0.0	00			
Barrier Distance to Observe		0.0 feet			Mediur	n Trucks:	2.2	97			
Observer Height (Above Pa Pad Elevation	·	5.0 feet 0.0 feet			Heav	y Trucks:	8.0	06	Grade Ad	iustment	: 0.0
Road Elevatio		0.0 feet		F	Lane Equ	uivalent D	istanc	e (in f	feet)		
Road Grad		0.0%		F		Autos:	57.2				
Left Vie		90.0 degree	<u></u>		Mediur	n Trucks:	57.1	17			
Right Vie		90.0 degree				y Trucks:	57.1				
FHWA Noise Model Calcula	tions										
VehicleType REMEL	T	raffic Flow	Di	stance	Finite	Road	Fresn	e/ i	Barrier Att	en Bei	rm Atten
Autos: 70	.20	1.23		-0.6	6	0.00	-	4.70	0.0	000	0.00
Medium Trucks: 81	.00	-16.01		-0.6	5	0.00	-	4.88	0.0	000	0.00
Heavy Trucks: 85	.38	-19.97		-0.6	5	0.00	-	5.31	0.0	000	0.00
Unmitigated Noise Levels (vithou	t Topo and	barri	ier atter	nuation)						
VehicleType Leq Peak		Leq Day		Leq E	vening	Leq Ni			Ldn		NEL
Autos:	70.8		68.9		67.1		61.1		69.7		70.3
Medium Trucks:	64.3		62.8		56.5		54.9		63.4		63.6
Heavy Trucks:	64.8		63.3		54.3		55.6		63.9		64.0
Vehicle Noise:	72.5		70.7		67.7		62.9		71.4	ł	71.9
Centerline Distance to Nois	e Cont	our (in feet)							1	
			L		dBA	65 dE		6	0 dBA		dBA
			Ldn:	-	39	282			891		818
		CI	NEL:	9	99	314			992	3,	138

FI	HWA-RD-77-108	HIGHWA	Y NOISE PF	REDICTION	MODEL							
Scenario: Existing N Road Name: Hovley Lr Road Segment: e/o Cook	n. ,		Project Name: Desert Wave Job Number: 11826									
SITE SPECIFIC			NOISE MODEL INPUTS									
Highway Data			Site Conditions (Hard = 10, Soft = 15)									
Average Daily Traffic (Adt):	17.400 vehicles	\$			Autos	: 10						
Peak Hour Percentage:		<i>.</i>	Me	dium Truck								
Peak Hour Volume:				avy Trucks								
Vehicle Speed:	45 mph				, ,							
Near/Far Lane Distance:			Vehicle I		Devi	Constant	Allerter	Delle				
0.0			veni	cleType Auto	Day 0s: 77.5%	Evening 6 12.9%	Night	Daily 97.42				
Site Data				Auto dium Truci								
Barrier Height:							10.3% 10.8%					
Barrier Type (0-Wall, 1-Berm):			F	leavy Truci	45. 80.57	o 2.1%	10.8%	0.74				
Centerline Dist. to Barrier:			Noise So	urce Eleva	ations (in f	eet)						
Centerline Dist. to Observer:				Autos:	0.000							
Barrier Distance to Observer:			Mediur	n Trucks:	2.297							
Observer Height (Above Pad):			Heav	y Trucks:	8.006	Grade Ad	ljustment	0.0				
Pad Elevation:			Laura Fre	, alualant Di		6						
Road Elevation:	0.0 1001		Lane Equ	uivalent Di		reet)						
Road Grade:	0.070		A day of the second	Autos: n Trucks:	57.271							
Left View:	00.0 009.00				57.117							
Right View:	90.0 degree	es	neav	y Trucks:	57.132							
FHWA Noise Model Calculation												
VehicleType REMEL	Traffic Flow	Distanc			Fresnel	Barrier At		m Atter				
Autos: 68.4			0.66	0.00	-4.70		000	0.00				
Medium Trucks: 79.4			0.65	0.00	-4.88		000	0.00				
Heavy Trucks: 84.2	-20.74	-1	0.65	0.00	-5.31	0.0	000	0.00				
Unmitigated Noise Levels (wi			,									
VehicleType Leq Peak H			q Evening	Leq Nig		Ldn		VEL				
		66.4	64.6		58.5	67.:		67				
		60.5	54.1		52.6	61.		61				
		61.4	52.4		53.7	62.		62				
Vehicle Noise:	70.1 6	68.4	65.2		60.5	69.	1	69				
Centerline Distance to Noise	Contour (in feet)											
			70 dBA	65 dB/	4	60 dBA		dBA				
		Ldn:	52	163		516		632				
		VEL:	57	181		574		814				

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	FH\	VA-RD-77-108 H	IGHW	AY N	OISE PF	REDICTI		DEL			
Road Nan	io: E+P ne: Monterey A nt: s/o Country					Project Job Ni	Name: umber:				
	SPECIFIC IN	IPUT DATA			NH- 0				L INPUTS	5	
Highway Data				2	site Con	aitions					
,	, ,	35,400 vehicles 10%			Ma	dium Tru		Autos:			
	Percentage: lour Volume:	3.540 vehicles				avy Truc					
					1160	avy muc	no (0+)	члісз).	10		
	hicle Speed: ne Distance:	55 mph		1	/ehicle I	Nix					
Near/Far La	ne Distance:	78 feet			Vehi	cleType		Day	Evening	Night	Daily
Site Data						A	utos:	77.5%	5 12.9%	9.6%	
Ba	rrier Height:	0.0 feet			Me	edium Tr	ucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-W	/all, 1-Berm):	0.0			H	leavy Tr	ucks:	86.5%	5 2.7%	10.8%	0.74%
Centerline Di	st. to Barrier:	76.0 feet			loise So	urce El	evation	s (in f	eet)		
Centerline Dist.	to Observer:	76.0 feet		Ľ.		Autos		000	000		
Barrier Distance	to Observer:	0.0 feet			Mediur	n Trucks		297			
Observer Height	(Above Pad):	5.0 feet				y Trucks		006	Grade Adj	ustment	0.0
P	ad Elevation:	0.0 feet				·					
	ad Elevation:	0.0 feet		L	ane Equ				feet)		
	Road Grade:	0.0%				Autos		422			
	Left View:	-90.0 degrees				n Trucks		286			
	Right View:	90.0 degrees			Heav	y Trucks	65.	300			
FHWA Noise Mod		-									
VehicleType	REMEL	Traffic Flow	Distan		Finite		Fresi		Barrier Atte		rm Atten
Autos:	71.78	2.67		-1.24		0.00		-4.73	0.0		0.000
Medium Trucks:	82.40	-14.57		-1.23		0.00		-4.88	0.0		0.000
Heavy Trucks:	86.40	-18.53		-1.23		0.00		-5.25	0.0	00	0.000
Unmitigated Nois					,				l dn		
VehicleType Autos:	Leq Peak Hou 73			eq Ev	ening 69.5	Leqi	Vight 63.	_	Lan 72.1		NEL 72.
Autos: Medium Trucks:	73	··			58.7		63. 57.	-	65.7		65.9
	66				56.2		57.4 57.4	-	65.8		65.9
Heavy Trucks:			.2		70.1						74.3
Vehicle Noise:			.0		70.1		65.	2	73.8		74
Centerline Distan	ce to Noise C	ontour (in feet)		70 d	DA	65 0			60 dBA	F	dBA
			In:	18		57		1 '	1.804		705
					-						
		CNE		20		63	27		2,013		366

	FH\	VA-RD-77-108	HIGHWA		PREDICT		EL			
Road Nar	rio: E+P ne: Portola Av. ent: n/o Country	Club Dr.				Name: D umber: 1	esert Wave 1826			
SITE	SPECIFIC IN	PUT DATA			Ν	IOISE M	ODEL INPL	JTS		
Highway Data				Site 0	Conditions	(Hard = 1	0, Soft = 15)		
Average Daily	Traffic (Adt):	15,400 vehicle	s			A	utos: 10			
Peak Hour	Percentage:	10%			Medium Tri	ucks (2 A)	des): 10			
Peak I	-lour Volume:	1,540 vehicle	s		Heavy True	cks (3+ A)	des): 10			
Ve	ehicle Speed:	55 mph		Mahla	le Mix					
Near/Far La	ane Distance:	58 feet			ie iviix /ehicleType		Day Evenir	NII	ght	Daily
Site Data				- '			7.5% 12.9	· ·	-	97.42%
				_	/ Medium T		4.8% 4.9).3%	1.84%
	rrier Height:	0.0 feet			Heavy T		4.8% 4.9 6.5% 2.7).8%	0.74%
Barrier Type (0-V	. ,	0.0			neavy n	ucks. c	0.3% 2.7	70 IC	1.0%	0.74%
	ist. to Barrier:	64.0 feet		Noise	Source E	evations	(in feet)			
Centerline Dist.		64.0 feet			Auto	s: 0.0	00			
Barrier Distance		0.0 feet		Me	dium Truck	s: 2.2	97			
Observer Height	. ,	5.0 feet		н	eavy Truck	s: 8.0	6 Grade	Adjustr	ment:	0.0
-	ad Elevation:	0.0 feet		1	Equivalen	Distance	(In 6 4)			
Ro	ad Elevation:	0.0 feet		Lane			. ,			
	Road Grade:	0.0%			Auto					
	Left View:	-90.0 degre			dium Truck					
	Right View:	90.0 degre	es	н	eavy Truck	s: 57.1	32			
FHWA Noise Mod	lel Calculation	s								
VehicleType	REMEL	Traffic Flow	Distan	ce Fii	ite Road	Fresne	l Barrier	Atten	Berm	Atten
Autos:	71.78	-0.95		0.66	0.00	-	4.70	0.000		0.000
Medium Trucks:	82.40	-18.19		0.65	0.00	-	4.88	0.000		0.000
		-22.14		0.05			5.31	0.000		0.000
Heavy Trucks:	86.40	-22.14		0.65	0.00	-	5.57	0.000		
Unmitigated Nois	e Levels (with	out Topo and	barrier a	ttenuatio	n)			0.000		
Unmitigated Nois VehicleType	e Levels (with Leq Peak Hou	out Topo and Ir Leq Day	barrier a	ttenuatio q Evenin	n) g Leq	Night	Ldn		CNI	
Unmitigated Nois VehicleType Autos:	e Levels (with Leq Peak Hou 70	out Topo and Ir Leq Day .2	barrier a / Le 68.3	ttenuatio q Evenin 6	n) g Leq 6.5	Night 60.5	Ldn	9.1	CNI	69.
Unmitigated Nois VehicleType Autos: Medium Trucks:	e Levels (with Leq Peak Hou 70 63	out Topo and r Leq Day .2 .6	barrier a / Le 68.3 62.1	ttenuatio q Evenin 6 5	n) g Leq 6.5 5.7	Night 60.5 54.2	Ldn 6	9.1 2.6	CNI	69.7 62.9
Unmitigated Nois VehicleType Autos: Medium Trucks: Heavy Trucks:	e Levels (with Leq Peak Hou 70 63 63	out Topo and r Leq Day .2 .6 .6	barrier a / Le 68.3 62.1 62.2	ttenuatio q Evenin 6 5 5	n) g Leq 6.5 5.7 3.1	Night 60.5 54.2 54.4	Ldn 6 6	9.1 2.6 2.8	CNI	69.7 62.9 62.9
Unmitigated Nois VehicleType Autos: Medium Trucks:	e Levels (with Leq Peak Hou 70 63 63	out Topo and r Leq Day .2 .6 .6	barrier a / Le 68.3 62.1	ttenuatio q Evenin 6 5 5	n) g Leq 6.5 5.7	Night 60.5 54.2	Ldn 6 6	9.1 2.6	CNI	69.7 62.9 62.9
Unmitigated Nois VehicleType Autos: Medium Trucks: Heavy Trucks:	e Levels (with Leg Peak Hou 70 63 63 71	out Topo and r Leq Day .2 .6 .6 .8	barrier a / Le 68.3 62.1 62.2 70.0	ttenuatio q Evenin 6 5 5 6	n) g Leq 5.5 3.1 7.0	Night 60.5 54.2 54.4 62.2	Ldn 6 6 6 7	9.1 2.6 2.8	-	69.3 62.9 62.9 71.2
Unmitigated Nois VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	e Levels (with Leg Peak Hou 70 63 63 71	out Topo and r Leq Day .2 .6 .6 .8	barrier a / Le 68.3 62.1 62.2 70.0)	ttenuatio q Evenin 6 5 5 6 70 dBA	n) g Leq 6.5 5.7 3.1 7.0 65	Night 60.5 54.2 54.4 62.2 dBA	Ldn 6 6 7 60 dBA	9.1 2.6 2.8	55 d	69.7 62.9 62.9 71.2 BA
Unmitigated Nois VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	e Levels (with Leg Peak Hou 70 63 63 71	out Topo and r Leq Day 2.2. 6.6. 8.8. Dontour (in feet	barrier a / Le 68.3 62.1 62.2 70.0	ttenuatio q Evenin 6 5 5 6	n) g Leq 5.5 5.7 3.1 7.0 65 2	Night 60.5 54.2 54.4 62.2	Ldn 6 6 6 7	9.1 2.6 2.8	-	69.7 62.9 62.9 71.2 BA 38

	FHW	/A-RD-77-108	HIGH	WAYN	IOISE PR	EDICTIO	N MODE	۲L			
Scenario: Road Name: Road Seament:	Portola Av.	Club Dr				Project Na Job Nurr			ave		
										_	
SITE SP Highway Data	PECIFIC IN	PUT DATA			Site Con	NO hitions (H	ISE MC			5	
Average Daily Tra Peak Hour Pe Peak Hou	ercentage:	1,000 vehicle 10% 2,100 vehicle 50 mph			Mec Hea	lium Truck avy Trucks	Au s (2 Axl	tos: es):	10 10 10		
Near/Far Lane		58 feet		-	Vehicle N		Dá			Manhat	Delle
Site Data					venio	cleType Aut		/	/ening 12.9%	Night 9.6%	Daily 97.42%
Barrie Barrier Type (0-Wall		0.0 feet 0.0				dium Truc leavy Truc	ks: 84	.8% .5%	4.9% 2.7%	10.3% 10.8%	1.84% 0.74%
Centerline Dist.		64.0 feet		Ē	Noise So	urce Elev	ations (in feet))		
Road	Observer: ove Pad): Elevation: Elevation:	64.0 feet 0.0 feet 5.0 feet 0.0 feet 0.0 feet		-	Heavy	Autos: n Trucks: / Trucks: iivalent D		7 6 Gr (in fee :		ustment	0.0
R	ad Grade: Left View: Right View:	0.0% -90.0 degre 90.0 degre				Autos: n Trucks: / Trucks:	57.27 57.11 57.13	7			
FHWA Noise Model	Calculations REMEL	Traffic Flow	Dist	ance	Finite I	Deed	Fresnel	0.	rrier Atte		m Atten
VehicleType Autos: Medium Trucks: Heavy Trucks:	70.20 81.00 85.38	0.81 -16.42 -20.38	Dist	-0.6 -0.6 -0.6	6 5	0.00 0.00 0.00	-4. -4.	.70 .88 .31	0.0 0.0 0.0	00	0.00 0.00 0.00
Unmitigated Noise L	evels (with	out Topo and	barrie	r atter	uation)						
	eq Peak Hou				vening	Leq Nig	ght	La	In	С	NEL
Autos: Medium Trucks:	70. 63.	9	68.5 62.4		66.7 56.1	, ,	60.6 54.5		69.3 63.0		69.9 63.2
Heavy Trucks:	64.	-	62.9		53.9		55.1		63.5		63.0
Vehicle Noise:	72.	1	70.3		67.3		62.5		71.0		71.
Centerline Distance	to Noise Co	ntour (in feet)								
			Ldn: VFL :	8	dBA 11	65 dB 256 285	A	60 a 81 90	0	2,	dBA 562 853

F	HWA-RD-77-108	HIGHWA	Y NOISE PR	REDICTION	MODEL			
Scenario: E+P				Project Nar				
Road Name: Cook St.				Job Numb	er: 11826			
Road Segment: n/o I-10	WB Ramps							
SITE SPECIFIC	INPUT DATA					L INPUT	s	
Highway Data			Site Con	ditions (Ha	rd = 10, S			
Average Daily Traffic (Adt)	7,900 vehicle	s			Autos:			
Peak Hour Percentage				dium Trucks	,			
Peak Hour Volume		s	Hea	avy Trucks (3+ Axles):	10		
Vehicle Speed			Vehicle I	Nix				
Near/Far Lane Distance	: 78 feet		Vehi	cleType	Day	Evening	Night	Daily
Site Data				Auto	s: 77.5%	12.9%	9.6%	97.42
Barrier Height	: 0.0 feet		Me	edium Truck	s: 84.8%	4.9%	10.3%	1.84
Barrier Type (0-Wall, 1-Berm)			F	leavy Truck	s: 86.5%	2.7%	10.8%	0.74
Centerline Dist. to Barrier			Naina Ca	urce Eleva	tione (in f	a a 41		
Centerline Dist. to Observer	76.0 feet		NOISe SU			eel)		
Barrier Distance to Observer	: 0.0 feet		Marthum	Autos: n Trucks:	0.000 2.297			
Observer Height (Above Pad)	5.0 feet				2.297	Grade Ad	iustmont	
Pad Elevation	: 0.0 feet		Heav	y Trucks:	8.006	Grade Ad	jusuneni.	0.0
Road Elevation	: 0.0 feet		Lane Equ	uivalent Dis	stance (in	feet)		
Road Grade	: 0.0%			Autos:	65.422			
Left View	-90.0 degree	es	Mediur	n Trucks:	65.286			
Right View	90.0 degree	es	Heav	y Trucks:	65.300			
FHWA Noise Model Calculati	ons							
VehicleType REMEL	Traffic Flow	Distan	ce Finite	Road F	resnel	Barrier At	en Ber	m Atter
Autos: 70.	20 -3.43	-	1.24	0.00	-4.73	0.0	000	0.00
Medium Trucks: 81.	-20.67	-	1.23	0.00	-4.88	0.0	000	0.00
Heavy Trucks: 85.3	-24.63	-	1.23	0.00	-5.25	0.0	000	0.00
Unmitigated Noise Levels (w			,					
VehicleType Leq Peak H			q Evening	Leq Nigł		Ldn		VEL
		63.6	61.9		55.8	64.		65
		57.6	51.2		49.7	58.		58
		58.1	49.1		50.3	58.		58
		65.5	62.4		57.7	66.	2	66
Centerline Distance to Noise	Contour (in feet	,	70 /54					
		L	70 dBA	65 dBA		60 dBA		dBA
		Ldn:	32	100		317		002
	CI	NEL:	35	112		353	1.	115

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	FUA	VA-RD-77-108	nigr	IVVAT		EDICTIC		JDEL			
Scenario:						Project N					
Road Name:						Job Nu	mber:	11826			
Road Segment:	s/o I-10 EB	Ramps									
	ECIFIC IN	PUT DATA			Site Cond					S	
Highway Data					Site Cond	ntions (I	Hara :				
Average Daily Tra	. ,							Autos:			
Peak Hour Pe	•	10%				lium Truc					
Peak Hour		3,370 vehicles			Hea	vy Truck	(3+	Axles):	10		
	e Speed:	50 mph			Vehicle N	lix					
Near/Far Lane	Distance:	78 feet			Vehi	leType		Day	Evening	Night	Daily
Site Data						Au	itos:	77.5%	5 12.9%	9.6%	97.42
Barrie	r Height:	0.0 feet			Me	dium Tru	icks:	84.8%	4.9%	10.3%	1.84
Barrier Type (0-Wall,	1-Berm):	0.0			Н	eavy Tru	icks:	86.5%	2.7%	10.8%	0.74
Centerline Dist. t		76.0 feet			Noise So	urce Ele	vatio	ns (in f	eet)		
Centerline Dist. to 0		76.0 feet				Autos:	0	.000			
Barrier Distance to (0.0 feet			Mediun	Trucks:	2	.297			
Observer Height (Abo	,	5.0 feet			Heav	Trucks:	8	.006	Grade Ad	ljustment	: 0.0
	levation:	0.0 feet		-						·	
	levation:	0.0 feet		-	Lane Equ				feet)		
Roa	d Grade:	0.0%				Autos:		.422			
L	.eft View:	-90.0 degree	s			Trucks:		.286			
Ri	ght View:	90.0 degree	S		Heavy	/ Trucks:	65	.300			
FHWA Noise Model C		-									
	REMEL	Traffic Flow	Dis	stance	Finite I		Fres		Barrier At		m Atter
Autos:	70.20	2.87		-1.2		0.00		-4.73		000	0.00
Medium Trucks:	81.00	-14.37		-1.2	-	0.00		-4.88		000	0.00
Heavy Trucks:	85.38	-18.33		-1.2	3	0.00		-5.25	0.	000	0.00
Unmitigated Noise Le					,			-			
	q Peak Hou			Leq E	vening	Leq N	<u> </u>		Ldn		NEL
Autos:	71		69.9		68.2		62.		70.		71
Medium Trucks:	65		63.9		57.5		56.		64.		64
Heavy Trucks:	65	-	64.4		55.4		56.	-	65.		65
Vehicle Noise:	73		71.8		68.7		64.	0	72.	5	73
Centerline Distance t	o Noise Co	ontour (in feet)		70	dBA	65 d	DA	T .	60 dBA	55	dBA
			dn:		35	65 a		1	1.351		ава 273
		1	an:	1.	50	42	r		1,351	4,	213
		~	IFI :		50	476	~		1.505		758

	FHV	/A-RD-77-108	HIGHW.	AY NC	DISE PR	EDICTI	ON MOI	DEL			
	o: E+P e: Cook St. nt: s/o Gerald F	ord Dr.					Name: I umber: ·		Wave		
SITE	SPECIFIC IN	PUT DATA				N	OISE N	IODE	L INPUT	s	
Highway Data				Si	ite Conc	ditions	(Hard =	10, Sc	oft = 15)		
Average Daily	Traffic (Adt): 2	5.600 vehicles					,	Autos:	10		
Peak Hour	Percentage:	10%			Mea	lium Tru	icks (2 A	(xles):	10		
Peak H	our Volume:	2,560 vehicles			Hea	avy Truc	:ks (3+ A	xles):	10		
Vei	hicle Speed:	50 mph		14				-			
Near/Far Lai	ne Distance:	78 feet		Ve	ehicle M	lix cleType		Davi	Evening	Night	Daily
Site Data					venic			Day 77.5%	•		
						ء dium Tr		77.5% 84.8%		9.6% 10.3%	
	rier Height:	0.0 feet						84.8% 86.5%		10.3%	
Barrier Type (0-W	. ,	0.0			н	leavy Tr	UCKS:	80.5%	2.7%	10.8%	0.74%
Centerline Dis		76.0 feet		N	oise So	urce El	evation	s (in fe	eet)		
Centerline Dist.		76.0 feet				Autos	s: 0.0	000			
Barrier Distance		0.0 feet			Medium	1 Trucks	s: 2.2	297			
Observer Height (.	,	5.0 feet			Heavy	/ Trucks	s: 8.0	006	Grade Ad	iustment	: 0.0
	d Elevation:	0.0 feet					Distant		641		
	d Elevation:	0.0 feet		La	ane Equ		Distand		reet)		
F	Road Grade:	0.0%				Autos					
	Left View:	-90.0 degree			Medium						
	Right View:	90.0 degree	S		Heavy	/ Trucks	s: 65.3	300			
FHWA Noise Mode	el Calculations	;									
VehicleType	REMEL	Traffic Flow	Distar	nce	Finite F	Road	Fresn	el	Barrier Att	en Ber	m Atten
Autos:	70.20	1.67		-1.24		0.00		-4.73	0.0	000	0.000
Medium Trucks:	81.00	-15.56		-1.23		0.00		-4.88	0.0	000	0.000
Heavy Trucks:	85.38	-19.52		-1.23		0.00		-5.25	0.0	000	0.00
Unmitigated Noise											
<i>,</i> ,	Leq Peak Hou			eq Eve	•	Leq	Night		Ldn	-	NEL
Autos:	70.		68.7		67.0		60.9		69.5		70.1
Medium Trucks:	64.		62.7		56.3		54.8		63.3		63.5
Heavy Trucks:	64.	-	33.2		54.2		55.4		63.8		63.9
Vehicle Noise:	72.	3	70.6		67.5		62.8		71.3	3	71.8
Centerline Distand	e to Noise Co	ntour (in feet)									
Centerline Distand	e to Noise Co			70 dE			dBA		0 dBA		dBA
Centerline Distand	e to Noise Co		_dn: IFL :	70 dE 103	;	65 (32 36	25		60 dBA 1,026 1,143	3,	dBA 246 614

Monday, February 25, 2019

	FH\	WA-RD-77-108	HIGH	WAY N	IOISE PR	EDICTIO		EL			
Scenario Road Name						Project Na Job Nurr			Vave		
Road Segmen	nt: s/o Frank S	Sinatra Dr.									
SITE S	SPECIFIC IN	IPUT DATA				NO	ISE M	ODEL	INPUTS	5	
Highway Data					Site Cond	litions (H	ard = 1	0, Sof	t = 15)		
Average Daily	Traffic (Adt):	26,400 vehicle	s				Au	utos:	10		
Peak Hour	Percentage:	10%			Med	ium Truck	(2 Ax	des):	10		
Peak He	our Volume:	2,640 vehicle	s		Hea	vy Trucks	: (3+ Ax	des):	10		
Vel	hicle Speed:	50 mph		-	Vehicle M	lix					
Near/Far Lar	ne Distance:	78 feet		-		leType	D	av I	Evening	Night	Daily
Site Data						Aut	os: 7	7.5%	12.9%	9.6%	
Bar	rier Height:	0.0 feet			Me	dium Truc	ks: 8	4.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wa	•	0.0			H	eavy Truc	ks: 8	6.5%	2.7%	10.8%	0.74%
Centerline Dis	t. to Barrier:	76.0 feet		H	Noise Sol	urce Elev	ations	(in for	at)		
Centerline Dist. t	to Observer:	76.0 feet		Ľ,	10/30 001	Autos:	0.00				
Barrier Distance t	to Observer:	0.0 feet			Modium	Trucks:	2.29				
Observer Height (/	Above Pad):	5.0 feet				Trucks:	8.00		Grade Adj	iustment	: 0.0
	d Elevation:	0.0 feet		_							
	d Elevation:	0.0 feet		1	Lane Equ				et)		
F	Road Grade:	0.0%				Autos:	65.42				
	Left View:	-90.0 degre				Trucks:	65.28				
	Right View:	90.0 degre	es		Heavy	Trucks:	65.30	00			
FHWA Noise Mode	el Calculation	S									
VehicleType	REMEL	Traffic Flow	Dist	tance	Finite F		Fresne		Barrier Atte		m Atten
Autos:	70.20	1.81		-1.2		0.00		1.73	0.0		0.000
Medium Trucks:	81.00			-1.2	-	0.00		1.88	0.0		0.000
Heavy Trucks:	85.38	-19.39		-1.2	3	0.00	-5	5.25	0.0	00	0.000
Unmitigated Noise					<u> </u>						
	Leq Peak Hou			Leq E	vening	Leq Nig		1	Ldn		NEL
Autos:	70		68.9		67.1		61.1		69.7		70.3
Medium Trucks:	64		62.8		56.5		54.9		63.4		63.6
Heavy Trucks: Vehicle Noise:	64 72		63.3 70.7		54.3 67.7		55.6 62.9		63.9 71.4		64.0 71.9
					07.7		02.9		71.4	•	71.8
Centerline Distanc	e to Noise Co	ontour (in feet)	70	dBA	65 dB	4	60	dBA	55	dBA
			I dn:	10		65 dB 335	м		058		ава 347
			Lan: VFL:	11		335			,058 .179		347 727
		6	VLL.		10	3/3		1,	,175	з,	121

F	HWA-RD-77-108 I	HIGHWA	Y NOISE PF	REDICTION				
Scenario: E+P				Project Na	me: Des	ert Wave		
Road Name: Cook St.				Job Num	ber: 1182	26		
Road Segment: n/o Cour	try Club Dr.							
SITE SPECIFIC	INPUT DATA					EL INPUT	S	
Highway Data			Site Con	ditions (H	ard = 10,	Soft = 15)		
Average Daily Traffic (Adt).	28,300 vehicles				Auto			
Peak Hour Percentage.	10%		Me	dium Truck	s (2 Axles	s): 10		
Peak Hour Volume	1		He	avy Trucks	(3+ Axles	s): 10		
Vehicle Speed.	50 mph		Vehicle I	Mix				
Near/Far Lane Distance.	78 feet			icleType	Day	Evening	Night	Daily
Site Data				Aut	,			97.42
Barrier Height	0.0 feet		Me	edium Truc	ks: 84.8	4.9%	10.3%	1.849
Barrier Type (0-Wall, 1-Berm)			ŀ	leavy Truc	ks: 86.5	% 2.7%	10.8%	0.74
Centerline Dist. to Barrier				-				
Centerline Dist. to Observer			Noise Sc	ource Elev		feet)		
Barrier Distance to Observer				Autos:	0.000			
Observer Height (Above Pad)				m Trucks:	2.297			
Pad Elevation			Heav	y Trucks:	8.006	Grade Ad	ijustment	: 0.0
Road Elevation	0.0 feet		Lane Eq	uivalent Di	istance (i	n feet)		
Road Grade	0.0%			Autos:	65.422			
Left View	-90.0 degree	s	Mediur	m Trucks:	65.286			
Right View	90.0 degree	s	Heav	y Trucks:	65.300			
FHWA Noise Model Calculation	ons							
VehicleType REMEL	Traffic Flow	Distand	e Finite	Road	Fresnel	Barrier At	ten Ber	m Atter
Autos: 70.2	20 2.11	-	1.24	0.00	-4.7	3 0.	000	0.00
Medium Trucks: 81.0	0 -15.13	-	1.23	0.00	-4.8	8 0.	000	0.00
Heavy Trucks: 85.3	-19.08	-	1.23	0.00	-5.2	5 0.	000	0.00
Unmitigated Noise Levels (wi		1	,					
VehicleType Leq Peak H			q Evening	Leq Nig		Ldn		NEL
		9.2	67.4		61.4	70.		70
		3.1	56.8		55.2	63.		63
		3.6	54.6		55.9	64.		64
	-	1.0	68.0		63.2	71.	7	72
Centerline Distance to Noise	Contour (in feet)		,				-	
			70 dBA	65 dB,	4	60 dBA		dBA
		.dn:	113	359		1,135		588
		FL:	126	400		1,264		996

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Seena	rio: E+P					Project	Nama:	Docor	t Waxa		
	ne: Cook St.						imber:				
	nt: s/o Country	Club Dr.				000740	innoon.	11020			
Ŷ	SPECIFIC IN					N					-
Highway Data	SPECIFIC IN	PUIDATA		s	ite Con				oft = 15	,	
Average Daily	Traffic (Adt):	29,300 vehicles						Autos:	10		
• •	Percentage:	10%			Mee	dium Tru	cks (2 A	Axles)	10		
Peak H	our Volume:	2,930 vehicles			Hea	avy Truc	ks (3+ A	(xles)	10		
Ve	ehicle Speed:	50 mph			ehicle I						
Near/Far La	ne Distance:	78 feet		-		icleType	-	Day	Evening	Night	Daily
Site Data				-	veni			77.5%	0	9.6%	
					M	n dium Tr		84.8%		10.3%	
	rrier Height:	0.0 feet				leavy Tr		86.5%		10.3%	
Barrier Type (0-V	vall, 1-Berm): ist. to Barrier:	0.0 76.0 feet				icavy in	20103.	00.07	5 2.170	10.070	0.147
Centerline Dist.		76.0 feet		۸	loise So	ource Ele	evation	s (in f	eet)		
Barrier Distance		0.0 feet				Autos	: 0.0	000			
Observer Height		5.0 feet				n Trucks		297			
	ad Flevation:	0.0 feet			Heav	y Trucks	: 8.0	006	Grade Adj	ustment	: 0.0
-	ad Elevation: ad Elevation:	0.0 feet		L	ane Equ	uivalent	Distan	ce (in	feet)		-
	Road Grade:	0.0%				Autos					
	Left View:	-90.0 degree	-		Mediur	n Trucks	65	286			
	Right View:	90.0 degree			Heav	y Trucks	: 65.	300			
FHWA Noise Moo	lel Calculation	s									
VehicleType	REMEL	Traffic Flow	Distar	се	Finite	Road	Fresr	iel	Barrier Atte	en Bei	rm Atten
Autos:	70.20	2.26		-1.24		0.00		-4.73	0.0	00	0.00
Medium Trucks:	81.00	-14.98		-1.23		0.00		-4.88	0.0	00	0.00
Heavy Trucks:	85.38	-18.93		-1.23		0.00		-5.25	0.0	00	0.00
Unmitigated Nois	e Levels (with	out Topo and L	arrier a	attenı	uation)						
VehicleType	Leq Peak Hou			eq Ev	~	Leq I	·		Ldn		NEL
Autos:			9.3		67.6		61.5		70.1		70.
Medium Trucks:	•		3.3		56.9		55.4		63.8		64.
Heavy Trucks:			3.8		54.8		56.0		64.4		64.
Vehicle Noise:	72	.9 7	1.2		68.1		63.3	5	71.9		72.
Centerline Distan	ce to Noise C	ontour (in feet)									-
				70 d		65 c			60 dBA		i dBA
									1.175	2	.715
		L CN	dn:	117 131		37 41			1,175		.137

	FHV	VA-RD-77-108	HIGH	WAY N	NOISE PR	EDICTI	ON MOI	DEL			
	io: E+P e: Cook St. nt: s/o Hovley I	_n.					Name: [umber: 1		Wave		
SITE	SPECIFIC IN	PUT DATA				N	OISE N	IODE	L INPUT	S	
Highway Data					Site Cond	ditions	(Hard =	10, So	oft = 15)		
Average Daily	Traffic (Adt): 2	9,100 vehicle	s					Autos:	10		
Peak Hour	Percentage:	10%			Med	lium Tru	icks (2 A	xles):	10		
Peak H	our Volume:	2,910 vehicle	S		Hea	avy Truc	:ks (3+ A	xles):	10		
Ve	hicle Speed:	50 mph		-	Vehicle N	Also .					
Near/Far La	ne Distance:	58 feet		-		cleType		Day	Evening	Night	Daily
Site Data					Vern			77.5%	•	9.6%	
					Mo	r dium Ti		84.8%		10.3%	
	rier Height:	0.0 feet				leavy Tr		86.5%		10.8%	
Barrier Type (0-W	. ,	0.0 64.0 feet				cuvy n	uch3.	00.070	2.170	10.070	0.747
Centerline Dis Centerline Dist.		64.0 feet			Noise So	urce El	evations	s (in fe	eet)		
Barrier Distance		0.0 feet				Autos					
Observer Height (5.0 feet			Mediun	n Trucks	s: 2.2	97			
	ad Elevation:	0.0 feet			Heavy	/ Trucks	s: 8.0	006	Grade Adj	iustment	: 0.0
	d Elevation:	0.0 feet		F	Lane Equ	iivalent	Distanc	e (in	feet)		
	Road Grade:	0.0%		F		Autos			,		
	Left View:	-90.0 degree	29		Mediun						
	Right View:	90.0 degree				/ Trucks		32			
FHWA Noise Mod	el Calculation:	s									
VehicleType	REMEL	Traffic Flow	Dis	tance	Finite I	Road	Fresn	el	Barrier Att	en Bei	m Atten
Autos:	70.20	2.23		-0.6	6	0.00		-4.70	0.0	000	0.000
Medium Trucks:	81.00	-15.01		-0.6	5	0.00		4.88	0.0	000	0.000
Heavy Trucks:	85.38	-18.96		-0.6	· · · · ·	0.00		-5.31	0.0	000	0.000
Unmitigated Noise					· · ·	1	N 12 1- 4		Lata		NEL
VehicleType Autos:	Leq Peak Hou 71	, ,	69.9	Leq E	vening 68.1	Leq	Night 62.1		Ldn 70.7	-	NEL 71.3
Autos: Medium Trucks:	65	-	63.8		57.5		55.9		70.7 64.4		64.6
Heavy Trucks:	65.	-	64.3		57.5		56.6		64.9		65.0
Vehicle Noise:	73	-	04.3 71.7		68.7		63.9		72.4		72.9
Centerline Distan					00.7		00.9		12.4	,	12.3
Centernine Distant	e to moise co	intour (III leet	, 	70	dBA	65 (dBA	é	60 dBA	55	dBA
			Ldn:		12		55		1,123		550
			VEL:	1:	25		95		1.250		953

	FHV	VA-RD-77-108	HIGHW	AY N	OISE PR	EDICTIO		DEL			
Scenario: Road Name: Road Segment.	El Dorado I					Project Na Job Nurr			Wave		
						NO					
Highway Data	PECIFIC IN	PUTDATA		5	Site Cond	litions (H				3	
	ercentage: ur Volume: cle Speed:	4,900 vehicles 10% 490 vehicles 50 mph 58 feet		١	Hea /ehicle M		(3 (2 A (3+ A	xles):	10 10 10		
Site Data				_	venic	leType Aut		Day 77.5%	Evening 12.9%	Night 9.6%	Daily 97.42%
Barri Barrier Type (0-Wa		0.0 feet 0.0				dium Truc eavy Truc	ks:	84.8% 86.5%	4.9% 2.7%	10.3% 10.8%	1.84%
Centerline Dist.		64.0 feet		^	loise So	urce Elev	ations	s (in fe	et)		
	Observer:	64.0 feet 0.0 feet 5.0 feet 0.0 feet 0.0 feet		L	Heavy	Autos: Trucks: Trucks: ivalent D	0.0 2.2 8.0 istand	97 106	Grade Adj	ustmen	t: 0.0
Ro	oad Grade:	0.0%				Autos:	57.2	271			
F	Left View: Right View:	-90.0 degree 90.0 degree				Trucks: Trucks:	57.1 57.1				
FHWA Noise Model	Calculation	s									
VehicleType	REMEL	Traffic Flow	Distar	се	Finite F	Road	Fresn	el	Barrier Atte	en Be	rm Atten
Autos:	70.20	-5.51		-0.66	;	0.00		4.70	0.0	00	0.00
Medium Trucks:	81.00	-22.74		-0.65		0.00		4.88	0.0	00	0.00
Heavy Trucks:	85.38	-26.70		-0.65		0.00		-5.31	0.0	00	0.00
Unmitigated Noise	Levels (with	out Topo and	barrier a	tten	uation)						
	eq Peak Hou			eq Ev	ening	Leq Nig			Ldn		NEL
Autos:	64		62.1		60.4		54.3		62.9		63.
Medium Trucks:	57		56.1		49.7		48.2		56.7		56.9
Heavy Trucks:	58	-	56.6		47.6		48.8		57.2		57.3
Vehicle Noise:	65	.7	64.0		60.9		56.2		64.7	·	65.
Centerline Distance	to Noise Co	ontour (in feet)				_				
				70 d		65 dB	A	6	0 dBA		i dBA
			Ldn:	19		60			189		598
		CI	NEL:	21		67			210	6	666

	FHV	/A-RD-77-108	HIGHWA	VY NO	OISE PRI	EDICT		_		
Scenario Road Name Road Segmeni	: El Dorado D				1		Name: Des umber: 118			
SITE S	PECIFIC IN	PUT DATA				N	IOISE MO	DEL INPUT	s	
Highway Data				S	ite Cond	itions	(Hard = 10,	Soft = 15)		
Average Daily T	raffic (Adt):	5,800 vehicles					Aut	os: 10		
Peak Hour F	Percentage:	10%			Med	ium Tru	ucks (2 Axle	s): 10		
Peak Ho	ur Volume:	580 vehicles			Hea	vy Truc	cks (3+ Axle	s): 10		
Veh	icle Speed:	50 mph		v	ehicle M	iv				
Near/Far Lan	e Distance:	58 feet		F		leType	Da	/ Evening	Night	Daily
Site Data					101110		Autos: 77.	•	9.6%	,
	ier Height:	0.0 feet			Med	dium Ti			10.3%	
Barrier Type (0-Wa	•	0.0			He	avv Ti	ucks: 86.	5% 2.7%	10.8%	0.749
Centerline Dist		64.0 feet				,				
Centerline Dist. to		64.0 feet		N	loise Sou		evations (i	,		
Barrier Distance to		0.0 feet				Autos				
Observer Height (A		5.0 feet			Medium					
0 1	d Elevation:	0.0 feet			Heavy	Truck	s: 8.006	Grade Ad	justment	: 0.0
Road	d Elevation:	0.0 feet		L	ane Equ	ivalent	Distance (in feet)		
R	oad Grade:	0.0%				Autos	s: 57.271			
	Left View:	-90.0 degree	5		Medium	Truck	s: 57.117			
	Right View:	90.0 degree	S		Heavy	Truck	s: 57.132			
FHWA Noise Mode	Calculation	5								
VehicleType	REMEL	Traffic Flow	Distan	ce	Finite F	Road	Fresnel	Barrier Att	en Ber	m Atten
Autos:	70.20	-4.77	-	0.66		0.00	-4.1	70 0.0	000	0.00
Medium Trucks:	81.00	-22.01	-	0.65		0.00	-4.8	38 0.0	000	0.00
Heavy Trucks:	85.38	-25.97	-	0.65		0.00	-5.3	31 0.0	000	0.00
Unmitigated Noise	Levels (with	out Topo and L	arrier a	ttenu	uation)					
	.eq Peak Hou			q Ev	ening	Leq	Night	Ldn		NEL
Autos:	64.		2.9		61.1		55.1	63.		64.
Medium Trucks:	58.		6.8		50.5		48.9	57.4		57.
Heavy Trucks:	58.		7.3		48.3		49.6	57.9	-	58.
Vehicle Noise:	66.		4.7		61.7		56.9	65.4	4	65.
Centerline Distance	e to Noise Co	ntour (in feet)		70 .	D 4	05	-10.4	00 -104		-10.4
		,		70 di 22			dBA	60 dBA 224		dBA
		CN	dn:	22			1 '9	224		'07 '88
		CN	EL:	- 25						88

Monday, February 25, 2019

Scenario: E+P				Project N	ame: Dese	ert Wave	
Road Name: Tamarisk	Row Dr				nber: 1182		
Road Segment: n/o Count				000 / 10	1001. 1102	.0	
SITE SPECIFIC I				NC		EL INPUTS	
Highway Data	IN OT DATA		Site Con		lard = 10,		
Average Daily Traffic (Adt):	8,400 vehicles				Auto	s: 10	
Peak Hour Percentage:	10%		Me	dium Truc	ks (2 Axles	;): 10	
Peak Hour Volume:	840 vehicles		He	avy Truck	s (3+ Axles	;): 10	
Vehicle Speed:	55 mph	-	Vehicle I	Alve			
Near/Far Lane Distance:	12 feet			cleType	Dav	Evening I	Vight Dailv
Site Data			1011		tos: 77.5	•	9.6% 97.42%
Barrier Height:	0.0 feet		Me	dium Tru	cks: 84.8	% 4.9%	10.3% 1.849
Barrier Type (0-Wall, 1-Berm):	0.0 1001		F	leavv Tru	cks: 86.5	% 2.7%	10.8% 0.749
Centerline Dist. to Barrier:	30.0 feet						
Centerline Dist. to Observer:	30.0 feet		Noise Sc		vations (in	feet)	
Barrier Distance to Observer:	0.0 feet			Autos:	0.000		
Observer Height (Above Pad):	5.0 feet			n Trucks:	2.297	Oranda Arlin	
Pad Elevation:	0.0 feet		Heav	y Trucks:	8.006	Grade Adju	stment: 0.0
Road Elevation:	0.0 feet		Lane Equ	livalent L	Distance (ii	n feet)	
Road Grade:	0.0%			Autos:	29.816		
Left View:	-90.0 degrees		Mediur	n Trucks:	29.518		
Right View:	90.0 degrees		Heav	y Trucks:	29.547		
FHWA Noise Model Calculatio	ns						
VehicleType REMEL	Traffic Flow	Distance	Finite	Road	Fresnel	Barrier Atter	Berm Atten
Autos: 71.78	-3.58	2.1	18	0.00	-4.4	9 0.00	0.00
Medium Trucks: 82.40	-20.82	2.2	22	0.00	-4.8	6 0.00	0.00
Heavy Trucks: 86.40) -24.77	2.2	22	0.00	-5.7	7 0.00	0.00
Unmitigated Noise Levels (wit	hout Topo and ba	arrier atte	nuation)				
VehicleType Leq Peak Ho			Evening	Leq N	0	Ldn	CNEL
	0.4 68		66.7		60.7	69.3	69.
	3.8 62		55.9		54.4	62.9	63.
	3.8 62		53.4		54.6	63.0	63.
Vehicle Noise: 7	2.0 70).2	67.2		62.4	70.9	71.
Centerline Distance to Noise C	Contour (in feet)						
		-	dBA	65 di		60 dBA	55 dBA
			37	118		372	1,175
	CNF		41	131		415	1.311

	FHV	NA-RD-77-108	HIGHW	AY N	OISE PR	EDICT	ION MOI	DEL			
Road Nam	io: E+P ne: Oasis Club nt: s/o Country						Name: I lumber: 1				
SITE	SPECIFIC IN	PUT DATA							L INPUT	S	
Highway Data				S	Site Cond	ditions	(Hard =	10, S	oft = 15)		
Average Daily	Traffic (Adt):	6,900 vehicles	5					Autos:	10		
Peak Hour	Percentage:	10%			Med	lium Tr	ucks (2 A	xles).	10		
Peak H	lour Volume:	690 vehicles	6		Hea	avy Tru	cks (3+ A	xles).	10		
Ve	hicle Speed:	55 mph			/ehicle N	li.v					
Near/Far La	ne Distance:	58 feet				cleType		Day	Evening	Night	Daily
Site Data					Vern			77.5%	•	~	97.42%
				_	Me			84.8%		10.3%	
Barrier Type (0-W	rrier Height:	0.0 feet 0.0						86.5%		10.8%	
Centerline Di	. ,	64.0 feet									
Centerline Dist.		64.0 feet		٨	Voise So				eet)		
Barrier Distance		0.0 feet				Auto					
Observer Height (5.0 feet			Mediun						
	ad Flevation:	0.0 feet			Heavy	/ Truck	s: 8.0	006	Grade Adj	iustment.	0.0
	ad Elevation:	0.0 feet		L	ane Equ	iivalen	t Distand	e (in	feet)		
	Road Grade:	0.0%				Auto			,		
	Left View:	-90.0 degree	s		Mediun						
	Right View:	90.0 degree			Heavy	/ Truck	s: 57.1	32			
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL										
venicierype	REIVIEL	Traffic Flow	Distan	nce	Finite I	Road	Fresn	el	Barrier Att	en Ber	m Atten
Autos:	REMEL 71.78	I rattic Flow -4.43		nce -0.66		Road 0.00		el -4.70	Barrier Atte 0.0		
	71.78	-4.43			6			-		000	0.000
Autos:	71.78 82.40	-4.43		-0.66	6	0.00		4.70	0.0	000	0.000
Autos: Medium Trucks: Heavy Trucks:	71.78 82.40 86.40	-4.43 -21.67 -25.63		-0.66 -0.65 -0.65	5 5	0.00		4.70 4.88	0.0	000	0.000
Autos: Medium Trucks: Heavy Trucks:	71.78 82.40 86.40	-4.43 -21.67 -25.63 out Topo and	barrier a	-0.66 -0.65 -0.65	5 5	0.00 0.00 0.00		4.70 4.88	0.0	000 000 000	0.000
Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise	71.78 82.40 86.40 e Levels (with	-4.43 -21.67 -25.63 out Topo and <i>ur</i> Leq Day	barrier a	-0.66 -0.65 -0.65	s s uation)	0.00 0.00 0.00		-4.70 -4.88 -5.31	0.0 0.0 0.0	000 000 000 <i>Cl</i>	0.000 0.000 0.000
Autos: Medium Trucks: Heavy Trucks: Unmitigated Nois VehicleType	71.78 82.40 86.40 e Levels (with Leq Peak Hou 66	-4.43 -21.67 -25.63 out Topo and <i>ir</i> Leq Day .7	barrier a	-0.66 -0.65 -0.65	s s uation) vening	0.00 0.00 0.00	Night	-4.70 -4.88 -5.31	0.0 0.0 0.0	000 000 000 <i>CI</i>	0.000 0.000 0.000 VEL 66.2
Autos: Medium Trucks: Heavy Trucks: Unmitigated Nois e VehicleType Autos:	71.78 82.40 86.40 e Levels (with Leq Peak Hou 66	-4.43 -21.67 -25.63 out Topo and ir Leq Day .7	barrier a	-0.66 -0.65 -0.65	s s vening 63.0	0.00 0.00 0.00	Night 57.0	-4.70 -4.88 -5.31	0.0 0.0 0.0 <i>Ldn</i> 65.6	000 000 000 <i>C/</i>	0.000 0.000 0.000 VEL 66.2 59.4
Autos: Medium Trucks: Heavy Trucks: Unmitigated Nois VehicleType Autos: Medium Trucks:	71.78 82.40 86.40 e Levels (with Leq Peak Hou 66 60 60 60	-4.43 -21.67 -25.63 out Topo and Ir Leq Day .7 .1	<i>barrier a</i> <i>Le</i> 64.8 58.6	-0.66 -0.65 -0.65	uation) vening 63.0 52.2	0.00 0.00 0.00	Night 57.0 50.7	-4.70 -4.88 -5.31	0.0 0.0 0.0 <i>Ldn</i> 65.6 59.1	000 000 000 <i>CI</i>	0.000 0.000 0.000 VEL 66.2 59.4 59.4
Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	71.78 82.40 86.40 e Levels (with Leq Peak Hou 66 60 60 60 60	-4.43 -21.67 -25.63 out Topo and <i>I</i> r Leq Day .7 .1 .1 .1	barrier a 64.8 58.6 58.7 66.5	-0.66 -0.65 -0.65 attenu eq Ev	uation) rening 63.0 52.2 49.7 63.6	0.00 0.00 0.00 Leq	Night 57.0 50.7 50.9 58.7	-4.70 -4.88 -5.31	0.0 0.0 0.0 0.0 59.1 59.3 67.2	000 000 000 000 C/	0.000 0.000 0.000 VEL 66.2 59.4 67.7
Autos: Medium Trucks: Heavy Trucks: Unmitigated Noiss VehicleType Autos: Medium Trucks: Heavy Trucks:	71.78 82.40 86.40 e Levels (with Leq Peak Hou 66 60 60 60 60	-4.43 -21.67 -25.63 out Topo and <i>I</i> Leq Day .7 .1 .1 .3	<i>barrier a</i> 64.8 58.6 58.7 66.5	-0.66 -0.65 -0.65 attenu eq Ev	ation) vening 63.0 52.2 49.7 63.6	0.00 0.00 0.00 Leq 65	Night 57.0 50.7 50.9 58.7 dBA	-4.70 -4.88 -5.31	0.0 0.0 0.0 65.6 59.1 59.3 67.2	000 000 000 2 2 55	0.000 0.000 0.000 VEL 66.2 59.4 59.4 67.7 dBA
Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	71.78 82.40 86.40 e Levels (with Leq Peak Hou 66 60 60 60 60	-4.43 -21.67 -25.63 out Topo and ir Leq Day .7 .1 .1 .3 .3	barrier a 64.8 58.6 58.7 66.5	-0.66 -0.65 -0.65 attenu eq Ev	ation) vening 63.0 52.2 49.7 63.6 /BA	0.00 0.00 0.00 <i>Leq</i> 65	Night 57.0 50.7 50.9 58.7	-4.70 -4.88 -5.31	0.0 0.0 0.0 0.0 59.1 59.3 67.2	000 000 000 2 2 55 1,	0.000 0.000 0.000 VEL 66.2 59.4 59.4 67.7

