

Barker Logistics

NOISE IMPACT ANALYSIS COUNTY OF RIVERSIDE

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12218-03 Noise Study



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LIST OF ABBREVIATED TERMS

(1)	Reference
ADT	Average Daily Traffic
ANSI	American National Standards Institute
Calveno	California Vehicle Noise
CEQA	California Environmental Quality Act
CNEL	Community Noise Equivalent Level
dBA	A-weighted decibels
EPA	Environmental Protection Agency
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
Hz	Hertz
I-215	Interstate 215
INCE	Institute of Noise Control Engineering
L _{eq}	Equivalent continuous (average) sound level
L _{max}	Maximum level measured over the time interval
L _{min}	Minimum level measured over the time interval
MARB/IPA	March Air Reserve Base / Inland Port Airport
mph	Miles per hour
OPR	Office of Planning and Research
PPV	Peak particle velocity
Project	Barker Logistics
REMEL	Reference Energy Mean Emission Level
RMS	Root-mean-square
VdB	Vibration Decibels



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EXECUTIVE SUMMARY

Urban Crossroads, Inc. has prepared this noise study to determine the potential noise impacts and the necessary noise mitigation measures, if any, for the proposed Barker Logistics development ("Project"). The Project site is located on the northeast corner of Patterson Avenue and Placentia Street, in unincorporated County of Riverside. The Project is proposed to consist of up to 699,630 square feet (sf) of high-cube fulfillment center use. The Project is anticipated to be constructed in a single phase by the year 2021. At the time this noise analysis was prepared, the future tenants of the proposed Project were unknown, and therefore, this noise study includes a conservative analysis of the proposed Project uses. This study has been prepared to satisfy applicable County of Riverside standards and thresholds of significance based on guidance provided by Appendix G of the California Environmental Quality Act (CEQA) Guidelines. (1)

OFF-SITE TRAFFIC NOISE ANALYSIS

Traffic generated by the operation of the Project will influence the traffic noise levels in surrounding off-site areas. To quantify the off-site traffic noise increases on the surrounding off-site areas, the changes in traffic noise levels on 10 study-area roadway segments were calculated based on the change in the average daily traffic (ADT) volumes. The traffic noise levels provided in this analysis are based on the traffic forecasts found in the *Barker Logistics Traffic Impact Analysis* prepared by Urban Crossroads, Inc. (2) To assess the off-site noise level impacts associated with the proposed Project, noise contour boundaries were developed for Existing (2018), Existing plus Ambient Growth (EA) (2021), and EA plus Cumulative (EAC) (2021) conditions under both Without and With the Placentia Street Interchange. The analysis shows that the unmitigated Project-related traffic noise level increases under all with Project traffic scenarios are considered *less than significant* impacts at land uses adjacent to the study area roadway segments.

OPERATIONAL NOISE ANALYSIS

Using reference noise levels to represent the expected noise sources from the Barker Logistics site, this analysis estimates the Project-related stationary-source noise levels at nearby sensitive receiver locations. The typical activities associated with the proposed Barker Logistics are anticipated to include idling trucks, delivery truck activities, backup alarms, as well as loading and unloading of dry goods, roof-top air conditioning units, and parking lot vehicle movements. The operational noise analysis shows that the Project-related stationary-source noise levels at all receiver locations will satisfy the County of Riverside 65 dBA L_{eq} daytime exterior noise level standards, and includes the barrier attenuation provided by the Project building and planned 14-foot high truck court screen walls, where applicable.

Further, this analysis demonstrates that the Project operational noise levels will not contribute a long-term operational noise level impact to the existing ambient noise environment at any of the sensitive receiver locations. Therefore, the operational noise level impacts associated with the proposed 24-hour seven days per week Project activities, such as the idling trucks, delivery truck



activities, backup alarms, as well as loading and unloading of dry goods, roof-top air conditioning units, and parking lot vehicle movements, are considered *less than significant* with mitigation.

OPERATIONAL VIBRATION ANALYSIS

The operation of the Project site will include heavy trucks moving on site to and from the loading dock areas. Truck vibration levels are dependent on vehicle characteristics, load, speed, and pavement conditions. According to the FTA *Transit Noise Impact and Vibration Assessment,* (3) (5) trucks rarely create vibration that exceeds 70 VdB or 0.003 in/sec RMS (6) (unless there are bumps due to frequent potholes in the road). Trucks transiting on site will be travelling at very low speeds so it is expected that delivery truck vibration impacts at nearby homes will satisfy the 0.01 in/sec RMS vibration threshold of the County of Riverside, and therefore, will be *less than significant*.

CONSTRUCTION NOISE ANALYSIS

Construction-related noise impacts are expected to create temporary and intermittent high-level noise conditions at receivers surrounding the Project site. Using sample reference noise levels to represent the planned construction activities of the Barker Logistics site, this analysis estimates the Project-related construction noise levels at nearby sensitive receiver locations. Since the County of Riverside General Plan and Municipal Codes do not identify specific construction noise level thresholds, a threshold is identified based on the National Institute for Occupational Safety and Health (NIOSH) limits for construction noise. The Project-related short-term construction noise levels are expected to range from 58.2 to 79.6 dBA L_{eq} and will satisfy the 85 dBA L_{eq} threshold identified by the National Institute for Occupational Safety and Health (NIOSH) at all receiver locations. Therefore, based on the results of this analysis, all nearby sensitive receiver locations will experience *less than significant* impacts due to Project construction noise levels.

CONSTRUCTION VIBRATION ANALYSIS

Construction activity can result in varying degrees of ground vibration, depending on the equipment and methods used, distance to the affected structures and soil type. It is expected that ground-borne vibration from Project construction activities would cause only intermittent, localized intrusion. This analysis shows the highest construction vibration levels are estimated at 0.001 in/sec RMS, which is below the vibration standard of 0.01 in/sec RMS at all receiver locations in the County of Riverside. Therefore, the Project-related vibration impacts are considered *less than significant* during the construction activities at the Project site.

At distances ranging from 50 to 145 feet from primary construction activities, construction vibration velocity levels are estimated 0.022 in/sec root-mean-square velocity (RMS), and will exceed County of Riverside RMS vibration threshold of 0.01 in/sec at receiver locations R2 and R3. As such, the Project-related vibration impacts will be *potentially significant* during the construction activities at the Project site. Therefore, a 90-foot buffer zone vibration mitigation measure is required which would restrict the use of large loaded trucks and dozers (greater than 80,000 pounds) within 90-feet of occupied sensitive receiver locations represented by R2 and R3.



With the mitigation measures identified in this report, and shown on Exhibit ES-B, the mitigated vibration levels with the 90-foot buffer zone will be reduced to 0.0093 in/sec RMS, and will satisfy the County of Riverside perceptible vibration threshold of 0.01 in/sec RMS. Therefore, impacts with the construction vibration mitigation measure identified in this study will be *less than significant*.

Further, the vibration levels due to Project construction do not represent vibration levels capable of causing building damage to nearby residential homes. The FTA identifies construction vibration levels capable of building damage ranging from 0.12 to 0.5 in/sec PPV. (5) The peak Project-construction vibration levels of 0.031 in/sec PPV will remain below the FTA vibration levels for building damage at the residential homes near the Project site. Further, the levels at the site of the closest sensitive receivers are unlikely to be sustained during the entire construction period but will occur rather only during the times that heavy construction equipment is operating adjacent to the Project site perimeter.

CONSTRUCTION VIBRATION MITIGATION

To reduce the construction vibration impacts to *less than significant* levels, the following vibration mitigation measure is required for Project-related construction activities:

 Large loaded trucks and dozers (greater than 80,000 pounds) shall not be used within 90 feet of occupied noise-sensitive residential homes, as shown on Exhibit ES-A, represented by receiver locations R2 and R3, during Project construction activities. Instead, small rubber-tired or alternative equipment shall be used within this area during Project construction to reduce vibration effects.

SUMMARY CEQA SIGNIFICANCE FINDINGS

The results of this Barker Logistics Noise Impact 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. (8). Table ES-1 shows the findings of significance for each potential noise and/or vibration impact before and after any required mitigation measures.

Anghuin	Report	Significance Findings			
Analysis	Section	Unmitigated	Mitigated		
Off-Site Traffic Noise	7	Less Than Significant	-		
Operational Noise	0	Less Than Significant	-		
Operational Vibration	9	Less Than Significant	-		
Construction Noise	10	Less Than Significant	-		
Construction Vibration	10	Potentially Significant	Less Than Significant		

TABLE ES-1: SUMMARY OF CEQA SIGNIFICANCE FINDINGS



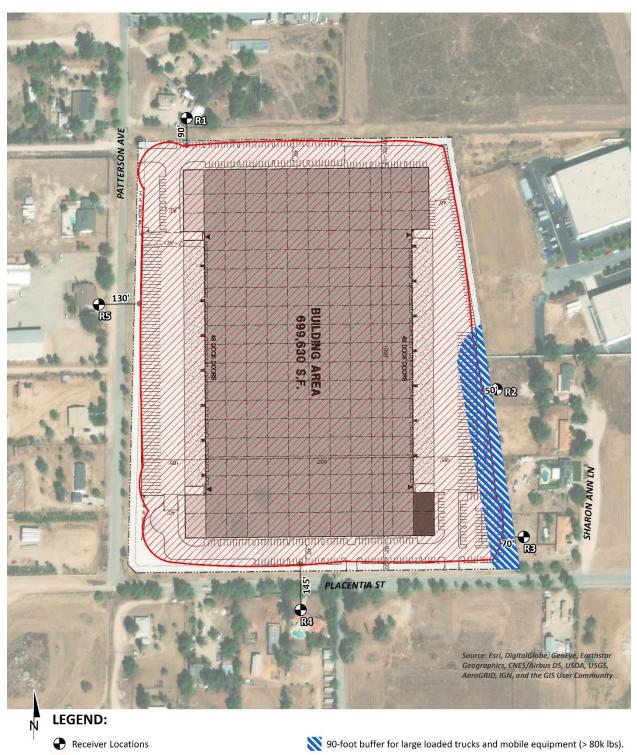


EXHIBIT ES-A: CONSTRUCTION VIBRATION MITIGATION

- Construction Activity
- Distance from receiver to construction activity (in feet)

1 INTRODUCTION

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

1.1 SITE LOCATION

The proposed Barker Logistics site is located on the northeast corner of Patterson Avenue and Placentia Street, in unincorporated County of Riverside, as shown on Exhibit 1-A.

