



**Majestic Thousand Palms
(GPA220004, CZ2200013, PPT220022,
CEQ220033)
NOISE AND VIBRATION ANALYSIS
COUNTY OF RIVERSIDE**

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TABLE OF CONTENTS

TABLE OF CONTENTS	III
APPENDICES	IV
LIST OF EXHIBITS	IV
LIST OF TABLES	V
LIST OF ABBREVIATED TERMS	VI
EXECUTIVE SUMMARY	1
1 INTRODUCTION	3
1.1 Site Location.....	3
1.2 Project Description.....	3
2 FUNDAMENTALS	7
2.1 Range of Noise	7
2.2 Noise Descriptors	8
2.3 Sound Propagation.....	8
2.4 Noise Control	9
2.5 Noise Barrier Attenuation	9
2.6 Land Use Compatibility With Noise	10
2.7 Community Response to Noise	10
2.8 Vibration	11
3 REGULATORY SETTING	13
3.1 State of California Noise Requirements.....	13
3.2 County of Riverside General Plan Noise Element	13
3.3 Construction Noise Standards	17
3.4 Construction Vibration Standards.....	19
4 SIGNIFICANCE CRITERIA	21
4.1 Noise Level Increases (Threshold A)	21
4.2 Vibration (Threshold B).....	22
4.3 CEQA Guidelines Not Further Analyzed (Threshold C)	23
4.4 Significance Criteria Summary	23
5 EXISTING NOISE LEVEL MEASUREMENTS	25
5.1 Measurement Procedure and Criteria	25
5.2 Noise Measurement Locations	25
5.3 Noise Measurement Results	26
6 TRAFFIC NOISE METHODS AND PROCEDURES	29
6.1 FHWA Traffic Noise Prediction Model	29
7 OFF-SITE TRAFFIC NOISE ANALYSIS	35
7.1 Traffic Noise Contours	35
7.2 Existing Project Traffic Noise Level Increases	38
7.3 EAC 2025 Traffic Noise Level Increases.....	38
7.4 HY 2045 Traffic Noise Level Increases.....	39
8 SENSITIVE RECEIVER LOCATIONS	43
9 OPERATIONAL NOISE IMPACTS	45

9.1 Operational Noise Sources..... 45

9.2 Reference Noise Levels 45

9.3 CadnaA Noise Prediction Model 49

9.4 Project Operational Noise Levels..... 50

9.5 Project Operational Noise Level Compliance..... 51

9.6 Project Operational Noise Level Increases 51

10 CONSTRUCTION IMPACTS..... 53

10.1 Construction Noise Levels..... 53

10.2 Construction Reference Noise Levels 53

10.3 Construction Noise Analysis..... 55

10.4 Project Site Construction Noise Level Compliance 56

10.5 Off-Site Roadway and Utility Improvements Construction Noise Analysis 56

10.6 Nighttime Concrete Pour Noise Analysis 58

10.7 Construction Vibration Analysis..... 60

11 REFERENCES..... 63

12 CERTIFICATION..... 65

APPENDICES

- APPENDIX 3.1: COUNTY OF RIVERSIDE MUNICIPAL CODE
- APPENDIX 5.1: STUDY AREA PHOTOS
- APPENDIX 5.2: NOISE LEVEL MEASUREMENT WORKSHEETS
- APPENDIX 7.1: OFF-SITE TRAFFIC NOISE LEVEL CALCULATIONS
- APPENDIX 9.1: CADNAA OPERATIONAL NOISE MODEL INPUTS
- APPENDIX 10.1: PROJECT CONSTRUCTION NOISE MODEL INPUTS
- APPENDIX 10.2: NIGHTTIME CONCRETE POUR NOISE MODEL INPUTS

LIST OF EXHIBITS

EXHIBIT 1-A: LOCATION MAP4

EXHIBIT 1-B: SITE PLAN.....5

EXHIBIT 2-A: TYPICAL NOISE LEVELS7

EXHIBIT 2-B: NOISE LEVEL INCREASE PERCEPTION 10

EXHIBIT 2-C: TYPICAL LEVELS OF GROUND-BORNE VIBRATION..... 12

EXHIBIT 3-A: LAND USE COMPATIBILITY FOR COMMUNITY NOISE EXPOSURE 16

EXHIBIT 5-A: NOISE MEASUREMENT LOCATIONS.....27

EXHIBIT 8-A: RECEIVER LOCATIONS.....44

EXHIBIT 9-A: OPERATIONAL NOISE SOURCE LOCATIONS46

EXHIBIT 10-A: CONSTRUCTION NOISE SOURCE LOCATIONS..... 54

EXHIBIT 10-B: NIGHTTIME CONCRETE POUR NOISE SOURCE AND RECEIVER LOCATIONS..... 59

LIST OF TABLES

TABLE ES-1: SUMMARY OF CEQA SIGNIFICANCE FINDINGS 1

TABLE 4-1: SIGNIFICANCE CRITERIA SUMMARY 23

TABLE 5-1: AMBIENT NOISE LEVEL MEASUREMENTS 26

TABLE 6-1: OFF-SITE ROADWAY PARAMETERS 30

TABLE 6-2: AVERAGE DAILY TRAFFIC VOLUMES 30

TABLE 6-3: TIME OF DAY VEHICLE SPLITS 31

TABLE 6-4: WITHOUT PROJECT VEHICLE MIX 31

TABLE 6-5: EXISTING WITH PROJECT VEHICLE MIX 32

TABLE 6-6: EAC 2025 WITH PROJECT VEHICLE MIX 32

TABLE 6-7: HY 2045 WITH PROJECT VEHICLE MIX 33

TABLE 7-1: EXISTING WITHOUT PROJECT CONTOURS 35

TABLE 7-2: EXISTING WITH PROJECT CONTOURS 36

TABLE 7-3: EAC 2025 WITHOUT PROJECT CONTOURS 36

TABLE 7-4: EAC 2025 WITH PROJECT CONTOURS 37

TABLE 7-5: HY 2045 WITHOUT PROJECT CONTOURS 37

TABLE 7-6: HY 2045 WITH PROJECT CONTOURS 38

TABLE 7-7: EXISTING WITH PROJECT TRAFFIC NOISE LEVEL INCREASES 40

TABLE 7-8: EAC 2025 WITH PROJECT TRAFFIC NOISE LEVEL INCREASES 41

TABLE 7-9: HY 2045 WITH PROJECT TRAFFIC NOISE LEVEL INCREASES 42

TABLE 9-1: REFERENCE NOISE LEVEL MEASUREMENTS 47

TABLE 9-2: DAYTIME PROJECT OPERATIONAL NOISE LEVELS 50

TABLE 9-3: NIGHTTIME PROJECT OPERATIONAL NOISE LEVELS 50

TABLE 9-4: OPERATIONAL NOISE LEVEL COMPLIANCE 51

TABLE 9-5: DAYTIME PROJECT OPERATIONAL NOISE LEVEL INCREASES 52

TABLE 9-6: NIGHTTIME OPERATIONAL NOISE LEVEL INCREASES 52

TABLE 10-1: CONSTRUCTION REFERENCE NOISE LEVELS 55

TABLE 10-2: CONSTRUCTION EQUIPMENT NOISE LEVEL SUMMARY 56

TABLE 10-3: PROJECT SITE CONSTRUCTION NOISE LEVEL COMPLIANCE 56

TABLE 10-4: NIGHTTIME CONCRETE POUR NOISE LEVEL COMPLIANCE 60

TABLE 10-5: VIBRATION SOURCE LEVELS FOR CONSTRUCTION EQUIPMENT 60

TABLE 10-6: PROJECT CONSTRUCTION VIBRATION LEVELS 61

LIST OF ABBREVIATED TERMS

(1)	Reference
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
INCE	Institute of Noise Control Engineering
L_{eq}	Equivalent continuous (average) sound level
L_{max}	Maximum level measured over the time interval
mph	Miles per hour
PPV	Peak Particle Velocity
Project	Majestic Thousand Palms
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 noise exposure and the necessary noise mitigation measures for the proposed Majestic Thousand Palms development (“Project”). The Project site is located on the northeast corner of Rio Del Sol Road and 30th Avenue in the County of Riverside. The Project is proposed to consist of the development of a 1,238,992 square foot warehouse building. This noise study has been prepared to satisfy applicable County of Riverside noise standards and significance criteria based on Appendix G of the California Environmental Quality Act (CEQA) Guidelines. (1)

The results of this Noise and Vibration Analysis are summarized below based on the significance criteria in Section 4 of this report consistent with Appendix G of the California Environmental Quality Act (CEQA) Guidelines. (1) Table ES-1 shows the findings of significance for each potential noise and/or vibration impact under CEQA before and after any required mitigation measures.

TABLE ES-1: SUMMARY OF CEQA SIGNIFICANCE FINDINGS

Analysis	Report Section	Significance Findings	
		Unmitigated	Mitigated
Off-Site Traffic Noise	7	<i>Less Than Significant</i>	-
Operational Noise	9	<i>Less Than Significant</i>	-
Project Construction Noise	10	<i>Less Than Significant</i>	-
Nighttime Concrete Pour		<i>Less Than Significant</i>	-
Construction Vibration		<i>Less Than Significant</i>	-

Although not required to address a *potentially significant* impact, the following measures would further reduce construction noise impacts:

MM-NOI-1 Hours of Construction. All construction activities shall comply with Riverside County Ordinance No. 847 Regulating Noise Section 2i (Code Section 9.52.020[1]), limiting construction activities to the hours of 6:00 a.m. and 6:00 p.m., during the months of June through September, and 7:00 a.m. and 6:00 p.m., during the months of October through May

MM-NOI-2 Construction Noise Abatement. Prior to the issuance of each grading permit and building permit, the applicant shall provide evidence that the subject plans contain the following requirements and restrictions:

- All construction equipment, fixed or mobile, shall be equipped with properly operating and maintained mufflers, consistent with manufacturers’ standards).
- All stationary construction equipment shall be placed in such a manner so that the emitted noise is directed away from any sensitive receivers.
- Construction equipment staging areas shall be located at the greatest feasible distance between the staging area and the nearest sensitive receivers.

- The construction contractor shall limit equipment and material deliveries to the same hours specified for construction equipment for **MM-NOI-1**.
- Electrically powered air compressors and similar power tools shall be used, when feasible, in place of diesel equipment.
- No music or electronically reinforced speech from construction workers shall be allowed within 500 feet of the property line of a residential use or sensitive receptor.

1 INTRODUCTION

This noise analysis has been completed to determine the noise impacts associated with the development of the proposed Majestic Thousand Palms (“Project”). This noise study briefly describes the proposed Project, provides information regarding noise fundamentals, sets out the local regulatory setting, presents the study methods and procedures for transportation related CNEL traffic noise analysis, and evaluates the future exterior noise environment. In addition, this study includes an analysis of the potential Project-related long-term stationary-source operational noise and short-term construction noise and vibration impacts.

1.1 SITE LOCATION

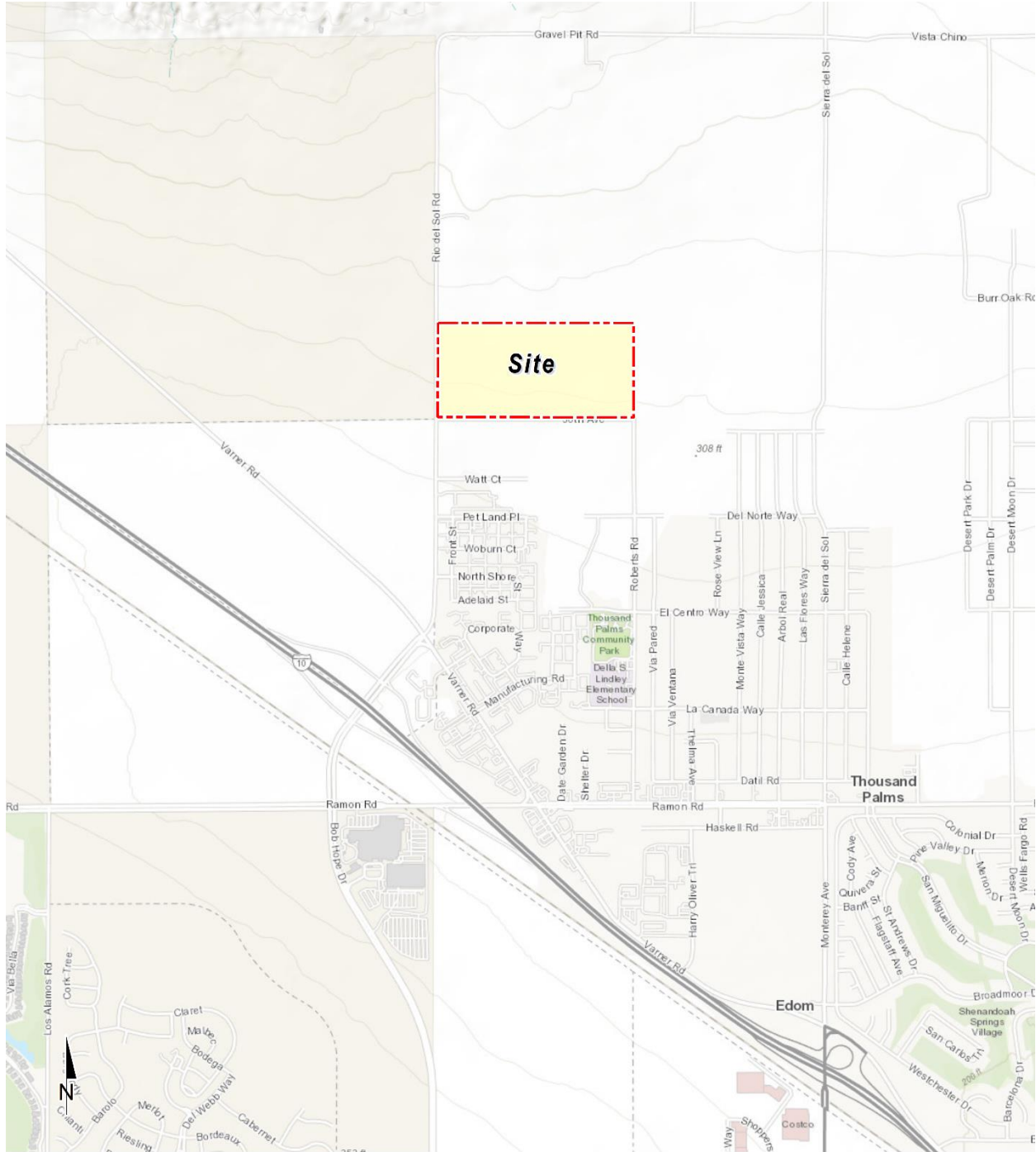
The proposed Project is located on the northeast corner of Rio Del Sol Road and 30th Avenue in the County of Riverside, as shown on Exhibit 1-A.

1.2 PROJECT DESCRIPTION

A preliminary site plan for the proposed Project is shown on Exhibit 1-B. The Project is proposed to consist of the development of a 1,238,992 square foot warehouse building. A water quality basin is proposed along the southern boundary of the site and a customer electric substation to be serviced by Imperial Irrigation District (IID) is proposed in the southeastern corner of the site, connected to the IID distribution system by off-site, above-ground, pole-mounted utility lines.

The on-site Project-related noise sources are expected to include: loading dock activity, tractor trailer parking, parking lot vehicle activities, IID Substation, diesel pump, roof-top air conditioning units, trash enclosure activity, and truck movements. This noise analysis is intended to describe the noise level impacts associated with the expected typical operational activities at the Project site.

EXHIBIT 1-A: LOCATION MAP



Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS

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2 FUNDAMENTALS

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

EXHIBIT 2-A: TYPICAL NOISE LEVELS

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

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

2.1 RANGE OF NOISE

Since the range of intensities that the human ear can detect is so large, the scale frequently used to measure intensity is a scale based on multiples of 10, the logarithmic scale. The scale for measuring intensity is the decibel scale. Each interval of 10 decibels indicates a sound energy ten times greater than before, which is perceived by the human ear as being roughly twice as loud. (2) 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 1,000 feet, which can cause serious discomfort. (3) 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 used metric 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 addition of 10 decibels to dBA L_{eq} sound levels at night between 10:00 p.m. and 7:00 a.m. These additions are made to account for the noise sensitive time periods during the evening and night hours when noise can become more intrusive. CNEL does not represent the actual sound level heard at any time, but rather represents the total sound exposure. The County of Riverside relies on the 24-hour CNEL level to assess land use compatibility with transportation related noise sources.

2.3 SOUND PROPAGATION

When sound propagates over a distance, it changes in level and frequency content. The 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. (2)

2.3.2 GROUND ABSORPTION

The propagation path of noise from a highway to a receiver 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 receiver, 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 receiver 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. (4)

2.3.3 ATMOSPHERIC EFFECTS

Receivers located downwind from a source can be exposed to increased noise levels relative to calm conditions, whereas locations upwind can have lowered noise levels. Sound levels can be increased at large distances (e.g., more than 500 feet) due to atmospheric temperature inversion (i.e., increasing temperature with elevation). Other factors such as air temperature, humidity, and turbulence can also have significant effects. (2)

2.3.4 SHIELDING

A large object or barrier in the path between a noise source and a receiver can substantially attenuate noise levels at the receiver. 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 Federal Highway Administration (FHWA) does not consider the planting of vegetation to be a noise abatement measure. (5)

2.4 NOISE CONTROL

Noise control is the process of obtaining an acceptable noise environment for an observation point or receiver by controlling the noise source, transmission path, receiver, or all three. This concept is known as the source-path-receiver 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 receiver. Noise barriers, however, do have limitations. For a noise barrier to work, it must block the line-of-sight path of sound from the noise source.

2.6 LAND USE COMPATIBILITY WITH NOISE

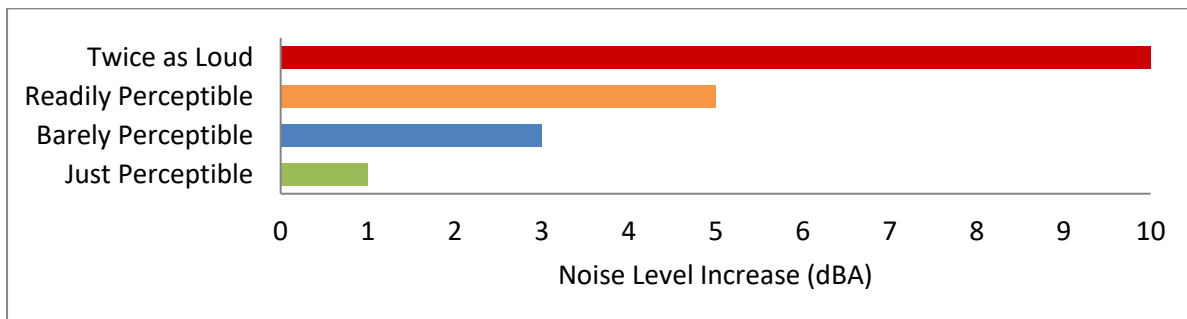
Some land uses are more tolerant of noise than others. For example, schools, hospitals, churches, and residences are more sensitive to noise intrusion than are commercial or industrial developments and related activities. As ambient noise levels affect the perceived amenity or livability of a development, 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. (6)

2.7 COMMUNITY RESPONSE TO NOISE

Approximately sixteen 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 may occur. Twenty to thirty percent of the population will not complain even in very severe noise environments. (7 pp. 8-6) Thus, a variety of reactions can be expected from people exposed to any given noise environment.

Surveys have shown that community response to noise varies from no reaction to vigorous action for newly introduced noises averaging from 10 dB below existing to 25 dB above existing. (8) According to research originally published in the Noise Effects Handbook (7), the percentage of high annoyance ranges from approximately 0 percent at 45 dB or less, 10 percent are highly annoyed around 60 dB, and increases rapidly to approximately 70 percent being highly annoyed at approximately 85 dB or greater. 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. A change of 3 dBA is considered barely perceptible, and changes of 5 dBA are considered readily perceptible. (4)

EXHIBIT 2-B: NOISE LEVEL INCREASE PERCEPTION



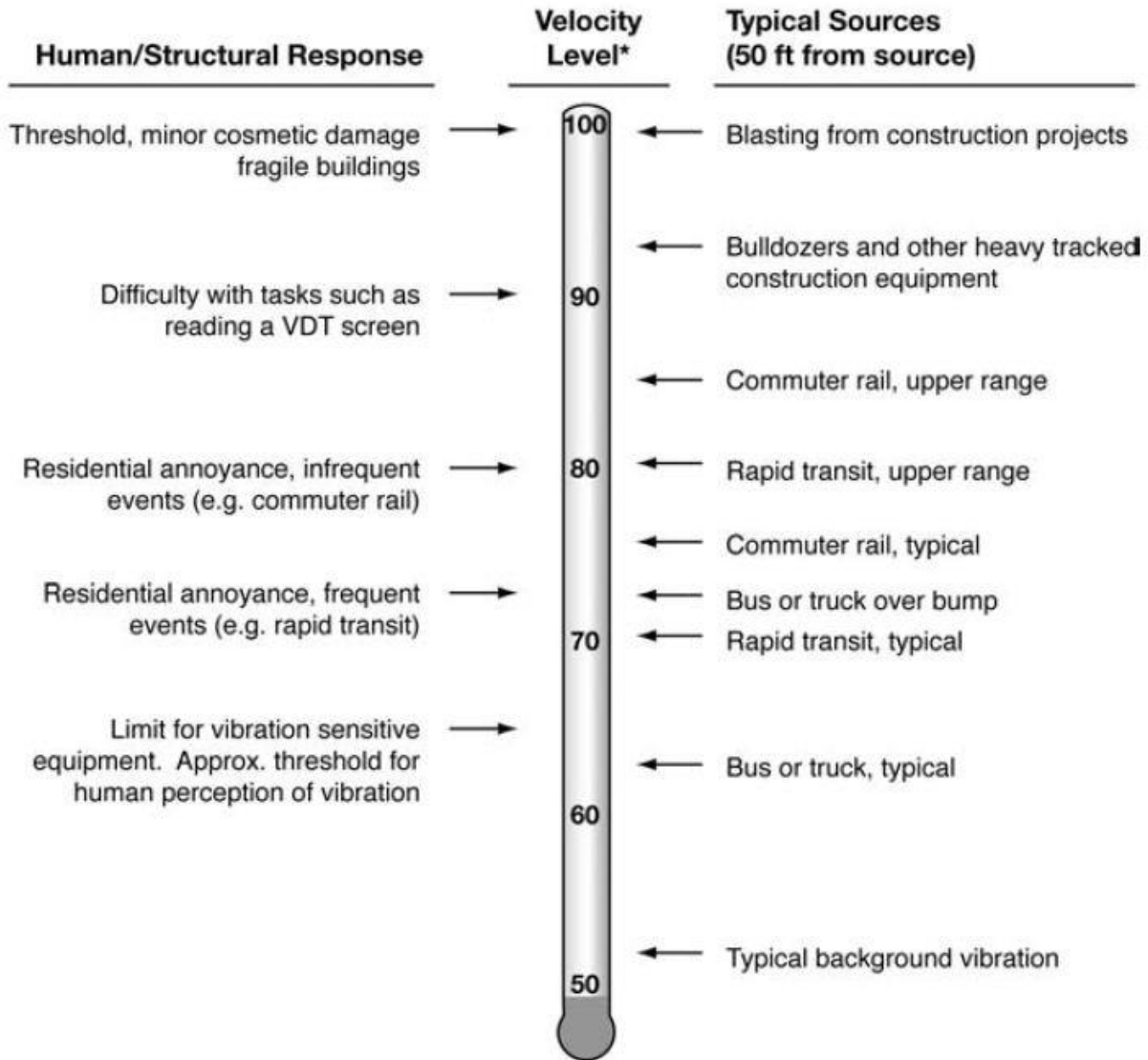
2.8 VIBRATION

Per the Federal Transit Administration (FTA) *Transit Noise Impact and Vibration Impact Assessment Manual* (8), 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 (VdB) serves to reduce the range of numbers used to describe human response to vibration. 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 and/or activities.

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 and Vibration Impact Assessment Manual.

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

3.2 COUNTY OF RIVERSIDE GENERAL PLAN NOISE ELEMENT

The County of Riverside has adopted a Noise Element of the General Plan to control and abate environmental noise, and to protect the citizens of the County of Riverside from excessive exposure to noise. (10) The Noise Element specifies the maximum 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 policies to minimize the impacts of excessive noise levels throughout the community and establishes noise level requirements for all land uses. To protect County of Riverside residents from excessive noise, the Noise Element contains the following policies related to the Project:

- N 1.1 *Protect noise-sensitive land uses from high levels of noise by restricting noise-producing land uses from these areas. If the noise-producing land use cannot be relocated, then noise buffers such as setbacks, landscaping, or block walls shall be used.*
- N 1.3 *Consider the following uses noise-sensitive and discourage these uses in areas in excess of 65 CNEL:*
 - *Schools*
 - *Hospitals*
 - *Rest Homes*
 - *Long Term Care Facilities*
 - *Mental Care Facilities*
 - *Residential Uses*
 - *Libraries*

- *Passive Recreation Uses*
 - *Places of Worship*
- N 1.5 *Prevent and mitigate the adverse impacts of excessive noise exposure on the residents, employees, visitors, and noise-sensitive uses of Riverside County.*
- N 4.1 *Prohibit facility-related noise, received by any sensitive use, from exceeding the following worst-case noise levels:*
- a. *45 dBA 9-minute L_{eq} between 10:00 p.m. and 7:00 a.m.;*
 - b. *65 dBA 9-minute L_{eq} between 7:00 a.m. and 10:00 p.m.*
- N 13.1 *Minimize the impacts of construction noise on adjacent uses within acceptable standards.*
- N 13.2 *Ensure that construction activities are regulated to establish hours of operation in order to prevent and/or mitigate the generation of excessive or adverse impacts on surrounding areas.*
- N 13.3 *Condition subdivision approval adjacent to developed/occupied noise-sensitive land uses (see policy N 1.3) by requiring the developer to submit a construction-related noise mitigation plan to the [County] for review and approval prior to issuance of a grading permit. The plan must depict the location of construction equipment and how the noise from this equipment will be mitigated during construction of this project, through the use of such methods as:*
- i. *Temporary noise attenuation fences;*
 - ii. *Preferential location and equipment; and*
 - iii. *Use of current noise suppression technology and equipment.*
- N 14.1 *Enforce the California Building Standards that sets standards for building construction to mitigate interior noise levels to the tolerable 45 CNEL limit. These standards are utilized in conjunction with the Uniform Building Code by the County's Building Department to ensure that noise protection is provided to the public. Some design features may include extra-dense insulation, double-paned windows, and dense construction materials.*
- N 16.3 *Prohibit exposure of residential dwellings to perceptible ground vibration from passing trains as perceived at the ground or second floor. Perceptible motion shall be presumed to be a motion velocity of 0.01 inches/second over a range of 1 to 100 Hz.*

To ensure noise-sensitive land uses are protected from high levels of noise (N 1.1), Table N-1 of the Noise Element identifies guidelines to evaluate proposed developments based on exterior and interior noise level limits for land uses and requires a noise analysis to determine needed mitigation measures if necessary. The Noise Element identifies residential use as a noise-sensitive land use (N 1.3) and discourages new development in areas with transportation related levels of 65 dBA CNEL or greater existing ambient noise levels. To prevent and mitigate noise impacts for its residents (N 1.5), County of Riverside requires exterior noise attenuation measures for sensitive land use exposed to transportation related noise levels higher than 65 dBA CNEL. In addition, the County of Riverside had adopted an interior noise level limit of 45 dBA CNEL (N 14.1).

Policy N 4.1 of the Noise Element sets a stationary-source exterior noise limit to not to be exceeded for a cumulative period of more than ten minutes in any hour of 65 dBA L_{eq} for daytime hours of 7:00 a.m. to 10:00 p.m., and 45 dBA L_{eq} during the noise-sensitive nighttime hours of 10:00 p.m. to 7:00 a.m. To prevent high levels of construction noise from impacting noise-

sensitive land uses, policies N 13.1 through 13.3 identify construction noise mitigation requirements for new development located near existing noise-sensitive land uses. (10)

3.2.1 LAND USE COMPATIBILITY GUIDELINES

The noise criteria identified in the County of Riverside Noise Element (Table N-1) are guidelines to evaluate the land use compatibility of transportation related noise. The compatibility criteria, shown on Exhibit 3-A, provides the County with a planning tool to gauge the compatibility of land uses relative to existing and future exterior noise levels.

The *Land Use Compatibility for Community Noise Exposure* matrix describes categories of compatibility and not specific noise standards. Non-noise sensitive warehouse/industrial use of the Project is considered *normally acceptable* with unmitigated exterior noise levels of less than 75 dBA CNEL based on the *Industrial, Manufacturing, Utilities, Agriculture* land use compatibility criteria shown on Exhibit 3-A. Noise sensitive residential designated land uses in the Project study area are considered *normally acceptable* with exterior noise levels below 60 dBA CNEL, and *conditionally acceptable* with exterior noise levels of up to 70 dBA CNEL. For *conditionally acceptable* exterior noise levels, of up to 80 dBA CNEL for Project land 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.* (10)

3.3.2 COUNTY OF RIVERSIDE STATIONARY NOISE STANDARDS

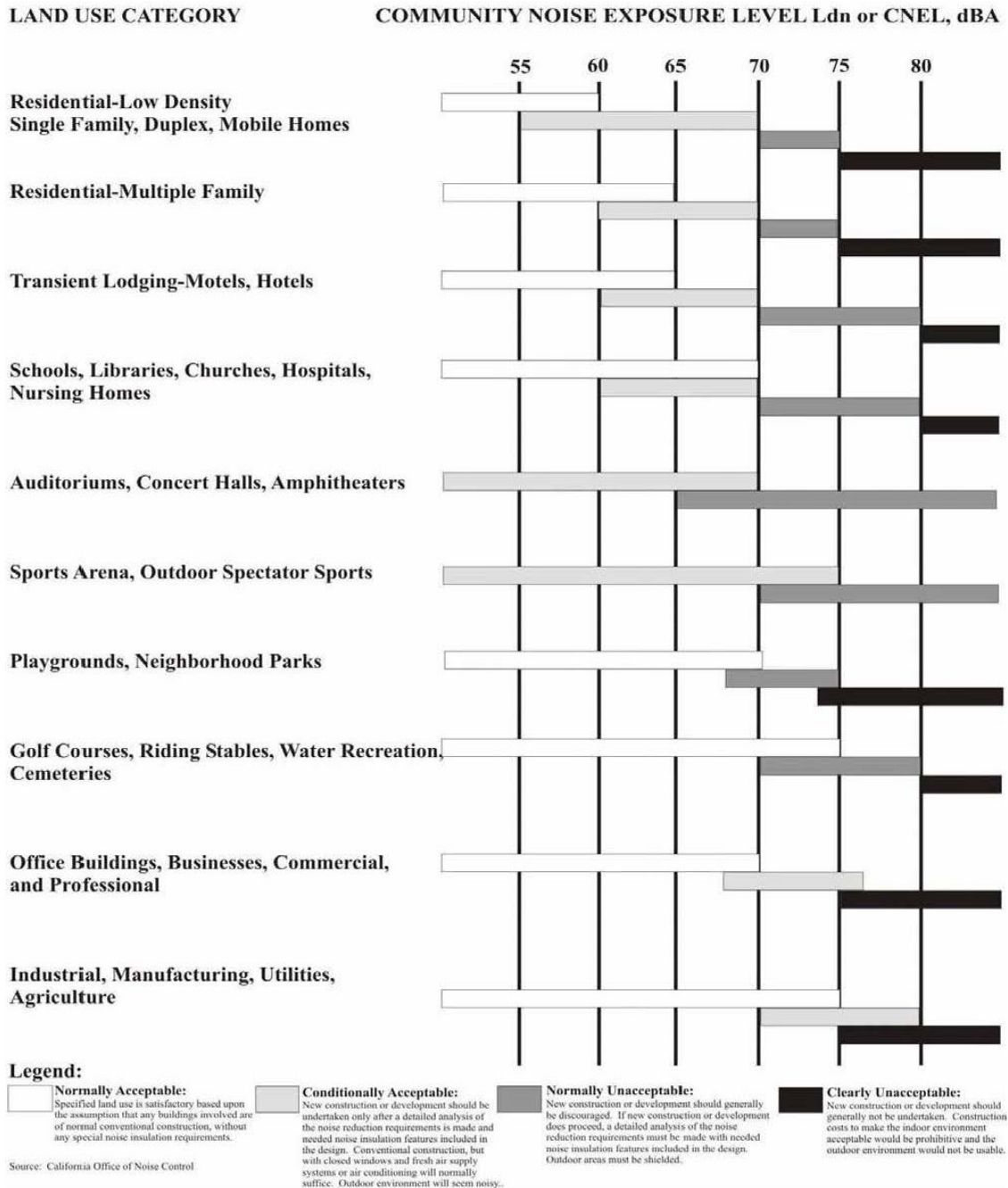
The County of Riverside has set stationary-source hourly average L_{eq} exterior noise limits to control loading dock activity, tractor trailer parking, parking lot vehicle activities, IID Substation, diesel pump, roof-top air conditioning units, trash enclosure activity, and truck movements associated with the development of the proposed Majestic Thousand Palms. The County considers noise generated using motor vehicles to be a stationary noise source when operated on private property such as at a loading dock. These facility-related noises, as projected to any portion of any surrounding property containing a *habitable dwelling, hospital, school, library or nursing home*, must not exceed the following worst-case noise levels.

Policy N 4.1 of the County of Riverside General Plan Noise Element sets a stationary-source average L_{eq} exterior noise limit not to be exceeded for a cumulative period of more than ten minutes in any hour of 65 dBA L_{eq} for daytime hours of 7:00 a.m. to 10:00 p.m., and 45 dBA L_{eq} during the noise-sensitive nighttime hours of 10:00 p.m. to 7:00 a.m. (10)

The County of Riverside County Code Section 9.52.040 *General sound level standards* (included in Appendix 3.1) summarizing Ordinance No. 847 *Regulating Noise* identify lower, more restrictive exterior noise level standards, which for the purpose of this report, are used to evaluate potential Project-related operational noise level limits instead of the higher the General Plan exterior noise level standards previously identified. The County of Riverside County Code identifies residential exterior noise level limits of 55 dBA L_{eq} during the daytime hours of 7:00 a.m. to 10:00 p.m., and 45 dBA L_{eq} during the noise-sensitive nighttime hours of 10:00 p.m. to 7:00 a.m., commercial exterior noise level limits of 65 dBA L_{eq} during the daytime hours, and 55

dBA L_{eq} during the noise-sensitive nighttime hours, and public facility exterior noise level limits of 65 dBA L_{eq} during the daytime hours, and 45 dBA L_{eq} during the noise-sensitive nighttime hours. (11).

EXHIBIT 3-A: LAND USE COMPATIBILITY FOR COMMUNITY NOISE EXPOSURE



Source: County of Riverside General Plan Noise Element, Table N-1.

Based on several discussions with the County of Riverside Department of Environmental Health (DEH), Office of Industrial Hygiene (OIH), it is important to recognize that the County of Riverside County Code noise level standards, incorrectly identify maximum noise level (L_{max}) standards that should instead reflect the average L_{eq} noise levels. Moreover, the County of Riverside DEH OIH's April 15th, 2015, *Requirements for determining and mitigating, non-transportation noise source impacts to residential properties* also identifies operational (stationary-source) noise level limits using the L_{eq} metric, consistent with the direction of the County of Riverside General Plan guidelines and standards provided in the Noise Element. Therefore, this report has been prepared consistent with direction of the County of Riverside DEH OIH guidelines and standards using the average L_{eq} noise level metric for stationary-source (operational) noise level evaluation.

3.3 CONSTRUCTION NOISE STANDARDS

The County of Riverside does not establish quantitative construction noise standards, instead the County has established limits to the hours of construction activities. Riverside County Ordinance No. 847 Regulating Noise Section 2i (Code Section 9.52.020[I]) indicates that noise associated with any private construction activity located within one-quarter of a mile from an inhabited dwelling is considered exempt between the hours of 6:00 a.m. and 6:00 p.m., during the months of June through September, and 7:00 a.m. and 6:00 p.m., during the months of October through May. (1) Neither the County's General Plan nor the County Code establish numeric maximum acceptable construction source noise levels at potentially affected receivers for CEQA analysis purposes.

Previously approved County of Riverside noise impact analysis reports prepared by Urban Crossroads, Inc. relied on a less restrictive 85 dBA L_{eq} construction noise level threshold adopted from the *Criteria for Recommended Standard: Occupational Noise Exposure* prepared by the National Institute for Occupational Safety and Health (NIOSH). (2) 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 NIOSH 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. (2)

To prevent long periods of exposure to high noise levels, the Occupational Safety and Health Administration (OSHA) requires hearing protection be provided by employers in workplaces where the noise levels may, endanger the hearing of their employees, such as construction equipment operators. 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. (3) The noise analysis prepared by Urban Crossroads, Inc. 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. (4)

Therefore, Urban Crossroads, Inc. continues to evaluate other agencies construction noise level limits to find a more appropriate threshold for assessing environmental impacts.

Initially, we reviewed Caltrans guidance as a state agency often cited as reference in CEQA documents, according to Caltrans guidance, construction noise impacts shall not exceed 86 dBA L_{max} at 50 feet from the job site activities between the hours of 9:00 p.m. to 6:00 a.m. (5) Equipment and operations are usually at or less than that level, except for blasting, pile drivers (impact or vibratory), hoe rams, pavement breakers for crack-and-seat operations, and other impact equipment. (6) The Caltrans guidance also suggests that detailed discussions of typical construction equipment noise levels are probably not necessary unless the project involves unusually sensitive receptors or nighttime work or if the project is controversial. (6) Since this limitation is only associated with nighttime activities and does not address the noise level at the point of concern, e.g., a residence, the Caltrans construction criteria was similarly not considered as the appropriate threshold for environmental review.

Further research indicated U.S. Department of Transportation guidance for construction published by the Federal Transit Administration (FTA) is appropriate and based on well documented studies of the effects of construction noise. According to the FTA *Transit Noise and Vibration Impact Assessment Manual*, local noise ordinances are typically not very useful in evaluating construction noise impacts. They usually relate to nuisance and hours of allowed activity, and sometimes specify limits in terms of maximum levels, but are generally not practical for assessing the impact of a construction project. Project construction noise criteria should account for the existing noise environment, the absolute noise levels during construction activities, the duration of the construction, and the adjacent land use. (7 p. 172) Due to the lack of standardized construction noise thresholds, the FTA provides guidelines that can be considered reasonable criteria for construction noise assessments. The FTA identifies two types of construction noise assessment criteria, general and detailed. For general construction noise assessments, the analysis is limited to the two noisiest pieces of equipment with an hourly daytime exterior noise level threshold for residential land use of 90 dBA $L_{eq(1hr)}$. (7 p. 179) However, for long-term construction projects that would expose sensitive receivers to noise for extended periods of time, the FTA considers a daytime 8-hour average exterior construction noise level of 80 dBA $L_{eq(8hr)}$

Therefore, to evaluate whether the Project will generate potentially significant short-term noise levels at nearby noise sensitive residential receiver locations, a daytime exterior construction noise level of 80 dBA L_{eq} is used as a reasonable threshold to assess construction noise level impacts based on the FTA detailed analysis construction noise criteria with a nighttime exterior construction noise level of 70 dBA L_{eq} . (7 p. 179)

3.4 CONSTRUCTION VIBRATION STANDARDS

Construction activity can result in varying degrees of ground-borne vibration, depending on the equipment and methods used, distance to the affected structures and soil type. Construction vibration is generally associated with pile driving and rock blasting. Other construction equipment such as air compressors, light trucks, hydraulic loaders, etc., generates little or no ground vibration (8). To analyze vibration impacts originating from the operation and construction of the Majestic Thousand Palms, vibration-generating activities are appropriately evaluated against standards established under the Municipal Code if such standards exist. However, the County of Riverside does not identify specific construction vibration level limits. Therefore, for analysis purposes, the Caltrans *Transportation and Construction Vibration Guidance Manual*, (12 p. 38) Table 19, vibration damage are used in this noise study to assess potential temporary construction-related impacts at adjacent building locations. The nearest noise sensitive buildings adjacent to the Project site can best be described as “older residential structures” with a maximum acceptable continuous vibration threshold of 0.3 PPV (in/sec).

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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?

4.1 NOISE LEVEL INCREASES (THRESHOLD A)

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 baseline 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 a noise impact significant*. (14) 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 level exceeds the previously existing ambient noise level, the less acceptable the new noise level will typically be judged.

4.1.1 NOISE-SENSITIVE RECEIVERS

The Federal Interagency Committee on Noise (FICON) (15) 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 a noise impact significant*, based on a 2008 California Court of Appeal ruling on *Gray v. County of Madera*. (14) 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, a *readily perceptible* 5 dBA or greater project-related noise level increase is considered a significant impact when the without project noise levels are below 60 dBA. 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. The FICON guidance provides an established source of criteria to assess the impacts of substantial temporary or permanent increase in baseline ambient noise levels. Based on the FICON criteria, the amount to which a given noise level increase is considered acceptable is reduced when the without Project (baseline) noise levels are already shown to exceed certain land-use specific exterior noise level criteria. The specific levels are based on typical responses to noise level increases of 5 dBA or *readily perceptible*, 3 dBA or *barely perceptible*, and 1.5 dBA depending on the underlying without Project noise levels for noise-sensitive uses. These levels of increases and their perceived acceptance at noise sensitive receiver locations are consistent with guidance provided by both the Federal Highway Administration (4 p. 9) and Caltrans (16 p. 2_48).

4.1.2 NON-NOISE-SENSITIVE RECEIVERS

The County of Riverside General Plan Noise Element, Table N-1, *Land Use Compatibility for Community Noise Exposure* 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 level for non-noise-sensitive warehouse/industrial land uses are 75 dBA CNEL. Noise levels greater than 75 dBA CNEL are considered *conditionally acceptable* per the *Land Use Compatibility for Community Noise Exposure*. (10)

To determine if Project-related traffic noise level increases are significant at off-site non-noise-sensitive land uses, a *barely perceptible* 3 dBA criteria is used. When the without Project noise levels are greater than the *normally acceptable* 75 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 for noise-sensitive land uses but instead rely on the County of Riverside General Plan Noise Element, Table N-1, *Land Use Compatibility for Community Noise Exposure normally acceptable* 75 dBA CNEL exterior noise level criteria.