Monday, February 25, 2019

	FHW	A-RD-77-108	HIGHW	AY N	OISE PR	EDICTIO	N MODEL			
Scenario: E+ Road Name: Co Road Segment: w/	ountry Club						ame: Dese nber: 1182			
SITE SPEC	CIFIC IN	PUT DATA				NO	ISE MOD	EL INPUT	s	
Highway Data				S	lite Cond	litions (H	ard = 10,	Soft = 15)		
Average Daily Traffic Peak Hour Perce Peak Hour V	entage: 'olume:	10% 2,120 vehicles					Auto ks (2 Axles s (3+ Axles): 10		
Vehicle		50 mph		V	ehicle M	lix				
Near/Far Lane Dis	stance:	66 feet			Vehic	leType	Day	Evening	Night	Daily
Site Data						Aut	os: 77.5	% 12.9%	9.6%	97.42%
Barrier H	leiaht [.]	0.0 feet			Me	dium Truc	ks: 84.8	% 4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-	Berm):	0.0			Н	eavy Truc	ks: 86.5	% 2.7%	10.8%	0.74%
Centerline Dist. to I		55.0 feet		٨	loise So	urce Elev	ations (in	feet)		
Centerline Dist. to Ob		55.0 feet				Autos:	0.000			
Barrier Distance to Ob		0.0 feet			Medium	Trucks:	2.297			
Observer Height (Above Pad Ele	,	5.0 feet 0.0 feet			Heavy	Trucks:	8.006	Grade Ad	justmen	t: 0.0
Road Ele	evation:	0.0 feet		L	ane Equ	ivalent D	istance (il	1 feet)		
Road	Grade:	0.0%				Autos:	44.283			
	ft View:	-90.0 degree				Trucks: Trucks:	44.083 44.103			
•	t View:	90.0 degree	s		neavy	TTUCKS.	44.103			
FHWA Noise Model Cal										
	MEL	Traffic Flow	Distar		Finite F		Fresnel	Barrier Att		rm Atten
Autos:	70.20	0.85		0.46		0.00	-4.6		000	0.00
Medium Trucks: Heavy Trucks:	81.00 85.38	-16.38 -20.34		0.48		0.00	-4.8 -5.3		000	0.00
Unmitigated Noise Leve	els (witho	ut Topo and	barrier a	atteni	uation)					
	Peak Hour			eq Ev		Leg Nig	aht	Ldn	C	NEL
Autos:	71.		69.6		67.9		61.8	70.4		71.0
Medium Trucks:	65.	1 6	63.6		57.2		55.7	64.1	1	64.4
Heavy Trucks:	65.	5 θ	64.1		55.1		56.3	64.7	7	64.
Vehicle Noise:	73.2	2 7	71.5		68.4		63.6	72.2	2	72.
Centerline Distance to	Noise Co	ntour (in feet)								
				70 d	BA	65 dB	A	60 dBA	55	i dBA
		L	dn:	91		288		909	2	,876
		CA	IEL:	10	1	320		1,013	3	,202

	FHV	VA-RD-77-108 H	IGHV	VAY N	OISE PR	EDICTIO	N MOE	EL			
Scenario: E+P						Project N	ame: D	esert	Wave		
Road Name: Cou	ntry Clu	ıb Dr.				Job Nur	nber: 1	1826			
Road Segment: e/o l	Montere	ey Av.									
SITE SPECI	FIC IN	PUT DATA							L INPUT	s	
Highway Data				S	Site Con	ditions (H	lard = 1	10, Sc	oft = 15)		
Average Daily Traffic (Adt): 2	3,100 vehicles					A	utos:	10		
Peak Hour Percen	tage:	10%			Med	lium Truc	ks (2 A	xles):	10		
Peak Hour Vol	ume:	2,310 vehicles			Hea	avy Trucks	s (3+ A	xles):	10		
Vehicle Sp	eed:	50 mph		L.	/ehicle N	liv					
Near/Far Lane Dista	ance:	78 feet		-		cleType	1	Day	Evening	Night	Daily
Site Data					10/11			7.5%			97.42
	la ht	0.0 feet			Me	dium Truc		34.8%		10.3%	
Barrier He	•	0.0 feet			Н	eavy Truc		6.5%		10.8%	
Barrier Type (0-Wall, 1-B Centerline Dist. to Ba		0.0 76.0 feet				,					
Centerline Dist. to Obse		76.0 feet		٨	Voise So	urce Elev	ations	(in fe	eet)		
Barrier Distance to Obse		0.0 feet				Autos:	0.0	00			
Observer Height (Above		5.0 feet			Mediun	n Trucks:	2.2	97			
Pad Eleve		0.0 feet			Heavy	/ Trucks:	8.0	06	Grade Ad	justment.	0.0
Road Eleva		0.0 feet		1	ano Fau	ivalent D	listanc	o (in i	foot)		
Road G		0.0 feet		-	une Lyu	Autos:	65.4		000		
	view:	-90.0 degrees			Modium	1 Trucks:					
Right		90.0 degrees				/ Trucks:	65.3				
÷		•			,		00.0	00			
FHWA Noise Model Calc		-									
VehicleType REN		Traffic Flow	Dista		Finite I		Fresne		Barrier Att		m Atter
Autos:	70.20	1.23		-1.24		0.00		4.73		000	0.00
Medium Trucks:	81.00	-16.01		-1.23		0.00		4.88		000	0.00
Heavy Trucks:	85.38	-19.97		-1.23	3	0.00	-	5.25	0.0	000	0.00
Unmitigated Noise Level			-								
	ak Hou			Leq Ev		Leq Ni			Ldn		VEL
Autos:	70.		3.3		66.5		60.5		69.1		69
Medium Trucks:	63		2.3		55.9		54.3		62.8		63
Heavy Trucks:	64		2.8		53.7		55.0		63.3		63
Vehicle Noise:	71	.9 70).1		67.1		62.3		70.9	9	71
Centerline Distance to N	oise Co	ontour (in feet)									
				70 d	IBA	65 dE	3A	6	i0 dBA	55	dBA
		L	dn:	93 10		293 326			926 1.031		929 261

Monday, February 25, 2019

		VA-RD-77-108									_
	rio: E+P					Project N			Wave		
	ne: Country Clu ent: e/o Portola					Job Nur	nber:	11826			
÷											
SITE Highway Data	SPECIFIC IN	PUT DATA			ito Con	NC ditions (H			L INPUT	S	
* /				3	ne com	nuons (i		Autos:	10		
,	. ,	23,500 vehicles 10%			Mar	lium Truc			10		
	· Percentage: -lour Volume:					avy Truck			10		
		2,350 vehicles			пеа	ivy muck	5 (3+7	axies).	10		
	ehicle Speed:	50 mph		V	ehicle N	lix					
Near/Far La	ane Distance:	58 feet			Vehi	cleType		Day	Evening	Night	Daily
Site Data						Au	tos:	77.5%	12.9%	9.6%	97.429
Ba	rrier Height:	0.0 feet			Me	dium Tru	cks:	84.8%	4.9%	10.3%	1.849
Barrier Type (0-V		0.0			Н	eavy Tru	cks:	86.5%	2.7%	10.8%	0.749
Centerline Di	ist. to Barrier:	64.0 feet		N	oise So	urce Ele	ation	s (in fe	et)		
Centerline Dist.	to Observer:	64.0 feet			0.00 00	Autos:		200			
Barrier Distance	to Observer:	0.0 feet			Modium	Trucks:		297			
Observer Height	(Above Pad):	5.0 feet				/ Trucks:		206	Grade Ad	iustment	· 0.0
P	ad Elevation:	0.0 feet								,	
Ro	ad Elevation:	0.0 feet		L	ane Equ	ivalent E	Distan	ce (in f	feet)		
	Road Grade:	0.0%				Autos:	57.	271			
	Left View:	-90.0 degree	s			n Trucks:	57.	117			
	Right View:	90.0 degree	s		Heavy	/ Trucks:	57.	132			
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Distar	се	Finite I	Road	Fresr	iel	Barrier Att	en Ber	m Atter
Autos:	70.20	1.30		-0.66		0.00		-4.70	0.0	000	0.00
Medium Trucks:	81.00	-15.94		-0.65		0.00		-4.88	0.0	000	0.00
Heavy Trucks:	85.38	-19.89		-0.65		0.00		-5.31	0.0	000	0.00
Unmitigated Nois	e Levels (with	out Topo and I	oarrier a	attenu	ation)						
VehicleType	Leq Peak Hou			eq Eve	~	Leq N	×		Ldn		NEL
Autos:			8.9		67.2		61.1		69.7		70
Medium Trucks:	64	.4 6	2.9		56.5		55.0)	63.5		63
	64	.8 6	3.4		54.4		55.6	;	64.0)	64.
Heavy Trucks:	72	.5 7	0.8		67.7		63.0)	71.5	5	72.
Heavy Trucks: Vehicle Noise:	12										
,		ontour (in feet)									
Vehicle Noise:				70 dł	BA	65 dE		6	0 dBA		dBA
Vehicle Noise:			.dn: FL :	70 dl 91 101		65 dE 287 319			0 dBA 906 1.009	2,	<i>dBA</i> 867 192

	FH	WA-RD-77-10	8 HIGI	HWAY N	NOISE PR	EDICTI	on Moi	DEL			
Scenari Road Nam Road Segmer	e: Country Cl					Project I Job Nu	Vame: I Imber: ·		Wave		
SITE	SPECIFIC I	VPUT DATA				N	OISE N	IODE	L INPUT	s	
Highway Data					Site Cond	ditions (Hard =	10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	24,400 vehicl	es					Autos:	10		
Peak Hour	Percentage:	10%			Med	lium Tru	cks (2 A	xles):	10		
Peak H	lour Volume:	2,440 vehicle	es		Hea	avy Truci	ks (3+ A	xles):	10		
Vei	hicle Speed:	50 mph		F	Vehicle N	Niv					
Near/Far Lai	ne Distance:	58 feet		F		cleType		Dav	Evening	Night	Daily
Site Data					10110			77.5%	•	9.6%	
	rrier Heiaht:	0.0 feet			Me	dium Tri		84.8%		10.3%	
Barrier Type (0-W		0.0			н	leavy Tru	icks:	86.5%	2.7%	10.8%	0.74%
Centerline Dis		64.0 feet		-		·					
Centerline Dist.		64.0 feet		4	Noise So				eet)		
Barrier Distance	to Observer:	0.0 feet				Autos		000			
Observer Height (Above Pad):	5.0 feet				n Trucks		297	Crada Ad	inatraant	
Pa	ad Elevation:	0.0 feet			Heavy	/ Trucks	: 8.0	006	Grade Ad	usunen	. 0.0
Roa	ad Elevation:	0.0 feet			Lane Equ	iivalent	Distand	ce (in t	feet)		
F	Road Grade:	0.0%				Autos	: 57.2	271			
	Left View:	-90.0 degre	ees		Medium	n Trucks	: 57.1	117			
	Right View:	90.0 degre	ees		Heavy	/ Trucks	57.	132			
FHWA Noise Mode	el Calculation	15									
VehicleType	REMEL	Traffic Flow	Di	stance	Finite F	Road	Fresn	el	Barrier Att	en Ber	m Atten
Autos:	70.20			-0.6	-	0.00		-4.70		000	0.000
Medium Trucks:	81.00			-0.6	-	0.00		-4.88		000	0.000
Heavy Trucks:	85.38	-19.73	3	-0.6	5	0.00		-5.31	0.0	000	0.000
Unmitigated Noise					,						
	Leq Peak Ho			Leq E	vening	Leq N			Ldn		NEL
Autos:		1.0	69.1		67.3		61.3		69.9		70.5
Medium Trucks:	-	4.6	63.1		56.7		55.2		63.6		63.9
Heavy Trucks: Vehicle Noise:		5.0	63.6 71.0		54.5 67.9		55.8 63.1		64.1 71.7		64.3 72.1
					67.9		63.1		71.7		72.1
Centerline Distance	ce to Noise C	ontour (in fee	et)	70	-10.4	05 -	04		0 -104		-10.4
			Latar		dBA	65 0		6	0 dBA		dBA
			Ldn: NEL:	-	14 05	29 33	-		941 1.048		976
		C	ANEL:	10	50	33	1		1,048	3,	314

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Scenario: E+P	
Road Name: Country Club Dr. Road Segment: e/o Cook St.	Project Name: Desert Wave Job Number: 11826
SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS
Highway Data	Site Conditions (Hard = 10, Soft = 15)
Average Daily Traffic (Adt): 23,000 vehicles	Autos: 10
Peak Hour Percentage: 10%	Medium Trucks (2 Axles): 10
Peak Hour Volume: 2,300 vehicles	Heavy Trucks (3+ Axles): 10
Vehicle Speed: 50 mph	Vehicle Mix
Near/Far Lane Distance: 78 feet	VehicleType Day Evening Night Daily
Site Data	Autos: 77.5% 12.9% 9.6% 97.42%
Barrier Height: 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%
Centerline Dist. to Barrier: 76.0 feet	Noise Source Elevations (in feet)
Centerline Dist. to Observer: 76.0 feet	Autos: 0.000
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 2,297
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006 Grade Adjustment: 0.0
Pad Elevation: 0.0 feet	,
Road Elevation: 0.0 feet	Lane Equivalent Distance (in feet)
Road Grade: 0.0%	Autos: 65.422
Left View: -90.0 degrees	Medium Trucks: 65.286
Right View: 90.0 degrees	Heavy Trucks: 65.300
FHWA Noise Model Calculations	
VehicleType REMEL Traffic Flow Distance	
	24 0.00 -4.73 0.000 0.000
	23 0.00 -4.88 0.000 0.000
Heavy Trucks: 85.38 -19.99 -1	23 0.00 -5.25 0.000 0.000
Unmitigated Noise Levels (without Topo and barrier atte	enuation)
VehicleType Leq Peak Hour Leq Day Leq	Evening Leq Night Ldn CNEL
Autos: 70.2 68.3	66.5 60.5 69.1 69.7
Medium Trucks: 63.7 62.2	55.9 54.3 62.8 63.0
Heavy Trucks: 64.2 62.7	53.7 55.0 63.3 63.4
Vehicle Noise: 71.9 70.1	67.1 62.3 70.8 71.3
Centerline Distance to Noise Contour (in feet)	
	0 dBA 65 dBA 60 dBA 55 dBA
Ldn:	92 292 922 2,916
CNEL:	103 325 1.027 3.247

F	HWA-RD-77-	108 HIG	HWAY NO	DISE PR	EDICTIO	N MOI	DEL					
Scenario: E+P				Project Name: Desert Wave								
Road Name: Country	Club Dr.				Job Nur	nber: 1	1826					
Road Segment: e/o El Do	orado Dr.											
SITE SPECIFIC	INPUT DAT	A		NOISE MODEL INPUTS								
Highway Data			S	Site Cond	litions (H	lard =	10, Sc	oft = 15)				
Average Daily Traffic (Adt)	: 21,700 veh	icles				A	Autos:	10				
Peak Hour Percentage	: 10%			Med	lium Truc	ks (2 A	xles):	10				
Peak Hour Volume	: 2,170 veh	icles		Hea	vy Truck	s (3+ A	xles):	10				
Vehicle Speed	: 50 mpl	h	V	ehicle M	liv							
Near/Far Lane Distance	: 58 feet	t			leType		Day	Evening	Night	Daily		
Site Data				Verne			77.5%	•		97.42		
				Me	dium Tru		84.8%		10.3%			
Barrier Height		et			eavy Tru		86.5%		10.8%			
Barrier Type (0-Wall, 1-Berm) Centerline Dist, to Barrier					outy ma		00.070	2.170	10.070	0.1 1		
Centerline Dist. to Barrier Centerline Dist. to Observer			N	loise Sou	urce Elev	ations	s (in fe	eet)				
Barrier Distance to Observer					Autos:	0.0	000					
				Medium	Trucks:	2.2	97					
Observer Height (Above Pad) Pad Elevation				Heavy	Trucks:	8.0	006	Grade Ad	justment.	0.0		
			1	ane Equ	ivalont F	Victore	o (in	foot)				
Road Elevation: 0.0 feet Road Grade: 0.0%				ane Lyu	Autos:	57.2		eel)				
Left View	0.070			Modium	Trucks:							
Right View		•			Trucks:	57.1						
Night view	. 90.0 de	grees		neavy	mucho.	57.1	132					
FHWA Noise Model Calculati												
VehicleType REMEL	Traffic Flo		istance	Finite F		Fresn		Barrier Att		m Atter		
Autos: 70.3		.96	-0.66		0.00		-4.70		000	0.00		
Medium Trucks: 81.		5.28	-0.65		0.00		-4.88		000	0.00		
Heavy Trucks: 85.	38 -20	0.24	-0.65		0.00		-5.31	0.0	000	0.00		
Unmitigated Noise Levels (w	ithout Topo a	and barr	ier attenu	lation)								
VehicleType Leq Peak F			Leq Eve		Leq Ni			Ldn		VEL		
	70.5	68.6		66.8		60.8		69.4		70		
	64.1	62.6		56.2		54.7		63.1		63		
	64.5	63.1		54.0		55.3		63.6	-	63		
Vehicle Noise:	72.2	70.4		67.4		62.6		71.3	2	71		
Centerline Distance to Noise	Contour (in	feet)										
		l	70 di		65 dE		6	i0 dBA		dBA		
		Ldn:			265			837		647		
		CNFL:	93		295			932		948		

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Scena	rio: E+P				Project N	lame: De	sert Wave		
	ne: Country Cl	ub Dr				mber: 118			
	nt: e/o Oasis (20		
	SPECIFIC IN	IPUT DATA					DEL INPUTS	5	
Highway Data				Site C	onditions (I	Hard = 10	, Soft = 15)		
Average Daily	Traffic (Adt):	23,700 vehicles	6			Aut	os: 10		
Peak Hour	Percentage:	10%		1	/ledium Truc	cks (2 Axle	es): 10		
Peak H	Hour Volume:	2,370 vehicles	6		Heavy Truck	is (3+ Axle	es): 10		
Ve	ehicle Speed:	50 mph		Vehic	e Mix				
Near/Far La	ane Distance:	58 feet			ehicleType	Da	y Evening	Night E	Daily
Site Data						itos: 77.	.5% 12.9%	•	7.42
Ba	rrier Heiaht:	0.0 feet			Medium Tru	cks: 84.	.8% 4.9%	10.3% 1	1.84
Barrier Type (0-V		0.0			Heavy Tru	cks: 86	.5% 2.7%	10.8% 0	0.74
	ist. to Barrier:	64.0 feet		Noice	Source Ele	vetiene (i	in fact)		
Centerline Dist.	to Observer:	64.0 feet		Noise	Autos:		,		
Barrier Distance	to Observer:	0.0 feet			Autos: ium Trucks:				
Observer Height	(Above Pad):	5.0 feet			avy Trucks:			ustment: 0.	0
P	ad Elevation:	0.0 feet			avy mucks.	0.000	Grade Auj	usuneni. 0.	0
Ro	ad Elevation:	0.0 feet		Lane	Equivalent	Distance	(in feet)		
	Road Grade:	0.0%			Autos:	57.271			
	Left View:	-90.0 degree	s	Med	ium Trucks:	57.117	,		
	Right View:	90.0 degree	es	He	avy Trucks:	57.132	2		
FHWA Noise Mod	lel Calculation	S		1					
VehicleType	REMEL	Traffic Flow	Distan	ce Fin	ite Road	Fresnel	Barrier Atte	en Berm A	Atter
Autos:	70.20	1.34	-	0.66	0.00	-4.	70 0.0	00	0.0
Medium Trucks:	81.00	-15.90	-	0.65	0.00	-4.	88 0.0	00	0.00
Heavy Trucks:	85.38	-19.86	-	0.65	0.00	-5.	31 0.0	00	0.0
Unmitigated Nois			barrier a	ttenuation	ı)				-
VehicleType	Leq Peak Ho			q Evening	,	•	Ldn	CNEL	
Autos:			69.0	67		61.2	69.8		70
Medium Trucks:			62.9	56		55.0	63.5		63
Heavy Trucks: 64.9 63.5				54		55.7	64.0		64
	72	2.6	70.8	67	.8	63.0	71.5		72
Vehicle Noise:		antour (in fact)		1				
	ce to Noise C	ontour (in reel)					60 dBA	55 dB	
	ce to Noise C			70 dBA	65 d				
Vehicle Noise: Centerline Distan	ce to Noise C		Ldn:	70 dBA 91 102	65 di 289	9	914 1.018	2,891	1

	FHV	VA-RD-77-108	HIGHW	AY NO	OISE PR	EDICT	ION MO	DEL				
Road Nan	io: E+P ie: Hovley Ln. nt: e/o Cook S	t.		Project Name: Desert Wave Job Number: 11826								
SITE	SPECIFIC IN	IPUT DATA		NOISE MODEL INPUTS								
Highway Data				S	ite Con	ditions	(Hard =	10, S	oft = 15)			
Average Daily	Traffic (Adt):	17,700 vehicle	6					Autos:	10			
Peak Hour	Percentage:	10%			Med	dium Tr	ucks (2 A	(xles):	10			
Peak F	lour Volume:	1,770 vehicle	6		Hea	avy Tru	cks (3+ A	xles):	10			
Ve	hicle Speed:	45 mph		v	ehicle N	Nix						
Near/Far La	ne Distance:	58 feet		-		cleType		Day	Evening	Night	Daily	
Site Data					1011			77.5%	•	· ·	97.42%	
		0.0 feet			Medium Trucks: 84.8% 4.9% 10.3% 1							
Barrier Type (0-V	rrier Height:	0.0 feet 0.0				leavy T		86.5%		10.8%		
Centerline Di	. ,	64.0 feet										
Centerline Dist.		64.0 feet		N	loise So		levation		eet)			
Barrier Distance		0.0 feet				Auto		000				
Observer Height		5.0 feet				n Truck		297				
	ad Elevation:	0.0 feet			Heav	y Truck	s: 8.0	006	Grade Adj	lustment	: 0.0	
Ro	ad Elevation:	0.0 feet		L	ane Equ	iivalen	t Distand	e (in	feet)			
	Road Grade:	0.0%				Auto	s: 57.2	271				
	Left View:	-90.0 degree	s		Mediun	n Truck	s: 57.1	117				
	Right View:	90.0 degree	es		Heav	y Truck	s: 57.1	132				
FHWA Noise Mod	el Calculation	s		_								
VehicleType	REMEL	Traffic Flow	Dista	nce	Finite	Road	Fresn	el	Barrier Att	en Ber	m Atten	
Autos:	68.46	0.53		-0.66		0.00		-4.70	0.0	000	0.000	
Medium Trucks:	79.45	-16.71		-0.65		0.00		-4.88	0.0	000	0.000	
Heavy Trucks:	84.25	-20.67		-0.65		0.00		-5.31	0.0	000	0.000	
Unmitigated Nois												
VehicleType	Leq Peak Hou			eq Ev	•	Leq	Night		Ldn		NEL	
Autos:	68		66.4		64.7		58.6		67.2		67.8	
Medium Trucks:	62		60.6		54.2		52.7		61.1		61.4	
Heavy Trucks:	62	-	61.5		52.5		53.7		62.1		62.2	
Vehicle Noise:			68.4		65.3		60.6		69.1		69.6	
Centerline Distan	ce to Noise Co	ontour (in feet)	70 di	DA	6E	dBA		60 dBA	55	dBA	
			Ldn:	70 al			ава 66		525		661	
			Lan: VFL:	53 58			84		525 583		845	
		0	v	- 30	,				000	1,	040	

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	Y NOISE PREDICTION MODEL
Scenario: EA Road Name: Monterey Av. Road Segment: s/o Country Club Dr.	Project Name: Desert Wave Job Number: 11826
SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS
Highway Data	Site Conditions (Hard = 10, Soft = 15)
Average Daily Traffic (Adt): 37,000 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 3,700 vehicles	Autos: 10 Medium Trucks (2 Axles): 10 Heavy Trucks (3+ Axles): 10
Vehicle Speed: 55 mph	Vehicle Mix
Near/Far Lane Distance: 78 feet	Vehicle Wix Vehicle Type Day Evening Night Daily
Site Data	Autos: 77.5% 12.9% 9.6% 97.42
	Medium Trucks: 84.8% 4.9% 10.3% 1.84
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74
Centerline Dist. to Barrier: 76.0 feet	Noise Source Elevations (in feet)
Centerline Dist. to Observer: 76.0 feet	Autos: 0.000
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 2,297
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006 Grade Adjustment: 0.0
Pad Elevation: 0.0 feet	, , ,
Road Elevation: 0.0 feet	Lane Equivalent Distance (in feet)
Road Grade: 0.0%	Autos: 65.422
Left View: -90.0 degrees Right View: 90.0 degrees	Medium Trucks: 65.286 Heavy Trucks: 65.300
FHWA Noise Model Calculations	
VehicleType REMEL Traffic Flow Distan	ce Finite Road Fresnel Barrier Atten Berm Atter
Autos: 71.78 2.86	1.24 0.00 -4.73 0.000 0.00
Medium Trucks: 82.40 -14.38	1.23 0.00 -4.88 0.000 0.00
Heavy Trucks: 86.40 -18.33	1.23 0.00 -5.25 0.000 0.00
Unmitigated Noise Levels (without Topo and barrier a	ttenuation)
	q Evening Leq Night Ldn CNEL
Autos: 73.4 71.5	69.7 63.7 72.3 72
Medium Trucks: 66.8 65.3	58.9 57.4 65.8 66
Heavy Trucks: 66.8 65.4	56.4 57.6 66.0 66
Vehicle Noise: 75.0 73.2	70.3 65.4 73.9 74
Centerline Distance to Noise Contour (in feet)	
	70 dBA 65 dBA 60 dBA 55 dBA
I dn:	189 596 1,886 5,963
CNEL:	210 665 2.104 6.654

Fi	HWA-RD-77-108	HIGHWA	Y NOISE PF	REDICTION	MODEL						
Scenario: EA			Project Name: Desert Wave								
Road Name: Portola A	v.		Job Number: 11826								
Road Segment: n/o Coun	try Club Dr.										
SITE SPECIFIC	INPUT DATA		NOISE MODEL INPUTS								
Highway Data			Site Con	ditions (Ha	ard = 10, S	oft = 15)					
Average Daily Traffic (Adt):	15,800 vehicles				Autos	: 10					
Peak Hour Percentage:	10%		Me	dium Truck	s (2 Axles)	: 10					
Peak Hour Volume:	1,580 vehicles		He	avy Trucks	(3+ Axles)	: 10					
Vehicle Speed:	55 mph		Vehicle I	Mix							
Near/Far Lane Distance:	58 feet			icleType	Day	Evening	Night	Daily			
Site Data				Auto	,			97.42			
Barrier Height:	0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1								
Barrier Type (0-Wall, 1-Berm).			ŀ	leavy Truc	ks: 86.5%	6 2.7%	10.8%	0.74			
Centerline Dist. to Barrier.											
Centerline Dist. to Observer.			Noise Sc	ource Eleva		'eet)					
Barrier Distance to Observer.				Autos:	0.000						
Observer Height (Above Pad).				m Trucks:	2.297						
Pad Elevation			Heav	y Trucks:	8.006	Grade Ad	ljustment	0.0			
Road Elevation	Lane Eq	uivalent Di	stance (in	feet)							
Road Grade			Autos:	57.271							
l eft View	0.070	9	Mediur	m Trucks:	57.117						
Right View.			Heav	y Trucks:	57.132						
FHWA Noise Model Calculation	ons										
VehicleType REMEL	Traffic Flow	Distand	e Finite	Road	Fresnel	Barrier At	ten Ber	m Atter			
Autos: 71.7	8 -0.84	-	0.66	0.00	-4.70	0.0	000	0.00			
Medium Trucks: 82.4	-18.07	-	0.65	0.00	-4.88	0.0	000	0.00			
Heavy Trucks: 86.4	-22.03	-	0.65	0.00	-5.31	0.0	000	0.00			
Unmitigated Noise Levels (wi		1	,								
VehicleType Leq Peak H			q Evening	Leq Nig		Ldn		VEL			
		8.4	66.6		60.6	69.3		69			
		2.2	55.8		54.3	62.		63			
		2.3	53.3		54.5	62.		63			
		0.1	67.1		62.3	70.	8	71			
Centerline Distance to Noise	Contour (in feet)	-									
			70 dBA	65 dB/	4	60 dBA		dBA			
		.dn:	77	245		775		450			
		FL:	86	273		864		734			

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	FH\	NA-RD-77-108	HIGH	WAYN	IOISE PF	REDICTIO	ON MO	DDEL			
	rio: EA ne: Portola Av. nt: s/o Country					Project I Job Nu			Wave		
	SPECIFIC IN	IPUT DATA			<u></u>					s	
Highway Data					Site Con	ditions (Hard :		,		
• •	, ,	21,700 vehicle	s					Autos:			
	Percentage:	10%				dium Tru					
	lour Volume:	2,170 vehicle	S		He	avy Truci	(S (3+	Axles):	10		
	hicle Speed:	50 mph		Ē	Vehicle I	Nix					
Near/Far La	ne Distance:	58 feet		Ē	Vehi	cleType		Day	Evening	Night	Daily
Site Data						A	utos:	77.5%	12.9%	9.6%	97.42%
Ba	rrier Heiaht:	0.0 feet			Me	dium Tru	icks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-W	Vall, 1-Berm):	0.0			ŀ	leavy Tru	icks:	86.5%	2.7%	10.8%	0.74%
	st. to Barrier:	64.0 feet			Noise Sc	ource Ele	vatio	ns (in fe	eet)		
Centerline Dist.		64.0 feet				Autos	0	.000			
Barrier Distance		0.0 feet			Mediur	n Trucks	2	.297			
Observer Height	· /	5.0 feet			Heav	y Trucks	8	.006	Grade Ad	justmen	t: 0.0
	ad Elevation:	0.0 feet		-	Lane Eq	ulualant	Diotor		fa a 4)		
	ad Elevation:	0.0 feet		H	Lane Equ				leel)		
	Road Grade:	0.0%				Autos. n Trucks		.271			
	Left View: Right View:	-90.0 degree 90.0 degree				n Trucks y Trucks		.117			
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Dist	ance	Finite	Road	Fres	nel	Barrier Att	en Be	rm Atten
Autos:	70.20	0.96		-0.6	6	0.00		-4.70	0.0	000	0.000
Medium Trucks:	81.00	-16.28		-0.6	5	0.00		-4.88	0.0	000	0.000
Heavy Trucks:	85.38	-20.24		-0.6	5	0.00		-5.31	0.0	000	0.000
Unmitigated Nois											
VehicleType	Leq Peak Hou			Leq E	vening	Leq N	· ·		Ldn		NEL
Autos:			68.6		66.8		60.		69.4		70.0
Medium Trucks:			62.6		56.2		54.		63.		63.4
Heavy Trucks:		-	63.1		54.0		55.	-	63.		63.8
Vehicle Noise:	72	2	70.4		67.4		62.	6	71.:	2	71.
Centerline Distan	ce to Noise C	ontour (in feet)	70	-10.4	05 -	04		0.404		
			Ldn:		dBA 4	65 d		6	0 dBA		dBA
							2		837	2	.647
			VFL:	-	3	29	-		932		.948

	FH\	VA-RD-77-108	HIGHW	AY NOISE F	REDICT		DEL			
	io: EA ne: Cook St. nt: n/o I-10 WI	3 Ramps				Name: D lumber: 1		Wave		
SITE	SPECIFIC IN	IPUT DATA						L INPUTS	5	
Highway Data				Site Co	nditions	(Hard = 1	10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	7,800 vehicles	6			A	utos:	10		
Peak Hour	Percentage:	10%		M	edium Tr	ucks (2 A	xles):	10		
Peak F	lour Volume:	780 vehicles	6	H	eavy Tru	cks (3+ A	xles):	10		
Ve	hicle Speed:	50 mph		Vehicle	Mix					
Near/Far La	ne Distance:	78 feet			hicleType		Day	Evening	Night	Daily
Site Data				100			7.5%	~	9.6%	
		0.0 feet		٨	Iedium T		34.8%		10.3%	
ва Barrier Type (0-И	rrier Height:	0.0 feet			Heavy T	rucks: 8	36.5%	2.7%	10.8%	0.749
Centerline Di	. ,	76.0 feet								
Centerline Dist.		76.0 feet		Noise S		levations		eet)		
Barrier Distance		0.0 feet			Auto					
Observer Height		5.0 feet			ım Truck					
	ad Flevation:	0.0 feet		Hea	vy Truck	s: 8.0	06	Grade Adj	ustment	: 0.0
	ad Elevation:	0.0 feet		Lane Ed	quivalen	t Distanc	e (in i	feet)		
	Road Grade:	0.0%			Auto	s: 65.4	22	,		
	Left View:	-90.0 deares	es	Media	Im Truck	s: 65.2	86			
	Right View:	90.0 degree	es	Hea	vy Truck	s: 65.3	00			
FHWA Noise Mod	el Calculation	s								
VehicleType	REMEL	Traffic Flow	Distan	ce Finite	e Road	Fresne	el	Barrier Atte	en Bei	m Atten
Autos:	70.20	-3.49		1.24	0.00	-	4.73	0.0	00	0.00
Medium Trucks:	81.00	-20.73		-1.23	0.00	-	4.88	0.0	00	0.00
Heavy Trucks:	85.38	-24.68		-1.23	0.00	-	5.25	0.0	00	0.00
Unmitigated Nois										
VehicleType	Leq Peak Hou			eq Evening	,	Night		Ldn		NEL
Autos:	65		63.6	61.8		55.8		64.4		65.
Medium Trucks:	59		57.5	51.2	-	49.6		58.1		58.
Heavy Trucks:	59		58.0	49.0	·	50.3		58.6		58.
Vehicle Noise:	-		65.4	62.4	1	57.6		66.1		66.
	ce to Noise C	ontour (in feet)							
Centerline Distan				70 dBA		dBA	F	60 dBA	55	dBA
Centerline Distan										
Centerline Distan			Ldn: JFL :	31 35	9	овя 99 10		313 348		989 101

FHW	A-RD-77-108 HIG	HWAY N	OISE PRE	DICTION	MODEL		
Scenario: EA					ne: Deser	Wave	
Road Name: Cook St.				Job Numb	er: 11826		
Road Segment: s/o I-10 EB	Ramps						
SITE SPECIFIC IN	PUT DATA					L INPUTS	5
Highway Data		3	Site Condi	itions (Ha	rd = 10, S	oft = 15)	
Average Daily Traffic (Adt): 3	2,300 vehicles				Autos:	10	
Peak Hour Percentage:	10%		Medi	um Trucks	(2 Axles)	10	
Peak Hour Volume:	3,230 vehicles		Heav	/y Trucks (3+ Axles):	10	
Vehicle Speed:	50 mph	1	Vehicle Mi	Y			
Near/Far Lane Distance:	78 feet	-		eType	Dav	Evening	Night Daily
Site Data				Auto	s: 77.5%	0	9.6% 97.42%
Barrier Height:	0.0 feet		Med	lium Truck	s: 84.8%	4.9%	10.3% 1.84%
Barrier Type (0-Wall, 1-Berm):	0.0		He	avy Truck	s: 86.5%	2.7%	10.8% 0.74%
Centerline Dist. to Barrier:	76.0 feet	,	Voise Sou	rco Flova	tions (in f	oof)	
Centerline Dist. to Observer:	76.0 feet		10/30 000	Autos:	0.000		
Barrier Distance to Observer:	0.0 feet		Medium		2.297		
Observer Height (Above Pad):	5.0 feet			Trucks:	8.006	Grade Adi	ustment: 0,0
Pad Elevation:	0.0 feet						0.0
Road Elevation:	0.0 feet	1	ane Equi			feet)	
Road Grade:	0.0%			Autos:	65.422		
Left View:	-90.0 degrees		Medium		65.286		
Right View:	90.0 degrees		Heavy	Trucks:	65.300		
FHWA Noise Model Calculations	;	1					
VehicleType REMEL		stance	Finite R		resnel	Barrier Atte	
Autos: 70.20	2.68	-1.24		0.00	-4.73	0.0	
Medium Trucks: 81.00	-14.55	-1.23	-	0.00	-4.88	0.0	
Heavy Trucks: 85.38	-18.51	-1.23	3	0.00	-5.25	0.0	00 0.000
Unmitigated Noise Levels (witho	ut Topo and barr	ier atten	uation)				
VehicleType Leq Peak Hour		Leq Ev		Leq Nigł		Ldn	CNEL
Autos: 71.			68.0		61.9	70.6	
Medium Trucks: 65.:			57.3		55.8	64.3	
Heavy Trucks: 65.	÷ ÷		55.2		56.4	64.8	
Vehicle Noise: 73.			68.6		63.8	72.3	72.
Centerline Distance to Noise Co.	ntour (in feet)						
	l	70 a		65 dBA		60 dBA	55 dBA
	I dn:	12				1.295	
	CNEL:	14		410 456		1,295	4,095 4,560

F	HWA-RD-77-108	HIGHWA	Y NOISE PR	REDICTIO							
Scenario: EA				Project Na	me: Des	ert Wave					
Road Name: Cook St.			Job Number: 11826								
Road Segment: s/o Geral	d Ford Dr.										
SITE SPECIFIC	INPUT DATA					DEL INPUT	S				
Highway Data			Site Con	ditions (H	ard = 10,	Soft = 15)					
Average Daily Traffic (Adt):	23,700 vehicles	S			Auto						
Peak Hour Percentage:	10%		Me	dium Truck	is (2 Axle	s <i>):</i> 10					
Peak Hour Volume:	1	S	He	avy Trucks	(3+ Axle	s <i>):</i> 10					
Vehicle Speed:	50 mph		Vehicle	Mix							
Near/Far Lane Distance:	78 feet			icleType	Day	Evening	Night	Daily			
Site Data				Aut				97.42			
Barrier Height:	0.0 feet		Me	edium Truc	ks: 84.8	3% 4.9%	10.3%	1.849			
Barrier Type (0-Wall, 1-Berm).			Heavy Trucks: 86.5% 2.7% 10.8% 0.74								
Centerline Dist. to Barrier.				-							
Centerline Dist. to Observer.			Noise So	ource Elev		n feet)					
Barrier Distance to Observer.				Autos:	0.000						
Observer Height (Above Pad)				m Trucks:	2.297	Orrenda A.					
Pad Elevation.			Heav	y Trucks:	8.006	Grade Ad	ijustment	: 0.0			
Road Elevation:	Lane Eq	uivalent D	istance (in feet)							
Road Grade:	0.0%			Autos:	65.422						
Left View:	-90.0 degree	es	Mediu	m Trucks:	65.286						
Right View.	90.0 degree	es	Heav	y Trucks:	65.300						
FHWA Noise Model Calculation	ons										
VehicleType REMEL	Traffic Flow	Distan	ce Finite	Road	Fresnel	Barrier At	ten Ber	m Atter			
Autos: 70.2	0 1.34	-	1.24	0.00	-4.7	3 0.	000	0.00			
Medium Trucks: 81.0	0 -15.90	-	1.23	0.00	-4.8	8 0.	000	0.00			
Heavy Trucks: 85.3	8 -19.86	-	1.23	0.00	-5.2	5 0.	000	0.00			
Unmitigated Noise Levels (wi			,								
VehicleType Leq Peak H			q Evening	Leq Nig		Ldn		NEL			
		68.4	66.6		60.6	69.		69			
		62.4	56.0		54.5	62.	-	63			
		62.9	53.8		55.1	63.		63			
	-	70.2	67.2		62.4	71.	0	71			
Centerline Distance to Noise	Contour (in feet						1				
			70 dBA	65 dB	A	60 dBA		dBA			
		Ldn:	95	300		950		005			
		VFL:	106	335		1.058		346			

Monday, February 25, 2019

Scenari	o: EA				Proie	et Name		t Wave				
	e: Cook St.			Project Name: Desert Wave Job Number: 11826								
Road Segmer		Sinatra Dr.			000		. 11020					
SITE	SPECIFIC IN	IPUT DATA				NOISE	MODE		s			
Highway Data				S	lite Condition	s (Hard	= 10, S	oft = 15)				
Average Daily	Traffic (Adt):	24,100 vehicle	s				Autos.	10				
Peak Hour	Percentage:	10%			Medium 1	rucks (2	2 Axles)	: 10				
Peak H	our Volume:	2,410 vehicle	s		Heavy Tr	ucks (3-	+ Axles).	: 10				
Vel	hicle Speed:	50 mph		V	ehicle Mix							
Near/Far Lar	ne Distance:	78 feet		-	VehicleTy	е	Day	Evening	Night	Daily		
Site Data						Autos:	77.5%	6 12.9%	9.6%	97.42		
Bar	rier Height:	0.0 feet			Medium	Trucks:	84.8%	6 4.9%	10.3%	1.84		
Barrier Type (0-W		0.0			Heavy	Trucks:	86.5%	6 2.7%	10.8%	0.74		
Centerline Dis	t. to Barrier:	76.0 feet		N	loise Source	Elevatio	ons (in f	eet)				
Centerline Dist.	to Observer:	76.0 feet		F.	Au		0.000					
Barrier Distance	to Observer:	0.0 feet			Medium Truc		2.297					
Observer Height (J	Above Pad):	5.0 feet			Heavy Truc	ks:	8.006	Grade Ad	iustment	: 0.0		
	d Elevation:	0.0 feet										
	d Elevation:	0.0 feet		L	ane Equivale			feet)				
F	Road Grade:	0.0%			Au		5.422					
	Left View:	-90.0 degre			Medium Truc		5.286					
	Right View:	90.0 degre	es		Heavy Truc	:KS: 6	5.300					
FHWA Noise Mode	el Calculation	s										
	REMEL	Traffic Flow	Distan		Finite Road		snel	Barrier Att		m Atter		
VehicleType										0.00		
Autos:	70.20	1.41		-1.24			-4.73	0.0				
Autos: Medium Trucks:	70.20 81.00	-15.83		1.23	0.00)	-4.88	0.0	000	0.00		
Autos:	70.20				0.00)		0.0		0.00		
Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise	70.20 81.00 85.38 • Levels (with	-15.83 -19.78 out Topo and	barrier a	-1.23 -1.23 <i>ttenu</i>	0.00 0.00 <i>uation)</i>)	-4.88	0.0	000	0.00		
Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType	70.20 81.00 85.38 Levels (with Leq Peak Hou	-15.83 -19.78 out Topo and Ir Leq Daj	barrier a	-1.23 -1.23 <i>ttenu</i>	0.00 0.00 uation) ening Le)) q Night	-4.88 -5.25	0.0 0.0 Ldn	000 000 C	0.00 0.00		
Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos:	70.20 81.00 85.38 • Levels (with Leq Peak Hou 70	-15.83 -19.78 out Topo and r Leq Daj	<i>barrier a</i> / <i>Le</i> 68.5	-1.23 -1.23 <i>ttenu</i>	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0)) q Night 61	-4.88 -5.25	0.0 0.0 <i>Ldn</i> 69.3	000 000 C	0.00 0.00 <u>VEL</u> 69		
Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks:	70.20 81.00 85.38 Levels (with Leg Peak Hou 70 63	-15.83 -19.78 out Topo and ir Leq Day .4 .9	barrier a / Le 68.5 62.4	-1.23 -1.23 <i>ttenu</i>	0.00 0.00 0.00 ening Le 66.7 56.1)) q Night 61 54	-4.88 -5.25).7 1.5	0.0 0.0 <i>Ldn</i> 69.3 63.0	000 000 C. 3	0.00 0.00 <u>VEL</u> 69 63		
Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks:	70.20 81.00 85.38 Levels (with Leg Peak Hou 70 63 64	-15.83 -19.78 out Topo and r Leq Day .4 .9 .4	barrier a / Le 68.5 62.4 62.9	-1.23 -1.23 <i>ttenu</i>	0.00 0.00 ening Le 66.7 56.1 53.9)) q Night 61 54 54	-4.88 -5.25 0.7 4.5 5.2	0.0 0.0 <u>Ldn</u> 69.0 63.0 63.0	000 000 C, 3 0 5	0.00 0.00 NEL 69 63 63		
Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	70.20 81.00 85.38 2 Levels (with Leg Peak Hou 70 63 64 72	-15.83 -19.78 out Topo and <i>Ir</i> Leq Day .4 .9 .4	barrier a / Le 68.5 62.4 62.9 70.3	-1.23 -1.23 <i>ttenu</i>	0.00 0.00 0.00 ening Le 66.7 56.1)) q Night 61 54 54	-4.88 -5.25).7 1.5	0.0 0.0 <i>Ldn</i> 69.3 63.0	000 000 C, 3 0 5	0.00 0.00 <u>VEL</u> 69 63		
Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks:	70.20 81.00 85.38 2 Levels (with Leg Peak Hou 70 63 64 72	-15.83 -19.78 out Topo and <i>Ir</i> Leq Day .4 .9 .4	barrier a / Le 68.5 62.4 62.9 70.3	-1.23 -1.23 ttenu	ation ening Le 66.7 56.1 53.9 67.3)) 61 54 55 62	-4.88 -5.25).7 4.5 5.2 2.5	0.0 0.0 <u>Ldn</u> 69.0 63.0 63.0 71.0	C. C. C. C. C. C. C. C. C. C.	0.00 0.00 NEL 69 63 63 63 71		
Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	70.20 81.00 85.38 2 Levels (with Leg Peak Hou 70 63 64 72	-15.83 -19.78 out Topo and <i>Ir</i> Leq Day .4 .9 .4	barrier a / Le 68.5 62.4 62.9 70.3	-1.23 -1.23 <i>ttenu</i>	0.00 0.00 0.00 ening Le 66.7 56.1 53.9 67.3 BA 6)) q Night 61 54 54	-4.88 -5.25).7 4.5 5.2 2.5	0.0 0.0 <u>Ldn</u> 69.0 63.0 63.0	000 000 200 200 200 200 200 200 200 200	0.00 0.00 NEL 69 63 63		