The Project site is currently vacant. Existing land uses near the site include noise-sensitive residential homes located north, south, east, and west of the Project site. Existing and future-designated Business Park use is located east of the Project site. Interstate 215 (I-215) is located approximately 1,600 feet east of the Project site; Burlington National Santa Fe (BNSF) railroad lines are located roughly 1,500 feet east of the Project site; and the March Air Reserve Base/Inland Port Airport (MARB/IPA) is located roughly 2.5 miles northeast of the Project site.

1.2 PROJECT DESCRIPTION

The Project is proposed to consist of up to 699,630 square feet (sf) of high-cube fulfillment center use, as shown on Exhibit 1-B. The Project is anticipated to be constructed in a single phase by the year 2021

At the time this noise analysis was prepared, the future tenants of the proposed Project were unknown. The on-site Project-related noise sources are expected to include: idling trucks, delivery truck activities, backup alarms, as well as loading and unloading of dry goods, roof-top air conditioning units, and parking lot vehicle movements. This noise analysis is intended to describe noise level impacts associated with the expected typical operational activities at the Project site.

Per the *Barker Logistics Traffic Impact Analysis* prepared by Urban Crossroads, Inc. the Project is expected to generate a total of approximately 1,548 trip-ends per day (actual vehicles) and includes 276 truck trip-ends per day. (2) This noise study relies on the actual Project trips (as opposed to the passenger car equivalents) to accurately account for the effect of individual truck trips on the study area roadway network.

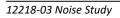


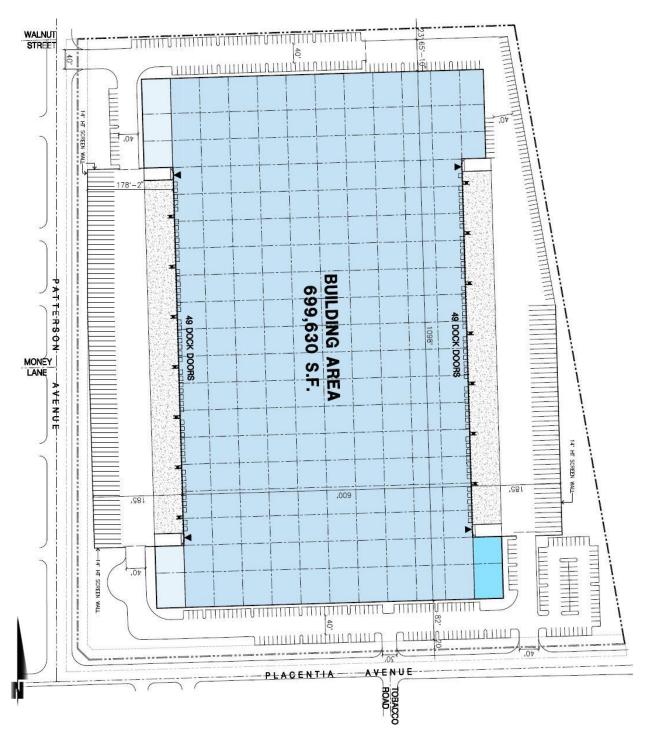




EXHIBIT 1-A: LOCATION MAP



EXHIBIT 1-B: SITE PLAN





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2 FUNDAMENTALS

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

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

EXHIBIT 2-A: TYPICAL NOISE LEVELS

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

2.1 RANGE OF NOISE

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



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

2.2 NOISE DESCRIPTORS

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

Peak hour or average noise levels, while useful, do not completely describe a given noise environment. Noise levels lower than peak hour may be disturbing if they occur during times when quiet is most desirable, namely evening and nighttime (sleeping) hours. To account for this, the Community Noise Equivalent Level (CNEL), representing a composite 24-hour noise level is utilized. The CNEL is the weighted average of the intensity of a sound, with corrections for time of day, and averaged over 24 hours. The time of day corrections require the addition of 5 decibels to dBA L_{eq} sound levels in the evening from 7:00 p.m. to 10:00 p.m., and the additions are made to account for the noise sensitive time periods during the evening and night hours when sound appears louder. CNEL does not represent the actual sound level heard at any time, but rather represents the total sound exposure. The 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. (4)

2.3.2 GROUND ABSORPTION

The propagation path of noise from a highway to a receiveris 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 receiverreceiver such as soft dirt, grass, or scattered bushes and trees), an excess ground attenuation value of 1.5 dB per doubling of distance is normally assumed. When added to the cylindrical spreading, the excess ground attenuation results in an overall drop-off rate of 4.5 dB per doubling of distance from a line source. (6)

2.3.3 Atmospheric Effects

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

2.3.4 SHIELDING

A large object or barrier in the path between a noise source and a 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 FHWA does not consider the planting of vegetation to be a noise abatement measure. (6)

2.4 NOISE CONTROL

Noise control is the process of obtaining an acceptable noise environment for an observation point or receiverby controlling the noise source, transmission path, receiver, or all three. This concept is known as the source-path-receiverreceiver 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 up to 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 be high enough and long enough to block the path of the noise source. (6)



2.6 LAND USE COMPATIBILITY WITH NOISE

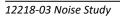
Some land uses are more tolerant of noise than others. For example, schools, hospitals, churches, and residences are more sensitive to noise intrusion than are commercial or industrial developments and related activities. As ambient noise levels affect the perceived amenity or livability of a development,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

2.7 COMMUNITY RESPONSE TO NOISE

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

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

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





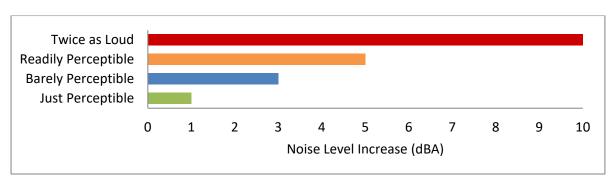


EXHIBIT 2-B: NOISE LEVEL INCREASE PERCEPTION

2.8 EXPOSURE TO HIGH NOISE LEVELS

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

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

2.9 VIBRATION

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



There are several different methods that are used to quantify vibration. The peak particle velocity (PPV) is defined as the maximum instantaneous peak of the vibration signal. The PPV is most frequently used to describe vibration impacts to buildings, but is not always suitable for evaluating human response (annoyance) because it takes some time for the human body to respond to vibration signals. Instead, the human body responds to average vibration amplitude often described as the root mean square (RMS). The RMS amplitude is defined as the average of the squared amplitude of the signal, and is most frequently used to describe the effect of vibration on the human body. Decibel notation (VdB) is commonly used to measure RMS. Decibel notation (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.



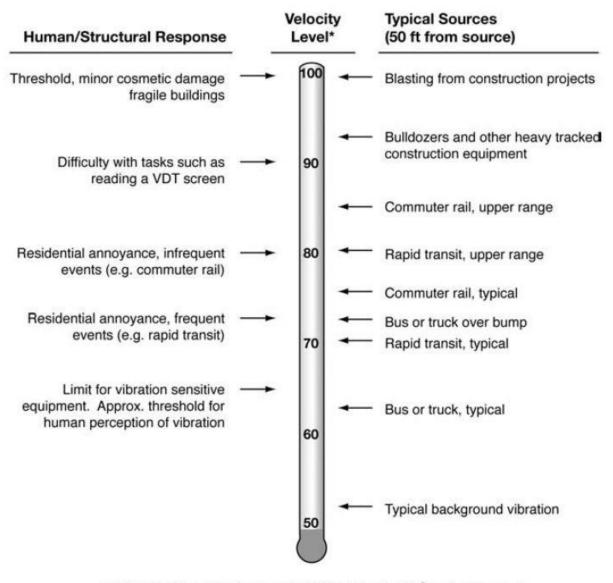


EXHIBIT 2-C: TYPICAL LEVELS OF GROUND-BORNE VIBRATION

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

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



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3 REGULATORY SETTING

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

3.1 STATE OF CALIFORNIA NOISE REQUIREMENTS

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

The State of California's Green Building Standards Code contains mandatory measures for nonresidential building construction in Section 5.507 on Environmental Comfort. (12) These noise standards are applied to new construction in California for controlling interior noise levels resulting from exterior noise sources. The regulations specify that acoustical studies must be prepared when non-residential structures are developed in areas where the exterior noise levels exceed 65 dBA CNEL, such as within a noise contour of an airport, freeway, railroad, and other areas where noise contours are not readily available. If the development falls within an airport or freeway 65 dBA CNEL noise contour, the combined sound transmission class (STC) rating of the wall and roof-ceiling assemblies must be at least 50. For those developments in areas where noise contours are not readily available and the noise level exceeds 65 dBA L_{eq} for any hour of operation, a wall and roof-ceiling combined STC rating of 45, and exterior windows with a minimum STC rating of 40 are required (Section 5.507.4.1).