4.2 VIBRATION (THRESHOLD B)

As described in Section 3.4, the vibration impacts originating from the construction of Majestic Thousand Palms, vibration-generating activities are appropriately evaluated using the Caltrans vibration damage thresholds to assess potential temporary construction-related impacts at adjacent building locations. The nearest noise sensitive buildings adjacent to the Project site can best be described as “older residential structures” with a maximum acceptable continuous vibration threshold of 0.3 PPV (in/sec).

4.3 CEQA GUIDELINES NOT FURTHER ANALYZED (THRESHOLD C)

The Project site is not located within two miles of a public airport or within an airport land use plan. The closest airport is the Palm Springs International Airport located over 5 miles southwest of the Project site. As such, the Project site would not be exposed to excessive noise levels from airport operations, and therefore, impacts are considered *less than significant*, and no further noise analysis is conducted in relation to Guideline C.

4.4 SIGNIFICANCE CRITERIA SUMMARY

Noise impacts shall be considered significant if any of the following occur as a direct result of the proposed development. Table 4-1 shows the significance criteria summary matrix that includes the allowable criteria used to identify potentially significant incremental noise level increases.

TABLE 4-1: SIGNIFICANCE CRITERIA SUMMARY

Analysis	Receiving Land Use	Condition(s)	Significance Criteria	
			Daytime	Nighttime
Off-Site Traffic	Noise-Sensitive ¹	If ambient is < 60 dBA CNEL	≥ 5 dBA CNEL Project increase	
		If ambient is 60 - 65 dBA CNEL	≥ 3 dBA CNEL Project increase	
		If ambient is > 65 dBA CNEL	≥ 1.5 dBA CNEL Project increase	
	Non-Noise-Sensitive ²	If ambient is > 75 dBA CNEL	≥ 3 dBA CNEL Project increase	
Operational	Noise-Sensitive	Exterior Noise Level Standards ³	55 dBA Leq	45 dBA Leq
		If ambient is < 60 dBA Leq ¹	≥ 5 dBA Leq Project increase	
		If ambient is 60 - 65 dBA Leq ¹	≥ 3 dBA Leq Project increase	
		If ambient is > 65 dBA Leq ¹	≥ 1.5 dBA Leq Project increase	
Construction	Noise-Sensitive	Noise Level Threshold ⁴	80 dBA Leq	70 dBA Leq
		Vibration Level Threshold ⁵	0.3 PPV (in/sec)	

¹ FICON, 1992.

² County of Riverside General Plan Noise Element, Table N-1.

³ County of Riverside General Plan Municipal Code, Section 9.52.040.

⁴ Federal Transit Administration, Transit Noise and Vibration Impact Assessment Manual.

⁵ Caltrans Transportation and Construction Vibration Manual, April 2020 Table 19

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

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5 EXISTING NOISE LEVEL MEASUREMENTS

To assess the existing noise level environment, 24-hour noise level measurements were taken at four 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, March 1, 2022. 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 equivalent 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.* (2) 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.* (8)

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. (8) 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 equivalent or the energy average hourly 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.

TABLE 5-1: AMBIENT NOISE LEVEL MEASUREMENTS

Location ¹	Description	Energy Average Noise Level (dBA L_{eq}) ²		CNEL
		Daytime	Nighttime	
L1	Located southeast of the Project site near the single-family residence at 72758 30th Avenue.	46.0	45.3	52.3
L2	Located southeast of the Project site near the single-family residence at 30525 Roseview Lane.	45.2	44.5	51.4
L3	Located south of the Project site near the single-family residence at 30524 Robert Road.	53.9	46.7	56.1
L4	Located south of the Project site near the Legacy Apartments at 72940 El Centro Way.	47.8	47.9	54.5

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.

Table 5-1 provides the equivalent 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, L_1 , L_2 , L_5 , L_8 , L_{25} , L_{50} , L_{90} , L_{95} , and L_{99} percentile noise levels observed during the daytime and nighttime periods.

EXHIBIT 5-A: NOISE MEASUREMENT LOCATIONS



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6 TRAFFIC NOISE METHODS AND PROCEDURES

The following section outlines the methods and procedures used to estimate and analyze the future traffic noise environment. Consistent with County of Riverside Noise Guidelines for Land Use Planning (see Exhibit 3-A), all transportation related noise levels are presented in terms of the 24-hour CNEL's.

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)

6.1.1 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 12 off-site study area roadway segments, the distance from the centerline to adjacent land use based on the functional roadway classifications per the County of Riverside General Plan Circulation Element, and the vehicle speeds. The ADT volumes used in this study area presented on Table 6-2 are based on the *Majestic Thousand Palms Traffic Analysis*, prepared by Urban Crossroads, Inc. for the following traffic scenarios (20).

- Existing (E)
- Existing plus Project (E+P)
- Existing plus Ambient Growth plus Cumulative (EAC) (2025) without Project Conditions
- Existing plus Ambient Growth plus Cumulative (EAPC) (2025) with Project Conditions
- Horizon Year (2045) without Project Conditions
- Horizon Year (2045) with Project Conditions

The ADT volumes vary for each roadway segment based on the existing traffic volumes and the combination of project traffic distributions. This analysis relies on a comparative evaluation of the off-site traffic noise impacts at the boundary of the right-of-way of the receiving adjacent land use, without and with project ADT traffic volumes from the Project traffic analysis. The

Project is anticipated to generate a net total of 2,640 two-way trips per day (actual vehicles) that includes 564 truck trips.

TABLE 6-1: OFF-SITE ROADWAY PARAMETERS

ID	Roadway	Segment	Classification ¹	Receiving Land Use ²	Distance from Centerline to Receiving Land Use (Feet) ³	Vehicle Speed (mph)
1	Rio Del Sol Rd.	n/o 30th Av.	Secondary	Non-Sensitive	50'	55
2	Rio Del Sol Rd.	s/o 30th Av.	Secondary	Non-Sensitive	50'	55
3	Bob Hope Dr.	s/o Varner Rd.	Urban Arterial	Non-Sensitive	76'	55
4	Bob Hope Dr.	s/o I-10 WB Ramps	Urban Arterial	Non-Sensitive	76'	55
5	Bob Hope Dr.	s/o I-10 EB Ramps	Urban Arterial	Non-Sensitive	76'	55
6	Bob Hope Dr.	s/o Ramon Rd.	Urban Arterial	Non-Sensitive	76'	55
7	Varner Rd.	w/o Rio Del Sol Rd.	Arterial	Non-Sensitive	64'	55
8	Varner Rd.	e/o Rio Del Sol Rd.	Arterial	Non-Sensitive	64'	40
9	Ramon Rd.	w/o Bob Hope Dr.	Urban Arterial	Sensitive	76'	55
10	Ramon Rd.	e/o Bob Hope Dr.	Arterial	Non-Sensitive	64'	55
11	Ramon Rd.	w/o Varner Rd.	Arterial	Non-Sensitive	64'	45
12	Ramon Rd.	e/o Varner Rd.	Arterial	Sensitive	64'	45

¹ Majestic Thousand Palms, Urban Crossroads, Inc.

² Based on a review of existing aerial imagery.

³ Distance to receiving land use is based upon the right-of-way distances.

TABLE 6-2: AVERAGE DAILY TRAFFIC VOLUMES

ID	Roadway	Segment	Average Daily Traffic Volumes ¹					
			Existing (2022)		EAC (2025)		HY (2045)	
			Without Project	With Project	Without Project	With Project	Without Project	With Project
1	Rio Del Sol Rd.	n/o 30th Av.	2,184	4,060	2,436	4,312	2,680	4,556
2	Rio Del Sol Rd.	s/o 30th Av.	2,184	4,824	2,570	5,210	2,827	5,467
3	Bob Hope Dr.	s/o Varner Rd.	13,717	15,495	16,506	18,284	18,156	19,934
4	Bob Hope Dr.	s/o I-10 WB Ramps	24,443	25,707	27,357	28,621	30,982	32,247
5	Bob Hope Dr.	s/o I-10 EB Ramps	25,512	26,326	27,074	27,888	29,923	30,737
6	Bob Hope Dr.	s/o Ramon Rd.	29,372	29,896	31,169	31,694	37,566	38,091
7	Varner Rd.	w/o Rio Del Sol Rd.	7,393	7,525	7,537	7,669	8,291	8,423
8	Varner Rd.	e/o Rio Del Sol Rd.	14,833	15,563	15,852	16,582	17,437	18,168
9	Ramon Rd.	w/o Bob Hope Dr.	32,735	33,009	32,735	33,009	41,264	41,538
10	Ramon Rd.	e/o Bob Hope Dr.	23,110	23,126	23,110	23,126	48,088	48,105
11	Ramon Rd.	w/o Varner Rd.	14,973	15,020	15,029	15,077	30,993	31,040
12	Ramon Rd.	e/o Varner Rd.	15,856	16,096	16,170	16,410	27,524	27,764

¹ Majestic Thousand Palms Traffic Analysis, Urban Crossroads, Inc.

To quantify the off-site noise levels, the Project related truck trips were added to the heavy truck category in the FHWA noise prediction model. The addition of the Project related truck trips increases the percentage of heavy trucks in the vehicle mix. This approach recognizes that the FHWA noise prediction model is significantly influenced by the number of heavy trucks in the vehicle mix. Table 6-3 provides the time of day (daytime, evening, and nighttime) vehicle splits. The daily Project truck trip-ends were assigned to the individual off-site study area roadway segments based on the Project truck trip distribution percentages documented in the *Majestic Thousand Palms Traffic Analysis*. Using the Project truck trips in combination with the Project trip distribution, Urban Crossroads, Inc. calculated the number of additional Project truck trips and vehicle mix percentages for each of the study area roadway segments. Table 6-4 shows the traffic flow by vehicle type (vehicle mix) used for all without Project traffic scenarios, and Tables 6-5 to 6-7 show the vehicle mixes used for the with Project traffic scenarios.

TABLE 6-3: TIME OF DAY VEHICLE SPLITS

Vehicle Type	Time of Day Splits ¹			Total of Time of Day Splits
	Daytime	Evening	Nighttime	
Autos	74.56%	8.89%	16.55%	100.00%
Medium Trucks	81.64%	5.43%	12.92%	100.00%
Heavy Trucks	63.63%	8.02%	28.35%	100.00%

¹ Based on the April 29, 2022, 24-hour directional vehicle classification count collected on Bob Hope Drive South of Varner Road (Majestic Thousand Palms Traffic Analysis, Urban Crossroads, Inc.)

"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: WITHOUT PROJECT VEHICLE MIX

Classification	Total % Traffic Flow ¹			Total
	Autos	Medium Trucks	Heavy Trucks	
All Segments	82.31%	4.97%	12.73%	100.00%

¹ Based on the April 29, 2022, 24-hour directional vehicle classification count collected on Bob Hope Drive South of Varner Road (Majestic Thousand Palms Traffic Analysis, Urban Crossroads, Inc.)

Due to the added Project truck trips, the increase in Project traffic volumes and the distributions of trucks on the study area road segments, the percentage of autos, medium trucks and heavy trucks will vary for each of the traffic scenarios. This explains why the existing and future traffic volumes and vehicle mixes vary between seemingly identical study area roadway segments.

TABLE 6-5: EXISTING WITH PROJECT VEHICLE MIX

ID	Roadway	Segment	With Project ¹			Total ²
			Autos	Medium Trucks	Heavy Trucks	
1	Rio Del Sol Rd.	n/o 30th Av.	80.06%	3.82%	16.12%	100.00%
2	Rio Del Sol Rd.	s/o 30th Av.	80.30%	3.53%	16.17%	100.00%
3	Bob Hope Dr.	s/o Varner Rd.	81.17%	4.74%	14.09%	100.00%
4	Bob Hope Dr.	s/o I-10 WB Ramps	82.01%	4.85%	13.14%	100.00%
5	Bob Hope Dr.	s/o I-10 EB Ramps	82.40%	4.86%	12.74%	100.00%
6	Bob Hope Dr.	s/o Ramon Rd.	82.39%	4.90%	12.71%	100.00%
7	Varner Rd.	w/o Rio Del Sol Rd.	82.24%	4.92%	12.84%	100.00%
8	Varner Rd.	e/o Rio Del Sol Rd.	82.85%	4.76%	12.39%	100.00%
9	Ramon Rd.	w/o Bob Hope Dr.	82.32%	4.94%	12.75%	100.00%
10	Ramon Rd.	e/o Bob Hope Dr.	82.29%	4.96%	12.74%	100.00%
11	Ramon Rd.	w/o Varner Rd.	82.32%	4.95%	12.72%	100.00%
12	Ramon Rd.	e/o Varner Rd.	82.50%	4.90%	12.60%	100.00%

¹ Total of vehicle mix percentage values rounded to the nearest one-hundredth.

TABLE 6-6: EAC 2025 WITH PROJECT VEHICLE MIX

ID	Roadway	Segment	With Project ¹			Total ²
			Autos	Medium Trucks	Heavy Trucks	
1	Rio Del Sol Rd.	n/o 30th Av.	80.20%	3.88%	15.92%	100.00%
2	Rio Del Sol Rd.	s/o 30th Av.	80.45%	3.64%	15.91%	100.00%
3	Bob Hope Dr.	s/o Varner Rd.	81.34%	4.78%	13.88%	100.00%
4	Bob Hope Dr.	s/o I-10 WB Ramps	82.04%	4.86%	13.10%	100.00%
5	Bob Hope Dr.	s/o I-10 EB Ramps	82.40%	4.87%	12.74%	100.00%
6	Bob Hope Dr.	s/o Ramon Rd.	82.39%	4.91%	12.71%	100.00%
7	Varner Rd.	w/o Rio Del Sol Rd.	82.24%	4.92%	12.84%	100.00%
8	Varner Rd.	e/o Rio Del Sol Rd.	82.81%	4.78%	12.41%	100.00%
9	Ramon Rd.	w/o Bob Hope Dr.	82.32%	4.94%	12.75%	100.00%
10	Ramon Rd.	e/o Bob Hope Dr.	82.29%	4.96%	12.74%	100.00%
11	Ramon Rd.	w/o Varner Rd.	82.32%	4.95%	12.72%	100.00%
12	Ramon Rd.	e/o Varner Rd.	82.50%	4.90%	12.60%	100.00%

¹ Total of vehicle mix percentage values rounded to the nearest one-hundredth.

TABLE 6-7: HY 2045 WITH PROJECT VEHICLE MIX

ID	Roadway	Segment	With Project ¹			Total ²
			Autos	Medium Trucks	Heavy Trucks	
1	Rio Del Sol Rd.	n/o 30th Av.	80.31%	3.94%	15.75%	100.00%
2	Rio Del Sol Rd.	s/o 30th Av.	80.53%	3.70%	15.76%	100.00%
3	Bob Hope Dr.	s/o Varner Rd.	81.42%	4.79%	13.78%	100.00%
4	Bob Hope Dr.	s/o I-10 WB Ramps	82.07%	4.87%	13.05%	100.00%
5	Bob Hope Dr.	s/o I-10 EB Ramps	82.39%	4.88%	12.73%	100.00%
6	Bob Hope Dr.	s/o Ramon Rd.	82.37%	4.92%	12.71%	100.00%
7	Varner Rd.	w/o Rio Del Sol Rd.	82.25%	4.92%	12.83%	100.00%
8	Varner Rd.	e/o Rio Del Sol Rd.	82.77%	4.79%	12.44%	100.00%
9	Ramon Rd.	w/o Bob Hope Dr.	82.31%	4.94%	12.74%	100.00%
10	Ramon Rd.	e/o Bob Hope Dr.	82.30%	4.96%	12.74%	100.00%
11	Ramon Rd.	w/o Varner Rd.	82.31%	4.96%	12.73%	100.00%
12	Ramon Rd.	e/o Varner Rd.	82.42%	4.93%	12.66%	100.00%

¹ Total of vehicle mix percentage values rounded to the nearest one-hundredth.

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7 OFF-SITE TRAFFIC NOISE ANALYSIS

To assess the off-site transportation CNEL noise level impacts associated with development of the proposed Project, noise contours were developed based on *the Majestic Thousand Palms Traffic Analysis* prepared by Urban Crossroads, Inc. (20) Noise contour boundaries represent the equal levels of noise exposure and are measured in CNEL from the center of the roadway.

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 to 7-6 present a summary of the exterior traffic noise levels for each traffic condition. Appendix 7.1 includes the traffic noise level contours worksheets for each traffic condition.

TABLE 7-1: EXISTING WITHOUT PROJECT CONTOURS

ID	Road	Segment	Receiving Land Use ¹	CNEL at Receiving Land Use (dBA) ²	Distance to Contour from Centerline (Feet)		
					70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Rio Del Sol Rd.	n/o 30th Av.	Non-Sensitive	70.2	56	122	262
2	Rio Del Sol Rd.	s/o 30th Av.	Non-Sensitive	70.2	RW	111	240
3	Bob Hope Dr.	s/o Varner Rd.	Non-Sensitive	76.0	RW	75	161
4	Bob Hope Dr.	s/o I-10 WB Ramps	Non-Sensitive	78.5	75	162	350
5	Bob Hope Dr.	s/o I-10 EB Ramps	Non-Sensitive	78.7	75	161	347
6	Bob Hope Dr.	s/o Ramon Rd.	Non-Sensitive	79.3	170	367	790
7	Varner Rd.	w/o Rio Del Sol Rd.	Non-Sensitive	74.1	166	358	770
8	Varner Rd.	e/o Rio Del Sol Rd.	Non-Sensitive	74.9	166	358	771
9	Ramon Rd.	w/o Bob Hope Dr.	Sensitive	79.5	314	677	1459
10	Ramon Rd.	e/o Bob Hope Dr.	Non-Sensitive	79.1	269	579	1248
11	Ramon Rd.	w/o Varner Rd.	Non-Sensitive	75.7	262	564	1215
12	Ramon Rd.	e/o Varner Rd.	Sensitive	76.0	247	533	1147

¹ Based on a review of existing aerial imagery.

² The CNEL is calculated at the boundary of the right-of-way of the receiving adjacent land use.

"RW" = Location of the respective noise contour falls within the right-of-way of the road.

TABLE 7-2: EXISTING WITH PROJECT CONTOURS

ID	Road	Segment	Receiving Land Use ¹	CNEL at Receiving Land Use (dBA) ²	Distance to Contour from Centerline (Feet)		
					70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Rio Del Sol Rd.	n/o 30th Av.	Non-Sensitive	73.6	87	188	404
2	Rio Del Sol Rd.	s/o 30th Av.	Non-Sensitive	74.4	98	210	453
3	Bob Hope Dr.	s/o Varner Rd.	Non-Sensitive	76.8	217	467	1006
4	Bob Hope Dr.	s/o I-10 WB Ramps	Non-Sensitive	78.8	293	631	1360
5	Bob Hope Dr.	s/o I-10 EB Ramps	Non-Sensitive	78.8	293	631	1360
6	Bob Hope Dr.	s/o Ramon Rd.	Non-Sensitive	79.3	319	686	1479
7	Varner Rd.	w/o Rio Del Sol Rd.	Non-Sensitive	74.3	123	265	571
8	Varner Rd.	e/o Rio Del Sol Rd.	Non-Sensitive	75.0	137	296	637
9	Ramon Rd.	w/o Bob Hope Dr.	Sensitive	79.5	327	705	1519
10	Ramon Rd.	e/o Bob Hope Dr.	Non-Sensitive	79.1	259	558	1202
11	Ramon Rd.	w/o Varner Rd.	Non-Sensitive	75.8	155	334	719
12	Ramon Rd.	e/o Varner Rd.	Sensitive	76.0	161	348	749

¹ Based on a review of existing aerial imagery.

² The CNEL is calculated at the boundary of the right-of-way of the receiving adjacent land use.

"RW" = Location of the respective noise contour falls within the right-of-way of the road.

TABLE 7-3: EAC 2025 WITHOUT PROJECT CONTOURS

ID	Road	Segment	Receiving Land Use ¹	CNEL at Receiving Land Use (dBA) ²	Distance to Contour from Centerline (Feet)		
					70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Rio Del Sol Rd.	n/o 30th Av.	Non-Sensitive	70.6	55	119	256
2	Rio Del Sol Rd.	s/o 30th Av.	Non-Sensitive	70.9	57	123	265
3	Bob Hope Dr.	s/o Varner Rd.	Non-Sensitive	76.8	215	463	997
4	Bob Hope Dr.	s/o I-10 WB Ramps	Non-Sensitive	79.0	301	648	1396
5	Bob Hope Dr.	s/o I-10 EB Ramps	Non-Sensitive	78.9	299	644	1386
6	Bob Hope Dr.	s/o Ramon Rd.	Non-Sensitive	79.5	328	707	1523
7	Varner Rd.	w/o Rio Del Sol Rd.	Non-Sensitive	74.2	123	264	569
8	Varner Rd.	e/o Rio Del Sol Rd.	Non-Sensitive	75.2	141	304	655
9	Ramon Rd.	w/o Bob Hope Dr.	Sensitive	79.5	325	701	1510
10	Ramon Rd.	e/o Bob Hope Dr.	Non-Sensitive	79.1	259	557	1201
11	Ramon Rd.	w/o Varner Rd.	Non-Sensitive	75.8	155	334	720
12	Ramon Rd.	e/o Varner Rd.	Sensitive	76.1	163	351	756

¹ Based on a review of existing aerial imagery.

² The CNEL is calculated at the boundary of the right-of-way of the receiving adjacent land use.

"RW" = Location of the respective noise contour falls within the right-of-way of the road.

TABLE 7-4: EAC 2025 WITH PROJECT CONTOURS

ID	Road	Segment	Receiving Land Use ¹	CNEL at Receiving Land Use (dBA) ²	Distance to Contour from Centerline (Feet)		
					70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Rio Del Sol Rd.	n/o 30th Av.	Non-Sensitive	73.8	90	194	418
2	Rio Del Sol Rd.	s/o 30th Av.	Non-Sensitive	74.6	102	220	473
3	Bob Hope Dr.	s/o Varner Rd.	Non-Sensitive	77.5	240	517	1115
4	Bob Hope Dr.	s/o I-10 WB Ramps	Non-Sensitive	79.2	314	677	1459
5	Bob Hope Dr.	s/o I-10 EB Ramps	Non-Sensitive	79.0	304	656	1413
6	Bob Hope Dr.	s/o Ramon Rd.	Non-Sensitive	79.6	331	714	1538
7	Varner Rd.	w/o Rio Del Sol Rd.	Non-Sensitive	74.3	124	268	578
8	Varner Rd.	e/o Rio Del Sol Rd.	Non-Sensitive	75.2	143	309	665
9	Ramon Rd.	w/o Bob Hope Dr.	Sensitive	79.5	327	705	1519
10	Ramon Rd.	e/o Bob Hope Dr.	Non-Sensitive	79.1	259	558	1202
11	Ramon Rd.	w/o Varner Rd.	Non-Sensitive	75.8	155	335	721
12	Ramon Rd.	e/o Varner Rd.	Sensitive	76.1	163	352	759

¹ Based on a review of existing aerial imagery.

² The CNEL is calculated at the boundary of the right-of-way of the receiving adjacent land use.

"RW" = Location of the respective noise contour falls within the right-of-way of the road.

TABLE 7-5: HY 2045 WITHOUT PROJECT CONTOURS

ID	Road	Segment	Receiving Land Use ¹	CNEL at Receiving Land Use (dBA) ²	Distance to Contour from Centerline (Feet)		
					70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Rio Del Sol Rd.	n/o 30th Av.	Non-Sensitive	71.0	59	127	273
2	Rio Del Sol Rd.	s/o 30th Av.	Non-Sensitive	71.3	61	131	282
3	Bob Hope Dr.	s/o Varner Rd.	Non-Sensitive	77.2	229	493	1062
4	Bob Hope Dr.	s/o I-10 WB Ramps	Non-Sensitive	79.5	327	704	1517
5	Bob Hope Dr.	s/o I-10 EB Ramps	Non-Sensitive	79.4	319	688	1482
6	Bob Hope Dr.	s/o Ramon Rd.	Non-Sensitive	80.3	372	801	1725
7	Varner Rd.	w/o Rio Del Sol Rd.	Non-Sensitive	74.6	131	281	606
8	Varner Rd.	e/o Rio Del Sol Rd.	Non-Sensitive	75.6	150	324	698
9	Ramon Rd.	w/o Bob Hope Dr.	Sensitive	80.5	380	818	1762
10	Ramon Rd.	e/o Bob Hope Dr.	Non-Sensitive	82.3	422	908	1957
11	Ramon Rd.	w/o Varner Rd.	Non-Sensitive	78.9	251	541	1166
12	Ramon Rd.	e/o Varner Rd.	Sensitive	78.4	232	500	1078

¹ Based on a review of existing aerial imagery.

² The CNEL is calculated at the boundary of the right-of-way of the receiving adjacent land use.

"RW" = Location of the respective noise contour falls within the right-of-way of the road.

TABLE 7-6: HY 2045 WITH PROJECT CONTOURS

ID	Road	Segment	Receiving Land Use ¹	CNEL at Receiving Land Use (dBA) ²	Distance to Contour from Centerline (Feet)		
					70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Rio Del Sol Rd.	n/o 30th Av.	Non-Sensitive	74.0	93	200	431
2	Rio Del Sol Rd.	s/o 30th Av.	Non-Sensitive	74.8	105	226	486
3	Bob Hope Dr.	s/o Varner Rd.	Non-Sensitive	77.8	254	546	1177
4	Bob Hope Dr.	s/o I-10 WB Ramps	Non-Sensitive	79.8	340	732	1577
5	Bob Hope Dr.	s/o I-10 EB Ramps	Non-Sensitive	79.5	325	700	1508
6	Bob Hope Dr.	s/o Ramon Rd.	Non-Sensitive	80.4	375	807	1739
7	Varner Rd.	w/o Rio Del Sol Rd.	Non-Sensitive	74.7	132	285	615
8	Varner Rd.	e/o Rio Del Sol Rd.	Non-Sensitive	75.7	152	328	708
9	Ramon Rd.	w/o Bob Hope Dr.	Sensitive	80.5	381	822	1771
10	Ramon Rd.	e/o Bob Hope Dr.	Non-Sensitive	82.3	422	909	1958
11	Ramon Rd.	w/o Varner Rd.	Non-Sensitive	78.9	251	542	1167
12	Ramon Rd.	e/o Varner Rd.	Sensitive	78.4	233	501	1080

¹ Based on a review of existing aerial imagery.

² The CNEL is calculated at the boundary of the right-of-way of the receiving adjacent land use.

"RW" = Location of the respective noise contour falls within the right-of-way of the road.

7.2 EXISTING PROJECT TRAFFIC NOISE LEVEL INCREASES

An analysis of existing traffic noise levels plus traffic noise generated by the proposed Project has been included in this report for informational purposes and to fully analyze all the existing traffic scenarios identified in the Traffic Analysis prepared by Urban Crossroads, Inc. However, the analysis of existing off-site 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 2025 conditions. Table 7-1 shows the Existing without Project conditions CNEL noise levels. The Existing without Project exterior noise levels range from 70.2 to 79.5 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-2 shows the Existing with Project conditions ranging from 73.6 to 79.5 dBA CNEL. Table 7-7 shows that the Project off-site traffic noise level increases range from 0.0 to 4.2 dBA CNEL on the study area roadway segments.

7.3 EAC 2025 TRAFFIC NOISE LEVEL INCREASES

Table 7-3 presents the Existing plus Ambient Growth Plus Cumulative (EAC) without Project conditions CNEL noise levels. The EAC without Project exterior noise levels range from 70.6 to 79.5 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-4 shows that the EAC with Project conditions will range from 73.8 to 79.6 dBA CNEL. Table 7-8 shows that the Project off-site traffic noise level increases range from 0.0 to 3.7 dBA CNEL.

7.4 HY 2045 TRAFFIC NOISE LEVEL INCREASES

Table 7-5 presents the HY 2045 without Project conditions CNEL noise levels. The HY 2045 without Project exterior noise levels range from 71.0 to 82.3 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-6 shows that the HY 2045 with Project conditions will range from 74.0 to 82.3 dBA CNEL. Table 7-9 shows that the Project off-site traffic noise level increases range from 0.0 to 3.5 dBA CNEL.

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

ID	Road	Segment	Receiving Land Use ¹	CNEL at Receiving Land Use (dBA) ¹			Incremental Noise Level Increase Threshold ²	
				No Project	With Project	Project Addition	Limit	Exceeded?
1	Rio Del Sol Rd.	n/o 30 th Av.	Non-Sensitive	70.2	73.6	3.4	n/a	No
2	Rio Del Sol Rd.	s/o 30 th Av.	Non-Sensitive	70.2	74.4	4.2	n/a	No
3	Bob Hope Dr.	s/o Varner Rd.	Non-Sensitive	76.0	76.8	0.8	3.0	No
4	Bob Hope Dr.	s/o I-10 WB Ramps	Non-Sensitive	78.5	78.8	0.3	3.0	No
5	Bob Hope Dr.	s/o I-10 EB Ramps	Non-Sensitive	78.7	78.8	0.1	3.0	No
6	Bob Hope Dr.	s/o Ramon Rd.	Non-Sensitive	79.3	79.3	0.0	3.0	No
7	Varner Rd.	w/o Rio Del Sol Rd.	Non-Sensitive	74.1	74.3	0.2	n/a	No
8	Varner Rd.	e/o Rio Del Sol Rd.	Non-Sensitive	74.9	75.0	0.1	n/a	No
9	Ramon Rd.	w/o Bob Hope Dr.	Sensitive	79.5	79.5	0.0	1.5	No
10	Ramon Rd.	e/o Bob Hope Dr.	Non-Sensitive	79.1	79.1	0.0	3.0	No
11	Ramon Rd.	w/o Varner Rd.	Non-Sensitive	75.7	75.8	0.1	3.0	No
12	Ramon Rd.	e/o Varner Rd.	Sensitive	76.0	76.0	0.0	1.5	No

¹ Based on a review of existing aerial imagery. Noise sensitive uses limited to existing residential land uses.
² The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the receiving land use.
³ Does the Project create an incremental noise level increase exceeding the significance criteria (Table 4-1)?
 “n/a” Per the County of Riverside General Plan Noise Element Table N-1, a barely perceptible 3 dBA or greater noise level increase is considered a significant impact when the ambient non-noise sensitive noise level is greater than the normally acceptable 75 dBA CNEL land use compatibility criteria.

TABLE 7-8: EAC 2025 WITH PROJECT TRAFFIC NOISE LEVEL INCREASES

ID	Road	Segment	Receiving Land Use ¹	CNEL at Receiving Land Use (dBA) ¹			Incremental Noise Level Increase Threshold ²	
				No Project	With Project	Project Addition	Limit	Exceeded?
1	Rio Del Sol Rd.	n/o 30 th Av.	Non-Sensitive	70.6	73.8	3.2	n/a	No
2	Rio Del Sol Rd.	s/o 30 th Av.	Non-Sensitive	70.9	74.6	3.7	n/a	No
3	Bob Hope Dr.	s/o Varner Rd.	Non-Sensitive	76.8	77.5	0.7	3.0	No
4	Bob Hope Dr.	s/o I-10 WB Ramps	Non-Sensitive	79.0	79.2	0.2	3.0	No
5	Bob Hope Dr.	s/o I-10 EB Ramps	Non-Sensitive	78.9	79.0	0.1	3.0	No
6	Bob Hope Dr.	s/o Ramon Rd.	Non-Sensitive	79.5	79.6	0.1	3.0	No
7	Varner Rd.	w/o Rio Del Sol Rd.	Non-Sensitive	74.2	74.3	0.1	n/a	No
8	Varner Rd.	e/o Rio Del Sol Rd.	Non-Sensitive	75.2	75.2	0.0	3.0	No
9	Ramon Rd.	w/o Bob Hope Dr.	Sensitive	79.5	79.5	0.0	1.5	No
10	Ramon Rd.	e/o Bob Hope Dr.	Non-Sensitive	79.1	79.1	0.0	3.0	No
11	Ramon Rd.	w/o Varner Rd.	Non-Sensitive	75.8	75.8	0.0	3.0	No
12	Ramon Rd.	e/o Varner Rd.	Sensitive	76.1	76.1	0.0	1.5	No

¹ Based on a review of existing aerial imagery. Noise sensitive uses limited to existing residential land uses.
² The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the receiving land use.
³ Does the Project create an incremental noise level increase exceeding the significance criteria (Table 4-1)?
 "n/a" Per the County of Riverside General Plan Noise Element Table N-1, a barely perceptible 3 dBA or greater noise level increase is considered a significant impact when the ambient non-noise sensitive noise level is greater than the normally acceptable 75 dBA CNEL land use compatibility criteria.

TABLE 7-9: HY 2045 WITH PROJECT TRAFFIC NOISE LEVEL INCREASES

ID	Road	Segment	Receiving Land Use ¹	CNEL at Receiving Land Use (dBA) ¹			Incremental Noise Level Increase Threshold ²	
				No Project	With Project	Project Addition	Limit	Exceeded?
1	Rio Del Sol Rd.	n/o 30 th Av.	Non-Sensitive	71.0	74.0	3.0	n/a	No
2	Rio Del Sol Rd.	s/o 30 th Av.	Non-Sensitive	71.3	74.8	3.5	n/a	No
3	Bob Hope Dr.	s/o Varner Rd.	Non-Sensitive	77.2	77.8	0.6	3.0	No
4	Bob Hope Dr.	s/o I-10 WB Ramps	Non-Sensitive	79.5	79.8	0.3	3.0	No
5	Bob Hope Dr.	s/o I-10 EB Ramps	Non-Sensitive	79.4	79.5	0.1	3.0	No
6	Bob Hope Dr.	s/o Ramon Rd.	Non-Sensitive	80.3	80.4	0.1	3.0	No
7	Varner Rd.	w/o Rio Del Sol Rd.	Non-Sensitive	74.6	74.7	0.1	n/a	No
8	Varner Rd.	e/o Rio Del Sol Rd.	Non-Sensitive	75.6	75.7	0.1	3.0	No
9	Ramon Rd.	w/o Bob Hope Dr.	Sensitive	80.5	80.5	0.0	1.5	No
10	Ramon Rd.	e/o Bob Hope Dr.	Non-Sensitive	82.3	82.3	0.0	3.0	No
11	Ramon Rd.	w/o Varner Rd.	Non-Sensitive	78.9	78.9	0.0	3.0	No
12	Ramon Rd.	e/o Varner Rd.	Sensitive	78.4	78.4	0.0	1.5	No

¹ Based on a review of existing aerial imagery. Noise sensitive uses limited to existing residential land uses.
² The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the receiving land use.
³ Does the Project create an incremental noise level increase exceeding the significance criteria (Table 4-1)?
 "n/a" Per the County of Riverside General Plan Noise Element Table N-1, a barely perceptible 3 dBA or greater noise level increase is considered a significant impact when the ambient non-noise sensitive noise level is greater than the normally acceptable 75 dBA CNEL land use compatibility criteria.

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. Moderately noise-sensitive land uses typically include multi-family dwellings, hotels, motels, dormitories, outpatient clinics, cemeteries, golf courses, country clubs, athletic/tennis clubs, and equestrian clubs. Land uses that are considered relatively insensitive to noise include business, commercial, and professional developments. Land uses that are typically not affected by noise include: industrial, manufacturing, utilities, agriculture, undeveloped land, parking lots, warehousing, liquid and solid waste facilities, salvage yards, and transit terminals.

To describe the potential off-site Project noise levels, four receiver locations in the vicinity of the Project site were identified. The selection of receiver locations is based on FHWA guidelines and is consistent with additional guidance provided by Caltrans and the FTA, as previously described in Section 5.2. 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. Distance is measured in a straight line from the project boundary to each receiver location.

- R1: Location R1 represents the existing noise sensitive residence at 72758 30th Avenue, approximately 1,329 feet southeast of the Project site. Receiver R1 is placed in the private outdoor living areas facing the Project site. A 24-hour noise measurement was taken near this location, L1, to describe the existing ambient noise environment.
- R2: Location R2 represents the existing noise sensitive residence at 30525 Roseview Lane, approximately 1,709 feet southeast of the Project site. Receiver R2 is placed in the private outdoor living areas facing the Project site. A 24-hour noise measurement was taken near this location, L2, to describe the existing ambient noise environment.
- R3: Location R3 represents the existing noise sensitive residence at 30524 Robert Road, approximately 1,396 feet south of the Project site. Since there are no private outdoor living areas (backyards) facing the Project site, receiver R3 is placed at the building façade. A 24-hour noise measurement was taken near this location, L3, to describe the existing ambient noise environment.
- R4: Location R4 represents the existing noise sensitive Legacy Apartments at 72940 El Centro Way, approximately 1,472 feet south of the Project site. Since there are no private outdoor living areas (backyards) facing the Project site, receiver R4 is placed at the building façade. A 24-hour noise measurement was taken near this location, L4, to describe the existing ambient noise environment.

EXHIBIT 8-A: RECEIVER LOCATIONS



LEGEND:
N [North Arrow] [Red dashed box] Site Boundary [Receiver symbol] Receiver Locations [Distance line] Distance from receiver to Project site boundary (in feet)

9 OPERATIONAL NOISE IMPACTS

This section analyzes the potential stationary-source operational noise impacts at the nearest receiver locations, identified in Section 8, resulting from the operation of the proposed Majestic Thousand Palms Project. Exhibit 9-A identifies the noise source locations used to assess the operational noise levels. The operational noise analysis includes the planned 12-foot-high screen walls surrounding the northern and southern loading dock areas as well as the eastern tractor trailer parking lot. The screenwall shown on Exhibit 9-A is designed for screening, privacy, noise control, and security.

9.1 OPERATIONAL NOISE SOURCES

This operational noise analysis is intended to describe noise level impacts associated with the expected typical of daytime and nighttime activities at the Project site. Consistent with similar warehouse uses, the Project business operations would primarily be conducted within the enclosed building, except for traffic movement, parking, as well as loading and unloading of trucks at designated loading bays. The on-site Project-related noise sources are expected to include: loading dock activity, tractor trailer parking, parking lot vehicle activities, IID Substation, diesel pump, roof-top air conditioning units, trash enclosure activity, and truck movements.

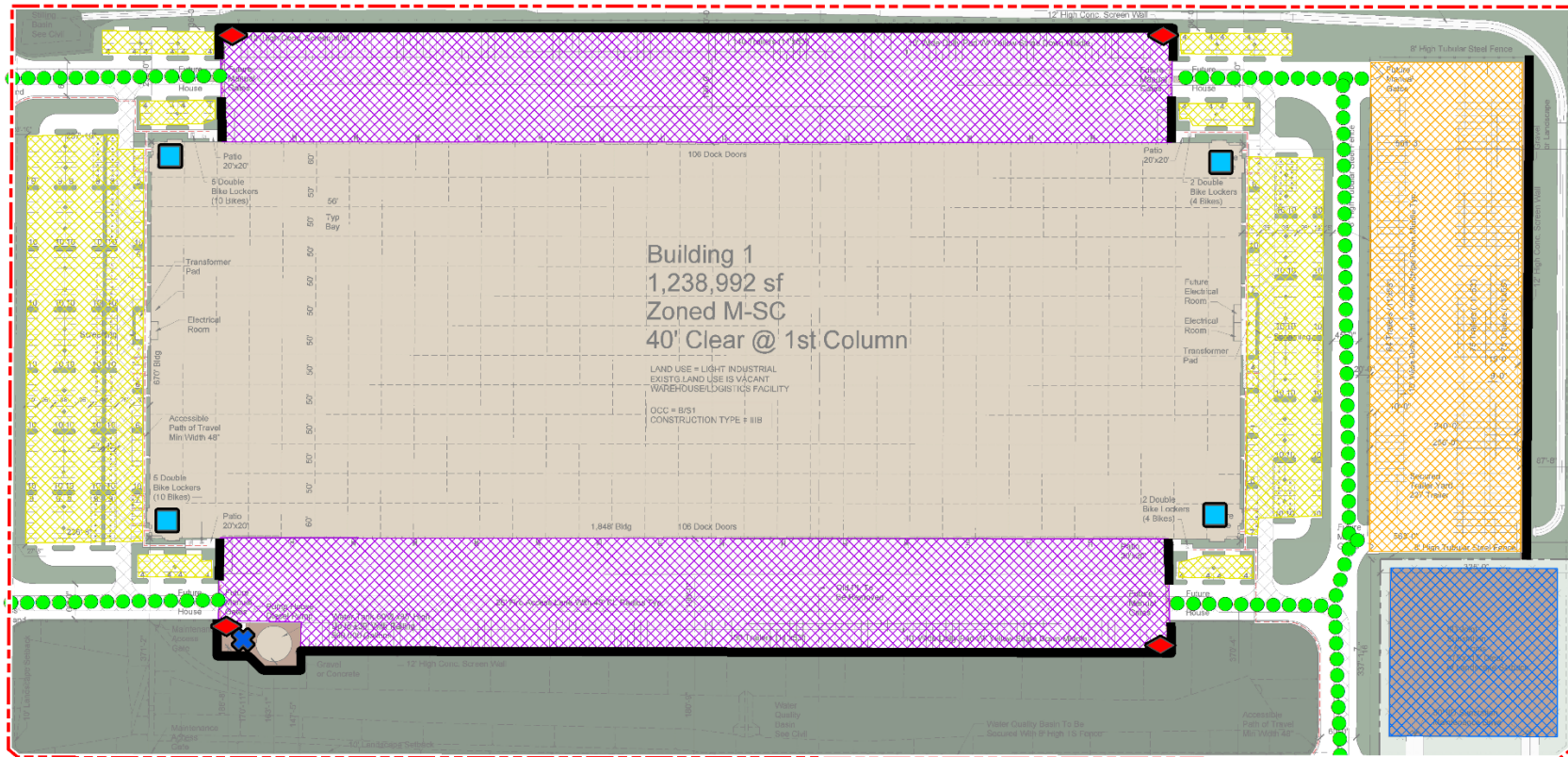
9.2 REFERENCE NOISE LEVELS

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 loading dock activity, tractor trailer parking, parking lot vehicle activities, IID Substation, diesel pump, roof-top air conditioning units, trash enclosure activity, and truck movements all operating at the same time. These sources of noise activity will likely vary throughout the day.