	FHV	VA-RD-77-108	HIGHV	VAY N	OISE PR	REDICTI	ON MOD	EL			
	io: EA ne: Cook St. nt: n/o Country	Club Dr.					Name: D umber: 1		Wave		
SITE	SPECIFIC IN	PUT DATA							L INPUTS	5	
Highway Data				5	Site Con	ditions	(Hard = 1	10, Sc	ft = 15)		
Average Daily	Traffic (Adt): 2	7,800 vehicle	S				A	utos:	10		
Peak Hour	Percentage:	10%			Med	dium Tru	icks (2 A)	xles):	10		
Peak H	lour Volume:	2,780 vehicle	S		Hea	avy Truc	ks (3+ A)	xles):	10		
Ve	hicle Speed:	50 mph			/ehicle N	Ai~					
Near/Far La	ne Distance:	78 feet		,		cleType	ſ	Day	Evening	Night	Daily
Site Data					VCIII			7.5%	•	•	97.42%
Ba	rrier Height:	0.0 feet			Me	dium Tr	ucks: 8	34.8%	4.9%	10.3%	1.84%
Barrier Type (0-W		0.0			h	leavy Tr	ucks: 8	86.5%	2.7%	10.8%	0.74%
Centerline Di	. ,	76.0 feet		-							
Centerline Dist.		76.0 feet		'	voise So		evations		et)		
Barrier Distance	to Observer:	0.0 feet				Autos					
Observer Height	(Above Pad):	5.0 feet				n Trucks			Crada Adi	interest	
P	ad Elevation:	0.0 feet			Heav	y Trucks	8: 8.0	06	Grade Adj	usimeni.	. 0.0
Ro	ad Elevation:	0.0 feet		L	.ane Equ	uivalent	Distance	e (in i	eet)		
	Road Grade:	0.0%				Autos	65.4	22			
	Left View:	-90.0 degree	es		Mediun	n Trucks	s: 65.2	86			
	Right View:	90.0 degree	es		Heav	y Trucks	65.3	00			
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Dista	ance	Finite	Road	Fresne	el 🛛	Barrier Atte	en Ber	m Atten
Autos:	70.20	2.03		-1.24	ļ.	0.00	-	4.73	0.0	00	0.000
Medium Trucks:	81.00	-15.21		-1.23	3	0.00	-	4.88	0.0	00	0.000
Heavy Trucks:	85.38	-19.16		-1.23	3	0.00	-	5.25	0.0	00	0.000
Unmitigated Nois			barrier	atten	uation)						
VehicleType	Leq Peak Hou	, ,		Leq Ev	· ·	Leq	Night		Ldn		NEL
Autos:	71.	-	69.1		67.3		61.3		69.9		70.5
Medium Trucks:	64.	-	63.1		56.7		55.2		63.6		63.8
Heavy Trucks:		-	63.6		54.5		55.8		64.1		64.3
Vehicle Noise:	72	.7	70.9		67.9		63.1		71.7		72.1
Centerline Distan	ce to Noise Co	ontour (in feet)						-		
			∟	70 a		65 (0 dBA		dBA
									1.115		525
			Ldn: VFL:	11 12		39	52		1,115		925

Monday, February 25, 2019

Fł	IWA-RD-77-108 HIG	GHWAY I	NOISE PR	EDICTION	MODEL			
Scenario: EA Road Name: Cook St.					me: Deser ber: 11826			
Road Segment: s/o Count	ry Club Dr.							
SITE SPECIFIC	NPUT DATA			NOI	SE MODE		s	
Highway Data			Site Cond	ditions (Ha	ard = 10, S	oft = 15)		
Average Daily Traffic (Adt):	29,900 vehicles				Autos.	10		
Peak Hour Percentage:	10%		Mec	lium Truck	s (2 Axles).	: 10		
Peak Hour Volume:	2,990 vehicles		Hea	avy Trucks	(3+ Axles)	: 10		
Vehicle Speed:	50 mph	ŀ	Vehicle N	lix				
Near/Far Lane Distance:	78 feet	ŀ		cleType	Dav	Evening	Night	Daily
Site Data				Auto	os: 77.5%	0	~	97.42%
Barrier Height:	0.0 feet		Me	dium Truci	ks: 84.8%	6 4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm):	0.0		н	eavy Truci	ks: 86.5%	6 2.7%	10.8%	0.74%
Centerline Dist. to Barrier:	76.0 feet	ŀ	Noiso So	urco Elov	ations (in f	ioot)		
Centerline Dist. to Observer:	76.0 feet	ŀ	140136 30	Autos:	0.000	eei)		
Barrier Distance to Observer:	0.0 feet		Modium	n Trucks:	2.297			
Observer Height (Above Pad):	5.0 feet			/ Trucks:	8.006	Grade Ad	iustment:	0.0
Pad Elevation:	0.0 feet		,				,	0.0
Road Elevation:	0.0 feet		Lane Equ		stance (in	feet)		
Road Grade:	0.0%			Autos:	65.422			
Left View:	-90.0 degrees			n Trucks:	65.286			
Right View:	90.0 degrees		Heavy	/ Trucks:	65.300			
FHWA Noise Model Calculation	ns							
VehicleType REMEL		Distance	Finite I		Fresnel	Barrier Att		n Atten
Autos: 70.2		-1.2		0.00	-4.73	0.0		0.000
Medium Trucks: 81.0		-1.2		0.00	-4.88		000	0.000
Heavy Trucks: 85.3	8 -18.85	-1.2	23	0.00	-5.25	0.0	000	0.000
Unmitigated Noise Levels (with		1	<u> </u>					
VehicleType Leq Peak H			vening	Leq Nig		Ldn	CN	
	1.3 69.4		67.7		61.6	70.2	-	70.8
	4.9 63.4		57.0		55.5	63.9		64.2
	5.3 63.9 (3.0 71.3		54.8 68.2		56.1 63.4	64.5		64.0 72.4
)	68.2		03.4	72.0	J	12.
Centerline Distance to Noise	Contour (in feet)	70	-10.4	05.10		00 -/D4		04
	l dn		dBA	65 dB/ 379	4	60 dBA	55 0	
	Lan CNFI		20 33	379		1,199 1.335	3,7	
	CIVEL	. 1	33	422		1,335	4,2	21

	HWA-R	D-77-108 I	HIGH	WAY N	IOISE PR	EDICTIC		DEL			
Scenario: EA						Project N	lame:	Desert	Wave		
Road Name: Cook S						Job Nu	mber:	11826			
Road Segment: s/o Hov	ley Ln.										
SITE SPECIFIC	INPUT	T DATA							L INPUT	S	
Highway Data					Site Cond	litions (I	Hard =	10, Sc	oft = 15)		
Average Daily Traffic (Adt): 29,60	0 vehicles					,	Autos:	10		
Peak Hour Percentage	e: 1	0%			Med	lium Truo	cks (2 A	(xles)	10		
Peak Hour Volume		0 vehicles			Hea	vy Truck	(3+ A	(xles)	10		
Vehicle Speed		i0 mph		F	Vehicle N	lix					
Near/Far Lane Distance	e: 5	i8 feet		F	Vehic	leType		Day	Evening	Night	Daily
Site Data						A	itos:	77.5%	12.9%	9.6%	97.429
Barrier Heigh	t· ().0 feet			Me	dium Tru	icks:	84.8%	4.9%	10.3%	1.849
Barrier Type (0-Wall, 1-Berm		0.0			н	eavy Tru	icks:	86.5%	2.7%	10.8%	0.749
Centerline Dist. to Barrie		1.0 feet		-	Noine C			- // *	- 41		
Centerline Dist. to Observe	r: 64	1.0 feet		4	Noise So				eet)		
Barrier Distance to Observe	r: (0.0 feet				Autos: Trucks:		000			
Observer Height (Above Pad): 5	5.0 feet						297 006	Grade Ad	iustmont	
Pad Elevation	n: (0.0 feet			Heavy	/ Trucks:	8.0	JU6	Graue Au	Justinent	. 0.0
Road Elevation	n: (0.0 feet			Lane Equ	ivalent	Distan	ce (in i	feet)		
Road Grade	e: (0.0%				Autos:	57.	271			
Left View	v: -90	0.0 degree	S		Medium	Trucks:	57.	117			
Right View	<i>v:</i> 90	0.0 degree	5		Heavy	/ Trucks:	57.	132			
FHWA Noise Model Calculat	ions										
VehicleType REMEL	Tra	ffic Flow	Dis	tance	Finite I	Road	Fresn	el	Barrier Att	en Ber	m Atter
Autos: 70	20	2.30		-0.6	6	0.00		-4.70	0.0	000	0.00
Medium Trucks: 81	.00	-14.93		-0.6	5	0.00		-4.88	0.0	000	0.00
Heavy Trucks: 85	.38	-18.89		-0.6	5	0.00		-5.31	0.0	000	0.00
Unmitigated Noise Levels (w			arrie		,						
VehicleType Leq Peak		Leq Day		Leq E	vening	Leq N			Ldn		NEL
Autos:	71.8		0.0		68.2		62.1		70.8		71
Medium Trucks:	65.4	-	3.9		57.6		56.0		64.		64.
Heavy Trucks:	65.8		4.4		55.4		56.6		65.0		65
Vehicle Noise:	73.5		1.8		68.7		64.0)	72.	5	73
Centerline Distance to Noise	Contou	ur (in feet)	1							1	
			ĻL		dBA	65 d			0 dBA		dBA
			dn:		14 27	36 40			1,142		611
			FI :						1.271		021

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Scenar	io: EA					Proiect I	lamo:	Docor	Mayo		
	io. EA 1e: El Dorado I)r				Job Nu					
	nt: n/o Country					300 /10		11020			
Ŷ	SPECIFIC IN					N		/ODF			
Highway Data				s	ite Con	ditions (
Average Daily	Traffic (Adt):	4,500 vehicles						Autos:	10		
Peak Hour	Percentage:	10%			Me	dium Tru	cks (2 A	(xles)	10		
Peak H	lour Volume:	450 vehicles			He	avy Truci	ks (3+ A	(xles)	10		
Ve	hicle Speed:	50 mph		v	ehicle l	Aix					
Near/Far La	ne Distance:	58 feet		F		cleType		Dav	Evening	Night	Daily
Site Data							utos:	77.5%	•	9.6%	
Ba	rrier Heiaht:	0.0 feet			Me	dium Tru	icks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-W		0.0			ŀ	leavy Tru	icks:	86.5%	2.7%	10.8%	0.74%
Centerline Di	st. to Barrier:	64.0 feet			loiso Sc	urce Ele	vation	c (in f	not)		
Centerline Dist.	to Observer:	64.0 feet		-	10/36 30	Autos		300	eei)		
Barrier Distance	to Observer:	0.0 feet			Modiur	n Trucks		297			
Observer Height (Above Pad):	5.0 feet				v Trucks		206	Grade Adj	ustment	0.0
	ad Elevation:	0.0 feet									
	ad Elevation:	0.0 feet		L	ane Equ	iivalent			feet)		
	Road Grade:	0.0%				Autos					
	Left View:	-90.0 degree				n Trucks		117			
	Right View:	90.0 degree	S		Heav	y Trucks	57.	132			
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Distar		Finite		Fresr	-	Barrier Atte		m Atten
Autos:	70.20	-5.88		-0.66		0.00		-4.70	0.0		0.00
Medium Trucks:	81.00	-23.11		-0.65		0.00		-4.88	0.0		0.00
Heavy Trucks:	85.38	-27.07		-0.65		0.00		-5.31	0.0	00	0.00
Unmitigated Nois	e Levels (with	out Topo and I	oarrier a	attenı	uation)						
VehicleType	Leq Peak Hou			eq Ev	ening	Leq N	·		Ldn		NEL
Autos:	63		1.8		60.0		53.9		62.6		63.2
Medium Trucks:	57		5.7		49.4		47.8		56.3		56.
Heavy Trucks:	57		6.2		47.2		48.5		56.8		56.9
Vehicle Noise:	65	.4 θ	3.6		60.6		55.8	5	64.3		64.
Contorlino Dioton	ce to Noise Co	ontour (in feet)									
Centernne Distan				70 d	BA	65 d	BA	(60 dBA	55	dBA
Centernine Distant											
Centernne Distant		L	dn:	17		55	i		174	5	49

	FHV	VA-RD-77-108 H	IIGHWA	Y N	OISE PR	EDICT	ION MOI	DEL			
	io: EA ne: El Dorado I nt: s/o Country						Name: I umber:				
SITE	SPECIFIC IN	IPUT DATA				N	IOISE N	IODE		s	-
Highway Data				S	Site Conc	litions	(Hard =	10, S	oft = 15)		-
Average Daily	Traffic (Adt):	5,600 vehicles						Autos:	10		
Peak Hour	Percentage:	10%			Med	lium Tru	ucks (2 A	xles):	10		
Peak F	lour Volume:	560 vehicles			Hea	vy Truc	cks (3+ A	(xles):	10		
Ve	hicle Speed:	50 mph		1	ehicle M	liv					
Near/Far La	ne Distance:	58 feet				leType		Day	Evening	Night	Daily
Site Data				-	Verne			77.5%	•	9.69	
					Me	dium Ti		84.8%		10.39	
	rrier Height:	0.0 feet				eavy Ti		86.5%		10.89	
Barrier Type (0-W Centerline Di	. ,	0.0 64.0 feet								10.07	0.117
Centerline Di Centerline Dist.		64.0 feet		٨	loise So	urce El	evation	s (in f	eet)		
Barrier Distance		0.0 feet				Autos		000			
Observer Height		5.0 feet			Medium			297			
	ad Elevation:	0.0 feet			Heavy	Truck	s: 8.0	006	Grade Ad	justmen	ıt: 0.0
	ad Elevation: ad Elevation:	0.0 feet		L	ane Equ	ivalent	Distand	e (in	feet)		
	Road Grade:	0.0%				Auto			,		-
	Left View:	-90.0 degrees			Medium	Truck					
	Right View:	90.0 degrees				Truck		132			
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Distan	ce	Finite F	Road	Fresn		Barrier Att	en Be	erm Atten
Autos:	70.20	-4.93		0.66		0.00		-4.70		000	0.000
Medium Trucks:	81.00	-22.17		0.65		0.00		-4.88		000	0.00
Heavy Trucks:	85.38	-26.12	-	0.65		0.00		-5.31	0.0	000	0.00
Unmitigated Nois											
VehicleType	Leq Peak Hou	1 1		q Ev	ening	Leq	Night		Ldn		CNEL
Autos:	64		2.7		61.0		54.9		63.5		64.1
Medium Trucks:	58		6.7		50.3		48.8		57.2	-	57.5
Heavy Trucks:	58		7.2		48.2		49.4		57.8	-	57.9
Vehicle Noise:	66	.3 6	4.6		61.5		56.7		65.3	3	65.8
Centerline Distan	ce to Noise Co	ontour (in feet)		70 .		05	-/0.4			-	C - 10 A
		,		70 d			dBA		60 dBA		5 dBA
		L CNI	dn:	22 24		-	8 6		216 241		683 761
		CN	=L.:	24	ł		o		241		101

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	FHW.	A-RD-77-108	HIGH	IWAY N	IOISE PI	REDICTIO	N MOI	DEL			
Scenario: EA Road Name: Tama Road Segment: n/o C						Project N Job Nur			Wave		
SITE SPECIF	IC INF	PUT DATA							L INPUT	s	
Highway Data Average Daily Traffic (/ Peak Hour Percent Peak Hour Volu Vehicle Sp Near/Far Lane Dista	age: me: eed:	3,300 vehicles 10% 830 vehicles 55 mph 12 feet			Me He Vehicle		A ks (2 A s (3+ A	Autos: xles):	10 10 10	Night	Daily
Site Data					ven	icleType Au		Day 77.5%	Evening 12.9%	Night 9.6%	Daily 97.42%
Barrier Hei Barrier Type (0-Wall, 1-Be Centerline Dist. to Ba	rm):	0.0 feet 0.0 30.0 feet				edium Truc Heavy Truc	cks:	84.8% 86.5%	4.9%	10.3% 10.8%	1.84%
Centerline Dist. to Obse Barrier Distance to Obse Observer Height (Above F Pad Eleva Road Eleva	ver: ver: ad): tion:	30.0 feet 0.0 feet 5.0 feet 0.0 feet			Mediu Heav	Autos: Autos: m Trucks: ry Trucks: uivalent D	0.0 2.2 8.0	100 197 106	Grade Ad	justment	: 0.0
Road Gr. Left V Right V	ade: ïew: ïew:	0.0 feet 0.0% -90.0 degree 90.0 degree			Mediu	Autos: m Trucks: ny Trucks:	29.8 29.5 29.5	316 518			
FHWA Noise Model Calcu		- <i>m</i> -					_				4
Medium Trucks:	71.78 82.40 86.40	Traffic Flow -3.63 -20.87 -24.83	Dis	2.1 2.2 2.2	8 2	Road 0.00 0.00 0.00		-4.49 -4.86 -5.77	0.0	<u>еп Ве</u> 000 000 000	r <u>m Atten</u> 0.00 0.00 0.00
Unmitigated Noise Levels	(witho	ut Topo and	barrie	er atten	uation)						
VehicleType Leq Pea	ak Hour	Leq Day		Leq E	vening	Leq Ni	ght		Ldn	С	NEL
Autos: Medium Trucks: Heavy Trucks:	70.3 63.8 63.8	3 (68.4 62.2 62.4		66.7 55.9 53.3		60.6 54.3 54.6		69.2 62.8 62.9	3	69. 63. 63.
Vehicle Noise:	71.9)	70.2		67.2		62.3		70.9)	71.
Centerline Distance to No	ise Cor	ntour (in feet))								
			Ldn: NEL:	70 d 3 4	7	65 dE 116 130		6	0 dBA 367 410	1	<i>dBA</i> 161 296

	FHWA	A-RD-77-108	HIGH	IWAY N	OISE PR	EDICT	ION MO	DEL			
Scenario: EA						Project	Name:	Deser	Wave		
Road Name: Oasis (Club D	r.				Job N	lumber:	11826			
Road Segment: s/o Cou	untry C	lub Dr.									
SITE SPECIFIC	C INP	UT DATA							L INPUT	s	
Highway Data				5	Site Cond	litions	(Hard =	10, S	oft = 15)		
Average Daily Traffic (Ad	t): 6	,700 vehicles						Autos:	10		
Peak Hour Percentag	e:	10%			Med	lium Tr	ucks (2 /	Axles):	10		
Peak Hour Volum	e:	670 vehicles			Hea	ivy Tru	cks (3+ A	Axles):	10		
Vehicle Spee	d:	55 mph		1	/ehicle N	liv					
Near/Far Lane Distanc	e:	58 feet		-		leType		Day	Evening	Night	Daily
Site Data					10/110			77.5%	•	9.6%	
Barrier Heigh	·*·	0.0 feet			Me	dium T	rucks:	84.8%	4.9%	10.3%	1.84
Barrier Type (0-Wall, 1-Bern		0.0 1001			н	eavy T	rucks:	86.5%	2.7%	10.8%	0.74
Centerline Dist. to Barrie		0.0 64.0 feet									
Centerline Dist. to Observe		64.0 feet		/	loise So				eet)		
Barrier Distance to Observe		0.0 feet				Auto		000			
Observer Height (Above Pag		5.0 feet			Medium			297			
Pad Elevatio	·	0.0 feet			Heavy	/ Truck	s: 8.	006	Grade Ad	justment	: 0.0
Road Elevatio		0.0 feet		L	ane Equ	ivalen	t Distan	ce (in	feet)		
Road Grad	le:	0.0%				Auto	s: 57.	271			
Left Vie	w:	-90.0 degree	s		Medium	n Truck	s: 57.	117			
Right Vie		90.0 degree			Heavy	/ Truck	s: 57.	132			
FHWA Noise Model Calcula	tions										
VehicleType REMEL	. 1	Fraffic Flow	Dis	stance	Finite I	Road	Fresr	nel	Barrier Att	en Ber	m Atter
Autos: 71	.78	-4.56		-0.66		0.00		-4.70	0.0	000	0.00
Medium Trucks: 82	.40	-21.80		-0.65		0.00		-4.88	0.0	000	0.00
Heavy Trucks: 86	6.40	-25.76		-0.65		0.00		-5.31	0.0	000	0.00
Unmitigated Noise Levels (
VehicleType Leq Peak		Leq Day		Leq Ev		Leq	Night		Ldn		NEL
Autos:	66.6		64.7		62.9		56.8		65.5		66
Medium Trucks:	60.0	-	58.4		52.1		50.5		59.0		59
Heavy Trucks:	60.0		58.6		49.5		50.8		59.1		59
Vehicle Noise:	68.1		6.4		63.4		58.6	6	67.1	1	67
Centerline Distance to Nois	e Con	tour (in feet)		70			10.4				
			L	70 a			dBA		60 dBA		dBA
			_dn: IFL :	33			04		329		039
			1-1:	37			16		367	1.	159

Monday, February 25, 2019

	FH\	VA-RD-77-108	HIGHW	AY N	OISE PF	REDICTI	ом мо	DEL			
	rio: EA ne: Country Cli nt: w/o Monter					Project I Job Nu	Vame: Imber:		Wave		
	SPECIFIC IN	IPUT DATA			NH- 0	N ditions (5	
Highway Data				3	site Con	aitions (<u> </u>			
• •	, ,	21,900 vehicles				-K		Autos:			
	Percentage: Iour Volume:	10% 2.190 vehicles				dium Tru avy Truc					
					пеа	avy muc	KS (3+7	axies).	10		
	hicle Speed:	50 mph 66 feet		V	/ehicle I	Nix					
Near/Far La	ine Distance:	66 feet			Vehi	cleType		Day	Evening	Night	Daily
Site Data						A	utos:	77.5%	12.9%	9.6%	97.42%
Ba	rrier Height:	0.0 feet			Me	edium Tru	icks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-V	Vall, 1-Berm):	0.0			H	leavy Tru	icks:	86.5%	2.7%	10.8%	0.74%
Centerline Di	st. to Barrier:	55.0 feet			loiso Sa	ource Ele	wation	c (in f	not)		
Centerline Dist.	to Observer:	55.0 feet		-	10/30 00	Autos		200			
Barrier Distance	to Observer:	0.0 feet			Modiur	n Trucks		297			
Observer Height	(Above Pad):	5.0 feet				y Trucks		200	Grade Adj	ustment	- 00
P	ad Elevation:	0.0 feet				·				lounom	. 0.0
Ro	ad Elevation:	0.0 feet		L	ane Equ	uivalent	Distan	ce (in	feet)		
	Road Grade:	0.0%				Autos					
	Left View:	-90.0 degree	s		Mediur	n Trucks					
	Right View:	90.0 degree	S		Heav	y Trucks	44.	103			
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Dista	nce	Finite	Road	Fresr		Barrier Atte	en Bei	rm Atten
Autos:	70.20	1.00		0.46		0.00		-4.67	0.0		0.000
Medium Trucks:		-16.24		0.48		0.00		-4.87	0.0		0.000
Heavy Trucks:	85.38	-20.20		0.48		0.00		-5.38	0.0	00	0.000
Unmitigated Nois										-	
VehicleType	Leq Peak Hou			eq Ev	ening	Leq I			Ldn		NEL
Autos:	71		59.8 		68.0		61.9		70.6		71.3
Medium Trucks:			53.7		57.4		55.8		64.3		64.
Heavy Trucks:			64.2		55.2		56.4		64.8		64.9
Vehicle Noise:	73	.4	71.6		68.6		63.8	3	72.3		72.8
Centerline Distan	ce to Noise Co	ontour (in feet)		70 4	04	05 -	0.4		0.104		
				70 d	BA	65 a			60 dBA		dBA
				~ ~							
			_dn: IFI :	94 10		29 33	-		939 1.046		,971 .308

	FHV	VA-RD-77-108	HIGHW	AY NO	DISE PR	EDICT					
Road Nar	rio: EA ne: Country Clu ent: e/o Montere						Name: [umber: 1				
SITE	SPECIFIC IN	PUT DATA				N	IOISE N	IODE	L INPUTS	6	
Highway Data				S	ite Cona	litions	(Hard =	10, S	oft = 15)		
Average Daily	Traffic (Adt): 2	23,300 vehicle	s				-	Autos:	10		
Peak Hour	Percentage:	10%			Med	ium Tru	ucks (2 A	xles):	10		
Peak I	Hour Volume:	2,330 vehicle	s		Hea	vy Truc	cks (3+ A	xles):	10		
Ve	ehicle Speed:	50 mph		V	ehicle M	liv					
Near/Far La	ane Distance:	78 feet		-		leType		Day	Evening	Night	Daily
Site Data					101110			77.5%	v	9.6%	
				_	Mei	, dium Ti		34.8%		10.3%	1.84%
	rrier Height:	0.0 feet 0.0				eavy Ti		36.5%		10.8%	0.74%
Barrier Type (0-V	vall, 1-Berm): ist. to Barrier:	0.0 76.0 feet								.0.070	0 17
Centerline Dist.		76.0 feet		N	loise Sol	urce El	evations	in f	eet)		
Barrier Distance		0.0 feet				Autos					
Observer Height		5.0 feet			Medium						
	ad Flevation:	0.0 feet			Heavy	Truck	s: 8.0	06	Grade Adj	ustment:	0.0
-	ad Elevation:	0.0 feet		L	ane Equ	ivalent	Distand	e (in	feet)		
10	Road Grade:	0.0%				Auto					
	Left View:	-90.0 degree	29		Medium	Truck					
	Right View:	90.0 degree			Heavy	Truck	s: 65.3	00			
FHWA Noise Moo	lel Calculation	s									
VehicleType	REMEL	Traffic Flow	Distar	nce	Finite F	Road	Fresn	el	Barrier Atte	en Ber	m Atten
Autos:	70.20	1.26		-1.24		0.00		4.73	0.0	00	0.000
Medium Trucks:	81.00	-15.97		-1.23		0.00		4.88	0.0	00	0.000
	85.38	-19.93		-1.23		0.00		-5.25	0.0	00	0.000
Heavy Trucks:											
Unmitigated Nois	e Levels (with										
Unmitigated Nois VehicleType	e Levels (with Leq Peak Hou	r Leq Day	' Le	attenu eq Eve	ening	Leq	Night		Ldn		VEL
Unmitigated Nois VehicleType Autos:	e Levels (with Leq Peak Hou 70	r Leq Day .2	, Le 68.3		ening 66.6	Leq	60.5		69.1		69.
Unmitigated Nois VehicleType Autos: Medium Trucks:	e Levels (with Leq Peak Hou 70 63	r Leq Day .2 .8	68.3 62.3		ening 66.6 55.9	Leq	60.5 54.4		69.1 62.8		69. 63.
Unmitigated Nois VehicleType Autos: Medium Trucks: Heavy Trucks:	e Levels (with Leq Peak Hou 70 63 64	r Leq Day .2 .8 .2	68.3 62.3 62.8		ening 66.6 55.9 53.8	Leq	60.5 54.4 55.0		69.1 62.8 63.4		69. 63. 63.
Unmitigated Nois VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	e Levels (with Leg Peak Hou 70 63 64 71	r Leq Day 2 .2 .8 .2 .9	68.3 62.3 62.8 70.2		ening 66.6 55.9	Leq	60.5 54.4		69.1 62.8		69. 63. 63.
Unmitigated Nois Vehicle Type Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	e Levels (with Leg Peak Hou 70 63 64 71	r Leq Day 2 .2 .8 .2 .9	68.3 62.3 62.8 70.2	eq Ev	ening 66.6 55.9 53.8 67.1		60.5 54.4 55.0 62.3		69.1 62.8 63.4 70.9		69.1 63.1 63.1 71.4
Unmitigated Nois Vehicle Type Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	e Levels (with Leg Peak Hou 70 63 64 71	r Leq Day 22. 8. 9. 20. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0	/ Le 68.3 62.3 62.8 70.2	eq Evi	ening 66.6 55.9 53.8 67.1 BA	65	60.5 54.4 55.0 62.3 dBA		69.1 62.8 63.4 70.9	55	69.7 63.1 63.5 71.4 dBA
Unmitigated Nois VehicleType Autos: Medium Trucks: Heavy Trucks:	e Levels (with Leg Peak Hou 70 63 64 71	r Leq Day 2.2 8.8 .2 .9 ontour (in feet	68.3 62.3 62.8 70.2	eq Ev	ening 66.6 55.9 53.8 67.1 BA	65	60.5 54.4 55.0 62.3		69.1 62.8 63.4 70.9	55	69.7 63.1 63.5 71.4

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	HWA-	RD-77-108	HIGH	I YAWH	NOISE PF	REDICTIO	N MODEL	-		
Scenario: EA Road Name: Country Road Segment: e/o Por							ame: Des nber: 118			
SITE SPECIFIC	INPU	T DATA				NO	ISE MOI	DEL INPUT	s	
Highway Data					Site Con	ditions (H	lard = 10,	Soft = 15)		
Average Daily Traffic (Ad Peak Hour Percentag Peak Hour Volum	ə:	00 vehicle 10% 50 vehicle				dium Truc avy Truck		s): 10		
Vehicle Spee		50 mph		ŀ	Vehicle I	Mix				
Near/Far Lane Distanc	e:	58 feet		ŀ		cleType	Dav	/ Evening	Night	Daily
Site Data							tos: 77.	0	9.6%	
Barrier Heigh	¢.	0.0 feet			Me	edium True	cks: 84.	3% 4.9%	10.39	6 1.84%
Barrier Type (0-Wall, 1-Bern):	0.0			ŀ	leavy Tru	cks: 86.	5% 2.7%	10.89	6 0.74%
Centerline Dist. to Barrie	-	64.0 feet		Ī	Noise Sc	ource Elev	ations (in	1 feet)		
Centerline Dist. to Observe		64.0 feet				Autos:	0.000			
Barrier Distance to Observe		0.0 feet			Mediur	n Trucks:	2.297			
Observer Height (Above Pac Pad Elevatio		5.0 feet 0.0 feet			Heav	y Trucks:	8.006	Grade Ad	djustmer	nt: 0.0
Road Elevatio	n:	0.0 feet		Ī	Lane Eq	uivalent D)istance (in feet)		
Road Grad) :	0.0%				Autos:	57.271			
Left Vier		0.0 degree				n Trucks: v Trucks:	57.117 57.132			
Right View		0.0 degree	es		neav	y mucks.	57.132			
FHWA Noise Model Calculat		<i></i>								A
VehicleType REMEL Autos: 70		affic Flow 1.11	DIS	stance -0.6	Finite	0.00	Fresnel -4.7	Barrier At	теп Ве 000	erm Atten 0.00
Autos: 70 Medium Trucks: 81		-16.13		-0.6	-	0.00	-4.1	•	000	0.00
Heavy Trucks: 85		-20.08		-0.6	-	0.00	-4.0		000	0.00
Unmitigated Noise Levels (v	ithout	Topo and	barri	er attei	nuation)					
VehicleType Leg Peak		Leg Day			vening	Leg Ni	aht	Ldn	(ONEL
Autos:	70.7		68.8		67.0		60.9	69.		70.2
Medium Trucks:	64.2		62.7		56.4		54.8	63.	3	63.
Heavy Trucks:	64.6		63.2		54.2		55.4	63.	8	63.9
Vehicle Noise:	72.4		70.6		67.6		62.8	71.	.3	71.
Centerline Distance to Noise	Conto	our (in feet)							
				70	dBA	65 dE	BA	60 dBA	5	5 dBA
			Ldn:	8	37	274		868	2	2,745
		CI	VEL:	ę	97	306		967	3	3,056

	FHV	VA-RD-77-108 I	HIGHW	AY NO	DISE PR	EDICTIC	ON MOI	DEL			
Scenar	io: EA					Project N	lame: I	Desert	Wave		
Road Nam	e: Country Clu	ıb Dr.				Job Nu	mber: '	11826			
Road Segme	nt: e/o Desert	Willow Dr.									
	SPECIFIC IN	IPUT DATA							L INPUT	s	
Highway Data				S	ite Con	ditions (I	Hard =	10, Sc	oft = 15)		
Average Daily	Traffic (Adt): 2	22,300 vehicles						Autos:	10		
Peak Hour	Percentage:	10%			Med	dium Truo	cks (2 A	xles):	10		
Peak H	lour Volume:	2,230 vehicles			Hea	avy Truck	(3+ A	xles):	10		
Ve	hicle Speed:	50 mph		V	ehicle N	Niv					
Near/Far La	ne Distance:	58 feet				cleType	1	Dav	Evening	Night	Daily
Site Data								77.5%	•	•	97.429
Pa	rrier Height:	0.0 feet			Me	dium Tru	icks:	84.8%	4.9%	10.3%	1.849
Barrier Type (0-W	•	0.0 1001			н	leavy Tru	icks:	86.5%	2.7%	10.8%	0.749
Centerline Di		64.0 feet									
Centerline Dist.		64.0 feet		N	oise So	urce Ele			eet)		
Barrier Distance		0.0 feet				Autos:		000			
Observer Height (5.0 feet				n Trucks:		297			
	ad Elevation:	0.0 feet			Heavy	y Trucks:	8.0	006	Grade Ad	justment.	0.0
	ad Elevation:	0.0 feet		Li	ane Eau	ivalent	Distand	e (in t	feet)		
	Road Grade:	0.0%				Autos:	57.2	271	,		
	Left View:	-90.0 degree	s		Mediun	n Trucks:	57.	117			
	Right View:	90.0 degree			Heavy	y Trucks:	57.	132			
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Dista	nce	Finite I	Road	Fresn	el	Barrier Att	en Ber	m Atten
Autos:	70.20	1.07		-0.66		0.00		-4.70	0.0	000	0.00
Medium Trucks:	81.00	-16.16		-0.65		0.00		-4.88	0.0	000	0.00
Heavy Trucks:	85.38	-20.12		-0.65		0.00		-5.31	0.0	000	0.00
Unmitigated Noise	e Levels (with	out Topo and L	barrier	attenu	ation)						
VehicleType	Leq Peak Hou			eq Eve		Leq N			Ldn		VEL
Autos:	70		8.7		67.0		60.9		69.5		70.
Medium Trucks:	64		2.7		56.3		54.8		63.2		63.
Heavy Trucks:	64		3.2		54.2		55.4		63.8		63.
Vehicle Noise:	72		0.6		67.5		62.7		71.3	3	71.
Centerline Distant	ce to Noise Co	ontour (in feet)									
			. 🗆	70 dE		65 d		6	0 dBA		dBA
			.dn:	86		273	/		860	2.	720
			EL:	96		30			958		029

Monday, February 25, 2019

	FHV	VA-RD-77-108 H	IGHWA	Y N	OISE PF	REDICTIC	ON MO	DEL			
Scena	rio: EA					Project N					
	ne: Country Clu					Job Nu	mber:	11826			
Road Segme	ent: e/o Cook S	t.									
	SPECIFIC IN	IPUT DATA								S	
Highway Data				3	site Con	ditions (l			,		
• •	, ,	20,900 vehicles						Autos:			
	Percentage:	10%				dium Truc		/			
	lour Volume:	2,090 vehicles			He	avy Truck	:s (3+ A	(xles):	10		
	ehicle Speed:	50 mph		V	/ehicle l	Mix					
Near/Far La	ane Distance:	78 feet			Vehi	cleType		Day	Evening	Night	Daily
Site Data						AL	itos:	77.5%	12.9%	9.6%	97.42%
Ba	rrier Heiaht:	0.0 feet			Me	edium Tru	cks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-V	Vall, 1-Berm):	0.0			ŀ	łeavy Tru	cks:	86.5%	2.7%	10.8%	0.74%
	ist. to Barrier:	76.0 feet		٨	Voise Sc	ource Ele	vation	s (in fe	eet)		
Centerline Dist.		76.0 feet				Autos:	0.0	000			
Barrier Distance		0.0 feet			Mediur	n Trucks:	2.3	297			
Observer Height	• /	5.0 feet			Heav	y Trucks:	8.0	006	Grade Ad	iustmen	t: 0.0
-	ad Elevation:	0.0 feet									
	ad Elevation:	0.0 feet		L	.ane Eq	uivalent l			feet)		
	Road Grade:	0.0%				Autos:	00.				
	Left View:	-90.0 degrees				n Trucks:					
	Right View:	90.0 degrees			Heav	y Trucks:	65.	300			
FHWA Noise Moo											
VehicleType	REMEL	Traffic Flow	Distan		Finite		Fresr	-	Barrier Att		rm Atten
Autos:		0.79		1.24		0.00		-4.73		000	0.000
Medium Trucks:		-16.45		1.23		0.00		-4.88		000	0.000
Heavy Trucks:	85.38	-20.40		1.23	3	0.00		-5.25	0.0	000	0.00
Unmitigated Nois			-								
VehicleType	Leq Peak Hou	. ,		q Ev	ening	Leq N	<u> </u>		Ldn	-	NEL
Autos:	00				66.1		60.0		68.7		69.3
Medium Trucks:			.8		55.5		53.9		62.4		62.0
Heavy Trucks:			2.3		53.3		54.5		62.9		63.0
Vehicle Noise:	71	.5 69	9.7		66.7		61.9		70.4	1	70.9
Centerline Distan	ce to Noise Co	ontour (in feet)						T			
				70 d		65 di		6	60 dBA		5 dBA
		10	in:	84	1	265	5		838	2	,650
		CNE		93		295			933		.951

	FHV	VA-RD-77-108	HIGHWA	AY N	IOISE PR	EDICT	ION MOI	DEL			
Scenario Road Name Road Segmen	e: Country Clu						Name: I umber:				
SITE S	SPECIFIC IN	IPUT DATA				Ν	IOISE N	IODE	L INPUTS	5	
Highway Data				į	Site Conc	litions	(Hard =	10, S	oft = 15)		
Average Daily	Traffic (Adt): 2	20,700 vehicles	6				,	Autos:	10		
Peak Hour I	Percentage:	10%			Mea	lium Tri	ucks (2 A	xles).	10		
Peak Ho	our Volume:	2,070 vehicles	3		Hea	vy Tru	cks (3+ A	xles).	10		
Vel	nicle Speed:	50 mph		H	Vehicle M	liv					
Near/Far Lar	e Distance:	58 feet		H		leType		Dav	Evening	Night	Dailv
Site Data				-	voine			77.5%	•	9.6%	
	rier Height:	0.0 feet			Me	dium T	rucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wa	•	0.0			н	eavy T	rucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dis		64.0 feet									
Centerline Dist. t		64.0 feet		1	Noise So				eet)		
Barrier Distance t	o Observer:	0.0 feet				Auto		000			
Observer Height ()	Above Pad):	5.0 feet			Medium			297	Over de Aul		
0 (d Elevation:	0.0 feet			Heavy	/ Truck	s: 8.0	006	Grade Adj	ustment	0.0
Roa	d Elevation:	0.0 feet		1	Lane Equ	ivalen	t Distand	ce (in	feet)		
F	Road Grade:	0.0%				Auto	s: 57.2	271			
	Left View:	-90.0 degree	s		Medium	n Truck	s: 57.*	117			
	Right View:	90.0 degree	s		Heavy	/ Truck	s: 57.1	132			
FHWA Noise Mode	Calculation	s									
VehicleType	REMEL	Traffic Flow	Distan	ice	Finite F	Road	Fresn	-	Barrier Atte	en Ber	m Atten
Autos:	70.20	0.75		-0.6	-	0.00		-4.70	0.0		0.00
Medium Trucks:	81.00	-16.49		-0.6	-	0.00		-4.88	0.0		0.00
Heavy Trucks:	85.38	-20.44		-0.6	5	0.00		-5.31	0.0	00	0.000
Unmitigated Noise					,						
,1	Leq Peak Hou			eq E	vening	Leq	Night		Ldn		VEL
Autos:	70	.0	68.4		66.6		60.6		69.2		69.8
		u	52.4		56.0		54.5		62.9		63.
Medium Trucks:	63				53.8		55.1		63.4		63.6
Heavy Trucks:	64	.3	52.9								
		.3	62.9 70.2		67.2		62.4		71.0		71.
Heavy Trucks:	64 72	.3	70.2	70	67.2		62.4				
Heavy Trucks: Vehicle Noise:	64 72	.3 .0 ontour (in feet	70.2		67.2 dBA		62.4 dBA		60 dBA	55	71.4 dBA
Heavy Trucks: Vehicle Noise:	64 72	.3 .0 ontour (in feet	70.2	70 c 8	67.2 dBA	2	62.4			55	

	FH\	WA-RD-77-108	HIGHV	VAY N	IOISE PR	EDICTIO	N MODEL			
	io: EA e: Country Cli nt: e/o Oasis C						ame: Dese nber: 1182			
SITE	SPECIFIC IN	IPUT DATA				NO	ISE MOD	EL INPUT	s	
Highway Data					Site Cond	litions (H	lard = 10, S	Soft = 15)		
	Traffic (Adt): 2 Percentage: lour Volume:	23,900 vehicle 10% 2,390 vehicle					Autos ks (2 Axles, s (3+ Axles,	: 10		
Ve	hicle Speed:	50 mph			Vehicle N	lix				
Near/Far La	ne Distance:	58 feet		H		leType	Dav	Evening	Night	Daily
Site Data					10/110		tos: 77.5	0	9.6%	97.42%
Pa	rier Height:	0.0 feet			Me	dium Truc	ks: 84.8	% 4.9%	10.3%	1.84%
Barrier Type (0-W	all, 1-Berm):	0.0			Н	eavy Truc	cks: 86.5°	% 2.7%	10.8%	0.74%
Centerline Dis		64.0 feet		1	Noise So	urce Elev	ations (in	feet)		
Centerline Dist.		64.0 feet				Autos:	0.000			
Barrier Distance		0.0 feet			Medium	Trucks:	2.297			
Observer Height (. Pa	Above Pad): ad Elevation:	5.0 feet 0.0 feet				Trucks:	8.006	Grade Ad	iustment:	0.0
Roa	ad Elevation:	0.0 feet		1	Lane Equ	ivalent D	istance (in	feet)		
I	Road Grade:	0.0%				Autos:	57.271			
	Left View:	-90.0 degre	es		Medium	Trucks:	57.117			
	Right View:	90.0 degre	es		Heavy	/ Trucks:	57.132			
FHWA Noise Mode	el Calculation	s								
VehicleType	REMEL	Traffic Flow	Dista	ance	Finite F	Road	Fresnel	Barrier Att	en Ber	m Atten
Autos:	70.20	1.38		-0.66		0.00	-4.70		000	0.00
Medium Trucks:	81.00	-15.86		-0.65	-	0.00	-4.88		000	0.000
Heavy Trucks:	85.38	-19.82		-0.65		0.00	-5.31	0.0	000	0.000
Unmitigated Noise					<u> </u>					
VehicleType	Leq Peak Hou			Leq E	/ening	Leq Ni		Ldn		VEL
Autos:	70		69.0		67.3		61.2	69.8	-	70.4
Medium Trucks:	64		63.0		56.6		55.1	63.5		63.8
Heavy Trucks:	64		63.5		54.5		55.7	64.1		64.2
Vehicle Noise:	72		70.9		67.8		63.0	71.6)	72.
Centerline Distance	ce to Noise Co	ontour (in feet)	70	104	05.15		00 -10 4		104
				70 c		65 dE		60 dBA		dBA
			Ldn:	92	-	292		922	,	915
		Ci	VEL:	10	13	325		1,027	3,2	247

	FHV	VA-RD-77-108	HIGHW	AY NO	DISE PR	EDICTIO	ON MO	DEL			
Scenario	: EA					Project I	Vame:	Deser	Wave		
Road Name	: Hovley Ln.					Job Nu	mber:	11826			
Road Segment	: e/o Cook Si	t.									
	PECIFIC IN	PUT DATA							L INPUT	s	
Highway Data				S	ite Conc	litions (Hard =	10, So	oft = 15)		
Average Daily T	raffic (Adt): 1	8,200 vehicles						Autos:	10		
Peak Hour P	Percentage:	10%			Mea	lium Tru	cks (2 A	Axles):	10		
Peak Ho	ur Volume:	1,820 vehicles			Hea	vy Truck	ks (3+ A	Axles):	10		
Vehi	icle Speed:	45 mph		v	ehicle M	lix					
Near/Far Lane	e Distance:	58 feet		ŀ		leType		Dav	Evening	Night	Dailv
Site Data							utos:	77.5%			97.42
Barr	ier Height:	0.0 feet			Me	dium Tru	icks:	84.8%	4.9%	10.3%	1.849
Barrier Type (0-Wa	•	0.0			н	eavy Tru	icks:	86.5%	2.7%	10.8%	0.749
Centerline Dist.		64.0 feet									
Centerline Dist. to	Observer:	64.0 feet		N	oise So				eet)		
Barrier Distance to	Observer:	0.0 feet				Autos.		000			
Observer Height (A	bove Pad):	5.0 feet				Trucks.		297	Crada Ad	i colmont	
Pac	d Elevation:	0.0 feet			Heavy	Trucks.	8.0	006	Grade Ad	jusiment	0.0
Road	d Elevation:	0.0 feet		L	ane Equ	ivalent	Distan	ce (in	feet)		
R	oad Grade:	0.0%				Autos.	57.	271			
	Left View:	-90.0 degree	s		Medium	Trucks.	57.	117			
1	Right View:	90.0 degree	S		Heavy	Trucks.	57.	132			
FHWA Noise Model	Calculation	S									
VehicleType	REMEL	Traffic Flow	Distar	nce	Finite F	Road	Fresr		Barrier Att	en Ber	m Atten
Autos:	68.46	0.65		-0.66		0.00		-4.70		000	0.00
Medium Trucks:	79.45	-16.59		-0.65		0.00		-4.88		000	0.00
Heavy Trucks:	84.25	-20.54		-0.65		0.00		-5.31	0.0	000	0.00
Unmitigated Noise	Levels (with	out Topo and L	arrier a	attenu	ation)						
	.eq Peak Hou			eq Ev		Leq N			Ldn		VEL
Autos:	68.		6.6		64.8		58.7		67.4		68.
Medium Trucks:	62		0.7		54.3		52.8	-	61.3	-	61.
Heavy Trucks:	63.	-	1.6		52.6		53.9		62.2	-	62.
Vehicle Noise:	70		8.5		65.4		60.7	7	69.3	3	69.
Centerline Distance	e to Noise Co	ontour (in feet)		70 -	04	05 -	04				-/0.4
		,	da	70 di		65 d			60 dBA		dBA
			dn:	54		17			540		707
		CN	EL:	60		19	υ		600	1.3	897

Monday, February 25, 2019

		VA-RD-77-108									
	io: EAP					Project N			Wave		
	e: Monterey A nt: s/o Country					Job Nu	mber:	1826			
*											
SITE Highway Data	SPECIFIC IN	PUT DATA			Site Con				L INPUT	S	
* /	Traffic (Adt):	37,300 vehicles						Autos:	10		
,	Percentage:	10%			Med	dium Truc			10		
	lour Volume:	3.730 vehicles				avy Truck			10		
	hicle Speed:	55 mph		-		·		,	-		
	ne Distance:	78 feet		F	Vehicle N			0	C. com in a	Mendat	Delte
Site Data					veni	cleType		Day 77.5%	Evening 12.9%	Night 9.69	
						AL dium Tru		77.5% 84.8%		9.6%	
	rrier Height:	0.0 feet				leavv Tru		84.8% 86.5%			
Barrier Type (0-W	. ,	0.0				eavy Tru	CKS:	86.5%	2.1%	10.89	% 0.74%
Centerline Di		76.0 feet			Noise So	urce Ele	vation	s (in fe	et)		
Centerline Dist.		76.0 feet				Autos:	0.0	000			
Barrier Distance		0.0 feet			Mediun	n Trucks:	2.2	297			
Observer Height	,	5.0 feet			Heav	Trucks:	8.0	006	Grade Ad	justmer	nt: 0.0
	ad Elevation:	0.0 feet		-	Lane Equ	undont l	Victory	o (in i	[a.a.4]		
	ad Elevation:	0.0 feet		H	Lane Lyi	Autos:			eel)		
	Road Grade:	0.0%			1 4 m all 1 m	Autos: n Trucks:					
	Left View:	-90.0 degree									
	Right View:	90.0 degree	S		Heav	v Trucks:	65.	300			
FHWA Noise Mod		-									
VehicleType	REMEL	Traffic Flow	Dist	tance	Finite		Fresn	-	Barrier Att		erm Atten
Autos:	71.78	2.89		-1.2		0.00		-4.73		000	0.000
Medium Trucks:	82.40	-14.34		-1.2	-	0.00		-4.88		000	0.000
Heavy Trucks:	86.40	-18.30		-1.2	3	0.00		-5.25	0.0	000	0.000
Unmitigated Nois			barrie								
VehicleType	Leq Peak Hou			Leq E	vening	Leq N	<u> </u>		Ldn		CNEL
Autos:	73		1.5		69.8		63.7		72.3	-	72.9
Medium Trucks:	66		5.3		59.0		57.4		65.9		66.1
Heavy Trucks:	66		5.4		56.4		57.7		66.0	-	66.1
Vehicle Noise:	75	.0 7	3.3		70.3		65.4		74.0)	74.5
Centerline Distan	ce to Noise Co	ontour (in feet)									
					dBA	65 di			i0 dBA		5 dBA
											0.044
		L	.dn:	19	90	601			1,901	6	6,011