3.3 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 County of Riverside from excessive exposure to noise. (13) 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 polices 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 10-minute L_{eq} between 10:00 p.m. and 7:00 a.m.;
 - b. 65 dBA 10-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 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 65 CNEL or greater existing ambient noise levels. To prevent and mitigate noise impacts for its residents (N 1.5),



County of Riverside requires noise attenuation measures for sensitive land use exposed to noise levels higher than 65 CNEL. Policy N 4.1 of the Noise Element sets a stationary-source 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. 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. Policy 16.3 establishes the vibration perception threshold for rail-related vibration levels, used in this analysis as a threshold for determining potential vibration impacts due to Project construction. (13)

3.3.1 LAND USE COMPATIBILITY

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. The warehouse/industrial use of the Project is considered normally acceptable with unmitigated exterior noise levels of less than 70 dBA CNEL based on the Industrial, Manufacturing, Utilities, Agriculture land use compatibility criteria shown on Exhibit 3-A. 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 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. (15)

3.3.2 COUNTY OF RIVERSIDE STATIONARY NOISE STANDARDS

The County of Riverside has set exterior noise limits to control idling trucks, delivery truck activities, backup alarms, as well as loading and unloading of dry goods, roof-top air conditioning units, and parking lot vehicle movements associated with the development of the proposed Barker Logistics. 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 Noise Element sets an 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. (15) 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



Municipal 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 Noise Element. Therefore, this report has been prepared consistent with the County of Riverside DEH OIH guidelines and standards using the L_{eq} noise level metric for stationary-source (operational) noise level evaluation.



		55	60	65	70	75	80
Residential-Low Density Single Family, Duplex, Mobile		r 					
Residential-Multiple Family		 			_		
Transient Lodging-Motels, Ho	tels	 					
Schools, Libraries, Churches, I Nursing Homes	Hospitals,		-		_		
Auditoriums, Concert Halls, A	mphitheaters	 					
Sports Arena, Outdoor Spectat	tor Sports						
Playgrounds, Neighborhood P	arks	 	T				
Golf Courses, Riding Stables, V Cemeteries	Water Recreation,		1			1	+
Office Buildings, Businesses, C and Professional	ommercial,						
Industrial, Manufacturing, Uti Agriculture	lities,						
Legend: Normally Acceptable: Specified land use is satisfactory based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements. Source: California Office of Noise Control	Conditionally Acceptable: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and meded noise insulation features included in the design. Conventional construction, but with closed windows and fresh air sapply systems or air conditioning will normally suffice. Outdoor environment will seem noisy.	New of the dis does p reduct noise	couraged. If ne proceed, a detail tion requirement	levelopment should w construction or d ed analysis of the not to must be made wit res included in the d	evelopment bise h needed	New constru generally no costs to mak acceptable w	Inacceptable: citor or development should be undertaken. Construction e the indoor environment ould be prohibitive and the roument would not be usable

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

COMMUNITY NOISE EXPOSURE LEVEL Ldn or CNEL, dBA

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

LAND USE CATEGORY



3.4 CONSTRUCTION NOISE STANDARDS

To control noise impacts associated with the construction of the proposed Project, the County of Riverside has established limits to the hours of operation. Section 9.52.020 of the County's Noise Regulation ordinance 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. (14) Neither the County's General Plan nor Municipal Code establish numeric maximum acceptable construction source noise levels at potentially affected receivers, which would allow for a quantified determination of what CEQA constitutes a *substantial temporary or periodic noise increase*.

To evaluate whether the Project will generate potentially significant construction noise levels at off-site sensitive receiver locations, a construction-related noise level threshold is adopted from the Criteria for Recommended Standard: Occupational Noise Exposure prepared by the National Institute for Occupational Safety and Health (NIOSH). (15) A division of the U.S. Department of Health and Human Services, NIOSH identifies a noise level threshold based on the duration of exposure to the source. The construction related noise level threshold starts at 85 dBA for more than eight hours per day, and for every 3 dBA increase, the exposure time is cut in half. This results in noise level thresholds of 88 dBA for more than four hours per day, 92 dBA for more than one hour per day, 96 dBA for more than 30 minutes per day, and up to 100 dBA for more than 15 minutes per day. (15) For the purposes of this analysis, the lowest, more conservative construction noise level threshold of 85 dBA Leq is used as an acceptable threshold for construction noise at the nearby sensitive receiver locations. Since this construction-related noise level threshold represents the energy average of the noise source over a given time, they are expressed as Leg noise levels. Therefore, the noise level threshold of 85 dBA Leg over a period of eight hours or more is used to evaluate the potential Project-related construction noise level impacts at the nearby sensitive receiver locations.

The Occupational Safety and Health Administration (OSHA) requires hearing protection be provided by employers in workplaces where the noise levels may, over long periods of exposure to high noise levels, endanger the hearing of their employees. Standard 29 CFR, Part 1910 indicates the noise levels under which a hearing conservation program is required to be provided to workers exposed to high noise levels. (9) This analysis does not evaluate the noise exposure of construction workers within the Project site based on CEQA requirements, and instead, evaluates the Project-related construction noise levels at the nearby sensitive receiver locations in the Project study area.



3.5 VIBRATION STANDARDS

The County of Riverside does not have vibration standards for temporary construction, but the County's General Plan Noise Element does contain the human reaction to typical vibration levels. Vibration levels with peak particle velocity of 0.0787 inches per second are considered readily perceptible and above 0.1968 in/sec are considered annoying to people in buildings. Further, County of Riverside General Plan Policy N 16.3 identifies a motion velocity perception threshold for vibration due to passing trains of 0.01 inches per second (in/sec) over the range of one to 100 Hz, which is used in this noise study to assess potential impacts due to Project construction vibration levels. (13)



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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?

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

4.1 CEQA GUIDELINES NOT FURTHER ANALYZED

The Project site is located approximately 2.5 miles southwest of MARB/IPA and would not be exposed to excessive aircraft noise levels. Therefore, impacts are considered *less than significant*, and no further noise analysis is conducted in relation to Guideline C.

4.2 NOISE-SENSITIVE RECEIVERS

Noise level increases resulting from the Project are evaluated based on the Appendix G CEQA Guidelines described above at the closest sensitive receiver locations. Under CEQA, consideration must be given to the magnitude of the increase, the existing ambient noise levels, and the location of noise-sensitive receivers to determine if a noise increase represents a significant adverse environmental impact. This approach recognizes *that there is no single noise increase that renders the noise impact significant.* (18)

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

In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will typically be judged. The Federal Interagency Committee on Noise (FICON) (19) developed guidance to be used for the assessment of project-generated increases in noise levels that consider the ambient noise level. The FICON recommendations are based on



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

As previously stated, the approach used in this noise study recognizes *that there is no single noise increase that renders the noise impact significant*, based on a 2008 California Court of Appeal ruling on Gray v. County of Madera. (18) For example, if the ambient noise environment is quiet (<60 dBA) and the new noise source greatly increases the noise levels, an impact may occur if the noise criteria may be exceeded. Therefore, for this analysis, FICON identifies a *readily perceptible* 5 dBA or greater project-related noise level increase is considered a significant impact when the noise criteria for a given land use is exceeded. Per the FICON, in areas where the without project noise levels range from 60 to 65 dBA, a 3 dBA *barely perceptible* noise level increase appears to be appropriate for most people. When the without project noise levels already exceed 65 dBA, any increase in community noise louder than 1.5 dBA or greater is considered a significant impact if the noise criteria for a given land use is exceeded, since it likely contributes to an existing noise exposure exceedance. Table 4-1 below provides a summary of the potential noise impact significance criteria, based on guidance from FICON.

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

Federal Interagency Committee on Noise (FICON), 1992.

4.3 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 levels for non-noise-sensitive land uses is 70 dBA CNEL. Noise levels greater than 70 dBA CNEL are considered conditionally acceptable per the Land Use Compatibility for Community Noise Exposure. (13)

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



for non-noise-sensitive land uses is generally consistent with the FICON noise level increase thresholds s for noise-sensitive land uses but instead rely on the County of Riverside General Plan Noise Element, Table N-1, *Land Use Compatibility for Community Noise Exposure normally acceptable* 70 dBA CNEL exterior noise level criteria.

4.4 SIGNIFICANCE CRITERIA SUMMARY

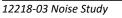
Noise impacts shall be considered significant if any of the following occur as a direct result of the proposed development. Table 4-2 shows the significance criteria summary matrix.

OFF-SITE TRAFFIC NOISE

- When the noise levels at existing and future noise-sensitive land uses (e.g. residential, etc.):
 - are less than 60 dBA CNEL and the Project creates a *readily perceptible* 5 dBA CNEL or greater Project-related noise level increase; or
 - range from 60 to 65 dBA CNEL and the Project creates a *barely perceptible* 3 dBA CNEL or greater Project-related noise level increase; or
 - already exceed 65 dBA CNEL, and the Project creates a community noise level increase of greater than 1.5 dBA CNEL (FICON, 1992).
- When the noise levels at existing and future non-noise-sensitive land uses (e.g., office, commercial, industrial):
 - are less than the County of Riverside General Plan Noise Element, Table N-1, normally acceptable 70 dBA CNEL and the Project creates a readily perceptible 5 dBA CNEL or greater Project related noise level increase; or
 - are greater than the County of Riverside General Plan Noise Element, Table N-1, normally acceptable 70 dBA CNEL and the Project creates a barely perceptible 3 dBA CNEL or greater Project noise level increase.