9.2.1 MEASUREMENT PROCEDURES

The reference noise level measurements presented in this section were collected using a Larson Davis LxT Type 1 precision sound level meter (serial number 01146). The LxT sound level meter was calibrated using a Larson-Davis calibrator, Model CAL 200, was programmed in “slow” mode to record noise levels in “A” weighted form and was located at approximately five feet above the ground elevation for each measurement. 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)

EXHIBIT 9-A: OPERATIONAL NOISE SOURCE LOCATIONS



LEGEND:



- Site Boundary
- Parking Lot Vehicle Activity
- Loading Dock Activity
- IID Substation
- Trash Enclosure Activity
- Planned 12-Foot High Screenwall
- Tractor Trailer Parking Activity
- Roof-Top Air Conditioning Unit
- ★ Diesel Pump
- Truck Movements

TABLE 9-1: REFERENCE NOISE LEVEL MEASUREMENTS

Reference Noise Source	Noise Source Height (Feet)	Min./ Hour ¹		Reference Noise Level (dBA L _{eq}) @ 50 Feet	Sound Power Level (dBA) ²
		Day	Night		
Loading Dock Activity	8'	60	60	65.7	111.5
Tractor Trailer Parking	8'	60	60	62.8	103.4
Parking Lot Vehicle Movements	5'	60	60	52.6	81.1
IID Substation	8'	60	60	55.6	87.3
Roof-Top Air Conditioning Units	5'	39	28	57.2	88.9
Trash Enclosure Activity	5'	60	30	57.3	89.0
Diesel Pump House	8'	60	60	42.2	73.9
Truck Movements	8'	60	60	59.8	93.2

¹ Anticipated duration (minutes within the hour) of noise activity during typical hourly conditions expected at the Project site. "Daytime" = 7:00 a.m. – 10:00 p.m.; "Nighttime" = 10:00 p.m. – 7:00 a.m.

² Sound power level represents the total amount of acoustical energy (noise level) produced by a sound source independent of distance or surroundings. Sound power levels calculated using the CadnaA noise model at the reference distance to the noise source. Numbers may vary due to size differences between point and area noise sources.

9.2.2 LOADING DOCK ACTIVITY

The reference loading dock activities are intended to describe the typical outdoor operational noise activities associated with the Project. This includes truck idling, reefer activity (refrigerator truck/cold storage), deliveries, backup alarms, trailer docking including a combination of tractor trailer semi-trucks, two-axle delivery trucks, and background operation activities. Since the noise levels generated by cold storage loading dock activity can be slightly higher due to the use of refrigerated trucks or reefers this analysis conservatively assumes that all loading dock activity is associated with cold storage facilities. The reference noise level measurement was taken in the center of the loading dock activity area and represents multiple concurrent noise sources resulting in a combined noise level of 65.7 dBA L_{eq} at a uniform distance of 50 feet. Specifically, the reference noise level measurement represents one truck located approximately 30 feet from the noise level meter with another truck passing by to park roughly 20 feet away, both with their engines idling. Throughout the reference noise level measurement, a separate docked and running reefer truck was located approximately 50 feet east of the measurement location. Additional background noise sources included truck pass-by noise, truck drivers talking to each other next to docked trucks, and air brake release noise when trucks parked.

9.2.3 TRACTOR TRAILER PARKING ACTIVITY

To evaluate the noise levels associated with tractor trailer parking, truck idling, backup alarms, trailer movements and storage activities, Urban Crossroads collected a reference noise level measurement at an existing parcel hub facility to describe the potential operational noise levels associated with Project operational activities. The measured reference noise level at 50 feet from activity was measured at 62.8 dBA L_{eq}. The reference noise level measurement includes a semi-

truck with trailer pass-by event, background switcher cab trailer towing, drop-off, idling, and backup alarm events.

9.2.4 PARKING LOT VEHICLE MOVEMENTS

To describe the on-site parking lot activity, a long-term 29-hour reference noise level measurement was collected in the center of activity within the staff parking lot of an Amazon warehouse distribution center. At 50 feet from the center of activity, the parking lot produced a reference noise level of 52.6 dBA L_{eq} . Parking activities are expected to take place during the full hour (60 minutes) throughout the daytime and evening hours. The parking lot noise levels are mainly due cars pulling in and out of parking spaces in combination with car doors opening and closing.

9.2.5 IID SUBSTATION

IID proposes to construct and operate a new 50 MW joint substation in the southeastern corner of the Majestic Thousand Palms Project Site. The substation is designed in two 25 MW banks, for a total of 50 MW. At full build-out, the substation's primary equipment would include one 92kV circuit breakers, two 25 megavolt-ampere (MVA) transformers, and up to eight distribution circuits at full build-out. Equipment would reach a maximum height of 15 feet and would be surrounded by a security fence with secured access gates. It is expected that the primary source of noise from the IID Substation will be generated by the power transformers. These transformers typically generate a noise level ranging from 60 to 80 dBA. (21) Therefore, an unmitigated reference noise level of approximately 80.0 dBA L_{eq} at 3 feet is used in this analysis to estimate the IID Substation noise levels.

9.2.6 ROOF-TOP AIR CONDITIONING UNITS

The noise level measurements describe a single mechanical roof-top air conditioning unit. The reference noise level represents a Lennox SCA120 series 10-ton model packaged air conditioning unit. At the uniform reference distance of 50 feet, the reference noise levels are 57.2 dBA L_{eq} . Based on the typical operating conditions observed over a four-day measurement period, the roof-top air conditioning units are estimated to operate for and average 39 minutes per hour during the daytime hours, and 28 minutes per hour during the nighttime hours. These operating conditions reflect peak summer cooling requirements with measured temperatures approaching 96 degrees Fahrenheit (°F) with average daytime temperatures of 82°F. For this noise analysis, the air conditioning units are expected to be located on the roof of the Project buildings.

9.2.7 TRASH ENCLOSURE ACTIVITY

To describe the noise levels associated with a trash enclosure activity, Urban Crossroads collected a reference noise level measurement at an existing trash enclosure containing two dumpster bins. The trash enclosure noise levels describe metal gates opening and closing, metal scraping against concrete floor sounds, dumpster movement on metal wheels, and trash dropping into the metal dumpster. The reference noise levels describe trash enclosure noise activities when trash is dropped into an empty metal dumpster, as would occur at the Project Site. The measured reference noise level at the uniform 50-foot reference distance is 57.3 dBA L_{eq} for the trash

enclosure activity. The reference noise level describes the expected noise source activities associated with the trash enclosures for the Project's proposed building.

9.2.8 DIESEL PUMP HOUSE

A reference noise level measurement was taken by Urban Crossroads, Inc. at the Coachella Valley Water District (CVWD) pump site number 5676, located at 38-130 Portola Avenue in the City of Palm Desert to describe the diesel pump house activity expected at the Project facilities. The two-minute reference noise level measurement indicates that pump activity generates noise levels of 69.8 dBA L_{eq} at 3 feet.

9.2.6 TRUCK MOVEMENTS

The truck movements reference noise level measurement was collected over a period of 1 hour and 28 minutes and represent multiple heavy trucks entering and exiting the outdoor loading dock area producing a reference noise level of 59.8 dBA L_{eq} at 50 feet. The noise sources included at this measurement location account for trucks entering and existing the Project driveways and maneuvering in and out of the outdoor loading dock activity area.

9.3 CADNA 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 multiple types of noise sources using the spatially accurate Project site plan, georeferenced Nearmap aerial imagery, topography, buildings, and barriers in its calculations to predict outdoor noise levels.

Using the ISO 9613-2 protocol, CadnaA 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 at each receiver and the partial noise level contributions by noise source. Consistent with the ISO 9613-2 protocol, the CadnaA noise prediction model relies on the reference sound power level (L_w) to describe individual noise sources. While sound pressure levels (e.g., L_{eq}) quantify in decibels the intensity of given sound sources at a reference distance, sound power levels (L_w) are connected to the sound source and are independent of distance. Sound pressure levels vary substantially with distance from the source and diminish because 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. A default ground attenuation factor of 0.5 was used in the CadnaA noise analysis to account for mixed ground representing a combination of hard and soft surfaces. Appendix 9.1 includes the detailed noise model inputs including the planned screenwall used to estimate the Project operational noise levels presented in this section.

9.4 PROJECT OPERATIONAL NOISE LEVELS

Using the reference noise levels to represent the proposed Project operations that include loading dock activity, tractor trailer parking, parking lot vehicle activities, IID Substation, diesel pump, roof-top air conditioning units, trash enclosure activity, and truck movements, Urban Crossroads, Inc. calculated the operational source noise levels that are expected to be generated at the Project site and the Project-related noise level increases that would be experienced at each of the sensitive receiver locations. Table 9-2 shows the Project operational noise levels during the daytime hours of 7:00 a.m. to 10:00 p.m. The daytime hourly noise levels at the off-site receiver locations are expected to range from 38.4 to 41.6 dBA L_{eq} .

TABLE 9-2: DAYTIME PROJECT OPERATIONAL NOISE LEVELS

Noise Source ¹	Operational Noise Levels by Receiver Location (dBA Leq)			
	R1	R2	R3	R4
Loading Dock Activity	39.1	35.7	37.8	38.9
Tractor Trailer Parking	36.6	33.3	34.5	34.1
Parking Lot Vehicle Movements	16.8	14.1	15.5	15.1
IID Substation	21.9	19.5	21.4	20.7
Roof-Top Air Conditioning Units	21.6	18.9	21.1	22.3
Trash Enclosure Activity	15.0	12.7	14.1	15.0
Diesel Pump House	5.1	5.0	7.6	9.6
Truck Movements	31.8	29.5	31.5	31.5
Total (All Noise Sources)	41.6	38.4	40.2	40.8

¹ See Exhibit 9-A for the noise source locations. CadnaA noise model calculations are included in Appendix 9.1.

Table 9-3 shows the Project operational noise levels during the nighttime hours of 10:00 p.m. to 7:00 a.m. The nighttime hourly noise levels at the off-site receiver locations are expected to range from 38.4 to 41.6 dBA L_{eq} .

TABLE 9-3: NIGHTTIME PROJECT OPERATIONAL NOISE LEVELS

Noise Source ¹	Operational Noise Levels by Receiver Location (dBA Leq)			
	R1	R2	R3	R4
Loading Dock Activity	39.1	35.7	37.8	38.9
Tractor Trailer Parking	36.6	33.3	34.5	34.1
Parking Lot Vehicle Movements	16.8	14.1	15.5	15.1
IID Substation	21.9	19.5	21.4	20.7
Roof-Top Air Conditioning Units	19.2	16.5	18.7	19.9
Trash Enclosure Activity	12.0	9.7	11.1	12.0
Diesel Pump House	5.1	5.0	7.6	9.6
Truck Movements	31.8	29.5	31.5	31.5
Total (All Noise Sources)	41.6	38.4	40.2	40.8

¹ See Exhibit 9-A for the noise source locations. CadnaA noise model calculations are included in Appendix 9.1.

The differences between the daytime and nighttime noise levels are largely related to the estimated duration of noise activity as outlined in Table 9-1 and Appendix 9.1.

9.5 PROJECT OPERATIONAL NOISE LEVEL COMPLIANCE

To demonstrate compliance with local noise regulations, the Project-only operational noise levels are evaluated against exterior noise level thresholds based on the County of Riverside exterior noise level standards at nearby noise-sensitive receiver locations. Table 9-4 shows the operational noise levels associated with Majestic Thousand Palms Project will not exceed the County of Riverside daytime and nighttime exterior noise level standards. Therefore, the operational noise impacts are considered *less than significant* at the nearby noise-sensitive receiver locations.

TABLE 9-4: OPERATIONAL NOISE LEVEL COMPLIANCE

Receiver Location ¹	Project Operational Noise Levels (dBA Leq) ²		Noise Level Standards (dBA Leq) ³		Noise Level Standards Exceeded? ⁴	
	Daytime	Nighttime	Daytime	Nighttime	Daytime	Nighttime
R1	41.6	41.6	55	45	No	No
R2	38.4	38.4	55	45	No	No
R3	40.2	40.2	55	45	No	No
R4	40.8	40.8	55	45	No	No

¹ See Exhibit 8-A for the receiver locations.

² Proposed Project operational noise levels as shown on Tables 9-2 and 9-3.

³ Exterior noise level standards, as shown on Table 4-1.

⁴ Do the estimated Project operational noise source activities exceed the noise level standards?

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

9.6 PROJECT OPERATIONAL NOISE LEVEL INCREASES

To describe the Project operational noise level increases, 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. (2) Instead, they must be logarithmically added using the following base equation:

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

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 describes the Project noise level increases 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 9-5 and 9-6, respectively. As indicated on Table 9-5, the Project will generate a daytime operational noise level increases ranging from 0.2 to 1.4 dBA Leq at the nearest receiver locations. Table 9-6 shows that the Project will generate a nighttime operational noise level increases

ranging from 0.8 to 1.5 dBA L_{eq} at the nearest receiver locations. Project-related operational noise level increases will not exceed the operational noise level increase significance criteria presented in Table 4-1, and, therefore, the increases at the sensitive receiver locations will be *less than significant*.

TABLE 9-5: DAYTIME PROJECT OPERATIONAL NOISE LEVEL INCREASES

Receiver Location ¹	Total Project Operational Noise Level ²	Measurement Location ³	Reference Ambient Noise Levels ⁴	Combined Project and Ambient ⁵	Project Increase ⁶	Increase Criteria ⁷	Increase Criteria Exceeded?
R1	41.6	L1	46.0	47.4	1.4	5.0	No
R2	38.4	L2	45.2	46.0	0.8	5.0	No
R3	40.2	L3	53.9	54.1	0.2	5.0	No
R4	40.8	L4	47.8	48.6	0.8	5.0	No

¹ See Exhibit 8-A for the receiver locations.

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

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 increase criteria as shown on Table 4-1.

TABLE 9-6: NIGHTTIME OPERATIONAL NOISE LEVEL INCREASES

Receiver Location ¹	Total Project Operational Noise Level ²	Measurement Location ³	Reference Ambient Noise Levels ⁴	Combined Project and Ambient ⁵	Project Increase ⁶	Increase Criteria ⁷	Increase Criteria Exceeded?
R1	41.6	L1	45.3	46.8	1.5	5.0	No
R2	38.4	L2	44.5	45.5	1.0	5.0	No
R3	40.2	L3	46.7	47.6	0.9	5.0	No
R4	40.8	L4	47.9	48.7	0.8	5.0	No

¹ See Exhibit 8-A for the receiver locations.

² Total Project nighttime 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 increase criteria as shown on Table 4-1.

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 on-site construction noise source activity including the off-site roadway and utility improvements in relation to the nearest sensitive receiver locations previously described in Section 8. According to Riverside County Ordinance No. 847 Regulating Noise Section 2i (Code Section 9.52.020[I]), noise associated with any private construction activity located within one-quarter of a mile from an inhabited dwelling is considered exempt between the hours of 6:00 a.m. and 6:00 p.m., during the months of June through September, and 7:00 a.m. and 6:00 p.m., during the months of October through May. (11)

10.1 CONSTRUCTION NOISE LEVELS

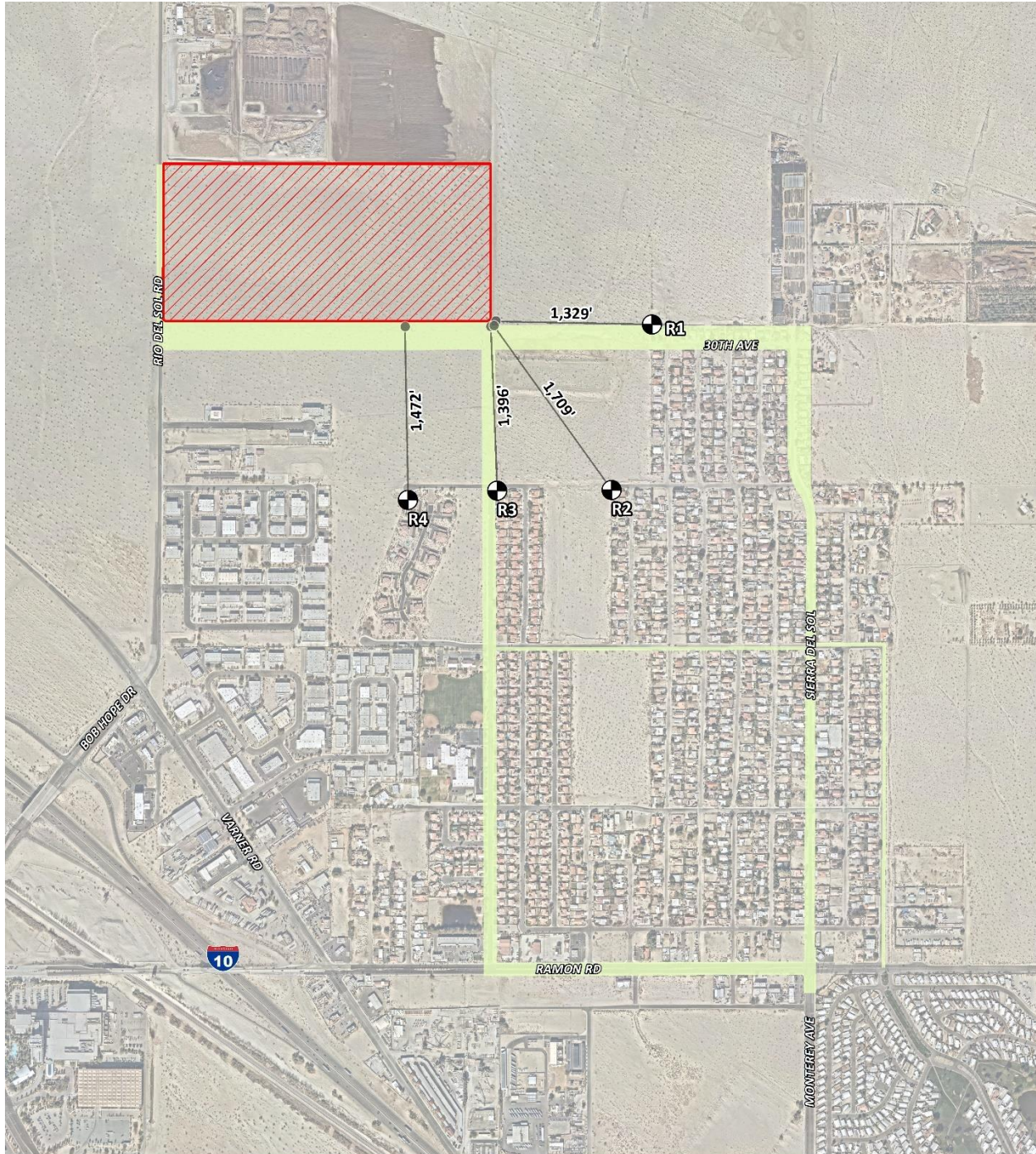
The FTA *Transit Noise and Vibration Impact Assessment Manual* recognizes that construction projects are accomplished in several different stages and outlines the procedures for assessing noise impacts during construction. Each stage has a specific equipment mix, depending on the work to be completed during that stage. As a result of the equipment mix, each stage has its own noise characteristics; some stages have higher continuous noise levels than others, and some have higher impact noise levels than others. The Project construction activities are expected to occur in the following stages:

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

10.2 CONSTRUCTION REFERENCE NOISE LEVELS

To describe construction noise activities, this construction noise analysis was prepared using reference construction equipment noise levels from the Federal Highway Administration (FHWA) published the Roadway Construction Noise Model (RCNM), which includes a national database of construction equipment reference noise emission levels. (21) The RCNM equipment database, provides a comprehensive list of the noise generating characteristics for specific types of construction equipment. In addition, the database provides an acoustical usage factor to estimate the fraction of time each piece of construction equipment is operating at full power (i.e., its loudest condition) during a construction operation.

EXHIBIT 10-A: CONSTRUCTION NOISE SOURCE LOCATIONS



10.3 CONSTRUCTION NOISE ANALYSIS

Using the reference construction equipment noise levels and the CadnaA noise prediction model, calculations of the Project construction noise level impacts at the nearby sensitive receiver locations were completed. Consistent with FTA guidance for general construction noise assessment, Table 10-1 presents the combined noise levels for the loudest construction equipment, assuming they operate at the same time. As shown on Table 10-2, the construction noise levels are expected to range from 46.9 to 55.4 dBA L_{eq} at the nearby receiver locations. Appendix 10.1 includes the detailed CadnaA construction noise model inputs.

TABLE 10-1: CONSTRUCTION REFERENCE NOISE LEVELS

Construction Stage	Reference Construction Activity	Reference Noise Level @ 50 Feet (dBA L_{eq}) ¹	Combined Noise Level (dBA L_{eq}) ²	Combined Sound Power Level (PWL) ³
Site Preparation	Crawler Tractors	78	80	112
	Hauling Trucks	72		
	Rubber Tired Dozers	75		
Grading	Graders	81	83	115
	Excavators	77		
	Compactors	76		
Building Construction	Cranes	73	81	113
	Tractors	80		
	Welders	70		
Paving	Pavers	74	83	115
	Paving Equipment	82		
	Rollers	73		
Architectural Coating	Cranes	73	77	109
	Air Compressors	74		
	Generator Sets	70		

¹ FHWA Roadway Construction Noise Model (RCNM).

² Represents the combined noise level for all equipment assuming they operate at the same time consistent with FTA Transit Noise and Vibration Impact Assessment guidance.

³ Sound power level represents the total amount of acoustical energy (noise level) produced by a sound source independent of distance or surroundings. Sound power levels calibrated using the CadnaA noise model at the reference distance to the noise source.

TABLE 10-2: CONSTRUCTION EQUIPMENT NOISE LEVEL SUMMARY

Receiver Location ¹	Construction Noise Levels (dBA Leq)					
	Site Preparation	Grading	Building Construction	Paving	Architectural Coating	Highest Levels ²
R1	51.9	54.9	52.9	54.9	48.9	54.9
R2	49.9	52.9	50.9	52.9	46.9	52.9
R3	52.1	55.1	53.1	55.1	49.1	55.1
R4	52.4	55.4	53.4	55.4	49.4	55.4

¹ Construction noise source and receiver locations are shown on Exhibit 10-A.

² Construction noise level calculations based on distance from the construction activity, which is measured from the Project site boundary to the nearest receiver locations. CadnaA construction noise model inputs are included in Appendix 10.1.

10.4 PROJECT SITE CONSTRUCTION NOISE LEVEL COMPLIANCE

To evaluate whether the Project will generate potentially significant short-term noise levels at nearest receiver locations, a construction-related daytime noise level threshold of 80 dBA Leq is used as a reasonable threshold to assess the daytime construction noise level impacts. The construction noise analysis shows that the nearest receiver locations will satisfy the reasonable daytime 80 dBA Leq significance threshold during Project construction activities as shown on Table 10-3. Therefore, the noise impacts due to Project construction noise between the hours of 6:00 a.m. and 6:00 p.m., during the months of June through September, and 7:00 a.m. and 6:00 p.m., during the months of October through May (11) are considered *less than significant* at all receiver locations.

TABLE 10-3: PROJECT SITE CONSTRUCTION NOISE LEVEL COMPLIANCE

Receiver Location ¹	Construction Noise Levels (dBA Leq)		
	Highest Construction Noise Levels ²	Threshold ³	Threshold Exceeded? ⁴
R1	54.9	80	No
R2	52.9	80	No
R3	55.1	80	No
R4	55.4	80	No

¹ Construction noise source and receiver locations are shown on Exhibit 10-A.

² Highest construction noise level calculations based on distance from the construction noise source activity to the nearest receiver locations as shown on Table 10-2.

³ Construction noise level thresholds as shown on Table 4-1.

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

10.5 OFF-SITE ROADWAY AND UTILITY IMPROVEMENTS CONSTRUCTION NOISE ANALYSIS

To support the Project development, there will be grading, trenching, and paving for off-site improvements associated with roadway construction and utility installation for the Project. The loudest phase of construction associated with off-site roadway and utility improvements would likely be grading/excavation activities, which would generate similar noise levels compared to

the grading/excavation phase of the proposed project's on-site construction activities previously outlined on Table 10-1.

To connect the proposed IID Substation to the local electric grid, approximately 8,646 feet of 92 kV above-ground power line would be needed. New poles would be installed along the selected alignment. The poles would be 70 feet in height and constructed of in-line wood pole and steel poles at changes of direction. The wood poles will be 2 feet in diameter at in-line locations. The steel poles will be 7 feet in diameter at changes of direction. During installation, an approximately 10 feet wide by 10 feet long by 15 feet deep maximum ground disturbance area would occur around each pole for installation, and it would take approximately four days to install each pole. Pole installation consists of auguring and removing soil, setting/installing the pole and backfilling. After the poles are installed, electric transmission lines would be anchored to and strung between the poles. The electric line installation process would take approximately 90 working days. Electric line installation consists of pole trucks and spools of new lines at each pole anchoring and spanning from new pole to new pole.

The actual transmission line route has not yet been established; however, several transmission line extension routing options are under consideration. This includes potential off-site transmission line extensions on sections of Sierra del Sol, Avenue 30, Ramon Road, Robert Road, Sierra del Sol, and El Centro Way as shown on Exhibit 10-A. This places the off-site utility improvements within a few feet of existing homes depending on the selected alignment.

It is expected that the off-site construction activities would not take place at any one location for more than four days. Construction noise from this off-site work would, therefore, be relatively short-term and the noise levels would be reduced as construction work moves linearly along the selected alignment and farther from sensitive uses. Although not required to address a *potentially significant* impact, the following noise abatement measures would further reduce construction noise impacts from the Project construction and off-site roadway and utility improvements.

1. All construction activities shall comply with Riverside County Ordinance No. 847 Regulating Noise Section 2i (Code Section 9.52.020[I]), limiting construction activities to the hours of 6:00 a.m. and 6:00 p.m., during the months of June through September, and 7:00 a.m. and 6:00 p.m., during the months of October through May. (11)
2. Construction contractors shall equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers, consistent with manufacturers' standards).
3. All stationary construction equipment shall be placed in such a manner so that emitted noise is directed away from any sensitive receivers.
4. Construction equipment staging areas shall be located the greatest distance between the staging area and the nearest sensitive receivers.
5. The construction contractor shall limit equipment and material deliveries to the same hours specified for construction equipment (between the hours of 6:00am to 6:00pm during the months of June through September and 7:00am to 6:00pm during the months of October through May).
6. Electrically powered air compressors and similar power tools shall be used, when feasible, in place of diesel equipment.

7. No music or electronically reinforced speech from construction workers shall be allowed.

With the implementation of the construction noise abatement measures, the potential impacts from the off-site roadway and utility Improvements would be reduced. Therefore, the off-site roadway and utility improvement construction activities will be to a *less than significant* level.

10.6 NIGHTTIME CONCRETE POUR NOISE ANALYSIS

It is our understanding that nighttime concrete pouring activities will occur as a part of Project building construction activities. Nighttime concrete pouring activities are often used to support reduced concrete mixer truck transit times and lower air temperatures than during the daytime hours and are generally limited to the actual building pad area as shown on Exhibit 10-B. Since the nighttime concrete pours will take place outside the permitted by Riverside County Ordinance No. 847 Regulating Noise Section 2i (Code Section 9.52.020[1]), the Project Applicant will be required to obtain authorization for nighttime work from the County of Riverside. Any nighttime construction noise activities are evaluated against the FTA nighttime exterior construction noise level threshold of 70 dBA L_{eq} for noise sensitive residential land use (8 p. 179).

10.6.1 NIGHTTIME CONCRETE POUR REFERENCE NOISE LEVEL MEASUREMENTS

To estimate the noise levels due to nighttime concrete pouring activities, sample reference noise level measurements were taken during a nighttime concrete pour at a construction site. Urban Crossroads, Inc. collected short-term nighttime concrete pour reference noise level measurements during the noise-sensitive nighttime hours between 1:00 a.m. to 2:00 a.m. at 27334 San Bernardino Avenue in the City of Redlands. The reference noise levels describe the expected concrete pour noise sources that may include concrete mixer truck movements and pouring activities, concrete paving equipment, rear mounted concrete mixer truck backup alarms, engine idling, air brakes, generators, and workers communicating/whistling.

To describe the nighttime concrete pour noise levels associated with the construction of the Majestic Thousand Palms, this analysis relies on reference sound pressure level of 67.7 dBA L_{eq} at 50 feet representing a sound power level of 100.3 dBA L_w . While the Project noise levels will depend on the actual duration of activities and specific equipment fleet in use at the time of construction, the reference sound power level of 100.3 dBA L_w is used to describe the expected Project nighttime concrete pour noise activities.

10.6.2 NIGHTTIME CONCRETE POUR NOISE LEVEL COMPLIANCE

As shown on Table 10-4, the noise levels associated with the nighttime concrete pour activities are estimated to range from 37.5 to 40.0 dBA L_{eq} . The analysis shows that the unmitigated nighttime concrete pour activities will satisfy the FTA 70 dBA L_{eq} nighttime residential noise level threshold at all the nearest noise sensitive receiver locations. Therefore, the noise impacts due to Project construction nighttime concrete pour noise activity are considered *less than significant* at all receiver locations with prior authorization for nighttime work from the County of Riverside. Appendix 10.2 includes the CadnaA nighttime concrete pour noise model inputs.

EXHIBIT 10-B: NIGHTTIME CONCRETE POUR NOISE SOURCE AND RECEIVER LOCATIONS



TABLE 10-4: NIGHTTIME CONCRETE POUR NOISE LEVEL COMPLIANCE

Receiver Location ¹	Concrete Pour Construction Noise Levels (dBA Leq)		
	Exterior Noise Levels ²	Threshold ³	Threshold Exceeded? ⁴
R1	39.6	70	No
R2	37.5	70	No
R3	39.6	70	No
R4	40.0	70	No

¹ Construction noise source and receiver locations are shown on Exhibit 10-A.

² Nighttime Concrete Pour noise model inputs are included in Appendix 10.2.

³ Construction noise level thresholds as shown on Table 4-1.

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

10.7 CONSTRUCTION VIBRATION ANALYSIS

Construction activity can result in varying degrees of ground vibration, depending on the equipment and methods employed. The operation of construction equipment causes ground vibrations that spread through the ground and diminish in strength with distance. Ground vibration levels associated with various types of construction equipment are summarized on Table 10-5. Based on the representative vibration levels presented for various construction equipment types, it is possible to estimate the potential for human response (annoyance) and building damage using the following vibration assessment methods defined by the FTA. To describe the vibration impacts the FTA provides the following equation: $PPV_{\text{equip}} = PPV_{\text{ref}} \times (25/D)^{1.5}$

TABLE 10-5: VIBRATION SOURCE LEVELS FOR CONSTRUCTION EQUIPMENT

Equipment	PPV (in/sec) at 25 feet
Small bulldozer	0.003
Jackhammer	0.035
Loaded Trucks	0.076
Large bulldozer	0.089
Vibratory Roller	0.210

Federal Transit Administration, Transit Noise and Vibration Impact Assessment Manual

Table 10-6 presents the expected Project related vibration levels at the nearby receiver locations. At distances ranging from 1,329 to 1,709 feet from Project construction activities, construction vibration velocity levels are estimated to range from 0.000 to 0.001 in/sec PPV. Based on maximum acceptable continuous vibration threshold of 0.3 PPV (in/sec), the typical Project construction vibration levels will fall below the building damage thresholds at all the noise sensitive receiver locations. Therefore, the Project-related vibration impacts are considered *less than significant* during typical construction activities at the Project site.

TABLE 10-6: PROJECT CONSTRUCTION VIBRATION LEVELS

Location ¹	Distance to Const. Activity (Feet) ²	Typical Construction Vibration Levels PPV (in/sec) ³						Thresholds PPV (in/sec) ⁴	Thresholds Exceeded? ⁵
		Small bulldozer	Jackhammer	Loaded Trucks	Large bulldozer	Vibratory Roller	Highest Vibration Level		
R1	1,329'	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.3	No
R2	1,709'	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.3	No
R3	1,396'	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.3	No
R4	1,472'	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.3	No

¹ Construction noise source and receiver locations are shown on Exhibit 10-A.

² Distance from receiver building facade to Project construction boundary (Project site boundary).

³ Based on the Vibration Source Levels of Construction Equipment (Table 10-5).

⁴ Caltrans Transportation and Construction Vibration Guidance Manual, April 2020, Table 19, p. 38.

⁵ Does the peak vibration exceed the acceptable vibration thresholds?

"PPV" = Peak Particle Velocity

Moreover, the vibration levels reported at the sensitive receiver locations 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.

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11 REFERENCES

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3. **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.* March 1974. EPA/ONAC 550/9/74-004.
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10. **County of Riverside.** *General Plan Noise Element.* December 2015.
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22. **California Department of Transportation Environmental Program, Office of Environmental Engineering.** *Use of California Vehicle Noise Reference Energy Mean Emission Levels (Calveno REMELs) in FHWA Highway Traffic Noise Prediction.* September 1995. TAN 95-03.
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25. **Electrical Engineering Portal.** Problems with audible substation noise and what you can do about it. *Energy and Power/Power Substation.* [Online] <https://electrical-engineering-portal.com/audible-substation-noise>.
26. **U.S. Department of Transportation, Federal Highway Administration, Office of Environment and Planning.** *FHWA Roadway Construction Noise Model.* January, 2006.

12 CERTIFICATION

The contents of this noise study report represent an accurate depiction of the noise environment and impacts associated with the proposed Majestic Thousand Palms 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) 584-3148.

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EDUCATION

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

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

PROFESSIONAL REGISTRATIONS

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

PROFESSIONAL AFFILIATIONS

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

PROFESSIONAL CERTIFICATIONS

Certified Acoustical Consultant – County of San Diego • March, 2018
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:

COUNTY OF RIVERSIDE MUNICIPAL CODE

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Chapter 9.52 NOISE REGULATION

Sections:

9.52.010 Intent.

At certain levels, sound becomes noise and may jeopardize the health, safety or general welfare of Riverside County residents and degrade their quality of life. Pursuant to its police power, the board of supervisors declares that noise shall be regulated in the manner described in this chapter. This chapter is intended to establish county-wide standards regulating noise. This chapter is not intended to establish thresholds of significance for the purpose of any analysis required by the California Environmental Quality Act and no such thresholds are established.

(Ord. 847 § 1, 2006)

9.52.020 Exemptions.

Sound emanating from the following sources is exempt from the provisions of this chapter:

- A. Facilities owned or operated by or for a governmental agency;
- B. Capital improvement projects of a governmental agency;
- C. The maintenance or repair of public properties;
- D. Public safety personnel in the course of executing their official duties, including, but not limited to, sworn peace officers, emergency personnel and public utility personnel. This exemption includes, without limitation, sound emanating from all equipment used by such personnel, whether stationary or mobile;
- E. Public or private schools and school-sponsored activities;
- F. Agricultural operations on land designated "Agriculture" in the Riverside County general plan, or land zoned A-1 (light agriculture), A-P (light agriculture with poultry), A-2 (heavy agriculture), A-D (agriculture-dairy) or C/V (citrus/vineyard), provided such operations are carried out in a manner consistent with accepted industry standards. This exemption includes, without limitation, sound emanating from all equipment used during such operations, whether stationary or mobile;
- G. Wind energy conversion systems (WECS), provided such systems comply with the WECS noise provisions of Riverside County Ordinance No. 348;
- H. Private construction projects located one-quarter of a mile or more from an inhabited dwelling;
- I. Private construction projects located within one-quarter of a mile from an inhabited dwelling, provided that:
 1. Construction does not occur between the hours of six p.m. and six a.m. during the months of June through September, and
 2. Construction does not occur between the hours of six p.m. and seven a.m. during the months of October through May;
- J. Property maintenance, including, but not limited to, the operation of lawnmowers, leaf blowers, etc., provided such maintenance occurs between the hours of seven a.m. and eight p.m.;

-
- K. Motor vehicles, other than off-highway vehicles. This exemption does not include sound emanating from motor vehicle sound systems;
 - L. Heating and air conditioning equipment;
 - M. Safety, warning and alarm devices, including, but not limited to, house and car alarms, and other warning devices that are designed to protect the public health, safety, and welfare;
 - N. The discharge of firearms consistent with all state laws.

(Ord. 847 § 2, 2006)

9.52.030 Definitions.

As used in this chapter, the following terms shall have the following meanings:

"Audio equipment" means a television, stereo, radio, tape player, compact disc player, mp3 player, I-POD or other similar device.

"Decibel (dB)" means a unit for measuring the relative amplitude of a sound equal approximately to the smallest difference normally detectable by the human ear, the range of which includes approximately one hundred thirty (130) decibels on a scale beginning with zero decibels for the faintest detectable sound. Decibels are measured with a sound level meter using different methodologies as defined below:

1. "A-weighting (dBA)" means the standard A-weighted frequency response of a sound level meter, which de-emphasizes low and high frequencies of sound in a manner similar to the human ear for moderate sounds.
2. "Maximum sound level (L_{max})" means the maximum sound level measured on a sound level meter.

"Governmental agency" means the United States, the state of California, Riverside County, any city within Riverside County, any special district within Riverside County or any combination of these agencies.

"Land use permit" means a discretionary permit issued by Riverside County pursuant to Riverside County Ordinance No. 348.

"Motor vehicle" means a vehicle that is self-propelled.

"Motor vehicle sound system" means a stereo, radio, tape player, compact disc player, mp3 player, I-POD or other similar device.

"Noise" means any loud, discordant or disagreeable sound.

"Occupied property" means property upon which is located a residence, business or industrial or manufacturing use.

"Off-highway vehicle" means a motor vehicle designed to travel over any terrain.

"Public or private school" means an institution conducting academic instruction at the preschool, elementary school, junior high school, high school, or college level.

"Public property" means property owned by a governmental agency or held open to the public, including, but not limited to, parks, streets, sidewalks, and alleys.

"Sensitive receptor" means a land use that is identified as sensitive to noise in the noise element of the Riverside County general plan, including, but not limited to, residences, schools, hospitals, churches, rest homes, cemeteries or public libraries.

"Sound-amplifying equipment" means a loudspeaker, microphone, megaphone or other similar device.

"Sound level meter" means an instrument meeting the standards of the American National Standards Institute for Type 1 or Type 2 sound level meters or an instrument that provides equivalent data.

(Ord. 847 § 3, 2006)

9.52.040 General sound level standards.

No person shall create any sound, or allow the creation of any sound, on any property that causes the exterior sound level on any other occupied property to exceed the sound level standards set forth in Table 1.

TABLE 1
Sound Level Standards (Db L_{max})

GENERAL PLAN FOUNDATION COMPONENT	GENERAL PLAN LAND USE DESIGNATION	GENERAL PLAN LAND USE DESIGNATION NAME	DENSITY	MAXIMUM DECIBEL LEVEL	
				7 am—10 pm	10 pm—7 am
Community Development	EDR	Estate Density Residential	2 AC	55	45
	VLDR	Very Low Density Residential	1 AC	55	45
	LDR	Low Density Residential	1/2 AC	55	45
	MDR	Medium Density Residential	2—5	55	45
	MHDR	Medium High Density Residential	5—8	55	45
	HDR	High Density Residential	8—14	55	45
	VHDR	Very High Density Residential	14—20	55	45
	H'TDR	Highest Density Residential	20+	55	45
	CR	Retail Commercial		65	55
	CO	Office Commercial		65	55
	CT	Tourist Commercial		65	55
	CC	Community Center		65	55
	LI	Light Industrial		75	55
	HI	Heavy Industrial		75	75
	BP	Business Park		65	45
	PF	Public Facility		65	45
	SP	Specific Plan-Residential		55	45

		Specific Plan-Commercial		65	55
		Specific Plan-Light Industrial		75	55
		Specific Plan-Heavy Industrial		75	75
Rural Community	EDR	Estate Density Residential	2 AC	55	45
	VLDR	Very Low Density Residential	1 AC	55	45
	LDR	Low Density Residential	1/2 AC	55	45
Rural	RR	Rural Residential	5 AC	45	45
	RM	Rural Mountainous	10 AC	45	45
	RD	Rural Desert	10 AC	45	45
Agriculture	AG	Agriculture	10 AC	45	45
Open Space	C	Conservation		45	45
	CH	Conservation Habitat		45	45
	REC	Recreation		45	45
	RUR	Rural	20 AC	45	45
	W	Watershed		45	45
	MR	Mineral Resources		75	45

(Ord. 847 § 4, 2006)

9.52.050 Sound level measurement methodology.

Sound level measurements may be made anywhere within the boundaries of an occupied property. The actual location of a sound level measurement shall be at the discretion of the enforcement officials identified in Section 9.52.080 of this chapter. Sound level measurements shall be made with a sound level meter. Immediately before a measurement is made, the sound level meter shall be calibrated utilizing an acoustical calibrator meeting the standards of the American National Standards Institute. Following a sound level measurement, the calibration of the sound level meter shall be re-verified. Sound level meters and calibration equipment shall be certified annually.