	FHV	A-RD-77-108	HIGHWA	Y NOISE	PREDICTI	ON MODE	EL			
Road Nam	io: EAP le: Portola Av. nt: n/o Country	Club Dr.				Name: De umber: 11	esert Wave 826	•		
SITE	SPECIFIC IN	PUT DATA			N	OISE MO	DDEL INF	UTS		
Highway Data				Site Co	onditions	(Hard = 10	0, Soft = 1	5)		
Average Daily	Traffic (Adt): 1	6.100 vehicles				Au	itos: 10		-	
• •	Percentage:	10%		N	ledium Tru	icks (2 Axi	les): 10			
Peak H	lour Volume:	1,610 vehicles		F	leavy Truc	ks (3+ Axi	les): 10			
Ve	hicle Speed:	55 mph		Vehicle						
Near/Far La	ne Distance:	58 feet			hicleType	0	ay Even	ing M	ight	Daily
Site Data				Ve				•	~	
					ہ Medium Tr				9.6% 0.3%	97.42%
	rrier Height:	0.0 feet			Heavy Tr				0.3%	0.74%
Barrier Type (0-W	. ,	0.0			neavy II	UCKS. OC	0.0% Z.	770 1	J.0%	0.74%
Centerline Dis		64.0 feet		Noise	Source El	evations ((in feet)			
Centerline Dist.		64.0 feet			Autos	: 0.00	0			
Barrier Distance		0.0 feet		Medi	um Trucks	2.29	7			
Observer Height (5.0 feet		He	avy Trucks	8.00	6 Grade	e Adjust	ment:	0.0
	ad Elevation:	0.0 feet		Lana F		Distance	(In 1 4)			
	ad Elevation:	0.0 feet		Lane E	quivalent					
1	Road Grade:	0.0%			Autos					
	Left View:	-90.0 degree			um Trucks					
	Right View:	90.0 degree	S	Hei	avy Trucks	: 57.13	2			
FHWA Noise Mode	el Calculation:	5							-	
VehicleType	REMEL	Traffic Flow	Distan	e Fini	e Road	Fresnel	Barrie	r Atten	Bern	n Atten
Autos:	71.78	-0.75	-	0.66	0.00	-4	.70	0.000		0.000
Medium Trucks:	82.40	-17.99	-	0.65	0.00	-4	.88	0.000		0.000
Heavy Trucks:	00.40	-21.95	-	0.65	0.00	-5	.31	0.000		0.00
neavy mucks.	86.40					-				
Unmitigated Noise	e Levels (with	out Topo and I								
Unmitigated Noise VehicleType	e Levels (with Leq Peak Hou	r Leq Day	Le	q Evening	Leq	•	Ldn		CN	
Unmitigated Noise VehicleType Autos:	e Levels (with Leq Peak Hou 70.	out Topo and I r Leq Day 4 6	Le 8.5	q Evening 66.	Leq I	60.6	Ldn	69.3	CN	69.9
Unmitigated Noise VehicleType Autos: Medium Trucks:	e Levels (with Leq Peak Hou 70. 63.	out Topo and I r Leq Day 4 6 8 6	Le 8.5 2.3	q Evening 66. 55.	Leq 7 9	60.6 54.4	Ldn	62.8	CN	69.9 63.0
Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks:	e Levels (with Leq Peak Hou 70. 63. 63.	Image: system of the system Image: system r Leq Day 4 6 8 6 8 6 8 6	Le 8.5 2.3 2.4	q Evening 66. 55. 53.	Leq 1 7 9 3	60.6 54.4 54.6	Ldn	62.8 62.9	CN	69.9 63.0 63.1
Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	e Levels (with Leq Peak Hou 70. 63. 63.	Dut Topo and I r Leq Day 4 6 8 6 8 6 9 7	Le 8.5 2.3	q Evening 66. 55.	Leq 1 7 9 3	60.6 54.4	Ldn	62.8	CN	69.9 63.0 63.1
Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	e Levels (with Leq Peak Hou 70. 63. 63.	Dut Topo and I r Leq Day 4 6 8 6 8 6 9 7	Le 8.5 2.3 2.4 70.2	q Evening 66. 55. 53. 67.	Leq 1 7 9 3 2	60.6 54.4 54.6 62.4		62.8 62.9 70.9		69.9 63.0 63.7 71.4
Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks:	e Levels (with Leq Peak Hou 70. 63. 63.	Dut Topo and I r Leq Day 4 6 8 6 9 7 ontour (in feet)	Le 8.5 2.3 2.4 70.2	q Evening 66. 55. 53. 67. 70 dBA	Leq 1 7 9 3 2 65 0	60.6 54.4 54.6 62.4	60 dBA	62.8 62.9 70.9	55 0	69.9 63.0 63.1 71.4 dBA
Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	e Levels (with Leq Peak Hou 70. 63. 63.	out Topo and I r Leq Day 4 66 8 68 9 7 ntour (in feet)	Le 8.5 2.3 2.4 70.2	q Evening 66. 55. 53. 67.	Leq 1 7 9 3 2	60.6 54.4 54.6 62.4 //BA		62.8 62.9 70.9		69.9 63.0 63.1 71.4 dBA

Monday, February 25, 2019

	FHV	VA-RD-77-108	HIGHWA	Y NO	DISE PR	EDICTIO	и моі	DEL			
Scenari Road Nam Road Segmer	e: Portola Av.					Project Na Job Nurr			Wave		
SITE	SPECIFIC IN	IPUT DATA							L INPUT	s	
Highway Data				S	ite Cond	ditions (H	ard =	10, Sc	oft = 15)		
	Traffic (Adt): 2 Percentage: our Volume:	22,000 vehicles 10% 2,200 vehicles				lium Truck avy Trucks	(s (2 A	/	10 10 10		
Vel	hicle Speed:	50 mph		V	ehicle N	lix					
Near/Far Lar	ne Distance:	58 feet		-		cleType		Dav	Evening	Night	Daily
Site Data						Aut	os:	77.5%	0	9.6%	
Bar Barrier Type (0-W	rier Height: all, 1-Berm):	0.0 feet 0.0				dium Truc leavy Truc		84.8% 86.5%		10.3% 10.8%	
Centerline Dis	st. to Barrier:	64.0 feet		N	nise So	urce Elev	ation	s (in fe	pet)		
	to Observer:	64.0 feet 0.0 feet 5.0 feet 0.0 feet			Mediun Heavy	Autos: n Trucks: / Trucks: iivalent D	0.0 2.2 8.0	000 297 006	Grade Ad	iustment	: 0.0
	Road Grade:	0.0%			ino Equ	Autos:	57.2		000)		
	Left View: Right View:	-90.0 degree 90.0 degree				n Trucks: / Trucks:	57.1 57.1				
FHWA Noise Mode	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Distand	е	Finite I	Road	Fresn	el	Barrier Att	en Bei	rm Atten
Autos:	70.20	1.02	-	0.66		0.00		-4.70	0.0	000	0.00
Medium Trucks:	81.00	-16.22	-	0.65		0.00		-4.88		000	0.00
Heavy Trucks:	85.38	-20.18	-	0.65		0.00		-5.31	0.0	000	0.00
Unmitigated Noise	e Levels (with	out Topo and	barrier at	tenu	ation)						
	Leq Peak Hou			q Eve	ening	Leq Nig			Ldn		NEL
Autos:	70		68.7		66.9		60.8		69.5		70.
Medium Trucks:	64		62.6		56.3		54.7		63.2	-	63.
Heavy Trucks:	64		63.1		54.1		55.3		63.7		63.
Vehicle Noise:	72	.3	70.5		67.5		62.7		71.2	2	71.
Centerline Distance	ce to Noise Co	ontour (in feet,	1								
				70 dE	BA	65 dB	A	6	0 dBA		dBA
			Ldn:	85		268			849		684
		Cl	IEL:	95		299			945	2	988

F	HWA-RD-77-10	8 HIGHWA	AY NOI	SE PREDIC	TION M	ODEL			
Scenario: EAP Road Name: Cook St Road Segment: n/o I-10					ct Name. Number.				
SITE SPECIFIC	INPUT DATA				NOISE	MODE	L INPUT	s	
Highway Data			Sit	e Condition	s (Hard	= 10, S	oft = 15)		
Average Daily Traffic (Adt)	: 8,100 vehicle	es				Autos:	10		
Peak Hour Percentage				Medium T	rucks (2	Axles):	10		
Peak Hour Volume		es		Heavy Tr	ucks (3+	Axles):	10		
Vehicle Speed	50 mph		1/-			,			
Near/Far Lane Distance	: 78 feet		vei	hicle Mix		0	Curring	Allenter	Deile
<u> </u>				VehicleTyp	e Autos:	Day 77.5%	Evening 12.9%	Night 9.6%	Daily 97.42
Site Data			_	Medium		84.8%		9.6%	
Barrier Height					Trucks:			10.3%	
Barrier Type (0-Wall, 1-Berm)				neavy	HUCKS.	00.5%	5 Z.170	10.0%	0.74
Centerline Dist. to Barrier			No	ise Source	Elevatio	ns (in f	eet)		
Centerline Dist. to Observer				Aut	os: 0	0.000			
Barrier Distance to Observe	0.0 1001		/	Aedium Truc	ks: 2	2.297			
Observer Height (Above Pad)				Heavy Truc	ks: 8	3.006	Grade Ad	ljustment.	0.0
Pad Elevation							6 4		
Road Elevation	0.0 1001		Lai	ne Equivale			feet)		
Road Grade	0.070			Aut		5.422			
Left View	· oolo dogii		/	Aedium Truc		5.286			
Right View	: 90.0 degre	ees		Heavy Truc	ks: 65	5.300			
FHWA Noise Model Calculati	ons		- 1						
VehicleType REMEL	Traffic Flow	Distan	се	Finite Road	Fres	snel	Barrier At	ten Ber	m Atter
Autos: 70.	20 -3.32	2 -	1.24	0.00		-4.73	0.0	000	0.00
Medium Trucks: 81.			1.23	0.00		-4.88	0.0	000	0.00
Heavy Trucks: 85.	38 -24.52	2 -	1.23	0.00		-5.25	0.0	000	0.00
Unmitigated Noise Levels (w	ithout Topo and	d barrier a	ttenua	tion)					
VehicleType Leq Peak H			q Ever		q Night		Ldn		VEL
Autos:	65.6	63.7		62.0	55		64.		65
Medium Trucks:	59.2	57.7		51.3	49		58.	-	58
Heavy Trucks:	59.6	58.2		49.2	50		58.	-	58
Vehicle Noise:	67.3	65.6		62.5	57	.8	66.	3	66
Centerline Distance to Noise	Contour (in fee	,							
			70 dB/		5 dBA	(60 dBA		dBA
		Ldn:	32 36		103		325		027
		NFL:			114		362		144

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Ca						Droioo(*	lama: D	ort Mouro		
	io: EAP le: Cook St.						lame: Des mber: 118			
	nt: s/o I-10 EE	Pampo				JOD INUI	nber. 118	20		
Road Segme	n. 3/01-10 LL	Ramps								
	SPECIFIC IN	IPUT DATA						DEL INPUT	s	
Highway Data				5	Site Con	ditions (F	lard = 10,	Soft = 15)		
Average Daily	Traffic (Adt):	34,000 vehicles	5				Aut	os: 10		
Peak Hour	Percentage:	10%			Med	dium Truc	ks (2 Axle	s): 10		
Peak H	lour Volume:	3,400 vehicles	5		Hea	avy Truck	s (3+ Axle	s): 10		
Ve	hicle Speed:	50 mph			Vehicle N	Niv				
Near/Far La	ne Distance:	78 feet		H		cleType	Da	/ Evening	Night	Daily
Site Data				-	VCIII		itos: 77.	•	9.6%	
					Ma	dium Tru			10.3%	
	rrier Height:	0.0 feet				leavy Tru			10.3%	
Barrier Type (0-W		0.0				ieavy IIu	UNS. 00.	378 2.178	10.076	0.74
Centerline Di		76.0 feet		1	Voise So	urce Ele	vations (i	n feet)		
Centerline Dist.		76.0 feet				Autos:	0.000			
Barrier Distance		0.0 feet			Mediun	n Trucks:	2.297			
Observer Height		5.0 feet			Heav	y Trucks:	8.006	Grade Ad	iustment	: 0.0
	ad Elevation:	0.0 feet			one Fau	uivelent l	Diatanaa (in fact)		
	ad Elevation:	0.0 feet		-	Lane Equ		Distance (,		
	Road Grade:	0.0%				Autos:	65.422			
	Left View:	-90.0 degree				n Trucks:				
	Right View:	90.0 degree	s		Heav	y Trucks:	65.300			
FHWA Noise Mod	el Calculation									
VehicleType	REMEL	Traffic Flow	Dista	ance	Finite	Road	Fresnel	Barrier Att	en Ber	m Atten
Autos:	70.20			-1.24		0.00	-4.1		000	0.00
Medium Trucks:	81.00			-1.23	-	0.00	-4.8		000	0.00
Heavy Trucks:	85.38	-18.29		-1.23	3	0.00	-5.2	25 0.0	000	0.00
Unmitigated Nois										
VehicleType	Leg Peak Ho			Leq Ev	/ening	Leq N		Ldn		NEL
Autos:			70.0		68.2		62.2	70.8		71.
Medium Trucks:			53.9		57.6		56.0	64.5	-	64
Heavy Trucks:		-	64.4		55.4		56.7	65.0		65.
Vehicle Noise:	73	3.6	71.8		68.8		64.0	72.5	5	73.
Centerline Distan	ce to Noise C	ontour (in feet,	•							
				70 a		65 di		60 dBA		dBA
			_dn:	13	6	431		1,363		311 800
			IFL :	15		480		1.518		

	FHV	VA-RD-77-108	HIGH	WAY N	IOISE PR	EDICTI	ON MO	DDEL			
Road Nan	io: EAP ne: Cook St. nt: s/o Gerald	Ford Dr.				Project Job N		Deser 11826	Wave		
SITE	SPECIFIC IN	IPUT DATA			-	N	OISE	MODE		s	
Highway Data				5	Site Cond	litions	(Hard =	= 10, S	oft = 15)		
Average Daily	Traffic (Adt): 2	25,400 vehicle	s					Autos:	10		
Peak Hour	Percentage:	10%			Med	lium Tru	ıcks (2	Axles):	10		
Peak H	lour Volume:	2,540 vehicle	s		Hea	vy Truc	:ks (3+	Axles):	10		
Ve	hicle Speed:	50 mph		T	Vehicle M	liv					
Near/Far La	ne Distance:	78 feet		H		leType	1	Day	Evening	Night	Daily
Site Data							lutos:	77.5%	v	9.6%	
	rrier Height:	0.0 feet			Me	dium Tr		84.8%		10.3%	1.84%
Barrier Type (0-V		0.0			н	eavy Tr	ucks:	86.5%	2.7%	10.8%	0.74%
Centerline Di	. ,	76.0 feet		-							
Centerline Dist.		76.0 feet		'	Noise So				eet)		
Barrier Distance	to Observer:	0.0 feet			Medium	Autos		.000			
Observer Height	(Above Pad):	5.0 feet						.297	Crada Ad	inatraant	
Р	ad Elevation:	0.0 feet			Heavy	/ Trucks	5: 8	.006	Grade Ad	usunen	. 0.0
Ro	ad Elevation:	0.0 feet		1	Lane Equ	ivalent	Distar	nce (in	feet)		
	Road Grade:	0.0%				Autos	s: 65	.422			
	Left View:	-90.0 degree	es		Medium	n Trucks	s: 65	.286			
	Right View:	90.0 degree	es		Heavy	/ Trucks	s: 65	.300			
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Dist	ance	Finite F	Road	Fres	nel	Barrier Att	en Ber	m Atten
Autos:	70.20	1.64		-1.24	4	0.00		-4.73	0.0	000	0.00
Medium Trucks:	81.00	-15.60		-1.23	3	0.00		-4.88	0.0	000	0.00
Heavy Trucks:	85.38	-19.55		-1.23	3	0.00		-5.25	0.0	000	0.00
Unmitigated Nois											
VehicleType	Leq Peak Hou			Leg Ev	•	Leq	Night		Ldn		NEL
Autos:	70		68.7		66.9		60.	-	69.5		70.
Medium Trucks:	64		62.7		56.3		54.	-	63.2		63.
Heavy Trucks:	64	-	63.2		54.1		55.		63.7		63.9
Vehicle Noise:			70.6		67.5		62.	1	71.3	5	71.
Centerline Distan	ce to Noise Co	ontour (in feet)	70 c		65 (60 dBA	55	dBA
			Ldn:	100		00 0			1.018		ава 220
			VFL:	11		35			1,018		220 586
		CI	¥66.						1,104		000

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WAY NOISE PREDICTION MODEL
Project Name: Desert Wave
Job Number: 11826
NOISE MODEL INPUTS
Site Conditions (Hard = 10, Soft = 15)
Autos: 10
Medium Trucks (2 Axles): 10
Heavy Trucks (3+ Axles): 10
Vehicle Mix
VehicleType Day Evening Night Daily
Autos: 77.5% 12.9% 9.6% 97.42%
Medium Trucks: 84.8% 4.9% 10.3% 1.84%
Heavy Trucks: 86.5% 2.7% 10.8% 0.74%
Noise Source Elevations (in feet)
Autos: 0.000
Medium Trucks: 2,297
Heavy Trucks: 8.006 Grade Adjustment: 0.0
Lane Equivalent Distance (in feet)
Autos: 65.422
Medium Trucks: 65.286
Heavy Trucks: 65.300
tance Finite Road Fresnel Barrier Atten Berm Atten
-1.24 0.00 -4.73 0.000 0.00
-1.23 0.00 -4.88 0.000 0.00
-1.23 0.00 -5.25 0.000 0.00
r attenuation)
,
Leq Evening Leq Night Ldn CNEL
Leq Evening Leq Night Ldn CNEL 67.0 61.0 69.6 70.
Leq Evening Leq Night Ldn CNEL 67.0 61.0 69.6 70. 56.4 54.9 63.3 63.3
Leq Evening Leq Night Ldn CNEL 67.0 61.0 69.6 70.
Leq Evening Leq Night Ldn CNEL 67.0 61.0 69.6 70.0 56.4 54.9 63.3 63.3 54.2 55.5 63.8 64.
Leq Evening Leq Night Ldn CNEL 67.0 61.0 69.6 70.0 56.4 54.9 63.3 63.3 54.2 55.5 63.8 64.
Leq Evening Leq Night Ldn CNEL 67.0 61.0 69.6 70. 56.4 54.9 63.3 63.3 54.2 55.5 63.8 64. 67.6 62.8 71.4 71.
ta

F	HWA-RD-77-108	HIGHWA	Y NOISE PR	REDICTION	N MODEL			
Scenario: EAP				Project Na	me: Dese	ert Wave		
Road Name: Cook St.				Job Num	ber: 1182	26		
Road Segment: n/o Coun	try Club Dr.							
SITE SPECIFIC	INPUT DATA					EL INPUT	s	
Highway Data			Site Con	ditions (H	ard = 10,	Soft = 15)		
Average Daily Traffic (Adt):	28,900 vehicle	s			Auto			
Peak Hour Percentage:	10%		Me	dium Truck	is (2 Axles	;): 10		
Peak Hour Volume:	2,890 vehicle	s	He	avy Trucks	(3+ Axles	;): 10		
Vehicle Speed:	50 mph		Vehicle	Mix				
Near/Far Lane Distance:	78 feet			icleType	Day	Evening	Night	Daily
Site Data				Aut				97.42
Barrier Height:	0.0 feet		Me	edium Truc	ks: 84.8	% 4.9%	10.3%	1.849
Barrier Type (0-Wall, 1-Berm).			ŀ	leavy Truc	ks: 86.5	% 2.7%	10.8%	0.74
Centerline Dist. to Barrier.				-				
Centerline Dist. to Observer.			Noise So	ource Elev		feet)		
Barrier Distance to Observer.				Autos:	0.000			
Observer Height (Above Pad)				m Trucks:	2.297	Our de Au		
Pad Elevation.			Heav	y Trucks:	8.006	Grade Ad	ijustment	: 0.0
Road Elevation:	0.0 feet		Lane Eq	uivalent Di	istance (i	n feet)		
Road Grade:	0.0%			Autos:	65.422			
Left View.	-90.0 degree	es	Mediu	m Trucks:	65.286			
Right View.	90.0 degree	es	Heav	y Trucks:	65.300			
FHWA Noise Model Calculation	ons							
VehicleType REMEL	Traffic Flow	Distan	ce Finite	Road	Fresnel	Barrier At	ten Ber	m Atter
Autos: 70.2	2.20	-	1.24	0.00	-4.7	3 0.	000	0.00
Medium Trucks: 81.0	-15.04	-	1.23	0.00	-4.8	8 0.	000	0.00
Heavy Trucks: 85.3	-18.99	-	1.23	0.00	-5.2	5 0.	000	0.00
Unmitigated Noise Levels (wi		-	,					
VehicleType Leq Peak H			q Evening	Leq Nig		Ldn		NEL
		69.3	67.5		61.4	70.		70
	• · · · ·	63.2	56.9		55.3	63.	-	64
		63.7	54.7		55.9	64.		64
	-	71.1	68.1		63.3	71.	8	72
Centerline Distance to Noise	Contour (in feet						1	
			70 dBA	65 dB,	A	60 dBA		dBA
		Ldn:	116	366		1,159		664
		NFL:	129	408		1,290		080

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Seena	rio: EAP					Project I	Namo:	Docor	t Waxa		
	ne: Cook St.						imber:				
	nt: s/o Country	Club Dr.				000740	inibor.	11020			
÷	SPECIFIC IN			1		N					
Highway Data	SPECIFIC IN	PUTDATA		s	ite Con				oft = 15	,	
Average Daily	Traffic (Adt):	30,700 vehicles					,	Autos:	10		
• •	Percentage:	10%			Me	dium Tru	cks (2 A	xles)	10		
Peak H	lour Volume:	3,070 vehicles			He	avy Truc	ks (3+ A	xles):	10		
Ve	hicle Speed:	50 mph			ehicle l	Mise	-				
Near/Far La	ne Distance:	78 feet		V		icleType		Day	Evening	Night	Daily
Site Data				_	Veni			77.5%	•	9.6%	
				_	Ma	dium Tri		84.8%		10.3%	
	rrier Height:	0.0 feet				leavy Tru		86.5%		10.8%	
Barrier Type (0-V	ist. to Barrier:	0.0 76.0 feet								10.070	0.7 17
Centerline Dist.		76.0 feet		N	loise Sc	ource Ele	evation	s (in f	eet)		
Barrier Distance		0.0 feet				Autos	: 0.0	000			
Observer Height		5.0 feet			Mediur	n Trucks	: 2.2	297			
	ad Flevation:	0.0 feet			Heav	y Trucks	: 8.0	006	Grade Adj	ustment	: 0.0
-	ad Elevation: ad Elevation:	0.0 feet		L	ane Eq	uivalent	Distand	ce (in	feet)		
	Road Grade:	0.0%				Autos			,		
	Left View:	-90.0 degrees			Mediur	n Trucks					
	Right View:	90.0 degrees			Heav	y Trucks	: 65.3	300			
FHWA Noise Moo	lel Calculation	s									
VehicleType	REMEL	Traffic Flow	Distan	се	Finite	Road	Fresn	el	Barrier Atte	en Ber	m Atten
Autos:	70.20	2.46		-1.24		0.00		-4.73	0.0	00	0.00
Medium Trucks:	81.00	-14.78		-1.23		0.00		-4.88	0.0	00	0.00
Heavy Trucks:	85.38	-18.73		-1.23		0.00		-5.25	0.0	00	0.00
Unmitigated Nois	e Levels (with	out Topo and b	arrier a	ttenu	uation)						
VehicleType	Leq Peak Hou			eq Eve	ening	Leq I	·		Ldn	-	NEL
Autos:			9.5		67.8		61.7		70.3		70.
Medium Trucks:			3.5		57.1		55.6		64.0		64.3
Heavy Trucks:	65	.4 6	4.0		55.0		56.2		64.6		64.
Vehicle Noise:	73	.1 7	1.4		68.3		63.5		72.1		72.
Centerline Distan	ce to Noise Co	ontour (in feet)									
				70 dl		65 a		- 1	60 dBA		dBA
				123	`	38	0		1.231	3	892
		L CN	dn:	123	-	38 43			1,231		334

	FH\	VA-RD-77-108	HIGHW	VAYN	IOISE PF	REDICT		DEL			
	io: EAP						Name: I				
	ne: Cook St. ent: s/o Hovley	In				JOD IN	umber:	1826			
ů	,										
SITE Highway Data	SPECIFIC IN	PUT DATA		_	Site Con					5	
					Sile Con	unions					
, ,	Traffic (Adt):		S					Autos:			
	Percentage:	10%					ucks (2 A				
	our Volume:	3,020 vehicle	S		He	avy Iru	cks (3+ A	xies):	10		
	hicle Speed:	50 mph			Vehicle I	Mix					
Near/Far La	ne Distance:	58 feet			Vehi	icleType		Day	Evening	Night	Daily
Site Data							Autos:	77.5%	5 12.9%	9.6%	97.42%
Ba	rrier Height:	0.0 feet			Me	edium T	rucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-V		0.0			F	leavy T	rucks:	86.5%	2.7%	10.8%	0.74%
<i>,</i> , , , ,	ist. to Barrier:	64.0 feet		H	Noise Sc	uree E	lovation	in f	0.041		
Centerline Dist.	to Observer:	64.0 feet		Ľ	NUISE SC	Auto			eel)		
Barrier Distance	to Observer:	0.0 feet			1 4 m - 15 m	Auto n Truck					
Observer Height	(Above Pad):	5.0 feet							0		
	ad Elevation:	0.0 feet			Heav	y Truck	s: 8.0	006	Grade Adj	ustment.	0.0
Ro	ad Elevation:	0.0 feet		7	Lane Eq	uivalen	t Distand	e (in	feet)		
	Road Grade:	0.0%				Auto	s: 57.2	271			
	Left View:	-90.0 degree	es		Mediur	n Truck	s: 57.'	17			
	Right View:	90.0 degree	es		Heav	y Truck	s: 57.1	32			
FHWA Noise Mod	lel Calculation	s									
	051451	Traffic Flow	Dista								
VehicleType	REMEL	Traffic Flow	Dista	ance	Finite	Road	Fresn	el	Barrier Att	en Ber	m Atten
VehicleType Autos:		2.39	Dista	-0.6		Road 0.00		el -4.70	Barrier Atte 0.0		
	70.20		Dista		6					000	0.00
Autos:	70.20 81.00	2.39	Dista	-0.6	6 5	0.00		4.70	0.0	000	0.00
Autos: Medium Trucks: Heavy Trucks:	70.20 81.00 85.38	2.39 -14.85 -18.80		-0.6 -0.6	6 5 5	0.00		4.70 4.88	0.0	000	0.000
Autos: Medium Trucks: Heavy Trucks:	70.20 81.00 85.38	2.39 -14.85 -18.80 out Topo and	barrier	-0.6 -0.6 -0.6	6 5 5	0.00 0.00 0.00		4.70 4.88	0.0	000 000 000	0.000
Autos: Medium Trucks: Heavy Trucks: Unmitigated Nois VehicleType Autos:	70.20 81.00 85.38 e Levels (with Leq Peak Hou 71	2.39 -14.85 -18.80 out Topo and rr Leq Day	barrier	-0.6 -0.6 -0.6	6 5 5 nuation)	0.00 0.00 0.00		-4.70 -4.88 -5.31	0.0 0.0 0.0	000 000 000 <i>CI</i>	0.000 0.000 0.000 NEL 71.4
Autos: Medium Trucks: Heavy Trucks: Unmitigated Nois VehicleType	70.20 81.00 85.38 e Levels (with Leq Peak Hou 71	2.39 -14.85 -18.80 out Topo and r Leq Day .9	barrier	-0.6 -0.6 -0.6	6 5 5 nuation) ivening	0.00 0.00 0.00	Night	-4.70 -4.88 -5.31	0.0 0.0 0.0 <i>Ldn</i>	000 000 000 <i>Cl</i>	0.000 0.000 0.000 NEL 71.4
Autos: Medium Trucks: Heavy Trucks: Unmitigated Nois VehicleType Autos:	70.20 81.00 85.38 e Levels (with Leq Peak Hou 71 65	2.39 -14.85 -18.80 out Topo and rr Leq Day .9 .5	<i>barrier</i> / [-0.6 -0.6 -0.6	6 5 5 <i>ivening</i> 68.3	0.00 0.00 0.00	Night 62.2	-4.70 -4.88 -5.31	0.0 0.0 0.0 0.0 <i>Ldn</i> 70.8	000 000 000 <i>C/</i>	0.000 0.000 0.000 VEL 71.4 64.8
Autos: Medium Trucks: Heavy Trucks: Unmitigated Nois VehicleType Autos: Medium Trucks:	70.20 81.00 85.38 e Levels (with Leq Peak Hou 71 65 65	2.39 -14.85 -18.80 out Topo and rr Leq Day .9 .5 .9	barrier / 70.0 64.0	-0.6 -0.6 -0.6	6 5 5 <i>ivening</i> 68.3 57.6	0.00 0.00 0.00	Night 62.2 56.1	-4.70 -4.88 -5.31	0.0 0.0 0.0 <i>Ldn</i> 70.8 64.6	000 000 000 <i>Cl</i>	0.000 0.000 0.000 VEL 71.4 64.8 65.2
Autos: Medium Trucks: Heavy Trucks: Unmitigated Nois VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	70.20 81.00 85.38 e Levels (with Leg Peak Hou 71 65 65 73	2.39 -14.85 -18.80 out Topo and r Leq Day .9 .5 .5 .6	<i>barrier</i> 70.0 64.0 64.5 71.9	-0.61 -0.63 -0.63 <i>atten</i> Leq E	6 5 5 <i>vening</i> 68.3 57.6 55.5 68.8	0.00 0.00 0.00 <i>Leq</i>	Night 62.2 56.1 56.7 64.1	-4.70 -4.88 -5.31	0.0 0.0 0.0 70.8 64.6 65.1 72.6	000 000 000 200 200 200 200 200 200 200	0.000 0.000 0.000 VEL 71.4 64.8 65.2 73.1
Autos: Medium Trucks: Heavy Trucks: Unmitigated Nois VehicleType Autos: Medium Trucks: Heavy Trucks:	70.20 81.00 85.38 e Levels (with Leg Peak Hou 71 65 65 73	2.39 -14.85 -18.80 out Topo and r Leq Day .9 .5 .5 .9 .6 ontour (in feet	<i>barrier</i> 70.0 64.0 64.5 71.9	-0.61 -0.63 -0.63 -0.63 -0.63 -0.63 -0.63 -0.63 -0.63 -0.63 -0.63 -0.63 -0.64 -0.64 -0.64 -0.64 -0.64 -0.64 -0.64 -0.65	6 5 5 5 7 7 7 6 8.3 5 7.6 5 5.5 6 8.8 0 BA	0.00 0.00 0.00 <i>Leq</i> 65	Night 62.2 56.1 56.7 64.1 dBA	-4.70 -4.88 -5.31	0.0 0.0 0.0 70.8 64.6 65.1 72.6	000 000 000 3 3 5 5 5 5 5 5 5	0.000 0.000 NEL 71.4 64.8 65.2 73.1
Autos: Medium Trucks: Heavy Trucks: Unmitigated Nois VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	70.20 81.00 85.38 e Levels (with Leg Peak Hou 71 65 65 73	2.39 -14.85 -18.80 out Topo and r Leq Day .9 .5 .9 .6 ontour (in feet	<i>barrier</i> 70.0 64.0 64.5 71.9	-0.61 -0.63 -0.63 <i>atten</i> Leq E	6 5 5 <u>vening</u> 68.3 57.6 55.5 68.8 <i>dBA</i> 16	0.00 0.00 0.00 <i>Leq</i> 65 3	Night 62.2 56.1 56.7 64.1	-4.70 -4.88 -5.31	0.0 0.0 0.0 70.8 64.6 65.1 72.6	000 000 3 3 5 5 5 3,	0.000 0.000 0.000 VEL 71.4 64.8 65.2 73.1

Monday, February 25, 2019

	FH\	WA-RD-77-108	HIGHWA	AY NO	DISE PR	EDICTIO	N MODEL	-		
	io: EAP ne: El Dorado	D-			1		ame: Des nber: 118	ert Wave		
	nt: n/o Countr					JOD INUIT	iber: 118	26		
				-						
SITE Highway Data	SPECIFIC IN	NPUT DATA		6	ite Cond			DEL INPU Soft = 15)	rs	
Average Daily	Traffic (Adt): Percentage:	4,800 vehicle	s			ium Truck	Auto	os: 10		
	lour Volume:	480 vehicle	s		Hea	vy Trucks	(3+ Axle	s): 10		
Ve	hicle Speed:	50 mph			ehicle M		•	·		
Near/Far La	ne Distance:	58 feet		V		IX leType	Dai	/ Evening	Nigh	t Daily
Site Data					venic	Aut		•		
	rrier Heiaht:	0.0 feet			Med	lium Truc				
Barrier Type (0-W	/all, 1-Berm):	0.0			He	eavy Truc	ks: 86.	5% 2.7%	5 10.8	3% 0.74%
Centerline Di		64.0 feet		N	loise Sou	ırce Elev	ations (ii	n feet)		
Centerline Dist.		64.0 feet				Autos:	0.000			
Barrier Distance		0.0 feet			Medium	Trucks:	2.297			
Observer Height	Above Pad): ad Flevation:	5.0 feet 0.0 feet			Heavy	Trucks:	8.006	Grade A	djustme	ent: 0.0
	ad Elevation:	0.0 feet		L	ane Equ	ivalent D	istance (in feet)		-
	Road Grade:	0.0%				Autos:	57.271	,		
	Left View:	-90.0 degre	es		Medium	Trucks:	57.117			
	Right View:	90.0 degre	es		Heavy	Trucks:	57.132			
FHWA Noise Mod	el Calculation	IS								
VehicleType	REMEL	Traffic Flow	Distan		Finite F		Fresnel	Barrier A		Berm Atten
Autos:	70.20			-0.66		0.00	-4.7		.000	0.00
Medium Trucks:	81.00			-0.65		0.00	-4.8		.000	0.00
Heavy Trucks:	85.38	-26.79		-0.65		0.00	-5.3	31 0	.000	0.00
Unmitigated Nois					<u> </u>					
VehicleType	Leq Peak Hou			eq Eve	ening	Leq Nig		Ldn		CNEL
Autos: Medium Trucks:			62.1 56.0		60.3 49.6		54.2 48.1	62 56		63. 56.
Heavy Trucks:			56.0 56.5		49.6 47.5		48.1 48.7	56		56.
Vehicle Noise:			63.9		60.8		40.7 56.1	64		65.
Centerline Distan					20.0			0.		
Contenine Distall	Le lo morae C	ontour (in leel	/	70 di	BA	65 dB	A	60 dBA		55 dBA
			Ldn:	19		59	-	185		586
		C	VEL:	21		65		206		652
		0.		21		00		200		001

	FHV	VA-RD-77-108	HIGHW	AY N	OISE PR	EDICT	ION MODEL	-		
Scenar	io: EAP					Project	Name: Des	ert Wave		
Road Nan	ne: El Dorado D	Dr.				Job N	umber: 118	26		
Road Segme	nt: s/o Country	Club Dr.								
	SPECIFIC IN	PUT DATA						DEL INPUT	s	
Highway Data				5	Site Con	ditions	(Hard = 10,	Soft = 15)		
Average Daily	Traffic (Adt):	5,900 vehicles					Auto	os: 10		
Peak Hour	Percentage:	10%			Med	lium Tr	ucks (2 Axle	s): 10		
Peak H	lour Volume:	590 vehicles			Hea	avy Tru	cks (3+ Axle	s): 10		
Ve	hicle Speed:	50 mph		1	/ehicle N	liv				
Near/Far La	ne Distance:	58 feet		- H		cleType	Day	/ Evening	Night	Daily
Site Data					VOIM		Autos: 77.		9.6%	
Ba	rrier Height:	0.0 feet			Me	dium T	rucks: 84.8	8% 4.9%	10.3%	1.84
Barrier Type (0-W	•	0.0			н	leavy T	rucks: 86.	5% 2.7%	10.8%	0.74
Centerline Di		64.0 feet		-	laiaa C-		levations (ir	a (a a t		
Centerline Dist.	to Observer:	64.0 feet		r	voise So	Auto		1 teet)		
Barrier Distance	to Observer:	0.0 feet			Mediun					
Observer Height	(Above Pad):	5.0 feet						Grade Ad	iustmont	
P	ad Elevation:	0.0 feet			Heavy	/ Truck	S: 8.006	Grade Au	usunen	. 0.0
Ro	ad Elevation:	0.0 feet		L	ane Equ	iivalen	t Distance (in feet)		
	Road Grade:	0.0%				Auto	s: 57.271			
	Left View:	-90.0 degree	S		Mediun	n Truck	s: 57.117			
	Right View:	90.0 degree	S		Heavy	/ Truck	s: 57.132			
FHWA Noise Mod	el Calculation:	s								
VehicleType	REMEL	Traffic Flow	Dista	nce	Finite I	Road	Fresnel	Barrier Att	en Ber	m Atter
Autos:	70.20	-4.70		-0.66		0.00	-4.7	0.0	000	0.0
Medium Trucks:	81.00	-21.94		-0.65		0.00	-4.8	88 0.0	000	0.00
Heavy Trucks:	85.38	-25.89		-0.65		0.00	-5.3	81 0.0	000	0.00
Unmitigated Nois	e Levels (with	out Topo and L	arrier	atten	uation)					
VehicleType	Leq Peak Hou			.eq Ev		Leq	Night	Ldn		NEL
Autos:	• · ·		2.9		61.2		55.1	63.7		64
Medium Trucks:			6.9		50.5		49.0	57.5	-	57
Heavy Trucks:			7.4		48.4		49.6	58.0		58
Vehicle Noise:			4.8		61.7		57.0	65.5	5	66
Centerline Distan	ce to Noise Co	ontour (in feet)		70	-					10.4
			-	70 d			dBA	60 dBA		dBA
			dn:	23			'2 80	228		20
			FL:	25				253		01

Monday, February 25, 2019

	WA-RD-77-108						
Scenario: EAP					Name: Dese		
Road Name: Tamarisk				JOD N	lumber: 1182	6	
Road Segment: n/o Count	ry Club Dr.						
SITE SPECIFIC I	NPUT DATA					EL INPUTS	
Highway Data			Site C	Conditions	(Hard = 10,	Soft = 15)	
Average Daily Traffic (Adt):	8,600 vehicles	3			Auto	s: 10	
Peak Hour Percentage:	10%			Medium Tr	ucks (2 Axles	;): 10	
Peak Hour Volume:	860 vehicles	5		Heavy Tru	cks (3+ Axles	;): 10	
Vehicle Speed:	55 mph		Vehic	le Mix			
Near/Far Lane Distance:	12 feet			ehicleType	e Dav	Evening N	ight Daily
Site Data			-		Autos: 77.5		9.6% 97.42%
				Medium T			0.3% 1.84%
Barrier Height: Barrier Type (0-Wall, 1-Berm):	0.0 feet 0.0			Heavy T			0.8% 0.74%
Centerline Dist. to Barrier:	30.0 feet						
Centerline Dist. to Observer:	30.0 feet		Noise		levations (in	feet)	
Barrier Distance to Observer:	0.0 feet			Auto			
Observer Height (Above Pad):	5.0 feet			dium Truck			
Pad Elevation:	0.0 feet		н	eavy Truck	s: 8.006	Grade Adjus	tment: 0.0
Road Elevation:	0.0 feet		Lane	Equivalen	t Distance (il	n feet)	
Road Grade:	0.0%			Auto	s: 29.816	,	
Left View:	-90.0 degree	24	Me	dium Truck	s: 29.518		
Right View:	90.0 degree		Н	eavy Truck	s: 29.547		
		-					
FHWA Noise Model Calculation							
VehicleType REMEL	Traffic Flow	Distand	e Fir	nite Road	Fresnel	Barrier Atten	Berm Atten
Autos: 71.78			2.18	0.00	-4.4		
Medium Trucks: 82.40			2.22	0.00	-4.8		
Heavy Trucks: 86.40	-24.67		2.22	0.00	-5.7	7 0.000	0.000
Unmitigated Noise Levels (with	hout Topo and	barrier at	tenuatio	n)			
VehicleType Leg Peak Ho			g Evenin		Night	Ldn	CNEL
		68.6		6.8	60.8	69.4	70.0
Medium Trucks: 6	3.9	62.4	5	6.0	54.5	63.0	63.2
Heavy Trucks: 6	3.9 (62.5	5	3.5	54.7	63.1	63.2
Vehicle Noise: 7	2.1	70.3	6	7.3	62.5	71.0	71.5
Centerline Distance to Noise C	Contour (in feet,)					
	. ,		70 dBA	65	dBA	60 dBA	55 dBA
		I also i	0.0		20	381	1.203
		Ldn:	38	1	20	301	1,203

	FHW	/A-RD-77-108	HIGHWA	AY NOISE F	REDICTI		EL		
	p: EAP e: Oasis Club ht: s/o Country					Name: Do umber: 11	esert Wave 1826		
SITE S	SPECIFIC IN	PUT DATA					DDEL INPUT	ſS	
Highway Data				Site Co	nditions ((Hard = 1	0, Soft = 15)		
Average Daily	Traffic (Adt):	7,000 vehicles	5			A	utos: 10		
Peak Hour	Percentage:	10%		M	edium Tru	icks (2 Ax	<i>les):</i> 10		
Peak H	our Volume:	700 vehicles	6	н	eavy Truc	ks (3+ Ax	<i>les):</i> 10		
Vel	nicle Speed:	55 mph		Vehicle	Mix				
Near/Far Lar	ne Distance:	58 feet			hicleType		ay Evening	Night	Daily
Site Data				10			7.5% 12.9%	-	
Par	rier Height:	0.0 feet		٨	ledium Tr	ucks: 8	4.8% 4.9%	10.3%	1.84%
Barrier Type (0-Wa		0.0			Heavy Tr	ucks: 8	6.5% 2.7%	10.8%	0.74%
Centerline Dis	. ,	64.0 feet		Malaa			(In fa a f)		
Centerline Dist.	o Observer:	64.0 feet		Noise a	Cource Ele Autos		, ,		
Barrier Distance i	o Observer:	0.0 feet		14-16	Autos Im Trucks				
Observer Height ()	Above Pad):	5.0 feet			vy Trucks			djustmeni	+· 0.0
Pa	d Elevation:	0.0 feet		nee	vy mucks	i. 0.00	6 Grade A	ujusunem	. 0.0
Roa	d Elevation:	0.0 feet		Lane E	quivalent	Distance	e (in feet)		
F	Road Grade:	0.0%			Autos	: 57.27	'1		
	Left View:	-90.0 degree	s	Media	ım Trucks	s: 57.11	7		
	Right View:	90.0 degree	s	Hea	vy Trucks	57.13	32		
FHWA Noise Mode	Calculations	;		-					
VehicleType	REMEL	Traffic Flow	Distan	ce Finite	e Road	Fresne	Barrier A	tten Be	rm Atten
Autos:	71.78	-4.37		-0.66	0.00	-4	4.70 0.	.000	0.000
Medium Trucks:	82.40	-21.61		-0.65	0.00	-4	4.88 0	.000	0.000
Heavy Trucks:	86.40	-25.57		-0.65	0.00	-5	5.31 0	.000	0.000
Unmitigated Noise									
	Leq Peak Hou			q Evening	Leq I	•	Ldn		NEL
Autos:	66.		64.9	63.1		57.0	65		66.3
Medium Trucks:	60.		58.6	52.3		50.7	59		59.4
Heavy Trucks:	60.		58.8	49.		51.0	59	-	59.5
Vehicle Noise:	68.		6.6	63.0	6	58.7	67	.3	67.8
Centerline Distanc	e to Noise Co	ntour (in feet)							
			L	70 dBA	65 0		60 dBA		6 dBA
			dn:	34	10	14	343	1.	.085
			IFI :	38	12		383		,211