OPERATIONAL NOISE & VIBRATION

- If Project-related operational (stationary-source) noise levels exceed the exterior 65 dBA L_{eq} daytime or 45 dBA L_{eq} nighttime noise level standards at nearby sensitive receiver locations in the County of Riverside (County of Riverside General Plan Noise Element, Table N-2).
- If the existing ambient noise levels at the nearby noise-sensitive receivers near the Project site:
 - $\circ~$ are less than 60 dBA L_{eq} and the Project creates a readily perceptible 5 dBA L_{eq} or greater Project-related noise level increase; or
 - \circ range from 60 to 65 dBA L_{eq} and the Project creates a *barely perceptible* 3 dBA L_{eq} or greater Project-related noise level increase; or
 - $\circ~$ already exceed 65 dBA L_{eq} and the Project creates a community noise level increase of greater than 1.5 dBA L_{eq} (FICON, 1992).
- If Project generated operational vibration levels exceed the County of Riverside acceptable vibration standard of 0.01 in/sec RMS at sensitive receiver locations (County of Riverside General Plan , Policy N 16.3).



CONSTRUCTION NOISE & VIBRATION

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

Analysia	Land Use	Condition(c)	Significance Criteria		
Analysis	Land Use	Condition(s)	Daytime	Nighttime	
	Noise- Sensitive ¹	If ambient is < 60 dBA CNEL	≥ 5 dBA CNEL Project increase		
		If ambient is 60 - 65 dBA CNEL	≥ 3 dBA CNEL P	Project increase	
Off-Site Traffic		If ambient is > 65 dBA CNEL	≥ 1.5 dBA CNEL	Project increase	
indific	Non-Noise- Sensitive ^{1,2}	If ambient is < 70 dBA CNEL	≥ 5 dBA CNEL Project increase		
		If ambient is > 70 dBA CNEL	≥ 3 dBA CNEL Project increase		
	Noise- Sensitive	Exterior Noise Level Standards ³	65 dBA L _{eq} 45 dBA L _{ec}		
		If ambient is < 60 dBA Leq1	≥ 5 dBA L _{eq} Project increase		
Operational		If ambient is 60 - 65 dBA Leq1	≥ 3 dBA L _{eq} Project increase		
		If ambient is > 65 dBA Leq1	≥ 1.5 dBA L _{eq} Project increase		
		Vibration Level Threshold ⁴	0.01 in/sec RMS		
Construction	Noise-	Noise Level Threshold ⁵	85 dBA L _{eq}		
Construction	Sensitive	Vibration Level Threshold ⁴	0.01 in/sec RMS		

TABLE 4-2: SIGNIFICANCE CRITERIA SUMMARY

¹ Source: FICON, 1992.

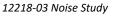
² Source: County of Riverside General Plan Noise Element, Table N-1.

³ Source: County of Riverside General Plan Noise Element, Table N-2.

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

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

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



5 EXISTING NOISE LEVEL MEASUREMENTS

To assess the existing noise level environment, 24-hour noise level measurements were taken at five 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 Thursday, February 7th, 2019. Appendix 5.1 includes study area photos.

5.1 MEASUREMENT PROCEDURE AND CRITERIA

To describe the existing noise environment, the hourly noise levels were measured during typical weekday conditions over a 24-hour period. By collecting individual hourly noise level measurements, it is possible to describe the daytime and nighttime hourly noise levels and calculate the 24-hour CNEL. The long-term noise readings were recorded using Piccolo Type 2 integrating sound level meter and dataloggers. The Piccolo sound level meters were calibrated using a Larson-Davis calibrator, Model CAL 150. All noise meters were programmed in "slow" mode to record noise levels in "A" weighted form. The sound level meters and microphones were equipped with a windscreen during all measurements. All noise level measurement equipment satisfies the American National Standards Institute (ANSI) standard specifications for sound level meters ANSI S1.4-2014/IEC 61672-1:2013. (20)

5.2 NOISE MEASUREMENT LOCATIONS

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

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



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

5.3 NOISE MEASUREMENT RESULTS

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

- Location L1 represents the noise levels on Patterson Avenue adjacent to existing ruralresidential land use near U-Turn for Christ. The noise level measurements collected show an overall 24-hour exterior noise level of 65.7 dBA CNEL. The energy (logarithmic) average daytime noise level was calculated at 61.4 dBA L_{eq} with an average nighttime noise level of 58.5 dBA L_{eq}.
- Location L2 represents the noise levels on Harvill Avenue northeast of the Project site adjacent to Daytona Business Park and existing industrial land use area. The noise level measurements collected show an overall 24-hour exterior noise level of 77.6 dBA CNEL. The energy (logarithmic) average daytime noise level was calculated at 73.3 dBA L_{eq} with an average nighttime noise level of 70.5 dBA L_{eq}.
- Location L3 represents the noise levels on Placentia Street southeast of the Project site adjacent to existing rural residential land use. The 24-hour CNEL indicates that the overall exterior noise level is 62.1 dBA CNEL. The energy (logarithmic) average daytime noise level was calculated at 56.4 dBA L_{eq} with an average nighttime noise level of 55.3 dBA L_{eq}.
- Location L4 represents the noise levels on Placentia Street south of the Project site adjacent to Tobacco Road and existing rural residential land use. The noise level measurements collected show an overall 24-hour exterior noise level of 65.3 dBA CNEL. The energy (logarithmic) average daytime noise level was calculated at 60.7 dBA L_{eq} with an average nighttime noise level of 58.2 dBA L_{eq}.
- Location L5 represents the noise levels on Patterson Avenue west of the Project site adjacent to existing rural residential land use. The 24-hour CNEL indicates that the overall exterior noise level is 62.8 dBA CNEL. The energy (logarithmic) average daytime noise level was calculated at 58.9 dBA L_{eq} with an average nighttime noise level of 55.5 dBA L_{eq}.

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



The background ambient noise levels in the Project study area are dominated by the transportation-related noise associated with I-215, the BNSF railroad lines, and MARB/IPA, in addition to background industrial land use activities. This includes the auto and heavy truck activities on study area roadway segments near the noise level measurement locations. The 24-hour existing noise level measurement results are shown on Table 5-1.

Location ¹	Distance to Project	Description	Energy Average Noise Level (dBA L _{eq}) ²		
	Boundary (Feet)		Daytime	Nighttime	
L1	0'	Located on Patterson Avenue adjacent to existing rural-residential land use near U-Turn for Christ.	61.4	58.5	65.7
L2	650'	Located on Harvill Avenue northeast of the Project site adjacent to Daytona Business Park and existing industrial land use area.	73.3	70.5	77.6
L3	70'	Located on Placentia Street southeast of the Project site adjacent to existing rural residential land use.	56.4	55.3	62.1
L4	0'	Located on Placentia Street south of the Project site adjacent to Tobacco Road and existing rural residential land use.	60.7	58.2	65.3
L5	0'	Located on Patterson Avenue west of the Project site adjacent to existing rural residential land use.	58.9	55.5	62.8

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

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

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

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





EXHIBIT 5-A: NOISE MEASUREMENT LOCATIONS

A Noise Measurement Locations



6 METHODS AND PROCEDURES

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

6.1 FHWA TRAFFIC NOISE PREDICTION MODEL

The expected roadway noise level increases from vehicular traffic were calculated by Urban Crossroads, Inc. using a computer program that replicates the Federal Highway Administration (FHWA) Traffic Noise Prediction Model- FHWA-RD-77-108. (21) 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. (22) 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. (23)

This methodology is consistent with the County of Riverside Office of Industrial Hygiene *Requirements for Determining and Mitigating Traffic Noise Impacts to Residential Structures,* which specifically requires the FHWA RD-77-108 model to be used in analysis within the County's jurisdiction. (24)

6.2 OFF-SITE TRAFFIC NOISE PREDICTION MODEL INPUTS

Table 6-1 presents the roadway parameters used to assess the Project's off-site transportation noise impacts. Table 6-1 identifies the 10 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 posted vehicle speeds. Where posted vehicle speeds are unavailable, the 40 mph speed identified in the County of Riverside Office of Industrial Hygiene Noise Study Guidelines is used. The ADT volumes used in this study are presented on Table 6-2 are based on the *Barker Logistics Traffic Impact Analysis*, prepared by Urban Crossroads, Inc. for the following traffic scenarios under both Without and With Placentia Street Interchange alternatives: Existing (2018), Existing plus Ambient Growth (EA) (2021), and EA plus Cumulative (EAC) (2021). (2)

Although the I-215/Placentia Avenue Interchange project is funded and construction is anticipated to commence in 2020, at the County's request, the EAP (2021) and EAPC (2021) analysis scenarios have been evaluated both without and with the proposed interchange in the event the Project were to open before the completion of the interchange.





ID	Roadway	Segment	Adjacent Planned (Existing if Different) Land Use ¹	Distance from Centerline to Nearest Adjacent Land Use (Feet) ²	Vehicle Speed (mph) ³
1	Patterson Av.	n/o Walnut St.	Residential	50'	40
2	Patterson Av.	n/o Placentia St.	Business Park (BP)/Residential	50'	40
3	Harvill Av.	s/o Cajalco Expy.	Light Industrial (LI)	59'	50
4	Harvill Av.	s/o Rider St.	BP/LI	59'	50
5	Harvill Av.	s/o Placentia St.	BP/LI	59'	50
6	Harvill Av.	s/o Orange Av.	BP/LI	59'	50
7	Harvill Av.	s/o A St.	BP/Commercial	59'	50
8	Rider St.	e/o Patterson Av.	BP/LI	50'	40
9	Placentia St.	e/o Patterson Av.	BP/Residential	50'	40
10	Placentia St.	e/o Dwy. 2	BP/Residential	50'	40

TABLE 6-1: OFF-SITE ROADWAY PARAMETERS

¹ Sources: Mead Valley Area Plan, Land Use Plan, Figure 3 and Nearmap aerial imagery.