(Ord. 847 § 5, 2006)

9.52.060 Special sound sources standards.

The general sound level standards set forth in Section 9.52.040 of this chapter apply to sound emanating from all sources, including the following special sound sources, and the person creating, or allowing the creation of, the sound is subject to the requirements of that section. The following special sound sources are also subject to the following additional standards, the failure to comply with which constitutes separate violations of this chapter:

(Supp. No. 79)

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- A. Motor Vehicles.
 - 1. Off-Highway Vehicles.
 - a. No person shall operate an off-highway vehicle unless it is equipped with a USDA-qualified spark arrester and a constantly operating and properly maintained muffler. A muffler is not considered constantly operating and properly maintained if it is equipped with a cutout, bypass or similar device.
 - b. No person shall operate an off-highway vehicle unless the noise emitted by the vehicle is not more than ninety-six (96) dBA if the vehicle was manufactured on or after January 1, 1986 or is not more than one hundred one (101) dBA if the vehicle was manufactured before January 1, 1986. For purposes of this subsection, emitted noise shall be measured a distance of twenty (20) inches from the vehicle tailpipe using test procedures established by the Society of Automotive Engineers under Standard J-1287.
 - 2. Sound Systems. No person shall operate a motor vehicle sound system, whether affixed to the vehicle or not, between the hours of ten p.m. and eight a.m., such that the sound system is audible to the human ear inside any inhabited dwelling. No person shall operate a motor vehicle sound system, whether affixed to the vehicle or not, at any other time such that the sound system is audible to the human ear at a distance greater than one hundred (100) feet from the vehicle.
 - B. Power Tools and Equipment. No person shall operate any power tools or equipment between the hours of ten p.m. and eight a.m. such that the power tools or equipment are audible to the human ear inside an inhabited dwelling other than a dwelling in which the power tools or equipment may be located. No person shall operate any power tools or equipment at any other time such that the power tools or equipment are audible to the human ear at a distance greater than one hundred (100) feet from the power tools or equipment.
 - C. Audio Equipment. No person shall operate any audio equipment, whether portable or not, between the hours of ten p.m. and eight a.m. such that the equipment is audible to the human ear inside an inhabited dwelling other than a dwelling in which the equipment may be located. No person shall operate any audio equipment, whether portable or not, at any other time such that the equipment is audible to the human ear at a distance greater than one hundred (100) feet from the equipment.
 - D. Sound-Amplifying Equipment and Live Music. No person shall install, use or operate sound-amplifying equipment, or perform, or allow to be performed, live music unless such activities comply with the following requirements. To the extent that these requirements conflict with any conditions of approval attached to an underlying land use permit, these requirements shall control:
 - 1. Sound-amplifying equipment or live music is prohibited between the hours of ten p.m. and eight a.m.
 - 2. Sound emanating from sound-amplifying equipment or live music at any other time shall not be audible to the human ear at a distance greater than two hundred (200) feet from the equipment or music.

(Ord. 847 § 6, 2006)

9.52.070 Exceptions.

Exceptions may be requested from the standards set forth in Section 9.52.040 or 9.52.060 of this chapter and may be characterized as construction-related, single-event or continuous-events exceptions.

-
- A. Application and Processing.
1. Construction-Related Exceptions. An application for a construction-related exception shall be made to and considered by the director of building and safety on forms provided by the building and safety department and shall be accompanied by the appropriate filing fee. No public hearing is required.
 2. Single-Event Exceptions. An application for a single-event exception shall be made to and considered by the planning director on forms provided by the planning department and shall be accompanied by the appropriate filing fee. No public hearing is required.
 3. Continuous-Events Exceptions. An application for a continuous-events exception shall be made to the planning director on forms provided by the planning department and shall be accompanied by the appropriate filing fee. Upon receipt of an application for a continuous-events exception, the planning director shall set the matter for public hearing before the planning commission, notice of which shall be given as provided in Section 18.26c of Riverside County Ordinance No. 348. Notwithstanding the above, an application for a continuous-events exception that is associated with an application for a land use permit shall be processed concurrently with the land use permit in the same manner that the land use permit is required to be processed.
- B. Requirements for Approval. The appropriate decisionmaking body or officer shall not approve an exception application unless the applicant demonstrates that the activities described in the application would not be detrimental to the health, safety or general welfare of the community. In determining whether activities are detrimental to the health, safety or general welfare of the community, the appropriate decisionmaking body or officer shall consider such factors as the proposed duration of the activities and their location in relation to sensitive receptors. If an exception application is approved, reasonable conditions may be imposed to minimize the public detriment, including, but not limited to, restrictions on sound level, sound duration and operating hours.
- C. Appeals. The director of building and safety's decision on an application for a construction-related exception is considered final. The planning director's decision on an application for a single-event exception is considered final. After making a decision on an application for a continuous-events exception, the appropriate decisionmaking body or officer shall mail notice of the decision to the applicant. Within ten (10) calendar days after the mailing of such notice, the applicant or an interested person may appeal the decision to the board of supervisors. Upon receipt of an appeal and payment of the appropriate appeal fee, the clerk of the board shall set the matter for hearing not less than five days nor more than thirty (30) days thereafter and shall give written notice of the hearing in the same manner as notice of the hearing was given by the appropriate hearing officer or body. The board of supervisors shall render its decision within thirty (30) days after the appeal hearing is closed.
- D. Effect of a Pending Continuous-Events Exception Application. For a period of one hundred eighty (180) days from the effective date of this chapter, no person creating any sound prohibited by this chapter shall be considered in violation of this chapter if the sound is related to a use that is operating pursuant to an approved land use permit, if an application for a continuous-events exception has been filed to sanction the sound and if a decision on the application is pending.

(Ord. 847 § 7, 2006)

9.52.080 Enforcement.

The Riverside County sheriff and code enforcement shall have the primary responsibility for enforcing this chapter; provided, however, the sheriff and code enforcement may be assisted by the public health department. Violations shall be prosecuted as described in Section 9.52.100 of this chapter, but nothing in this chapter shall

prevent the sheriff, code enforcement or the department of public health from engaging in efforts to obtain voluntary compliance by means of warnings, notices, or educational programs.

(Ord. 847.1 § 1, 2007; Ord. 847 § 8, 2006)

9.52.090 Duty to cooperate.

No person shall refuse to cooperate with, or obstruct, the enforcement officials identified in Section 9.52.080 of this chapter when they are engaged in the process of enforcing the provisions of this chapter. This duty to cooperate may require a person to extinguish a sound source so that it can be determined whether sound emanating from the source violates the provisions of this chapter.

(Ord. 847 § 9, 2006)

9.52.100 Violations and penalties.

Any person who violates any provision of this chapter once or twice within a one hundred eighty (180) day period shall be guilty of an infraction. Any person who violates any provision of this chapter more than twice within a one hundred eighty (180) day period shall be guilty of a misdemeanor. Each day a violation is committed or permitted to continue shall constitute a separate offense and shall be punishable as such. Penalties shall not exceed the following amounts:

- A. For the first violation within a one hundred eighty (180) day period, the minimum mandatory fine shall be five hundred dollars (\$500.00).
- B. For the second violation within a one hundred eighty (180) day period, the minimum mandatory fine shall be seven hundred fifty dollars (\$750.00).
- C. For any further violations within a one hundred eighty (180) day period, the minimum mandatory fine shall be one thousand dollars (\$1,000.00) or imprisonment in the county jail for a period not exceeding six months, or both.

(Ord. 847 § 10, 2006)

**ORDINANCE NO. 847
(AS AMENDED THROUGH 847.1)
AN ORDINANCE OF THE COUNTY OF RIVERSIDE AMENDING
ORDINANCE NO. 847 REGULATING NOISE**

The Board of Supervisors of the County of Riverside Ordains as Follows:

Section 1. INTENT. At certain levels, sound becomes noise and may jeopardize the health, safety or general welfare of Riverside County residents and degrade their quality of life. Pursuant to its police power, the Board of Supervisors hereby declares that noise shall be regulated in the manner described herein. This ordinance is intended to establish countywide standards regulating noise. This ordinance is not intended to establish thresholds of significance for the purpose of any analysis required by the California Environmental Quality Act and no such thresholds are hereby established.

Section 2. EXEMPTIONS. Sound emanating from the following sources is exempt from the provisions of this ordinance:

- a. Facilities owned or operated by or for a governmental agency.
- b. Capital improvement projects of a governmental agency.
- c. The maintenance or repair of public properties.
- d. Public safety personnel in the course of executing their official duties, including, but not limited to, sworn peace officers, emergency personnel and public utility personnel. This exemption includes, without limitation, sound emanating from all equipment used by such personnel, whether stationary or mobile.
- e. Public or private schools and school-sponsored activities
- f. Agricultural operations on land designated Agriculture in the Riverside County General Plan, or land zoned A-1 (Light Agriculture), A-P (Light Agriculture With Poultry), A-2 (Heavy Agriculture), A-D (Agriculture-Dairy) or C/V (Citrus/Vineyard), provided such operations are carried out in a manner consistent with accepted industry standards. This exemption includes, without limitation, sound emanating from all equipment used during such operations, whether stationary or mobile.
- g. Wind Energy Conversion Systems (WECS), provided such systems comply with the WECS noise provisions of Riverside County Ordinance No. 348.
- h. Private construction projects located one-quarter (1/4) of a mile or more from an inhabited dwelling.
- i. Private construction projects located within one-quarter (1/4) of a mile from an inhabited dwelling, provided that:
 1. Construction does not occur between the hours of 6:00 p.m. and 6:00 a.m. during the months of June through September; and
 2. Construction does not occur between the hours of 6:00 p.m. and 7:00 a.m. during the months of October through May.

- j. Property maintenance, including, but not limited to, the operation of lawnmowers, leaf blowers, etc., provided such maintenance occurs between the hours of 7 a.m. and 8 p.m.
- k. Motor vehicles, other than off-highway vehicles. This exemption does not include sound emanating from motor vehicle sound systems
- l. Heating and air conditioning equipment.
- m. Safety, warning and alarm devices, including, but not limited to, house and car alarms, and other warning devices that are designed to protect the public health, safety, and welfare.
- n. The discharge of firearms consistent with all state laws.

Section 3. DEFINITIONS. As used in this ordinance, the following terms shall have the following meanings:

- a. Audio Equipment. A television, stereo, radio, tape player, compact disc player, mp3 player, I-POD or other similar device.
- b. Decibel (dB). A unit for measuring the relative amplitude of a sound equal approximately to the smallest difference normally detectable by the human ear, the range of which includes approximately one hundred thirty (130) decibels on a scale beginning with zero decibels for the faintest detectable sound. Decibels are measured with a sound level meter using different methodologies as defined below:
 1. A-weighting (dBA) means the standard A-weighted frequency response of a sound level meter, which de-emphasizes low and high frequencies of sound in a manner similar to the human ear for moderate sounds.
 2. Maximum Sound level (L_{max}) means the maximum sound level measured on a sound level meter.
- c. Governmental Agency. The United States, the State of California, Riverside County, any city within Riverside County, any special district within Riverside County or any combination of these agencies.
- d. Land Use Permit. A discretionary permit issued by Riverside County pursuant to Riverside County Ordinance No. 348.
- e. Motor Vehicle. A vehicle that is self-propelled.
- f. Motor Vehicle Sound System. A stereo, radio, tape player, compact disc player, mp3 player, I-POD or other similar device.
- g. Noise. Any loud, discordant or disagreeable sound.
- h. Occupied Property. Property upon which is located a residence, business or industrial or manufacturing use.
- i. Off-Highway Vehicle. A motor vehicle designed to travel over any terrain.
- j. Public Property. Property owned by a governmental agency or held open to the public, including, but not limited to, parks, streets, sidewalks, and alleys.

- k. Public or Private School. An institution conducting academic instruction at the preschool, elementary school, junior high school, high school, or college level.
- l. Sensitive Receptor. A land use that is identified as sensitive to noise in the Noise Element of the Riverside County General Plan, including, but not limited to, residences, schools, hospitals, churches, rest homes, cemeteries or public libraries.
- m. Sound Level Meter. An instrument meeting the standards of the American National Standards Institute for Type 1 or Type 2 sound level meters or an instrument that provides equivalent data.
- n. Sound Amplifying Equipment. A loudspeaker, microphone, megaphone or other similar device.

Section 4. GENERAL SOUND LEVEL STANDARDS. No person shall create any sound, or allow the creation of any sound, on any property that causes the exterior sound level on any other occupied property to exceed the sound level standards set forth in Table 1.

**TABLE 1
SOUND LEVEL STANDARDS (Db L_{max})**

GENERAL PLAN FOUNDATION COMPONENT	GENERAL PLAN LAND USE DESIGNATION	GENERAL PLAN LAND USE DESIGNATION NAME	DENSITY	MAXIMUM DECIBEL LEVEL	
				7am-10pm	10pm-7am
Community Development	EDR	Estate Density Residential	2 AC	55	45
	VLDR	Very Low density Residential	1 AC	55	45
	LDR	Low Density Residential	1/2 AC	55	45
	MDR	Medium Density Residential	2--5	55	45
	MHDR	Medium High Density Residential	5--8	55	45
	HDR	High Density Residential	8--14	55	45
	VHDR	Very High Density Residential	14-20	55	45
	H'TDR	Highest Density Residential	20+	55	45
	CR	Retail Commercial		65	55
	CO	Office Commercial		65	55
	CT	Tourist Commercial		65	55
	CC	Community Center		65	55
	LI	Light Industrial		75	55
	HI	Heavy Industrial		75	75
	BP	Business Park		65	45
	PF	Public Facility		65	45
	SP		Specific Plan-Residential		55
		Specific Plan-Commercial		65	55
		Specific Plan-Light Industrial		75	55
		Specific Plan-Heavy Industrial		75	75
Rural Community	EDR	Estate Density Residential	2 ac	55	45
	VLDR	Very Low Density Residential	1 ac	55	45
	LDR	Low Density Residential	1/2 ac	55	45
Rural	RR	Rural Residential	5 ac	45	45
	RM	Rural Mountainous	10 ac	45	45
	RD	Rural Desert	10 ac	45	45
Agriculture	AG	Agriculture	10 AC	45	45
Open Space	C	Conservation		45	45
	CH	Conservation Habitat		45	45
	REC	Recreation		45	45
	RUR	Rural	20 AC	45	45
	W	Watershed		45	45
	MR	Mineral Resources		75	45

Section 5. SOUND LEVEL MEASUREMENT METHODOLOGY. Sound level measurements may be made anywhere within the boundaries of an occupied property. The actual location of a sound level measurement shall be at the discretion of the enforcement officials identified in Section 8. of this ordinance. Sound level measurements shall be made with a sound level meter. Immediately before a measurement is made, the sound level meter shall be calibrated utilizing an acoustical calibrator meeting the standards of the American National Standards Institute. Following a sound level measurement, the calibration of the sound level meter shall be re-verified. Sound level meters and calibration equipment shall be certified annually.

Section 6. SPECIAL SOUND SOURCES STANDARDS. The general sound level standards set forth in Section 4. of this ordinance apply to sound emanating from all sources, including the following special sound sources, and the person creating, or allowing the creation of, the sound is subject to the requirements of that section. The following special sound sources are also subject to the following additional standards, the failure to comply with which constitute separate violations of this ordinance.

- a. Motor Vehicles.
 1. Off-Highway Vehicles.
 - i. No person shall operate an off-highway vehicle unless it is equipped with a USDA qualified spark arrester and a constantly operating and properly maintained muffler. A muffler is not considered constantly operating and properly maintained if it is equipped with a cutout, bypass or similar device.
 - ii. No person shall operate an off-highway vehicle unless the noise emitted by the vehicle is not more than 96 dBA if the vehicle was manufactured on or after January 1, 1986 or is not more than 101 dBA if the vehicle was manufactured before January 1, 1986. For purposes of this subsection, emitted noise shall be measured a distance of twenty (20) inches from the vehicle tailpipe using test procedures established by the Society of Automotive Engineers under Standard J-1287.
 2. Sound Systems. No person shall operate a motor vehicle sound system, whether affixed to the vehicle or not, between the hours of 10:00 p.m. and 8:00 a.m., such that the sound system is audible to the human ear inside any inhabited dwelling. No person shall operate a motor vehicle sound system, whether affixed to the vehicle or not, at any other time such that the sound system is audible to the human ear at a distance greater than one hundred (100) feet from the vehicle.
- b. Power Tools and Equipment. No person shall operate any power tools or equipment between the hours of 10:00 p.m. and 8:00 a.m. such that the power tools or equipment are audible to the human ear inside an inhabited dwelling other than a dwelling in which the power tools or equipment may be located. No person shall operate any power tools or equipment at any other time such that the power tools

or equipment are audible to the human ear at a distance greater than one hundred (100) feet from the power tools or equipment.

- c. Audio Equipment. No person shall operate any audio equipment, whether portable or not, between the hours of 10:00 p.m. and 8:00 a.m. such that the equipment is audible to the human ear inside an inhabited dwelling other than a dwelling in which the equipment may be located. No person shall operate any audio equipment, whether portable or not, at any other time such that the equipment is audible to the human ear at a distance greater than one hundred (100) feet from the equipment.
- d. Sound Amplifying Equipment and Live Music. No person shall install, use or operate sound amplifying equipment, or perform, or allow to be performed, live music unless such activities comply with the following requirements. To the extent that these requirements conflict with any conditions of approval attached to an underlying land use permit, these requirements shall control.
 - 1. Sound amplifying equipment or live music is prohibited between the hours of 10:00 p.m. and 8:00 a.m.
 - 2. Sound emanating from sound amplifying equipment or live music at any other time shall not be audible to the human ear at a distance greater than two hundred (200) feet from the equipment or music.

Section 7. EXCEPTIONS. Exceptions may be requested from the standards set forth in Sections 4. or 6. of this ordinance and may be characterized as construction-related, single event or continuous events exceptions.

- a. Application and Processing.
 - 1. Construction-Related Exceptions. An application for a construction-related exception shall be made to and considered by the Director of Building and Safety on forms provided by the Building and Safety Department and shall be accompanied by the appropriate filing fee. No public hearing is required.
 - 2. Single Event Exceptions. An application for a single event exception shall be made to and considered by the Planning Director on forms provided by the Planning Department and shall be accompanied by the appropriate filing fee. No public hearing is required.
 - 3. Continuous Events Exceptions. An application for a continuous events exception shall be made to the Planning Director on forms provided by the Planning Department and shall be accompanied by the appropriate filing fee. Upon receipt of an application for a continuous events exception, the Planning Director shall set the matter for public hearing before the Planning Commission, notice of which shall be given as provided in Section 18.26.c. of Riverside County Ordinance No. 348. Notwithstanding the above, an application for a

continuous events exception that is associated with an application for a land use permit shall be processed concurrently with the land use permit in the same manner that the land use permit is required to be processed.

- b. Requirements for Approval. The appropriate decision making body or officer shall not approve an exception application unless the applicant demonstrates that the activities described in the application would not be detrimental to the health, safety or general welfare of the community. In determining whether activities are detrimental to the health, safety or general welfare of the community, the appropriate decision making body or officer shall consider such factors as the proposed duration of the activities and their location in relation to sensitive receptors. If an exception application is approved, reasonable conditions may be imposed to minimize the public detriment, including, but not limited to, restrictions on sound level, sound duration and operating hours.
- c. Appeals. The Director of Building and Safety's decision on an application for a construction-related exception is considered final. The Planning Director's decision on an application for a single event exception is considered final. After making a decision on an application for a continuous events exception, the appropriate decision making body or officer shall mail notice of the decision to the applicant. Within ten (10) calendar days after the mailing of such notice, the applicant or an interested person may appeal the decision to the Board of Supervisors. Upon receipt of an appeal and payment of the appropriate appeal fee, the Clerk of the Board shall set the matter for hearing not less than five (5) days nor more than thirty (30) days thereafter and shall give written notice of the hearing in the same manner as notice of the hearing was given by the appropriate hearing officer or body. The Board of Supervisors shall render its decision within thirty (30) days after the appeal hearing is closed.
- d. Effect of a Pending Continuous Events Exception Application. For a period of one hundred and eighty (180) days from the effective date of this ordinance, no person creating any sound prohibited by this ordinance shall be considered in violation of this ordinance if the sound is related to a use that is operating pursuant to an approved land use permit, if an application for a continuous events exception has been filed to sanction the sound and if a decision on the application is pending.

Section 8. ENFORCEMENT. The Riverside County Sheriff and Code Enforcement shall have the primary responsibility for enforcing this ordinance; provided, however, the Sheriff and Code Enforcement may be assisted by the Public Health Department. Violations shall be prosecuted as described in Section 10. of this ordinance, but nothing in this ordinance shall prevent the Sheriff, Code Enforcement or the Department of Public Health from engaging in efforts to obtain voluntary compliance by means of warnings, notices, or educational programs.

Section 9. DUTY TO COOPERATE. No person shall refuse to cooperate with, or obstruct, the enforcement officials identified in Section 8. of this ordinance when they are engaged in the process of enforcing the provisions of this ordinance. This duty to cooperate may require a person to extinguish a sound source so that it can be determined whether sound emanating from the source violates the provisions of this ordinance.

Section 10. VIOLATIONS AND PENALTIES. Any person who violates any provision of this ordinance once or twice within a one hundred and eighty (180) day period shall be guilty of an infraction. Any person who violates any provision of this ordinance more than twice within a one hundred and eighty (180) day period shall be guilty of a misdemeanor. Each day a violation is committed or permitted to continue shall constitute a separate offense and shall be punishable as such. Penalties shall not exceed the following amounts.

- a. For the first violation within a one hundred and eighty (180) day period the minimum mandatory fine shall be five hundred dollars (\$500).
- b. For the second violation within a one hundred and eighty (180) day period the minimum mandatory fine shall be seven hundred and fifty dollars (\$750).
- c. For any further violations within a one hundred and eighty (180) day period the minimum mandatory fine shall be one thousand dollars (\$1,000) or imprisonment in the County jail for a period not exceeding six (6) months, or both.

Section 11. SEVERABILITY. If any provision of this ordinance, or the application thereof to any person or circumstance, is held invalid, such invalidity shall not affect the remainder of the ordinance or the application of such provision(s) to other persons or circumstances.

Section 12. SAVINGS CLAUSE. The adoption of this ordinance shall not in any manner affect the prosecution of ordinance violations, which violations were committed prior to the effective date of this ordinance, nor be construed as a waiver of any permit, license, penalty or penal provisions applicable to such violations. The provisions of this ordinance, insofar as they are substantially the same as ordinance provisions previously adopted by Riverside County relating to the same subject matter, shall be construed as restatements and continuations, and not as new enactments.

Section 13. EFFECTIVE DATE. This ordinance shall take effect 30 days after its adoption.

Adopted: 847 Item 3.19 of 04/04/2006 (Eff: 05/04/2006)

Amended: 847.1 Item 3.4 of 06/19/2007 (Eff: 07/19/2007)

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APPENDIX 5.1:
STUDY AREA PHOTOS

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JN:14174



L1_E
33, 49' 49.960000"116, 23' 35.700000"



L1_N
33, 49' 49.930000"116, 23' 35.700000"



L1_S
33, 49' 49.940000"116, 23' 35.700000"



L1_W
33, 49' 49.940000"116, 23' 35.730000"



L2_E
33, 49' 38.870000"116, 23' 36.990000"



L2_N
33, 49' 38.870000"116, 23' 36.990000"

JN:14174



L2_S
33, 49' 38.830000"116, 23' 37.040000"



L2_W
33, 49' 38.850000"116, 23' 36.990000"



L3_E
33, 49' 38.260000"116, 23' 47.650000"



L3_N
33, 49' 38.270000"116, 23' 47.670000"



L3_S
33, 49' 38.240000"116, 23' 47.650000"



L3_W
33, 49' 38.270000"116, 23' 47.670000"

JN:14174



L4_E
33, 49' 37.970000"116, 23' 55.390000"



L4_N
33, 49' 37.980000"116, 23' 55.450000"



L4_S
33, 49' 38.010000"116, 23' 55.420000"



L4_W
33, 49' 38.010000"116, 23' 55.420000"

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APPENDIX 5.2:
NOISE LEVEL MEASUREMENT WORKSHEETS

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24-Hour Noise Level Measurement Summary

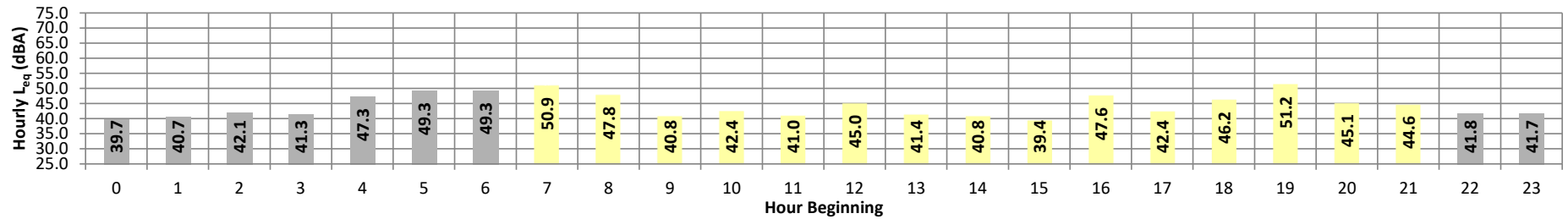
Date: Tuesday, March 1, 2022
Project: Thousand Palms Warehouse

Location: L1 - Located southeast of the Project site near the single-
Source: family residence at 72758 30th Avenue.

Meter: Piccolo II

JN: 14174
Analyst: A. Khan

Hourly L_{eq} dBA Readings (unadjusted)



Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L_{eq}	Adj.	Adj. L_{eq}	
Night	0	39.7	42.1	37.9	41.8	41.7	41.3	41.0	40.3	39.6	38.4	38.2	38.0	39.7	10.0	49.7	
	1	40.7	43.9	38.6	43.6	43.3	42.7	42.4	41.2	40.4	39.3	39.0	38.8	40.7	10.0	50.7	
	2	42.1	46.4	38.9	46.0	45.6	44.9	44.4	42.9	41.6	39.7	39.4	39.0	42.1	10.0	52.1	
	3	41.3	44.5	39.3	44.1	43.8	43.2	42.9	41.8	40.9	39.9	39.7	39.4	41.3	10.0	51.3	
	4	47.3	50.1	45.3	49.8	49.6	49.1	48.8	47.7	47.0	45.9	45.7	45.4	47.3	10.0	57.3	
	5	49.3	53.2	47.1	52.7	52.3	51.6	51.0	49.7	48.9	47.7	47.5	47.2	49.3	10.0	59.3	
	6	49.3	52.0	47.7	51.7	51.5	50.9	50.5	49.7	49.1	48.2	48.0	47.8	49.3	10.0	59.3	
Day	7	50.9	54.1	49.0	53.7	53.4	52.7	52.4	51.3	50.5	49.6	49.4	49.1	50.9	0.0	50.9	
	8	47.8	50.5	45.9	50.2	50.0	49.6	49.3	48.3	47.6	46.5	46.3	46.0	47.8	0.0	47.8	
	9	40.8	45.4	36.8	44.9	44.6	44.0	43.6	42.0	40.0	37.4	37.1	36.9	40.8	0.0	40.8	
	10	42.4	47.1	37.7	46.8	46.4	45.8	45.4	43.6	41.6	38.6	38.2	37.9	42.4	0.0	42.4	
	11	41.0	45.9	37.4	45.5	45.1	44.3	43.9	42.0	40.0	38.0	37.8	37.5	41.0	0.0	41.0	
	12	45.0	52.1	36.6	51.8	51.4	50.7	50.0	46.2	41.4	37.5	37.1	36.7	45.0	0.0	45.0	
	13	41.4	46.7	37.3	46.2	45.7	44.8	44.2	42.5	40.3	38.1	37.8	37.4	41.4	0.0	41.4	
	14	40.8	47.9	35.6	47.3	46.8	45.6	44.9	41.6	38.6	36.3	36.0	35.7	40.8	0.0	40.8	
	15	39.4	47.4	34.7	47.1	46.6	44.5	43.0	39.3	37.6	35.4	35.1	34.8	39.4	0.0	39.4	
	16	47.6	54.7	35.8	54.4	54.3	53.6	52.8	48.9	43.6	37.7	36.7	35.9	47.6	0.0	47.6	
	17	42.4	48.4	35.4	48.1	47.6	46.6	46.0	43.8	40.9	37.0	36.1	35.5	42.4	0.0	42.4	
	18	46.2	52.8	36.2	52.6	52.3	51.8	51.3	47.9	42.3	37.7	37.2	36.4	46.2	0.0	46.2	
	19	51.2	63.2	40.5	62.9	62.2	59.1	56.4	46.6	43.3	41.2	41.0	40.7	51.2	5.0	56.2	
	20	45.1	49.6	41.5	49.3	49.0	48.4	47.9	46.1	44.3	42.2	42.0	41.6	45.1	5.0	50.1	
	21	44.6	49.2	41.9	48.9	48.5	47.7	47.1	44.9	43.9	42.5	42.3	42.1	44.6	5.0	49.6	
Night	22	41.8	44.3	40.1	44.1	43.8	43.4	43.1	42.2	41.5	40.6	40.4	40.2	41.8	10.0	51.8	
Night	23	41.7	45.2	39.2	44.9	44.6	44.1	43.7	42.3	41.2	39.9	39.7	39.4	41.7	10.0	51.7	
Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L_{eq} (dBA)			
Day	Min	39.4	45.4	34.7	44.9	44.6	44.0	43.0	39.3	37.6	35.4	35.1	34.8	24-Hour	45.8	46.0	45.3
	Max	51.2	63.2	49.0	62.9	62.2	59.1	56.4	51.3	50.5	49.6	49.4	49.1				
Energy Average		46.0	Average:		50.0	49.6	48.6	47.9	45.0	42.4	39.7	39.3	38.9				
Night	Min	39.7	42.1	37.9	41.8	41.7	41.3	41.0	40.3	39.6	38.4	38.2	38.0				
	Max	49.3	53.2	47.7	52.7	52.3	51.6	51.0	49.7	49.1	48.2	48.0	47.8				
Energy Average		45.3	Average:		46.5	46.2	45.7	45.3	44.2	43.4	42.2	42.0	41.7				

24-Hour Noise Level Measurement Summary

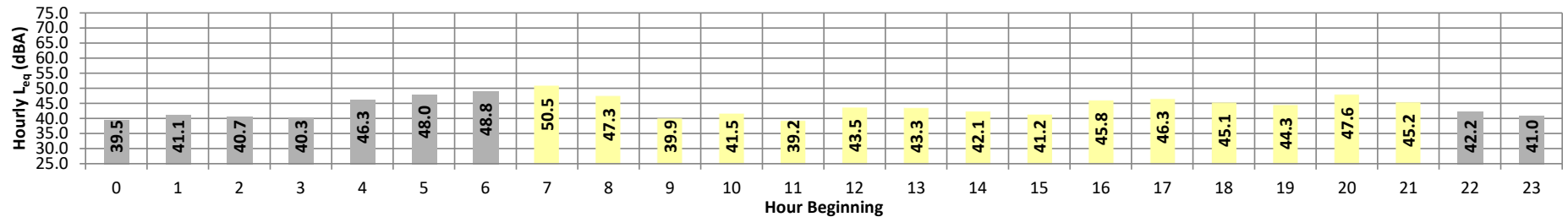
Date: Tuesday, March 1, 2022
Project: Thousand Palms Warehouse

Location: L2 - Located southeast of the Project site near the single-
Source: family residence at 30525 Roseview Lane.

Meter: Piccolo II

JN: 14174
Analyst: A. Khan

Hourly L_{eq} dBA Readings (unadjusted)



Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L_{eq}	Adj.	Adj. L_{eq}	
Night	0	39.5	43.7	37.4	43.2	42.8	42.0	41.5	40.0	39.1	37.9	37.8	37.5	39.5	10.0	49.5	
	1	41.1	44.4	38.6	44.1	43.7	43.1	42.8	41.7	40.7	39.3	39.0	38.7	41.1	10.0	51.1	
	2	40.7	43.8	38.5	43.5	43.3	42.7	42.3	41.3	40.5	39.1	38.9	38.6	40.7	10.0	50.7	
	3	40.3	43.9	38.3	43.4	43.0	42.1	41.7	40.9	40.1	38.9	38.7	38.4	40.3	10.0	50.3	
	4	46.3	48.9	44.0	48.7	48.5	48.0	47.7	46.8	46.1	44.8	44.5	44.1	46.3	10.0	56.3	
	5	48.0	51.0	45.9	50.8	50.5	50.0	49.5	48.5	48.5	47.7	46.5	46.3	46.1	48.0	10.0	58.0
Day	6	48.8	52.6	47.0	52.3	51.8	51.0	50.5	49.2	48.4	47.5	47.4	47.1	48.8	10.0	58.8	
	7	50.5	55.5	48.1	55.0	54.5	53.4	52.6	50.9	49.9	48.7	48.5	48.3	50.5	0.0	50.5	
	8	47.3	51.7	44.9	51.1	50.5	49.5	49.1	47.8	46.8	45.5	45.3	45.0	47.3	0.0	47.3	
	9	39.9	46.2	35.0	45.7	45.2	44.1	43.1	41.1	38.5	35.7	35.4	35.1	39.9	0.0	39.9	
	10	41.5	46.7	36.2	46.2	45.8	45.1	44.5	42.8	40.7	37.1	36.6	36.3	41.5	0.0	41.5	
	11	39.2	46.4	34.7	45.9	45.3	44.1	42.1	39.6	37.6	35.6	35.2	34.8	39.2	0.0	39.2	
	12	43.5	51.3	35.1	50.7	50.0	48.7	47.9	44.8	40.8	36.1	35.7	35.2	43.5	0.0	43.5	
	13	43.3	51.0	35.5	50.4	49.9	48.6	47.7	44.2	41.0	36.8	36.3	35.7	43.3	0.0	43.3	
	14	42.1	51.6	34.4	51.0	50.0	48.0	46.2	42.2	39.6	35.8	35.2	34.6	42.1	0.0	42.1	
	15	41.2	51.4	33.9	50.6	49.8	47.1	45.5	40.6	38.1	35.3	34.8	34.1	41.2	0.0	41.2	
	16	45.8	52.7	36.3	52.4	52.0	51.2	50.5	46.9	42.3	37.9	37.3	36.5	45.8	0.0	45.8	
	17	46.3	53.5	38.4	53.0	52.2	50.5	49.6	47.0	45.0	41.4	40.0	38.7	46.3	0.0	46.3	
	18	45.1	50.6	36.5	50.2	49.7	48.9	48.2	46.0	44.3	41.6	40.0	36.8	45.1	0.0	45.1	
	19	44.3	51.7	40.2	51.2	50.5	48.8	47.6	44.8	42.5	40.8	40.6	40.3	44.3	5.0	49.3	
	20	47.6	55.5	41.2	55.0	54.8	53.5	52.2	48.0	44.2	42.0	41.7	41.4	47.6	5.0	52.6	
21	45.2	51.7	41.9	50.9	50.3	49.4	48.4	45.5	44.2	42.5	42.3	42.0	45.2	5.0	50.2		
Night	22	42.2	45.0	40.4	44.7	44.5	44.0	43.6	42.6	41.9	40.9	40.7	40.5	42.2	10.0	52.2	
Night	23	41.0	44.7	38.8	44.3	43.9	43.2	42.8	41.6	40.6	39.4	39.2	38.9	41.0	10.0	51.0	
Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L_{eq} (dBA)			
Day	Min	39.2	46.2	33.9	45.7	45.2	43.7	42.1	39.6	37.6	35.3	34.8	34.1	24-Hour	45.0	45.2	44.5
	Max	50.5	55.5	48.1	55.0	54.8	53.5	52.6	50.9	49.9	48.7	48.5	48.3				
Energy Average		45.2	Average:		50.6	50.0	48.7	47.7	44.8	42.4	39.5	39.0	38.3	Nighttime (10pm-7am)			
Night	Min	39.5	43.7	37.4	43.2	42.8	42.0	41.5	40.0	39.1	37.9	37.8	37.5				
	Max	48.8	52.6	47.0	52.3	51.8	51.0	50.5	49.2	48.4	47.5	47.4	47.1				
Energy Average		44.5	Average:		46.1	45.8	45.1	44.7	43.6	42.8	41.6	41.4	41.1				

24-Hour Noise Level Measurement Summary

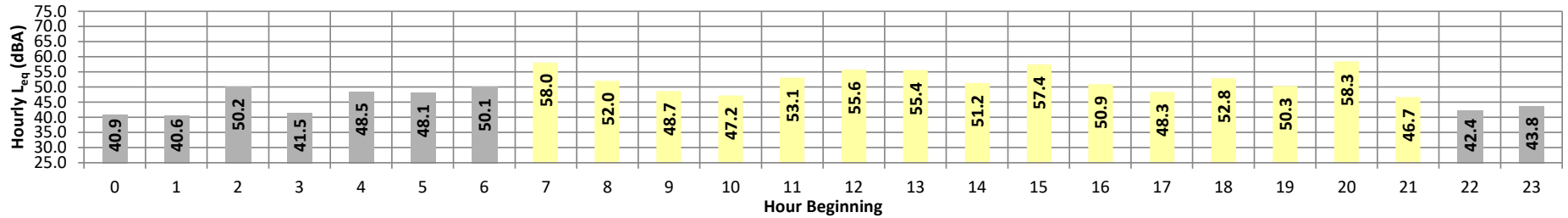
Date: Tuesday, March 1, 2022
Project: Thousand Palms Warehouse

Location: L3 - Located south of the Project site near the single-family
Source: residence at 30524 Robert Road.

Meter: Piccolo II

JN: 14174
Analyst: A. Khan

Hourly L_{eq} dBA Readings (unadjusted)



Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L_{eq}	Adj.	Adj. L_{eq}
Night	0	40.9	44.3	39.1	43.9	43.6	42.6	42.2	41.3	40.6	39.6	39.5	39.2	40.9	10.0	50.9
	1	40.6	43.1	38.9	42.8	42.6	42.2	42.0	41.1	40.4	39.4	39.2	39.0	40.6	10.0	50.6
	2	50.2	64.0	39.1	62.9	61.7	58.8	54.4	43.3	40.9	39.8	39.5	39.3	50.2	10.0	60.2
	3	41.5	45.3	39.4	44.9	44.5	43.8	43.4	42.0	41.1	39.9	39.8	39.5	41.5	10.0	51.5
	4	48.5	59.0	42.9	58.3	57.3	54.9	53.1	45.8	44.6	43.5	43.3	43.0	48.5	10.0	58.5
	5	48.1	52.4	45.7	51.9	51.5	50.8	50.3	48.4	47.6	46.3	46.1	45.8	48.1	10.0	58.1
Day	6	50.1	56.6	47.4	56.3	55.6	53.8	52.5	50.1	49.2	47.9	47.7	47.5	50.1	10.0	60.1
	7	58.0	71.0	49.2	70.3	68.8	66.2	62.6	53.2	51.4	49.8	49.6	49.3	58.0	0.0	58.0
	8	52.0	61.5	47.9	60.5	59.4	57.3	55.0	51.6	49.9	48.5	48.3	48.0	52.0	0.0	52.0
	9	48.7	60.1	37.2	59.7	58.9	55.7	53.7	46.1	41.0	37.9	37.6	37.3	48.7	0.0	48.7
	10	47.2	56.6	38.6	56.1	55.5	53.6	51.7	47.4	43.3	39.5	39.2	38.7	47.2	0.0	47.2
	11	53.1	66.3	36.6	65.8	64.4	61.1	59.2	45.7	40.8	37.5	37.1	36.7	53.1	0.0	53.1
	12	55.6	69.1	35.9	68.3	67.1	64.6	60.5	47.5	42.1	37.1	36.5	36.0	55.6	0.0	55.6
	13	55.4	67.7	37.9	67.4	67.0	64.8	61.6	45.5	41.9	39.0	38.5	38.1	55.4	0.0	55.4
	14	51.2	64.8	37.8	63.9	62.8	59.7	55.0	46.4	41.6	38.8	38.3	38.0	51.2	0.0	51.2
	15	57.4	70.8	36.5	70.5	69.4	65.0	62.5	51.1	41.0	37.3	37.0	36.6	57.4	0.0	57.4
	16	50.9	61.2	37.1	60.9	60.5	58.6	57.1	47.9	41.8	38.1	37.7	37.3	50.9	0.0	50.9
	17	48.3	58.4	38.6	58.2	57.9	55.9	53.4	46.8	42.7	39.8	39.3	38.8	48.3	0.0	48.3
	18	52.8	65.5	37.8	64.9	64.4	61.8	58.3	45.7	42.2	39.1	38.4	37.9	52.8	0.0	52.8
	19	50.3	62.5	40.8	62.0	61.1	58.2	56.4	45.4	43.3	41.5	41.2	40.9	50.3	5.0	55.3
	20	58.3	71.3	41.5	71.0	70.5	66.7	62.6	51.2	44.5	42.2	41.9	41.6	58.3	5.0	63.3
21	46.7	53.0	42.9	52.8	52.5	51.4	50.5	47.1	44.6	43.4	43.2	43.0	46.7	5.0	51.7	
Night	22	42.4	47.2	40.4	46.9	46.5	45.3	44.3	42.4	41.7	40.9	40.7	40.5	42.4	10.0	52.4
	23	43.8	47.0	41.4	46.7	46.5	45.9	45.6	44.5	43.3	42.1	41.8	41.5	43.8	10.0	53.8
Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L_{eq} (dBA)		
Day	Min	46.7	53.0	35.9	52.8	52.5	51.4	50.5	45.4	40.8	37.1	36.5	36.0	24-Hour	Daytime	Nighttime
	Max	58.3	71.3	49.2	71.0	70.5	66.7	62.6	53.2	51.4	49.8	49.6	49.3			
Energy Average		53.9	Average:		63.5	62.7	60.0	57.3	47.9	43.5	40.6	40.3	39.9	52.4	53.9	46.7
Night	Min	40.6	43.1	38.9	42.8	42.6	42.2	42.0	41.1	40.4	39.4	39.2	39.0			
	Max	50.2	64.0	47.4	62.9	61.7	58.8	54.4	50.1	49.2	47.9	47.7	47.5			
Energy Average		46.7	Average:		50.5	50.0	48.7	47.5	44.3	43.3	42.2	42.0	41.7			

24-Hour Noise Level Measurement Summary

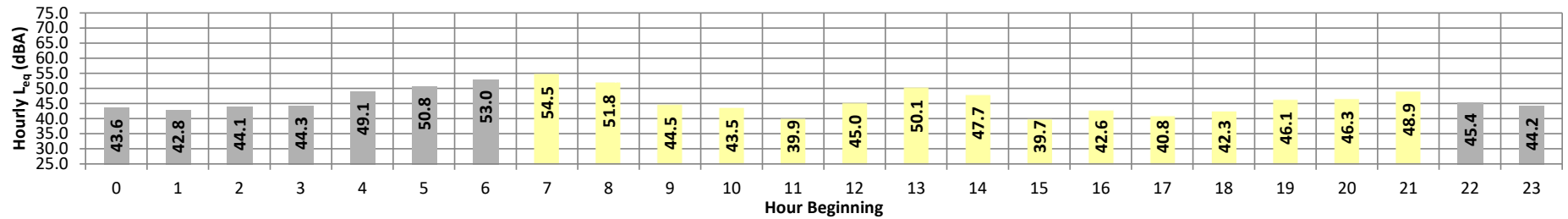
Date: Tuesday, March 1, 2022
Project: Thousand Palms Warehouse

Location: L4 - Located south of the Project site near the Legacy
Source: Apartments at 72940 El Centro Way.