Monday, February 25, 2019

Site Data Autos: 77.5% 12.9% 9.6% 97.4 Barrier Height: 0.0 feet Medium Trucks: 84.3% 4.9% 10.3% 1.1 Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Dasrier: 55.0 feet Medium Trucks: 86.5% 2.7% 10.8% 0.1% Centerline Dist. to Dasrier: 55.0 feet Moise Source Elevations (in feet) Autos: 0.000 Diserver Height (Above Pad): 5.0 feet Moise Source Elevations (in feet) Autos: 0.000 Pad Elevation: 0.0 feet Medium Trucks: 8.006 Grade Adjustment: 0.0 Right View: 90.0 degrees Medium Trucks: 44.083 Medium Trucks: 44.083 VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berrier Atten Medium Trucks: 85.38 -20.14 0.48 0.00 -4.67 0.000 0 Medium Trucks: 85.38 -20.14 0.48 0.00 -5.38 0.000 0 <th></th> <th>FHV</th> <th>NA-RD-77-108 H</th> <th>IIGHWAY</th> <th>NOISE F</th> <th>REDICTIO</th> <th></th> <th></th> <th></th> <th></th>		FHV	NA-RD-77-108 H	IIGHWAY	NOISE F	REDICTIO				
Highway Data Site Conditions (Hard = 10, Soft = 15) Average Daily Traffic (Adt): 22,200 vehicles Peak Hour Volume: 2,220 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 66 feet Autos: 10 Barrier Height: Barrier Height: 0.0 feet Medium Trucks (2 Avles): 10 Barrier Height: 0.0 feet Autos: 77.5% 12.9% 9.6% 97. Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Daserver: 55.0 feet Centerline Dist. to Daserver: 55.0 feet Medium Trucks: 84.8% 4.9% 10.3% 1.1 Barrier Type (0-Wall, 1-Berm): 0.0 0.0 feet Barrier Distance to Observer: 0.0 feet Mutos: 0.000 Pad Elevation: 0.0 feet Mutos: 44.283 Road Grade: 0.0% Medium Trucks: 44.083 Left View: 90.0 degrees Heavy Trucks: 44.03 FHWA Noise Model Calculations Distance VehicleType REMEL Traffic Flow VehicleType Res 2.014 0.48 Medium Trucks: 85.38 -20.14 Medium Trucks: 85.38 -20.14 VehicleType Leqt View VehicleType Leqt Peak Hour VehicleType Leqt Peak Hour VehicleType REMEL <t< th=""><th>Road Nam</th><th>e: Country Clu</th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th></t<>	Road Nam	e: Country Clu								
Average Daily Traffic (Adt): 22,200 vehicles Autos: 10 Peak Hour Percentage: 10% Medium Trucks: (2 Akles): 10 Peak Hour Volume: 2,220 vehicles Heavy Trucks (2 Akles): 10 Vehicle Speed: 50 mph Heavy Trucks (3+ Akles): 10 Site Data Vehicle Mix Vehicle Mix Night Day Barrier Height: 0.0 feet Medium Trucks: Autos: 77.5% 1.29% 9.6% 97. Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist to Deserver: 55.0 feet Medium Trucks: 86.5% 2.7% 10.8% 0.3% 1. Barrier Type (0-Wall, 1-Berm): 0.0 feet Moise Source Elevations (in feet) Medium Trucks: 86.5% 2.7% 10.8% 0.3% Barrier Type (0-Wall, 1-Berm): 0.0 feet Mutos: 2.297 10.8% 0.0 Observer: 0.0 feet Road Elevation: 0.0 feet Autos: 4.283 Medium Trucks: 8.006 Grade Adjustment: 0.0 Road Grade:	SITE	SPECIFIC IN	IPUT DATA						;	-
Notest Medium Trucks (2 Akles): 10 Peak Hour Volume: 2,220 vehicles Medium Trucks (2 Akles): 10 Vehicle Speed: 50 mph Heavy Trucks (3 Akles): 10 Near/Far Lane Distance: 66 feet Vehicle Type Day Evening Night Das Site Data Autos: 77.5% 12.9% 9.6% 97. Barrier Height: 0.0 feet Autos: 77.5% 12.9% 9.6% 97. Barrier Type (Owall, 1-Berm): 0.0 Centerline Dist. to Barrier: 55.0 feet Medium Trucks: 8.65% 2.7% 10.3% 1.1 Barrier Dist. to Dserver: 5.0 feet Noise Source Elevations (in feet) Noise Source Elevations (in feet) Noise Source Elevations (in feet) 10.3% 1.1 Observer Height (Above Pad): 5.0 feet Autos: 0.00 Grade Adjustment: 0.0 Road Grade: 0.0% Left View: 90.0 degrees Medium Trucks: 44.083 Heavy Trucks: 44.03 FHWA Nolse Model Calculations Vehicle Nize Aitos	Highway Data				Site Co	nditions (H	ard = 10, S	oft = 15)		
Near/Far Lane Distance: 66 feet Venicle Mix Leg Night Day Evening Night Day Site Data Autos: 77.5% 12.9% 9.6% 97. Barrier Height: 0.0 feet Autos: 77.5% 12.9% 9.6% 97. Barrier Type (G-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 55.0 feet Medium Trucks: 8.6% 2.7% 10.3%	Peak Hour	Percentage:	10%				(2 Axles)	: 10		
Site Data Venicle type Day Eventual Num Num Lagy Tue Num Lagy Lagy Lagy Lagy Tue Num Lagy Lagy Lagy Lagy Lagy Lagy Num Lagy Lagy Lagy Num Lagy <thlagy< th=""> Nu</thlagy<>		· · · · /	50 mph		Vehicle	Mix				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Dasriver: 55.0 feet Centerline Dist. to Dasriver: 55.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Dasriver: 55.0 feet Barrier Distance to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: 90.0 degrees PHWA Noise Model Calculations Distance VehicleType REMEL Traffic Flow Distance Finite Road Heavy Trucks: 85.38 -20.14 0.48 Medium Trucks: 85.38 -20.14 0.48 Medium Trucks: 85.38 -20.14 0.48 Medium Trucks: 85.38 -20.14 0.48 Outo: 7.7 69.8 68.1 62.0 70.6 Medium Trucks: 65.7	Near/Far La	ne Distance:	66 feet		Ve	hicleType	Day	Evening	Night	Daily
Barrier Treignit: Utilitie Barrier Treignit: Utilitie Barrier Treignit: Utilitie Centerline Dist. to Diserver: 55.0 feet Centerline Dist. to Observer: 50.0 feet Diserver: 0.0 feet Barrier Tsepide Autos: Observer: 0.0 feet Barrier Tsepide Autos: Pad Elevation: 0.0 feet Road Grade: 0.0% Autos: 44.083 Betrier Tsepide Medium Trucks: Right View: 90.0 degrees Right View: 90.0 degrees Heavy Trucks: 8.10 VehicleType REMEL VehicleType REMEL VehicleType Remet Leqt Vende 0.00 Heavy Trucks: 8.38 -0.161 0.46 0.00 Heavy Trucks: 8.538 -0.161 0.48 0.00 Medium Trucks: 8.538 -0.14 Ummitgated Noise Levels (without Topo and barrier attenuation) <	Site Data							•	~	97.42%
Barrier Type (0-Wall, 1-Berm): 0.0 Heavy Trucks: 86.5% 2.7% 10.8% 0.1 Centerline Dist. to Dbserver: 55.0 feet Autos: 0.000 Moise Source Elevations (in feet) Autos: 0.000 Deserver Height (Above Pad): 5.0 feet Autos: 0.006 Grade Adjustment: 0.0 Pad Elevation: 0.0 feet Autos: 42.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0 Road Grade: 0.0% Autos: 44.083 Heavy Trucks: 44.083 VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Attant Autos: 7.02 1.05 0.46 0.00 -4.67 0.000 0 Medium Trucks: 85.38 -20.14 0.48 0.00 -5.38 0.000 0 Unmitigated Moise Leep Vening Leep Night Left View CNEL	Bar	rier Height:	0.0 feet		٨	ledium Truc	ks: 84.8%	6 4.9%	10.3%	1.84%
Centerline Dist. to Observer: 55.0 feet Noise Source Elevations (in feet) Barrier Distance to Observer: 0.0 feet Autos: 0.000 Deserver Height (Above Pad): 5.0 feet Autos: 0.000 Pad Elevation: 0.0 feet Medium Trucks: 2.297 Road Grade: 0.0% Left View: 90.0 degrees Right View: 90.0 degrees Medium Trucks: 44.083 FHWA Noise Model Calculations VenicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Bern Att Autos: 7.02 1.05 0.46 0.00 -4.67 0.000 0 Heavy Trucks: 85.38 -20.14 0.48 0.00 -5.38 0.000 0 Heavy Trucks: 85.38 -20.14 0.48 0.00 -5.38 0.000 0 Unnitigated Noise Levels (without Topo and barrier attenuation) Leq Night Ldn CNEL VehicleType Leq Peak Hour Leq Evening Leq Night Ldn CNEL <td>Barrier Type (0-W</td> <td>'all, 1-Berm):</td> <td>0.0</td> <td></td> <td></td> <td>Heavy Truc</td> <td>ks: 86.5%</td> <td>6 2.7%</td> <td>10.8%</td> <td>0.74%</td>	Barrier Type (0-W	'all, 1-Berm):	0.0			Heavy Truc	ks: 86.5%	6 2.7%	10.8%	0.74%
Barrier Distance to Observer: 0.0 feet Autos: 0.000 Observer Height (Above Pad): 5.0 feet Medium Trucks: 8.006 Grade Adjustment: 0.0 Pad Elevation: 0.0 feet Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0 Road Grade: 0.0% Left View: 90.0 degrees Autos: 44.283 Left View: 90.0 degrees Medium Trucks: 44.003 Heavy Trucks: 44.003 VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Medium Trucks: 8.10 -16.18 0.48 0.00 -4.67 0.000 0 Heavy Trucks: 8.538 -20.14 0.48 0.00 -5.38 0.000 0 Ummitgated Noise Leeq Peak Hour Leq Evening Leq Night Lch CNEL Autos: 71.7 69.8 68.1 62.0 70.6 Medium Trucks: 65.3 63.8 72.4					Noise S	Source Elev	ations (in i	feet)		
Deserver Height (Above Pad): 5.0 feet Pad Elevation: Medium Trucks: 2.297 Heavy Trucks: Medium Trucks: 2.297 Heavy Trucks: Road Elevation: 0.0 feet Heavy Trucks: 8.006 Grade Adjustment: 0.0 Road Elevation: 0.0 feet Heavy Trucks: 8.006 Grade Adjustment: 0.0 Road Grade: 0.0% Left View: 90.0 degrees Medium Trucks: 44.283 VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berrier Atten Medium Trucks: 70.20 1.05 0.46 0.00 -4.67 0.000 0 Medium Trucks: 85.38 -20.14 0.48 0.00 -5.38 0.000 0 Unnitigated Noise Levels (without Topo and barrier attenuation) Leq Evening Leq Night Ldn CNEL Altos: 71.7 69.8 68.1 62.0 70.6 Medium Trucks: 65.3 63.8 57.4 55.9 64.3 44.9 Vehicle Noise: <						Autos:	0.000			
Pad Elevation: 0.0 feet Heavy Tracks: 8.006 Grade Adjustment. 0.0 Road Elevation: 0.0 feet Lane Equivalent Distance (in feet) Lane Equivalent Distance (in feet) Road Grade: 0.0% Lane Equivalent Distance (in feet) Autos: 44.283 Left View: -90.0 degrees Medium Trucks: 44.103 FHWA Noise Model Calculations Heavy Trucks: 44.103 VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Attan Autos: 70.20 1.05 0.46 0.00 -4.67 0.000 0 Medium Trucks: 81.00 -16.18 0.48 0.00 -5.38 0.000 0 Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Verining Leq Night Ldn CNEL Vehicle Noise: 71.7 69.8 68.1 62.0 70.6 Medium Trucks: 65.3 63.8 57.4 55.9 64.3 9 <					Medi	um Trucks:	2.297			
Road Elevation: 0.0 feet Lane Equivalent Distance (in feet) Road Grade: 0.0% Autos: 44.283 Left View: -90.0 degrees Medium Trucks: 44.083 WehicheType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Medium Trucks: 44.033 Heavy Trucks: 44.103 Heavy Trucks: 44.103 Medium Trucks: 70.20 1.05 0.46 0.00 -4.67 0.000 0 Medium Trucks: 81.00 -16.18 0.48 0.00 -5.38 0.000 0 Heavy Trucks: 85.38 -20.14 0.48 0.00 -5.38 0.000 0 Ummitigated Noise Levels (without Topo and barrier attenuation) Leq Right I Ldn CNEL VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night I Che Autos: 71.7 69.8 68.1 62.0 70.6 Medium Trucks: 65.3 63.8 72.4 Vehicle Noi	0 1	,			Hea	vy Trucks:	8.006	Grade Adju	ustment:	0.0
Road Grade: 0.0% Autos: 44.283 Left View: -90.0 degrees Medium Trucks: 44.083 Right View: 90.0 degrees Medium Trucks: 44.103 FHWA Noise Model Calculations Heavy Trucks: 44.103 VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Bern Attacks: Medium Trucks: 70.20 1.05 0.46 0.00 -4.67 0.000 0 Medium Trucks: 81.00 1.61.8 0.48 0.00 -5.38 0.000 0 Unnitigated Noise Levels (without Topo and barrier attenuation) Leq Evening Leq Night Ldn CNEL Autos: 71.7 69.8 68.1 62.0 70.6 Medium Trucks: 65.3 63.8 57.4 55.9 64.3 1 Heavy Trucks: 65.7 64.3 55.3 65.5 64.9 1 Vehicle Noise: 73.4 71.7 68.6 63.8 72.4 Centerti					Lano E	nuivalont D	istanco (in	foot)		
Left View: -90.0 degrees Medium Trucks: 44.03 Right View: 90.0 degrees Heavy Trucks: 44.103 FHWA Noise Model Calculations Heavy Trucks: 44.103 VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Bern Att Autos: 70.20 1.05 0.46 0.00 -4.67 0.000 0 Heavy Trucks: 81.00 -16.18 0.48 0.00 -4.87 0.000 0 Heavy Trucks: 85.38 -20.14 0.48 0.00 -5.38 0.000 0 Umnitigated Noise Levels (without Topo and barrier attenuation) Leq Right Ldn CNEL VehicleType Leq Peak Hour Leq Devening Leq Night Ldn CNEL Medium Trucks: 65.3 63.8 57.4 55.9 64.3 Filewing Vehicle Noise: Vehicle Noise: 73.4 71.7 68.6 63.8 72.4					LaneL			leel)		
Right View: 90.0 degrees Heavy Trucks: 44.103 FHWA Noise Model Calculations Heavy Trucks: 44.103 VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Medium Trucks: 70.20 1.05 0.46 0.00 -4.67 0.000 0 Medium Trucks: 81.00 -16.18 0.48 0.00 -4.67 0.000 0 Ummitgated Noise Levels (without Topo and barrier attenuation) Leq Evening Leq Night Ldn C/NEL VehicleType Leq Peak Hour Leg Sas 68.1 62.0 70.6 Medium Trucks: 65.3 63.8 57.4 55.9 64.3 9 Vehicle Type Iceq Peak Hour Case 68.6 63.8 72.4 Medium Trucks: 65.7 64.3 55.3 56.5 64.9 9 Vehicle Noise: 73.4 71.7 68.6 63.8 72.4 24 Centerline Distance to Noise Contour (,				Modi					
VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berra Atten Autos: 70.20 1.05 0.46 0.00 -4.67 0.000 0 Medium Trucks: 81.00 -16.18 0.48 0.00 -4.67 0.000 0 Heavy Trucks: 85.38 -20.14 0.48 0.00 -5.38 0.000 0 Ummitigated Noise Levels (without Topo and barrier attenuation) Leq Evening Leq Night Ldn CNEL Autos: 71.7 69.8 68.1 62.0 70.6 70.6 Medium Trucks: 65.7 64.3 55.3 56.5 64.9 10 Vehicle Noise: 73.4 71.7 68.6 63.8 72.4 Centertine Distance to Noise Contour (in feet)										
Autos: 70.20 1.05 0.46 0.00 -4.67 0.000 0 Medium Trucks: 81.00 -16.18 0.48 0.00 -4.67 0.000 0 Heavy Trucks: 85.38 -20.14 0.48 0.00 -5.38 0.000 0 Unnitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Right Ldn CNEL Autos: 71.7 69.8 68.1 62.0 70.6 - Medium Trucks: 65.3 63.8 57.4 55.9 64.3 - Heavy Trucks: 65.7 64.3 55.3 56.5 64.9 - Vehicle Noise: 73.4 71.7 68.6 63.8 72.4 -	FHWA Noise Mode	el Calculation	s							
Medium Trucks: 81.00 -16.18 0.48 0.00 -4.87 0.000 0 Heavy Trucks: 85.38 -20.14 0.48 0.00 -5.38 0.000 0 Umitigated Noise Levels (without Topo and barrier attenuation) Ue Revening Leq Night Ldn CNEL VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Medium Trucks: 65.3 63.8 57.4 55.9 64.3 64.9 Heavy Trucks: 65.7 64.3 55.3 56.5 64.9 64.9 Vehicle Noise: 73.4 71.7 68.6 63.8 72.4 Centerline Distance to Noise Contour (in feet)	VehicleType	REMEL	Traffic Flow	Distance	Finit	e Road	Fresnel	Barrier Atte	en Berm	Atten
Heavy Trucks: 85.38 -20.14 0.48 0.00 -5.38 0.000 0 Unnitigated Noise Levels (without Topo and barrier attenuation) Vehicle Type Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 71.7 69.8 68.1 62.0 70.6 Medium Trucks: 65.3 63.8 57.4 55.9 64.3 64.3 Heavy Trucks: 65.7 64.3 55.3 56.5 64.9 9 Vehicle Noise: 73.4 71.7 68.6 63.8 72.4 Centerline Distance to Noise Contour (in feet) 56.7	Autos:	70.20	1.05	0.	46	0.00	-4.67	0.0	00	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 71.7 69.8 68.1 62.0 70.6 Medium Trucks: 65.3 63.8 57.4 55.9 64.3 Heavy Trucks: 65.7 64.3 55.3 56.5 64.9 Vehicle Noise: 73.4 71.7 68.6 63.8 72.4	Medium Trucks:			0.	48				00	0.00
VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 71.7 69.8 68.1 62.0 70.6							-5.38	0.0	00	0.00
Autos: 71.7 69.8 68.1 62.0 70.6 Medium Trucks: 65.3 63.8 57.4 55.9 64.3 Heavy Trucks: 65.7 64.3 55.3 56.5 64.9 Vehicle Noise: 73.4 71.7 68.6 63.8 72.4 Centerline Distance to Noise Contour (in feet)						1				
Medium Trucks: 65.3 63.8 57.4 55.9 64.3 Heavy Trucks: 65.7 64.3 55.3 56.5 64.9 10 Vehicle Noise: 73.4 71.7 68.6 63.8 72.4 Centerline Distance to Noise Contour (in feet) Infection Infection Infection					~				CNI	
Heavy Trucks: 65.7 64.3 55.3 56.5 64.9 Vehicle Noise: 73.4 71.7 68.6 63.8 72.4 Centerline Distance to Noise Contour (in feet)										71.
Vehicle Noise: 73.4 71.7 68.6 63.8 72.4 Centerline Distance to Noise Contour (in feet)										64.0
Centerline Distance to Noise Contour (in feet)	· · ·									65.0 72.9
					00.		00.0	12.4		12.
70 dBA 65 dBA 60 dBA 55 dBA	Contentine Distant		in idel)	70	dBA	65 dB	A	60 dBA	55 d	BA
Ldn: 95 301 952 3,011			L							
CNEL: 106 335 1,060 3,353			CN	EL:	106	335		1,060		

	FHV	VA-RD-77-108	HIGHV	VAY N	OISE PR	REDICTIO	ON MO	DEL			
Scenar	io: EAP					Project I	Vame: I	Desert	Wave		
Road Nam	e: Country Clu	ub Dr.				Job Nu	mber: *	1826			
Road Segme	nt: e/o Montere	ey Av.									
	SPECIFIC IN	IPUT DATA							L INPUT	s	
Highway Data				5	Site Con	ditions (Hard =	10, Sc	oft = 15)		
Average Daily	Traffic (Adt): 2	23,900 vehicles						Autos:	10		
Peak Hour	Percentage:	10%			Med	dium Tru	cks (2 A	xles):	10		
Peak H	lour Volume:	2,390 vehicles			Hea	avy Truci	ks (3+ A	xles):	10		
Ve	hicle Speed:	50 mph			/ehicle N	Nix					
Near/Far La	ne Distance:	78 feet		-		cleType		Day	Evening	Night	Daily
Site Data								77.5%	•		97.429
	rrier Height:	0.0 feet			Me	dium Tru	icks:	84.8%	4.9%	10.3%	
Barrier Type (0-W		0.0			h	leavy Tru	icks:	86.5%		10.8%	0.749
Centerline Di		76.0 feet									
Centerline Dist.		76.0 feet		1	Voise So				eet)		
Barrier Distance		0.0 feet				Autos		000			
Observer Height		5.0 feet				n Trucks		97			
	ad Elevation:	0.0 feet			Heav	y Trucks	: 8.0	006	Grade Ad	justment.	0.0
	ad Elevation:	0.0 feet		1	ane Equ	uivalent	Distand	e (in	feet)		
	Road Grade:	0.0%				Autos					
	Left View:	-90.0 degree	\$		Mediun	n Trucks					
	Right View:	90.0 degree			Heav	y Trucks					
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Dista	ance	Finite	Road	Fresn	el	Barrier Att	en Ber	m Atten
Autos:	70.20	1.38		-1.24	Ļ	0.00		4.73	0.0	000	0.00
Medium Trucks:	81.00	-15.86		-1.23	3	0.00		4.88	0.0	000	0.00
Heavy Trucks:	85.38	-19.82		-1.23	3	0.00		-5.25	0.0	000	0.00
Unmitigated Nois			-		í ,						
VehicleType	Leq Peak Hou			Leq Ev	· · ·	Leq N	· ·		Ldn		VEL
Autos:	70		8.4		66.7		60.6		69.2		69.
Medium Trucks:	63		52.4		56.0		54.5		63.0		63.
Heavy Trucks:			2.9		53.9		55.1		63.		63.
Vehicle Noise:			0.3		67.2		62.5		71.0)	71.
Centerline Distan	ce to Noise Co	ontour (in feet)		70 -	04	05 -	0.4				-10.4
			dn:	70 a		65 a 30		6	0 dBA 958		dBA
		1	.an:	96	2	30	3			3,	030
		~	IFI :	10	7	33	7		1,067	0	374

Monday, February 25, 2019

Monday, February 25, 2019

	FH\	VA-RD-77-108	HIGH	WAY N	IOISE PR	EDICTIO	N MOI	DEL			
Road Nan	rio: EAP ne: Country Cl ent: e/o Portola					Project N Job Nur			Wave		
	SPECIFIC IN	IPUT DATA			o:: 0					s	
Highway Data					Site Con	ditions (F		<u> </u>	,		
,	Traffic (Adt):		S					Autos:	10		
	Percentage:	10%				lium Truc					
Peak H	lour Volume:	2,370 vehicle	S		Hea	ivy Truck	s (3+ A	xles):	10		
Ve	ehicle Speed:	50 mph		F	Vehicle I	lix					
Near/Far La	ane Distance:	58 feet		-		cleType		Day	Evening	Night	Daily
Site Data								77.5%	•	9.6%	
Ba	rrier Height:	0.0 feet			Me	dium Tru	cks:	84.8%	4.9%	10.3%	1.849
Barrier Type (0-V	Vall, 1-Berm):	0.0				eavy Tru		86.5%	2.7%	10.8%	
	ist. to Barrier:	64.0 feet			Noise So	urce Ele	vations	s (in fe	eet)		-
Centerline Dist.	to Observer:	64.0 feet				Autos:	0.0		,		
Barrier Distance	to Observer:	0.0 feet			Mediun	1 Trucks:	2.2				
Observer Height	(Above Pad):	5.0 feet				/ Trucks:	8.0	06	Grade Ad	iustmen	t: 0.0
-	ad Elevation:	0.0 feet									
Ro	ad Elevation:	0.0 feet		1	Lane Equ				feet)		
	Road Grade:	0.0%				Autos:	57.2				
	Left View:	-90.0 degre	es		Mediun	n Trucks:	57.1				
	Right View:	90.0 degre	es		Heav	/ Trucks:	57.1	32			
FHWA Noise Mod		-									
VehicleType	REMEL	Traffic Flow	Dis	tance	Finite		Fresn		Barrier Att		rm Atten
Autos:		1.34		-0.6	-	0.00		4.70		000	0.00
Medium Trucks:		-15.90		-0.6	-	0.00		4.88		000	0.00
Heavy Trucks:		-19.86		-0.6	-	0.00		-5.31	0.0	000	0.00
Unmitigated Nois											
VehicleType	Leq Peak Hou			Leq E	vening	Leq N	<u> </u>		Ldn		NEL
Autos:			69.0		67.2		61.2		69.8		70.
Medium Trucks:			62.9		56.6		55.0		63.5		63.
Heavy Trucks:		-	63.5		54.4		55.7		64.0		64.
Vehicle Noise:	72	6	70.8		67.8		63.0		71.5	5	72.
Centerline Distan	ce to Noise C	ontour (in feet)								
			L		dBA	65 dE		6	60 dBA		5 dBA
			Ldn:	9	1	289			914	2	,891
			NFI :	10		322			1.018		.219

FHWA	-RD-77-108 HIG	HWAY N	NOISE PRE	DICTION MO	DEL	
Scenario: EAP Road Name: Country Club Road Segment: e/o Desert Wi				Project Name: Job Number:		
SITE SPECIFIC INP	UT DATA			NOISE	NODEL INPU	TS
Highway Data			Site Condi	itions (Hard =	10, Soft = 15)	
Average Daily Traffic (Adt): 24,	200 vehicles				Autos: 10	
Peak Hour Percentage:	10%		Medi	um Trucks (2 /	4 <i>xles):</i> 10	
Peak Hour Volume: 2,	420 vehicles		Heav	y Trucks (3+ /	Axles): 10	
Vehicle Speed:	50 mph	-	Vehicle Mi			
Near/Far Lane Distance:	58 feet	-	Venicle will Vehicl		Day Evening	Night Daily
Site Data			VCINCI	Autos:	77.5% 12.9%	,
	0.0 feet		Med		84.8% 4.9%	
Barrier Height: Barrier Type (0-Wall, 1-Berm):	0.0 feet		He	avy Trucks:	86.5% 2.7%	10.8% 0.74%
	64.0 feet					
	64.0 feet	4	Noise Sou	rce Elevation	, ,	
Barrier Distance to Observer:	0.0 feet				000	
Observer Height (Above Pad):	5.0 feet		Medium		297	
Pad Elevation:	0.0 feet		Heavy	Trucks: 8.	006 Grade A	djustment: 0.0
Road Elevation:	0.0 feet		Lane Equi	valent Distan	ce (in feet)	
Road Grade:	0.0%			Autos: 57.	271	
l eft View:	-90.0 degrees		Medium	Trucks: 57.	117	
	90.0 degrees		Heavy	Trucks: 57.	132	
FHWA Noise Model Calculations						
VehicleType REMEL T	raffic Flow D	istance	Finite R	oad Fresr	nel Barrier A	tten Berm Atten
Autos: 70.20	1.43	-0.6	6	0.00	-4.70 0	.000 0.000
Medium Trucks: 81.00	-15.81	-0.6	5	0.00	-4.88 0	.000 0.000
Heavy Trucks: 85.38	-19.76	-0.6	5	0.00	-5.31 0	.000 0.000
Unmitigated Noise Levels (without	t Topo and barr	ier atter	nuation)			
VehicleType Leq Peak Hour	Leq Day	Leq E	vening	Leq Night	Ldn	CNEL
Autos: 71.0	69.1		67.3	61.3	3 69	.9 70.5
Medium Trucks: 64.5	63.0		56.7	55.1		
Heavy Trucks: 65.0	63.5		54.5	55.8		-
Vehicle Noise: 72.7	70.9		67.9	63.1	1 71	.6 72.1
Centerline Distance to Noise Cont	tour (in feet)					
			dBA	65 dBA	60 dBA	55 dBA
	Ldn:		3	295	933	2,952
	CNEL:	10	04	329	1,040	3,287

	FH\	WA-RD-77-108	HIGHW	AY NO	DISE PRI	EDICTIO	N MOE	DEL			
	io: EAP e: Country Cli nt: e/o Cook S				I	Project Na Job Nun			Wave		
SITE	SPECIFIC IN	IPUT DATA				NO	ISE N	IODE		s	
Highway Data				S	ite Cond	litions (H	ard =	10, So	ft = 15)		
	Traffic (Adt): 2 Percentage: lour Volume:	22,600 vehicles 10% 2,260 vehicles				ium Trucl vy Trucks	ks (2 A		10 10 10		
Ve	hicle Speed:	50 mph		V	ehicle M	live .					
Near/Far La	ne Distance:	78 feet		V		leType		Dav	Evening	Night	Daily
Site Data				-	venie	Aut		77.5%	12.9%	9.6%	
	wier Height	0.0 feet			Med	dium Truc	ks: 8	34.8%	4.9%	10.3%	
Barrier Type (0-W	r rier Height: 'all, 1-Berm):	0.0 feet 0.0				eavy Truc		36.5%	2.7%	10.8%	
Centerline Dis	st. to Barrier:	76.0 feet		N	oise Sou	ırce Elev	ations	in fe	et)		
Centerline Dist.	to Observer:	76.0 feet		-		Autos:	0.0				
Barrier Distance	to Observer:	0.0 feet			Medium	Trucks:	2.2	97			
Observer Height (Above Pad): ad Elevation:	5.0 feet 0.0 feet				Trucks:	8.0		Grade Adj	iustment	: 0.0
Roa	ad Elevation:	0.0 feet		L	ane Equ	ivalent D	istanc	e (in f	eet)		
	Road Grade:	0.0%				Autos:	65.4	22			
	Left View:	-90.0 degree	s		Medium	Trucks:	65.2	86			
	Right View:	90.0 degree			Heavy	Trucks:	65.3	00			
FHWA Noise Mode	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Distar	nce	Finite F	Road	Fresn	el i	Barrier Att	en Ber	m Atten
Autos:	70.20	1.13		-1.24		0.00	-	4.73	0.0	000	0.00
Medium Trucks:	81.00	-16.11		-1.23		0.00	-	4.88	0.0	000	0.00
Heavy Trucks:	85.38	-20.06		-1.23		0.00	-	5.25	0.0	000	0.00
Unmitigated Noise			barrier a	attenu	ation)						
VehicleType	Leq Peak Hou			eq Eve		Leq Ni			Ldn		NEL
Autos:	70		68.2		66.4		60.4		69.0		69.
Medium Trucks:	63		62.2		55.8		54.3		62.7		62.9
Heavy Trucks:	64		62.7		53.6		54.9		63.2	-	63.4
Vehicle Noise:	71		70.0		67.0		62.2		70.8	3	71.:
Centerline Distant	ce to Noise Co	ontour (in feet))							1	
				70 dł	BA	65 dB	A	6	0 dBA		dBA
			Ldn:	91		287			906		865
		CI	IEL:	101		319			1,009	3,	191

	FHV	VA-RD-77-108 H	IIGHW	AY NO	DISE PR	EDICTIO	N MOD	EL			
Scenari	p: EAP					Project N	ame: D	esert	Wave		
Road Nam	e: Country Clu	ıb Dr.				Job Nur	nber: 1	1826			
Road Segmen	t: e/o El Dora	do Dr.									
	SPECIFIC IN	PUT DATA								S	
Highway Data				S	ite Con	ditions (H	lard = 1	0, So	oft = 15)		
Average Daily	Traffic (Adt): 2	1,800 vehicles					A	utos:	10		
Peak Hour	Percentage:	10%			Med	lium Truc	ks (2 Ax	des):	10		
Peak H	our Volume:	2,180 vehicles			Hea	avy Trucks	s (3+ Ax	des):	10		
Vel	nicle Speed:	50 mph		V	ehicle N	liv					
Near/Far Lar	ne Distance:	58 feet				cleType	L	ay	Evening	Night	Daily
Site Data								7.5%			97.42
Bar	rier Height:	0.0 feet			Me	dium Truc	cks: 8	4.8%	4.9%	10.3%	1.849
Barrier Type (0-W	•	0.0			н	leavy Truc	cks: 8	6.5%	2.7%	10.8%	0.749
Centerline Dis		64.0 feet				,					
Centerline Dist. t		64.0 feet		N	oise So	urce Elev			et)		
Barrier Distance		0.0 feet				Autos:	0.00				
Observer Height (5.0 feet				n Trucks:	2.29				
0 1	d Elevation:	0.0 feet			Heavy	/ Trucks:	8.00)6	Grade Ad	justment	: 0.0
	d Elevation:	0.0 feet		Li	ane Eau	ivalent D	Distance	e (in f	eet)		
	Road Grade:	0.0%				Autos:	57.27		,		
	Left View:	-90.0 degrees			Mediun	n Trucks:	57.1	17			
	Right View:	90.0 degrees			Heavy	/ Trucks:	57.13				
FHWA Noise Mode	el Calculation:	s									
VehicleType	REMEL	Traffic Flow	Distar	nce	Finite I	Road	Fresne	Ι.	Barrier Att	en Ber	m Atter
Autos:	70.20	0.98		-0.66		0.00	-4	4.70	0.0	000	0.00
Medium Trucks:	81.00	-16.26		-0.65		0.00	-4	4.88	0.0	000	0.00
Heavy Trucks:	85.38	-20.22		-0.65		0.00	-{	5.31	0.0	000	0.00
Unmitigated Noise	Levels (with	out Topo and b	arrier a	attenu	ation)						
	Leq Peak Hou			eq Eve		Leq Ni			Ldn		NEL
Autos:	70.		3.6		66.9		60.8		69.4		70
Medium Trucks:	64.		2.6		56.2		54.7		63.1		63.
Heavy Trucks:	64.		3.1		54.1		55.3		63.7		63
Vehicle Noise:	72		0.5		67.4		62.6		71.2	2	71
Centerline Distanc	e to Noise Co	ontour (in feet)		70.0		05.15					
			. ட	70 dE		65 dE		6	0 dBA		dBA
			dn:	84		266			841	2.	659
		CNI		94		296			936	,	961

Monday, February 25, 2019

Scenario:	EAD					Designed	Verse De				
Road Name:		- D-					Vame: De Imber: 11		ve		
Road Segment:						JOD INL	mber. 11	826			
Ŷ											
	ECIFIC IN	PUT DATA					DISE MO				
Highway Data				S	ite Con	ditions (Hard = 10		,		
Average Daily Tra	. ,								0		
Peak Hour Per		10%					cks (2 Ax	/	0		
Peak Hour		2,450 vehicles			Hea	avy Truci	ks (3+ Ax	<i>les):</i> 1	0		
Vehicl	e Speed:	50 mph		ν	ehicle I	Nix					
Near/Far Lane I	Distance:	58 feet		-		cleType	D	av Ev	ening N	light	Daily
Site Data							utos: 77		2.9%	9.6%	97.429
	r Holesht	0.0 feet			Me	dium Tru				10.3%	1.849
Barrier Type (0-Wall,	r Height:	0.0 feet				leavy Tru				10.8%	0.749
Centerline Dist. t	,	64.0 feet							,.		
Centerline Dist. to (64.0 feet		۸	loise So	urce Ele	evations ((in feet)			
Barrier Distance to C		0.0 feet				Autos.	0.00	0			
Observer Height (Abo		5.0 feet			Mediur	n Trucks	2.29				
	-levation:	0.0 feet			Heav	y Trucks	8.00	6 Gra	ide Adjus	tment:	0.0
	Elevation:	0.0 feet		1	ane Fru	ivalent	Distance	(in feet)		
	d Grade:	0.0%		-	ano Equ	Autos			, 		
	eft View:				Modiur	n Trucks					
		-90.0 degree				v Trucks					
Γί	ght View:	90.0 degree	5		neav	y mucks.	. 57.15	2			
FHWA Noise Model C	alculation	5									
VehicleType I	REMEL	Traffic Flow	Distar	се	Finite	Road	Fresnel	Ban	rier Atten	Berr	m Atten
Autos:	70.20	1.48		-0.66		0.00	-4	.70	0.00)	0.00
Medium Trucks:	81.00	-15.76		-0.65		0.00	-4	.88	0.00)	0.00
Heavy Trucks:	85.38	-19.71		-0.65		0.00	-5	.31	0.00)	0.00
Unmitigated Noise Le	evels (with	out Topo and I	oarrier a	ttenu	uation)						
VehicleType Lei	, q Peak Hou	r Leq Day	Le	eq Ev	ening	Leq N	light	Ldı	2	CN	IEL
Autos:	71.	0 6	9.1		67.4		61.3		69.9		70.
Medium Trucks:	64.	6 6	3.1		56.7		55.2		63.6		63.
Heavy Trucks:	65.	.0 E	3.6		54.6		55.8		64.2		64.
Vehicle Noise:	72	.7 7	1.0		67.9		63.1		71.7		72.
O-starling Distance (o Noise Co	ntour (in feet)									
Centerline Distance t		,,	1	70 d	RΔ	65 d	BA	60 di	BA	55	dBA
Centerline Distance t											
Centerline Distance t		L	.dn:	95		29	9	945	5	2,9	989

						ION MO	DEE			
Road Nan	rio: EAP ne: Hovley Ln. nt: e/o Cook S	t.				t Name: lumber:				
SITE	SPECIFIC IN	IPUT DATA			I	NOISE N	/IODE	L INPUTS	s	
Highway Data				Site	Conditions	(Hard =	10, S	oft = 15)		
Average Dailv	Traffic (Adt): 1	18.500 vehicle	s			,	Autos.	: 10		
	Percentage:	10%			Medium Tr	ucks (2 A	(xles)	: 10		
Peak H	our Volume:	1.850 vehicle	s		Heavy Tru	cks (3+ A	(xles)	: 10		
Ve	hicle Speed:	45 mph					-			
	ne Distance:	58 feet		ven	icle Mix	-	D	Evening	Night	Delle
				_	VehicleType		Day	•		Daily
Site Data				_			77.5%			97.42%
	rrier Height:	0.0 feet			Medium T		84.8%		10.3%	
Barrier Type (0-V	. ,	0.0			Heavy T	rucks:	86.5%	6 2.7%	10.8%	0.74%
	ist. to Barrier:	64.0 feet		Noi	se Source E	levation	s (in f	eet)		
Centerline Dist.		64.0 feet			Auto		000	1		
Barrier Distance		0.0 feet		M	edium Truck	(s: 2.2	297			
Observer Height	, ,	5.0 feet			Heavy Truck	s: 8.0	006	Grade Adj	iustment	: 0.0
	ad Elevation:	0.0 feet								
	ad Elevation:	0.0 feet		Lan	e Equivalen			feet)		
	Road Grade:	0.0%			Auto					
	Left View:	-90.0 degre	es		edium Truck					
	Right View:	90.0 degre	es		Heavy Truck	is: 57.	132			
FHWA Noise Mod	el Calculation	s								
			Distan			_				
VehicleType	REMEL	Traffic Flow	Distan	ce F	inite Road	Fresn	el	Barrier Atte	en Ber	m Atten
VehicleType Autos:		Traffic Flow 0.72		ce F -0.66	inite Road 0.00		el -4.70	Barrier Atte 0.0		
11	68.46						-		000	0.00
Autos:	68.46 79.45	0.72		0.66	0.00		-4.70	0.0	000	0.000
Autos: Medium Trucks: Heavy Trucks:	68.46 79.45 84.25	0.72 -16.52 -20.47		-0.66 -0.65 -0.65	0.00 0.00 0.00		-4.70 -4.88	0.0	000	0.000
Autos: Medium Trucks: Heavy Trucks:	68.46 79.45 84.25	0.72 -16.52 -20.47 out Topo and	barrier a	-0.66 -0.65 -0.65	0.00 0.00 0.00		-4.70 -4.88	0.0 0.0 0.0	000 000 000 Ci	0.000
Autos: Medium Trucks: Heavy Trucks: Unmitigated Nois	68.46 79.45 84.25 e Levels (with Leq Peak Hou	0.72 -16.52 -20.47 out Topo and r Leq Day	barrier a	-0.66 -0.65 -0.65 <i>ttenuat</i>	0.00 0.00 0.00		-4.70 -4.88 -5.31	0.0 0.0 0.0	000 000 000 Ci	0.000 0.000 0.000 NEL 68.0
Autos: Medium Trucks: Heavy Trucks: Unmitigated Nois VehicleType	68.46 79.45 84.25 e Levels (with Leq Peak Hou 68	0.72 -16.52 -20.47 out Topo and <i>I</i> r Leq Day .5	barrier a	-0.66 -0.65 -0.65 ttenuat q Eveni	0.00 0.00 0.00 ion) ng Leq	Night	-4.70 -4.88 -5.31	0.0 0.0 0.0	000 000 000 Ci	0.000 0.000 0.000 NEL 68.0
Autos: Medium Trucks: Heavy Trucks: Unmitigated Nois VehicleType Autos:	68.46 79.45 84.25 e Levels (with Leq Peak Hou 68 62	0.72 -16.52 -20.47 out Topo and rr Leq Day .5 .3	barrier a	-0.66 -0.65 -0.65 <i>ttenuat</i> q Eveni	0.00 0.00 0.00 ion) ng Leq 64.9	Night 58.8	-4.70 -4.88 -5.31	0.0 0.0 0.0 <i>Ldn</i> 67.4	000 000 000 Ci	0.000 0.000 0.000 NEL 68.0 61.6
Autos: Medium Trucks: Heavy Trucks: Unmitigated Nois VehicleType Autos: Medium Trucks:	68.46 79.45 84.25 e Levels (with Leq Peak Hou 68 62 63	0.72 -16.52 -20.47 out Topo and r Leq Day .5 .3 .1	barrier a / Le 66.6 60.8	-0.66 -0.65 -0.65 ttenuat -q Eveni	0.00 0.00 0.00 ion) ng Leq 64.9 54.4	Night 58.8 52.9	-4.70 -4.88 -5.31	0.0 0.0 0.0 <i>Ldn</i> 67.4 61.3	000 000 000 Ci	0.000 0.000 0.000 NEL 68.0 61.6 62.4
Autos: Medium Trucks: Heavy Trucks: Unmitigated Nois VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	68.46 79.45 84.25 e Levels (with Leg Peak Hou 68 62 63 70	0.72 -16.52 -20.47 out Topo and <i>Ir</i> Leg Day 5 .3 .1 .4	barrier a 66.6 60.8 61.7 68.6	0.66 0.65 0.65 ttenuat q Eveni	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	Night 58.8 52.9 53.9 60.8	-4.70 -4.88 -5.31	0.0 0.0 0.0 67.4 61.3 62.3 69.3	000 000 000 Ci 4 3 3	0.000 0.000 0.000 NEL 68.0 61.0 62.4 69.8
Autos: Medium Trucks: Heavy Trucks: Unmitigated Nois VehicleType Autos: Medium Trucks: Heavy Trucks:	68.46 79.45 84.25 e Levels (with Leg Peak Hou 68 62 63 70	0.72 -16.52 -20.47 out Topo and rr Leq Day 5 .3 .3 .1 .4 ontour (in feet	<i>barrier a</i> / <i>Le</i> 66.6 60.8 61.7 68.6)	0.66 0.65 0.65 <i>ttenuat</i> <i>q Eveni</i> 70 dBA	0.00 0.00 0.00 64.9 54.4 52.7 65.5 655	Night 58.8 52.9 53.9 60.8 dBA	-4.70 -4.88 -5.31	0.0 0.0 0.0 67.4 61.3 62.3 69.3 60 dBA	000 000 000 Ci 3 3 3 55	0.000 0.000 NEL 68.0 61.6 62.4 69.8 dBA
Autos: Medium Trucks: Heavy Trucks: Unmitigated Nois VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	68.46 79.45 84.25 e Levels (with Leg Peak Hou 68 62 63 70	0.72 -16.52 -20.47 out Topo and ir Leq Day .5 .3 .1 .4 pontour (in feet	barrier a 66.6 60.8 61.7 68.6	0.66 0.65 0.65 ttenuat q Eveni	0.00 0.00 0.00 64.9 54.4 52.7 65.5 65.5	Night 58.8 52.9 53.9 60.8	-4.70 -4.88 -5.31	0.0 0.0 0.0 67.4 61.3 62.3 69.3	000 000 Ci 4 3 3 55 1,	0.000 0.000 0.000 NEL 68.0 61.6 62.4 69.8

Monday, February 25, 2019

	FHV	VA-RD-77-108	HIGHWA	Y NOI	SE PRE	EDICTIO	N MOI	DEL			
Scenario Road Name Road Segmen	e: Monterey A				F	Project Na Job Nun			Wave		
SITE S	PECIFIC IN	IPUT DATA				NO	ISE N	IODE		s	
Highway Data				Sit	e Cond	itions (H	lard =	10, Sc	oft = 15)		
Average Daily T Peak Hour I Peak Ho	, ,	37,900 vehicles 10% 3,790 vehicles				ium Trucl vy Trucks	ks (2 A		10 10 10		
Veh	icle Speed:	55 mph		Vo	hicle M	iv					
Near/Far Lar	e Distance:	78 feet		ve		leType		Dav	Evening	Night	Daily
Site Data				-	Verne	Aut		77.5%	0	9.6%	
	rier Height:	0.0 feet		-	Med	lium Truc	ks: 8	34.8%	4.9%	10.3%	
Barrier Type (0-Wa	•	0.0			He	eavy Truc		36.5%		10.8%	0.74%
Centerline Dis		76.0 feet		No	ise Sou	ırce Elev	ations	in fe	et)		
Centerline Dist. t	o Observer:	76.0 feet				Autos:	0.0				
Barrier Distance t	o Observer:	0.0 feet			Aedium	Trucks:	2.2	97			
Observer Height (/	Above Pad): d Elevation:	5.0 feet				Trucks:	8.0		Grade Ad	iustment	: 0.0
	d Elevation: d Elevation:	0.0 feet 0.0 feet		1 21	no Faui	ivalent D	listanc	o (in i	(oot)		
	oad Grade:	0.0 reet		Lui	ie Lyui	Autos:	65.4		001)		
r	Left View:	-90.0 dearee	-		Andium	Trucks:	65.2				
	Right View:	90.0 degree				Trucks:	65.3				
FHWA Noise Mode	l Calculation	s									
VehicleType	REMEL	Traffic Flow	Distanc	е	Finite R	load	Fresne	e/	Barrier Att	en Ber	m Atten
Autos:	71.78	2.96	-*	.24		0.00	-	4.73	0.0	000	0.00
Medium Trucks:	82.40	-14.27	-*	.23		0.00	-	4.88	0.0	000	0.00
Heavy Trucks:	86.40	-18.23	-1	.23		0.00	-	5.25	0.0	000	0.00
Unmitigated Noise	Levels (with	out Topo and I	barrier at	tenua	tion)						
	Leq Peak Hou			Ever		Leq Ni			Ldn		NEL
Autos:	73		1.6		69.8		63.8		72.4		73.0
Medium Trucks:	66		65.4		59.0		57.5		65.9		66.3
Heavy Trucks:	66		35.5		56.5		57.7		66.1		66.3
Vehicle Noise:	75		73.3		70.4		65.5		74.1		74.
Centerline Distanc	e to Noise Co	ontour (in feet)									
				'0 dB/	4	65 dB			0 dBA		dBA
		-	dn:	193		611			1,932		108
		CA	IEL:	216		682		:	2,155	6,	816

FI	HWA-RD-77-108 H	HIGHWA	Y NOISE PR	REDICTION	N MODEL			
Scenario: EAC				Project Na	me: Dese	ert Wave		
Road Name: Portola A	v.			Job Num	ber: 1182	26		
Road Segment: n/o Coun	try Club Dr.							
SITE SPECIFIC	INPUT DATA					EL INPUT	S	
Highway Data			Site Con	ditions (H	ard = 10,	Soft = 15)		
Average Daily Traffic (Adt):	16,800 vehicles				Auto	s: 10		
Peak Hour Percentage:	10%		Me	dium Truck	s (2 Axles	;): 10		
Peak Hour Volume:	1,680 vehicles		He	avy Trucks	(3+ Axles	;): 10		
Vehicle Speed:	55 mph		Vehicle	Mix				
Near/Far Lane Distance:	58 feet			icleType	Day	Evening	Night	Daily
Site Data				Aut	,			97.429
Barrier Height:	0.0 feet		Me	edium Truc	ks: 84.8	% 4.9%	10.3%	1.849
Barrier Type (0-Wall, 1-Berm):			ŀ	leavy Truc	ks: 86.5	% 2.7%	10.8%	0.749
Centerline Dist. to Barrier:								
Centerline Dist. to Observer:			Noise So	ource Elev		feet)		
Barrier Distance to Observer:				Autos:	0.000			
Observer Height (Above Pad):				m Trucks:	2.297			
Pad Elevation:			Heav	y Trucks:	8.006	Grade Ac	ljustment	: 0.0
Road Elevation:			Lane Eq	uivalent Di	istance (i	n feet)		
Road Grade:	0.0 1001			Autos:	57.271			
I eft View	0.070		Mediu	n Trucks:	57.117			
Right View:			Heav	y Trucks:	57.132			
FHWA Noise Model Calculatio	ons							
VehicleType REMEL	Traffic Flow	Distanc	e Finite	Road	Fresnel	Barrier At	ten Ber	m Atten
Autos: 71.7	8 -0.57	-1	0.66	0.00	-4.7	0 0.	000	0.00
Medium Trucks: 82.4	0 -17.81	-1	0.65	0.00	-4.8	8 0.	000	0.00
Heavy Trucks: 86.4	0 -21.76	-	0.65	0.00	-5.3	1 0.	000	0.00
Unmitigated Noise Levels (wi		1	,					
VehicleType Leq Peak H			q Evening	Leq Nig		Ldn		NEL
		8.7	66.9		60.8	69.		70.
		2.4	56.1		54.5	63.	-	63.
		2.6	53.5		54.8	63.		63.
		0.4	67.4		62.5	71.	1	71.
Centerline Distance to Noise	Contour (in feet)							
			70 dBA	65 dB	4	60 dBA		dBA
		dn:	82	261		824		605
		EL:	92	291		919		907

Monday, February 25, 2019

	io: EAC				Pr	oject Nai	ma. Das	art Wa	10		
	e: Portola Av.					lob Numi			*0		
	nt: s/o Country	Club Dr.				00 110/11					
	SPECIFIC IN	IPUT DATA					SE MOE			s	
Highway Data				S	Site Condit	ions (Ha	rd = 10,	Soft =	15)		
Average Daily	Traffic (Adt): 2	22,400 vehicles					Auto	s: 1	0		
Peak Hour	Percentage:	10%			Mediu	m Trucks	s (2 Axles	s): 1	0		
Peak H	our Volume:	2,240 vehicles			Heavy	/ Trucks	(3+ Axle	s): 1	0		
Ve	hicle Speed:	50 mph		v	/ehicle Mix						
Near/Far La	ne Distance:	58 feet		F	Vehicle	Туре	Day	Eve	ening	Night	Daily
Site Data						Auto	s: 77.5	5% 1	2.9%	9.6%	97.42
Rai	rier Heiaht:	0.0 feet			Media	um Truck	s: 84.8	3%	4.9%	10.3%	1.849
Barrier Type (0-W		0.0			Hea	avy Truck	s: 86.5	5%	2.7%	10.8%	0.74
Centerline Dis		64.0 feet			loise Sour	ce Eleva	tions (ir	feet)			
Centerline Dist.	to Observer:	64.0 feet				Autos:	0.000	,			
Barrier Distance	to Observer:	0.0 feet			Medium T	rucks:	2.297				
Observer Height (,	5.0 feet			Heavv 1	rucks:	8.006	Gra	de Ad	justment	0.0
	ad Elevation:	0.0 feet									
	ad Elevation:	0.0 feet		L	ane Equiv.			n teet)			
	Road Grade:	0.0%				Autos:	57.271				
	Left View:	-90.0 degree			Medium 1		57.117				
	Right View:	90.0 degree	S		Heavy 7	rucks:	57.132				
FUNALA MINING AND I	el Calculation	s									
FRIVA NOISE MOD			Distan	се	Finite Ro		resnel	Barr	ier Att	en Ber	m Atter
VehicleType	REMEL	Traffic Flow									
VehicleType Autos:	REMEL 70.20	1.09	-	0.66	. (0.00	-4.7	0		000	
VehicleType Autos: Medium Trucks:	REMEL 70.20 81.00	1.09 -16.14	-	0.65	. (0.00 0.00	-4.7 -4.8	0 8	0.0	000	0.00
VehicleType Autos: Medium Trucks: Heavy Trucks:	REMEL 70.20 81.00 85.38	1.09 -16.14 -20.10	-	-0.65 -0.65		0.00	-4.7	0 8	0.0		0.00
VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise	REMEL 70.20 81.00 85.38 e Levels (with	1.09 -16.14 -20.10 out Topo and	barrier a	-0.65 -0.65 tteni	((uation)	0.00 0.00 0.00	-4.7 -4.8 -5.3	0 8 1	0.0	000	0.00
VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType	REMEL 70.20 81.00 85.38 a Levels (with Leq Peak Hou	1.09 -16.14 -20.10 out Topo and r Leq Day	barrier a	-0.65 -0.65 tteni	uation)	0.00 0.00	-4.7 -4.8 -5.3	0 8	0.0	000 000 Ci	0.00 0.00 0.00 VEL
VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos:	REMEL 70.20 81.00 85.38 Levels (with Leg Peak Hou 70	1.09 -16.14 -20.10 out Topo and r Leq Day .6	barrier a Le	-0.65 -0.65 tteni	uation) rening 67.0	0.00 0.00 0.00	-4.7 -4.8 -5.3 ht 60.9	0 8 1	0.0 0.0 69.5	000 000 C	0.00 0.00 NEL 70
VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks:	REMEL 70.20 81.00 85.38 Levels (with Leq Peak Hou 70 64	1.09 -16.14 -20.10 out Topo and a rr Leq Day .6 (6 .2 (6)	barrier a Le 38.7 52.7	-0.65 -0.65 tteni	uation) rening 67.0 56.3	0.00 0.00 0.00	-4.7 -4.8 -5.3 ht 60.9 54.8	0 8 1	0.0 0.0 69.5 63.3	000 000 Ci	0.00 0.00 <u>VEL</u> 70 63
VehicleType Autos: Medium Trucks: Heavy Trucks: Unnitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks:	REMEL 70.20 81.00 85.38 Levels (with Leq Peak Hou 70 64	1.09 -16.14 -20.10 out Topo and a rr Leq Day .6 (.2 (.6 (barrier at Le 58.7 52.7 53.2	-0.65 -0.65 tteni	uation) ening 67.0 56.3 54.2	0.00 0.00 0.00	-4.7 -4.8 -5.3 ht 60.9 54.8 55.4	0 8 1	0.0 0.0 69.5 63.3 63.8	000 000 5 3 3	0.00 0.00 <u>NEL</u> 70 63 63
VehicleType Autos: Medium Trucks: Heavy Trucks: Unnitigated Noiss VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	REMEL 70.20 81.00 85.38 Devels (with Leq Peak Hot 70 64 72	1.09 -16.14 -20.10 out Topo and a rr Leq Day .6 (.2 (.6 (.3)	barrier a Le 68.7 62.7 63.2 70.6	-0.65 -0.65 tteni	uation) rening 67.0 56.3	0.00 0.00 0.00	-4.7 -4.8 -5.3 ht 60.9 54.8	0 8 1	0.0 0.0 69.5 63.3	000 000 5 3 3	0.00 0.00 <u>NEL</u> 70 63 63
VehicleType Autos: Medium Trucks: Heavy Trucks: Unnitigated Noiss VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	REMEL 70.20 81.00 85.38 Devels (with Leq Peak Hot 70 64 72	1.09 -16.14 -20.10 out Topo and a rr Leq Day .6 (.2 (.6 (.3)	barrier a Le 38.7 52.7 53.2 70.6	0.65 0.65 ttenu	ening 67.0 56.3 54.2 67.5	0.00 0.00 0.00 <i>Leq Nigi</i>	-4.7 -4.8 -5.3 ht 60.9 54.8 55.4 62.8	0 8 1 Ldr	0.0 0.0 69.5 63.3 63.8 71.3	000 000 5 3 3 3	0.00 0.00 NEL 70 63 63 71
VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks:	REMEL 70.20 81.00 85.38 Devels (with Leq Peak Hot 70 64 72	1.09 -16.14 -20.10 out Topo and a rr Leq Day 6 (.2 (6 (.3) ontour (in feet)	barrier a Le 38.7 52.7 53.2 70.6	-0.65 -0.65 tteni	ening 67.0 56.3 54.2 67.5 BA	0.00 0.00 0.00	-4.7 -4.8 -5.3 ht 60.9 54.8 55.4 62.8	0 8 1	0.0 0.0 69.5 63.3 63.8 71.3	000 000 5 3 3 3 3 3	0.00