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

³ Sources: Barker Logistics Traffic Impact Analysis, prepared by Urban Crossroads, Inc. and the County of Riverside Office of Industrial Hygiene noise study guidelines.





						Ave	erage Daily T	raffic Volum	es1			
					Without In	terchange			With Interchange			
ID	D Roadway Segment		Exist 20	-	Existing + Growt		EA + Cur Developm		E	4	EA	νC
			Without Project	With Project	Without Project	With Project	Without Project	With Project	Without Project	With Project	Without Project	With Project
1	Patterson Av.	n/o Walnut St.	293	589	305	601	305	601	305	432	305	432
2	Patterson Av.	n/o Placentia St.	337	443	351	457	351	457	351	542	351	542
3	Harvill Av.	s/o Cajalco Expy.	15,861	16,769	16,502	17,410	20,142	21,050	16,837	17,119	20,379	20,661
4	Harvill Av.	s/o Rider St.	13,941	14,552	14,504	15,115	17,580	18,191	18,088	18,243	21,068	21,223
5	Harvill Av.	s/o Placentia St.	8,663	9,305	9,013	9,655	12,051	12,693	13,512	13,703	16,522	16,713
6	Harvill Av.	s/o Orange Av.	8,370	9,012	8,708	9,350	11,732	12,374	11,469	11,660	14,433	14,624
7	Harvill Av.	s/o A St.	12,417	13,059	12,918	13,560	15,942	16,584	18,545	18,736	21,509	21,700
8	Rider St.	e/o Patterson Av.	1,788	2,084	1,861	2,157	1,861	2,157	1,861	1,988	1,861	1,988
9	Placentia St.	e/o Patterson Av.	381	487	397	503	397	503	397	588	397	588
10	Placentia St.	e/o Dwy. 2	399	1,077	415	1,093	415	1,093	415	1,178	415	1,178

TABLE 6-2: AVERAGE DAILY TRAFFIC VOLUMES

¹ Source: Barker Logistics Traffic Impact 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 *Traffic Impact 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 6-9 show the vehicle mixes used for the with Project traffic scenarios.

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.

		Time of Day Splits				
Vehicle Type	Daytime	Evening	Nighttime	Day Splits		
Autos	68.65%	11.26%	20.09%	100.00%		
Medium Trucks	74.35%	5.18%	20.47%	100.00%		
Heavy Trucks	74.40%	5.86%	19.74%	100.00%		

TABLE 6-3: TIME OF DAY VEHICLE SPLITS

Based on an existing vehicle count taken at Cajalco Road west of Harvill Avenue. Vehicle mix percentage values rounded to the nearest onehundredth (Barker Logistics Traffic Impact 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 CONDITIONS VEHICLE MIX

Cleasification		Total			
Classification	Autos	Autos Medium Trucks Heavy Trucks			
All Segments	87.95%	7.05%	5.00%	100.00%	

Based on an existing vehicle count taken at Cajalco Road west of Harvill Avenue. Vehicle mix percentage values rounded to the nearest onehundredth (Barker Logistics Traffic Impact Analysis, Urban Crossroads, Inc.).



				With P	roject ¹	
ID	Roadway	Segment	Autos	Medium Trucks	Heavy Trucks	Total ²
1	Patterson Av.	n/o Walnut St.	86.88%	6.56%	6.56%	100.00%
2	Patterson Av.	n/o Placentia St.	81.34%	9.43%	9.23%	100.00%
3	Harvill Av.	s/o Cajalco Expy.	87.36%	7.20%	5.44%	100.00%
4	Harvill Av.	s/o Rider St.	87.32%	7.24%	5.44%	100.00%
5	Harvill Av.	s/o Placentia St.	88.03%	6.89%	5.08%	100.00%
6	Harvill Av.	s/o Orange Av.	88.03%	6.88%	5.09%	100.00%
7	Harvill Av.	s/o A St.	88.01%	6.93%	5.06%	100.00%
8	Rider St.	e/o Patterson Av.	87.65%	6.91%	5.44%	100.00%
9	Placentia St.	e/o Patterson Av.	81.93%	9.22%	8.85%	100.00%
10	Placentia St.	e/o Dwy. 2	91.64%	4.28%	4.08%	100.00%

TABLE 6-5: EXISTING WITH PROJECT CONDITIONS VEHICLE MIX	ľ
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¹ Source: Barker Logistics Traffic Impact Analysis, Urban Crossroads, Inc.

² Total of vehicle mix percentage values rounded to the nearest one-hundredth.

TABLE 6-6: EA WITHOUT INTERCHANGE WITH PROJECT CONDITIONS VEHICLE MIX

				With P	roject ¹	
ID	Roadway	Segment	Autos	Medium Trucks	Heavy Trucks	Total ²
1	Patterson Av.	n/o Walnut St.	86.91%	6.57%	6.53%	100.00%
2	Patterson Av.	n/o Placentia St.	81.54%	9.36%	9.10%	100.00%
3	Harvill Av.	s/o Cajalco Expy.	87.38%	7.19%	5.42%	100.00%
4	Harvill Av.	s/o Rider St.	87.34%	7.23%	5.43%	100.00%
5	Harvill Av.	s/o Placentia St.	88.03%	6.89%	5.08%	100.00%
6	Harvill Av.	s/o Orange Av.	88.03%	6.89%	5.08%	100.00%
7	Harvill Av.	s/o A St.	88.00%	6.94%	5.06%	100.00%
8	Rider St.	e/o Patterson Av.	87.66%	6.92%	5.43%	100.00%
9	Placentia St.	e/o Patterson Av.	82.13%	9.15%	8.72%	100.00%
10	Placentia St.	e/o Dwy. 2	91.58%	4.32%	4.09%	100.00%

¹ Source: Barker Logistics Traffic Impact Analysis, Urban Crossroads, Inc.

² Total of vehicle mix percentage values rounded to the nearest one-hundredth.



				With P	roject ¹	
ID	Roadway	Segment	Autos	Medium Trucks	Heavy Trucks	Total ²
1	Patterson Av.	n/o Walnut St.	86.91%	6.57%	6.53%	100.00%
2	Patterson Av.	n/o Placentia St.	81.54%	9.36%	9.10%	100.00%
3	Harvill Av.	s/o Cajalco Expy.	87.48%	7.17%	5.35%	100.00%
4	Harvill Av.	s/o Rider St.	87.44%	7.20%	5.35%	100.00%
5	Harvill Av.	s/o Placentia St.	88.01%	6.93%	5.06%	100.00%
6	Harvill Av.	s/o Orange Av.	88.01%	6.93%	5.06%	100.00%
7	Harvill Av.	s/o A St.	87.99%	6.96%	5.05%	100.00%
8	Rider St.	e/o Patterson Av.	87.66%	6.92%	5.43%	100.00%
9	Placentia St.	e/o Patterson Av.	82.13%	9.15%	8.72%	100.00%
10	Placentia St.	e/o Dwy. 2	91.58%	4.32%	4.09%	100.00%

TABLE 6-7: EAC WITHOUT INTERCHANGE WITH PROJECT CONDITIONS VEHICLE MIX

¹ Source: Barker Logistics Traffic Impact Analysis, Urban Crossroads, Inc.

² Total of vehicle mix percentage values rounded to the nearest one-hundredth.

TABLE 6-8: EA WITHOUT INTERCHANGE WITH PROJECT CONDITIONS VEHICLE MIX

				With P	roject ¹	
ID	Roadway	lway Segment	Autos	Medium Trucks	Heavy Trucks	Total ²
1	Patterson Av.	n/o Walnut St.	91.50%	4.98%	3.53%	100.00%
2	Patterson Av.	n/o Placentia St.	92.19%	4.57%	3.24%	100.00%
3	Harvill Av.	s/o Cajalco Expy.	87.99%	7.00%	5.01%	100.00%
4	Harvill Av.	s/o Rider St.	87.90%	7.06%	5.05%	100.00%
5	Harvill Av.	s/o Placentia St.	88.12%	6.95%	4.93%	100.00%
6	Harvill Av.	s/o Orange Av.	88.15%	6.93%	4.92%	100.00%
7	Harvill Av.	s/o A St.	88.07%	6.98%	4.95%	100.00%
8	Rider St.	e/o Patterson Av.	88.72%	6.60%	4.68%	100.00%
9	Placentia St.	e/o Patterson Av.	91.86%	4.76%	3.38%	100.00%
10	Placentia St.	e/o Dwy. 2	95.76%	2.48%	1.76%	100.00%

¹ Source: Barker Logistics Traffic Impact Analysis, Urban Crossroads, Inc.

² Total of vehicle mix percentage values rounded to the nearest one-hundredth.



				With P	roject ¹	
ID	Roadway	Segment	Autos	Medium Trucks	Heavy Trucks	Total ²
1	Patterson Av.	n/o Walnut St.	91.50%	4.98%	3.53%	100.00%
2	Patterson Av.	n/o Placentia St.	92.19%	4.57%	3.24%	100.00%
3	Harvill Av.	s/o Cajalco Expy.	87.98%	7.01%	5.01%	100.00%
4	Harvill Av.	s/o Rider St.	87.91%	7.05%	5.04%	100.00%
5	Harvill Av.	s/o Placentia St.	88.09%	6.97%	4.94%	100.00%
6	Harvill Av.	s/o Orange Av.	88.11%	6.96%	4.93%	100.00%
7	Harvill Av.	s/o A St.	88.06%	6.99%	4.96%	100.00%
8	Rider St.	e/o Patterson Av.	88.72%	6.60%	4.68%	100.00%
9	Placentia St.	e/o Patterson Av.	91.86%	4.76%	3.38%	100.00%
10	Placentia St.	e/o Dwy. 2	95.76%	2.48%	1.76%	100.00%

TABLE 6-9: EAC WITHOUT INTERCHANGE WITH PROJECT CONDITIONS VEHICLE MIX

¹ Source: Barker Logistics Traffic Impact Analysis, Urban Crossroads, Inc.