Meter: Piccolo II

JN: 14174
Analyst: A. Khan

Hourly L_{eq} dBA Readings (unadjusted)



Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L_{eq}	Adj.	Adj. L_{eq}	
Night	0	43.6	46.0	41.8	45.7	45.5	45.1	44.8	44.1	43.4	42.4	42.2	41.9	43.6	10.0	53.6	
	1	42.8	45.4	41.0	45.2	44.9	44.5	44.2	43.3	42.6	41.6	41.4	41.1	42.8	10.0	52.8	
	2	44.1	47.2	41.8	46.9	46.6	46.0	45.7	44.6	43.8	42.6	42.3	41.9	44.1	10.0	54.1	
	3	44.3	46.7	42.6	46.5	46.2	45.8	45.6	44.8	44.1	43.1	42.9	42.7	44.3	10.0	54.3	
	4	49.1	51.5	47.2	51.3	51.2	50.8	50.6	49.7	48.8	47.8	47.5	47.3	49.1	10.0	59.1	
	5	50.8	53.3	48.8	53.1	52.9	52.5	52.2	51.3	50.5	49.4	49.2	48.9	50.8	10.0	60.8	
Day	6	53.0	57.7	50.6	57.4	57.0	56.0	55.4	53.4	52.2	51.1	50.9	50.7	53.0	10.0	63.0	
	7	54.5	58.3	52.2	58.0	57.5	56.9	56.5	55.1	54.1	52.8	52.6	52.3	54.5	0.0	54.5	
	8	51.8	57.5	49.1	57.2	56.8	54.9	54.0	52.2	51.0	49.7	49.5	49.2	51.8	0.0	51.8	
	9	44.5	55.8	37.2	54.9	54.3	52.0	49.1	42.4	39.8	37.8	37.6	37.3	44.5	0.0	44.5	
	10	43.5	52.4	37.6	51.7	50.9	48.4	46.3	44.1	41.9	38.3	38.0	37.7	43.5	0.0	43.5	
	11	39.9	44.6	37.0	44.3	43.9	43.0	42.2	40.4	39.1	37.6	37.3	37.1	39.9	0.0	39.9	
	12	45.0	51.3	39.3	51.0	50.5	49.7	49.0	46.2	43.0	40.1	39.7	39.4	45.0	0.0	45.0	
	13	50.1	55.6	46.5	55.1	54.8	54.0	53.2	50.5	48.8	47.2	47.0	46.6	50.1	0.0	50.1	
	14	47.7	59.0	37.5	58.4	57.5	54.7	53.4	45.2	41.0	38.3	38.0	37.6	47.7	0.0	47.7	
	15	39.7	44.4	36.9	43.9	43.5	42.4	41.8	40.4	39.1	37.6	37.3	37.0	39.7	0.0	39.7	
	16	42.6	48.7	37.1	48.2	47.8	46.6	45.9	43.9	41.2	38.5	37.8	37.3	42.6	0.0	42.6	
	17	40.8	45.2	37.2	44.9	44.6	43.8	43.4	41.8	39.9	37.9	37.6	37.3	40.8	0.0	40.8	
	18	42.3	49.2	38.7	48.5	47.8	46.4	45.7	42.6	40.7	39.3	39.1	38.8	42.3	0.0	42.3	
	19	46.1	51.0	43.2	50.5	50.0	49.3	48.7	46.7	45.3	43.8	43.6	43.3	46.1	5.0	51.1	
	20	46.3	50.4	43.7	50.0	49.8	49.2	48.7	46.9	45.7	44.3	44.0	43.8	46.3	5.0	51.3	
	21	48.9	53.4	45.4	53.2	52.9	51.7	51.2	49.8	48.4	46.1	45.8	45.5	48.9	5.0	53.9	
Night	22	45.4	52.0	43.2	51.4	50.6	49.2	46.7	45.5	44.7	43.7	43.5	43.3	45.4	10.0	55.4	
Night	23	44.2	47.2	42.1	47.0	46.8	46.4	46.1	44.8	43.8	42.7	42.5	42.2	44.2	10.0	54.2	
Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L_{eq} (dBA)			
Day	Min	39.7	44.4	36.9	43.9	43.5	42.4	41.8	40.4	39.1	37.6	37.3	37.0	24-Hour	47.8	47.8	47.9
	Max	54.5	59.0	52.2	58.4	57.5	56.9	56.5	55.1	54.1	52.8	52.6	52.3				
Energy Average		47.8	Average:		51.3	50.8	49.5	48.6	45.9	43.9	41.9	41.6	41.3				
Night	Min	42.8	45.4	41.0	45.2	44.9	44.5	44.2	43.3	42.6	41.6	41.4	41.1				
	Max	53.0	57.7	50.6	57.4	57.0	56.0	55.4	53.4	52.2	51.1	50.9	50.7				
Energy Average		47.9	Average:		49.4	49.1	48.5	47.9	46.8	46.0	44.9	44.7	44.4				

APPENDIX 7.1:
OFF-SITE TRAFFIC NOISE LEVEL CALCULATIONS

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)								
Scenario: E Road Name: Rio Del Sol Rd. Road Segment: n/o 30th Av.			Project Name: Majestic Thousand Palms Job Number: 14174					
SITE SPECIFIC INPUT DATA			NOISE MODEL INPUTS					
Highway Data			Site Conditions (Hard = 10, Soft = 15)					
Average Daily Traffic (Adt): 2,184 vehicles			Autos: 15					
Peak Hour Percentage: 6.45%			Medium Trucks (2 Axles): 15					
Peak Hour Volume: 141 vehicles			Heavy Trucks (3+ Axles): 15					
Vehicle Speed: 55 mph			Vehicle Mix					
Near/Far Lane Distance: 36 feet			VehicleType Day Evening Night Daily					
Site Data			Autos: 74.6% 8.9% 16.5% 82.31%					
Barrier Height: 0.0 feet			Medium Trucks: 81.6% 5.4% 12.9% 4.97%					
Barrier Type (0-Wall, 1-Berm): 0.0			Heavy Trucks: 63.6% 8.0% 28.4% 12.73%					
Centerline Dist. to Barrier: 50.0 feet			Noise Source Elevations (in feet)					
Centerline Dist. to Observer: 50.0 feet			Autos: 0.000					
Barrier Distance to Observer: 0.0 feet			Medium Trucks: 2.297					
Observer Height (Above Pad): 5.0 feet			Heavy Trucks: 8.004 Grade Adjustment: 0.0					
Pad Elevation: 0.0 feet			Lane Equivalent Distance (in feet)					
Road Elevation: 0.0 feet			Autos: 46.915					
Road Grade: 0.0%			Medium Trucks: 46.726					
Left View: -90.0 degrees			Heavy Trucks: 46.744					
Right View: 90.0 degrees								
FHWA Noise Model Calculations								
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten	
Autos:	71.78	-12.07	0.31	-1.20	-4.65	0.000	0.000	
Medium Trucks:	82.40	-24.26	0.34	-1.20	-4.87	0.000	0.000	
Heavy Trucks:	86.40	-20.17	0.34	-1.20	-5.43	0.000	0.000	
Unmitigated Noise Levels (without Topo and barrier attenuation)								
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL		
Autos:	58.8	58.7	55.4	53.4	60.9	61.2		
Medium Trucks:	57.3	57.5	51.8	50.8	58.7	59.0		
Heavy Trucks:	65.4	64.5	61.5	62.2	69.0	69.2		
Vehicle Noise:	66.8	66.2	62.8	63.0	69.9	70.2		
Centerline Distance to Noise Contour (in feet)								
		70 dBA	65 dBA	60 dBA	55 dBA			
Ldn:		50	107	230	495			
CNEL:		51	110	238	512			

Friday, February 17, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)								
Scenario: E+P Road Name: Rio Del Sol Rd. Road Segment: n/o 30th Av.			Project Name: Majestic Thousand Palms Job Number: 14174					
SITE SPECIFIC INPUT DATA			NOISE MODEL INPUTS					
Highway Data			Site Conditions (Hard = 10, Soft = 15)					
Average Daily Traffic (Adt): 4,060 vehicles			Autos: 15					
Peak Hour Percentage: 6.45%			Medium Trucks (2 Axles): 15					
Peak Hour Volume: 262 vehicles			Heavy Trucks (3+ Axles): 15					
Vehicle Speed: 55 mph			Vehicle Mix					
Near/Far Lane Distance: 36 feet			VehicleType Day Evening Night Daily					
Site Data			Autos: 74.6% 8.9% 16.5% 80.06%					
Barrier Height: 0.0 feet			Medium Trucks: 81.6% 5.4% 12.9% 3.82%					
Barrier Type (0-Wall, 1-Berm): 0.0			Heavy Trucks: 63.6% 8.0% 28.4% 16.12%					
Centerline Dist. to Barrier: 50.0 feet			Noise Source Elevations (in feet)					
Centerline Dist. to Observer: 50.0 feet			Autos: 0.000					
Barrier Distance to Observer: 0.0 feet			Medium Trucks: 2.297					
Observer Height (Above Pad): 5.0 feet			Heavy Trucks: 8.004 Grade Adjustment: 0.0					
Pad Elevation: 0.0 feet			Lane Equivalent Distance (in feet)					
Road Elevation: 0.0 feet			Autos: 46.915					
Road Grade: 0.0%			Medium Trucks: 46.726					
Left View: -90.0 degrees			Heavy Trucks: 46.744					
Right View: 90.0 degrees								
FHWA Noise Model Calculations								
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten	
Autos:	71.78	-9.49	0.31	-1.20	-4.65	0.000	0.000	
Medium Trucks:	82.40	-22.71	0.34	-1.20	-4.87	0.000	0.000	
Heavy Trucks:	86.40	-16.45	0.34	-1.20	-5.43	0.000	0.000	
Unmitigated Noise Levels (without Topo and barrier attenuation)								
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL		
Autos:	61.4	61.2	58.0	55.9	63.5	63.8		
Medium Trucks:	58.8	59.1	53.3	52.3	60.3	60.5		
Heavy Trucks:	69.1	68.2	65.3	66.0	72.7	72.9		
Vehicle Noise:	70.1	69.4	66.2	66.5	73.4	73.6		
Centerline Distance to Noise Contour (in feet)								
		70 dBA	65 dBA	60 dBA	55 dBA			
Ldn:		84	181	391	842			
CNEL:		87	188	404	871			

Friday, February 17, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)								
Scenario: EAC Road Name: Rio Del Sol Rd. Road Segment: n/o 30th Av.			Project Name: Majestic Thousand Palms Job Number: 14174					
SITE SPECIFIC INPUT DATA			NOISE MODEL INPUTS					
Highway Data			Site Conditions (Hard = 10, Soft = 15)					
Average Daily Traffic (Adt): 2,436 vehicles			Autos: 15					
Peak Hour Percentage: 6.45%			Medium Trucks (2 Axles): 15					
Peak Hour Volume: 157 vehicles			Heavy Trucks (3+ Axles): 15					
Vehicle Speed: 55 mph			Vehicle Mix					
Near/Far Lane Distance: 36 feet			VehicleType Day Evening Night Daily					
Site Data			Autos: 74.6% 8.9% 16.5% 80.20%					
Barrier Height: 0.0 feet			Medium Trucks: 81.6% 5.4% 12.9% 4.97%					
Barrier Type (0-Wall, 1-Berm): 0.0			Heavy Trucks: 63.6% 8.0% 28.4% 12.73%					
Centerline Dist. to Barrier: 50.0 feet			Noise Source Elevations (in feet)					
Centerline Dist. to Observer: 50.0 feet			Autos: 0.000					
Barrier Distance to Observer: 0.0 feet			Medium Trucks: 2.297					
Observer Height (Above Pad): 5.0 feet			Heavy Trucks: 8.004 Grade Adjustment: 0.0					
Pad Elevation: 0.0 feet			Lane Equivalent Distance (in feet)					
Road Elevation: 0.0 feet			Autos: 46.915					
Road Grade: 0.0%			Medium Trucks: 46.726					
Left View: -90.0 degrees			Heavy Trucks: 46.744					
Right View: 90.0 degrees								
FHWA Noise Model Calculations								
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten	
Autos:	71.78	-11.59	0.31	-1.20	-4.65	0.000	0.000	
Medium Trucks:	82.40	-23.79	0.34	-1.20	-4.87	0.000	0.000	
Heavy Trucks:	86.40	-19.70	0.34	-1.20	-5.43	0.000	0.000	
Unmitigated Noise Levels (without Topo and barrier attenuation)								
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL		
Autos:	59.3	59.1	55.9	53.8	61.4	61.7		
Medium Trucks:	57.8	58.0	52.2	51.2	59.2	59.4		
Heavy Trucks:	65.8	65.0	62.0	62.7	69.4	69.6		
Vehicle Noise:	67.2	66.6	63.3	63.5	70.4	70.6		
Centerline Distance to Noise Contour (in feet)								
		70 dBA	65 dBA	60 dBA	55 dBA			
Ldn:		53	115	247	533			
CNEL:		55	119	256	551			

Friday, February 17, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)								
Scenario: EAC+P Road Name: Rio Del Sol Rd. Road Segment: n/o 30th Av.			Project Name: Majestic Thousand Palms Job Number: 14174					
SITE SPECIFIC INPUT DATA			NOISE MODEL INPUTS					
Highway Data			Site Conditions (Hard = 10, Soft = 15)					
Average Daily Traffic (Adt): 4,312 vehicles			Autos: 15					
Peak Hour Percentage: 6.45%			Medium Trucks (2 Axles): 15					
Peak Hour Volume: 278 vehicles			Heavy Trucks (3+ Axles): 15					
Vehicle Speed: 55 mph			Vehicle Mix					
Near/Far Lane Distance: 36 feet			VehicleType Day Evening Night Daily					
Site Data			Autos: 74.6% 8.9% 16.5% 80.20%					
Barrier Height: 0.0 feet			Medium Trucks: 81.6% 5.4% 12.9% 3.88%					
Barrier Type (0-Wall, 1-Berm): 0.0			Heavy Trucks: 63.6% 8.0% 28.4% 15.92%					
Centerline Dist. to Barrier: 50.0 feet			Noise Source Elevations (in feet)					
Centerline Dist. to Observer: 50.0 feet			Autos: 0.000					
Barrier Distance to Observer: 0.0 feet			Medium Trucks: 2.297					
Observer Height (Above Pad): 5.0 feet			Heavy Trucks: 8.004 Grade Adjustment: 0.0					
Pad Elevation: 0.0 feet			Lane Equivalent Distance (in feet)					
Road Elevation: 0.0 feet			Autos: 46.915					
Road Grade: 0.0%			Medium Trucks: 46.726					
Left View: -90.0 degrees			Heavy Trucks: 46.744					
Right View: 90.0 degrees								
FHWA Noise Model Calculations								
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten	
Autos:	71.78	-9.22	0.31	-1.20	-4.65	0.000	0.000	
Medium Trucks:	82.40	-22.37	0.34	-1.20	-4.87	0.000	0.000	
Heavy Trucks:	86.40	-16.25	0.34	-1.20	-5.43	0.000	0.000	
Unmitigated Noise Levels (without Topo and barrier attenuation)								
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL		
Autos:	61.7	61.5	58.3	56.2	63.7	64.1		
Medium Trucks:	59.2	59.4	53.7	52.6	60.6	60.9		
Heavy Trucks:	69.3	68.4	65.5	66.2	72.9	73.1		
Vehicle Noise:	70.3	69.7	66.5	66.8	73.6	73.8		
Centerline Distance to Noise Contour (in feet)								
		70 dBA	65 dBA	60 dBA	55 dBA			
Ldn:		87	188	404	871			
CNEL:		90	194	418	900			

Friday, February 17, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: HY Road Name: Rio Del Sol Rd. Road Segment: n/o 30th Av.				Project Name: Majestic Thousand Palms Job Number: 14174			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 2,680 vehicles				Autos: 15			
Peak Hour Percentage: 6.45%				Medium Trucks (2 Axles): 15			
Peak Hour Volume: 173 vehicles				Heavy Trucks (3+ Axles): 15			
Vehicle Speed: 55 mph				Vehicle Mix			
Near/Far Lane Distance: 36 feet				VehicleType Day Evening Night Daily			
Site Data				Autos: 74.6% 8.9% 16.5% 82.31%			
Barrier Height: 0.0 feet				Medium Trucks: 81.6% 5.4% 12.9% 4.97%			
Barrier Type (0-Wall, 1-Berm): 0.0				Heavy Trucks: 63.6% 8.0% 28.4% 12.73%			
Centerline Dist. to Barrier: 50.0 feet				Noise Source Elevations (in feet)			
Centerline Dist. to Observer: 50.0 feet				Autos: 0.000			
Barrier Distance to Observer: 0.0 feet				Medium Trucks: 2.297			
Observer Height (Above Pad): 5.0 feet				Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Pad Elevation: 0.0 feet				Lane Equivalent Distance (in feet)			
Road Elevation: 0.0 feet				Autos: 46.915			
Road Grade: 0.0%				Medium Trucks: 46.726			
Left View: -90.0 degrees				Heavy Trucks: 46.744			
Right View: 90.0 degrees							
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-11.18	0.31	-1.20	-4.65	0.000	0.000
Medium Trucks:	82.40	-23.37	0.34	-1.20	-4.87	0.000	0.000
Heavy Trucks:	86.40	-19.28	0.34	-1.20	-5.43	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	59.7	59.6	56.3	54.3	61.8	62.1	
Medium Trucks:	58.2	58.4	52.7	51.6	59.6	59.9	
Heavy Trucks:	66.2	65.4	62.4	63.1	69.9	70.1	
Vehicle Noise:	67.6	67.0	63.7	63.9	70.8	71.0	
Centerline Distance to Noise Contour (in feet)							
	70 dBA	65 dBA	60 dBA	55 dBA			
Ldn:	57	122	263	567			
CNEL:	59	127	273	587			

Friday, February 17, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: HY+P Road Name: Rio Del Sol Rd. Road Segment: n/o 30th Av.				Project Name: Majestic Thousand Palms Job Number: 14174			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 4,556 vehicles				Autos: 15			
Peak Hour Percentage: 6.45%				Medium Trucks (2 Axles): 15			
Peak Hour Volume: 294 vehicles				Heavy Trucks (3+ Axles): 15			
Vehicle Speed: 55 mph				Vehicle Mix			
Near/Far Lane Distance: 36 feet				VehicleType Day Evening Night Daily			
Site Data				Autos: 74.6% 8.9% 16.5% 80.31%			
Barrier Height: 0.0 feet				Medium Trucks: 81.6% 5.4% 12.9% 3.94%			
Barrier Type (0-Wall, 1-Berm): 0.0				Heavy Trucks: 63.6% 8.0% 28.4% 15.75%			
Centerline Dist. to Barrier: 50.0 feet				Noise Source Elevations (in feet)			
Centerline Dist. to Observer: 50.0 feet				Autos: 0.000			
Barrier Distance to Observer: 0.0 feet				Medium Trucks: 2.297			
Observer Height (Above Pad): 5.0 feet				Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Pad Elevation: 0.0 feet				Lane Equivalent Distance (in feet)			
Road Elevation: 0.0 feet				Autos: 46.915			
Road Grade: 0.0%				Medium Trucks: 46.726			
Left View: -90.0 degrees				Heavy Trucks: 46.744			
Right View: 90.0 degrees							
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-8.98	0.31	-1.20	-4.65	0.000	0.000
Medium Trucks:	82.40	-22.07	0.34	-1.20	-4.87	0.000	0.000
Heavy Trucks:	86.40	-16.05	0.34	-1.20	-5.43	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	61.9	61.8	58.5	56.5	64.0	64.3	
Medium Trucks:	59.5	59.7	54.0	52.9	60.9	61.2	
Heavy Trucks:	69.5	68.6	65.7	66.4	73.1	73.3	
Vehicle Noise:	70.5	69.9	66.7	67.0	73.8	74.0	
Centerline Distance to Noise Contour (in feet)							
	70 dBA	65 dBA	60 dBA	55 dBA			
Ldn:	90	193	417	898			
CNEL:	93	200	431	929			

Friday, February 17, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: E Road Name: Rio Del Sol Rd. Road Segment: s/o 30th Av.				Project Name: Majestic Thousand Palms Job Number: 14174			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 2,184 vehicles				Autos: 15			
Peak Hour Percentage: 6.45%				Medium Trucks (2 Axles): 15			
Peak Hour Volume: 141 vehicles				Heavy Trucks (3+ Axles): 15			
Vehicle Speed: 55 mph				Vehicle Mix			
Near/Far Lane Distance: 36 feet				VehicleType Day Evening Night Daily			
Site Data				Autos: 74.6% 8.9% 16.5% 80.30%			
Barrier Height: 0.0 feet				Medium Trucks: 81.6% 5.4% 12.9% 3.53%			
Barrier Type (0-Wall, 1-Berm): 0.0				Heavy Trucks: 63.6% 8.0% 28.4% 16.17%			
Centerline Dist. to Barrier: 50.0 feet				Noise Source Elevations (in feet)			
Centerline Dist. to Observer: 50.0 feet				Autos: 0.000			
Barrier Distance to Observer: 0.0 feet				Medium Trucks: 2.297			
Observer Height (Above Pad): 5.0 feet				Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Pad Elevation: 0.0 feet				Lane Equivalent Distance (in feet)			
Road Elevation: 0.0 feet				Autos: 46.915			
Road Grade: 0.0%				Medium Trucks: 46.726			
Left View: -90.0 degrees				Heavy Trucks: 46.744			
Right View: 90.0 degrees							
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-12.07	0.31	-1.20	-4.65	0.000	0.000
Medium Trucks:	82.40	-24.26	0.34	-1.20	-4.87	0.000	0.000
Heavy Trucks:	86.40	-20.17	0.34	-1.20	-5.43	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	58.8	58.7	55.4	53.4	60.9	61.2	
Medium Trucks:	57.3	57.5	51.8	50.8	58.7	59.0	
Heavy Trucks:	65.4	64.5	61.5	62.2	69.0	69.2	
Vehicle Noise:	66.8	66.2	62.8	63.0	69.9	70.2	
Centerline Distance to Noise Contour (in feet)							
	70 dBA	65 dBA	60 dBA	55 dBA			
Ldn:	50	107	230	495			
CNEL:	51	110	238	512			

Friday, February 17, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: E+P Road Name: Rio Del Sol Rd. Road Segment: s/o 30th Av.				Project Name: Majestic Thousand Palms Job Number: 14174			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 4,824 vehicles				Autos: 15			
Peak Hour Percentage: 6.45%				Medium Trucks (2 Axles): 15			
Peak Hour Volume: 311 vehicles				Heavy Trucks (3+ Axles): 15			
Vehicle Speed: 55 mph				Vehicle Mix			
Near/Far Lane Distance: 36 feet				VehicleType Day Evening Night Daily			
Site Data				Autos: 74.6% 8.9% 16.5% 80.30%			
Barrier Height: 0.0 feet				Medium Trucks: 81.6% 5.4% 12.9% 3.53%			
Barrier Type (0-Wall, 1-Berm): 0.0				Heavy Trucks: 63.6% 8.0% 28.4% 16.17%			
Centerline Dist. to Barrier: 50.0 feet				Noise Source Elevations (in feet)			
Centerline Dist. to Observer: 50.0 feet				Autos: 0.000			
Barrier Distance to Observer: 0.0 feet				Medium Trucks: 2.297			
Observer Height (Above Pad): 5.0 feet				Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Pad Elevation: 0.0 feet				Lane Equivalent Distance (in feet)			
Road Elevation: 0.0 feet				Autos: 46.915			
Road Grade: 0.0%				Medium Trucks: 46.726			
Left View: -90.0 degrees				Heavy Trucks: 46.744			
Right View: 90.0 degrees							
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-8.73	0.31	-1.20	-4.65	0.000	0.000
Medium Trucks:	82.40	-22.30	0.34	-1.20	-4.87	0.000	0.000
Heavy Trucks:	86.40	-15.69	0.34	-1.20	-5.43	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.2	62.0	58.8	56.7	64.2	64.5	
Medium Trucks:	59.2	59.5	53.7	52.7	60.7	60.9	
Heavy Trucks:	69.8	69.0	66.0	66.7	73.4	73.7	
Vehicle Noise:	70.8	70.2	67.0	67.3	74.1	74.4	
Centerline Distance to Noise Contour (in feet)							
	70 dBA	65 dBA	60 dBA	55 dBA			
Ldn:	94	203	438	944			
CNEL:	98	210	453	976			

Friday, February 17, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: EAC Road Name: Rio Del Sol Rd. Road Segment: s/o 30th Av.				Project Name: Majestic Thousand Palms Job Number: 14174			
SITE SPECIFIC INPUT DATA			NOISE MODEL INPUTS				
Highway Data			Site Conditions (Hard = 10, Soft = 15)				
Average Daily Traffic (Adt): 2,570 vehicles			Autos: 15				
Peak Hour Percentage: 6.45%			Medium Trucks (2 Axles): 15				
Peak Hour Volume: 166 vehicles			Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph			Vehicle Mix				
Near/Far Lane Distance: 36 feet			VehicleType	Day	Evening	Night	Daily
Site Data			Autos: 74.6% 8.9% 16.5% 82.31%				
Barrier Height: 0.0 feet			Medium Trucks: 81.6% 5.4% 12.9% 4.97%				
Barrier Type (0-Wall, 1-Berm): 0.0			Heavy Trucks: 63.6% 8.0% 28.4% 12.73%				
Centerline Dist. to Barrier: 50.0 feet			Noise Source Elevations (in feet)				
Centerline Dist. to Observer: 50.0 feet			Autos: 0.000				
Barrier Distance to Observer: 0.0 feet			Medium Trucks: 2.297				
Observer Height (Above Pad): 5.0 feet			Heavy Trucks: 8.004 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet			Lane Equivalent Distance (in feet)				
Road Elevation: 0.0 feet			Autos: 46.915				
Road Grade: 0.0%			Medium Trucks: 46.726				
Left View: -90.0 degrees			Heavy Trucks: 46.744				
Right View: 90.0 degrees							
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-11.36	0.31	-1.20	-4.65	0.000	0.000
Medium Trucks:	82.40	-23.56	0.34	-1.20	-4.87	0.000	0.000
Heavy Trucks:	86.40	-19.47	0.34	-1.20	-5.43	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	59.5	59.4	56.2	54.1	61.6	61.9	
Medium Trucks:	58.0	58.2	52.5	51.5	59.4	59.7	
Heavy Trucks:	66.1	65.2	62.2	63.0	69.7	69.9	
Vehicle Noise:	67.5	66.9	63.5	63.7	70.6	70.9	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			55	119	256	552	
CNEL:			57	123	265	571	

Friday, February 17, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: EAC+P Road Name: Rio Del Sol Rd. Road Segment: s/o 30th Av.				Project Name: Majestic Thousand Palms Job Number: 14174			
SITE SPECIFIC INPUT DATA			NOISE MODEL INPUTS				
Highway Data			Site Conditions (Hard = 10, Soft = 15)				
Average Daily Traffic (Adt): 5,210 vehicles			Autos: 15				
Peak Hour Percentage: 6.45%			Medium Trucks (2 Axles): 15				
Peak Hour Volume: 336 vehicles			Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph			Vehicle Mix				
Near/Far Lane Distance: 36 feet			VehicleType	Day	Evening	Night	Daily
Site Data			Autos: 74.6% 8.9% 16.5% 80.45%				
Barrier Height: 0.0 feet			Medium Trucks: 81.6% 5.4% 12.9% 3.64%				
Barrier Type (0-Wall, 1-Berm): 0.0			Heavy Trucks: 63.6% 8.0% 28.4% 15.91%				
Centerline Dist. to Barrier: 50.0 feet			Noise Source Elevations (in feet)				
Centerline Dist. to Observer: 50.0 feet			Autos: 0.000				
Barrier Distance to Observer: 0.0 feet			Medium Trucks: 2.297				
Observer Height (Above Pad): 5.0 feet			Heavy Trucks: 8.004 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet			Lane Equivalent Distance (in feet)				
Road Elevation: 0.0 feet			Autos: 46.915				
Road Grade: 0.0%			Medium Trucks: 46.726				
Left View: -90.0 degrees			Heavy Trucks: 46.744				
Right View: 90.0 degrees							
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-8.39	0.31	-1.20	-4.65	0.000	0.000
Medium Trucks:	82.40	-21.83	0.34	-1.20	-4.87	0.000	0.000
Heavy Trucks:	86.40	-15.43	0.34	-1.20	-5.43	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.5	62.3	59.1	57.1	64.6	64.9	
Medium Trucks:	59.7	59.9	54.2	53.2	61.2	61.4	
Heavy Trucks:	70.1	69.3	66.3	67.0	73.7	73.9	
Vehicle Noise:	71.1	70.5	67.3	67.6	74.4	74.6	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			99	212	457	985	
CNEL:			102	220	473	1,019	

Friday, February 17, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: HY Road Name: Rio Del Sol Rd. Road Segment: s/o 30th Av.				Project Name: Majestic Thousand Palms Job Number: 14174			
SITE SPECIFIC INPUT DATA			NOISE MODEL INPUTS				
Highway Data			Site Conditions (Hard = 10, Soft = 15)				
Average Daily Traffic (Adt): 2,827 vehicles			Autos: 15				
Peak Hour Percentage: 6.45%			Medium Trucks (2 Axles): 15				
Peak Hour Volume: 182 vehicles			Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph			Vehicle Mix				
Near/Far Lane Distance: 36 feet			VehicleType	Day	Evening	Night	Daily
Site Data			Autos: 74.6% 8.9% 16.5% 82.31%				
Barrier Height: 0.0 feet			Medium Trucks: 81.6% 5.4% 12.9% 4.97%				
Barrier Type (0-Wall, 1-Berm): 0.0			Heavy Trucks: 63.6% 8.0% 28.4% 12.73%				
Centerline Dist. to Barrier: 50.0 feet			Noise Source Elevations (in feet)				
Centerline Dist. to Observer: 50.0 feet			Autos: 0.000				
Barrier Distance to Observer: 0.0 feet			Medium Trucks: 2.297				
Observer Height (Above Pad): 5.0 feet			Heavy Trucks: 8.004 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet			Lane Equivalent Distance (in feet)				
Road Elevation: 0.0 feet			Autos: 46.915				
Road Grade: 0.0%			Medium Trucks: 46.726				
Left View: -90.0 degrees			Heavy Trucks: 46.744				
Right View: 90.0 degrees							
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-10.95	0.31	-1.20	-4.65	0.000	0.000
Medium Trucks:	82.40	-23.14	0.34	-1.20	-4.87	0.000	0.000
Heavy Trucks:	86.40	-19.05	0.34	-1.20	-5.43	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	59.9	59.8	56.6	54.5	62.0	62.3	
Medium Trucks:	58.4	58.6	52.9	51.9	59.9	60.1	
Heavy Trucks:	66.5	65.6	62.7	63.4	70.1	70.3	
Vehicle Noise:	67.9	67.3	64.0	64.2	71.1	71.3	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			59	127	273	588	
CNEL:			61	131	282	609	

Friday, February 17, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: HY+P Road Name: Rio Del Sol Rd. Road Segment: s/o 30th Av.				Project Name: Majestic Thousand Palms Job Number: 14174			
SITE SPECIFIC INPUT DATA			NOISE MODEL INPUTS				
Highway Data			Site Conditions (Hard = 10, Soft = 15)				
Average Daily Traffic (Adt): 5,467 vehicles			Autos: 15				
Peak Hour Percentage: 6.45%			Medium Trucks (2 Axles): 15				
Peak Hour Volume: 353 vehicles			Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph			Vehicle Mix				
Near/Far Lane Distance: 36 feet			VehicleType	Day	Evening	Night	Daily
Site Data			Autos: 74.6% 8.9% 16.5% 80.53%				
Barrier Height: 0.0 feet			Medium Trucks: 81.6% 5.4% 12.9% 3.70%				
Barrier Type (0-Wall, 1-Berm): 0.0			Heavy Trucks: 63.6% 8.0% 28.4% 15.76%				
Centerline Dist. to Barrier: 50.0 feet			Noise Source Elevations (in feet)				
Centerline Dist. to Observer: 50.0 feet			Autos: 0.000				
Barrier Distance to Observer: 0.0 feet			Medium Trucks: 2.297				
Observer Height (Above Pad): 5.0 feet			Heavy Trucks: 8.004 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet			Lane Equivalent Distance (in feet)				
Road Elevation: 0.0 feet			Autos: 46.915				
Road Grade: 0.0%			Medium Trucks: 46.726				
Left View: -90.0 degrees			Heavy Trucks: 46.744				
Right View: 90.0 degrees							
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-8.18	0.31	-1.20	-4.65	0.000	0.000
Medium Trucks:	82.40	-21.55	0.34	-1.20	-4.87	0.000	0.000
Heavy Trucks:	86.40	-15.26	0.34	-1.20	-5.43	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.7	62.6	59.3	57.3	64.8	65.1	
Medium Trucks:	60.0	60.2	54.5	53.5	61.4	61.7	
Heavy Trucks:	70.3	69.4	66.4	67.2	73.9	74.1	
Vehicle Noise:	71.3	70.6	67.4	67.7	74.6	74.8	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			101	218	470	1,013	
CNEL:			105	226	486	1,048	

Friday, February 17, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)									
Scenario: E Road Name: Bob Hope Dr. Road Segment: s/o Varner Rd.					Project Name: Majestic Thousand Palms Job Number: 14174				
SITE SPECIFIC INPUT DATA			NOISE MODEL INPUTS						
Highway Data			Site Conditions (Hard = 10, Soft = 15)						
Average Daily Traffic (Adt): 13,717 vehicles			Autos: 15						
Peak Hour Percentage: 6.45%			Medium Trucks (2 Axles): 15						
Peak Hour Volume: 885 vehicles			Heavy Trucks (3+ Axles): 15						
Vehicle Speed: 55 mph			Vehicle Mix						
Near/Far Lane Distance: 78 feet			VehicleType Day Evening Night Daily						
Site Data			Autos: 74.6% 8.9% 16.5% 82.31%						
Barrier Height: 0.0 feet			Medium Trucks: 81.6% 5.4% 12.9% 4.97%						
Barrier Type (0-Wall, 1-Berm): 0.0			Heavy Trucks: 63.6% 8.0% 28.4% 12.73%						
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: 8.004 Grade Adjustment: 0.0						
Pad Elevation: 0.0 feet			Lane Equivalent Distance (in feet)						
Road Elevation: 0.0 feet			Autos: 65.422						
Road Grade: 0.0%			Medium Trucks: 65.286						
Left View: -90.0 degrees			Heavy Trucks: 65.299						
Right View: 90.0 degrees									
FHWA Noise Model Calculations									
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten		
Autos:	71.78	-4.09	-1.85	-1.20	-4.73	0.000	0.000		
Medium Trucks:	82.40	-16.28	-1.84	-1.20	-4.88	0.000	0.000		
Heavy Trucks:	86.40	-12.19	-1.84	-1.20	-5.25	0.000	0.000		
Unmitigated Noise Levels (without Topo and barrier attenuation)									
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL			
Autos:	64.6	64.5	61.3	59.2	66.7	67.0			
Medium Trucks:	63.1	63.3	57.6	56.6	64.5	64.8			
Heavy Trucks:	71.2	70.3	67.3	68.0	74.8	75.0			
Vehicle Noise:	72.6	72.0	68.6	68.8	75.7	76.0			
Centerline Distance to Noise Contour (in feet)									
			70 dBA	65 dBA	60 dBA	55 dBA			
Ldn:			183	395	851	1,834			
CNEL:			190	409	881	1,898			

Friday, February 17, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)									
Scenario: E+P Road Name: Bob Hope Dr. Road Segment: s/o Varner Rd.					Project Name: Majestic Thousand Palms Job Number: 14174				
SITE SPECIFIC INPUT DATA			NOISE MODEL INPUTS						
Highway Data			Site Conditions (Hard = 10, Soft = 15)						
Average Daily Traffic (Adt): 15,495 vehicles			Autos: 15						
Peak Hour Percentage: 6.45%			Medium Trucks (2 Axles): 15						
Peak Hour Volume: 999 vehicles			Heavy Trucks (3+ Axles): 15						
Vehicle Speed: 55 mph			Vehicle Mix						
Near/Far Lane Distance: 78 feet			VehicleType Day Evening Night Daily						
Site Data			Autos: 74.6% 8.9% 16.5% 81.17%						
Barrier Height: 0.0 feet			Medium Trucks: 81.6% 5.4% 12.9% 4.74%						
Barrier Type (0-Wall, 1-Berm): 0.0			Heavy Trucks: 63.6% 8.0% 28.4% 14.09%						
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: 8.004 Grade Adjustment: 0.0						
Pad Elevation: 0.0 feet			Lane Equivalent Distance (in feet)						
Road Elevation: 0.0 feet			Autos: 65.422						
Road Grade: 0.0%			Medium Trucks: 65.286						
Left View: -90.0 degrees			Heavy Trucks: 65.299						
Right View: 90.0 degrees									
FHWA Noise Model Calculations									
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten		
Autos:	71.78	-3.62	-1.85	-1.20	-4.73	0.000	0.000		
Medium Trucks:	82.40	-15.95	-1.84	-1.20	-4.88	0.000	0.000		
Heavy Trucks:	86.40	-11.22	-1.84	-1.20	-5.25	0.000	0.000		
Unmitigated Noise Levels (without Topo and barrier attenuation)									
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL			
Autos:	65.1	64.9	61.7	59.7	67.2	67.5			
Medium Trucks:	63.4	63.6	57.9	56.9	64.9	65.1			
Heavy Trucks:	72.1	71.3	68.3	69.0	75.7	75.9			
Vehicle Noise:	73.4	72.8	69.5	69.7	76.6	76.8			
Centerline Distance to Noise Contour (in feet)									
			70 dBA	65 dBA	60 dBA	55 dBA			
Ldn:			209	451	972	2,095			
CNEL:			217	467	1,006	2,167			

Friday, February 17, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)									
Scenario: EAC Road Name: Bob Hope Dr. Road Segment: s/o Varner Rd.					Project Name: Majestic Thousand Palms Job Number: 14174				
SITE SPECIFIC INPUT DATA			NOISE MODEL INPUTS						
Highway Data			Site Conditions (Hard = 10, Soft = 15)						
Average Daily Traffic (Adt): 16,506 vehicles			Autos: 15						
Peak Hour Percentage: 6.45%			Medium Trucks (2 Axles): 15						
Peak Hour Volume: 1,065 vehicles			Heavy Trucks (3+ Axles): 15						
Vehicle Speed: 55 mph			Vehicle Mix						
Near/Far Lane Distance: 78 feet			VehicleType Day Evening Night Daily						
Site Data			Autos: 74.6% 8.9% 16.5% 82.31%						
Barrier Height: 0.0 feet			Medium Trucks: 81.6% 5.4% 12.9% 4.97%						
Barrier Type (0-Wall, 1-Berm): 0.0			Heavy Trucks: 63.6% 8.0% 28.4% 12.73%						
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: 8.004 Grade Adjustment: 0.0						
Pad Elevation: 0.0 feet			Lane Equivalent Distance (in feet)						
Road Elevation: 0.0 feet			Autos: 65.422						
Road Grade: 0.0%			Medium Trucks: 65.286						
Left View: -90.0 degrees			Heavy Trucks: 65.299						
Right View: 90.0 degrees									
FHWA Noise Model Calculations									
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten		
Autos:	71.78	-3.28	-1.85	-1.20	-4.73	0.000	0.000		
Medium Trucks:	82.40	-15.48	-1.84	-1.20	-4.88	0.000	0.000		
Heavy Trucks:	86.40	-11.39	-1.84	-1.20	-5.25	0.000	0.000		
Unmitigated Noise Levels (without Topo and barrier attenuation)									
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL			
Autos:	65.4	65.3	62.1	60.0	67.5	67.8			
Medium Trucks:	63.9	64.1	58.4	57.4	65.3	65.6			
Heavy Trucks:	72.0	71.1	68.1	68.9	75.6	75.8			
Vehicle Noise:	73.4	72.8	69.5	69.6	76.5	76.8			
Centerline Distance to Noise Contour (in feet)									
			70 dBA	65 dBA	60 dBA	55 dBA			
Ldn:			208	447	963	2,075			
CNEL:			215	463	997	2,148			