	FH\	VA-RD-77-108	HIGH	NAY N	IOISE PR	EDICTI	ON MOE	DEL			
Road Nan	io: EAC ne: Cook St. nt: n/o I-10 WE	3 Ramps					Name: D umber: 1		Wave		
SITE	SPECIFIC IN	IPUT DATA				N	OISE M	ODE	L INPUT	s	
Highway Data					Site Cond	litions	(Hard =	10, So	oft = 15)		
Average Daily	Traffic (Adt):	13,600 vehicle	s				A	utos:	10		
Peak Hour	Percentage:	10%			Med	lium Tru	icks (2 A	xles):	10		
Peak H	lour Volume:	1,360 vehicle	s		Hea	vy Truc	ks (3+ A	xles):	10		
Ve	hicle Speed:	50 mph		-	Vehicle N	liv					
Near/Far La	ne Distance:	78 feet		F		leType		Day	Evening	Night	Daily
Site Data					101110			7.5%	•	9.6%	
Be	rrier Height:	0.0 feet			Me	dium Tr		34.8%		10.3%	1.84%
Barrier Type (0-V		0.0 1001			Н	eavy Tr	ucks: 8	36.5%	2.7%	10.8%	0.74%
Centerline D	. ,	76.0 feet		-							
Centerline Dist.		76.0 feet		1	Noise So				eet)		
Barrier Distance	to Observer:	0.0 feet				Autos					
Observer Height		5.0 feet			Medium				~ · · ·		
	ad Flevation:	0.0 feet			Heavy	/ Trucks	8.0	06	Grade Adj	ustment	0.0
Ro	ad Elevation:	0.0 feet			Lane Equ	ivalent	Distanc	e (in f	feet)		
	Road Grade:	0.0%		L L		Autos	: 65.4	22			
	Left View:	-90.0 degree	es		Medium	Trucks	: 65.2	86			
	Right View:	90.0 degree	es		Heavy	/ Trucks	65.3	00			
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Dist	ance	Finite I	Road	Fresne	el i	Barrier Att	en Ber	m Atten
Autos:	70.20	-1.07		-1.2	4	0.00	-	4.73	0.0	000	0.000
Medium Trucks:	81.00	-18.31		-1.2	3	0.00	-	4.88	0.0	000	0.000
Heavy Trucks:	85.38	-22.27		-1.2	3	0.00	-	5.25	0.0	000	0.000
Unmitigated Nois											
VehicleType	Leq Peak Hou			Leq E	vening	Leq I			Ldn	-	VEL
Autos:	67		66.0		64.2		58.2		66.8		67.4
Medium Trucks:	61		60.0		53.6		52.0		60.5		60.7
Heavy Trucks:	61	-	60.5		51.4		52.7		61.0		61.2
Vehicle Noise:		-	67.8		64.8		60.0		68.6	6	69.0
Centerline Distan	ce to Noise Co	ontour (in feet)	70	-10.4	05	104				-/0.4
					dBA	65 0		6	0 dBA		dBA
			Ldn:		55	17	-		545		724
		CI	NEL:	6	51	19	12		607	1,	920

Scenario: EAC Project Name: Desert Waw Road Name: Cook St. Job Number: 11826 Road Segment: Soft 10 EB Ramps Softe Conditions (Hard = 10, Soft = 1 Highway Data Site Conditions (Hard = 10, Soft = 1 Average Daily Traffic (Adt): 35,100 vehicles Average Daily Traffic (Adt): 35,100 vehicles Autos: 10 Peak Hour Percentage: 10% Medium Trucks (2 Axles): 10 Vehicle Speed: S0 mph Vehicle Mix Vehicle Vice Near/Far Lane Distance: 78 feet VehicleType Day	PUTS	
Highway Data Site Conditions (Hard = 10, Soft = 1 Average Daily Traffic (Adt): 35,100 vehicles Autos:: 10 Peak Hour Percentage: 10% Peak Hour Volume: 3,510 vehicles Vehicle Speed: 50 mph Vehicle August 70 etch	5)	
Average Daily Traffic (Adt): 35,100 vehicles Autos: 10 Peak Hour Percentage: 10% Medium Trucks (2 Axles): 10 Peak Hour Volume: 3,510 vehicles Heavy Trucks (3+ Axles): 10 Vehicle Speed: 50 mph Vehicle Mix Vehicle Mix		
Peak Hour Percentage: 10% Peak Hour Volume: 3,510 vehicles Vehicle Speed: 50 mph Venicle Lange Topological and the speed: 50 mph		
Near/Far Lane Distance: 78 feet		
Near/Earland Distance: 79 feet		
	ning Nig	aht Dailv
		0.6% 97.42%
Barrier Height: 0.0 feet Medium Trucks: 84.8% 4	.9% 10	.3% 1.84%
Barrier Type (0-Wall, 1-Berm): 0.0 Heavy Trucks: 86.5% 2	.7% 10	0.8% 0.74%
Centerline Dist. to Barrier: 76.0 feet Noise Source Elevations (in feet)	-	
Centerline Dist. to Observer: 76.0 feet Autos: 0.000		
Barrier Distance to Observer: 0.0 feet Medium Trucks: 2.297		
Observer Height (Above Pad): 5.0 feet Heavy Trucks: 8.006 Grad	e Adjustn	ment: 0.0
Road Elevation: 0.0 feet Lane Equivalent Distance (in feet)		
Road Grade: 0.0% Autos: 65.422		
Left View: -90.0 degrees Medium Trucks: 65.286		
Right View: 90.0 degrees Heavy Trucks: 65.300		
FHWA Noise Model Calculations		
VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrie	er Atten	Berm Atten
Autos: 70.20 3.04 -1.24 0.00 -4.73	0.000	0.00
Medium Trucks: 81.00 -14.19 -1.23 0.00 -4.88	0.000	0.000
Heavy Trucks: 85.38 -18.15 -1.23 0.00 -5.25	0.000	0.00
Unmitigated Noise Levels (without Topo and barrier attenuation)		
VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn		CNEL
Autos: 72.0 70.1 68.3 62.3	70.9	71.
Medium Trucks: 65.6 64.1 57.7 56.2	64.6	64.9
Heavy Trucks: 66.0 64.6 55.5 56.8	65.1	65.3
Vehicle Noise: 73.7 72.0 68.9 64.1	72.7	73.
Centerline Distance to Noise Contour (in feet)		
70 dBA 65 dBA 60 dB/		55 dBA
Ldn: 141 445 1,407		4,450
CNEL: 157 496 1,567		4,956

FH	IWA-RD-77-108 H	GHWA	Y NOISE PR	REDICTIO	N MOE	DEL			
Scenario: EAC Road Name: Cook St.				Project Na Job Nun			Wave		
Road Segment: s/o Gerald	Ford Dr.			JUD MUN	iber. I	1020			
SITE SPECIFIC I				NO		ODE	L INPUT	c .	
Highway Data	NFOT DATA		Site Con	ditions (H				3	
Average Daily Traffic (Adt):	26.670 vehicles					utos:	10		
Peak Hour Percentage:	10%		Me	dium Truck			10		
Peak Hour Volume:	2,667 vehicles		He	avy Trucks	(3+ A	xles):	10		
Vehicle Speed:	50 mph		Vehicle	Mix					
Near/Far Lane Distance:	78 feet			icleType	1	Dav	Evening	Night	Daily
Site Data			VCII	Aut		7.5%			97.42
	0.0 feet		Me	edium Truc		34.8%		10.3%	
Barrier Height: Barrier Type (0-Wall, 1-Berm):	0.0 feet 0.0			leavy Truc		36.5%		10.8%	
Centerline Dist. to Barrier:	76.0 feet								
Centerline Dist. to Observer:	76.0 feet		Noise So	ource Elev			eet)		
Barrier Distance to Observer:	0.0 feet			Autos:	0.0				
Observer Height (Above Pad):	5.0 feet			n Trucks:	2.2				
Pad Elevation:	0.0 feet		Heav	y Trucks:	8.0	06	Grade Ad	justment	: 0.0
Road Elevation:	0.0 feet		Lane Eq	uivalent D	istanc	e (in i	feet)		
Road Grade:	0.0%			Autos:	65.4	22			
Left View:	-90.0 degrees		Mediu	n Trucks:	65.2	86			
Right View:	90.0 degrees		Heav	y Trucks:	65.3	00			
FHWA Noise Model Calculatio	ns								
VehicleType REMEL	Traffic Flow	Distanc	e Finite	Road	Fresne	el	Barrier Att	en Ber	m Atter
Autos: 70.20			1.24	0.00		4.73		000	0.00
Medium Trucks: 81.00			1.23	0.00		4.88		000	0.00
Heavy Trucks: 85.38	3 -19.34	-1	1.23	0.00	-	5.25	0.0	000	0.00
Unmitigated Noise Levels (with			,		1				
VehicleType Leq Peak Ho			Evening	Leq Nig			Ldn 69.3		NEL 70
	0.8 68		67.2		61.1				
	4.4 62 4.8 63		56.5 54.3		55.0 55.6		63.4 64.0		63 64
	4.8 63 2.5 70		54.3 67.7				71.5		71
		.8	67.7		62.9		/1.	0	/1
Centerline Distance to Noise C	contour (in feet)	-	70 dBA	65 dB	4	6	0 dBA	55	dBA
	La		107	65 dB 338	~		1.069		ава 381
	Lu	n. 1 :	119	377			1,009		765

Monday, February 25, 2019

0-	EAO					Design			10/		
	io: EAC ie: Cook St.					Project I	vame: L Imber: *				
	nt: s/o Frank S	Sinatra Dr				JOD INL	mber.	11826			
÷											
	SPECIFIC IN	IPUT DATA								5	
Highway Data				3	ne con	aitions (oft = 15)		
• •	, ,	25,600 vehicles						Autos:			
	Percentage:	10%				dium Tru					
	lour Volume:	2,560 vehicles			Hea	avy Truc	ks (3+ A	(xles):	10		
	hicle Speed:	50 mph		ν	ehicle l	/lix					
Near/Far La	ne Distance:	78 feet			Vehi	cleType		Day	Evening	Night	Daily
Site Data						Α	utos:	77.5%	12.9%	9.6%	97.429
Ra	rrier Height:	0.0 feet			Me	dium Tru	icks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-W		0.0			H	leavy Tri	icks:	86.5%	2.7%	10.8%	0.74%
Centerline Di	st. to Barrier:	76.0 feet			loise So	urce Ele	vation	s (in f	eet)		
Centerline Dist.	to Observer:	76.0 feet		-		Autos		000	000		
Barrier Distance	to Observer:	0.0 feet			Modiur	n Trucks		297			
Observer Height	(Above Pad):	5.0 feet				v Trucks		006	Grade Adj	ustmen	t: 0.0
P	ad Elevation:	0.0 feet				·			,		
Ro	ad Elevation:	0.0 feet		L	ane Equ	iivalent			feet)		
	Road Grade:	0.0%				Autos					
	Left View:	-90.0 degree				n Trucks					
	Right View:	90.0 degree	5		Heav	y Trucks	65.3	300			
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Distar		Finite	Road	Fresn		Barrier Atte	en Be	rm Atten
Autos:	70.20	1.67		-1.24		0.00		-4.73	0.0	00	0.00
Medium Trucks:	81.00	-15.56		-1.23		0.00		-4.88	0.0	00	0.00
Heavy Trucks:	85.38	-19.52		-1.23		0.00		-5.25	0.0	00	0.00
Unmitigated Nois	e Levels (with	out Topo and L	arrier a	attenı	uation)						
VehicleType	Leq Peak Hou			eq Ev	~	Leq I	·		Ldn		NEL
Autos:	70		8.7		67.0		60.9		69.5		70.
Medium Trucks:	64		2.7		56.3		54.8		63.3		63.
Heavy Trucks:	64	.6 6	3.2		54.2		55.4		63.8		63.
Vehicle Noise:	72	.3 7	0.6		67.5		62.8		71.3		71.
Centerline Distan	ce to Noise Co	ontour (in feet)									
		-		70 d	BA	65 a	BA	(60 dBA	55	i dBA
		L	dn:	103	3	32	5		1,026	3	,246

	FHV	VA-RD-77-108	HIGHW	AY NOIS	SE PREI	DICTION	MODEL			
	o: EAC e: Cook St. nt: n/o Country	/ Club Dr.					ne: Dese er: 11826			
	SPECIFIC IN	IPUT DATA						EL INPUT	S	
Highway Data				Site	Condit	ions (Ha	rd = 10, S	oft = 15)		
Average Daily	Traffic (Adt):	29,200 vehicle	s				Autos	: 10		
Peak Hour	Percentage:	10%			Mediu	m Trucks	(2 Axles)	: 10		
Peak H	our Volume:	2,920 vehicle	S		Heavy	Trucks (3+ Axles)	: 10		
Vei	hicle Speed:	50 mph		Vot	icle Mix					
Near/Far Lar	ne Distance:	78 feet		ven	Vehicle		Day	Evening	Night	Daily
Site Data					Venicie	Auto		•	~	97.42%
		0.0 feet		_	Medii	im Truck			10.3%	
Barrier Type (0-W	rier Height:	0.0 feet			Hea	vy Truck	s: 86.5%	6 2.7%	10.8%	0.74%
Centerline Dis	. ,	76.0 feet								
Centerline Dist.		76.0 feet		Noi			tions (in	feet)		
Barrier Distance		0.0 feet				Autos:	0.000			
Observer Height (5.0 feet			1edium T		2.297			
0,1	d Flevation:	0.0 feet			Heavy T	rucks:	8.006	Grade Ad	justment.	: 0.0
	d Elevation:	0.0 feet		Lan	e Equiv	alent Dis	tance (in	feet)		
	Road Grade:	0.0%				Autos:	65.422	,		
	Left View:	-90.0 degree	es.	A	1edium T	rucks:	65.286			
	Right View:	90.0 degree			Heavy T	rucks:	65.300			
FHWA Noise Mode	Calculation	s								
VehicleType	REMEL	Traffic Flow	Distan	ce l	inite Ro	ad F	resnel	Barrier Att	en Ber	m Atten
Autos:	70.20	2.25		1.24	(0.00	-4.73	0.0	000	0.000
Medium Trucks:	81.00	-14.99		1.23	0	0.00	-4.88	0.0	000	0.000
		-18.95		1.23	(0.00	-5.25	0.0	000	0.000
Heavy Trucks:	85.38	-10.55								
,			barrier a	ttenuat	ion)					
Unmitigated Noise		out Topo and		ttenuat q Even		Leq Nigh		Ldn	CI	NEL
Unmitigated Noise	Levels (with	out Topo and Ir Leq Day				Leq Nigh		Ldn 70.1		
Unmitigated Noise VehicleType	Levels (with Leq Peak Hou	out Topo and Ir Leq Day .2	' Le		ing	Leq Nigh	it		1	70.7
Unmitigated Noise VehicleType Autos:	e Levels (with Leq Peak Hou 71	out Topo and Ir Leq Day .2 .8	, Le 69.3		ing 67.5	Leq Nigh	61.5	70.1	1 3	70.7 64.1
Unmitigated Noise VehicleType Autos: Medium Trucks:	e Levels (with Leq Peak Hou 71 64	out Topo and Ir Leq Day .2 .8 .2	, Le 69.3 63.3		ing 67.5 56.9	Leq Nigh	t 61.5 55.4	70.1	1 3 3	70.7 64.1 64.5
Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	e Levels (with Leq Peak Hou 71 64 65 72	out Topo and Ir Leq Day .2 .8 .2 .9	2 Le 69.3 63.3 63.8 71.2	q Even	ing 67.5 56.9 54.7 68.1	Leq Nigh	t 61.5 55.4 56.0	70.1 63.8 64.3 71.9	1 3 3	70.7 64.1 64.5 72.3
Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks:	e Levels (with Leq Peak Hou 71 64 65 72	out Topo and r Leq Day .2 .8 .2 .9 ontour (in feet	/ Le 69.3 63.3 63.8 71.2	q Even	ing 67.5 56.9 54.7 68.1	Leq Nigh	t 61.5 55.4 56.0	70.1 63.8 64.3 71.9 60 dBA	1 3 3 9 55	70.7 64.1 64.5 72.3 dBA
Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	e Levels (with Leq Peak Hou 71 64 65 72	out Topo and r Leq Day .2 .8 .2 .9 ontour (in feet	2 Le 69.3 63.3 63.8 71.2	q Even	ing 67.5 56.9 54.7 68.1	Leq Nigh	t 61.5 55.4 56.0	70.1 63.8 64.3 71.9	1 3 3 9 55 3,7	70.7 64.1 64.5 72.3

Monday, February 25, 2019

Scenario: EAC								
Road Name: Cook St. Road Segment: s/o Country Club Dr.		,	Project Na Job Num			Vave		
SITE SPECIFIC INPUT DATA			NOI	SE MC	DEL	INPUT	5	
Highway Data		Site Cond	litions (Ha	ard = 10), Sofi	t = 15)		
Average Daily Traffic (Adt): 30,800 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 3,080 vehicles			ium Truck vy Trucks	s (2 Axl		10 10 10		
Vehicle Speed: 50 mph	ŀ	Vehicle M	iv					
Near/Far Lane Distance: 78 feet	-		leType	Dá	av F	vening	Night	Dailv
Site Data		10/110	Auto		.5%	12.9%	9.6%	
Barrier Height: 0.0 feet		Med	dium Truci	ks: 84	.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0		He	eavy Truci	ks: 86	.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 76.0 feet		Noise Sou	ırce Eleva	ations (in fee	t)		
Centerline Dist. to Observer: 76.0 feet			Autos:	0.00)			
Barrier Distance to Observer: 0.0 feet		Medium	Trucks:	2.29	7			
Observer Height (Above Pad): 5.0 feet		Heavy	Trucks:	8.006	6 G	ade Adj	iustment	0.0
Pad Elevation: 0.0 feet Road Elevation: 0.0 feet	-	Lane Equ	ivalont Di	etanco	(in fo	of		
Road Elevation: 0.0 feet Road Grade: 0.0%	H	Lane Lyu	Autos:	65.42		ei)		
Left View: -90.0 degrees		Modium	Trucks:	65.28	-			
Right View: 90.0 degrees			Trucks:	65.30	-			
FHWA Noise Model Calculations								
VehicleType REMEL Traffic Flow Dist	tance	Finite F	Road I	Fresnel	В	arrier Atte	en Bei	m Atten
Autos: 70.20 2.48	-1.2		0.00		73	0.0		0.00
Medium Trucks: 81.00 -14.76	-1.2	-	0.00		.88	0.0		0.00
Heavy Trucks: 85.38 -18.72	-1.2	3	0.00	-5.	25	0.0	00	0.00
Unmitigated Noise Levels (without Topo and barried	r atter	uation)						
	Leq E	vening	Leq Nig		L	.dn		NEL
Autos: 71.4 69.5		67.8		61.7		70.3		71.0
Medium Trucks: 65.0 63.5		57.1		55.6		64.1		64.3
Heavy Trucks: 65.4 64.0		55.0		56.2		64.6		64.
Vehicle Noise: 73.1 71.4		68.3		63.6		72.1		72.
Centerline Distance to Noise Contour (in feet)						-		
		dBA	65 dB/	4		dBA		dBA
		23	390		1	235	3	905
Ldn: CNFL:		23 38	435			375		349

	FHW	A-RD-77-108 H	GHW.	AY NO	DISE PRI	EDICTIO	ON MO	DEL			
Scenario: EAC Road Name: Cook	St.				F	Project I Job Nu					
Road Segment: s/o He		n.									
SITE SPECIF	IC INF	PUT DATA							L INPUT	s	
Highway Data				S	ite Cond	itions (Hard =	10, Sc	oft = 15)		
Average Daily Traffic (A	dt): 30	0,600 vehicles					,	Autos:	10		
Peak Hour Percenta	ge:	10%			Medi	ium Tru	cks (2 A	Axles):	10		
Peak Hour Volu	me: 3	3,060 vehicles			Hear	vy Trucl	ks (3+ A	Axles):	10		
Vehicle Spe	ed:	50 mph		V	ehicle M	ix					
Near/Far Lane Distar	ice:	58 feet		-		leType		Day	Evening	Night	Daily
Site Data								77.5%	•		97.429
Barrier Heid	tht.	0.0 feet			Med	lium Tru	icks:	84.8%	4.9%	10.3%	1.849
Barrier Type (0-Wall, 1-Ber		0.0			He	avy Tru	icks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Ban		64.0 feet									
Centerline Dist. to Obser	ver:	64.0 feet		N	oise Sou				eet)		
Barrier Distance to Obser	ver:	0.0 feet			Medium	Autos.		000			
Observer Height (Above Pa	ad):	5.0 feet						297	Grade Ad	iustmont	
Pad Elevat	ion:	0.0 feet			Heavy	Trucks.	8.0	006	Grade Au	Jusuneni	. 0.0
Road Elevat	ion:	0.0 feet		La	ane Equi	valent	Distan	ce (in i	feet)		
Road Gra	de:	0.0%				Autos.	57.	271			
Left Vi	ew:	-90.0 degrees			Medium	Trucks.	57.	117			
Right Vi	ew:	90.0 degrees			Heavy	Trucks.	57.	132			
FHWA Noise Model Calcul											
VehicleType REME		Traffic Flow	Distar		Finite R		Fresn		Barrier Att		m Atter
	0.20	2.45		-0.66		0.00		-4.70		000	0.00
	31.00	-14.79		-0.65		0.00		-4.88		000	0.00
Heavy Trucks: 8	35.38	-18.75		-0.65		0.00		-5.31	0.0	000	0.00
Unmitigated Noise Levels			-								
VehicleType Leq Pea Autos:				eq Eve		Leq N			Ldn		NEL 71
	72.0 65.6				68.3 57.7		62.3 56.1		70.9 64.6		64
Medium Trucks:	66.0				57.7		56.8		65.1	-	65.
Heavy Trucks: Vehicle Noise:	73.7		-		55.5 68.9		64.1		72.7		73.
			.9		68.9		64.1		72.	1	73.
Centerline Distance to Noi	se Col	ntour (in feet)		70 dE	RA	65 d	RA	F	60 dBA	55	dBA
		Lo	n:	118		37			1.180		733
		LU	n. 1 :	131	·	01	6		1,314		157

Monday, February 25, 2019

Scenari	A FAC					Proiect I	lama:	Docor	Mayo	_	
	e: El Dorado I					Job Nu					
	nt: n/o Country					300 140	mber.	11020			
Ŷ	,					BIA		1000			
SITE : Highway Data	SPECIFIC IN	PUIDAIA		s	ite Con	ditions (L INPUTS	•	
Average Daily	Traffic (Adt)	4.500 vehicles						Autos	,		
	Percentage:	10%			Me	dium True	ks (2 A	(xles):	10		
	our Volume:	450 vehicles				avy Truck					
Vel	hicle Speed:	50 mph			(- h-i - l - l						
Near/Far Lar	ne Distance:	58 feet		V	Vehicle I	nix cleType		Dav	Evening	Night	Daily
Site Data				_	veni			77.5%	•	9.6%	
				_	14	edium Tru		84.8%		9.0%	
	rier Height:	0.0 feet				leavv Tru		86.5%		10.3%	
Barrier Type (0-W	. ,	0.0			F	leavy III	CKS.	00.5%	2.17o	10.0%	0.747
Centerline Dis		64.0 feet		٨	loise Sc	urce Ele	vation	s (in f	eet)		
Centerline Dist.		64.0 feet				Autos:	0.0	000			
Barrier Distance		0.0 feet			Mediur	n Trucks.	2.2	297			
Observer Height (,	5.0 feet			Heav	y Trucks:	8.0	006	Grade Adj	ustment	: 0.0
	d Elevation:	0.0 feet			ano Equ	livalent	Dictor	oo (in	foot)		
	ad Elevation:	0.0 feet		-	ane Equ	Autos			ieel)		
ŀ	Road Grade:	0.0%			Marthur						
	Left View:	-90.0 degree				n Trucks.					
	Right View:	90.0 degree	S		Heav	y Trucks:	57.	132			
FHWA Noise Mode	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Distar		Finite		Fresr	-	Barrier Atte		m Atten
Autos:	70.20	-5.88		-0.66		0.00		-4.70	0.0		0.00
Medium Trucks:	81.00	-23.11		-0.65		0.00		-4.88	0.0		0.00
Heavy Trucks:	85.38	-27.07		-0.65		0.00		-5.31	0.0	00	0.00
Unmitigated Noise	e Levels (with	out Topo and I	oarrier a	attenı	uation)						
21	Leq Peak Hou			eq Ev	ening	Leq N	·		Ldn		NEL
Autos:	63		1.8		60.0		53.9		62.6		63.
Medium Trucks:	57		5.7		49.4		47.8		56.3		56.
Heavy Trucks:	57	.7 5	6.2		47.2		48.5	i	56.8		56.9
Vehicle Noise:	65	.4 θ	3.6		60.6		55.8	3	64.3		64.
	e to Noise Co	ontour (in feet)									
Centerline Distand				70 d	BA	65 d	BA	(60 dBA	55	dBA
Centerline Distand											
Centerline Distand		L	.dn:	17	,	55			174	5	649

	FH\	NA-RD-77-108	HIGHW	VAY N		EDICTI				
Road Nam	io: EAC ie: El Dorado I nt: s/o Country				1		Vame: Dese Imber: 1182			
SITE	SPECIFIC IN	IPUT DATA				N	DISE MOD	EL INPUT	S	
Highway Data				:	Site Cond	litions (Hard = 10,	Soft = 15)		
Average Daily	Traffic (Adt):	5,600 vehicle	s				Auto	s: 10		
Peak Hour	Percentage:	10%			Med	ium Tru	cks (2 Axles	;): 10		
Peak H	lour Volume:	560 vehicle	s		Hea	vy Truc	ks (3+ Axles	;): 10		
Ve	hicle Speed:	50 mph		-	Vehicle M	liv				
Near/Far La	ne Distance:	58 feet		-		leType	Day	Evening	Night	Daily
Site Data					Venie		utos: 77.5	-	9.6%	
		0.0 feet			Med	dium Tri			10.3%	
Barrier Type (0-W	rrier Height:	0.0 feet 0.0				eavy Tri			10.8%	
Centerline Di	. ,	0.0 64.0 feet		L						
Centerline Dist.		64.0 feet		1	Noise Sou		evations (in	feet)		
Barrier Distance		0.0 feet				Autos				
Observer Height (5.0 feet			Medium					
	ad Flevation:	0.0 feet			Heavy	Trucks	8.006	Grade Ac	ljustmen	t: 0.0
	ad Elevation:	0.0 feet		1	Lane Equ	ivalent	Distance (i	n feet)		
	Road Grade:	0.0%				Autos	: 57.271	,		
	Left View:	-90.0 degree	es		Medium	Trucks	57.117			
	Right View:	90.0 degree			Heavy	Trucks	57.132			
FHWA Noise Mod	el Calculation	s								
VehicleType	REMEL	Traffic Flow	Dista	nce	Finite F	Road	Fresnel	Barrier At	ten Be	rm Atten
Autos:	70.20	-4.93		-0.66	6	0.00	-4.7	0 0.	000	0.000
Medium Trucks:	81.00	-22.17		-0.65	5	0.00	-4.8		000	0.000
Heavy Trucks:	85.38	-26.12		-0.65		0.00	-5.3	1 0.	000	0.000
Unmitigated Noise	e Levels (with	out Topo and	barrier	atten	uation)					
VehicleType	Leq Peak Hou			Leq E	vening	Leq I	•	Ldn	-	NEL
Autos:	64		62.7		61.0		54.9	63.		64.1
Medium Trucks:	58		56.7		50.3		48.8	57.		57.5
Heavy Trucks:	58		57.2		48.2		49.4	57.	-	57.9
Vehicle Noise:	66		64.6		61.5		56.7	65.	3	65.8
Centerline Distand	ce to Noise Co	ontour (in feet)	70 0	JD A	CE -	10.4	60 dB4	-	
			L day			65 0		60 dBA		5 dBA
			Ldn:	2	2	68	5	216		683
		0	NFL:	2		76		241		761

Monday, February 25, 2019

	FHV	VA-RD-77-108 HIC	GHWAY N		EDICTION			
Scenario Road Nami	o: EAC e: Tamarisk R	ow Dr				me: Deser		
Road Segmen					JOD MUM	Der. 11020		
			1					
SITE S Highway Data	SPECIFIC IN	PUT DATA		Cite Con		SE MODE ard = 10, S		
Average Daily	Traffic (Adt):	9.500 vehicles		one oom	andons (m	Autos:		
,	Percentage:	10%		Med	dium Truck	s (2 Axles)	10	
	our Volume:	950 vehicles		Hea	avy Trucks	(3+ Axles).	10	
Vel	nicle Speed:	55 mph	-	Vehicle N		. ,		
Near/Far Lar	ne Distance:	12 feet	H		leType	Dav	Evening I	Vight Daily
Site Data				Vern	Aut		0	9.6% 97.42%
				Me	dium Truc			10.3% 1.84%
	rier Height:	0.0 feet 0.0			leavy Truc			10.8% 0.74%
Barrier Type (0-Wa Centerline Dis		30.0 feet						
Centerline Dist. 1		30.0 feet	_	Noise So		ations (in f	eet)	
Barrier Distance t		0.0 feet			Autos:	0.000		
Observer Height (/		5.0 feet			n Trucks:	2.297		
	d Elevation:	0.0 feet		Heav	y Trucks:	8.006	Grade Adjus	stment: 0.0
Roa	d Elevation:	0.0 feet		Lane Equ	ivalent Di	istance (in	feet)	
F	Road Grade:	0.0%			Autos:	29.816		
	Left View:	-90.0 degrees		Mediun	n Trucks:	29.518		
	Right View:	90.0 degrees		Heav	y Trucks:	29.547		
FHWA Noise Mode	Calculation	s						
VehicleType	REMEL	Traffic Flow	Distance	Finite	Road	Fresnel	Barrier Atter	Berm Atten
Autos:	71.78	-3.05	2.1	8	0.00	-4.49	0.00	0.00
Medium Trucks:	82.40	-20.28	2.2	-	0.00	-4.86	0.00	
Heavy Trucks:	86.40	-24.24	2.2	2	0.00	-5.77	0.00	0 0.00
Unmitigated Noise			1			1		
	Leq Peak Hou			vening	Leq Nig		Ldn	CNEL
Autos:	70		-	67.2		61.2	69.8	70.4
Medium Trucks:	64		-	56.5		54.9	63.4	63.
Heavy Trucks:	64			53.9		55.2	63.5 71.5	63.0 71.1
Vehicle Noise:			(67.8		62.9	/1.5	/1.
Centerline Distanc	e to Noise Co	ontour (in feet)	70	dBA	65 dB/		60 dBA	55 dBA
		l dn		2	133	- '	420	1.329
		CNFL		.7	148		469	1,323
		ONEL			. 10			1,100

I	HWA-RD-77-1	08 HIGH	WAY NO	DISE PREI	DICTION	MODEL			
Scenario: EAC				Pr	oject Nan	ne: Deser	t Wave		
Road Name: Oasis C	lub Dr.			J	lob Numb	er: 11826			
Road Segment: s/o Cou	ntry Club Dr.								
SITE SPECIFIC	INPUT DAT	A					L INPUT	s	
Highway Data			S	ite Condit	ions (Har	d = 10, S	oft = 15)		
Average Daily Traffic (Adt): 6,700 vehic	cles				Autos:	10		
Peak Hour Percentage	e: 10%			Mediu	m Trucks	(2 Axles).	10		
Peak Hour Volume	e: 670 vehic	cles		Heavy	Trucks (3+ Axles).	10		
Vehicle Speed	l: 55 mph		V	ehicle Mix					
Near/Far Lane Distance	: 58 feet		V	Vehicle		Day	Evening	Night	Daily
Site Data				Veniere	Autos		•	9.6%	
Barrier Heigh	t: 0.0 feet			Media	um Trucks	: 84.8%	4.9%	10.3%	1.84
Barrier Type (0-Wall, 1-Berm				Hea	vy Trucks	86.5%	6 2.7%	10.8%	
Centerline Dist. to Barrie									
Centerline Dist. to Observe			N	loise Sour			eet)		
Barrier Distance to Observe					Autos:	0.000			
Observer Height (Above Pad	0.0 1000			Medium 7		2.297			
Pad Elevation				Heavy 7	rucks:	8.006	Grade Ad	justment.	0.0
Road Elevation			L	ane Equiv	alent Dis	tance (in	feet)		
Road Grade			-			57.271			
Left Viev	0.070	1000		Medium T		57.117			
Right Viev				Heavy 7		57.132			
FHWA Noise Model Calculat	ions								
VehicleType REMEL	Traffic Flov	v Dis	tance	Finite Ro	ad Fi	resnel	Barrier Att	en Ber	m Atter
Autos: 71.			-0.66		0.00	-4.70		000	0.00
Medium Trucks: 82.			-0.65		0.00	-4.88		000	0.00
Heavy Trucks: 86			-0.65		0.00	-5.31		000	0.00
Unmitigated Noise Levels (w	rithout Topo ar	nd barrie	er attenu	uation)					
VehicleType Leq Peak	Hour Leq D	Day	Leq Eve	ening	Leq Nigh	t	Ldn	CI	VEL
Autos:	66.6	64.7		62.9		56.8	65.5	5	66
Medium Trucks:	60.0	58.4		52.1	:	50.5	59.0)	59
Heavy Trucks:	60.0	58.6		49.5		50.8	59.1	1	59
Vehicle Noise:	68.1	66.4		63.4	1	58.6	67.1		67
Centerline Distance to Noise	Contour (in fe	et)							
		L	70 dl		65 dBA		60 dBA		dBA
		Ldn:	33		104		329		039
		CNFL:	37		116		367		159

Monday, February 25, 2019

	FH\	VA-RD-77-108	HIGHW	AY N	OISE PF	REDICTI	DN MO	DEL			
Road Nan	rio: EAC ne: Country Cl nt: w/o Monter					Project Job Ni	Vame: Imber:		Wave		
	SPECIFIC IN	IPUT DATA								S	
Highway Data				2	Site Con	aitions (
,	, ,	22,400 vehicles	5					Autos:			
	Percentage:	10%				dium Tru		/			
	lour Volume:	2,240 vehicles	5		Hea	avy Truc	ks (3+7	(xles	10		
	hicle Speed:	50 mph		١	/ehicle I	Лix					
Near/Far La	ne Distance:	66 feet			Vehi	cleType		Day	Evening	Night	Daily
Site Data						A	utos:	77.5%	12.9%	9.6%	97.42
Pa	rrier Height:	0.0 feet			Me	dium Tr	ucks:	84.8%	4.9%	10.3%	1.84
Barrier Type (0-W		0.0			H	leavy Tr	ucks:	86.5%	2.7%	10.8%	0.74
Centerline Di	ist. to Barrier:	55.0 feet			Voise So	urco Ele	vation	e (in fi	oot)		
Centerline Dist.	to Observer:	55.0 feet		-	10/30 00	Autos		200			
Barrier Distance	to Observer:	0.0 feet			Modiur	n Trucks		297			
Observer Height	(Above Pad):	5.0 feet				v Trucks		200	Grade Ad	ustmon	+ 0.0
P	ad Elevation:	0.0 feet			neav	y mucks	. 0.	000	Orade Haj	usuncin	. 0.0
Ro	ad Elevation:	0.0 feet		L	ane Equ	iivalent	Distan	ce (in	feet)		
	Road Grade:	0.0%				Autos	: 44.	283			
	Left View:	-90.0 degree	s		Mediur	n Trucks	: 44.	083			
	Right View:	90.0 degree	s		Heav	y Trucks	: 44.	103			
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Distar	nce	Finite	Road	Fresr	iel	Barrier Atte	en Bei	rm Atter
Autos:	70.20	1.09		0.46	5	0.00		-4.67	0.0	00	0.00
Medium Trucks:	81.00	-16.14		0.48	3	0.00		-4.87	0.0	00	0.00
Heavy Trucks:	85.38	-20.10		0.48	3	0.00		-5.38	0.0	00	0.00
Unmitigated Nois											
VehicleType	Leq Peak Hou			eq Ev	ening	Leq I			Ldn	-	NEL
Autos:			69.9		68.1		62.0		70.7		71
Medium Trucks:			53.8		57.5		55.9		64.4		64
Heavy Trucks:	65	.8 (64.3		55.3		56.5	i	64.9)	65
Vehicle Noise:	73	.5	71.7		68.7		63.9	9	72.4	l .	72
Centerline Distan	ce to Noise C	ontour (in feet,									
				70 d	IBA	65 0		6	60 dBA		i dBA
			Ldn: IEL:	96 10	-	30 33			961 1,070		,039 .384

					IOISE PR	EDICTI		DEL			
Road Nam	io: EAC le: Country Cli nt: e/o Monter					Project Job Ni	Name: Imber:				
SITE	SPECIFIC IN	IPUT DATA				N	OISE	NODE		s	
Highway Data				:	Site Cond	ditions (Hard =	10, S	oft = 15)		
Average Daily	Traffic (Adt):	23,500 vehicle	s					Autos:	10		
Peak Hour	Percentage:	10%			Med	lium Tru	cks (2)	Axles).	10		
Peak H	lour Volume:	2,350 vehicles	s		Hea	avy Truc	ks (3+)	Axles).	10		
Ve	hicle Speed:	50 mph		H	V-1-1-1- 1			-			
Near/Far La	ne Distance:	78 feet		-	Vehicle N	leType		Day	Evening	Night	Daily
Site Data				-	venio		utos:	77.5%	~	9.6%	
					140	н dium Tr		84.8%		9.6%	
	rrier Height:	0.0 feet				leavy Tr		86.5%		10.3%	
Barrier Type (0-W	. ,	0.0				eavy II	ucha.	00.37	0 2.170	10.076	0.747
Centerline Di		76.0 feet		1	Noise So	urce Ele	evation	s (in f	eet)		
Centerline Dist.		76.0 feet				Autos	: 0.	000			
Barrier Distance		0.0 feet			Mediun	n Trucks	: 2.	297			
Observer Height (,	5.0 feet			Heavy	/ Trucks	: 8.	006	Grade Ad	justmen	t: 0.0
	ad Elevation:	0.0 feet		H	Lane Equ	uivelent	Dioton	00 (in	fa a 4)		
	ad Elevation:	0.0 feet		-	Lane Lyu	Autos			leel)		
	Road Grade:	0.0%				Autos 1 Trucks		422 286			
	Left View: Right View:	-90.0 degree				/ Trucks		200 300			
		90.0 degree	es		neav	/ ITUCKS	. 65.	300			
	ragin view.	-									
FHWA Noise Mod	0	s									
FHWA Noise Mod VehicleType	0	s Traffic Flow	Dista	ance	Finite	Road	Fresi	nel	Barrier Att	en Be	rm Atten
	el Calculation		Dista	ance -1.24		Road 0.00	Fresi	nel -4.73		en Be	
VehicleType	el Calculation REMEL	Traffic Flow	Dista		4		Fresi		0.0		0.00
VehicleType Autos:	el Calculation REMEL 70.20	Traffic Flow 1.30	Dista	-1.24	4 3	0.00	Fresi	-4.73	0.0	000	0.000
VehicleType Autos: Medium Trucks: Heavy Trucks:	el Calculation REMEL 70.20 81.00 85.38	Traffic Flow 1.30 -15.94 -19.89		-1.24 -1.23 -1.23	4 3 3	0.00 0.00	Fresi	-4.73 -4.88	0.0	000	0.000
VehicleType Autos: Medium Trucks: Heavy Trucks:	el Calculation REMEL 70.20 81.00 85.38	Traffic Flow 1.30 -15.94 -19.89 out Topo and	barrier	-1.24 -1.23 -1.23	4 3 3 uation)	0.00 0.00		-4.73 -4.88	0.0	000	0.000
VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Nois	el Calculation REMEL 70.20 81.00 85.38 e Levels (with	Traffic Flow 1.30 -15.94 -19.89 out Topo and Ir Leq Day	barrier	-1.24 -1.23 -1.23 r atten	4 3 3 uation)	0.00 0.00 0.00		-4.73 -4.88 -5.25	0.0 0.0 0.0	000 000 000	0.000 0.000 0.000
VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Nois e VehicleType	el Calculation REMEL 70.20 81.00 85.38 e Levels (with Leq Peak Hou	Traffic Flow 1.30 -15.94 -19.89 out Topo and Ir Leq Day .3	barrier	-1.24 -1.23 -1.23 r atten	4 3 uation) vening	0.00 0.00 0.00	Vight	-4.73 -4.88 -5.25	0.0 0.0 0.0	000 000 000 C	0.000 0.000 0.000 NEL 69.8
VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos:	el Calculation REMEL 70.20 81.00 85.38 e Levels (with Leq Peak Hou 70	Traffic Flow 1.30 -15.94 -19.89 out Topo and r Leq Day .3 .8	barrier	-1.24 -1.23 -1.23 r atten	4 3 3 <i>uation)</i> <i>vening</i> 66.6	0.00 0.00 0.00	Vight 60.	-4.73 -4.88 -5.25	0.0 0.0 0.0 <i>Ldn</i> 69.2	000 000 000 2 2	0.000 0.000 0.000 NEL 69.8 63.1
VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Noiss VehicleType Autos: Medium Trucks:	el Calculation <u>REMEL</u> 70.20 81.00 85.38 e Levels (with Leq Peak Hou 70 63 64	Traffic Flow 1.30 -15.94 -19.89 out Topo and rr Leq Day .3	<i>barrier</i> 68.4 62.3	-1.24 -1.23 -1.23 r atten	4 3 3 <i>vening</i> 66.6 56.0	0.00 0.00 0.00	Vight 60.9 54.4	-4.73 -4.88 -5.25	0.0 0.0 0.0 <i>Ldn</i> 69.2 62.9	000 000 000 2 2 3	0.000 0.000 0.000 NEL 69.8 63.1 63.5
VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Noiss VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	el Calculation REMEL 70.20 81.00 85.38 e Levels (with Leg Peak Hot 70 63 64 72	Traffic Flow 1.30 -15.94 -19.89 out Topo and rr Leq Day .3 .8 .3 .0	barrier 68.4 62.3 62.8 70.2	-1.24 -1.23 -1.23 r atten Leq Ev	4 3 3 vening 66.6 56.0 53.8 67.2	0.00 0.00 0.00	Vight 60.5 54.4 55.0 62.4	-4.73 -4.88 -5.25	0.0 0.0 0.0 0.0 69.2 62.9 63.4 70.9	000 000 000 2 3 4	0.000 0.000 0.000 NEL 69.8 63.4 63.4 71.4
Autos: Medium Trucks: Heavy Trucks: Unmitigated Noiss VehicleType Autos: Medium Trucks: Heavy Trucks:	el Calculation REMEL 70.20 81.00 85.38 e Levels (with Leg Peak Hot 70 63 64 72	Traffic Flow 1.30 -15.94 -19.89 Out Topo and Ir Leq Day .3 .3 .0 ontour (in feet)	barrier 68.4 62.3 62.8 70.2	-1.2 -1.2 -1.2 r atten Leg E	4 3 3 <i>vening</i> 66.6 56.0 53.8 67.2	0.00 0.00 0.00 Leq I	Vight 60. 54. 55. 62.	-4.73 -4.88 -5.25	0.0 0.0 0.0 69.2 63.4 70.9 60 dBA	000 000 000 22 34 4 39 555	0.000 0.000 0.000 NEL 69.8 63.1 63.5 71.4
VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Noiss VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	el Calculation REMEL 70.20 81.00 85.38 e Levels (with Leg Peak Hot 70 63 64 72	Traffic Flow 1.30 -15.94 -19.89 out Topo and II II II II II II II II II I	barrier 68.4 62.3 62.8 70.2	-1.24 -1.23 -1.23 r atten Leq Ev	4 3 3 <i>vening</i> 66.6 56.0 53.8 67.2 <i>BA</i> 4	0.00 0.00 0.00	Vight 60.5 54.4 55.0 62.4 1BA 18	-4.73 -4.88 -5.25	0.0 0.0 0.0 0.0 69.2 62.9 63.4 70.9	000 000 000 2 2 3 4 4 3 3 2 2 2 2 2 2 2 2 2 2 2 2 2	0.000 0.000 0.000 NEL 69.8 63.4 63.4 71.4

Monday, February 25, 2019

FHWA-RD-	77-108 HIGHWAY	NOISE PREDICTION MODEL
Scenario: EAC Road Name: Country Club Dr. Road Segment: e/o Portola Av.		Project Name: Desert Wave Job Number: 11826
SITE SPECIFIC INPUT D	ATA	NOISE MODEL INPUTS
Highway Data		Site Conditions (Hard = 10, Soft = 15)
Average Daily Traffic (Adt): 22,600	/ehicles	Autos: 10
Peak Hour Percentage: 10%		Medium Trucks (2 Axles): 10
Peak Hour Volume: 2,260	/ehicles	Heavy Trucks (3+ Axles): 10
Vehicle Speed: 50	nph	Vehicle Mix
Near/Far Lane Distance: 58	eet	VehicleType Day Evening Night Daily
Site Data		Autos: 77.5% 12.9% 9.6% 97.42%
Barrier Height: 0.0	feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	ieet	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%
Centerline Dist. to Barrier: 64.0	feet	
Centerline Dist. to Observer: 64.0		Noise Source Elevations (in feet)
Barrier Distance to Observer: 0.0	feet	Autos: 0.000
Observer Height (Above Pad): 5.0	feet	Medium Trucks: 2.297 Heavy Trucks: 8,006 Grade Adjustment: 0.0
Pad Elevation: 0.0	feet	Heavy Trucks: 8.006 Grade Adjustment: 0.0
Road Elevation: 0.0	feet	Lane Equivalent Distance (in feet)
Road Grade: 0.0	%	Autos: 57.271
	degrees	Medium Trucks: 57.117
Right View: 90.0	degrees	Heavy Trucks: 57.132
FHWA Noise Model Calculations		
VehicleType REMEL Traffic		
Autos: 70.20		66 0.00 - <i>4.70</i> 0.000 0.000
		65 0.00 -4.88 0.000 0.000
Heavy Trucks: 85.38	-20.06 -0	65 0.00 -5.31 0.000 0.000
Unmitigated Noise Levels (without Top		,
		Evening Leq Night Ldn CNEL
Autos: 70.7	68.8	67.0 61.0 69.6 70.3
Medium Trucks: 64.2	62.7	56.4 54.8 63.3 63.4 E4.2 EEE 62.8 62.4
Heavy Trucks: 64.7 Vehicle Noise: 72.4	63.2 70.6	54.2 55.5 63.8 63.3 67.6 62.8 71.3 71.4
		07.0 02.8 71.3 71.3
Centerline Distance to Noise Contour	,	
		0 dBA 65 dBA 60 dBA 55 dBA 87 276 872 2757
	Ldn: CNFL:	87 276 872 2,757 97 307 971 3,070