² Total of vehicle mix percentage values rounded to the nearest one-hundredth.

6.3 VIBRATION ASSESSMENT

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

However, while vehicular traffic is rarely perceptible, construction has the potential to result in varying degrees of temporary ground vibration, depending on the specific construction activities and equipment used. Ground vibration levels associated with various types of construction equipment are summarized on Table 6-10. Based on the representative vibration levels presented for various construction equipment types, it is possible to estimate the potential Project construction vibration levels using the following vibration assessment methods defined by the FTA. The FTA provides the following equation: $PPV_{equip} = PPV_{ref} \times (25/D)^{1.5}$



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

TABLE 6-10: VIBRATION SOURCE LEVELS FOR CONSTRUCTION EQUIPMENT

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



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7 OFF-SITE TRANSPORTATION NOISE IMPACTS

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

Without Placentia Street Interchange

- Existing Without / With Project:
 - This scenario refers to the Existing present-day noise conditions, without and with the proposed Project.
- Existing plus Ambient Growth (EA) (2021) Without / With Project:
 - This scenario below refers to the background noise conditions at future Year 2021 without and with the proposed Project plus ambient growth.
- EA plus Cumulative (EAC) (2021) Without / With Project:
 - This scenario below refers to the background noise conditions at future Year 2021 without and with the proposed Project plus ambient growth, and includes all cumulative projects identified in the *Traffic Impact Analysis*.

With Placentia Street Interchange

- Existing plus Ambient Growth (EA) (2021) Without / With Project:
 - This scenario below refers to the background noise conditions at future Year 2021 without and with the proposed Project plus ambient growth.
- EA plus Cumulative (EAC) (2021) Without / With Project:
 - This scenario below refers to the background noise conditions at future Year 2021 without and with the proposed Project plus ambient growth, and includes all cumulative projects identified in the *Traffic Impact Analysis*.

7.1 WITHOUT INTERCHANGE TRAFFIC NOISE CONTOURS

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



(EAC). Appendix 7.1 includes a summary of the traffic noise level contours for each of the traffic scenarios.

			Adjacent	CNEL at Nearest	Distance to Contour from Centerline (Feet)		
ID	Road Segment Planned (Existing) Land Use ¹		Adjacent Land Use (dBA) ²	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	
1	Patterson Av.	n/o Walnut St.	Residential	55.9	RW	RW	RW
2	Patterson Av.	n/o Placentia St.	Business Park (BP)/Residential	56.5	RW	RW	RW
3	Harvill Av.	s/o Cajalco Expy.	Light Industrial (LI)	74.3	114	245	529
4	Harvill Av.	s/o Rider St.	BP/LI	73.7	105	225	485
5	Harvill Av.	s/o Placentia St.	BP/LI	71.7	76	164	353
6	Harvill Av.	s/o Orange Av.	BP/LI	71.5	74	160	345
7	Harvill Av.	s/o A St.	BP/Commercial	73.2	97	209	449
8	Rider St.	e/o Patterson Av.	BP/LI	63.8	RW	RW	89
9	Placentia St.	e/o Patterson Av.	BP/Residential	57.1	RW	RW	RW
10	Placentia St.	e/o Dwy. 2	BP/Residential	57.3	RW	RW	RW

TABLE 7-1: EXISTING WITHOUT PROJECT CONDITIONS NOISE CONTOURS

¹ Sources: Mead Valley Area Plan, Land Use Plan, Figure 3 and Nearmap aerial imagery.

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

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

TABLE 7-2: EXISTING WITH PROJECT CONDITIONS NOISE CONTOURS

			Adjacent	CNEL at Nearest	Distance to Contour from Centerline (Feet)		
ID	Road	Segment	Planned (Existing) Land Use ¹	Adjacent Land Use (dBA) ²	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Patterson Av.	n/o Walnut St.	Residential	59.6	RW	RW	RW
2	Patterson Av.	n/o Placentia St.	Business Park (BP)/Residential	59.5	RW	RW	RW
3	Harvill Av.	s/o Cajalco Expy.	Light Industrial (LI)	74.7	122	262	565
4	Harvill Av.	s/o Rider St.	BP/LI	74.1	111	239	515
5	Harvill Av.	s/o Placentia St.	BP/LI	72.0	80	172	371
6	Harvill Av.	s/o Orange Av.	BP/LI	71.8	78	169	363
7	Harvill Av.	s/o A St.	BP/Commercial	73.5	100	216	465
8	Rider St.	e/o Patterson Av.	BP/LI	64.6	RW	RW	102
9	Placentia St.	e/o Patterson Av.	BP/Residential	59.8	RW	RW	RW
10	Placentia St.	e/o Dwy. 2	BP/Residential	60.7	RW	RW	56

¹ Sources: Mead Valley Area Plan, Land Use Plan, Figure 3 and Nearmap aerial imagery.

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



			Adjacent	CNEL at Nearest		nce to Co enterline	
ID	Road	Road Segment Planned (Existing) Land Use ¹		Adjacent Land Use (dBA) ²	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Patterson Av.	n/o Walnut St.	Residential	56.1	RW	RW	RW
2	Patterson Av.	n/o Placentia St.	Business Park (BP)/Residential	56.7	RW	RW	RW
3	Harvill Av.	s/o Cajalco Expy.	Light Industrial (LI)	74.5	117	252	543
4	Harvill Av.	s/o Rider St.	BP/LI	73.9	107	231	498
5	Harvill Av.	s/o Placentia St.	BP/LI	71.8	78	168	363
6	Harvill Av.	s/o Orange Av.	BP/LI	71.7	76	165	355
7	Harvill Av.	s/o A St.	BP/Commercial	73.4	99	214	461
8	Rider St.	e/o Patterson Av.	BP/LI	64.0	RW	RW	92
9	Placentia St.	e/o Patterson Av.	BP/Residential	57.3	RW	RW	RW
10	Placentia St.	e/o Dwy. 2	BP/Residential	57.4	RW	RW	RW

TABLE 7-3: EA WITHOUT PROJECT CONDITIONS NOISE CONTOURS

¹ Sources: Mead Valley Area Plan, Land Use Plan, Figure 3 and Nearmap aerial imagery.

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

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

			Adjacent	CNEL at Nearest		Distance to Contour from Centerline (Feet)		
ID	Road Segment Planned (Existing) Land Use ¹		Adjacent Land Use (dBA) ²	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL		
1	Patterson Av.	n/o Walnut St.	Residential	59.7	RW	RW	RW	
2	Patterson Av.	n/o Placentia St.	Business Park (BP)/Residential	59.6	RW	RW	RW	
3	Harvill Av.	s/o Cajalco Expy.	Light Industrial (LI)	74.9	125	269	579	
4	Harvill Av.	s/o Rider St.	BP/LI	74.3	114	245	528	
5	Harvill Av.	s/o Placentia St.	BP/LI	72.1	82	177	381	
6	Harvill Av.	s/o Orange Av.	BP/LI	72.0	80	173	372	
7	Harvill Av.	s/o A St.	BP/Commercial	73.6	103	221	477	
8	Rider St.	e/o Patterson Av.	BP/LI	64.8	RW	RW	104	
9	Placentia St.	e/o Patterson Av.	BP/Residential	59.9	RW	RW	RW	
10	Placentia St.	e/o Dwy. 2	BP/Residential	60.8	RW	RW	57	

¹ Sources: Mead Valley Area Plan, Land Use Plan, Figure 3 and Nearmap aerial imagery.

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



			Adjacent	CNEL at Nearest		nce to Co enterline	
ID	D Road Segmen		Planned (Existing) Land Use ¹	Adjacent Land Use (dBA) ²	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Patterson Av.	n/o Walnut St.	Residential	56.1	RW	RW	RW
2	Patterson Av.	n/o Placentia St.	Business Park (BP)/Residential	56.7	RW	RW	RW
3	Harvill Av.	s/o Cajalco Expy.	Light Industrial (LI)	75.3	134	288	620
4	Harvill Av.	s/o Rider St.	BP/LI	74.7	122	263	566
5	Harvill Av.	s/o Placentia St.	BP/LI	73.1	95	204	440
6	Harvill Av.	s/o Orange Av.	BP/LI	73.0	93	201	433
7	Harvill Av.	s/o A St.	BP/Commercial	74.3	114	246	531
8	Rider St.	e/o Patterson Av.	BP/LI	64.0	RW	RW	92
9	Placentia St.	e/o Patterson Av.	BP/Residential	57.3	RW	RW	RW
10	Placentia St.	e/o Dwy. 2	BP/Residential	57.4	RW	RW	RW

TABLE 7-5: EAC WITHOUT PROJECT CONDITIONS NOISE CONTOURS

¹ Sources: Mead Valley Area Plan, Land Use Plan, Figure 3 and Nearmap aerial imagery.