Friday, February 17, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)									
Scenario: EAC+P Road Name: Bob Hope Dr. Road Segment: s/o Varner Rd.					Project Name: Majestic Thousand Palms Job Number: 14174				
SITE SPECIFIC INPUT DATA			NOISE MODEL INPUTS						
Highway Data			Site Conditions (Hard = 10, Soft = 15)						
Average Daily Traffic (Adt): 18,284 vehicles			Autos: 15						
Peak Hour Percentage: 6.45%			Medium Trucks (2 Axles): 15						
Peak Hour Volume: 1,179 vehicles			Heavy Trucks (3+ Axles): 15						
Vehicle Speed: 55 mph			Vehicle Mix						
Near/Far Lane Distance: 78 feet			VehicleType Day Evening Night Daily						
Site Data			Autos: 74.6% 8.9% 16.5% 81.34%						
Barrier Height: 0.0 feet			Medium Trucks: 81.6% 5.4% 12.9% 4.78%						
Barrier Type (0-Wall, 1-Berm): 0.0			Heavy Trucks: 63.6% 8.0% 28.4% 13.88%						
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: 8.004 Grade Adjustment: 0.0						
Pad Elevation: 0.0 feet			Lane Equivalent Distance (in feet)						
Road Elevation: 0.0 feet			Autos: 65.422						
Road Grade: 0.0%			Medium Trucks: 65.286						
Left View: -90.0 degrees			Heavy Trucks: 65.299						
Right View: 90.0 degrees									
FHWA Noise Model Calculations									
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten		
Autos:	71.78	-2.89	-1.85	-1.20	-4.73	0.000	0.000		
Medium Trucks:	82.40	-15.20	-1.84	-1.20	-4.88	0.000	0.000		
Heavy Trucks:	86.40	-10.57	-1.84	-1.20	-5.25	0.000	0.000		
Unmitigated Noise Levels (without Topo and barrier attenuation)									
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL			
Autos:	65.8	65.7	62.5	60.4	67.9	68.2			
Medium Trucks:	64.2	64.4	58.6	57.6	65.6	65.8			
Heavy Trucks:	72.8	71.9	69.0	69.7	76.4	76.6			
Vehicle Noise:	74.1	73.4	70.2	70.4	77.3	77.5			
Centerline Distance to Noise Contour (in feet)									
			70 dBA	65 dBA	60 dBA	55 dBA			
Ldn:			232	500	1,077	2,321			
CNEL:			240	517	1,115	2,402			

Friday, February 17, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)																													
Scenario: HY Road Name: Bob Hope Dr. Road Segment: s/o Vaner Rd.					Project Name: Majestic Thousand Palms Job Number: 14174																								
SITE SPECIFIC INPUT DATA			NOISE MODEL INPUTS																										
Highway Data			Site Conditions (Hard = 10, Soft = 15)																										
Average Daily Traffic (Adt): 18,156 vehicles			Autos: 15																										
Peak Hour Percentage: 6.45%			Medium Trucks (2 Axles): 15																										
Peak Hour Volume: 1,171 vehicles			Heavy Trucks (3+ Axles): 15																										
Vehicle Speed: 55 mph			Vehicle Mix																										
Near/Far Lane Distance: 78 feet			<table border="1"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>74.6%</td> <td>8.9%</td> <td>16.5%</td> <td>82.31%</td> </tr> <tr> <td>Medium Trucks:</td> <td>81.6%</td> <td>5.4%</td> <td>12.9%</td> <td>4.97%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>63.6%</td> <td>8.0%</td> <td>28.4%</td> <td>12.73%</td> </tr> </tbody> </table>							VehicleType	Day	Evening	Night	Daily	Autos:	74.6%	8.9%	16.5%	82.31%	Medium Trucks:	81.6%	5.4%	12.9%	4.97%	Heavy Trucks:	63.6%	8.0%	28.4%	12.73%
VehicleType	Day	Evening	Night	Daily																									
Autos:	74.6%	8.9%	16.5%	82.31%																									
Medium Trucks:	81.6%	5.4%	12.9%	4.97%																									
Heavy Trucks:	63.6%	8.0%	28.4%	12.73%																									
Site Data			Noise Source Elevations (in feet)																										
Barrier Height: 0.0 feet			Autos: 0.000																										
Barrier Type (0-Wall, 1-Berm): 0.0			Medium Trucks: 2.297																										
Centerline Dist. to Barrier: 76.0 feet			Heavy Trucks: 8.004 Grade Adjustment: 0.0																										
Centerline Dist. to Observer: 76.0 feet			Lane Equivalent Distance (in feet)																										
Barrier Distance to Observer: 0.0 feet			Autos: 65.422																										
Observer Height (Above Pad): 5.0 feet			Medium Trucks: 65.286																										
Pad Elevation: 0.0 feet			Heavy Trucks: 65.299																										
Road Elevation: 0.0 feet																													
Road Grade: 0.0%																													
Left View: -90.0 degrees																													
Right View: 90.0 degrees																													
FHWA Noise Model Calculations																													
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten																						
Autos:	71.78	-2.87	-1.85	-1.20	-4.73	0.000	0.000																						
Medium Trucks:	82.40	-15.06	-1.84	-1.20	-4.88	0.000	0.000																						
Heavy Trucks:	86.40	-10.98	-1.84	-1.20	-5.25	0.000	0.000																						
Unmitigated Noise Levels (without Topo and barrier attenuation)																													
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL																							
Autos:	65.9	65.7	62.5	60.4	67.9	68.2																							
Medium Trucks:	64.3	64.5	58.8	57.8	65.8	66.0																							
Heavy Trucks:	72.4	71.5	68.6	69.3	76.0	76.2																							
Vehicle Noise:	73.8	73.2	69.9	70.1	77.0	77.2																							
Centerline Distance to Noise Contour (in feet)																													
			70 dBA	65 dBA	60 dBA	55 dBA																							
Ldn:			221	476	1,026	2,211																							
CNEL:			229	493	1,062	2,288																							

Friday, February 17, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)																													
Scenario: HY+P Road Name: Bob Hope Dr. Road Segment: s/o Vaner Rd.					Project Name: Majestic Thousand Palms Job Number: 14174																								
SITE SPECIFIC INPUT DATA			NOISE MODEL INPUTS																										
Highway Data			Site Conditions (Hard = 10, Soft = 15)																										
Average Daily Traffic (Adt): 19,934 vehicles			Autos: 15																										
Peak Hour Percentage: 6.45%			Medium Trucks (2 Axles): 15																										
Peak Hour Volume: 1,286 vehicles			Heavy Trucks (3+ Axles): 15																										
Vehicle Speed: 55 mph			Vehicle Mix																										
Near/Far Lane Distance: 78 feet			<table border="1"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>74.6%</td> <td>8.9%</td> <td>16.5%</td> <td>81.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>81.6%</td> <td>5.4%</td> <td>12.9%</td> <td>4.79%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>63.6%</td> <td>8.0%</td> <td>28.4%</td> <td>13.78%</td> </tr> </tbody> </table>							VehicleType	Day	Evening	Night	Daily	Autos:	74.6%	8.9%	16.5%	81.42%	Medium Trucks:	81.6%	5.4%	12.9%	4.79%	Heavy Trucks:	63.6%	8.0%	28.4%	13.78%
VehicleType	Day	Evening	Night	Daily																									
Autos:	74.6%	8.9%	16.5%	81.42%																									
Medium Trucks:	81.6%	5.4%	12.9%	4.79%																									
Heavy Trucks:	63.6%	8.0%	28.4%	13.78%																									
Site Data			Noise Source Elevations (in feet)																										
Barrier Height: 0.0 feet			Autos: 0.000																										
Barrier Type (0-Wall, 1-Berm): 0.0			Medium Trucks: 2.297																										
Centerline Dist. to Barrier: 76.0 feet			Heavy Trucks: 8.004 Grade Adjustment: 0.0																										
Centerline Dist. to Observer: 76.0 feet			Lane Equivalent Distance (in feet)																										
Barrier Distance to Observer: 0.0 feet			Autos: 65.422																										
Observer Height (Above Pad): 5.0 feet			Medium Trucks: 65.286																										
Pad Elevation: 0.0 feet			Heavy Trucks: 65.299																										
Road Elevation: 0.0 feet																													
Road Grade: 0.0%																													
Left View: -90.0 degrees																													
Right View: 90.0 degrees																													
FHWA Noise Model Calculations																													
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten																						
Autos:	71.78	-2.51	-1.85	-1.20	-4.73	0.000	0.000																						
Medium Trucks:	82.40	-14.81	-1.84	-1.20	-4.88	0.000	0.000																						
Heavy Trucks:	86.40	-10.22	-1.84	-1.20	-5.25	0.000	0.000																						
Unmitigated Noise Levels (without Topo and barrier attenuation)																													
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL																							
Autos:	66.2	66.1	62.8	60.8	68.3	68.6																							
Medium Trucks:	64.6	64.8	59.0	58.0	66.0	66.2																							
Heavy Trucks:	73.1	72.3	69.3	70.0	76.7	76.9																							
Vehicle Noise:	74.4	73.8	70.5	70.7	77.6	77.8																							
Centerline Distance to Noise Contour (in feet)																													
			70 dBA	65 dBA	60 dBA	55 dBA																							
Ldn:			245	528	1,137	2,450																							
CNEL:			254	546	1,177	2,535																							

Friday, February 17, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)																													
Scenario: E Road Name: Bob Hope Dr. Road Segment: s/o I-10 WB Ramps					Project Name: Majestic Thousand Palms Job Number: 14174																								
SITE SPECIFIC INPUT DATA			NOISE MODEL INPUTS																										
Highway Data			Site Conditions (Hard = 10, Soft = 15)																										
Average Daily Traffic (Adt): 24,443 vehicles			Autos: 15																										
Peak Hour Percentage: 6.45%			Medium Trucks (2 Axles): 15																										
Peak Hour Volume: 1,577 vehicles			Heavy Trucks (3+ Axles): 15																										
Vehicle Speed: 55 mph			Vehicle Mix																										
Near/Far Lane Distance: 78 feet			<table border="1"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>74.6%</td> <td>8.9%</td> <td>16.5%</td> <td>82.31%</td> </tr> <tr> <td>Medium Trucks:</td> <td>81.6%</td> <td>5.4%</td> <td>12.9%</td> <td>4.97%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>63.6%</td> <td>8.0%</td> <td>28.4%</td> <td>12.73%</td> </tr> </tbody> </table>							VehicleType	Day	Evening	Night	Daily	Autos:	74.6%	8.9%	16.5%	82.31%	Medium Trucks:	81.6%	5.4%	12.9%	4.97%	Heavy Trucks:	63.6%	8.0%	28.4%	12.73%
VehicleType	Day	Evening	Night	Daily																									
Autos:	74.6%	8.9%	16.5%	82.31%																									
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Heavy Trucks:	63.6%	8.0%	28.4%	12.73%																									
Site Data			Noise Source Elevations (in feet)																										
Barrier Height: 0.0 feet			Autos: 0.000																										
Barrier Type (0-Wall, 1-Berm): 0.0			Medium Trucks: 2.297																										
Centerline Dist. to Barrier: 76.0 feet			Heavy Trucks: 8.004 Grade Adjustment: 0.0																										
Centerline Dist. to Observer: 76.0 feet			Lane Equivalent Distance (in feet)																										
Barrier Distance to Observer: 0.0 feet			Autos: 65.422																										
Observer Height (Above Pad): 5.0 feet			Medium Trucks: 65.286																										
Pad Elevation: 0.0 feet			Heavy Trucks: 65.299																										
Road Elevation: 0.0 feet																													
Road Grade: 0.0%																													
Left View: -90.0 degrees																													
Right View: 90.0 degrees																													
FHWA Noise Model Calculations																													
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten																						
Autos:	71.78	-1.58	-1.85	-1.20	-4.73	0.000	0.000																						
Medium Trucks:	82.40	-13.77	-1.84	-1.20	-4.88	0.000	0.000																						
Heavy Trucks:	86.40	-9.68	-1.84	-1.20	-5.25	0.000	0.000																						
Unmitigated Noise Levels (without Topo and barrier attenuation)																													
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL																							
Autos:	67.1	67.0	63.8	61.7	69.2	69.5																							
Medium Trucks:	65.6	65.8	60.1	59.1	67.0	67.3																							
Heavy Trucks:	73.7	72.8	69.8	70.6	77.3	77.5																							
Vehicle Noise:	75.1	74.5	71.2	71.4	78.2	78.5																							
Centerline Distance to Noise Contour (in feet)																													
			70 dBA	65 dBA	60 dBA	55 dBA																							
Ldn:			270	581	1,251	2,696																							
CNEL:			279	601	1,295	2,790																							

Friday, February 17, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)																													
Scenario: E+P Road Name: Bob Hope Dr. Road Segment: s/o I-10 WB Ramps					Project Name: Majestic Thousand Palms Job Number: 14174																								
SITE SPECIFIC INPUT DATA			NOISE MODEL INPUTS																										
Highway Data			Site Conditions (Hard = 10, Soft = 15)																										
Average Daily Traffic (Adt): 25,707 vehicles			Autos: 15																										
Peak Hour Percentage: 6.45%			Medium Trucks (2 Axles): 15																										
Peak Hour Volume: 1,658 vehicles			Heavy Trucks (3+ Axles): 15																										
Vehicle Speed: 55 mph			Vehicle Mix																										
Near/Far Lane Distance: 78 feet			<table border="1"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>74.6%</td> <td>8.9%</td> <td>16.5%</td> <td>82.01%</td> </tr> <tr> <td>Medium Trucks:</td> <td>81.6%</td> <td>5.4%</td> <td>12.9%</td> <td>4.85%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>63.6%</td> <td>8.0%</td> <td>28.4%</td> <td>13.14%</td> </tr> </tbody> </table>							VehicleType	Day	Evening	Night	Daily	Autos:	74.6%	8.9%	16.5%	82.01%	Medium Trucks:	81.6%	5.4%	12.9%	4.85%	Heavy Trucks:	63.6%	8.0%	28.4%	13.14%
VehicleType	Day	Evening	Night	Daily																									
Autos:	74.6%	8.9%	16.5%	82.01%																									
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Site Data			Noise Source Elevations (in feet)																										
Barrier Height: 0.0 feet			Autos: 0.000																										
Barrier Type (0-Wall, 1-Berm): 0.0			Medium Trucks: 2.297																										
Centerline Dist. to Barrier: 76.0 feet			Heavy Trucks: 8.004 Grade Adjustment: 0.0																										
Centerline Dist. to Observer: 76.0 feet			Lane Equivalent Distance (in feet)																										
Barrier Distance to Observer: 0.0 feet			Autos: 65.422																										
Observer Height (Above Pad): 5.0 feet			Medium Trucks: 65.286																										
Pad Elevation: 0.0 feet			Heavy Trucks: 65.299																										
Road Elevation: 0.0 feet																													
Road Grade: 0.0%																													
Left View: -90.0 degrees																													
Right View: 90.0 degrees																													
FHWA Noise Model Calculations																													
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten																						
Autos:	71.78	-1.37	-1.85	-1.20	-4.73	0.000	0.000																						
Medium Trucks:	82.40	-13.66	-1.84	-1.20	-4.88	0.000	0.000																						
Heavy Trucks:	86.40	-9.33	-1.84	-1.20	-5.25	0.000	0.000																						
Unmitigated Noise Levels (without Topo and barrier attenuation)																													
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL																							
Autos:	67.4	67.2	64.0	61.9	69.4	69.7																							
Medium Trucks:	65.7	65.9	60.2	59.2	67.2	67.4																							
Heavy Trucks:	74.0	73.2	70.2	70.9	77.6	77.8																							
Vehicle Noise:	75.4	74.8	71.5	71.7	78.6	78.8																							
Centerline Distance to Noise Contour (in feet)																													
			70 dBA	65 dBA	60 dBA	55 dBA																							
Ldn:			283	610	1,314	2,832																							
CNEL:			293	631	1,360	2,930																							

Friday, February 17, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: EAC Road Name: Bob Hope Dr. Road Segment: s/o I-10 WB Ramps				Project Name: Majestic Thousand Palms Job Number: 14174			
SITE SPECIFIC INPUT DATA			NOISE MODEL INPUTS				
Highway Data			Site Conditions (Hard = 10, Soft = 15)				
Average Daily Traffic (Adt): 27,357 vehicles Peak Hour Percentage: 6.45% Peak Hour Volume: 1,765 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet			Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15				
Site Data			Vehicle Mix				
			VehicleType	Day	Evening	Night	Daily
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 76.0 feet Centerline Dist. to Observer: 76.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees			Autos: 74.6% 8.9% 16.5% 82.31% Medium Trucks: 81.6% 5.4% 12.9% 4.97% Heavy Trucks: 63.6% 8.0% 28.4% 12.73%				
			Noise Source Elevations (in feet)				
			Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0				
			Lane Equivalent Distance (in feet)				
			Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299				
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.09	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	82.40	-13.28	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-9.19	-1.84	-1.20	-5.25	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.6	67.5	64.3	62.2	69.7	70.0	
Medium Trucks:	66.1	66.3	60.6	59.6	67.5	67.8	
Heavy Trucks:	74.2	73.3	70.3	71.0	77.8	78.0	
Vehicle Noise:	75.6	75.0	71.6	71.8	78.7	79.0	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			291	626	1,349	2,906	
CNEL:			301	648	1,396	3,008	

Friday, February 17, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: EAC+P Road Name: Bob Hope Dr. Road Segment: s/o I-10 WB Ramps				Project Name: Majestic Thousand Palms Job Number: 14174			
SITE SPECIFIC INPUT DATA			NOISE MODEL INPUTS				
Highway Data			Site Conditions (Hard = 10, Soft = 15)				
Average Daily Traffic (Adt): 28,621 vehicles Peak Hour Percentage: 6.45% Peak Hour Volume: 1,846 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet			Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15				
Site Data			Vehicle Mix				
			VehicleType	Day	Evening	Night	Daily
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 76.0 feet Centerline Dist. to Observer: 76.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees			Autos: 74.6% 8.9% 16.5% 82.04% Medium Trucks: 81.6% 5.4% 12.9% 4.86% Heavy Trucks: 63.6% 8.0% 28.4% 13.10%				
			Noise Source Elevations (in feet)				
			Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0				
			Lane Equivalent Distance (in feet)				
			Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299				
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.91	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	82.40	-13.18	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-8.88	-1.84	-1.20	-5.25	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.8	67.7	64.4	62.4	69.9	70.2	
Medium Trucks:	66.2	66.4	60.7	59.7	67.6	67.9	
Heavy Trucks:	74.5	73.6	70.7	71.4	78.1	78.3	
Vehicle Noise:	75.8	75.2	71.9	72.1	79.0	79.2	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			304	654	1,410	3,037	
CNEL:			314	677	1,459	3,143	

Friday, February 17, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: HY Road Name: Bob Hope Dr. Road Segment: s/o I-10 WB Ramps				Project Name: Majestic Thousand Palms Job Number: 14174			
SITE SPECIFIC INPUT DATA			NOISE MODEL INPUTS				
Highway Data			Site Conditions (Hard = 10, Soft = 15)				
Average Daily Traffic (Adt): 30,982 vehicles Peak Hour Percentage: 6.45% Peak Hour Volume: 1,998 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet			Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15				
Site Data			Vehicle Mix				
			VehicleType	Day	Evening	Night	Daily
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 76.0 feet Centerline Dist. to Observer: 76.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees			Autos: 74.6% 8.9% 16.5% 82.31% Medium Trucks: 81.6% 5.4% 12.9% 4.97% Heavy Trucks: 63.6% 8.0% 28.4% 12.73%				
			Noise Source Elevations (in feet)				
			Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0				
			Lane Equivalent Distance (in feet)				
			Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299				
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.55	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	82.40	-12.74	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-8.65	-1.84	-1.20	-5.25	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.2	68.0	64.8	62.7	70.2	70.6	
Medium Trucks:	66.6	66.9	61.1	60.1	68.1	68.3	
Heavy Trucks:	74.7	73.8	70.9	71.6	78.3	78.5	
Vehicle Noise:	76.1	75.5	72.2	72.4	79.3	79.5	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			316	680	1,466	3,158	
CNEL:			327	704	1,517	3,268	

Friday, February 17, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: HY+P Road Name: Bob Hope Dr. Road Segment: s/o I-10 WB Ramps				Project Name: Majestic Thousand Palms Job Number: 14174			
SITE SPECIFIC INPUT DATA			NOISE MODEL INPUTS				
Highway Data			Site Conditions (Hard = 10, Soft = 15)				
Average Daily Traffic (Adt): 32,247 vehicles Peak Hour Percentage: 6.45% Peak Hour Volume: 2,080 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet			Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15				
Site Data			Vehicle Mix				
			VehicleType	Day	Evening	Night	Daily
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 76.0 feet Centerline Dist. to Observer: 76.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees			Autos: 74.6% 8.9% 16.5% 82.07% Medium Trucks: 81.6% 5.4% 12.9% 4.87% Heavy Trucks: 63.6% 8.0% 28.4% 13.05%				
			Noise Source Elevations (in feet)				
			Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0				
			Lane Equivalent Distance (in feet)				
			Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299				
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.39	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	82.40	-12.65	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-8.37	-1.84	-1.20	-5.25	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.3	68.2	65.0	62.9	70.4	70.7	
Medium Trucks:	66.7	66.9	61.2	60.2	68.2	68.4	
Heavy Trucks:	75.0	74.1	71.2	71.9	78.6	78.8	
Vehicle Noise:	76.3	75.7	72.4	72.6	79.5	79.8	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			328	707	1,524	3,283	
CNEL:			340	732	1,577	3,398	

Friday, February 17, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: E Road Name: Bob Hope Dr. Road Segment: s/o I-10 EB Ramps				Project Name: Majestic Thousand Palms Job Number: 14174			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 25,512 vehicles Peak Hour Percentage: 6.45% Peak Hour Volume: 1,646 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 76.0 feet Centerline Dist. to Observer: 76.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 74.6% 8.9% 16.5% 82.31% Medium Trucks: 81.6% 5.4% 12.9% 4.97% Heavy Trucks: 63.6% 8.0% 28.4% 12.73%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.39	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	82.40	-13.59	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-9.50	-1.84	-1.20	-5.25	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.3	67.2	64.0	61.9	69.4	69.7	
Medium Trucks:	65.8	66.0	60.3	59.3	67.2	67.5	
Heavy Trucks:	73.9	73.0	70.0	70.7	77.5	77.7	
Vehicle Noise:	75.2	74.7	71.3	71.5	78.4	78.7	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			277	598	1,288	2,774	
CNEL:			287	619	1,333	2,871	

Friday, February 17, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: E+P Road Name: Bob Hope Dr. Road Segment: s/o I-10 EB Ramps				Project Name: Majestic Thousand Palms Job Number: 14174			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 26,326 vehicles Peak Hour Percentage: 6.45% Peak Hour Volume: 1,698 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 76.0 feet Centerline Dist. to Observer: 76.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 74.6% 8.9% 16.5% 82.40% Medium Trucks: 81.6% 5.4% 12.9% 4.86% Heavy Trucks: 63.6% 8.0% 28.4% 12.74%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.25	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	82.40	-13.54	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-9.36	-1.84	-1.20	-5.25	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.5	67.3	64.1	62.0	69.5	69.9	
Medium Trucks:	65.8	66.1	60.3	59.3	67.3	67.5	
Heavy Trucks:	74.0	73.1	70.2	70.9	77.6	77.8	
Vehicle Noise:	75.4	74.8	71.5	71.7	78.6	78.8	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			283	610	1,314	2,831	
CNEL:			293	631	1,360	2,930	

Friday, February 17, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: EAC Road Name: Bob Hope Dr. Road Segment: s/o I-10 EB Ramps				Project Name: Majestic Thousand Palms Job Number: 14174			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 27,074 vehicles Peak Hour Percentage: 6.45% Peak Hour Volume: 1,746 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 76.0 feet Centerline Dist. to Observer: 76.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 74.6% 8.9% 16.5% 82.31% Medium Trucks: 81.6% 5.4% 12.9% 4.97% Heavy Trucks: 63.6% 8.0% 28.4% 12.73%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.13	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	82.40	-13.33	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-9.24	-1.84	-1.20	-5.25	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.6	67.4	64.2	62.1	69.7	70.0	
Medium Trucks:	66.0	66.3	60.5	59.5	67.5	67.7	
Heavy Trucks:	74.1	73.3	70.3	71.0	77.7	77.9	
Vehicle Noise:	75.5	74.9	71.6	71.8	78.7	78.9	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			289	622	1,340	2,886	
CNEL:			299	644	1,386	2,987	

Friday, February 17, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: EAC+P Road Name: Bob Hope Dr. Road Segment: s/o I-10 EB Ramps				Project Name: Majestic Thousand Palms Job Number: 14174			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 27,888 vehicles Peak Hour Percentage: 6.45% Peak Hour Volume: 1,799 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 76.0 feet Centerline Dist. to Observer: 76.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 74.6% 8.9% 16.5% 82.40% Medium Trucks: 81.6% 5.4% 12.9% 4.87% Heavy Trucks: 63.6% 8.0% 28.4% 12.74%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.00	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	82.40	-13.29	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-9.11	-1.84	-1.20	-5.25	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.7	67.6	64.3	62.3	69.8	70.1	
Medium Trucks:	66.1	66.3	60.6	59.6	67.5	67.8	
Heavy Trucks:	74.2	73.4	70.4	71.1	77.9	78.1	
Vehicle Noise:	75.6	75.0	71.7	71.9	78.8	79.0	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			294	634	1,365	2,942	
CNEL:			304	656	1,413	3,045	

Friday, February 17, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: HY Road Name: Bob Hope Dr. Road Segment: s/o I-10 EB Ramps				Project Name: Majestic Thousand Palms Job Number: 14174			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 29,923 vehicles Peak Hour Percentage: 6.45% Peak Hour Volume: 1,930 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 76.0 feet Centerline Dist. to Observer: 76.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 74.6% 8.9% 16.5% 82.31% Medium Trucks: 81.6% 5.4% 12.9% 4.97% Heavy Trucks: 63.6% 8.0% 28.4% 12.73%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.70	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	82.40	-12.89	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-8.81	-1.84	-1.20	-5.25	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.0	67.9	64.7	62.6	70.1	70.4	
Medium Trucks:	66.5	66.7	61.0	59.9	67.9	68.2	
Heavy Trucks:	74.5	73.7	70.7	71.4	78.2	78.4	
Vehicle Noise:	75.9	75.3	72.0	72.2	79.1	79.4	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			309	665	1,432	3,085	
CNEL:			319	688	1,482	3,193	

Friday, February 17, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: HY+P Road Name: Bob Hope Dr. Road Segment: s/o I-10 EB Ramps				Project Name: Majestic Thousand Palms Job Number: 14174			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 30,737 vehicles Peak Hour Percentage: 6.45% Peak Hour Volume: 1,983 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 76.0 feet Centerline Dist. to Observer: 76.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 74.6% 8.9% 16.5% 82.39% Medium Trucks: 81.6% 5.4% 12.9% 4.88% Heavy Trucks: 63.6% 8.0% 28.4% 12.73%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.58	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	82.40	-12.86	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-8.69	-1.84	-1.20	-5.25	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.1	68.0	64.8	62.7	70.2	70.5	
Medium Trucks:	66.5	66.7	61.0	60.0	68.0	68.2	
Heavy Trucks:	74.7	73.8	70.8	71.6	78.3	78.5	
Vehicle Noise:	76.1	75.5	72.1	72.3	79.2	79.5	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			314	676	1,457	3,139	
CNEL:			325	700	1,508	3,249	

Friday, February 17, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: E Road Name: Bob Hope Dr. Road Segment: s/o Ramon Rd.				Project Name: Majestic Thousand Palms Job Number: 14174			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 29,372 vehicles Peak Hour Percentage: 6.45% Peak Hour Volume: 1,894 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 76.0 feet Centerline Dist. to Observer: 76.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 74.6% 8.9% 16.5% 82.31% Medium Trucks: 81.6% 5.4% 12.9% 4.97% Heavy Trucks: 63.6% 8.0% 28.4% 12.73%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.78	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	82.40	-12.97	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-8.89	-1.84	-1.20	-5.25	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.9	67.8	64.6	62.5	70.0	70.3	
Medium Trucks:	66.4	66.6	60.9	59.9	67.8	68.1	
Heavy Trucks:	74.5	73.6	70.6	71.4	78.1	78.3	
Vehicle Noise:	75.9	75.3	72.0	72.2	79.0	79.3	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			305	657	1,414	3,047	
CNEL:			315	679	1,464	3,154	

Friday, February 17, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: E+P Road Name: Bob Hope Dr. Road Segment: s/o Ramon Rd.				Project Name: Majestic Thousand Palms Job Number: 14174			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 29,896 vehicles Peak Hour Percentage: 6.45% Peak Hour Volume: 1,928 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 76.0 feet Centerline Dist. to Observer: 76.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 74.6% 8.9% 16.5% 82.39% Medium Trucks: 81.6% 5.4% 12.9% 4.90% Heavy Trucks: 63.6% 8.0% 28.4% 12.71%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.70	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	82.40	-12.95	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-8.82	-1.84	-1.20	-5.25	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.0	67.9	64.7	62.6	70.1	70.4	
Medium Trucks:	66.4	66.6	60.9	59.9	67.9	68.1	
Heavy Trucks:	74.5	73.7	70.7	71.4	78.1	78.4	
Vehicle Noise:	75.9	75.3	72.0	72.2	79.1	79.3	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			308	663	1,429	3,079	
CNEL:			319	686	1,479	3,186	

Friday, February 17, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: EAC Road Name: Bob Hope Dr. Road Segment: s/o Ramon Rd.				Project Name: Majestic Thousand Palms Job Number: 14174			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 31,169 vehicles Peak Hour Percentage: 6.45% Peak Hour Volume: 2,010 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 76.0 feet Centerline Dist. to Observer: 76.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 74.6% 8.9% 16.5% 82.31% Medium Trucks: 81.6% 5.4% 12.9% 4.97% Heavy Trucks: 63.6% 8.0% 28.4% 12.73%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.52	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	82.40	-12.72	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-8.63	-1.84	-1.20	-5.25	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.2	68.0	64.8	62.8	70.3	70.6	
Medium Trucks:	66.6	66.9	61.1	60.1	68.1	68.3	
Heavy Trucks:	74.7	73.9	70.9	71.6	78.3	78.5	
Vehicle Noise:	76.1	75.5	72.2	72.4	79.3	79.5	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			317	683	1,472	3,170	
CNEL:			328	707	1,523	3,281	

Friday, February 17, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: EAC+P Road Name: Bob Hope Dr. Road Segment: s/o Ramon Rd.				Project Name: Majestic Thousand Palms Job Number: 14174			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 31,694 vehicles Peak Hour Percentage: 6.45% Peak Hour Volume: 2,044 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 76.0 feet Centerline Dist. to Observer: 76.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 74.6% 8.9% 16.5% 82.39% Medium Trucks: 81.6% 5.4% 12.9% 4.91% Heavy Trucks: 63.6% 8.0% 28.4% 12.71%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.45	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	82.40	-12.70	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-8.56	-1.84	-1.20	-5.25	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.3	68.1	64.9	62.8	70.3	70.7	
Medium Trucks:	66.7	66.9	61.2	60.1	68.1	68.3	
Heavy Trucks:	74.8	73.9	71.0	71.7	78.4	78.6	
Vehicle Noise:	76.2	75.6	72.3	72.5	79.4	79.6	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			320	690	1,486	3,201	
CNEL:			331	714	1,538	3,313	

Friday, February 17, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: HY Road Name: Bob Hope Dr. Road Segment: s/o Ramon Rd.				Project Name: Majestic Thousand Palms Job Number: 14174			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 37,566 vehicles Peak Hour Percentage: 6.45% Peak Hour Volume: 2,423 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 76.0 feet Centerline Dist. to Observer: 76.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 74.6% 8.9% 16.5% 82.31% Medium Trucks: 81.6% 5.4% 12.9% 4.97% Heavy Trucks: 63.6% 8.0% 28.4% 12.73%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.29	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	82.40	-11.91	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-7.82	-1.84	-1.20	-5.25	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.0	68.9	65.6	63.6	71.1	71.4	
Medium Trucks:	67.5	67.7	61.9	60.9	68.9	69.1	
Heavy Trucks:	75.5	74.7	71.7	72.4	79.1	79.3	
Vehicle Noise:	76.9	76.3	73.0	73.2	80.1	80.3	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			359	774	1,667	3,591	
CNEL:			372	801	1,725	3,716	

Friday, February 17, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: HY+P Road Name: Bob Hope Dr. Road Segment: s/o Ramon Rd.				Project Name: Majestic Thousand Palms Job Number: 14174			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 38,091 vehicles Peak Hour Percentage: 6.45% Peak Hour Volume: 2,457 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 76.0 feet Centerline Dist. to Observer: 76.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 74.6% 8.9% 16.5% 82.37% Medium Trucks: 81.6% 5.4% 12.9% 4.92% Heavy Trucks: 63.6% 8.0% 28.4% 12.71%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.35	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	82.40	-11.89	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-7.76	-1.84	-1.20	-5.25	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.1	68.9	65.7	63.6	71.1	71.5	
Medium Trucks:	67.5	67.7	62.0	60.9	68.9	69.2	
Heavy Trucks:	75.6	74.7	71.8	72.5	79.2	79.4	
Vehicle Noise:	77.0	76.4	73.1	73.3	80.2	80.4	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			362	780	1,680	3,620	
CNEL:			375	807	1,739	3,746	

Friday, February 17, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)								
Scenario: E Road Name: Varner Rd. Road Segment: w/o Rio Del Sol Rd.			Project Name: Majestic Thousand Palms Job Number: 14174					
SITE SPECIFIC INPUT DATA			NOISE MODEL INPUTS					
Highway Data			Site Conditions (Hard = 10, Soft = 15)					
Average Daily Traffic (Adt): 7,393 vehicles Peak Hour Percentage: 6.45% Peak Hour Volume: 477 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 58 feet			Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15					
Site Data			Vehicle Mix					
			VehicleType	Day	Evening	Night	Daily	
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 64.0 feet Centerline Dist. to Observer: 64.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees			Autos: 74.6% 8.9% 16.5% 82.31% Medium Trucks: 81.6% 5.4% 12.9% 4.97% Heavy Trucks: 63.6% 8.0% 28.4% 12.73%					
			Noise Source Elevations (in feet)					
			Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0					
			Lane Equivalent Distance (in feet)					
			Autos: 57.271 Medium Trucks: 57.117 Heavy Trucks: 57.132					
FHWA Noise Model Calculations								
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten	
Autos:	71.78	-6.77	-0.99	-1.20	-4.70	0.000	0.000	
Medium Trucks:	82.40	-18.97	-0.97	-1.20	-4.88	0.000	0.000	
Heavy Trucks:	86.40	-14.88	-0.97	-1.20	-5.31	0.000	0.000	
Unmitigated Noise Levels (without Topo and barrier attenuation)								
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL		
Autos:	62.8	62.7	59.4	57.4	64.9	65.2		
Medium Trucks:	61.3	61.5	55.8	54.7	62.7	63.0		
Heavy Trucks:	69.3	68.5	65.5	66.2	73.0	73.2		
Vehicle Noise:	70.7	70.1	66.8	67.0	73.9	74.1		
Centerline Distance to Noise Contour (in feet)								
			70 dBA	65 dBA	60 dBA	55 dBA		
Ldn:			117	252	543	1,169		
CNEL:			121	261	562	1,210		

Friday, February 17, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)								
Scenario: E+P Road Name: Varner Rd. Road Segment: w/o Rio Del Sol Rd.			Project Name: Majestic Thousand Palms Job Number: 14174					
SITE SPECIFIC INPUT DATA			NOISE MODEL INPUTS					
Highway Data			Site Conditions (Hard = 10, Soft = 15)					
Average Daily Traffic (Adt): 7,525 vehicles Peak Hour Percentage: 6.45% Peak Hour Volume: 485 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 58 feet			Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15					
Site Data			Vehicle Mix					
			VehicleType	Day	Evening	Night	Daily	
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 64.0 feet Centerline Dist. to Observer: 64.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees			Autos: 74.6% 8.9% 16.5% 82.24% Medium Trucks: 81.6% 5.4% 12.9% 4.92% Heavy Trucks: 63.6% 8.0% 28.4% 12.84%					
			Noise Source Elevations (in feet)					
			Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0					
			Lane Equivalent Distance (in feet)					
			Autos: 57.271 Medium Trucks: 57.117 Heavy Trucks: 57.132					
FHWA Noise Model Calculations								
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten	
Autos:	71.78	-6.70	-0.99	-1.20	-4.70	0.000	0.000	
Medium Trucks:	82.40	-18.93	-0.97	-1.20	-4.88	0.000	0.000	
Heavy Trucks:	86.40	-14.76	-0.97	-1.20	-5.31	0.000	0.000	
Unmitigated Noise Levels (without Topo and barrier attenuation)								
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL		
Autos:	62.9	62.7	59.5	57.4	65.0	65.3		
Medium Trucks:	61.3	61.5	55.8	54.8	62.8	63.0		
Heavy Trucks:	69.5	68.6	65.6	66.3	73.1	73.3		
Vehicle Noise:	70.8	70.2	66.9	67.1	74.0	74.3		
Centerline Distance to Noise Contour (in feet)								
			70 dBA	65 dBA	60 dBA	55 dBA		
Ldn:			119	256	551	1,188		
CNEL:			123	265	571	1,229		

Friday, February 17, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)								
Scenario: EAC Road Name: Varner Rd. Road Segment: w/o Rio Del Sol Rd.			Project Name: Majestic Thousand Palms Job Number: 14174					
SITE SPECIFIC INPUT DATA			NOISE MODEL INPUTS					
Highway Data			Site Conditions (Hard = 10, Soft = 15)					
Average Daily Traffic (Adt): 7,537 vehicles Peak Hour Percentage: 6.45% Peak Hour Volume: 486 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 58 feet			Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15					
Site Data			Vehicle Mix					
			VehicleType	Day	Evening	Night	Daily	
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 64.0 feet Centerline Dist. to Observer: 64.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees			Autos: 74.6% 8.9% 16.5% 82.31% Medium Trucks: 81.6% 5.4% 12.9% 4.97% Heavy Trucks: 63.6% 8.0% 28.4% 12.73%					
			Noise Source Elevations (in feet)					
			Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0					
			Lane Equivalent Distance (in feet)					
			Autos: 57.271 Medium Trucks: 57.117 Heavy Trucks: 57.132					
FHWA Noise Model Calculations								
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten	
Autos:	71.78	-6.69	-0.99	-1.20	-4.70	0.000	0.000	
Medium Trucks:	82.40	-18.88	-0.97	-1.20	-4.88	0.000	0.000	
Heavy Trucks:	86.40	-14.79	-0.97	-1.20	-5.31	0.000	0.000	
Unmitigated Noise Levels (without Topo and barrier attenuation)								
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL		
Autos:	62.9	62.7	59.5	57.5	65.0	65.3		
Medium Trucks:	61.4	61.6	55.8	54.8	62.8	63.0		
Heavy Trucks:	69.4	68.6	65.6	66.3	73.0	73.2		
Vehicle Noise:	70.8	70.2	66.9	67.1	74.0	74.2		
Centerline Distance to Noise Contour (in feet)								
			70 dBA	65 dBA	60 dBA	55 dBA		
Ldn:			118	255	550	1,184		
CNEL:			123	264	569	1,226		

Friday, February 17, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)								
Scenario: EAC+P Road Name: Varner Rd. Road Segment: w/o Rio Del Sol Rd.			Project Name: Majestic Thousand Palms Job Number: 14174					
SITE SPECIFIC INPUT DATA			NOISE MODEL INPUTS					
Highway Data			Site Conditions (Hard = 10, Soft = 15)					
Average Daily Traffic (Adt): 7,669 vehicles Peak Hour Percentage: 6.45% Peak Hour Volume: 495 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 58 feet			Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15					
Site Data			Vehicle Mix					
			VehicleType	Day	Evening	Night	Daily	
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 64.0 feet Centerline Dist. to Observer: 64.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees			Autos: 74.6% 8.9% 16.5% 82.24% Medium Trucks: 81.6% 5.4% 12.9% 4.92% Heavy Trucks: 63.6% 8.0% 28.4% 12.84%					
			Noise Source Elevations (in feet)					
			Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0					
			Lane Equivalent Distance (in feet)					
			Autos: 57.271 Medium Trucks: 57.117 Heavy Trucks: 57.132					
FHWA Noise Model Calculations								
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten	
Autos:	71.78	-6.61	-0.99	-1.20	-4.70	0.000	0.000	
Medium Trucks:	82.40	-18.85	-0.97	-1.20	-4.88	0.000	0.000	
Heavy Trucks:	86.40	-14.68	-0.97	-1.20	-5.31	0.000	0.000	
Unmitigated Noise Levels (without Topo and barrier attenuation)								
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL		
Autos:	63.0	62.8	59.6	57.5	65.0	65.4		
Medium Trucks:	61.4	61.6	55.9	54.9	62.8	63.1		
Heavy Trucks:	69.5	68.7	65.7	66.4	73.1	73.4		
Vehicle Noise:	70.9	70.3	67.0	67.2	74.1	74.3		
Centerline Distance to Noise Contour (in feet)								
			70 dBA	65 dBA	60 dBA	55 dBA		
Ldn:			120	259	558	1,203		
CNEL:			124	268	578	1,245		

Friday, February 17, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)									
Scenario: HY Road Name: Varner Rd. Road Segment: w/o Rio Del Sol Rd.					Project Name: Majestic Thousand Palms Job Number: 14174				
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS					
Highway Data				Site Conditions (Hard = 10, Soft = 15)					
Average Daily Traffic (Adt): 8,291 vehicles Peak Hour Percentage: 6.45% Peak Hour Volume: 535 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 58 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15					
Site Data				Vehicle Mix					
				VehicleType	Day	Evening	Night	Daily	
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 64.0 feet Centerline Dist. to Observer: 64.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 74.6% 8.9% 16.5% 82.31% Medium Trucks: 81.6% 5.4% 12.9% 4.97% Heavy Trucks: 63.6% 8.0% 28.4% 12.73%					
				Noise Source Elevations (in feet)					
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0					
				Lane Equivalent Distance (in feet)					
				Autos: 57.271 Medium Trucks: 57.117 Heavy Trucks: 57.132					
FHWA Noise Model Calculations									
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten		
Autos:	71.78	-6.27	-0.99	-1.20	-4.70	0.000	0.000		
Medium Trucks:	82.40	-18.47	-0.97	-1.20	-4.88	0.000	0.000		
Heavy Trucks:	86.40	-14.38	-0.97	-1.20	-5.31	0.000	0.000		
Unmitigated Noise Levels (without Topo and barrier attenuation)									
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL			
Autos:	63.3	63.2	59.9	57.9	65.4	65.7			
Medium Trucks:	61.8	62.0	56.2	55.2	63.2	63.4			
Heavy Trucks:	69.8	69.0	66.0	66.7	73.5	73.7			
Vehicle Noise:	71.2	70.6	67.3	67.5	74.4	74.6			
Centerline Distance to Noise Contour (in feet)									
			70 dBA	65 dBA	60 dBA	55 dBA			
Ldn:			126	272	586	1,262			
CNEL:			131	281	606	1,306			