	FHV	VA-RD-77-108 I	HIGHW	AY NO	DISE PR	EDICTIO	ON MO	DEL			
Scenar	io: EAC					Project I	Vame:	Desert	Wave		
Road Nam	e: Country Clu	ıb Dr.				Job Nu	mber:	11826			
Road Segme	nt: e/o Desert	Willow Dr.									
	SPECIFIC IN	IPUT DATA							L INPUT	S	
Highway Data				S	ite Con	ditions (Hard =	10, Sc	oft = 15)		
Average Daily	Traffic (Adt): 2	22,400 vehicles						Autos:	10		
Peak Hour	Percentage:	10%			Med	dium Tru	cks (2 A	(xles)	10		
Peak H	lour Volume:	2,240 vehicles			Hea	avy Truck	ks (3+ A	(xles)	10		
Ve	hicle Speed:	50 mph		V	ehicle N	Nix					
Near/Far La	ne Distance:	58 feet		-		cleType		Dav	Evening	Night	Daily
Site Data							utos:	77.5%	•		97.42
Ba	rrier Height:	0.0 feet			Me	dium Tru	icks:	84.8%	4.9%	10.3%	1.849
Barrier Type (0-W	•	0.0			н	leavy Tru	icks:	86.5%	2.7%	10.8%	0.749
Centerline Di		64.0 feet				-					
Centerline Dist.		64.0 feet		N	oise So	urce Ele			eet)		
Barrier Distance	to Observer:	0.0 feet				Autos.		000			
Observer Height	Above Pad);	5.0 feet				n Trucks.		297	Grade Ad		
P	ad Elevation:	0.0 feet			Heavy	y Trucks.	8.0	006	Grade Ad	jusiment	0.0
Ro	ad Elevation:	0.0 feet		L	ane Equ	livalent	Distan	ce (in i	feet)		
	Road Grade:	0.0%				Autos.	57.	271			
	Left View:	-90.0 degree	s		Mediun	n Trucks.	57.	117			
	Right View:	90.0 degree	s		Heavy	y Trucks.	57.	132			
FHWA Noise Mod	el Calculation	s		-							
VehicleType	REMEL	Traffic Flow	Dista	nce	Finite I	Road	Fresn	el	Barrier Att	en Ber	m Atter
Autos:	70.20	1.09		-0.66		0.00		-4.70		000	0.00
Medium Trucks:	81.00	-16.14		-0.65		0.00		-4.88		000	0.00
Heavy Trucks:	85.38	-20.10		-0.65		0.00		-5.31	0.0	000	0.00
Unmitigated Nois											
VehicleType	Leq Peak Hou			.eq Eve		Leq N			Ldn		VEL
Autos:	70		8.7		67.0		60.9		69.		70.
Medium Trucks:	64		2.7		56.3		54.8		63.3		63.
Heavy Trucks:	64		3.2		54.2		55.4		63.8		63.
Vehicle Noise:	72		0.6		67.5		62.8	1	71.3	3	71.
Centerline Distan	ce to Noise Co	ontour (in feet)		70 -"	24	6E -	DA		O dBA	55	dDA
		,	.dn:	70 dl 86	DM	65 d		6	0 dBA 864		dBA 732
		L				27				2,	
		CN	EL .	96		30	4		962	<u> </u>	043

Monday, February 25, 2019

	FH\	VA-RD-77-108 H	IGHWA	Y NO	OISE PR	EDICTIC	N MO	DEL			
Scenar	rio: EAC					Project N			Wave		
	ne: Country Cli					Job Nu	mber:	11826			
Road Segme	ent: e/o Cook S	t.									
	SPECIFIC IN	IPUT DATA								S	
Highway Data				S	ite Con	ditions (F			,		
,	. ,	21,400 vehicles						Autos:			
	Percentage:	10%				dium Truc		/			
	lour Volume:	2,140 vehicles			Hea	avy Truck	s (3+ /	Axles):	10		
Ve	ehicle Speed:	50 mph		v	ehicle A	<i>lix</i>					
Near/Far La	ane Distance:	78 feet		-	Vehi	cleType		Day	Evening	Night	Daily
Site Data						AL	itos:	77.5%	12.9%	9.6%	97.42
Da	rrier Heiaht:	0.0 feet			Me	dium Tru	cks:	84.8%	4.9%	10.3%	1.849
Barrier Type (0-V	Vall, 1-Berm):	0.0			H	leavy Tru	cks:	86.5%	2.7%	10.8%	0.74
	ist. to Barrier:	76.0 feet		٨	loise So	urce Ele	vation	s (in fe	eet)		
Centerline Dist.		76.0 feet				Autos:	0.	000	í		
Barrier Distance	to Observer:	0.0 feet			Mediun	Trucks:	2	297			
Observer Height	(Above Pad):	5.0 feet			Heav	V Trucks:	8.	006	Grade Ad	iustmen	t: 0.0
-	ad Elevation:	0.0 feet									
	ad Elevation:	0.0 feet		L	ane Equ	ivalent L			feet)		
	Road Grade:	0.0%				Autos:		422			
	Left View:	-90.0 degrees				n Trucks:		286			
	Right View:	90.0 degrees			Heav	y Trucks:	65.	300			
FHWA Noise Moo											
VehicleType	REMEL	Traffic Flow	Distan		Finite		Fresr		Barrier Att		rm Atter
Autos:		0.90		1.24		0.00		-4.73		000	0.00
Medium Trucks:		-16.34		1.23		0.00		-4.88		000	0.00
Heavy Trucks:	85.38	-20.30	-	1.23		0.00		-5.25	0.0	000	0.00
Unmitigated Nois											
VehicleType	Leq Peak Hou			q Ev	ening	Leq N	<u> </u>		Ldn		NEL
Autos:	00		3.0		66.2		60.1		68.8		69
Medium Trucks:		•	.9		55.6		54.0		62.5		62
Heavy Trucks:			2.4		53.4		54.6		63.0		63
Vehicle Noise:	71	.6 6	9.8		66.8		62.0)	70.5	5	71
Centerline Distan	ce to Noise Co	ontour (in feet)									
				70 d		65 dl		6	60 dBA		5 dBA
		L	dn:	86 96		271			858 955		,713 .021

	FHWA-	RD-77-108 HI	GHWAY	NOISE PI	REDICTI	ON MOI	DEL			
Scenario: Road Name: Road Segment:	Country Club E				Project Job Nu	Name: I umber: ·				
SITE SP	ECIFIC INPU	T DATA			N	OISE N	IODE	L INPUTS	5	
Highway Data				Site Con	ditions (Hard =	10, Sc	oft = 15)		
Average Daily Tra	affic (Adt): 21,3	00 vehicles					Autos:	10		
Peak Hour Pe	ercentage:	10%		Me	dium Tru	icks (2 A	xles):	10		
Peak Hou	r Volume: 2,1	30 vehicles		He	avy Truc	ks (3+ A	xles):	10		
Vehic	le Speed:	50 mph		Vehicle	Miy					
Near/Far Lane	Distance:	58 feet			icleType		Day	Evening	Night	Daily
Site Data				Ven			77.5%	v	9.6%	
					edium Tr		84.8%		10.3%	1.84%
	er Height:	0.0 feet			Heavy Tr		86.5%		10.8%	0.74%
Barrier Type (0-Wall		0.0 34.0 feet			icavy III	uono.	00.070	2.170	10.070	0.7470
Centerline Dist. Centerline Dist. to		64.0 feet		Noise Se	ource Ele	evation	s (in fe	eet)		
Barrier Distance to		0.0 feet			Autos	: 0.0	000			
Observer Height (Ab		5.0 feet		Mediu	m Trucks	: 2.2	297			
0,	ove Pad): Flevation:	0.0 feet		Heav	y Trucks	: 8.0	006	Grade Adj	ustment.	0.0
	Elevation: Elevation:	0.0 feet		Lane Eq	uivalent	Distan	e (in	feet)		
	ad Grade:	0.0%		Lano Lq	Autos					
		0.0 / degrees		Modiu	m Trucks					
		0.0 degrees			y Trucks					
FHWA Noise Model	Calculations									
VehicleType	REMEL Tr	affic Flow	Distance	Finite	Road	Fresn	el	Barrier Atte	en Ber	m Atten
Autos:	70.20	0.88	-0.	66	0.00		-4.70	0.0	00	0.000
Medium Trucks:	81.00	-16.36	-0.	65	0.00		-4.88	0.0	00	0.000
Heavy Trucks:	85.38	-20.32	-0.		0.00		-5.31	0.0	00	0.000
Unmitigated Noise L										
	eq Peak Hour	Leq Day	,	Evening	Leq I			Ldn		NEL
Autos:	70.4	68		66.8		60.7		69.3		69.9
Medium Trucks:	64.0	62		56.1		54.6		63.0		63.3
Heavy Trucks:	64.4	63		54.0		55.2		63.6		63.7
Vehicle Noise:	72.1	70	.4	67.3		62.5		71.1		71.6
Centerline Distance	to Noise Conto	our (in feet)	7/		05.	04		0.104		-/0.4
		I d		0 dBA 82	65 c		e	60 dBA 822		dBA
		La CNF		82 91	26			822 915		598 802
		CNE	L.	31	28	13		912	2,	893

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FI	IWA-RD-77-108	HIGHWA	Y NOISE PI	REDICTION	MODEL		
Scenario: EAC Road Name: Country C Road Segment: e/o Oasis					me: Deser ber: 11826		
SITE SPECIFIC	NPUT DATA			NOI	SE MODE	L INPUTS	
Highway Data			Site Cor	ditions (Ha	ard = 10, S	oft = 15)	
Average Daily Traffic (Adt): Peak Hour Percentage: Peak Hour Volume:	10% 2,450 vehicle			dium Truck avy Trucks		10	
Vehicle Speed: Near/Far Lane Distance:	50 mph		Vehicle	Mix			
Near/Far Lane Distance:	58 feet		Veh	icleType	Day	Evening N	light Daily
Site Data				Auto			9.6% 97.42%
Barrier Height:	0.0 feet		M	edium Truci	ks: 84.8%	6 4.9% 1	1.84%
Barrier Type (0-Wall, 1-Berm):	0.0		1	Heavy Truci	ks: 86.5%	6 2.7% 1	0.74%
Centerline Dist. to Barrier:	64.0 feet		Noise S	ource Eleva	ations (in f	eet)	
Centerline Dist. to Observer:	64.0 feet			Autos:	0.000	000	
Barrier Distance to Observer:	0.0 feet		Modiu	m Trucks:	2.297		
Observer Height (Above Pad):	5.0 feet			/v Trucks:	8.006	Grade Adjus	tment: 0.0
Pad Elevation:	0.0 feet					,	
Road Elevation:	0.0 feet		Lane Eq	uivalent Di		feet)	
Road Grade:	0.0%			Autos:	57.271		
Left View: Right View:	-90.0 degre 90.0 degre			m Trucks: /y Trucks:	57.117 57.132		
FHWA Noise Model Calculatio	ns						
VehicleType REMEL	Traffic Flow	Distanc	e Finite	Road I	Fresnel	Barrier Atten	Berm Atten
Autos: 70.2	0 1.48	-1	0.66	0.00	-4.70	0.000	0.00
Medium Trucks: 81.0	0 -15.76	-1	0.65	0.00	-4.88	0.000	0.000
Heavy Trucks: 85.3	8 -19.71	-1	0.65	0.00	-5.31	0.000	0.00
Unmitigated Noise Levels (with	hout Topo and	barrier at	tenuation)				
VehicleType Leq Peak H	our Leq Da	/ Leo	l Evening	Leq Nig	ht	Ldn	CNEL
	1.0	69.1	67.4		61.3	69.9	70.
	4.6	63.1	56.7		55.2	63.6	63.9
	5.0	63.6	54.6		55.8	64.2	64.3
Vehicle Noise:	2.7	71.0	67.9		63.1	71.7	72.
Centerline Distance to Noise	Contour (in fee	,					
			70 dBA	65 dB/	4	60 dBA	55 dBA
		Ldn:	95	299		945	2,989
		NFL:	105	333		1.052	3.328

	FHW	/A-RD-77-108 HI	GHWAY	NOISE PI	REDICTIO	ON MODEL			
Road Nam	io: EAC ne: Hovley Ln. nt: e/o Cook St					lame: Dese mber: 1182			
	SPECIFIC IN	PUT DATA				DISE MOD		S	
Highway Data				Site Con	ditions (Hard = 10, S	Soft = 15)		
Average Daily	Traffic (Adt): 3	0,900 vehicles				Autos	: 10		
Peak Hour	Percentage:	10%		Me	dium Truc	cks (2 Axles): 10		
Peak H	lour Volume:	3,090 vehicles		He	avy Truck	s (3+ Axles)): 10		
Ve	hicle Speed:	45 mph		Vehicle	Mix				
Near/Far La	ne Distance:	58 feet			icleType	Day	Evening	Night	Daily
Site Data				VCII		utos: 77.5	•	9.6%	
				M	edium Tru			10.3%	1.849
	rrier Height:	0.0 feet			Heavy Tru			10.8%	
Barrier Type (0-W Centerline Di					loary no	00.0	2.170	10.070	0.1 17
Centerline Dist.		64.0 feet 64.0 feet		Noise Se	ource Ele	vations (in	feet)		
Barrier Distance		0.0 feet			Autos:	0.000			
Observer Height				Mediu	m Trucks:	2.297			
	ad Elevation:	5.0 feet 0.0 feet		Heav	y Trucks:	8.006	Grade Ad	justment:	0.0
	ad Elevation: ad Elevation:	0.0 feet		Lano Fr	uivalent	Distance (ir	foot)		
	Road Grade:	0.0 reet		Lane Ly	Autos		neery		
	Left View:	-90.0 degrees		Mediu	m Trucks:				
	Right View:	90.0 degrees			ry Trucks:	07.117			
FHWA Noise Mod	el Calculations	;		1					
VehicleType	REMEL	Traffic Flow	Distance	e Finite	Road	Fresnel	Barrier Att	en Ber	m Atten
Autos:	68.46	2.95	-0	.66	0.00	-4.70	0.0	000	0.00
Medium Trucks:	79.45	-14.29	-0	.65	0.00	-4.88	0.0	000	0.00
Heavy Trucks:	84.25	-18.25	-0	.65	0.00	-5.31	0.0	000	0.00
Unmitigated Nois	e Levels (witho	out Topo and ba	rrier att	enuation)					
VehicleType	Leq Peak Hou			Evening	Leq N		Ldn		VEL
Autos:	70.			67.1		61.0	69.7		70.3
Medium Trucks:	64.			56.6		55.1	63.6		63.
Heavy Trucks:	65		-	54.9		56.2	64.5		64.
Vehicle Noise:			.8	67.7		63.0	71.6	6	72.
Centerline Distan	ce to Noise Co	ntour (in feet)	7	0 dBA	65 d	RA	60 dBA	55	dBA
		I d		92	29		917		399
						-		,	
		CNE	L:	102	32	2	1,018	,	221

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Scenario	2: FAPC					Project	Name: Des	ert Wave	
	9: Monterey A	V.					lumber: 118		
Road Segmen									
SITE S	SPECIFIC IN	IPUT DATA				N	IOISE MOD	DEL INPUTS	
Highway Data				S	Site Con	ditions	(Hard = 10,	Soft = 15)	
Average Daily	Traffic (Adt):	38,200 vehicles					Auto	s: 10	
Peak Hour	Percentage:	10%			Me	dium Tr	ucks (2 Axle	s): 10	
Peak He	our Volume:	3,820 vehicles			He	avy Tru	cks (3+ Axle	s <i>):</i> 10	
Vel	nicle Speed:	55 mph		V	/ehicle l	Mix			-
Near/Far Lar	ne Distance:	78 feet				cleType	e Day	Evening	Night Daily
Site Data							Autos: 77.5	v	9.6% 97.42%
Bar	rier Heiaht:	0.0 feet			Me	dium T	rucks: 84.8	3% 4.9%	10.3% 1.84%
Barrier Type (0-Wa		0.0			F	leavy T	rucks: 86.5	5% 2.7%	10.8% 0.74%
Centerline Dis	. ,	76.0 feet			laina Ca	uree E	levations (in	fact	
Centerline Dist. t	o Observer:	76.0 feet		~	ioise sc	Auto		rieel)	
Barrier Distance t	o Observer:	0.0 feet			Modiur	n Truck			
Observer Height (/	Above Pad):	5.0 feet				y Truck		Grade Adju	stment: 00
Pa	d Elevation:	0.0 feet				, 			sunchi. 0.0
Roa	d Elevation:	0.0 feet		L	ane Equ	uivalen	t Distance (i	in feet)	
F	Road Grade:	0.0%				Auto			
	Left View:	-90.0 degree	s		Mediur	n Truck			
	Right View:	90.0 degree	S		Heav	y Truck	s: 65.300		
FHWA Noise Mode	Calculation	s							
VehicleType	REMEL	Traffic Flow	Distar	ce	Finite	Road	Fresnel	Barrier Atter	n Berm Atten
Autos:	71.78	3.00		-1.24		0.00	-4.7		
Medium Trucks:	82.40	-14.24		-1.23		0.00	-4.8	8 0.00	0 0.00
Heavy Trucks:	86.40	-18.20		-1.23		0.00	-5.2	5 0.00	0 0.00
Unmitigated Noise	Levels (with	out Topo and	barrier a	ttenu	uation)				-
	Leq Peak Hou			eq Ev	ening	Leq	Night	Ldn	CNEL
Autos:	73		1.6		69.9		63.8	72.4	73.
Medium Trucks:	66		65.4		59.1		57.5	66.0	66.3
Heavy Trucks:	67	-	65.6		56.5		57.8	66.1	66.2
Vehicle Noise:	75	.1 1	73.4		70.4		65.5	74.1	74.
Centerline Distanc	e to Noise Co	ontour (in feet)							
				70 d			dBA	60 dBA	55 dBA
			_dn: IFI :	19 21	-	-	16 87	1,947 2.172	6,157 6.870

	FH	WA-RD-77-108	HIGHW	AY N	OISE PR	EDICT	ON MOD	DEL			
Road Nan	io: EAPC ne: Portola Av. nt: n/o Countr						Name: D umber: 1		Wave		
	SPECIFIC IN	NPUT DATA							L INPUTS	5	
Highway Data				S	Site Cond	litions	(Hard = '	10, So	oft = 15)		
Average Daily	Traffic (Adt):	17,100 vehicle	s				A	utos:	10		
Peak Hour	Percentage:	10%					ıcks (2 A	/			
Peak H	lour Volume:	1,710 vehicle	s		Hea	vy Truc	:ks (3+ A	xles):	10		
Ve	hicle Speed:	55 mph		v	/ehicle M	lix					
Near/Far La	ne Distance:	58 feet		-		leType	1	Day	Evening	Night	Daily
Site Data								7.5%	~	9.6%	
Ba	rrier Heiaht:	0.0 feet			Me	dium Ti	ucks: 8	34.8%	4.9%	10.3%	1.84%
Barrier Type (0-V		0.0			н	eavy Ti	ucks: 8	36.5%	2.7%	10.8%	0.74%
Centerline D	. ,	64.0 feet		-	loise So			1			
Centerline Dist.	to Observer:	64.0 feet		~	voise so	Auto:			eet)		
Barrier Distance	to Observer:	0.0 feet			Medium						
Observer Height	(Above Pad):	5.0 feet							Grade Adj	ustmont	
- P	ad Elevation:	0.0 feet			neavy	Truck	s. o.u	00	Graue Auj	usunen	. 0.0
Ro	ad Elevation:	0.0 feet		L	.ane Equ	ivalent	Distanc	e (in	feet)		
	Road Grade:	0.0%				Autos	s: 57.2	71			
	Left View:	-90.0 degre	es		Medium	Truck	s: 57.1	17			
	Right View:	90.0 degre	es		Heavy	Truck	s: 57.1	32			
FHWA Noise Mod	el Calculation	IS									
VehicleType	REMEL	Traffic Flow	Distar	nce	Finite F	Road	Fresne	e/	Barrier Atte	en Ber	m Atten
Autos:	71.78	-0.49		-0.66	;	0.00	-	4.70	0.0	00	0.00
Medium Trucks:	82.40	-17.73		-0.65	i	0.00	-	4.88	0.0	00	0.00
Heavy Trucks:	86.40	-21.69		-0.65		0.00	-	5.31	0.0	00	0.00
Unmitigated Nois											
VehicleType	Leq Peak Ho			eq Ev	ening	Leq	Night		Ldn		NEL
Autos:			68.7		67.0		60.9		69.5		70.
Medium Trucks:	-		62.5		56.2		54.6		63.1		63.3
Heavy Trucks:			62.6		53.6		54.9		63.2		63.3
Vehicle Noise:			70.4		67.5		62.6		71.2		71.6
Centerline Distan	ce to Noise C	ontour (in feet)								
			L	70 d			dBA	6	60 dBA		dBA
			Ldn:	84	1	20	65		838	2,	652
		-	NEL:	94		-	96		936	-	959

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FH	WA-RD-77-108 HIC	GHWAY	NOISE PR	EDICTION	MODEL			
Scenario: EAPC Road Name: Portola Av			1		me: Deser ber: 11826			
Road Segment: s/o Countr	y Club Dr.							
SITE SPECIFIC II	NPUT DATA						s	
Highway Data			Site Cond	litions (Ha	ard = 10, S	oft = 15)		
Average Daily Traffic (Adt):	22,700 vehicles				Autos.	10		
Peak Hour Percentage:	10%				s (2 Axles).			
Peak Hour Volume:	2,270 vehicles		Hea	vy Trucks	(3+ Axles)	: 10		
Vehicle Speed:	50 mph		Vehicle M	lix				
Near/Far Lane Distance:	58 feet		Vehic	cleType	Day	Evening	Night	Daily
Site Data				Auto	os: 77.5%	6 12.9%	9.6%	97.42%
Barrier Height:	0.0 feet		Me	dium Truci	ks: 84.8%	6 4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm):	0.0		H	eavy Truci	ks: 86.5%	6 2.7%	10.8%	0.74%
Centerline Dist. to Barrier:	64.0 feet		Noiso So	urco Elov	ations (in f	iont)		
Centerline Dist. to Observer:	64.0 feet		10136 301	Autos:	0.000	eei)		
Barrier Distance to Observer:	0.0 feet		Modium	Trucks:	2.297			
Observer Height (Above Pad):	5.0 feet			Trucks:	8.006	Grade Ad	iustment:	0.0
Pad Elevation:	0.0 feet							
Road Elevation:	0.0 feet		Lane Equ		stance (in	feet)		
Road Grade:	0.0%			Autos:	57.271			
Left View:	-90.0 degrees			Trucks:	57.117			
Right View:	90.0 degrees		neavy	/ Trucks:	57.132			
FHWA Noise Model Calculation			T		T			
VehicleType REMEL		Distance	Finite F		Fresnel	Barrier Att		m Atten
Autos: 70.20 Medium Trucks: 81.00		-0.6		0.00	-4.70 -4.88	0.0	000	0.00
Heavy Trucks: 81.00 Heavy Trucks: 85.38		-0.6		0.00	-4.88 -5.31		000	0.00
				0.00	-5.37	0.0	000	0.00
Unmitigated Noise Levels (with VehicleType Leg Peak Ho		-	<u> </u>	Log Nie	ht	l dn	0	VEL
,, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	ur Leq Day 0.7 68.8		Evening 67.0	Leq Nig	61.0	69.6		70.2
	1.3 62.8	-	56.4		54.9	63.3		63.5
	1.7 63.3	-	54.2		55.5	63.8	-	64.0
		•	67.6		62.8	71.4	-	71.
Vehicle Noise: 72	2.4 70.6	0	07.0					
Vehicle Noise: 72 Centerline Distance to Noise C		0	01.0					
		-	dBA	65 dB/	4	60 dBA	55	dBA
		70		65 dB/ 277	4	60 dBA 876		dBA 769

F	HWA-RD-77-108	B HIGHWA	Y NOISE PR	REDICTION	MODEL			
Scenario: EAPC				Project Na	me: Deser	t Wave		
Road Name: Cook St.				Job Num	ber: 11826			
Road Segment: n/o I-10	VB Ramps							
SITE SPECIFIC	INPUT DATA				SE MODE		S	
Highway Data			Site Con	ditions (Ha	ard = 10, S	oft = 15)		
Average Daily Traffic (Adt)	13,900 vehicle	s			Autos:	10		
Peak Hour Percentage	10%		Me	dium Truck	s (2 Axles).	10		
Peak Hour Volume	1,390 vehicle	s	He	avy Trucks	(3+ Axles).	10		
Vehicle Speed			Vehicle	Mix				
Near/Far Lane Distance	78 feet		-	icleType	Day	Evening	Night	Daily
Site Data				Auto		•		97.42
Barrier Height	0.0 feet		Me	edium Truck	ks: 84.8%	4.9%	10.3%	
Barrier Type (0-Wall, 1-Berm)			ŀ	leavy Truck	ks: 86.5%	6 2.7%	10.8%	0.74
Centerline Dist. to Barrier								
Centerline Dist. to Observer			Noise So	ource Eleva		eet)		
Barrier Distance to Observer				Autos:	0.000			
Observer Height (Above Pad)				m Trucks:	2.297			
Pad Elevation			Heav	y Trucks:	8.006	Grade Ad	justment.	0.0
Road Elevation			Lane Ea	uivalent Di	stance (in	feet)		
Road Grade	0.0 1001			Autos:	65.422			
Left View		es	Mediu	m Trucks:	65.286			
Right View			Heav	y Trucks:	65.300			
FHWA Noise Model Calculati	ons							
VehicleType REMEL	Traffic Flow	Distanc	e Finite	Road I	Fresnel	Barrier At	en Ber	m Atter
Autos: 70.2	-0.98	-	1.24	0.00	-4.73	0.0	000	0.00
Medium Trucks: 81.0	0 -18.22	-	1.23	0.00	-4.88	0.0	000	0.00
Heavy Trucks: 85.3	-22.17	-	1.23	0.00	-5.25	0.0	000	0.00
Unmitigated Noise Levels (w			,		1			
VehicleType Leq Peak F			q Evening	Leq Nig		Ldn		VEL
	68.0	66.1	64.3		58.3	66.		67
	61.6	60.0	53.7		52.1	60.	-	60
	62.0	60.6	51.5		52.8	61.		61
	69.7	67.9	64.9		60.1	68.	7	69
Centerline Distance to Noise	Contour (in fee	,	70 - 10 4	05.10		00-104		-10.4
			70 dBA	65 dB/	4	60 dBA		dBA
	~	Ldn:	56	176		557		762
		NEL:	62	196		621		962

Monday, February 25, 2019

	FH\	VA-RD-77-108	HIGHW	AY N	OISE PF	EDICTIO	ON MO	DEL			
Road Nan	rio: EAPC ne: Cook St. nt: s/o I-10 EB	Ramps				Project I Job Nu			Wave		
	SPECIFIC IN	IPUT DATA								S	
Highway Data				S	Site Con	ditions (,		
,	, ,	36,800 vehicles	5					Autos:			
	Percentage:	10%				dium Tru					
	lour Volume:	3,680 vehicles	5		Hea	avy Truci	(S (3+ /	Axles):	10		
	hicle Speed:	50 mph		v	/ehicle I	Лix					
Near/Far La	ne Distance:	78 feet		F	Vehi	cleType		Day	Evening	Night	Daily
Site Data							utos:	77.5%	•	9.6%	
Ba	rrier Heiaht:	0.0 feet			Me	dium Tru	icks:	84.8%	4.9%	10.39	6 1.84%
Barrier Type (0-V	Vall, 1-Berm):	0.0			H	leavy Tru	icks:	86.5%	2.7%	10.89	6 0.74%
	ist. to Barrier:	76.0 feet		٨	Voise So	urce Ele	vation	s (in fe	eet)		
Centerline Dist.	to Observer:	76.0 feet				Autos		200	,		
Barrier Distance	to Observer:	0.0 feet			Mediur	n Trucks	2	297			
Observer Height	(Above Pad):	5.0 feet				v Trucks		006	Grade Ad	ustmer	nt: 0.0
P	ad Elevation:	0.0 feet					-		,		
Ro	ad Elevation:	0.0 feet		L	.ane Equ	livalent			feet)		
	Road Grade:	0.0%				Autos		422			
	Left View:	-90.0 degree	S			n Trucks		286			
	Right View:	90.0 degree	'S		Heav	y Trucks	65.	300			
FHWA Noise Mod		-									
VehicleType	REMEL	Traffic Flow	Dista		Finite		Fresr		Barrier Atte		erm Atten
Autos:	70.20	3.25		-1.24		0.00		-4.73	0.0		0.000
Medium Trucks:		-13.99		-1.23		0.00		-4.88	0.0		0.00
Heavy Trucks:		-17.94		-1.23	-	0.00		-5.25	0.0	00	0.000
Unmitigated Nois			-								
VehicleType	Leq Peak Hou			eq Ev	ening	Leq N	·		Ldn		CNEL
Autos:			70.3		68.6		62.5		71.1		71.
Medium Trucks:			64.3		57.9		56.4		64.8		65.
Heavy Trucks:			64.8		55.7		57.0		65.4		65.
Vehicle Noise:	73	.9	72.2		69.1		64.3	3	72.9)	73.3
Centerline Distan	ce to Noise Co	ontour (in feet,									
				70 d	IBA	65 d			60 dBA		5 dBA
			Ldn: IFI :	14 16	-	46 52	-		1,475 1.643		4,666 5.196

FHWA-F	RD-77-108 HIGH	WAY N	IOISE PRI	EDICTIO	N MODE	:L		
Scenario: EAPC Road Name: Cook St. Road Segment: s/o Gerald Ford	Dr.		I	Project Na Job Nun		sert Wave 826		
SITE SPECIFIC INPU	T DATA			NO	ISE MC	DEL INPU	TS	
Highway Data		4	Site Cond	litions (H	ard = 10), Soft = 15)		
Average Daily Traffic (Adt): 28,3	70 vehicles				Au	tos: 10		
Peak Hour Percentage:	10%		Med	ium Trucł	s (2 Axl	es): 10		
Peak Hour Volume: 2,83	37 vehicles		Hea	vy Trucks	: (3+ Axl	es): 10		
Vehicle Speed:	50 mph	H	Vehicle M	liv				
Near/Far Lane Distance:	78 feet	-		leType	Da	ay Evenin	q Niqi	nt Daily
Site Data			101110	Aut		5% 12.9		5% 97.42%
Barrier Height:	0.0 feet		Med	dium Truc	ks: 84	.8% 4.9	6 10.3	
	0.0		He	eavy Truc	ks: 86	.5% 2.79	6 10.	3% 0.74%
	6.0 feet	E.		,				
	6.0 feet	1	Noise Sou			,		
	0.0 feet			Autos:	0.00			
Observer Height (Above Pad):	5.0 feet			Trucks:	2.29		A	
Pad Elevation:	0.0 feet		Heavy	Trucks:	8.00	Grade /	Adjustm	ent: 0.0
Road Elevation:	0.0 feet	1	Lane Equ	ivalent D	istance	(in feet)		
Road Grade:	0.0%			Autos:	65.42	2		
Left View: -9	0.0 degrees		Medium	Trucks:	65.28	6		
Right View: 9	0.0 degrees		Heavy	Trucks:	65.30	0		
FHWA Noise Model Calculations								
,,	fic Flow Dis	tance	Finite F	Road	Fresnel		Atten	Berm Atten
Autos: 70.20	2.12	-1.24		0.00			0.000	0.00
Medium Trucks: 81.00	-15.12	-1.23	-	0.00			0.000	0.00
Heavy Trucks: 85.38	-19.07	-1.23	3	0.00	-5	.25	0.000	0.00
Unmitigated Noise Levels (without	Topo and barrie	er atten	uation)					
VehicleType Leq Peak Hour	Leq Day	Leq E	0	Leq Ni	/	Ldn		CNEL
Autos: 71.1	69.2		67.4		61.4		0.0	70.
Medium Trucks: 64.7	63.1		56.8		55.2		3.7	63.
Heavy Trucks: 65.1	63.7		54.6		55.9		4.2	64.
Vehicle Noise: 72.8	71.0		68.0		63.2	7	1.8	72.:
Centerline Distance to Noise Conto	ur (in feet)	-						-
		70 c	dBA	65 dB	A	60 dBA		55 dBA
	L							
	Ldn: CNFL :	11		360 401		1,137 1.267		3,597 4.005

	FHW	/A-RD-77-108	HIGHW	AY NO	DISE PR	EDICTIO	N MOD	EL			
Scenario: EA Road Name: Co						Project N Job Nur			Wave		
Road Segment: s/o	Frank S	inatra Dr.									
SITE SPEC	IFIC IN	PUT DATA				NO	ISE M	ODEI		s	
Highway Data				S	ite Cond	ditions (H	lard = 1	0, So	ft = 15)		
Average Daily Traffic	(Adt): 2	7,500 vehicle	S				A	utos:	10		
Peak Hour Perce	ntage:	10%			Med	lium Truc	ks (2 Ax	des):	10		
Peak Hour Vo	olume:	2,750 vehicle	S		Hea	vy Truck	s (3+ A)	des):	10		
Vehicle S	Speed:	50 mph		V	ehicle N	lix					
Near/Far Lane Dis	tance:	78 feet		-		cleType	L)av	Evening	Night	Daily
Site Data						Au	tos: 7	7.5%	12.9%	9.6%	97.42%
Barrier H	leiaht [.]	0.0 feet			Me	dium Truc	cks: 8	4.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-L		0.0			н	leavy Tru	cks: 8	6.5%	2.7%	10.8%	0.74%
Centerline Dist. to E	Barrier:	76.0 feet		N	oise So	urce Elev	ations	(in fe	et)		
Centerline Dist. to Obs		76.0 feet				Autos:	0.00				
Barrier Distance to Obs		0.0 feet			Medium	Trucks:	2.29	97			
Observer Height (Above		5.0 feet			Heav	/ Trucks:	8.00	06	Grade Ad	iustmen	t: 0.0
Pad Eler		0.0 feet									
Road Elev		0.0 feet		L	ane Equ	ivalent D			eet)		
Road (0.0%				Autos:	65.42				
	t View:	-90.0 degree				1 Trucks:	65.28				
Right	t View:	90.0 degree	es		neavy	/ Trucks:	65.30	JU			
FHWA Noise Model Cald		-									
	MEL	Traffic Flow	Dista		Finite F		Fresne		Barrier Atte		rm Atten
Autos:	70.20	1.98		-1.24		0.00		4.73	0.0		0.00
Medium Trucks:	81.00 85.38	-15.25 -19.21		-1.23		0.00		4.88 5.25		000	0.000
Heavy Trucks:						0.00	~	0.20	0.0	000	0.000
Unmitigated Noise Leve VehicleType Leg P					<u> </u>	1 10	what a		L ala		NEL
Autos:	Peak Hou 71.		69.1	eq Eve	67.3	Leq Ni	61.2		Ldn 69.9	-	70.5
Medium Trucks:	64.	-	63.0		56.7		55.1		63.6		63.8
Heavy Trucks:		-	63.5		54.5		55.7		64.1		64.2
	64.				÷ 1.0		2.5.1				
Vehicle Noise:	64. 72.	-	70.9		67.9		63.1		71.6	6	72.
	72.	6			67.9		63.1		71.6	6	72.
Vehicle Noise:	72.	6		70 dł		65 dE		6	71.6 0 dBA		72. dBA
Vehicle Noise:	72.	6 Intour (in feet		70 dl	BA	65 dE 349	BA			55	72. dBA ,487

FH	WA-RD-77-108	HIGHWA	Y NOIS	E PREDICTIO		DEL			
Scenario: EAPC				Project I	lame: [Desert	Wave		
Road Name: Cook St.				Job Nu	mber: 1	1826			
Road Segment: n/o Count	y Club Dr.								
SITE SPECIFIC I	NPUT DATA						L INPUT	s	
Highway Data			Site	Conditions (Hard =	10, Sc	oft = 15)		
Average Daily Traffic (Adt):	30,300 vehicles					Autos:	10		
Peak Hour Percentage:	10%			Medium Tru	cks (2 A	xles):	10		
Peak Hour Volume:	3,030 vehicles			Heavy Truck	(3+ A	xles):	10		
Vehicle Speed:	50 mph		Vohi	le Mix					
Near/Far Lane Distance:	78 feet			VehicleTvpe		Dav	Evening	Night	Dailv
Site Data				,		77.5%	•	9.6%	
			-	Medium Tru		84.8%		10.3%	
Barrier Height:	0.0 feet		1	Heavy Tru		86.5%		10.3%	
Barrier Type (0-Wall, 1-Berm):	0.0			neavy nu	ichs. 1	50.576	2.170	10.0 %	0.747
Centerline Dist. to Barrier:	76.0 feet		Nois	e Source Ele	vations	s (in fe	eet)		
Centerline Dist. to Observer:	76.0 feet			Autos.	0.0	000			
Barrier Distance to Observer:	0.0 feet		Me	dium Trucks.	2.2	97			
Observer Height (Above Pad):	5.0 feet		F	leavy Trucks.	8.0	006	Grade Ad	justment.	0.0
Pad Elevation:	0.0 feet		-						
Road Elevation:	0.0 feet		Lane	Equivalent			eet)		
Road Grade:	0.0%			Autos.					
Left View:	-90.0 degree	3		dium Trucks.					
Right View:	90.0 degree	3	F	leavy Trucks.	65.3	300			
FHWA Noise Model Calculatio	าร								
VehicleType REMEL	Traffic Flow	Distan	ce Fi	nite Road	Fresn	el	Barrier Att	en Ber	m Atten
Autos: 70.20	2.41	-	1.24	0.00		-4.73	0.0	000	0.00
Medium Trucks: 81.00			1.23	0.00		-4.88	0.0	000	0.00
Heavy Trucks: 85.38	-18.79	-	1.23	0.00		-5.25	0.0	000	0.00
Unmitigated Noise Levels (wit		1							
VehicleType Leq Peak Ho			q Evenir				Ldn		VEL
		9.5		7.7	61.7		70.3		70.
		3.4		7.1	55.5		64.0		64.
		3.9		4.9	56.2		64.5		64.
Vehicle Noise: 7	3.1 7	1.3	e	8.3	63.5		72.0)	72.
Centerline Distance to Noise C	contour (in feet)						_		
			70 dBA	65 d			i0 dBA		dBA
	L	dn:	121	38	4		1,215	3,	842
		EL:	135	42			1,353		278

Monday, February 25, 2019

		NA-RD-77-108 H	IGHW/		JISE PR						
	io: EAPC						Name: [
	ne: Cook St.					Job Ni	umber: 1	11826			
Road Segme	nt: s/o Country	/ Club Dr.									
	SPECIFIC IN	IPUT DATA								5	
Highway Data				S	ite Con	ditions			oft = 15)		
• •	, ,	31,600 vehicles					-	Autos:			
	Percentage:	10%					icks (2 A	/			
	lour Volume:	3,160 vehicles			Hea	avy Truc	ks (3+ A	xles):	10		
	hicle Speed:	50 mph		V	ehicle I	Mix					
Near/Far La	ne Distance:	78 feet		-	Vehi	cleType		Day	Evening	Night	Daily
Site Data						A	utos:	77.5%	5 12.9%	9.6%	
Ba	rrier Heiaht:	0.0 feet			Me	edium Tr	ucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-W		0.0			H	łeavy Tr	ucks:	86.5%	2.7%	10.8%	0.74%
Centerline Di	st. to Barrier:	76.0 feet		N	loise Se	urce El	evations	: (in f	(oot)		
Centerline Dist.	to Observer:	76.0 feet		/	0/36 30	Autos		000	eeij		
Barrier Distance	to Observer:	0.0 feet			Modiur	n Trucks		97			
Observer Height	(Above Pad):	5.0 feet				y Trucks		006	Grade Adj	istmont	. 0.0
P	ad Elevation:	0.0 feet			neav	y mucha	. 0.0	000	Orade Haji	Journeine	0.0
Ro	ad Elevation:	0.0 feet		L	ane Equ	uivalent	Distanc	e (in	feet)		
	Road Grade:	0.0%				Autos					
	Left View:	-90.0 degrees			Mediur	n Trucks	65.2	286			
	Right View:	90.0 degrees			Heav	y Trucks	65.3	300			
FHWA Noise Mod	el Calculation	s		-							
VehicleType	REMEL	Traffic Flow	Distan		Finite	Road	Fresn	-	Barrier Atte		m Atten
Autos:	70.20	2.59	-	1.24		0.00		-4.73	0.0	00	0.000
Medium Trucks:	81.00	-14.65		1.23		0.00		-4.88	0.0	00	0.000
Heavy Trucks:	85.38	-18.61	-	1.23		0.00		-5.25	0.0	00	0.000
Unmitigated Nois											
VehicleType	Leq Peak Hou			q Eve	ening	Leq I			Ldn	C	NEL
Autos:	71		9.7		67.9		61.8		70.5		71.1
Medium Trucks:	65		3.6		57.3		55.7		64.2		64.4
Heavy Trucks:	65		4.1		55.1		56.3		64.7		64.8
Vehicle Noise:	73	.3 7	1.5		68.5		63.7		72.2		72.7
Centerline Distan	ce to Noise C	ontour (in feet)									
				70 dł	BA	65 0	1BA	- (60 dBA		dBA
		L	dn:	127 141		40 44			1,267 1,411		006 461

		WA-RD-11-100		WAIN	IOISE PRE	DICTION	MODEL			
Road Nar	rio: EAPC me: Cook St. ent: s/o Hovley	Ln.				roject Nan Job Numb				
SITE	SPECIFIC IN	IPUT DATA				NOIS	E MOD	L INPUT	s	
Highway Data					Site Condi	tions (Har	d = 10, S	oft = 15)		
Average Daily	Traffic (Adt):	31,200 vehicle	s				Autos	: 10		
	Percentage:	10%			Mediu	ım Trucks	(2 Axles)	: 10		
Peak I	Hour Volume:	3,120 vehicle	s		Heav	y Trucks (3+ Axles)	: 10		
Ve	ehicle Speed:	50 mph		-	Vehicle Mi					
Near/Far La	ane Distance:	58 feet		-	Venicle will Vehicle		Day	Evening	Night	Daily
Site Data					Venici	Auto		•	· ·	97.42%
					Mod	um Truck			10.3%	
	arrier Height:	0.0 feet				avy Truck			10.3%	
Barrier Type (0-V	. ,	0.0			110	avy mucks	5. 00.07	0 2.170	10.076	0.747
	ist. to Barrier:	64.0 feet		1	Noise Sou	rce Elevai	ions (in	feet)		
Centerline Dist.		64.0 feet				Autos:	0.000			
Barrier Distance		0.0 feet			Medium	Trucks:	2.297			
Observer Height	, ,	5.0 feet			Heavy	Trucks:	8.006	Grade Ad	justment	: 0.0
	Pad Elevation:	0.0 feet		-	Lane Equiv	alont Die	tanco (in	foot)		
RC	ad Elevation:	0.0 feet		E State	Lane Lyun	Autos:	57.271	leel)		
	Road Grade:	0.0%			Medium		57.117			
	Left View:	-90.0 degre			Heavy		57.132			
	Right View:	90.0 degre	es		neavy	TTUCKS.	57.152			
FHWA Noise Mod	lel Calculation	s								
FHWA Noise Moo VehicleType	lel Calculation REMEL	s Traffic Flow	Dist	tance	Finite R	ad F	resnel	Barrier Att	en Bei	m Atten
	REMEL	-	Dist	<i>tance</i> -0.6		oad Fi 0.00	resnel -4.70		en Bei 000	
VehicleType	REMEL 70.20	Traffic Flow	Dist		6			0.0		0.00
VehicleType Autos	REMEL 70.20 81.00	Traffic Flow 2.53	Dist	-0.6	6 5	0.00	-4.70	0.0	000	0.000
VehicleType Autos Medium Trucks	REMEL 70.20 81.00 85.38	Traffic Flow 2.53 -14.71 -18.66		-0.6 -0.6 -0.6	6 5 5	0.00 0.00	-4.70 -4.88	0.0	000	0.000
VehicleType Autos. Medium Trucks. Heavy Trucks.	REMEL 70.20 81.00 85.38	Traffic Flow 2.53 -14.71 -18.66 out Topo and	barrie	-0.66 -0.68 -0.68	6 5 5	0.00 0.00	-4.70 -4.88 -5.31	0.0	000 000 000	0.000
VehicleType Autos. Medium Trucks. Heavy Trucks. Unmitigated Nois	REMEL 70.20 81.00 85.38 Se Levels (with Leq Peak Hou	Traffic Flow 2.53 -14.71 -18.66 out Topo and Ir Leq Day	barrie	-0.66 -0.68 -0.68	6 5 5 nuation)	0.00 0.00 0.00 <i>Leq Nigh</i>	-4.70 -4.88 -5.31	0.0 0.0 0.0	000 000 000	0.000 0.000 0.000
VehicleType Autos. Medium Trucks. Heavy Trucks. Unmitigated Nois VehicleType	REMEL 70.20 81.00 85.38 e Levels (with Leq Peak Hou 72	Traffic Flow 2.53 -14.71 -18.66 out Topo and Ir Leq Day .1	barrie	-0.66 -0.68 -0.68	6 5 5 nuation) ivening	0.00 0.00 0.00 <i>Leq Nigh</i>	-4.70 -4.88 -5.31	0.0 0.0 0.0	000 000 000 C	0.000 0.000 0.000 NEL 71.6
VehicleType Autos. Medium Trucks. Heavy Trucks. Unmitigated Nois VehicleType Autos.	REMEL 70.20 81.00 85.38 e Levels (with Leq Peak Hou 72 65	Traffic Flow 2.53 -14.71 -18.66 out Topo and r Leq Day .1 .6	<i>barrie</i> / 70.2	-0.66 -0.68 -0.68	6 5 5 <i>nuation)</i> <i>ivening</i> 68.4	0.00 0.00 0.00 Leq Nigh	-4.70 -4.88 -5.31 t 62.4	0.0 0.0 0.0 <i>Ldn</i> 71.0	000 000 000 000 C 0 7	0.000 0.000 0.000 NEL 71.6 64.9
VehicleType Autos. Medium Trucks. Heavy Trucks. Unmitigated Nois VehicleType Autos. Medium Trucks.	REMEL 70.20 81.00 85.38 e Levels (with Leq Peak Hou 72 65 66	Traffic Flow 2.53 -14.71 -18.66 out Topo and ur Leq Day .1 .6 .1	<i>barrie</i> / 70.2 64.1	-0.66 -0.68 -0.68	6 5 5 5 5 5 7 7 7 8 8 8 4 5 7.8	0.00 0.00 0.00 Leq Nigh	-4.70 -4.88 -5.31 t 62.4 56.2	0.0 0.0 0.0 <i>Ldn</i> 71.0 64.7	000 000 000 000 C 0 7 2	0.000 0.000 0.000 NEL 71.6 64.5 65.3
VehicleType Autos Medium Trucks Heavy Trucks Unmitigated Nois VehicleType Autos Medium Trucks Heavy Trucks	REMEL 70.20 81.00 85.38 ce Levels (with Leg Peak Hot 72 65 66 73	Traffic Flow 2.53 -14.71 -18.66 Out Topo and ur Leq Day .1 .6 .1 .8	<i>barrie</i> 70.2 64.1 64.6 72.0	-0.66 -0.68 -0.68	6 5 5 vening 68.4 57.8 55.6	0.00 0.00 0.00 Leq Nigh	-4.70 -4.88 -5.31 t 62.4 56.2 56.9	0.0 0.0 0.0 <i>Ldn</i> 71.0 64.7 65.2	000 000 000 000 C 0 7 2	0.000 0.000 0.000 NEL 71.6 64.5 65.3
VehicleType Autos. Medium Trucks. Heavy Trucks. Unmitigated Nois VehicleType Autos. Medium Trucks. Heavy Trucks. Vehicle Noise.	REMEL 70.20 81.00 85.38 ce Levels (with Leg Peak Hot 72 65 66 73	Traffic Flow 2.53 -14.71 -18.66 Out Topo and ur Leq Day .1 .6 .1 .8	<i>barrie</i> 70.2 64.1 64.6 72.0	-0.6/ -0.6 -0.6 -0.6 r atten Leg E	6 5 5 vening 68.4 57.8 55.6	0.00 0.00 0.00 Leq Nigh	-4.70 -4.88 -5.31 t 52.4 56.2 56.9 54.2	0.0 0.0 0.0 <i>Ldn</i> 71.0 64.7 65.2	000 000 000 000 7 2 7	0.000 0.000 0.000 NEL 71.6 64.9 65.3
VehicleType Autos. Medium Trucks. Heavy Trucks. Unmitigated Nois VehicleType Autos. Medium Trucks. Heavy Trucks. Vehicle Noise.	REMEL 70.20 81.00 85.38 ce Levels (with Leg Peak Hot 72 65 66 73	Traffic Flow 2.53 -14.71 -18.66 out Topo and r Leq Day .1 .6 .1 .8 ontour (in feet)	<i>barrie</i> 70.2 64.1 64.6 72.0	-0.66 -0.63 -0.63 er atten Leq En 70 c	6 5 5 <i>vening</i> 68.4 57.8 55.6 69.0	0.00 0.00 0.00	-4.70 -4.88 -5.31 t 52.4 56.2 56.9 54.2	0.0 0.0 0.0 0.0 71.0 64.7 65.2 72.7	000 000 000 7 2 7 55	0.000 0.000 0.000 NEL 71.6 64.5 65.3 73.2