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

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

TABLE 7-6:	EAC WITH PROJECT	CONDITIONS NOISE CONTOURS
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			Adjacent	CNEL at Nearest		nce to Co enterline	
ID	ID Road	Segment	Planned (Existing) Land Use ¹	Adjacent Land Use (dBA) ²	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Patterson Av.	n/o Walnut St.	Residential	59.7	RW	RW	RW
2	Patterson Av.	n/o Placentia St.	Business Park (BP)/Residential	59.6	RW	RW	RW
3	Harvill Av.	s/o Cajalco Expy.	Light Industrial (LI)	75.7	141	304	654
4	Harvill Av.	s/o Rider St.	BP/LI	75.0	128	276	594
5	Harvill Av.	s/o Placentia St.	BP/LI	73.3	98	212	456
6	Harvill Av.	s/o Orange Av.	BP/LI	73.2	97	208	449
7	Harvill Av.	s/o A St.	BP/Commercial	74.5	117	253	545
8	Rider St.	e/o Patterson Av.	BP/LI	64.8	RW	RW	104
9	Placentia St.	e/o Patterson Av.	BP/Residential	59.9	RW	RW	RW
10	Placentia St.	e/o Dwy. 2	BP/Residential	60.8	RW	RW	57

¹ Sources: Mead Valley Area Plan, Land Use Plan, Figure 3 and Nearmap aerial imagery.

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



7.2 WITHOUT INTERCHANGE EXISTING CONDITIONS PROJECT CONTRIBUTIONS

An analysis of existing traffic noise levels plus traffic noise generated by the proposed Project has been included in this report for informational purposes. However, the analysis of existing traffic noise levels plus traffic noise generated by the proposed Project scenario will not actually occur since the Project would not be fully constructed and operational until Year 2021 cumulative conditions.

Table 7-1 shows the Existing without Project conditions CNEL noise levels. The Existing without Project exterior noise levels are expected to range from 55.9 to 74.3 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-2 shows the Existing with Project conditions will range from 59.5 to 74.7 dBA CNEL. Table 7-7 shows that the Project off-site traffic noise level increases will range from 0.2 to 3.6 dBA CNEL.

ID	Road	Segment		EL at Adja nd Use (d		Noise- Sensitive Land
			NoWithProjectProjectProjectAddition		Use?	
1	Patterson Av.	n/o Walnut St.	55.9	59.6	3.6	Yes
2	Patterson Av.	n/o Placentia St.	56.5	59.5	3.0	Yes
3	Harvill Av.	s/o Cajalco Expy.	74.3	74.7	0.4	No
4	Harvill Av.	s/o Rider St.	73.7	74.1	0.4	No
5	Harvill Av.	s/o Placentia St.	71.7	72.0	0.3	No
6	Harvill Av.	s/o Orange Av.	71.5	71.8	0.3	No
7	Harvill Av.	s/o A St.	73.2	73.5	0.2	No
8	Rider St.	e/o Patterson Av.	63.8	64.6	0.8	No
9	Placentia St.	e/o Patterson Av.	57.1	59.8	2.7	Yes
10	Placentia St.	e/o Dwy. 2	57.3	60.7	3.4	Yes

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

¹ The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the nearest adjacent land use. Values rounded to the nearest one-tenth.



7.3 WITHOUT INTERCHANGE EA PROJECT TRAFFIC NOISE LEVEL CONTRIBUTIONS

Table 7-3 presents the Existing plus Ambient Growth (EA) without Project conditions CNEL noise levels. The EA without Project exterior noise levels are expected to range from 56.1 to 74.5 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography.

Table 7-4 shows the EA with Project conditions will range from 59.6 to 74.9 dBA CNEL. Table 7-8 shows that the Project off-site traffic noise level increases will range from 0.2 to 3.5 dBA CNEL. Based on the significance criteria for off-site traffic noise presented in Table 4-2, land uses adjacent to the study area roadway segments would experience *less than significant* noise level impacts due to unmitigated Project-related traffic noise levels.

ID	Road Segment		CNEL at Adjacent Land Use (dBA) ¹			Noise- Sensitive Land	Threshold Exceeded? ²
			No Project	With Project	Project Addition	Use?	
1	Patterson Av.	n/o Walnut St.	56.1	59.7	3.5	Yes	No
2	Patterson Av.	n/o Placentia St.	56.7	59.6	2.9	Yes	No
3	Harvill Av.	s/o Cajalco Expy.	74.5	74.9	0.4	No	No
4	Harvill Av.	s/o Rider St.	73.9	74.3	0.4	No	No
5	Harvill Av.	s/o Placentia St.	71.8	72.1	0.3	No	No
6	Harvill Av.	s/o Orange Av.	71.7	72.0	0.3	No	No
7	Harvill Av.	s/o A St.	73.4	73.6	0.2	No	No
8	Rider St.	e/o Patterson Av.	64.0	64.8	0.8	No	No
9	Placentia St.	e/o Patterson Av.	57.3	59.9	2.7	Yes	No
10	Placentia St.	e/o Dwy. 2	57.4	60.8	3.4	Yes	No

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

¹ The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the nearest adjacent land use. Values rounded to the nearest one-tenth.

² Significance Criteria (Section 4).



7.4 WITHOUT INTERCHANGE EAC PROJECT TRAFFIC NOISE LEVEL CONTRIBUTIONS

Table 7-5 presents the Existing plus Ambient Growth plus Cumulative (EAC) without Project conditions CNEL noise levels. The EAC without Project exterior noise levels are expected to range from 56.1 to 75.3 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography.

Table 7-6 shows the EAC with Project conditions will range from 59.6 to 75.7 dBA CNEL. Table 7-9 shows that the Project off-site traffic noise level increases will range from 0.2 to 3.5 dBA CNEL. Based on the significance criteria for off-site traffic noise presented in Table 4-2, land uses adjacent to the study area roadway segments would experience *less than significant* noise level impacts due to unmitigated Project-related traffic noise levels.

ID	Road	Segment		EL at Adja nd Use (d		Noise- Sensitive Land	Threshold Exceeded? ²
			No Project	With Project	Project Addition	Use?	
1	Patterson Av.	n/o Walnut St.	56.1	59.7	3.5	Yes	No
2	Patterson Av.	n/o Placentia St.	56.7	59.6	2.9	Yes	No
3	Harvill Av.	s/o Cajalco Expy.	75.3	75.7	0.3	No	No
4	Harvill Av.	s/o Rider St.	74.7	75.0	0.3	No	No
5	Harvill Av.	s/o Placentia St.	73.1	73.3	0.2	No	No
6	Harvill Av.	s/o Orange Av.	73.0	73.2	0.2	No	No
7	Harvill Av.	s/o A St.	74.3	74.5	0.2	No	No
8	Rider St.	e/o Patterson Av.	64.0	64.8	0.8	No	No
9	Placentia St.	e/o Patterson Av.	57.3	59.9	2.7	Yes	No
10	Placentia St.	e/o Dwy. 2	57.4	60.8	3.4	Yes	No

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

¹ The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the nearest adjacent land use. Values rounded to the nearest one-tenth.

² Significance Criteria (Section 4).



7.5 WITH INTERCHANGE TRAFFIC NOISE CONTOURS

Tables 7-10 through 7-13 present a summary of the exterior traffic noise levels under With Placentia Street Interchange conditions. All scenarios do not include barrier attenuation. Roadway segments are analyzed from the without Project to the with Project conditions in each of the following timeframes: Existing, Existing plus Ambient Growth (EA), and EA plus Cumulative (EAC). Appendix 7.1 includes a summary of the traffic noise level contours for each of the traffic scenarios.

			Adjacent	CNEL at Nearest		nce to Co enterline	
ID	Road	Segment	Planned (Existing) Land Use ¹	Adjacent Land Use (dBA) ²	70 dBA CNEL	65 dBA CNEL	(Feet) 60 dBA CNEL RW 8W 550 577 475 426 587
1	Patterson Av.	n/o Walnut St.	Residential	56.1	RW	RW	RW
2	Patterson Av.	n/o Placentia St.	Business Park (BP)/Residential	56.7	RW	RW	RW
3	Harvill Av.	s/o Cajalco Expy.	Light Industrial (LI)	74.5	119	255	550
4	Harvill Av.	s/o Rider St.	BP/LI	74.9	124	268	577
5	Harvill Av.	s/o Placentia St.	BP/LI	73.6	102	221	475
6	Harvill Av.	s/o Orange Av.	BP/LI	72.9	92	198	426
7	Harvill Av.	s/o A St.	BP/Commercial	75.0	126	272	587
8	Rider St.	e/o Patterson Av.	BP/LI	64.0	RW	RW	92
9	Placentia St.	e/o Patterson Av.	BP/Residential	57.3	RW	RW	RW
10	Placentia St.	e/o Dwy. 2	BP/Residential	57.4	RW	RW	RW

TABLE 7-10: EA WITHOUT PROJECT CONDITIONS NOISE CONTOURS

¹ Sources: Mead Valley Area Plan, Land Use Plan, Figure 3 and Nearmap aerial imagery.

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



	Road	Segment	Adjacent	CNEL at Nearest		nce to Co enterline	
ID			Planned (Existing) Land Use ¹	Adjacent Land Use (dBA) ²	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Patterson Av.	n/o Walnut St.	Residential	56.5	RW	RW	RW
2	Patterson Av.	n/o Placentia St.	Business Park (BP)/Residential	57.3	RW	RW	RW
3	Harvill Av.	s/o Cajalco Expy.	Light Industrial (LI)	74.6	120	258	556
4	Harvill Av.	s/o Rider St.	BP/LI	74.9	125	270	582
5	Harvill Av.	s/o Placentia St.	BP/LI	73.6	103	221	477
6	Harvill Av.	s/o Orange Av.	BP/LI	72.9	92	198	428
7	Harvill Av.	s/o A St.	BP/Commercial	75.0	127	273	588
8	Rider St.	e/o Patterson Av.	BP/LI	64.0	RW	RW	93
9	Placentia St.	e/o Patterson Av.	BP/Residential	57.8	RW	RW	RW
10	Placentia St.	e/o Dwy. 2	BP/Residential	59.1	RW	RW	RW

TABLE 7-11: EA WITH PROJECT CONDITIONS NOISE CONTOURS

¹ Sources: Mead Valley Area Plan, Land Use Plan, Figure 3 and Nearmap aerial imagery.