Friday, February 17, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)									
Scenario: HY+P Road Name: Varner Rd. Road Segment: w/o Rio Del Sol Rd.					Project Name: Majestic Thousand Palms Job Number: 14174				
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS					
Highway Data				Site Conditions (Hard = 10, Soft = 15)					
Average Daily Traffic (Adt): 8,423 vehicles Peak Hour Percentage: 6.45% Peak Hour Volume: 543 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 58 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15					
Site Data				Vehicle Mix					
				VehicleType	Day	Evening	Night	Daily	
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 64.0 feet Centerline Dist. to Observer: 64.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 74.6% 8.9% 16.5% 82.25% Medium Trucks: 81.6% 5.4% 12.9% 4.92% Heavy Trucks: 63.6% 8.0% 28.4% 12.83%					
				Noise Source Elevations (in feet)					
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0					
				Lane Equivalent Distance (in feet)					
				Autos: 57.271 Medium Trucks: 57.117 Heavy Trucks: 57.132					
FHWA Noise Model Calculations									
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten		
Autos:	71.78	-6.21	-0.99	-1.20	-4.70	0.000	0.000		
Medium Trucks:	82.40	-18.44	-0.97	-1.20	-4.88	0.000	0.000		
Heavy Trucks:	86.40	-14.28	-0.97	-1.20	-5.31	0.000	0.000		
Unmitigated Noise Levels (without Topo and barrier attenuation)									
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL			
Autos:	63.4	63.2	60.0	57.9	65.4	65.8			
Medium Trucks:	61.8	62.0	56.3	55.3	63.3	63.5			
Heavy Trucks:	69.9	69.1	66.1	66.8	73.6	73.8			
Vehicle Noise:	71.3	70.7	67.4	67.6	74.5	74.7			
Centerline Distance to Noise Contour (in feet)									
			70 dBA	65 dBA	60 dBA	55 dBA			
Ldn:			128	276	594	1,280			
CNEL:			132	285	615	1,325			

Friday, February 17, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)									
Scenario: E Road Name: Varner Rd. Road Segment: e/o Rio Del Sol Rd.					Project Name: Majestic Thousand Palms Job Number: 14174				
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS					
Highway Data				Site Conditions (Hard = 10, Soft = 15)					
Average Daily Traffic (Adt): 14,833 vehicles Peak Hour Percentage: 6.45% Peak Hour Volume: 957 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 58 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15					
Site Data				Vehicle Mix					
				VehicleType	Day	Evening	Night	Daily	
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 64.0 feet Centerline Dist. to Observer: 64.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 74.6% 8.9% 16.5% 82.31% Medium Trucks: 81.6% 5.4% 12.9% 4.97% Heavy Trucks: 63.6% 8.0% 28.4% 12.73%					
				Noise Source Elevations (in feet)					
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0					
				Lane Equivalent Distance (in feet)					
				Autos: 57.271 Medium Trucks: 57.117 Heavy Trucks: 57.132					
FHWA Noise Model Calculations									
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten		
Autos:	66.51	-2.36	-0.99	-1.20	-4.70	0.000	0.000		
Medium Trucks:	77.72	-14.56	-0.97	-1.20	-4.88	0.000	0.000		
Heavy Trucks:	82.99	-10.47	-0.97	-1.20	-5.31	0.000	0.000		
Unmitigated Noise Levels (without Topo and barrier attenuation)									
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL			
Autos:	62.0	61.8	58.6	56.5	64.0	64.3			
Medium Trucks:	61.0	61.2	55.5	54.5	62.4	62.7			
Heavy Trucks:	70.4	69.5	66.5	67.2	74.0	74.3			
Vehicle Noise:	71.4	70.7	67.5	67.8	74.6	74.9			
Centerline Distance to Noise Contour (in feet)									
			70 dBA	65 dBA	60 dBA	55 dBA			
Ldn:			131	281	606	1,306			
CNEL:			135	291	627	1,351			

Friday, February 17, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)									
Scenario: E+P Road Name: Varner Rd. Road Segment: e/o Rio Del Sol Rd.					Project Name: Majestic Thousand Palms Job Number: 14174				
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS					
Highway Data				Site Conditions (Hard = 10, Soft = 15)					
Average Daily Traffic (Adt): 15,563 vehicles Peak Hour Percentage: 6.45% Peak Hour Volume: 1,004 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 58 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15					
Site Data				Vehicle Mix					
				VehicleType	Day	Evening	Night	Daily	
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 64.0 feet Centerline Dist. to Observer: 64.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 74.6% 8.9% 16.5% 82.85% Medium Trucks: 81.6% 5.4% 12.9% 4.76% Heavy Trucks: 63.6% 8.0% 28.4% 12.39%					
				Noise Source Elevations (in feet)					
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0					
				Lane Equivalent Distance (in feet)					
				Autos: 57.271 Medium Trucks: 57.117 Heavy Trucks: 57.132					
FHWA Noise Model Calculations									
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten		
Autos:	66.51	-2.13	-0.99	-1.20	-4.70	0.000	0.000		
Medium Trucks:	77.72	-14.53	-0.97	-1.20	-4.88	0.000	0.000		
Heavy Trucks:	82.99	-10.38	-0.97	-1.20	-5.31	0.000	0.000		
Unmitigated Noise Levels (without Topo and barrier attenuation)									
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL			
Autos:	62.2	62.0	58.8	56.7	64.3	64.6			
Medium Trucks:	61.0	61.2	55.5	54.5	62.5	62.7			
Heavy Trucks:	70.4	69.6	66.6	67.3	74.0	74.3			
Vehicle Noise:	71.5	70.8	67.6	67.9	74.7	75.0			
Centerline Distance to Noise Contour (in feet)									
			70 dBA	65 dBA	60 dBA	55 dBA			
Ldn:			133	286	616	1,327			
CNEL:			137	296	637	1,372			

Friday, February 17, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)									
Scenario: EAC Road Name: Varner Rd. Road Segment: elo Rio Del Sol Rd.					Project Name: Majestic Thousand Palms Job Number: 14174				
SITE SPECIFIC INPUT DATA			NOISE MODEL INPUTS						
Highway Data			Site Conditions (Hard = 10, Soft = 15)						
Average Daily Traffic (Adt): 15,852 vehicles			Autos: 15						
Peak Hour Percentage: 6.45%			Medium Trucks (2 Axles): 15						
Peak Hour Volume: 1,022 vehicles			Heavy Trucks (3+ Axles): 15						
Vehicle Speed: 40 mph			Vehicle Mix						
Near/Far Lane Distance: 58 feet			VehicleType Day Evening Night Daily						
Site Data			Autos: 74.6% 8.9% 16.5% 82.31%						
Barrier Height: 0.0 feet			Medium Trucks: 81.6% 5.4% 12.9% 4.97%						
Barrier Type (0-Wall, 1-Berm): 0.0			Heavy Trucks: 63.6% 8.0% 28.4% 12.73%						
Centerline Dist. to Barrier: 64.0 feet			Noise Source Elevations (in feet)						
Centerline Dist. to Observer: 64.0 feet			Autos: 0.000						
Barrier Distance to Observer: 0.0 feet			Medium Trucks: 2.297						
Observer Height (Above Pad): 5.0 feet			Heavy Trucks: 8.004 Grade Adjustment: 0.0						
Pad Elevation: 0.0 feet			Lane Equivalent Distance (in feet)						
Road Elevation: 0.0 feet			Autos: 57.271						
Road Grade: 0.0%			Medium Trucks: 57.117						
Left View: -90.0 degrees			Heavy Trucks: 57.132						
Right View: 90.0 degrees									
FHWA Noise Model Calculations									
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten		
Autos:	66.51	-2.08	-0.99	-1.20	-4.70	0.000	0.000		
Medium Trucks:	77.72	-14.27	-0.97	-1.20	-4.88	0.000	0.000		
Heavy Trucks:	82.99	-10.18	-0.97	-1.20	-5.31	0.000	0.000		
Unmitigated Noise Levels (without Topo and barrier attenuation)									
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL			
Autos:	62.2	62.1	58.9	56.8	64.3	64.6			
Medium Trucks:	61.3	61.5	55.8	54.7	62.7	63.0			
Heavy Trucks:	70.6	69.8	66.8	67.5	74.2	74.5			
Vehicle Noise:	71.6	71.0	67.7	68.1	74.9	75.2			
Centerline Distance to Noise Contour (in feet)									
			70 dBA	65 dBA	60 dBA	55 dBA			
Ldn:			137	294	634	1,365			
CNEL:			141	304	655	1,412			

Friday, February 17, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)									
Scenario: EAC+P Road Name: Varner Rd. Road Segment: elo Rio Del Sol Rd.					Project Name: Majestic Thousand Palms Job Number: 14174				
SITE SPECIFIC INPUT DATA			NOISE MODEL INPUTS						
Highway Data			Site Conditions (Hard = 10, Soft = 15)						
Average Daily Traffic (Adt): 16,582 vehicles			Autos: 15						
Peak Hour Percentage: 6.45%			Medium Trucks (2 Axles): 15						
Peak Hour Volume: 1,070 vehicles			Heavy Trucks (3+ Axles): 15						
Vehicle Speed: 40 mph			Vehicle Mix						
Near/Far Lane Distance: 58 feet			VehicleType Day Evening Night Daily						
Site Data			Autos: 74.6% 8.9% 16.5% 82.81%						
Barrier Height: 0.0 feet			Medium Trucks: 81.6% 5.4% 12.9% 4.78%						
Barrier Type (0-Wall, 1-Berm): 0.0			Heavy Trucks: 63.6% 8.0% 28.4% 12.41%						
Centerline Dist. to Barrier: 64.0 feet			Noise Source Elevations (in feet)						
Centerline Dist. to Observer: 64.0 feet			Autos: 0.000						
Barrier Distance to Observer: 0.0 feet			Medium Trucks: 2.297						
Observer Height (Above Pad): 5.0 feet			Heavy Trucks: 8.004 Grade Adjustment: 0.0						
Pad Elevation: 0.0 feet			Lane Equivalent Distance (in feet)						
Road Elevation: 0.0 feet			Autos: 57.271						
Road Grade: 0.0%			Medium Trucks: 57.117						
Left View: -90.0 degrees			Heavy Trucks: 57.132						
Right View: 90.0 degrees									
FHWA Noise Model Calculations									
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten		
Autos:	66.51	-1.85	-0.99	-1.20	-4.70	0.000	0.000		
Medium Trucks:	77.72	-14.24	-0.97	-1.20	-4.88	0.000	0.000		
Heavy Trucks:	82.99	-10.10	-0.97	-1.20	-5.31	0.000	0.000		
Unmitigated Noise Levels (without Topo and barrier attenuation)									
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL			
Autos:	62.5	62.3	59.1	57.0	64.5	64.9			
Medium Trucks:	61.3	61.5	55.8	54.8	62.8	63.0			
Heavy Trucks:	70.7	69.9	66.9	67.6	74.3	74.5			
Vehicle Noise:	71.7	71.1	67.8	68.2	75.0	75.2			
Centerline Distance to Noise Contour (in feet)									
			70 dBA	65 dBA	60 dBA	55 dBA			
Ldn:			139	298	643	1,385			
CNEL:			143	309	665	1,433			

Friday, February 17, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)									
Scenario: HY Road Name: Varner Rd. Road Segment: elo Rio Del Sol Rd.					Project Name: Majestic Thousand Palms Job Number: 14174				
SITE SPECIFIC INPUT DATA			NOISE MODEL INPUTS						
Highway Data			Site Conditions (Hard = 10, Soft = 15)						
Average Daily Traffic (Adt): 17,437 vehicles			Autos: 15						
Peak Hour Percentage: 6.45%			Medium Trucks (2 Axles): 15						
Peak Hour Volume: 1,125 vehicles			Heavy Trucks (3+ Axles): 15						
Vehicle Speed: 40 mph			Vehicle Mix						
Near/Far Lane Distance: 58 feet			VehicleType Day Evening Night Daily						
Site Data			Autos: 74.6% 8.9% 16.5% 82.31%						
Barrier Height: 0.0 feet			Medium Trucks: 81.6% 5.4% 12.9% 4.97%						
Barrier Type (0-Wall, 1-Berm): 0.0			Heavy Trucks: 63.6% 8.0% 28.4% 12.73%						
Centerline Dist. to Barrier: 64.0 feet			Noise Source Elevations (in feet)						
Centerline Dist. to Observer: 64.0 feet			Autos: 0.000						
Barrier Distance to Observer: 0.0 feet			Medium Trucks: 2.297						
Observer Height (Above Pad): 5.0 feet			Heavy Trucks: 8.004 Grade Adjustment: 0.0						
Pad Elevation: 0.0 feet			Lane Equivalent Distance (in feet)						
Road Elevation: 0.0 feet			Autos: 57.271						
Road Grade: 0.0%			Medium Trucks: 57.117						
Left View: -90.0 degrees			Heavy Trucks: 57.132						
Right View: 90.0 degrees									
FHWA Noise Model Calculations									
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten		
Autos:	66.51	-1.66	-0.99	-1.20	-4.70	0.000	0.000		
Medium Trucks:	77.72	-13.86	-0.97	-1.20	-4.88	0.000	0.000		
Heavy Trucks:	82.99	-9.77	-0.97	-1.20	-5.31	0.000	0.000		
Unmitigated Noise Levels (without Topo and barrier attenuation)									
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL			
Autos:	62.7	62.5	59.3	57.2	64.7	65.0			
Medium Trucks:	61.7	61.9	56.2	55.2	63.1	63.4			
Heavy Trucks:	71.1	70.2	67.2	67.9	74.7	74.9			
Vehicle Noise:	72.1	71.4	68.2	68.5	75.4	75.6			
Centerline Distance to Noise Contour (in feet)									
			70 dBA	65 dBA	60 dBA	55 dBA			
Ldn:			145	313	675	1,455			
CNEL:			150	324	698	1,505			

Friday, February 17, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)									
Scenario: HY+P Road Name: Varner Rd. Road Segment: elo Rio Del Sol Rd.					Project Name: Majestic Thousand Palms Job Number: 14174				
SITE SPECIFIC INPUT DATA			NOISE MODEL INPUTS						
Highway Data			Site Conditions (Hard = 10, Soft = 15)						
Average Daily Traffic (Adt): 18,168 vehicles			Autos: 15						
Peak Hour Percentage: 6.45%			Medium Trucks (2 Axles): 15						
Peak Hour Volume: 1,172 vehicles			Heavy Trucks (3+ Axles): 15						
Vehicle Speed: 40 mph			Vehicle Mix						
Near/Far Lane Distance: 58 feet			VehicleType Day Evening Night Daily						
Site Data			Autos: 74.6% 8.9% 16.5% 82.77%						
Barrier Height: 0.0 feet			Medium Trucks: 81.6% 5.4% 12.9% 4.79%						
Barrier Type (0-Wall, 1-Berm): 0.0			Heavy Trucks: 63.6% 8.0% 28.4% 12.44%						
Centerline Dist. to Barrier: 64.0 feet			Noise Source Elevations (in feet)						
Centerline Dist. to Observer: 64.0 feet			Autos: 0.000						
Barrier Distance to Observer: 0.0 feet			Medium Trucks: 2.297						
Observer Height (Above Pad): 5.0 feet			Heavy Trucks: 8.004 Grade Adjustment: 0.0						
Pad Elevation: 0.0 feet			Lane Equivalent Distance (in feet)						
Road Elevation: 0.0 feet			Autos: 57.271						
Road Grade: 0.0%			Medium Trucks: 57.117						
Left View: -90.0 degrees			Heavy Trucks: 57.132						
Right View: 90.0 degrees									
FHWA Noise Model Calculations									
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten		
Autos:	66.51	-1.46	-0.99	-1.20	-4.70	0.000	0.000		
Medium Trucks:	77.72	-13.83	-0.97	-1.20	-4.88	0.000	0.000		
Heavy Trucks:	82.99	-9.69	-0.97	-1.20	-5.31	0.000	0.000		
Unmitigated Noise Levels (without Topo and barrier attenuation)									
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL			
Autos:	62.9	62.7	59.5	57.4	64.9	65.3			
Medium Trucks:	61.7	61.9	56.2	55.2	63.2	63.4			
Heavy Trucks:	71.1	70.3	67.3	68.0	74.7	74.9			
Vehicle Noise:	72.1	71.5	68.3	68.6	75.4	75.7			
Centerline Distance to Noise Contour (in feet)									
			70 dBA	65 dBA	60 dBA	55 dBA			
Ldn:			147	318	684	1,474			
CNEL:			152	328	708	1,525			

Friday, February 17, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)								
Scenario: E Road Name: Ramon Rd. Road Segment: w/o Bob Hope Dr.			Project Name: Majestic Thousand Palms Job Number: 14174					
SITE SPECIFIC INPUT DATA			NOISE MODEL INPUTS					
Highway Data			Site Conditions (Hard = 10, Soft = 15)					
Average Daily Traffic (Adt): 32,735 vehicles Peak Hour Percentage: 6.45% Peak Hour Volume: 2,111 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 68 feet			Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15					
Site Data			Vehicle Mix					
			VehicleType	Day	Evening	Night	Daily	
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 76.0 feet Centerline Dist. to Observer: 76.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees			Autos: 74.6% 8.9% 16.5% 82.31% Medium Trucks: 81.6% 5.4% 12.9% 4.97% Heavy Trucks: 63.6% 8.0% 28.4% 12.73%					
			Noise Source Elevations (in feet)					
			Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0					
			Lane Equivalent Distance (in feet)					
			Autos: 68.154 Medium Trucks: 68.024 Heavy Trucks: 68.037					
FHWA Noise Model Calculations								
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten	
Autos:	71.78	-0.31	-2.12	-1.20	-4.73	0.000	0.000	
Medium Trucks:	82.40	-12.50	-2.11	-1.20	-4.88	0.000	0.000	
Heavy Trucks:	86.40	-8.42	-2.11	-1.20	-5.25	0.000	0.000	
Unmitigated Noise Levels (without Topo and barrier attenuation)								
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL		
Autos:	68.2	68.0	64.8	62.7	70.2	70.5		
Medium Trucks:	66.6	66.8	61.1	60.1	68.0	68.3		
Heavy Trucks:	74.7	73.8	70.8	71.6	78.3	78.5		
Vehicle Noise:	76.1	75.5	72.2	72.4	79.2	79.5		
Centerline Distance to Noise Contour (in feet)								
			70 dBA	65 dBA	60 dBA	55 dBA		
Ldn:			314	677	1,459	3,144		
CNEL:			325	701	1,510	3,254		

Friday, February 17, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)								
Scenario: E+P Road Name: Ramon Rd. Road Segment: w/o Bob Hope Dr.			Project Name: Majestic Thousand Palms Job Number: 14174					
SITE SPECIFIC INPUT DATA			NOISE MODEL INPUTS					
Highway Data			Site Conditions (Hard = 10, Soft = 15)					
Average Daily Traffic (Adt): 33,009 vehicles Peak Hour Percentage: 6.45% Peak Hour Volume: 2,129 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 68 feet			Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15					
Site Data			Vehicle Mix					
			VehicleType	Day	Evening	Night	Daily	
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 76.0 feet Centerline Dist. to Observer: 76.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees			Autos: 74.6% 8.9% 16.5% 82.32% Medium Trucks: 81.6% 5.4% 12.9% 4.94% Heavy Trucks: 63.6% 8.0% 28.4% 12.75%					
			Noise Source Elevations (in feet)					
			Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0					
			Lane Equivalent Distance (in feet)					
			Autos: 68.154 Medium Trucks: 68.024 Heavy Trucks: 68.037					
FHWA Noise Model Calculations								
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten	
Autos:	71.78	-0.27	-2.12	-1.20	-4.73	0.000	0.000	
Medium Trucks:	82.40	-12.49	-2.11	-1.20	-4.88	0.000	0.000	
Heavy Trucks:	86.40	-8.37	-2.11	-1.20	-5.25	0.000	0.000	
Unmitigated Noise Levels (without Topo and barrier attenuation)								
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL		
Autos:	68.2	68.0	64.8	62.7	70.3	70.6		
Medium Trucks:	66.6	66.8	61.1	60.1	68.1	68.3		
Heavy Trucks:	74.7	73.9	70.9	71.6	78.3	78.5		
Vehicle Noise:	76.1	75.5	72.2	72.4	79.3	79.5		
Centerline Distance to Noise Contour (in feet)								
			70 dBA	65 dBA	60 dBA	55 dBA		
Ldn:			316	681	1,468	3,163		
CNEL:			327	705	1,519	3,273		

Friday, February 17, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)								
Scenario: EAC Road Name: Ramon Rd. Road Segment: w/o Bob Hope Dr.			Project Name: Majestic Thousand Palms Job Number: 14174					
SITE SPECIFIC INPUT DATA			NOISE MODEL INPUTS					
Highway Data			Site Conditions (Hard = 10, Soft = 15)					
Average Daily Traffic (Adt): 32,735 vehicles Peak Hour Percentage: 6.45% Peak Hour Volume: 2,111 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 68 feet			Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15					
Site Data			Vehicle Mix					
			VehicleType	Day	Evening	Night	Daily	
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 76.0 feet Centerline Dist. to Observer: 76.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees			Autos: 74.6% 8.9% 16.5% 82.31% Medium Trucks: 81.6% 5.4% 12.9% 4.97% Heavy Trucks: 63.6% 8.0% 28.4% 12.73%					
			Noise Source Elevations (in feet)					
			Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0					
			Lane Equivalent Distance (in feet)					
			Autos: 68.154 Medium Trucks: 68.024 Heavy Trucks: 68.037					
FHWA Noise Model Calculations								
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten	
Autos:	71.78	-0.31	-2.12	-1.20	-4.73	0.000	0.000	
Medium Trucks:	82.40	-12.50	-2.11	-1.20	-4.88	0.000	0.000	
Heavy Trucks:	86.40	-8.42	-2.11	-1.20	-5.25	0.000	0.000	
Unmitigated Noise Levels (without Topo and barrier attenuation)								
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL		
Autos:	68.2	68.0	64.8	62.7	70.2	70.5		
Medium Trucks:	66.6	66.8	61.1	60.1	68.0	68.3		
Heavy Trucks:	74.7	73.8	70.8	71.6	78.3	78.5		
Vehicle Noise:	76.1	75.5	72.2	72.4	79.2	79.5		
Centerline Distance to Noise Contour (in feet)								
			70 dBA	65 dBA	60 dBA	55 dBA		
Ldn:			314	677	1,459	3,144		
CNEL:			325	701	1,510	3,254		

Friday, February 17, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)								
Scenario: EAC+P Road Name: Ramon Rd. Road Segment: w/o Bob Hope Dr.			Project Name: Majestic Thousand Palms Job Number: 14174					
SITE SPECIFIC INPUT DATA			NOISE MODEL INPUTS					
Highway Data			Site Conditions (Hard = 10, Soft = 15)					
Average Daily Traffic (Adt): 33,009 vehicles Peak Hour Percentage: 6.45% Peak Hour Volume: 2,129 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 68 feet			Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15					
Site Data			Vehicle Mix					
			VehicleType	Day	Evening	Night	Daily	
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 76.0 feet Centerline Dist. to Observer: 76.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees			Autos: 74.6% 8.9% 16.5% 82.32% Medium Trucks: 81.6% 5.4% 12.9% 4.94% Heavy Trucks: 63.6% 8.0% 28.4% 12.75%					
			Noise Source Elevations (in feet)					
			Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0					
			Lane Equivalent Distance (in feet)					
			Autos: 68.154 Medium Trucks: 68.024 Heavy Trucks: 68.037					
FHWA Noise Model Calculations								
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten	
Autos:	71.78	-0.27	-2.12	-1.20	-4.73	0.000	0.000	
Medium Trucks:	82.40	-12.49	-2.11	-1.20	-4.88	0.000	0.000	
Heavy Trucks:	86.40	-8.37	-2.11	-1.20	-5.25	0.000	0.000	
Unmitigated Noise Levels (without Topo and barrier attenuation)								
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL		
Autos:	68.2	68.0	64.8	62.7	70.3	70.6		
Medium Trucks:	66.6	66.8	61.1	60.1	68.1	68.3		
Heavy Trucks:	74.7	73.9	70.9	71.6	78.3	78.5		
Vehicle Noise:	76.1	75.5	72.2	72.4	79.3	79.5		
Centerline Distance to Noise Contour (in feet)								
			70 dBA	65 dBA	60 dBA	55 dBA		
Ldn:			316	681	1,468	3,163		
CNEL:			327	705	1,519	3,273		

Friday, February 17, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: HY Road Name: Ramon Rd. Road Segment: w/o Bob Hope Dr.				Project Name: Majestic Thousand Palms Job Number: 14174			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 41,264 vehicles Peak Hour Percentage: 6.45% Peak Hour Volume: 2,662 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 68 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 76.0 feet Centerline Dist. to Observer: 76.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 74.6% 8.9% 16.5% 82.31% Medium Trucks: 81.6% 5.4% 12.9% 4.97% Heavy Trucks: 63.6% 8.0% 28.4% 12.73%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 68.154 Medium Trucks: 68.024 Heavy Trucks: 68.037			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.70	-2.12	-1.20	-4.73	0.000	0.000
Medium Trucks:	82.40	-11.50	-2.11	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-7.41	-2.11	-1.20	-5.25	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.2	69.0	65.8	63.7	71.2	71.5	
Medium Trucks:	67.6	67.8	62.1	61.1	69.0	69.3	
Heavy Trucks:	75.7	74.8	71.9	72.6	79.3	79.5	
Vehicle Noise:	77.1	76.5	73.2	73.4	80.3	80.5	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			367	790	1,703	3,669	
CNEL:			380	818	1,762	3,797	

Friday, February 17, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: HY+P Road Name: Ramon Rd. Road Segment: w/o Bob Hope Dr.				Project Name: Majestic Thousand Palms Job Number: 14174			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 41,538 vehicles Peak Hour Percentage: 6.45% Peak Hour Volume: 2,679 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 68 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 76.0 feet Centerline Dist. to Observer: 76.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 74.6% 8.9% 16.5% 82.31% Medium Trucks: 81.6% 5.4% 12.9% 4.94% Heavy Trucks: 63.6% 8.0% 28.4% 12.74%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 68.154 Medium Trucks: 68.024 Heavy Trucks: 68.037			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.73	-2.12	-1.20	-4.73	0.000	0.000
Medium Trucks:	82.40	-11.49	-2.11	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-7.38	-2.11	-1.20	-5.25	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.2	69.0	65.8	63.7	71.2	71.6	
Medium Trucks:	67.6	67.8	62.1	61.1	69.1	69.3	
Heavy Trucks:	75.7	74.9	71.9	72.6	79.3	79.5	
Vehicle Noise:	77.1	76.5	73.2	73.4	80.3	80.5	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			369	794	1,711	3,686	
CNEL:			381	822	1,771	3,815	

Friday, February 17, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: E Road Name: Ramon Rd. Road Segment: e/o Bob Hope Dr.				Project Name: Majestic Thousand Palms Job Number: 14174			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 23,110 vehicles Peak Hour Percentage: 6.45% Peak Hour Volume: 1,491 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 58 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 64.0 feet Centerline Dist. to Observer: 64.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 74.6% 8.9% 16.5% 82.31% Medium Trucks: 81.6% 5.4% 12.9% 4.97% Heavy Trucks: 63.6% 8.0% 28.4% 12.73%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 57.271 Medium Trucks: 57.117 Heavy Trucks: 57.132			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.82	-0.99	-1.20	-4.70	0.000	0.000
Medium Trucks:	82.40	-14.02	-0.97	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-9.93	-0.97	-1.20	-5.31	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.8	67.6	64.4	62.3	69.8	70.2	
Medium Trucks:	66.2	66.4	60.7	59.7	67.7	67.9	
Heavy Trucks:	74.3	73.4	70.5	71.2	77.9	78.1	
Vehicle Noise:	75.7	75.1	71.8	72.0	78.9	79.1	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			250	539	1,160	2,500	
CNEL:			259	557	1,201	2,587	

Friday, February 17, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: E+P Road Name: Ramon Rd. Road Segment: e/o Bob Hope Dr.				Project Name: Majestic Thousand Palms Job Number: 14174			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 23,126 vehicles Peak Hour Percentage: 6.45% Peak Hour Volume: 1,492 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 58 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 64.0 feet Centerline Dist. to Observer: 64.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 74.6% 8.9% 16.5% 82.29% Medium Trucks: 81.6% 5.4% 12.9% 4.96% Heavy Trucks: 63.6% 8.0% 28.4% 12.74%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 57.271 Medium Trucks: 57.117 Heavy Trucks: 57.132			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.82	-0.99	-1.20	-4.70	0.000	0.000
Medium Trucks:	82.40	-14.01	-0.97	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-9.92	-0.97	-1.20	-5.31	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.8	67.6	64.4	62.3	69.8	70.2	
Medium Trucks:	66.2	66.5	60.7	59.7	67.7	67.9	
Heavy Trucks:	74.3	73.5	70.5	71.2	77.9	78.1	
Vehicle Noise:	75.7	75.1	71.8	72.0	78.9	79.1	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			250	539	1,161	2,502	
CNEL:			259	558	1,202	2,589	

Friday, February 17, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)								
Scenario: EAC Road Name: Ramon Rd. Road Segment: e/o Bob Hope Dr.			Project Name: Majestic Thousand Palms Job Number: 14174					
SITE SPECIFIC INPUT DATA			NOISE MODEL INPUTS					
Highway Data			Site Conditions (Hard = 10, Soft = 15)					
Average Daily Traffic (Adt): 23,110 vehicles Peak Hour Percentage: 6.45% Peak Hour Volume: 1,491 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 58 feet			Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15					
Site Data			Vehicle Mix					
			VehicleType	Day	Evening	Night	Daily	
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 64.0 feet Centerline Dist. to Observer: 64.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees			Autos: 74.6% 8.9% 16.5% 82.31% Medium Trucks: 81.6% 5.4% 12.9% 4.97% Heavy Trucks: 63.6% 8.0% 28.4% 12.73%					
			Noise Source Elevations (in feet)					
			Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0					
			Lane Equivalent Distance (in feet)					
			Autos: 57.271 Medium Trucks: 57.117 Heavy Trucks: 57.132					
FHWA Noise Model Calculations								
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten	
Autos:	71.78	-1.82	-0.99	-1.20	-4.70	0.000	0.000	
Medium Trucks:	82.40	-14.02	-0.97	-1.20	-4.88	0.000	0.000	
Heavy Trucks:	86.40	-9.93	-0.97	-1.20	-5.31	0.000	0.000	
Unmitigated Noise Levels (without Topo and barrier attenuation)								
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL		
Autos:	67.8	67.6	64.4	62.3	69.8	70.2		
Medium Trucks:	66.2	66.4	60.7	59.7	67.7	67.9		
Heavy Trucks:	74.3	73.4	70.5	71.2	77.9	78.1		
Vehicle Noise:	75.7	75.1	71.8	72.0	78.9	79.1		
Centerline Distance to Noise Contour (in feet)								
			70 dBA	65 dBA	60 dBA	55 dBA		
Ldn:			250	539	1,160	2,500		
CNEL:			259	557	1,201	2,587		

Friday, February 17, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)								
Scenario: EAC+P Road Name: Ramon Rd. Road Segment: e/o Bob Hope Dr.			Project Name: Majestic Thousand Palms Job Number: 14174					
SITE SPECIFIC INPUT DATA			NOISE MODEL INPUTS					
Highway Data			Site Conditions (Hard = 10, Soft = 15)					
Average Daily Traffic (Adt): 23,126 vehicles Peak Hour Percentage: 6.45% Peak Hour Volume: 1,492 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 58 feet			Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15					
Site Data			Vehicle Mix					
			VehicleType	Day	Evening	Night	Daily	
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 64.0 feet Centerline Dist. to Observer: 64.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees			Autos: 74.6% 8.9% 16.5% 82.29% Medium Trucks: 81.6% 5.4% 12.9% 4.96% Heavy Trucks: 63.6% 8.0% 28.4% 12.74%					
			Noise Source Elevations (in feet)					
			Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0					
			Lane Equivalent Distance (in feet)					
			Autos: 57.271 Medium Trucks: 57.117 Heavy Trucks: 57.132					
FHWA Noise Model Calculations								
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten	
Autos:	71.78	-1.82	-0.99	-1.20	-4.70	0.000	0.000	
Medium Trucks:	82.40	-14.01	-0.97	-1.20	-4.88	0.000	0.000	
Heavy Trucks:	86.40	-9.92	-0.97	-1.20	-5.31	0.000	0.000	
Unmitigated Noise Levels (without Topo and barrier attenuation)								
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL		
Autos:	67.8	67.6	64.4	62.3	69.8	70.2		
Medium Trucks:	66.2	66.5	60.7	59.7	67.7	67.9		
Heavy Trucks:	74.3	73.5	70.5	71.2	77.9	78.1		
Vehicle Noise:	75.7	75.1	71.8	72.0	78.9	79.1		
Centerline Distance to Noise Contour (in feet)								
			70 dBA	65 dBA	60 dBA	55 dBA		
Ldn:			250	539	1,161	2,502		
CNEL:			259	558	1,202	2,589		

Friday, February 17, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)								
Scenario: HY Road Name: Ramon Rd. Road Segment: e/o Bob Hope Dr.			Project Name: Majestic Thousand Palms Job Number: 14174					
SITE SPECIFIC INPUT DATA			NOISE MODEL INPUTS					
Highway Data			Site Conditions (Hard = 10, Soft = 15)					
Average Daily Traffic (Adt): 48,088 vehicles Peak Hour Percentage: 6.45% Peak Hour Volume: 3,102 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 58 feet			Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15					
Site Data			Vehicle Mix					
			VehicleType	Day	Evening	Night	Daily	
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 64.0 feet Centerline Dist. to Observer: 64.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees			Autos: 74.6% 8.9% 16.5% 82.31% Medium Trucks: 81.6% 5.4% 12.9% 4.97% Heavy Trucks: 63.6% 8.0% 28.4% 12.73%					
			Noise Source Elevations (in feet)					
			Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0					
			Lane Equivalent Distance (in feet)					
			Autos: 57.271 Medium Trucks: 57.117 Heavy Trucks: 57.132					
FHWA Noise Model Calculations								
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten	
Autos:	71.78	1.36	-0.99	-1.20	-4.70	0.000	0.000	
Medium Trucks:	82.40	-10.83	-0.97	-1.20	-4.88	0.000	0.000	
Heavy Trucks:	86.40	-6.75	-0.97	-1.20	-5.31	0.000	0.000	
Unmitigated Noise Levels (without Topo and barrier attenuation)								
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL		
Autos:	71.0	70.8	67.6	65.5	73.0	73.3		
Medium Trucks:	69.4	69.6	63.9	62.9	70.9	71.1		
Heavy Trucks:	77.5	76.6	73.7	74.4	81.1	81.3		
Vehicle Noise:	78.9	78.3	75.0	75.2	82.1	82.3		
Centerline Distance to Noise Contour (in feet)								
			70 dBA	65 dBA	60 dBA	55 dBA		
Ldn:			407	878	1,891	4,074		
CNEL:			422	908	1,957	4,216		

Friday, February 17, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)								
Scenario: HY+P Road Name: Ramon Rd. Road Segment: e/o Bob Hope Dr.			Project Name: Majestic Thousand Palms Job Number: 14174					
SITE SPECIFIC INPUT DATA			NOISE MODEL INPUTS					
Highway Data			Site Conditions (Hard = 10, Soft = 15)					
Average Daily Traffic (Adt): 48,105 vehicles Peak Hour Percentage: 6.45% Peak Hour Volume: 3,103 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 58 feet			Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15					
Site Data			Vehicle Mix					
			VehicleType	Day	Evening	Night	Daily	
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 64.0 feet Centerline Dist. to Observer: 64.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees			Autos: 74.6% 8.9% 16.5% 82.30% Medium Trucks: 81.6% 5.4% 12.9% 4.96% Heavy Trucks: 63.6% 8.0% 28.4% 12.74%					
			Noise Source Elevations (in feet)					
			Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0					
			Lane Equivalent Distance (in feet)					
			Autos: 57.271 Medium Trucks: 57.117 Heavy Trucks: 57.132					
FHWA Noise Model Calculations								
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten	
Autos:	71.78	1.36	-0.99	-1.20	-4.70	0.000	0.000	
Medium Trucks:	82.40	-10.83	-0.97	-1.20	-4.88	0.000	0.000	
Heavy Trucks:	86.40	-6.74	-0.97	-1.20	-5.31	0.000	0.000	
Unmitigated Noise Levels (without Topo and barrier attenuation)								
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL		
Autos:	71.0	70.8	67.6	65.5	73.0	73.3		
Medium Trucks:	69.4	69.6	63.9	62.9	70.9	71.1		
Heavy Trucks:	77.5	76.6	73.7	74.4	81.1	81.3		
Vehicle Noise:	78.9	78.3	75.0	75.2	82.1	82.3		
Centerline Distance to Noise Contour (in feet)								
			70 dBA	65 dBA	60 dBA	55 dBA		
Ldn:			408	878	1,892	4,076		
CNEL:			422	909	1,958	4,218		

Friday, February 17, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)										
Scenario: E Road Name: Ramon Rd. Road Segment: w/o Varner Rd.					Project Name: Majestic Thousand Palms Job Number: 14174					
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS						
Highway Data				Site Conditions (Hard = 10, Soft = 15)						
Average Daily Traffic (Adt): 14,973 vehicles				Autos: 15						
Peak Hour Percentage: 6.45%				Medium Trucks (2 Axles): 15						
Peak Hour Volume: 966 vehicles				Heavy Trucks (3+ Axles): 15						
Vehicle Speed: 45 mph				Vehicle Mix						
Near/Far Lane Distance: 58 feet				VehicleType		Day	Evening	Night	Daily	
Site Data				Autos: 74.6% 8.9% 16.5% 82.31%						
Barrier Height: 0.0 feet				Medium Trucks: 81.6% 5.4% 12.9% 4.97%						
Barrier Type (0-Wall, 1-Berm): 0.0				Heavy Trucks: 63.6% 8.0% 28.4% 12.73%						
Centerline Dist. to Barrier: 64.0 feet				Noise Source Elevations (in feet)						
Centerline Dist. to Observer: 64.0 feet				Autos: 0.000						
Barrier Distance to Observer: 0.0 feet				Medium Trucks: 2.297						
Observer Height (Above Pad): 5.0 feet				Heavy Trucks: 8.004 Grade Adjustment: 0.0						
Pad Elevation: 0.0 feet				Lane Equivalent Distance (in feet)						
Road Elevation: 0.0 feet				Autos: 57.271						
Road Grade: 0.0%				Medium Trucks: 57.117						
Left View: -90.0 degrees				Heavy Trucks: 57.132						
Right View: 90.0 degrees										
FHWA Noise Model Calculations										
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten			
Autos:	68.46	-2.83	-0.99	-1.20	-4.70	0.000	0.000			
Medium Trucks:	79.45	-15.03	-0.97	-1.20	-4.88	0.000	0.000			
Heavy Trucks:	84.25	-10.94	-0.97	-1.20	-5.31	0.000	0.000			
Unmitigated Noise Levels (without Topo and barrier attenuation)										
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL				
Autos:	63.4	63.3	60.1	58.0	65.5	65.8				
Medium Trucks:	62.2	62.5	56.7	55.7	63.7	63.9				
Heavy Trucks:	71.1	70.3	67.3	68.0	74.7	75.0				
Vehicle Noise:	72.3	71.6	68.4	68.7	75.5	75.7				
Centerline Distance to Noise Contour (in feet)										
			70 dBA	65 dBA	60 dBA	55 dBA				
Ldn:			150	322	694	1,496				
CNEL:			155	333	718	1,547				

Friday, February 17, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)										
Scenario: E+P Road Name: Ramon Rd. Road Segment: w/o Varner Rd.					Project Name: Majestic Thousand Palms Job Number: 14174					
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS						
Highway Data				Site Conditions (Hard = 10, Soft = 15)						
Average Daily Traffic (Adt): 15,020 vehicles				Autos: 15						
Peak Hour Percentage: 6.45%				Medium Trucks (2 Axles): 15						
Peak Hour Volume: 969 vehicles				Heavy Trucks (3+ Axles): 15						
Vehicle Speed: 45 mph				Vehicle Mix						
Near/Far Lane Distance: 58 feet				VehicleType		Day	Evening	Night	Daily	
Site Data				Autos: 74.6% 8.9% 16.5% 82.32%						
Barrier Height: 0.0 feet				Medium Trucks: 81.6% 5.4% 12.9% 4.95%						
Barrier Type (0-Wall, 1-Berm): 0.0				Heavy Trucks: 63.6% 8.0% 28.4% 12.72%						
Centerline Dist. to Barrier: 64.0 feet				Noise Source Elevations (in feet)						
Centerline Dist. to Observer: 64.0 feet				Autos: 0.000						
Barrier Distance to Observer: 0.0 feet				Medium Trucks: 2.297						
Observer Height (Above Pad): 5.0 feet				Heavy Trucks: 8.004 Grade Adjustment: 0.0						
Pad Elevation: 0.0 feet				Lane Equivalent Distance (in feet)						
Road Elevation: 0.0 feet				Autos: 57.271						
Road Grade: 0.0%				Medium Trucks: 57.117						
Left View: -90.0 degrees				Heavy Trucks: 57.132						
Right View: 90.0 degrees										
FHWA Noise Model Calculations										
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten			
Autos:	68.46	-2.82	-0.99	-1.20	-4.70	0.000	0.000			
Medium Trucks:	79.45	-15.03	-0.97	-1.20	-4.88	0.000	0.000			
Heavy Trucks:	84.25	-10.93	-0.97	-1.20	-5.31	0.000	0.000			
Unmitigated Noise Levels (without Topo and barrier attenuation)										
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL				
Autos:	63.5	63.3	60.1	58.0	65.5	65.8				
Medium Trucks:	62.3	62.5	56.7	55.7	63.7	63.9				
Heavy Trucks:	71.2	70.3	67.3	68.0	74.8	75.0				
Vehicle Noise:	72.3	71.6	68.4	68.7	75.5	75.8				
Centerline Distance to Noise Contour (in feet)										
			70 dBA	65 dBA	60 dBA	55 dBA				
Ldn:			150	323	695	1,498				
CNEL:			155	334	719	1,550				