Monday, February 25, 2019

	FH\	WA-RD-77-108	HIGHW	AY NO	DISE PR	EDICTIO	N MOE	DEL			
Scenario Road Name Road Segmen	e: El Dorado I					Project Na Job Nurr			Wave		
SITE S	PECIFIC IN	IPUT DATA				NO	ISE N	ODE		s	
Highway Data				S	ite Cond	litions (H	ard =	10, So	ft = 15)		
	, ,	4,800 vehicles 10% 480 vehicles 50 mph			Hea	lium Truck vy Trucks	(2 A	/	10 10 10		
Near/Far Lan		58 feet		V	ehicle M						
	e Distance.	50 1001			Vehic	cleType		Day	Evening	Night	Daily
Site Data Barrier Type (0-Wa	r ier Height: all, 1-Berm):	0.0 feet 0.0				Aut dium Truc eavy Truc	ks: 8	77.5% 34.8% 36.5%	12.9% 4.9% 2.7%	9.6% 10.3% 10.8%	1.84%
Centerline Dis	t. to Barrier:	64.0 feet		N	oise So	urce Elev	ations	in fe	et)		
	o Observer:	64.0 feet 0.0 feet 5.0 feet 0.0 feet 0.0 feet		L	Heavy	Autos: Trucks: Trucks: Trucks:	0.0 2.2 8.0 istanc	97 06	Grade Adj	iustment	± 0.0
	oad Grade:	0.0%				Autos:	57.2				
	Left View: Right View:	-90.0 degree 90.0 degree				n Trucks: / Trucks:	57.1 57.1				
FHWA Noise Mode	I Calculation	s		_							
VehicleType	REMEL	Traffic Flow	Distan	се	Finite F	Road	Fresn	e/	Barrier Atte	en Bei	rm Atten
Autos:	70.20	-5.60		-0.66		0.00		4.70	0.0		0.00
Medium Trucks:	81.00	-22.83		-0.65		0.00		4.88	0.0		0.00
Heavy Trucks:	85.38	-26.79		-0.65		0.00	-	5.31	0.0	00	0.00
Unmitigated Noise	Levels (with	out Topo and	barrier a	ttenu	ation)						
	Leq Peak Hou			eq Eve	ening	Leq Nig			Ldn		NEL
Autos:	63		62.1		60.3		54.2		62.9		63.
Medium Trucks:	57		56.0		49.6		48.1		56.6		56.
Heavy Trucks:	57	-	56.5		47.5		48.7		57.1		57.3
Vehicle Noise:	65	5.6	63.9		60.8		56.1		64.6	6	65.
Centerline Distance	e to Noise Co	ontour (in feet)								
				70 dl		65 dB	A	6	0 dBA		dBA
			Ldn:	19 21		59			185		586 552
			JEL			65			206		

	FHV	VA-RD-77-108	HIGHW	AY N	OISE PR	EDICT	ION MODE	L		
Scenario Road Name Road Segment	El Dorado D						Name: Des umber: 118			
SITE S	PECIFIC IN	PUT DATA						DEL INPUT	s	
Highway Data				S	Site Cond	ditions	(Hard = 10,	Soft = 15)		
Average Daily T	raffic (Adt):	5,900 vehicles					Aut	os: 10		
Peak Hour F	Percentage:	10%			Med	lium Tri	ucks (2 Axle	s): 10		
Peak Ho	ur Volume:	590 vehicles			Hea	avy Tru	cks (3+ Axle	s): 10		
Veh	icle Speed:	50 mph		V	ehicle N	liv				
Near/Far Lan	e Distance:	58 feet		-		cleType	Da	v Evening	Night	Daily
Site Data					VCIIIC		Autos: 77.		9.6%	,
		0.0 feet			Me	dium T			10.3%	
Barrier Type (0-Wa	ier Height:	0.0 reet			Н	leavv T	ucks: 86.	5% 2.7%	10.8%	
Centerline Dist		0.0 64.0 feet								
Centerline Dist. to		64.0 feet		۸	loise So		evations (i	,		
Barrier Distance to		0.0 feet				Auto				
Observer Height (A		5.0 feet			Medium					
	d Elevation:	0.0 feet			Heavy	/ Truck	s: 8.006	Grade Ad	justment	: 0.0
	d Elevation:	0.0 feet		L	ane Equ	ivalen	Distance (in feet)		
R	oad Grade:	0.0%				Auto	s: 57.271	-		
	Left View:	-90.0 degree	s		Medium	n Truck	s: 57.117			
	Right View:	90.0 degree			Heavy	/ Truck	s: 57.132			
FHWA Noise Model	Calculation	5								
VehicleType	REMEL	Traffic Flow	Distar	nce	Finite I	Road	Fresnel	Barrier Att	en Bei	m Atten
Autos:	70.20	-4.70		-0.66		0.00	-4.	70 0.0	000	0.00
Medium Trucks:	81.00	-21.94		-0.65		0.00	-4.	38 0.0	000	0.00
Heavy Trucks:	85.38	-25.89		-0.65		0.00	-5.	31 0.0	000	0.00
Unmitigated Noise	Levels (with	out Topo and I	barrier a	attenu	uation)					
	eq Peak Hou			eq Ev	ening	Leq	Night	Ldn		NEL
Autos:	64.		62.9		61.2		55.1	63.		64.
Medium Trucks:	58.		6.9		50.5		49.0	57.5	-	57.
Heavy Trucks:	58.		57.4		48.4		49.6	58.0	-	58.
Vehicle Noise:	66		64.8		61.7		57.0	65.5	5	66.
Centerline Distance	e to Noise Co	ontour (in feet)	-	=0.1	-					10.4
			-	70 d			dBA	60 dBA		dBA
			.dn: IFI :	23 25			2	228 253		20
										301

Monday, February 25, 2019

Scenario:	FAPC					Project	Name: Dese	ert Wave	
Road Name:		ow Dr.					umber: 1182		
Road Segment:	n/o Country	Club Dr.							
SITE SF	ECIFIC IN	PUT DATA				N	IOISE MOD	EL INPUTS	
Highway Data					Site Con	ditions	(Hard = 10, \$	Soft = 15)	
Average Daily Tr	affic (Adt):	9,800 vehicles	5				Auto	s: 10	
Peak Hour Pe	ercentage:	10%			Me	dium Tri	ucks (2 Axles): 10	
Peak Hou	r Volume:	980 vehicles	5		He	avy Truc	cks (3+ Axles): 10	
Vehic	le Speed:	55 mph		-	Vehicle I	Niv			
Near/Far Lane	Distance:	12 feet		-		icleType	Dav	Evening N	light Daily
Site Data					10.11		Autos: 77.5	•	9.6% 97.42%
Parrie	er Height:	0.0 feet			Me	dium Ti	rucks: 84.8	% 4.9%	0.3% 1.84%
Barrier Type (0-Wall		0.0			F	leavy Ti	rucks: 86.5	% 2.7% [·]	0.74%
Centerline Dist.	. ,	30.0 feet		-		-			
Centerline Dist. to	Observer:	30.0 feet		2	Noise Sc		levations (in	teet)	
Barrier Distance to	Observer:	0.0 feet				Auto			
Observer Height (At	ove Pad):	5.0 feet				n Truck		Crada Adius	tmont: 0.0
Pad	Elevation:	0.0 feet			Heav	y Truck	s: 8.006	Grade Adjus	unent. 0.0
Road	Elevation:	0.0 feet			Lane Eq	uivalen	t Distance (ii	n feet)	
Ro	ad Grade:	0.0%		Γ		Auto	s: 29.816		
	Left View:	-90.0 degree	es		Mediur	n Truck	s: 29.518		
R	light View:	90.0 degree	es		Heav	y Truck	s: 29.547		
FHWA Noise Model	Calculation	s							
VehicleType	REMEL	Traffic Flow	Dist	tance	Finite	Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-2.91		2.1	8	0.00	-4.49	9 0.000	0.000
Medium Trucks:	82.40	-20.15		2.2	2	0.00	-4.80	6 0.000	0.000
Heavy Trucks:	86.40	-24.10		2.2	2	0.00	-5.77	7 0.000	0.000
Unmitigated Noise L	evels (with	out Topo and	barrie	r atten	uation)				
VehicleType Le	eq Peak Hou	r Leq Day	r	Leq E	vening	Leq	Night	Ldn	CNEL
Autos:	71.	.0	69.1		67.4		61.3	69.9	70.6
Medium Trucks:	64.	5	63.0		56.6		55.1	63.5	63.8
Heavy Trucks:	64.	5	63.1		54.1		55.3	63.7	63.8
Vehicle Noise:	72	.6	70.9		67.9		63.0	71.6	72.7
Centerline Distance	to Noise Co	ontour (in feet)						
					dBA		dBA	60 dBA	55 dBA
			Ldn: VFL:		3 8		37 53	434 484	1,371 1.530

	FH\	WA-RD-77-108	HIGHWA	Y NC	DISE PRE	DICTION	MODEL			
Road Nan	io: EAPC ne: Oasis Club nt: s/o Country					roject Nar Job Numb				
SITE	SPECIFIC IN	IPUT DATA						EL INPUTS	S	
Highway Data				Si	ite Condit	tions (Ha	rd = 10, S	oft = 15)		
Average Daily	Traffic (Adt):	7,000 vehicles					Autos	: 10		
Peak Hour	Percentage:	10%			Mediu	m Trucks	(2 Axles)	: 10		
Peak H	lour Volume:	700 vehicles			Heav	/ Trucks (3+ Axles)	: 10		
Ve	hicle Speed:	55 mph		14	ehicle Mix					
Near/Far La	ne Distance:	58 feet		Ve	Vehicle		Day	Evening	Night	Daily
Site Data				-	Venicie	Auto		•	9.6%	
				_	Modi	um Truck			9.0%	1.84%
	rrier Height:	0.0 feet				avy Truck			10.3%	0.74%
Barrier Type (0-V	. ,	0.0			пеа	avy muck	5. 00.07	/o 2.170	10.0%	0.74%
Centerline Di		64.0 feet		N	oise Sour	rce Eleva	tions (in	feet)		
Centerline Dist.		64.0 feet				Autos:	0.000			
Barrier Distance		0.0 feet			Medium 1	Trucks:	2.297			
Observer Height	· ,	5.0 feet			Heavy	Trucks:	8.006	Grade Adj	iustment:	0.0
	ad Elevation:	0.0 feet			ane Equiv	alant Dia	tonoo (in	fact)		
	ad Elevation:	0.0 feet		Le				leel)		
	Road Grade:	0.0%				Autos:	57.271			
	Left View:	-90.0 degree			Medium		57.117			
	Right View:	90.0 degree	S		Heavy	rucks:	57.132			
FHWA Noise Mod	el Calculation	s								
VehicleType	REMEL	Traffic Flow	Distand	ce	Finite Ro	ad F	resnel	Barrier Att	en Ber	m Atten
Autos:	71.78	-4.37	-	0.66						0.000
Autos:	/1./0	1.01		0.00		0.00	-4.70	0.0	000	0.000
Medium Trucks:	82.40		-	0.65		0.00 0.00	-4.70 -4.88			
								0.0	000	0.000
Medium Trucks: Heavy Trucks:	82.40 86.40	-21.61 -25.57	-	0.65 0.65		0.00	-4.88	0.0	000	0.000
Medium Trucks: Heavy Trucks:	82.40 86.40	-21.61 -25.57 out Topo and I	- barrier at	0.65 0.65 ttenu		0.00	-4.88 -5.31	0.0	000	0.000
Medium Trucks: Heavy Trucks: Unmitigated Nois	82.40 86.40 e Levels (with	-21.61 -25.57 out Topo and I r Leq Day	- barrier at	0.65 0.65 ttenu	ation)	0.00 0.00 Leq Nigł	-4.88 -5.31	0.0	000 000 <i>CI</i>	0.000 0.000
Medium Trucks: Heavy Trucks: Unmitigated Nois VehicleType	82.40 86.40 e Levels (with Leq Peak Hou	-21.61 -25.57 out Topo and I r Leq Day .8 6	- barrier at	0.65 0.65 ttenu	ation) ening	0.00 0.00 Leq Nigh	-4.88 -5.31	0.0 0.0 <i>Ldn</i>	000 000 <i>CI</i>	0.000 0.000 <u>VEL</u> 66.3
Medium Trucks: Heavy Trucks: Unmitigated Nois VehicleType Autos:	82.40 86.40 e Levels (with Leq Peak Hou 66	-21.61 -25.57 out Topo and I ir Leq Day 5.8 6 5.1 5	barrier at Leo 64.9	0.65 0.65 ttenu	ening 63.1	0.00 0.00 Leq Nigh	-4.88 -5.31 nt 57.0	0.0 0.0 <i>Ldn</i> 65.7	000 000 <i>CI</i>	0.000 0.000 <u>VEL</u> 66.3 59.4
Medium Trucks: Heavy Trucks: Unmitigated Nois VehicleType Autos: Medium Trucks:	82.40 86.40 e Levels (with Leg Peak Hou 66 60 60 60	-21.61 -25.57 out Topo and I II Leq Day .8 6 .1 5 .2 5	<i>barrier at</i> Le	0.65 0.65 ttenu	ening 63.1 52.3	0.00 0.00 Leq Nigh	-4.88 -5.31 ot 57.0 50.7	0.0 0.0 <i>Ldn</i> 65.7 59.2	000 000 <i>CI</i>	0.000 0.000 <u>VEL</u> 66.3 59.4 59.5
Medium Trucks: Heavy Trucks: Unmitigated Nois VehicleType Autos: Medium Trucks: Heavy Trucks:	82.40 86.40 e Levels (with Leg Peak Hot 66 60 60 60 68	-21.61 -25.57 out Topo and I II Leg Day .8 6 .1 5 .2 5 .3 6	5 barrier at Let 54.9 58.6 58.8 56.6	0.65 0.65 t tenu q Eve	ening 63.1 52.3 49.7 63.6	0.00 0.00 Leq Nigh	-4.88 -5.31 57.0 50.7 51.0 58.7	0.0 0.0 <u>Ldn</u> 65.7 59.2 59.3 67.3	000 000 7 2 3 3	0.000 0.000 VEL 66.3 59.4 59.4 67.8
Medium Trucks: Heavy Trucks: Unmitigated Nois VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	82.40 86.40 e Levels (with Leg Peak Hot 66 60 60 60 68	-21.61 -25.57 out Topo and I Ir Leq Day .8 6 .1 5 .2 5 .3 6 ontour (in feet)		0.65 0.65 t tenu q Eve	ening 63.1 52.3 49.7 63.6	0.00 0.00 <i>Leq Nigt</i> 65 dBA	-4.88 -5.31 57.0 50.7 51.0 58.7	0.0 0.0 <u>Ldn</u> 65.7 59.2 59.3 67.3 60 dBA	000 000 2 3 3 55	0.000 0.000 NEL 66.3 59.4 59.5 67.8 67.8
Medium Trucks: Heavy Trucks: Unmitigated Nois VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	82.40 86.40 e Levels (with Leg Peak Hot 66 60 60 60 68	-21.61 -25.57 out Topo and I ir Leq Day .8 6 .1 5 .2 5 .3 6 ontour (in feet)	5 barrier at Let 54.9 58.6 58.8 56.6	0.65 0.65 t tenu q Eve	ening 63.1 52.3 49.7 63.6	0.00 0.00 Leq Nigh	-4.88 -5.31 57.0 50.7 51.0 58.7	0.0 0.0 <u>Ldn</u> 65.7 59.2 59.3 67.3	000 000 7 2 3 3 3 55 1,(0.000 0.000 VEL 66.3 59.4 59.5 67.8

	FH\	WA-RD-77-108	HIGHWA	Y NO	ISE PRE	EDICTIO	N MOE	DEL			
Road Nam	io: EAPC ne: Country Cl nt: w/o Monter				F	Project Na Job Nurr			Wave		
SITE	SPECIFIC IN	NPUT DATA				NO	ISE N	IODE		s	
Highway Data				Si	te Cond	itions (H	ard =	10, Sc	oft = 15)		
Peak Hour	Traffic (Adt): Percentage: lour Volume:	22,700 vehicles 10% 2,270 vehicles				ium Trucł vy Trucks	ks (2 A	/	10 10 10		
Ve	hicle Speed:	50 mph		Ve	ehicle M	iv					
Near/Far La	ne Distance:	66 feet		ve		leType		Dav	Evening	Night	Daily
Site Data					Verne	Aut		77.5%	0	9.6%	
	rrier Height:	0.0 feet			Med	lium Truc	ks: 8	34.8%	4.9%	10.3%	
Barrier Type (0-W	/all, 1-Berm):	0.0			He	eavy Truc		36.5%		10.8%	0.74%
Centerline Dis		55.0 feet		No	oise Sou	ırce Elev	ations	; (in fe	et)		
Centerline Dist. Barrier Distance Observer Height (Pa	to Observer:	55.0 feet 0.0 feet 5.0 feet 0.0 feet			Medium	Autos:	0.0 2.2 8.0	00 97	Grade Ad	justment	: 0.0
Roa	ad Elevation:	0.0 feet		La	ne Equi	ivalent D	istanc	e (in f	leet)		
1	Road Grade:	0.0%				Autos:	44.2	83			
	Left View: Right View:	-90.0 degree 90.0 degree			Medium Heavy	Trucks: Trucks:	44.0 44.1				
FHWA Noise Mode	el Calculation	IS									
VehicleType	REMEL	Traffic Flow	Distanc	e	Finite R	load	Fresn	el	Barrier Att	en Ber	m Atten
Autos:	70.20	1.15	1	0.46		0.00	-	4.67	0.0	000	0.00
Medium Trucks:	81.00	-16.09		0.48		0.00	-	4.87	0.0	000	0.00
Heavy Trucks:	85.38	-20.04		0.48		0.00	-	5.38	0.0	000	0.00
Unmitigated Noise	e Levels (with	out Topo and	barrier at	tenua	ation)						
VehicleType	Leq Peak Ho			q Eve		Leq Nig			Ldn		NEL
Autos:			69.9		68.1		62.1		70.7		71.3
Medium Trucks:			63.9		57.5		56.0		64.4		64.
Heavy Trucks:			64.4		55.4		56.6		65.0		65.
Vehicle Noise:	73	3.5	71.8		68.7		63.9		72.5	5	72.
Centerline Distant	ce to Noise C	ontour (in feet)									
				70 dE	BA	65 dB	A	6	0 dBA		dBA
			dn:	97		308			974	3,	079
		CN	IEL:	108		343			1,084	3,	429

FI	IWA-RD-77-108	B HIGHW.	AY NOISE PF	REDICTION	MODEL			
Scenario: EAPC				Project Nam	e: Deser	t Wave		
Road Name: Country (lub Dr.			Job Numb	er: 11826			
Road Segment: e/o Monte	erey Av.							
SITE SPECIFIC	NPUT DATA					L INPUT	s	
Highway Data			Site Con	ditions (Har	d = 10, S	oft = 15)		
Average Daily Traffic (Adt):	24,100 vehicle	s			Autos:	10		
Peak Hour Percentage:	10%		Me	dium Trucks	(2 Axles):	10		
Peak Hour Volume:	2,410 vehicle	s	He	avy Trucks (3	3+ Axles):	10		
Vehicle Speed:	50 mph		Vehicle I	Mix				
Near/Far Lane Distance:	78 feet			icleType	Day	Evening	Night	Daily
Site Data				Autos	: 77.5%	5 12.9%	9.6%	97.429
Barrier Height:	0.0 feet		Me	edium Trucks	: 84.8%	4.9%	10.3%	1.849
Barrier Type (0-Wall, 1-Berm):	0.0		ŀ	leavy Trucks	: 86.5%	2.7%	10.8%	0.749
Centerline Dist. to Barrier:	76.0 feet							
Centerline Dist. to Observer:	76.0 feet		Noise Sc	ource Elevat		eet)		
Barrier Distance to Observer:	0.0 feet			Autos:	0.000			
Observer Height (Above Pad):				n Trucks:	2.297	Grade Ad	livetreent	
Pad Elevation:	0.0 feet		Heav	y Trucks:	8.006	Grade Ad	jusiment	. 0.0
Road Elevation:	0.0 feet		Lane Eq	uivalent Dis	tance (in	feet)		
Road Grade:	0.0%			Autos:	65.422			
Left View:	-90.0 degre	es	Mediur	n Trucks:	65.286			
Right View:	90.0 degre	es	Heav	y Trucks:	65.300			
FHWA Noise Model Calculation	ns							
VehicleType REMEL	Traffic Flow	Distar	nce Finite	Road Fr	esnel	Barrier At	ten Ber	m Atter
Autos: 70.2	0 1.41		-1.24	0.00	-4.73	0.0	000	0.00
Medium Trucks: 81.0			-1.23	0.00	-4.88	0.0	000	0.00
Heavy Trucks: 85.3	8 -19.78		-1.23	0.00	-5.25	0.0	000	0.00
Unmitigated Noise Levels (wi		· · ·			1			
VehicleType Leq Peak H			eq Evening	Leq Nigh		Ldn	-	NEL
	0.4	68.5	66.7		50.7	69.		69
	3.9	62.4	56.1		54.5	63.		63.
	64.4	62.9	53.9		55.2	63.		63
	'2.1	70.3	67.3	6	62.5	71.	0	71
Centerline Distance to Noise	Contour (in fee	t)	70 dBA	65 dBA		60 dBA	55	dBA
		Ldn:	97	306		966		055
				300		300	3.	ບວວ

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	FH\	VA-RD-77-108	HIGHW	AY N	OISE PF	EDICTIO	ON MO	DEL			
Road Nan	io: EAPC ne: Country Cl nt: e/o Portola					Project I Job Nu					
SITE Highway Data	SPECIFIC IN	IPUT DATA			Site Con					6	
				-	Sile Com	uiuons (Autos:	,		
		23,800 vehicles 10%			Ma	dium Tru					
	Percentage: lour Volume:	2.380 vehicles				avy Truci					
	hicle Speed:	50 mph			nea	avy muci	13 (3+7	-1,103).	10		
	ne Distance:	50 mpn 58 feet		١	/ehicle I						
ivear/r-ar La	ne Distance:	58 Teet			Vehi	cleType		Day	Evening	Night	Daily
Site Data						A	utos:	77.5%	12.9%	9.6%	
Ba	rrier Height:	0.0 feet			Me	edium Tru	icks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-W	/all, 1-Berm):	0.0			H	leavy Tru	icks:	86.5%	2.7%	10.8%	0.74%
Centerline Di	st. to Barrier:	64.0 feet			Voise So	urco Ele	vation	s (in f	oof)		
Centerline Dist.	to Observer:	64.0 feet		-	10/30 00	Autos		000			
Barrier Distance	to Observer:	0.0 feet			Modiur	n Trucks		297			
Observer Height	(Above Pad):	5.0 feet				v Trucks		006	Grade Adj	ustment	- 00
P	ad Elevation:	0.0 feet								usunom	. 0.0
Ro	ad Elevation:	0.0 feet		L	.ane Equ	livalent	Distan	ce (in	feet)		
	Road Grade:	0.0%				Autos	57.	271			
	Left View:	-90.0 degree	s		Mediur	n Trucks	57.	117			
	Right View:	90.0 degree	S		Heav	y Trucks	57.	132			
FHWA Noise Mod	el Calculation	s		_							
VehicleType	REMEL	Traffic Flow	Distar	се	Finite	Road	Fresr	nel	Barrier Atte	en Ber	rm Atten
Autos:	70.20	1.36		-0.66	6	0.00		-4.70	0.0	00	0.00
Medium Trucks:	81.00	-15.88		-0.65	5	0.00		-4.88	0.0	00	0.00
Heavy Trucks:	85.38	-19.84		-0.65	5	0.00		-5.31	0.0	00	0.00
Unmitigated Nois											
VehicleType	Leq Peak Hou			eq Ev	ening	Leq N			Ldn	-	NEL
Autos:	70		69.0		67.2		61.2	-	69.8		70.
Medium Trucks:	64		63.0		56.6		55.1		63.5		63.
Heavy Trucks:	64		63.5		54.4		55.7		64.0		64.
Vehicle Noise:	72	.6	70.8		67.8		63.0)	71.6		72.
Centerline Distan	ce to Noise C	ontour (in feet)		70		05		1			10.4
				70 d	вА	65 d			60 dBA		dBA
			_dn: IFI :	92 10	-	29 32	-		918 1.022		,903 .233

	FHV	VA-RD-77-108	HIGHW	AY NO	ISE PRE	DICTI	ON MODI	EL			
Scenario Road Name Road Segmen	Country Clu						Name: De Imber: 11		Wave		
SITE S	PECIFIC IN	PUT DATA				N	OISE MO	DDEL	INPUTS	5	
Highway Data				Sit	e Condi	tions (Hard = 1	0, Sof	t = 15)		
Average Daily T			s			_		itos:	10		
Peak Hour F		10%					cks (2 Ax		10		
	our Volume:	2,430 vehicle	s		Heav	y Truc	ks (3+ Ax	les):	10		
	icle Speed:	50 mph		Ve	hicle Mix	ĸ					
Near/Far Lan	e Distance:	58 feet			Vehicle	еТуре	D	ay	Evening	Night	Daily
Site Data						A	utos: 7	7.5%	12.9%	9.6%	97.42%
Bari	ier Heiaht:	0.0 feet			Medi	ium Tri	ucks: 84	4.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wa	all, 1-Berm):	0.0			Hea	avy Tri	ucks: 86	6.5%	2.7%	10.8%	0.74%
Centerline Dis	t. to Barrier:	64.0 feet		No	ise Sou	rce Ele	evations	(in fee	et)		
Centerline Dist. to		64.0 feet				Autos		·	,		
Barrier Distance to		0.0 feet			Medium	Trucks	: 2.29	7			
Observer Height (A	bove Pad):	5.0 feet			Heavy	Trucks	: 8.00	6 (Grade Adj	ustment.	0.0
Pa	d Elevation:	0.0 feet						-			
	d Elevation:	0.0 feet		La	ne Equiv		Distance		eet)		
R	oad Grade:	0.0%				Autos					
	Left View:	-90.0 degree			Medium						
	Right View:	90.0 degree	es		Heavy	Trucks	: 57.13	2			
FHWA Noise Mode	I Calculation	s									
VehicleType	REMEL	Traffic Flow	Distan	ice	Finite Ro	oad	Fresnel	E	Barrier Atte	en Ber	m Atten
Autos:	70.20	1.45		-0.66		0.00	-4	1.70	0.0	00	0.000
Medium Trucks:	81.00	-15.79		-0.65		0.00	-4	.88	0.0	00	0.000
I In an a Tanadana		-19.75		-0.65		0.00	_F	5.31	0.0	00	0.000
Heavy Trucks:	85.38	10.10				0.00					
Unmitigated Noise	Levels (with	out Topo and	barrier a	ttenua		0.00					
Unmitigated Noise		out Topo and		ettenua eq Eve	tion)	Leq I			Ldn	CI	IEL
Unmitigated Noise VehicleType	Levels (with	out Topo and Ir Leq Day			ning 67.3				69.9		70.5
Unmitigated Noise VehicleType	Levels (with Leq Peak Hou	out Topo and r Leq Day .0	/ Le		ning		Vight				70.5
Unmitigated Noise VehicleType I Autos: Medium Trucks: Heavy Trucks:	Levels (with Leq Peak Hou 71	out Topo and r Leq Day .0	/ Le		ning 67.3		light 61.3		69.9		70.5 63.8
Unmitigated Noise VehicleType Autos: Medium Trucks:	Levels (with Leq Peak Hou 71 64	out Topo and r Leq Day .0 .6	/ Le 69.1 63.1		ning 67.3 56.7		light 61.3 55.1		69.9 63.6		70.5 63.8 64.3
Unmitigated Noise VehicleType I Autos: Medium Trucks: Heavy Trucks:	Levels (with Leg Peak Hou 71 64 65 72	out Topo and r Leq Day .0 .6 .0 .7	/ Le 69.1 63.1 63.6 70.9	eq Evel	ation) ning 67.3 56.7 54.5 67.9	Leq I	light 61.3 55.1 55.8 63.1		69.9 63.6 64.1 71.7		70.5 63.8 64.3 72.1
Unmitigated Noise VehicleType I Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	Levels (with Leg Peak Hou 71 64 65 72	out Topo and r Leq Day .0 .6 .0 .7 ontour (in feet	/ Le 69.1 63.1 63.6 70.9	70 dB	ation) ning 67.3 56.7 54.5 67.9	Leq 1 65 c	61.3 55.1 55.8 63.1 IBA	60	69.9 63.6 64.1 71.7	55	70.5 63.8 64.3 72.1 dBA
Unmitigated Noise VehicleType I Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	Levels (with Leg Peak Hou 71 64 65 72	out Topo and r Leq Day 0 6 0 7 ontour (in feet	/ Le 69.1 63.1 63.6 70.9	eq Evel	ation) ning 67.3 56.7 54.5 67.9	Leq I	Vight 61.3 55.1 55.8 63.1 IBA 6	60	69.9 63.6 64.1 71.7	55	70.5 63.8 64.3 72.1

	FHV	VA-RD-77-108	HIGH	WAY N	IOISE PR	EDICTIO	N MODEL	-		
Scenario: Road Name: Road Segment:	Country Clu					Project Na Job Nun	ame: Des aber: 118			
SITE SF	PECIFIC IN	PUT DATA				NO	ISE MOI	DEL INPUT	s	
Highway Data					Site Cond	litions (H	ard = 10,	Soft = 15)		
Average Daily Tr Peak Hour Pe Peak Hou	. ,	23,100 vehicle 10% 2,310 vehicle				ium Truck vy Trucks		s): 10		
Vehio	cle Speed:	50 mph		-	Vehicle M	live				
Near/Far Lane	Distance:	78 feet		H		leType	Da	/ Evening	Night	Daily
Site Data					venic	Aut			9.6%	
	an Haladati	0.0 feet			Me	dium Truc			10.3%	
Barrier Type (0-Wal	er Height: I, 1-Berm):	0.0 feet 0.0				eavy Truc			10.8%	
Centerline Dist.	to Barrier:	76.0 feet		5	Noise So	urce Elev	ations (ii	1 feet)		
Centerline Dist. to	Observer:	76.0 feet		- F	10.00 001	Autos:	0.000	11000		
Barrier Distance to	Observer:	0.0 feet			Modium	Trucks:	2.297			
Observer Height (Al	bove Pad): Flevation:	5.0 feet 0.0 feet				Trucks:	8.006	Grade Ad	ljustment	: 0.0
	Elevation:	0.0 feet			Lane Equ	ivalent D	istance (in feet)		
	ad Grade:	0.0%		F		Autos:	65.422			
110	Left View:	-90.0 deare	oc		Medium	Trucks:	65.286			
F	Right View:	90.0 degre				Trucks:	65.300			
FHWA Noise Model	Calculation	s								
VehicleType	REMEL	Traffic Flow	Dist	tance	Finite F	Road	Fresnel	Barrier At	ten Bei	rm Atten
Autos:	70.20	1.23		-1.24	4	0.00	-4.7	' 3 0.	000	0.000
Medium Trucks:	81.00	-16.01		-1.23	3	0.00	-4.8	8 0.	000	0.000
Heavy Trucks:	85.38	-19.97		-1.23	3	0.00	-5.2	.5 0.	000	0.000
Unmitigated Noise L			barrie	r atten	uation)					
	eq Peak Hou			Leq E	vening	Leq Ni		Ldn		NEL
Autos:	70		68.3		66.5		60.5	69.		69.7
Medium Trucks:	63		62.3		55.9		54.3	62.		63.0
Heavy Trucks:	64		62.8		53.7		55.0	63.	•	63.5
Vehicle Noise:	71		70.1		67.1		62.3	70.	9	71.3
Centerline Distance	to Noise Co	ontour (in feet)							
					dBA	65 dB	A	60 dBA		dBA
			Ldn:	9	-	293		926	2	929
		C	NEL:	10)3	326		1,031	3,	261

	FH\	NA-RD-77-108	HIGHV	WAY NC	DISE PR	EDICTIC	N MOD	DEL			
Scenar	io: EAPC					Project N	lame: [esert	Wave		
Road Nan	e: Country Cl	ub Dr.				Job Nu	mber: 1	1826			
Road Segme	nt: e/o El Dora	ido Dr.									
	SPECIFIC IN	IPUT DATA	-							s	
Highway Data				Si	te Con	ditions (F	lard =	10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	22,400 vehicles					A	utos:	10		
Peak Hour	Percentage:	10%			Med	lium Truc	ks (2 A	xles):	10		
Peak F	lour Volume:	2,240 vehicles			Hea	avy Truck	s (3+ A	xles):	10		
Ve	hicle Speed:	50 mph		V	ehicle N	lix					
Near/Far La	ne Distance:	58 feet		-		cleType		Day	Evening	Night	Daily
Site Data								7.5%	0		97.429
Ba	rrier Height:	0.0 feet			Ме	dium Tru	cks: 8	34.8%	4.9%	10.3%	1.849
Barrier Type (0-W		0.0			h	leavy Tru	cks: 8	36.5%	2.7%	10.8%	0.749
Centerline Di		64.0 feet		-							
Centerline Dist.		64.0 feet		N	oise So	urce Ele			et)		
Barrier Distance		0.0 feet				Autos:					
Observer Height		5.0 feet				n Trucks:		÷.			
	ad Elevation:	0.0 feet			Heav	/ Trucks:	8.0	06	Grade Ad	justment.	0.0
Ro	ad Elevation:	0.0 feet		La	ane Equ	ivalent I	Distanc	e (in i	eet)		
	Road Grade:	0.0%				Autos:	57.2	71			
	Left View:	-90.0 degree	s		Mediun	n Trucks:	57.1	17			
	Right View:	90.0 degree	s		Heav	/ Trucks:	57.1	32			
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Dista	ance	Finite	Road	Fresn	e/	Barrier Att	en Ber	m Atten
Autos:	70.20	1.09		-0.66		0.00		4.70	0.0	000	0.00
Medium Trucks:	81.00	-16.14		-0.65		0.00		4.88	0.0	000	0.00
Heavy Trucks:	85.38	-20.10		-0.65		0.00		5.31	0.0	000	0.00
Unmitigated Nois			-							Т	
VehicleType	Leq Peak Hou			Leq Eve		Leq N			Ldn		VEL
Autos:	70		8.7		67.0		60.9		69.5		70.
Medium Trucks:			2.7		56.3		54.8		63.3		63.
Heavy Trucks:			3.2		54.2		55.4		63.8		63.
Vehicle Noise:			0.6		67.5		62.8		71.3	3	71.
Centerline Distan	ce to Noise C	ontour (in feet)		70 dF	24	ee al	24	6	0 dBA	55	dD A
		,	dn:	70 dE 86	0/4	65 dl		6	0 dBA 864		dBA 732
		-					-		864 962		732 043
		CN		96		304					

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		VA-RD-77-108	HIGHV	TAT N		EDICTIC		DEE			
Road Nan	io: EAPC e: Country Clu					Project N Job Nui			Wave		
Road Segme	nt: e/o Oasis C	Club Dr.									
SITE	SPECIFIC IN	IPUT DATA							L INPUT	s	
Highway Data				5	Site Cond	ditions (F	lard =	10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	25,100 vehicles	5					Autos:	10		
Peak Hour	Percentage:	10%			Med	lium Truc	ks (2 A	(xles):	10		
Peak H	lour Volume:	2,510 vehicles	5		Hea	vy Truck	s (3+ A	(xles):	10		
Ve	hicle Speed:	50 mph			/ehicle N	liv					
Near/Far La	ne Distance:	58 feet		H		cleType		Dav	Evening	Night	Dailv
Site Data								77.5%	•	9.6%	
	rrier Heiaht:	0.0 feet			Me	dium Tru	cks:	84.8%	4.9%	10.3%	
Barrier Type (0-W		0.0 1001			н	leavy Tru	cks:	86.5%	2.7%	10.8%	0.749
Centerline Di		64.0 feet		1	Voise So	urce Ele	vation	s (in fe	eet)		
Centerline Dist.	to Observer:	64.0 feet				Autos:		000			
Barrier Distance	to Observer:	0.0 feet			Mediun	Trucks:		97			
Observer Height	,	5.0 feet			Heav	/ Trucks:	8.0	006	Grade Ad	justmen	t: 0.0
	ad Elevation:	0.0 feet									
	ad Elevation:	0.0 feet		1	.ane Equ	ivalent L			leet)		
	Road Grade:	0.0%				Autos:	57.:				
	Left View:	-90.0 degree				n Trucks:	57.				
	Right View:	90.0 degree	es		Heavy	/ Trucks:	57.	132			
FHWA Noise Mod		-									
VehicleType	REMEL	Traffic Flow	Dista		Finite I		Fresr	-	Barrier Att		rm Atten
Autos:	70.20	1.59		-0.66		0.00		-4.70		000	0.00
Medium Trucks:	81.00	-15.65		-0.65		0.00		-4.88		000	0.00
Heavy Trucks:	85.38	-19.61		-0.65	5	0.00		-5.31	0.0	000	0.00
Unmitigated Nois											
VehicleType	Leq Peak Hou			Leq Ev	~	Leq N	<u> </u>		Ldn	-	NEL
Autos:	71		69.2		67.5		61.4		70.	-	70
Medium Trucks:	64		63.2		56.8		55.3		63.		64
Heavy Trucks:	65		63.7		54.7		55.9		64.3	-	64
Vehicle Noise:	72	.8	71.1		68.0		63.2		71.	3	72.
Centerline Distan	ce to Noise Co	ontour (in feet)								
Contoninio Biotani				70 a	IBA	65 dl	BA	6	60 dBA	55	5 dBA
Contonino Diotan											
Contornino Diotani			Ldn:	97 10		306 341			968 1.078		,062 .410

	AWAT	NOISE PR		-				
Scenario: EAPC Road Name: Hovley Ln. Road Segment: e/o Cook St.			Project N Job Nur			Wave		
SITE SPECIFIC INPUT DATA							S	
Highway Data		Site Con	ditions (H	lard =	10, Sc	oft = 15)		
Average Daily Traffic (Adt): 31,200 vehicles				,	Autos:	10		
Peak Hour Percentage: 10%		Med	dium Truc	ks (2 A	xles):	10		
Peak Hour Volume: 3,120 vehicles		Hea	avy Truck	s (3+ A	xles):	10		
Vehicle Speed: 45 mph	F	Vehicle N	Nix					
Near/Far Lane Distance: 58 feet			cleType		Day	Evening	Night	Daily
Site Data			Au	tos:	77.5%	12.9%	9.6%	97.42
Barrier Height: 0.0 feet		Me	dium True	cks:	84.8%	4.9%	10.3%	1.849
Barrier Type (0-Wall, 1-Berm): 0.0		H	leavy Tru	cks:	86.5%	2.7%	10.8%	0.74
Centerline Dist. to Barrier: 64.0 feet		Noise So	urce Elev	ation.	s (in fe	et)		
Centerline Dist. to Observer: 64.0 feet	ľ		Autos:	0.0	000			
Barrier Distance to Observer: 0.0 feet		Mediun	n Trucks:	2.2	297			
Observer Height (Above Pad): 5.0 feet		Heav	v Trucks:	8.0	006	Grade Ad	iustment	: 0.0
Pad Elevation: 0.0 feet	-	1 E				41		
Road Elevation: 0.0 feet	-	Lane Equ				eet)		
Road Grade: 0.0%			Autos: n Trucks:	57.1 57.1				
Left View: -90.0 degrees Right View: 90.0 degrees			y Trucks:	57.				
FHWA Noise Model Calculations								
VehicleType REMEL Traffic Flow D	listance	Finite	Road	Fresn	el	Barrier Att	en Ber	m Atter
Autos: 68.46 2.99	-0.6	66	0.00		-4.70	0.0	000	0.00
Medium Trucks: 79.45 -14.25	-0.6	65	0.00		-4.88	0.0	000	0.00
Heavy Trucks: 84.25 -18.20	-0.6		0.00		-5.31	0.0	000	0.00
Unmitigated Noise Levels (without Topo and barr								
VehicleType Leq Peak Hour Leq Day		vening	Leq Ni	<u> </u>		Ldn 69.7	-	NEL 70
Autos: 70.8 68.9 Medium Trucks: 64.6 63.0		67.1 56.7		61.1 55.1		69.7 63.6		70 63
		56.7 54.9		55.1 56.2		64.5		63 64
							·	72
Heavy Trucks: 65.4 64.0		67.7 63.1 71.6			0	72		
Vehicle Noise: 72.6 70.9)							
		dBA	65 dE	BA	6	0 dBA	55	dBA
Vehicle Noise: 72.6 70.9	70	dBA	65 dE 293		6	0 dBA 926		dBA 927

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11826-03 Noise Study



APPENDIX 9.1:

CADNAA MODEL INPUTS AND RESULTS



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11826

CadnaA Noise Prediction Model 11826-07 typical.cna Date: 04.03.19 Analyst: A.Wolfe

Receiver Noise Levels

Name	Leve	el Lr	Height		C	oordinates	
	Day	Night			Х	Y	Z
	(dBA)	(dBA)	(m)		(m)	(m)	(m)
1	30.1	30.1	1.52	r	1988528.87	677268.18	3.75
2	49.2	49.2	1.52	r	1988925.54	677217.10	7.98
3	46.3	46.3	1.52	r	1988961.14	677015.47	6.63
4	42.9	42.9	1.52	r	1989398.47	676790.88	6.09
5	38.5	38.5	1.52	r	1989769.61	677313.76	4.60
6	36.8	36.8	1.52	r	1988872.46	677570.41	4.85

Point Source(s)

Name		Lw/L	i	Height		Co	oordinates	
	Туре	Value	norm.			Х	Y	Z
			dB(A)	(m)		(m)	(m)	(m)
ACUNITS	Lw	88.9		1.52	g	1988982.53	677165.74	17.24
ACUNITS	Lw	88.9		1.52	g	1989018.80	677140.46	17.24
ACUNITS	Lw	88.9		1.52	g	1989049.21	677182.23	17.24
ACUNITS	Lw	88.9		1.52	g	1989062.04	677208.61	17.24
ACUNITS	Lw	88.9		1.52	g	1989002.68	677183.70	14.30
ACUNITS	Lw	88.9		1.52	g	1989018.80	677185.90	14.30
ACUNITS	Lw	88.9		1.52	g	1989093.55	677232.06	17.37
ACUNITS	Lw	88.9		1.52	g	1989093.91	677245.62	17.37
ACUNITS	Lw	88.9		1.52	g	1989125.06	677253.68	17.37
ACUNITS	Lw	88.9		1.52	g	1989153.27	677261.01	17.37
ACUNITS	Lw	88.9		1.52	g	1989187.34	677268.70	14.33
ACUNITS	Lw	88.9		1.52	g	1989203.83	677261.37	14.33
ACUNITS	Lw	88.9		1.52	g	1989222.52	677254.78	14.33
ACUNITS	Lw	88.9		1.52	g	1988957.61	677230.23	11.16
ACUNITS	Lw	88.9		1.52	g	1988980.33	677235.36	11.21
ACUNITS	Lw	88.9		1.52	g	1989015.50	677241.59	11.28
ACUNITS	Lw	88.9		1.52	g	1989041.15	677246.35	11.28
ACUNITS	Lw	88.9		1.52	g	1989019.17	677217.77	11.28
ACUNITS	Lw	88.9		1.52	g	1988986.56	677212.28	11.24
ACUNITS	Lw	88.9		1.52	g	1989038.59	677224.00	11.28
ACUNITS	Lw	88.9		1.52	g	1989122.12	677058.39	10.90
ACUNITS	Lw	88.9		1.52	g	1989150.70	677045.93	10.84
ACUNITS	Lw	88.9		1.52	g	1989178.55	677034.57	10.47
ACUNITS	Lw	88.9		1.52	g	1989203.10	677001.60	10.16
ACUNITS	Lw	88.9		1.52	g	1989221.79	676995.37	10.45
ACUNITS	Lw	88.9		1.52	g	1989238.27	676983.28	10.41
ACUNITS	Lw	88.9		1.52	g	1989264.65	676982.91	10.59
ACUNITS	Lw	88.9		1.52	g	1989262.82	677001.60	11.19
ACUNITS	Lw	88.9		1.52	g	1989259.52	677018.09	11.28
ACUNITS	Lw	88.9		1.52	g	1989245.97	677044.47	11.28

Area Source(s)

Name		Lw/L	i
	Туре	Value	norm.
			dB(A)
Pool/Spa	Lw	89.5	
Surf Lagoon	Lw	115.3	
Pool/Spa	Lw	89.5	
Pool/Spa	Lw	89.5	
Pool/Spa	Lw	89.5	
Parking Lot	Lw	84.6	
Parking Lot	Lw	84.6	
Parking Lot	Lw	84.6	
Parking Lot	Lw	84.6	
Parking Lot	Lw	84.6	
Parking Lot	Lw	84.6	
Parking Lot	Lw	84.6	
Outdoor Activities	Lw	78	
Outdoor Activities	Lw	78	

Barrier(s)

ID			Z-Ext.	н	ght		
	left right			Begin		End	
			(m)	(m)		(m)	Γ
EXISTINGBARRIER00001	0.21	0.21		1.83	r		
EXISTINGBARRIER00002	0.21	0.21		1.83	r		
EXISTINGBARRIER00003	0.21	0.21		1.83	r		Γ
EXISTINGBARRIER00004	0.21	0.21		1.83	r		
EXISTINGBARRIER00005	0.21	0.21		1.83	r		
PROJECTWALL	0.21	0.21		1.83	r		Γ

Building(s)

Name	Absorption	Height Begin	
		(m)	
BUILDINGS	0.21	6.10	r
BUILDINGS	0.21	3.05	r
BUILDINGS	0.21	3.05	r
BUILDINGS	0.21	3.05	r
BUILDINGS	0.21	3.05	r
BUILDINGS	0.21	3.05	r
BUILDINGS	0.21	3.05	r
BUILDINGS	0.21	3.05	r
BUILDINGS	0.21	3.05	r
BUILDINGS	0.21	6.10	r
BUILDINGS	0.21	3.05	r
Hotel	0.21	9.14	r
Hotel	0.21	9.14	r
Surf Center	0.21	6.10	r
BUILDINGS	0.21	3.05	r
BUILDINGS	0.21		-
BUILDINGS		3.05	r
BUILDINGS	0.21	3.05	r
BUILDINGS		3.05	r
BUILDINGS	0.21	3.05	r r
	0.21	3.05	-
BUILDINGS	0.21	3.05	r
BUILDINGS	0.21	3.05	r
BUILDINGS	0.21	3.05 3.05	r r
BUILDINGS	0.21	3.05	r
-	0.21		
BUILDINGS	0.21	3.05 3.05	r r
BUILDINGS	0.21	3.05	r
BUILDINGS	0.21	6.10	r
BUILDINGS	0.21	6.10	r
BUILDINGS	0.21	6.10	r
BUILDINGS	0.21	3.05	r
BUILDINGS	0.21	3.05	r
BUILDINGS	0.21	3.05	r
BUILDINGS	0.21	3.05	r
BUILDINGS	0.21	3.05	r
BUILDINGS	0.21	3.05	r
BUILDINGS	0.21	3.05	r
BUILDINGS	0.21	6.10	r
BUILDINGS	0.21	6.10	r
BUILDINGS	0.21	3.05	r
BUILDINGS	0.21	6.10	r
BUILDINGS	0.21	6.10	r
BUILDINGS	0.21	6.10	r
BUILDINGS	0.21	6.10	r
BUILDINGS	0.21	6.10	r
BUILDINGS	0.21	6.10	r
BUILDINGS	0.21	6.10	-
BUILDINGS	0.21	6.10	r
BUILDINGS	0.21	6.10	r
BUILDINGS	0.21	6.10	r
BUILDINGS	0.21	6.10	r
BUILDINGS	0.21	6.10	r
BUILDINGS	0.21	6.10	r
BUILDINGS	0.21	6.10	r
BUILDINGS	0.21	6.10	r
BUILDINGS	0.21	6.10	r
BUILDINGS	0.21	6.10	r
BUILDINGS	0.21	6.10	r
BUILDINGS	0.21	6.10	r
BUILDINGS	0.21	6.10	r
BUILDINGS	0.21	6.10	r
BUILDINGS	0.21	6.10	r
BUILDINGS	0.21	6.10	r

Name	Absorption	Height	
		Begin	
		(m)	
BUILDINGS	0.21	6.10	r
BUILDINGS	0.21	6.10	r
BUILDINGS	0.21	6.10	r

11826

CadnaA Noise Prediction Model 11826-07 special event.cna Date: 04.03.19 Analyst: A.Wolfe

Receiver Noise Levels

Name	Leve	el Lr	Height		Coordinates		
	Day	Night			Х	Y	Z
	(dBA)	(dBA)	(m)		(m)	(m)	(m)
1	30.1	30.1	1.52	r	1988528.87	677268.18	3.75
2	49.2	49.2	1.52	r	1988925.54	677217.10	7.98
3	46.5	46.5	1.52	r	1988961.14	677015.47	6.63
4	43.2	43.2	1.52	r	1989398.47	676790.88	6.09
5	38.7	38.7	1.52	r	1989769.61	677313.76	4.60
6	36.9	36.9	1.52	r	1988872.46	677570.41	4.85

Area Source(s)

Name	Lw / Li		
	Туре	Value	norm.
			dB(A)
Pool/Spa	Lw	89.5	
Surf Lagoon	Lw	115.3	
Pool/Spa	Lw	89.5	
Pool/Spa	Lw	89.5	
Pool/Spa	Lw	89.5	
Parking Lot	Lw	84.6	
Parking Lot	Lw	84.6	
Parking Lot	Lw	84.6	
Parking Lot	Lw	84.6	
Parking Lot	Lw	84.6	
Parking Lot	Lw	84.6	
Parking Lot	Lw	84.6	
Outdoor Activities	Lw	78	
Outdoor Activities	Lw	78	
Special Event Field	Lw	101.4	