Friday, February 17, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)										
Scenario: EAC Road Name: Ramon Rd. Road Segment: w/o Varner Rd.					Project Name: Majestic Thousand Palms Job Number: 14174					
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS						
Highway Data				Site Conditions (Hard = 10, Soft = 15)						
Average Daily Traffic (Adt): 15,029 vehicles				Autos: 15						
Peak Hour Percentage: 6.45%				Medium Trucks (2 Axles): 15						
Peak Hour Volume: 969 vehicles				Heavy Trucks (3+ Axles): 15						
Vehicle Speed: 45 mph				Vehicle Mix						
Near/Far Lane Distance: 58 feet				VehicleType		Day	Evening	Night	Daily	
Site Data				Autos: 74.6% 8.9% 16.5% 82.31%						
Barrier Height: 0.0 feet				Medium Trucks: 81.6% 5.4% 12.9% 4.97%						
Barrier Type (0-Wall, 1-Berm): 0.0				Heavy Trucks: 63.6% 8.0% 28.4% 12.73%						
Centerline Dist. to Barrier: 64.0 feet				Noise Source Elevations (in feet)						
Centerline Dist. to Observer: 64.0 feet				Autos: 0.000						
Barrier Distance to Observer: 0.0 feet				Medium Trucks: 2.297						
Observer Height (Above Pad): 5.0 feet				Heavy Trucks: 8.004 Grade Adjustment: 0.0						
Pad Elevation: 0.0 feet				Lane Equivalent Distance (in feet)						
Road Elevation: 0.0 feet				Autos: 57.271						
Road Grade: 0.0%				Medium Trucks: 57.117						
Left View: -90.0 degrees				Heavy Trucks: 57.132						
Right View: 90.0 degrees										
FHWA Noise Model Calculations										
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten			
Autos:	68.46	-2.82	-0.99	-1.20	-4.70	0.000	0.000			
Medium Trucks:	79.45	-15.01	-0.97	-1.20	-4.88	0.000	0.000			
Heavy Trucks:	84.25	-10.92	-0.97	-1.20	-5.31	0.000	0.000			
Unmitigated Noise Levels (without Topo and barrier attenuation)										
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL				
Autos:	63.5	63.3	60.1	58.0	65.5	65.8				
Medium Trucks:	62.3	62.5	56.7	55.7	63.7	63.9				
Heavy Trucks:	71.2	70.3	67.3	68.0	74.8	75.0				
Vehicle Noise:	72.3	71.7	68.4	68.7	75.5	75.8				
Centerline Distance to Noise Contour (in feet)										
			70 dBA	65 dBA	60 dBA	55 dBA				
Ldn:			150	323	696	1,499				
CNEL:			155	334	720	1,551				

Friday, February 17, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)										
Scenario: EAC+P Road Name: Ramon Rd. Road Segment: w/o Varner Rd.					Project Name: Majestic Thousand Palms Job Number: 14174					
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS						
Highway Data				Site Conditions (Hard = 10, Soft = 15)						
Average Daily Traffic (Adt): 15,077 vehicles				Autos: 15						
Peak Hour Percentage: 6.45%				Medium Trucks (2 Axles): 15						
Peak Hour Volume: 972 vehicles				Heavy Trucks (3+ Axles): 15						
Vehicle Speed: 45 mph				Vehicle Mix						
Near/Far Lane Distance: 58 feet				VehicleType		Day	Evening	Night	Daily	
Site Data				Autos: 74.6% 8.9% 16.5% 82.32%						
Barrier Height: 0.0 feet				Medium Trucks: 81.6% 5.4% 12.9% 4.95%						
Barrier Type (0-Wall, 1-Berm): 0.0				Heavy Trucks: 63.6% 8.0% 28.4% 12.72%						
Centerline Dist. to Barrier: 64.0 feet				Noise Source Elevations (in feet)						
Centerline Dist. to Observer: 64.0 feet				Autos: 0.000						
Barrier Distance to Observer: 0.0 feet				Medium Trucks: 2.297						
Observer Height (Above Pad): 5.0 feet				Heavy Trucks: 8.004 Grade Adjustment: 0.0						
Pad Elevation: 0.0 feet				Lane Equivalent Distance (in feet)						
Road Elevation: 0.0 feet				Autos: 57.271						
Road Grade: 0.0%				Medium Trucks: 57.117						
Left View: -90.0 degrees				Heavy Trucks: 57.132						
Right View: 90.0 degrees										
FHWA Noise Model Calculations										
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten			
Autos:	68.46	-2.80	-0.99	-1.20	-4.70	0.000	0.000			
Medium Trucks:	79.45	-15.01	-0.97	-1.20	-4.88	0.000	0.000			
Heavy Trucks:	84.25	-10.91	-0.97	-1.20	-5.31	0.000	0.000			
Unmitigated Noise Levels (without Topo and barrier attenuation)										
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL				
Autos:	63.5	63.3	60.1	58.0	65.5	65.9				
Medium Trucks:	62.3	62.5	56.8	55.7	63.7	64.0				
Heavy Trucks:	71.2	70.3	67.3	68.1	74.8	75.0				
Vehicle Noise:	72.3	71.7	68.4	68.7	75.6	75.8				
Centerline Distance to Noise Contour (in feet)										
			70 dBA	65 dBA	60 dBA	55 dBA				
Ldn:			150	324	697	1,502				
CNEL:			155	335	721	1,554				

Friday, February 17, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)									
Scenario: HY Road Name: Ramon Rd. Road Segment: w/o Varner Rd.					Project Name: Majestic Thousand Palms Job Number: 14174				
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS					
Highway Data				Site Conditions (Hard = 10, Soft = 15)					
Average Daily Traffic (Adt): 30,993 vehicles Peak Hour Percentage: 6.45% Peak Hour Volume: 1,999 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 58 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15					
Site Data				Vehicle Mix					
				VehicleType	Day	Evening	Night	Daily	
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 64.0 feet Centerline Dist. to Observer: 64.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 74.6% 8.9% 16.5% 82.31% Medium Trucks: 81.6% 5.4% 12.9% 4.97% Heavy Trucks: 63.6% 8.0% 28.4% 12.73%					
				Noise Source Elevations (in feet)					
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0					
				Lane Equivalent Distance (in feet)					
				Autos: 57.271 Medium Trucks: 57.117 Heavy Trucks: 57.132					
FHWA Noise Model Calculations									
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten		
Autos:	68.46	0.33	-0.99	-1.20	-4.70	0.000	0.000		
Medium Trucks:	79.45	-11.87	-0.97	-1.20	-4.88	0.000	0.000		
Heavy Trucks:	84.25	-7.78	-0.97	-1.20	-5.31	0.000	0.000		
Unmitigated Noise Levels (without Topo and barrier attenuation)									
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL			
Autos:	66.6	66.4	63.2	61.1	68.7	69.0			
Medium Trucks:	65.4	65.6	59.9	58.9	66.9	67.1			
Heavy Trucks:	74.3	73.4	70.5	71.2	77.9	78.1			
Vehicle Noise:	75.4	74.8	71.5	71.8	78.7	78.9			
Centerline Distance to Noise Contour (in feet)									
			70 dBA	65 dBA	60 dBA	55 dBA			
Ldn:			243	523	1,127	2,429			
CNEL:			251	541	1,166	2,513			

Friday, February 17, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)									
Scenario: HY+P Road Name: Ramon Rd. Road Segment: w/o Varner Rd.					Project Name: Majestic Thousand Palms Job Number: 14174				
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS					
Highway Data				Site Conditions (Hard = 10, Soft = 15)					
Average Daily Traffic (Adt): 31,040 vehicles Peak Hour Percentage: 6.45% Peak Hour Volume: 2,002 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 58 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15					
Site Data				Vehicle Mix					
				VehicleType	Day	Evening	Night	Daily	
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 64.0 feet Centerline Dist. to Observer: 64.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 74.6% 8.9% 16.5% 82.31% Medium Trucks: 81.6% 5.4% 12.9% 4.96% Heavy Trucks: 63.6% 8.0% 28.4% 12.73%					
				Noise Source Elevations (in feet)					
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0					
				Lane Equivalent Distance (in feet)					
				Autos: 57.271 Medium Trucks: 57.117 Heavy Trucks: 57.132					
FHWA Noise Model Calculations									
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten		
Autos:	68.46	0.33	-0.99	-1.20	-4.70	0.000	0.000		
Medium Trucks:	79.45	-11.87	-0.97	-1.20	-4.88	0.000	0.000		
Heavy Trucks:	84.25	-7.78	-0.97	-1.20	-5.31	0.000	0.000		
Unmitigated Noise Levels (without Topo and barrier attenuation)									
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL			
Autos:	66.6	66.4	63.2	61.2	68.7	69.0			
Medium Trucks:	65.4	65.6	59.9	58.9	66.9	67.1			
Heavy Trucks:	74.3	73.5	70.5	71.2	77.9	78.1			
Vehicle Noise:	75.4	74.8	71.5	71.8	78.7	78.9			
Centerline Distance to Noise Contour (in feet)									
			70 dBA	65 dBA	60 dBA	55 dBA			
Ldn:			243	524	1,128	2,431			
CNEL:			251	542	1,167	2,515			

Friday, February 17, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)									
Scenario: E Road Name: Ramon Rd. Road Segment: e/o Varner Rd.					Project Name: Majestic Thousand Palms Job Number: 14174				
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS					
Highway Data				Site Conditions (Hard = 10, Soft = 15)					
Average Daily Traffic (Adt): 15,856 vehicles Peak Hour Percentage: 6.45% Peak Hour Volume: 1,023 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 58 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15					
Site Data				Vehicle Mix					
				VehicleType	Day	Evening	Night	Daily	
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 64.0 feet Centerline Dist. to Observer: 64.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 74.6% 8.9% 16.5% 82.31% Medium Trucks: 81.6% 5.4% 12.9% 4.97% Heavy Trucks: 63.6% 8.0% 28.4% 12.73%					
				Noise Source Elevations (in feet)					
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0					
				Lane Equivalent Distance (in feet)					
				Autos: 57.271 Medium Trucks: 57.117 Heavy Trucks: 57.132					
FHWA Noise Model Calculations									
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten		
Autos:	68.46	-2.59	-0.99	-1.20	-4.70	0.000	0.000		
Medium Trucks:	79.45	-14.78	-0.97	-1.20	-4.88	0.000	0.000		
Heavy Trucks:	84.25	-10.69	-0.97	-1.20	-5.31	0.000	0.000		
Unmitigated Noise Levels (without Topo and barrier attenuation)									
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL			
Autos:	63.7	63.5	60.3	58.2	65.7	66.1			
Medium Trucks:	62.5	62.7	57.0	56.0	64.0	64.2			
Heavy Trucks:	71.4	70.5	67.6	68.3	75.0	75.2			
Vehicle Noise:	72.5	71.9	68.6	68.9	75.8	76.0			
Centerline Distance to Noise Contour (in feet)									
			70 dBA	65 dBA	60 dBA	55 dBA			
Ldn:			155	335	721	1,554			
CNEL:			161	346	746	1,607			

Friday, February 17, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)									
Scenario: E+P Road Name: Ramon Rd. Road Segment: e/o Varner Rd.					Project Name: Majestic Thousand Palms Job Number: 14174				
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS					
Highway Data				Site Conditions (Hard = 10, Soft = 15)					
Average Daily Traffic (Adt): 16,096 vehicles Peak Hour Percentage: 6.45% Peak Hour Volume: 1,038 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 58 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15					
Site Data				Vehicle Mix					
				VehicleType	Day	Evening	Night	Daily	
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 64.0 feet Centerline Dist. to Observer: 64.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 74.6% 8.9% 16.5% 82.50% Medium Trucks: 81.6% 5.4% 12.9% 4.90% Heavy Trucks: 63.6% 8.0% 28.4% 12.60%					
				Noise Source Elevations (in feet)					
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0					
				Lane Equivalent Distance (in feet)					
				Autos: 57.271 Medium Trucks: 57.117 Heavy Trucks: 57.132					
FHWA Noise Model Calculations									
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten		
Autos:	68.46	-2.51	-0.99	-1.20	-4.70	0.000	0.000		
Medium Trucks:	79.45	-14.77	-0.97	-1.20	-4.88	0.000	0.000		
Heavy Trucks:	84.25	-10.67	-0.97	-1.20	-5.31	0.000	0.000		
Unmitigated Noise Levels (without Topo and barrier attenuation)									
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL			
Autos:	63.8	63.6	60.4	58.3	65.8	66.1			
Medium Trucks:	62.5	62.7	57.0	56.0	64.0	64.2			
Heavy Trucks:	71.4	70.6	67.6	68.3	75.0	75.2			
Vehicle Noise:	72.6	71.9	68.6	68.9	75.8	76.0			
Centerline Distance to Noise Contour (in feet)									
			70 dBA	65 dBA	60 dBA	55 dBA			
Ldn:			156	336	724	1,560			
CNEL:			161	348	749	1,614			

Friday, February 17, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: EAC Road Name: Ramon Rd. Road Segment: elo Varner Rd.				Project Name: Majestic Thousand Palms Job Number: 14174			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 16,170 vehicles Peak Hour Percentage: 6.45% Peak Hour Volume: 1,043 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 58 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 64.0 feet Centerline Dist. to Observer: 64.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 74.6% 8.9% 16.5% 82.31% Medium Trucks: 81.6% 5.4% 12.9% 4.97% Heavy Trucks: 63.6% 8.0% 28.4% 12.73%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 57.271 Medium Trucks: 57.117 Heavy Trucks: 57.132			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.50	-0.99	-1.20	-4.70	0.000	0.000
Medium Trucks:	79.45	-14.70	-0.97	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-10.61	-0.97	-1.20	-5.31	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.8	63.6	60.4	58.3	65.8	66.2	
Medium Trucks:	62.6	62.8	57.1	56.1	64.0	64.3	
Heavy Trucks:	71.5	70.6	67.6	68.4	75.1	75.3	
Vehicle Noise:	72.6	72.0	68.7	69.0	75.9	76.1	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			157	339	731	1,574	
CNEL:			163	351	756	1,628	

Friday, February 17, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: EAC+P Road Name: Ramon Rd. Road Segment: elo Varner Rd.				Project Name: Majestic Thousand Palms Job Number: 14174			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 16,410 vehicles Peak Hour Percentage: 6.45% Peak Hour Volume: 1,058 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 58 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 64.0 feet Centerline Dist. to Observer: 64.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 74.6% 8.9% 16.5% 82.50% Medium Trucks: 81.6% 5.4% 12.9% 4.90% Heavy Trucks: 63.6% 8.0% 28.4% 12.60%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 57.271 Medium Trucks: 57.117 Heavy Trucks: 57.132			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.43	-0.99	-1.20	-4.70	0.000	0.000
Medium Trucks:	79.45	-14.69	-0.97	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-10.59	-0.97	-1.20	-5.31	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.8	63.7	60.5	58.4	65.9	66.2	
Medium Trucks:	62.6	62.8	57.1	56.1	64.0	64.3	
Heavy Trucks:	71.5	70.6	67.7	68.4	75.1	75.3	
Vehicle Noise:	72.6	72.0	68.7	69.0	75.9	76.1	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			158	340	734	1,580	
CNEL:			163	352	759	1,635	

Friday, February 17, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: HY Road Name: Ramon Rd. Road Segment: elo Varner Rd.				Project Name: Majestic Thousand Palms Job Number: 14174			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 27,524 vehicles Peak Hour Percentage: 6.45% Peak Hour Volume: 1,775 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 58 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 64.0 feet Centerline Dist. to Observer: 64.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 74.6% 8.9% 16.5% 82.31% Medium Trucks: 81.6% 5.4% 12.9% 4.97% Heavy Trucks: 63.6% 8.0% 28.4% 12.73%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 57.271 Medium Trucks: 57.117 Heavy Trucks: 57.132			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.19	-0.99	-1.20	-4.70	0.000	0.000
Medium Trucks:	79.45	-12.39	-0.97	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-8.30	-0.97	-1.20	-5.31	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.1	65.9	62.7	60.6	68.1	68.5	
Medium Trucks:	64.9	65.1	59.4	58.4	66.3	66.6	
Heavy Trucks:	73.8	72.9	70.0	70.7	77.4	77.6	
Vehicle Noise:	74.9	74.3	71.0	71.3	78.2	78.4	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			224	484	1,042	2,244	
CNEL:			232	500	1,078	2,321	

Friday, February 17, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: HY+P Road Name: Ramon Rd. Road Segment: elo Varner Rd.				Project Name: Majestic Thousand Palms Job Number: 14174			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 27,764 vehicles Peak Hour Percentage: 6.45% Peak Hour Volume: 1,791 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 58 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 64.0 feet Centerline Dist. to Observer: 64.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 74.6% 8.9% 16.5% 82.42% Medium Trucks: 81.6% 5.4% 12.9% 4.93% Heavy Trucks: 63.6% 8.0% 28.4% 12.66%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 57.271 Medium Trucks: 57.117 Heavy Trucks: 57.132			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.15	-0.99	-1.20	-4.70	0.000	0.000
Medium Trucks:	79.45	-12.38	-0.97	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-8.28	-0.97	-1.20	-5.31	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.1	66.0	62.7	60.7	68.2	68.5	
Medium Trucks:	64.9	65.1	59.4	58.4	66.4	66.6	
Heavy Trucks:	73.8	72.9	70.0	70.7	77.4	77.6	
Vehicle Noise:	74.9	74.3	71.0	71.3	78.2	78.4	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			225	485	1,044	2,249	
CNEL:			233	501	1,080	2,327	

Friday, February 17, 2023

APPENDIX 9.1:
CADNAA OPERATIONAL NOISE MODEL INPUTS

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14174 - Majestic Thousand Palms

CadnaA Noise Prediction Model: 14174-02.cna

Date: 08.03.23

Analyst: B. Lawson

Calculation Configuration

Configuration	
Parameter	Value
General	
Max. Error (dB)	0.00
Max. Search Radius #(Unit,LEN)	2000.01
Min. Dist Src to Rcvr	0.00
Partition	
Raster Factor	0.50
Max. Length of Section #(Unit,LEN)	999.99
Min. Length of Section #(Unit,LEN)	1.01
Min. Length of Section (%)	0.00
Proj. Line Sources	On
Proj. Area Sources	On
Ref. Time	
Reference Time Day (min)	960.00
Reference Time Night (min)	480.00
Daytime Penalty (dB)	0.00
Recr. Time Penalty (dB)	5.00
Night-time Penalty (dB)	10.00
DTM	
Standard Height (m)	0.00
Model of Terrain	Triangulation
Reflection	
max. Order of Reflection	2
Search Radius Src	100.00
Search Radius Rcvr	100.00
Max. Distance Source - Rcvr	1000.00 1000.00
Min. Distance Rcvr - Reflector	1.00 1.00
Min. Distance Source - Reflector	0.10
Industrial (ISO 9613)	
Lateral Diffraction	some Obj
Obst. within Area Src do not shield	On
Screening	Incl. Ground Att. over Barrier
	Dz with limit (20/25)
Barrier Coefficients C1,2,3	3.0 20.0 0.0
Temperature #(Unit,TEMP)	10
rel. Humidity (%)	70
Ground Absorption G	0.50
Wind Speed for Dir. #(Unit,SPEED)	3.0
Roads (TNM)	
Railways (FTA/FRA)	
Aircraft (???)	
Strictly acc. to AzB	

Receiver Noise Levels

Name	M.	ID	Level Lr			Limit. Value			Land Use			Height	Coordinates			
			Day	Night	CNEL	Day	Night	CNEL	Type	Auto	Noise Type		X	Y	Z	
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)				(ft)	(ft)	(ft)	(ft)	
RECEIVERS		R1	41.6	41.6	48.3	55.0	45.0	0.0				5.00	a	6518392.39	2246021.64	5.00
RECEIVERS		R2	38.4	38.4	45.0	55.0	45.0	0.0				5.00	a	6518060.63	2244659.24	5.00
RECEIVERS		R3	40.3	40.2	46.9	55.0	45.0	0.0				5.00	a	6517119.34	2244652.66	5.00
RECEIVERS		R4	40.8	40.8	47.5	55.0	45.0	0.0				5.00	a	6516385.33	2244576.76	5.00

Point Source(s)

Name	M.	ID	Result. PWL			Lw / Li		Operating Time			Height	Coordinates			
			Day	Evening	Night	Type	Value	norm.	Day	Special		Night	X	Y	Z
			(dBA)	(dBA)	(dBA)		dB(A)	(min)	(min)	(min)	(ft)	(ft)	(ft)	(ft)	
POINTSOURCE		AC01	88.9	88.9	88.9	Lw	88.9	585.00	0.00	252.00	5.00	g	6516446.21	2246468.15	50.00
POINTSOURCE		AC02	88.9	88.9	88.9	Lw	88.9	585.00	0.00	252.00	5.00	g	6516456.62	2247076.42	50.00
POINTSOURCE		AC03	88.9	88.9	88.9	Lw	88.9	585.00	0.00	252.00	5.00	g	6514640.26	2246458.67	50.00
POINTSOURCE		AC04	88.9	88.9	88.9	Lw	88.9	585.00	0.00	252.00	5.00	g	6514645.80	2247086.56	50.00
POINTSOURCE		PUMP01	73.9	73.9	73.9	Lw	73.9				8.00	a	6514771.19	2246253.99	8.00
POINTSOURCE		TRASH01	89.0	89.0	89.0	Lw	89	900.00	0.00	270.00	5.00	a	6514752.75	2247294.94	5.00
POINTSOURCE		TRASH02	89.0	89.0	89.0	Lw	89	900.00	0.00	270.00	5.00	a	6516357.05	2247294.94	5.00
POINTSOURCE		TRASH03	89.0	89.0	89.0	Lw	89	900.00	0.00	270.00	5.00	a	6514742.61	2246277.04	5.00
POINTSOURCE		TRASH04	89.0	89.0	89.0	Lw	89	900.00	0.00	270.00	5.00	a	6516352.44	2246243.85	5.00

Line Source(s)

Name	M.	ID	Result. PWL			Result. PWL'			Lw / Li			Operating Time			Moving Pt. Src			Height	
			Day	Evening	Night	Day	Evening	Night	Type	Value	norm.	Day	Special	Night	Number		Speed	(ft)	a
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)				(min)	(min)	(min)	Day	Evening	Night		
LINESOURCE		TRUCK01	93.2	93.2	93.2	72.8	72.8	72.8	Lw	93.2								8	a
LINESOURCE		TRUCK02	93.2	93.2	93.2	72.8	72.8	72.8	Lw	93.2								8	a
LINESOURCE		TRUCK03	93.2	93.2	93.2	73.0	73.0	73.0	Lw	93.2								8	a
LINESOURCE		TRUCK04	93.2	93.2	93.2	67.7	67.7	67.7	Lw	93.2								8	a
LINESOURCE		TRUCK05	93.2	93.2	93.2	82.9	82.9	82.9	Lw	93.2								8	a
LINESOURCE		TRUCK06	93.2	93.2	93.2	73.8	73.8	73.8	Lw	93.2								8	a

Name	ID	Height		Coordinates			
		Begin	End	x	y	z	Ground
		(ft)	(ft)	(ft)	(ft)	(ft)	(ft)
LINESOURCE	TRUCK01	8.00	a	6514733.08	2247224.88	8.00	0.00
				6514372.97	2247220.25	8.00	0.00
LINESOURCE	TRUCK02	8.00	a	6514729.46	2246321.35	8.00	0.00
				6514368.28	2246316.73	8.00	0.00
LINESOURCE	TRUCK03	8.00	a	6516371.94	2247222.09	8.00	0.00
				6516714.72	2247220.25	8.00	0.00
LINESOURCE	TRUCK04	8.00	a	6516666.83	2247220.51	8.00	0.00
				6516677.91	2246414.42	8.00	0.00
				6516652.09	2246322.22	8.00	0.00
				6516662.23	2246049.01	8.00	0.00
LINESOURCE	TRUCK05	8.00	a	6516712.99	2246427.33	8.00	0.00
				6516677.78	2246423.58	8.00	0.00
LINESOURCE	TRUCK06	8.00	a	6516367.84	2246316.63	8.00	0.00
				6516652.46	2246312.16	8.00	0.00

Area Source(s)

Name	M.	ID	Result. PWL			Result. PWL''			Lw / Li			Operating Time			Height	
			Day	Evening	Night	Day	Evening	Night	Type	Value	norm.	Day	Special	Night	(ft)	a
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)				(min)	(min)	(min)		
AREASOURCE		CAR01	81.1	81.1	81.1	52.7	52.7	Lw	81.1						5	a
AREASOURCE		CAR02	81.1	81.1	81.1	54.3	54.3	Lw	81.1						5	a
AREASOURCE		CAR03	81.1	81.1	81.1	40.0	40.0	Lw	81.1						5	a
AREASOURCE		CAR04	81.1	81.1	81.1	54.7	54.7	Lw	81.1						5	a
AREASOURCE		CAR05	81.1	81.1	81.1	54.8	54.8	Lw	81.1						5	a
AREASOURCE		CAR06	81.1	81.1	81.1	53.0	53.0	Lw	81.1						5	a
AREASOURCE		CAR07	81.1	81.1	81.1	54.8	54.8	Lw	81.1						5	a
AREASOURCE		CAR08	81.1	81.1	81.1	42.3	42.3	Lw	81.1						5	a
AREASOURCE		DOCK01	111.5	111.5	111.5	66.8	66.8	Lw	111.5						8	a
AREASOURCE		DOCK02	111.5	111.5	111.5	66.9	66.9	Lw	111.5						8	a
AREASOURCE		ELECT01	87.3	87.3	87.3	48.4	48.4	Lw	87.3						8	a
AREASOURCE		TRAILER01	103.4	103.4	103.4	60.3	60.3	Lw	103.4						8	a

Name	ID	Height		Coordinates			
		Begin	End	x	y	z	Ground
		(ft)	(ft)	(ft)	(ft)	(ft)	(ft)
AREASOURCE	CAR01	5.00	a	6514528.70	2247303.23	5.00	0.00
				6514722.32	2247300.47	5.00	0.00
				6514720.48	2247262.67	5.00	0.00
				6514528.70	2247264.51	5.00	0.00
AREASOURCE	CAR02	5.00	a	6514593.24	2247181.53	5.00	0.00
				6514723.24	2247183.37	5.00	0.00
				6514723.24	2247151.10	5.00	0.00
				6514701.12	2247141.88	5.00	0.00
				6514595.09	2247140.96	5.00	0.00
AREASOURCE	CAR03	5.00	a	6514399.62	2247121.60	5.00	0.00
				6514557.28	2247123.44	5.00	0.00
				6514553.60	2247098.55	5.00	0.00
				6514599.70	2247098.55	5.00	0.00
				6514597.85	2246423.64	5.00	0.00
				6514396.85	2246419.95	5.00	0.00
AREASOURCE	CAR04	5.00	a	6514590.48	2246399.66	5.00	0.00
				6514700.19	2246399.66	5.00	0.00
				6514699.27	2246388.60	5.00	0.00
				6514716.79	2246390.44	5.00	0.00
				6514717.71	2246360.94	5.00	0.00
				6514591.40	2246361.86	5.00	0.00
AREASOURCE	CAR05	5.00	a	6516384.71	2246386.76	5.00	0.00
				6516428.96	2246398.74	5.00	0.00
				6516510.10	2246397.82	5.00	0.00
				6516512.87	2246359.10	5.00	0.00
				6516383.78	2246360.94	5.00	0.00
AREASOURCE	CAR06	5.00	a	6516386.55	2247298.62	5.00	0.00
				6516579.25	2247297.70	5.00	0.00
				6516579.25	2247260.82	5.00	0.00
				6516388.39	2247263.59	5.00	0.00
AREASOURCE	CAR07	5.00	a	6516384.71	2247176.92	5.00	0.00

Name	ID	Height		Coordinates			
		Begin	End	x	y	z	Ground
		(ft)	(ft)	(ft)	(ft)	(ft)	(ft)
				6516514.71	2247177.84	5.00	0.00
				6516511.94	2247140.04	5.00	0.00
				6516408.68	2247139.12	5.00	0.00
				6516402.23	2247152.02	5.00	0.00
				6516385.63	2247151.10	5.00	0.00
AREASOURCE	CAR08	5.00	a	6516504.57	2247085.64	5.00	0.00
				6516632.73	2247083.80	5.00	0.00
				6516629.96	2246466.97	5.00	0.00
				6516522.09	2246463.28	5.00	0.00
				6516519.32	2246435.62	5.00	0.00
				6516499.04	2246436.55	5.00	0.00
AREASOURCE	DOCK01	8.00	a	6514735.23	2247111.46	8.00	0.00
				6514731.54	2247306.00	8.00	0.00
				6516372.72	2247305.08	8.00	0.00
				6516370.87	2247109.67	8.00	0.00
AREASOURCE	DOCK02	8.00	a	6514731.54	2246429.05	8.00	0.00
				6516366.27	2246427.45	8.00	0.00
				6516369.03	2246232.78	8.00	0.00
				6514870.77	2246236.47	8.00	0.00
				6514871.69	2246284.41	8.00	0.00
				6514728.78	2246286.26	8.00	0.00
AREASOURCE	ELECT01	8.00	a	6516749.82	2246377.54	8.00	0.00
				6517036.57	2246376.61	8.00	0.00
				6517036.57	2246086.18	8.00	0.00
				6516747.06	2246088.03	8.00	0.00
AREASOURCE	TRAILER01	8.00	a	6516714.79	2247248.84	8.00	0.00
				6516975.72	2247248.84	8.00	0.00
				6516972.95	2246405.20	8.00	0.00
				6516712.94	2246406.12	8.00	0.00

Barrier(s)

Name	Sel.	M.	ID	Absorption		Z-Ext.	Cantilever		Height		Coordinates			
				left	right		horz.	vert.	Begin	End	x	y	z	Ground
							(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)
BARRIERPLANNED			0						12.00	a	6516374.21	2247250.66	12.00	0.00
											6516374.74	2247307.08	12.00	0.00
											6514729.50	2247308.00	12.00	0.00
											6514730.54	2247253.46	12.00	0.00
BARRIERPLANNED			0						12.00	a	6514726.92	2246289.50	12.00	0.00
											6514726.74	2246284.28	12.00	0.00
											6514726.92	2246225.50	12.00	0.00
											6514781.08	2246225.37	12.00	0.00
											6514805.32	2246201.26	12.00	0.00
											6514870.98	2246201.26	12.00	0.00
											6514870.84	2246234.47	12.00	0.00
											6516371.06	2246230.78	12.00	0.00
											6516370.31	2246283.48	12.00	0.00
BARRIERPLANNED			0						12.00	a	6514731.51	2246427.33	12.00	0.00
											6514730.13	2246356.34	12.00	0.00
BARRIERPLANNED			0						12.00	a	6514733.78	2247188.04	12.00	0.00
											6514735.23	2247111.46	12.00	0.00
BARRIERPLANNED			0						12.00	a	6516371.62	2247188.88	12.00	0.00
											6516370.87	2247109.67	12.00	0.00
BARRIERPLANNED			0						12.00	a	6516367.38	2246348.98	12.00	0.00
											6516366.27	2246427.45	12.00	0.00

Building(s)

Name	Sel.	M.	ID	RB	Residents	Absorption	Height	Coordinates				
								Begin	x	y	z	Ground
								(ft)	(ft)	(ft)	(ft)	(ft)
BUILDING			BUILDING00001	x	0	45.00	a	6514613.53	2247110.53	45.00	0.00	
								6516491.66	2247109.61	45.00	0.00	
								6516494.43	2246427.33	45.00	0.00	
								6514610.76	2246429.17	45.00	0.00	

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APPENDIX 10.1:
PROJECT CONSTRUCTION NOISE MODEL INPUTS

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14174 - Majestic Thousand Palms

CadnaA Noise Prediction Model: 14174-02_Construction.cna

Date: 20.02.23

Analyst: B. Lawson

Calculation Configuration

Configuration	
Parameter	Value
General	
Max. Error (dB)	0.00
Max. Search Radius #(Unit,LEN)	2000.01
Min. Dist Src to Rcvr	0.00
Partition	
Raster Factor	0.50
Max. Length of Section #(Unit,LEN)	999.99
Min. Length of Section #(Unit,LEN)	1.01
Min. Length of Section (%)	0.00
Proj. Line Sources	On
Proj. Area Sources	On
Ref. Time	
Reference Time Day (min)	960.00
Reference Time Night (min)	480.00
Daytime Penalty (dB)	0.00
Recr. Time Penalty (dB)	5.00
Night-time Penalty (dB)	10.00
DTM	
Standard Height (m)	0.00
Model of Terrain	Triangulation
Reflection	
max. Order of Reflection	2
Search Radius Src	100.00
Search Radius Rcvr	100.00
Max. Distance Source - Rcvr	1000.00 1000.00
Min. Distance Rcvr - Reflector	1.00 1.00
Min. Distance Source - Reflector	0.10
Industrial (ISO 9613)	
Lateral Diffraction	some Obj
Obst. within Area Src do not shield	On
Screening	Incl. Ground Att. over Barrier
	Dz with limit (20/25)
Barrier Coefficients C1,2,3	3.0 20.0 0.0
Temperature #(Unit,TEMP)	10
rel. Humidity (%)	70
Ground Absorption G	0.50
Wind Speed for Dir. #(Unit,SPEED)	3.0
Roads (TNM)	
Railways (FTA/FRA)	
Aircraft (???)	
Strictly acc. to AzB	

Receiver Noise Levels

Name	M.	ID	Level Lr			Limit. Value			Land Use			Height	Coordinates			
			Day	Night	CNEL	Day	Night	CNEL	Type	Auto	Noise Type		X	Y	Z	
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)				(ft)	(ft)	(ft)	(ft)	
RECEIVERS		R1	54.9	52.0	59.1	55.0	45.0	0.0				5.00	a	6518392.39	2246021.64	5.00
RECEIVERS		R2	52.9	49.8	56.9	55.0	45.0	0.0				5.00	a	6518060.63	2244659.24	5.00
RECEIVERS		R3	55.1	52.0	59.1	55.0	45.0	0.0				5.00	a	6517119.34	2244652.66	5.00
RECEIVERS		R4	55.4	51.8	59.0	55.0	45.0	0.0				5.00	a	6516385.33	2244576.76	5.00

Point Source(s)

Name	M.	ID	Result. PWL			Lw / Li		Operating Time			Height	Coordinates			
			Day	Evening	Night	Type	Value	norm.	Day	Special		Night	X	Y	Z
			(dBA)	(dBA)	(dBA)			(min)	(min)	(min)	(ft)		(ft)	(ft)	(ft)
		CONSTRUCITON01	115.0	115.0	115.0	Lw	115				8.00	a	6517004.64	2246272.15	8.00
		CONSTRUCITON02	115.0	115.0	115.0	Lw	115				8.00	a	6516441.85	2246107.30	8.00

Area Source(s)

Name	M.	ID	Result. PWL			Result. PWL"			Lw / Li		Operating Time			Height	
			Day	Evening	Night	Day	Evening	Night	Type	Value	norm.	Day	Special		Night
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)			(min)	(min)	(min)	(ft)	
SITEBOUNDARY		CONSTRUCTION	122.0	15.0	15.0	66.9	-40.1	-40.1	PWL-Pt	115				8	a

Name	ID	Height		Coordinates			
		Begin	End	x	y	z	Ground
		(ft)	(ft)	(ft)	(ft)	(ft)	(ft)
SITEBOUNDARY	CONSTRUCTION	8.00	a	6514373.62	2247345.35	8.00	0.00

Name	ID	Height		Coordinates			
		Begin	End	x	y	z	Ground
		(ft)	(ft)	(ft)	(ft)	(ft)	(ft)
				6517064.60	2247343.71	8.00	0.00
				6517063.29	2246066.87	8.00	0.00
				6517039.26	2246048.67	8.00	0.00
				6514383.24	2246051.03	8.00	0.00
				6514366.97	2246064.83	8.00	0.00

APPENDIX 10.2:
NIGHTTIME CONCRETE POUR NOISE MODEL INPUTS

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14174 - Majestic Thousand Palms

CadnaA Noise Prediction Model: 14174-02_Concrete.cna

Date: 20.02.23

Analyst: B. Lawson

Calculation Configuration

Configuration	
Parameter	Value
General	
Max. Error (dB)	0.00
Max. Search Radius #(Unit,LEN)	2000.01
Min. Dist Src to Rcvr	0.00
Partition	
Raster Factor	0.50
Max. Length of Section #(Unit,LEN)	999.99
Min. Length of Section #(Unit,LEN)	1.01
Min. Length of Section (%)	0.00
Proj. Line Sources	On
Proj. Area Sources	On
Ref. Time	
Reference Time Day (min)	960.00
Reference Time Night (min)	480.00
Daytime Penalty (dB)	0.00
Recr. Time Penalty (dB)	5.00
Night-time Penalty (dB)	10.00
DTM	
Standard Height (m)	0.00
Model of Terrain	Triangulation
Reflection	
max. Order of Reflection	2
Search Radius Src	100.00
Search Radius Rcvr	100.00
Max. Distance Source - Rcvr	1000.00 1000.00
Min. Distance Rcvr - Reflector	1.00 1.00
Min. Distance Source - Reflector	0.10
Industrial (ISO 9613)	
Lateral Diffraction	some Obj
Obst. within Area Src do not shield	On
Screening	Incl. Ground Att. over Barrier
	Dz with limit (20/25)
Barrier Coefficients C1,2,3	3.0 20.0 0.0
Temperature #(Unit,TEMP)	10
rel. Humidity (%)	70
Ground Absorption G	0.50
Wind Speed for Dir. #(Unit,SPEED)	3.0
Roads (TNM)	
Railways (FTA/FRA)	
Aircraft (???)	
Strictly acc. to AzB	

Receiver Noise Levels

Name	M.	ID	Level Lr			Limit. Value			Land Use			Height	Coordinates			
			Day	Night	CNEL	Day	Night	CNEL	Type	Auto	Noise Type		X	Y	Z	
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)				(ft)	(ft)	(ft)	(ft)	
RECEIVERS		R1	39.6	36.5	43.6	55.0	45.0	0.0				5.00	a	6518392.39	2246021.64	5.00
RECEIVERS		R2	37.5	34.1	41.3	55.0	45.0	0.0				5.00	a	6518060.63	2244659.24	5.00
RECEIVERS		R3	39.6	36.1	43.3	55.0	45.0	0.0				5.00	a	6517119.34	2244652.66	5.00
RECEIVERS		R4	40.0	36.1	43.4	55.0	45.0	0.0				5.00	a	6516385.33	2244576.76	5.00

Point Source(s)

Name	M.	ID	Result. PWL			Lw / Li			Operating Time			Height	Coordinates			
			Day	Evening	Night	Type	Value	norm.	Day	Special	Night		(ft)	X	Y	Z
			(dBA)	(dBA)	(dBA)				(min)	(min)	(min)	(ft)	(ft)	(ft)	(ft)	
		CONCRETE01	100.3	100.3	100.3	Lw	100.3					8.00	a	6516913.69	2246481.35	8.00
		CONCRETE02	100.3	100.3	100.3	Lw	100.3					8.00	a	6516328.16	2246299.44	8.00

Area Source(s)

Name	M.	ID	Result. PWL			Result. PWL"			Lw / Li			Operating Time			Height	
			Day	Evening	Night	Day	Evening	Night	Type	Value	norm.	Day	Special	Night		(ft)
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)				(min)	(min)	(min)	(ft)	
CONCRETE		CONCRETE	107.3	0.3	0.3	53.3	-53.7	-53.7	PWL-Pt	100.3					8	a

Name	ID	Height		Coordinates			
		Begin	End	x	y	z	Ground
		(ft)	(ft)	(ft)	(ft)	(ft)	(ft)
CONCRETE	CONCRETE	8.00	a	6514532.33	2247306.50	8.00	0.00

Name	ID	Height		Coordinates			
		Begin (ft)	End (ft)	x (ft)	y (ft)	z (ft)	Ground (ft)
				6516575.40	2247302.59	8.00	0.00
				6516577.36	2247249.86	8.00	0.00
				6516969.96	2247247.90	8.00	0.00
				6516968.00	2246406.06	8.00	0.00
				6516700.41	2246406.06	8.00	0.00
				6516692.60	2246382.62	8.00	0.00
				6516686.74	2246072.06	8.00	0.00
				6516706.27	2246050.57	8.00	0.00
				6516620.33	2246054.48	8.00	0.00
				6516624.24	2246075.97	8.00	0.00
				6516630.09	2246253.71	8.00	0.00
				6516585.17	2246286.91	8.00	0.00
				6516370.32	2246290.82	8.00	0.00
				6516368.36	2246232.22	8.00	0.00
				6514868.29	2246238.08	8.00	0.00
				6514868.29	2246204.88	8.00	0.00
				6514801.88	2246200.97	8.00	0.00
				6514782.34	2246226.36	8.00	0.00
				6514725.70	2246226.36	8.00	0.00
				6514721.79	2246290.82	8.00	0.00
				6514383.89	2246290.82	8.00	0.00
				6514366.31	2246275.20	8.00	0.00
				6514368.26	2247261.57	8.00	0.00
				6514524.52	2247257.67	8.00	0.00

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APPENDIX 5.1:
STUDY AREA PHOTOS

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APPENDIX 5.2:
NOISE LEVEL MEASUREMENT WORKSHEETS

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APPENDIX 7.1:
OFF-SITE TRAFFIC NOISE LEVEL CALCULATIONS

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APPENDIX 9.1:

CADNAA OPERATIONAL NOISE MODEL INPUTS

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APPENDIX 10.1:
PROJECT CONSTRUCTION NOISE MODEL INPUTS

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APPENDIX 10.2:

NIGHTTIME CONCRETE POUR NOISE MODEL INPUTS

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