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

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

		Segment	Adjacent	CNEL at Nearest		nce to Co enterline	
ID	Road		Planned (Existing) Land Use ¹	Adjacent Land Use (dBA) ²	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Patterson Av.	n/o Walnut St.	Residential	56.1	RW	RW	RW
2	Patterson Av.	n/o Placentia St.	Business Park (BP)/Residential	56.7	RW	RW	RW
3	Harvill Av.	s/o Cajalco Expy.	Light Industrial (LI)	75.4	135	290	625
4	Harvill Av.	s/o Rider St.	BP/LI	75.5	138	297	639
5	Harvill Av.	s/o Placentia St.	BP/LI	74.5	117	252	544
6	Harvill Av.	s/o Orange Av.	BP/LI	73.9	107	231	497
7	Harvill Av.	s/o A St.	BP/Commercial	75.6	140	301	648
8	Rider St.	e/o Patterson Av.	BP/LI	64.0	RW	RW	92
9	Placentia St.	e/o Patterson Av.	BP/Residential	57.3	RW	RW	RW
10	Placentia St.	e/o Dwy. 2	BP/Residential	57.4	RW	RW	RW

¹ Sources: Mead Valley Area Plan, Land Use Plan, Figure 3 and Nearmap aerial imagery.

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



	Road	Segment	Adjacent	CNEL at Nearest		nce to Co enterline	
ID			Planned (Existing) Land Use ¹	Adjacent Land Use (dBA) ²	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Patterson Av.	n/o Walnut St.	Residential	56.5	RW	RW	RW
2	Patterson Av.	n/o Placentia St.	Business Park (BP)/Residential	57.3	RW	RW	RW
3	Harvill Av.	s/o Cajalco Expy.	Light Industrial (LI)	75.4	136	293	631
4	Harvill Av.	s/o Rider St.	BP/LI	75.6	139	299	644
5	Harvill Av.	s/o Placentia St.	BP/LI	74.5	117	253	545
6	Harvill Av.	s/o Orange Av.	BP/LI	73.9	107	231	498
7	Harvill Av.	s/o A St.	BP/Commercial	75.6	140	301	649
8	Rider St.	e/o Patterson Av.	BP/LI	64.0	RW	RW	93
9	Placentia St.	e/o Patterson Av.	BP/Residential	57.8	RW	RW	RW
10	Placentia St.	e/o Dwy. 2	BP/Residential	59.1	RW	RW	RW

TABLE 7-13: EAC WITH PROJECT CONDITIONS NOISE CONTOURS

¹ Sources: Mead Valley Area Plan, Land Use Plan, Figure 3 and Nearmap aerial imagery.

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

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

7.6 WITH INTERCHANGE EA PROJECT TRAFFIC NOISE LEVEL CONTRIBUTIONS

Table 7-10 presents the Existing plus Ambient Growth (EA) without Project conditions CNEL noise levels. The EA without Project exterior noise levels are expected to range from 56.1 to 75.0 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography.

Table 7-11 shows the EA with Project conditions will range from 56.5 to 75.0 dBA CNEL. Table 7-14 shows that the Project off-site traffic noise level increases will range from 0.0 to 1.7 dBA CNEL. Based on the significance criteria for off-site traffic noise presented in Table 4-2, land uses adjacent to the study area roadway segments would experience *less than significant* noise level impacts due to unmitigated Project-related traffic noise levels.



ID	Road	nd Segment		CNEL at Adjacent Land Use (dBA) ¹			Threshold Exceeded? ²	
			No Project	With Project	Project Addition	Use?		
1	Patterson Av.	n/o Walnut St.	56.1	56.5	0.4	Yes	No	
2	Patterson Av.	n/o Placentia St.	56.7	57.3	0.6	Yes	No	
3	Harvill Av.	s/o Cajalco Expy.	74.5	74.6	0.1	No	No	
4	Harvill Av.	s/o Rider St.	74.9	74.9	0.1	No	No	
5	Harvill Av.	s/o Placentia St.	73.6	73.6	0.0	No	No	
6	Harvill Av.	s/o Orange Av.	72.9	72.9	0.0	No	No	
7	Harvill Av.	s/o A St.	75.0	75.0	0.0	No	No	
8	Rider St.	e/o Patterson Av.	64.0	64.0	0.1	No	No	
9	Placentia St.	e/o Patterson Av.	57.3	57.8	0.5	Yes	No	
10	Placentia St.	e/o Dwy. 2	57.4	59.1	1.7	Yes	No	

TABLE 7-14: UNMITIGATED EA WITH PROJECT TRAFFIC NOISE IMPACTS

¹ The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the nearest adjacent land use. Values rounded to the nearest one-tenth.

² Significance Criteria (Section 4).

7.7 WITH INTERCHANGE EAC PROJECT TRAFFIC NOISE LEVEL CONTRIBUTIONS

Table 7-12 presents the Existing plus Ambient Growth plus Cumulative (EAC) without Project conditions CNEL noise levels. The EAC without Project exterior noise levels are expected to range from 56.1 to 75.6 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography.

Table 7-13 shows the EAC with Project conditions will range from 56.5 to 75.6 dBA CNEL. Table 7-15 shows that the Project off-site traffic noise level increases will range from 0.0 to 1.7 dBA CNEL. Based on the significance criteria for off-site traffic noise presented in Table 4-2, land uses adjacent to the study area roadway segments would experience *less than significant* noise level impacts due to unmitigated Project-related traffic noise levels.



ID	Road	Segment	CNEL at Adjacent Land Use (dBA) ¹			Noise- Sensitive Land	Threshold Exceeded? ²
			No Project	With Project	Project Addition	Use?	
1	Patterson Av.	n/o Walnut St.	56.1	56.5	0.4	Yes	No
2	Patterson Av.	n/o Placentia St.	56.7	57.3	0.6	Yes	No
3	Harvill Av.	s/o Cajalco Expy.	75.4	75.4	0.1	No	No
4	Harvill Av.	s/o Rider St.	75.5	75.6	0.0	No	No
5	Harvill Av.	s/o Placentia St.	74.5	74.5	0.0	No	No
6	Harvill Av.	s/o Orange Av.	73.9	73.9	0.0	No	No
7	Harvill Av.	s/o A St.	75.6	75.6	0.0	No	No
8	Rider St.	e/o Patterson Av.	64.0	64.0	0.1	No	No
9	Placentia St.	e/o Patterson Av.	57.3	57.8	0.5	Yes	No
10	Placentia St.	e/o Dwy. 2	57.4	59.1	1.7	Yes	No

TABLE 7-15: UNMITIGATED EAC WITH PROJECT TRAFFIC NOISE IMPACTS

¹ The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the nearest adjacent land use. Values rounded to the nearest one-tenth.

² Significance Criteria (Section 4).



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.

Receiver locations are located in outdoor living areas (e.g., backyards) at 10 feet from any existing or proposed barriers or at the building façade, whichever is closer to the Project site, based on FHWA guidance, and consistent with additional guidance provided by Caltrans and the FTA, as previously described in Section 5.2. Sensitive receiver locations in the Project study area include residential uses, as described below. Other sensitive land uses in the Project study area that are located at greater distances than those identified in this noise study will experience lower noise levels than those presented in this report due to the additional attenuation from distance and the shielding of intervening structures.

- R1: Located approximately 66 feet north of the Project site, R1 represents existing residential homes on the east side of Patterson Avenue. A 24-hour noise measurement was taken near this location, L1, to describe the existing ambient noise environment.
- R2: Location R2 represents existing residential outdoor living areas (backyards) located east of the Project site at roughly 10 feet, on the north side of Placentia Street. A 24-hour noise measurement was taken near this location, L3, to describe the existing ambient noise environment.
- R3: Location R3 represents existing residential outdoor living areas (backyards) located east of the Project site at roughly 10 feet, on the north side of Placentia Street. A 24-hour noise measurement near this location, L3, is used to describe the existing ambient noise environment.
- R4: Location R4 represents the existing residential home located roughly 112 feet south of the Project site, south of Placentia Street. A 24-hour noise measurement near this location, L4, is used to describe the existing ambient noise environment.
- R5: Located approximately 102 feet west of the Project site, R5 represents existing residential homes on the west side of Patterson Avenue. A 24-hour noise measurement was taken near this location, L5, to describe the existing ambient noise environment.







- 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 nearby receiver locations, identified in Section 8, resulting from the operation of the proposed Barker Logistics Project. Exhibit 9-A identifies the representative receiver locations and noise source locations used to assess the operational noise levels.

9.1 OPERATIONAL NOISE SOURCES

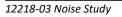
At the time this noise analysis was prepared, the future tenants of the proposed Project were unknown. The on-site Project-related noise sources are expected to include: idling trucks, delivery truck activities, backup alarms, as well as loading and unloading of dry goods, roof-top air conditioning units, and parking lot vehicle movements. This noise analysis is intended to describe noise level impacts associated with the expected typical operational activities at the Project site.

9.2 **OPERATIONAL NOISE BARRIERS**

A review of the Project site plan indicates that the distribution/warehouse activity loading dock areas will benefit from a planned 14-high screen wall as shown on Exhibit 9-A. In addition, the site plan and elevations included in Appendix 9.2 indicate that the building will be 35 feet high with an additional 8-foot high parapet wall.

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 idling trucks, delivery truck activities, backup alarms, as well as loading and unloading of dry goods, roof-top air conditioning units, and parking lot vehicle movements all operating continuously. These sources of noise activity will likely vary throughout the day.





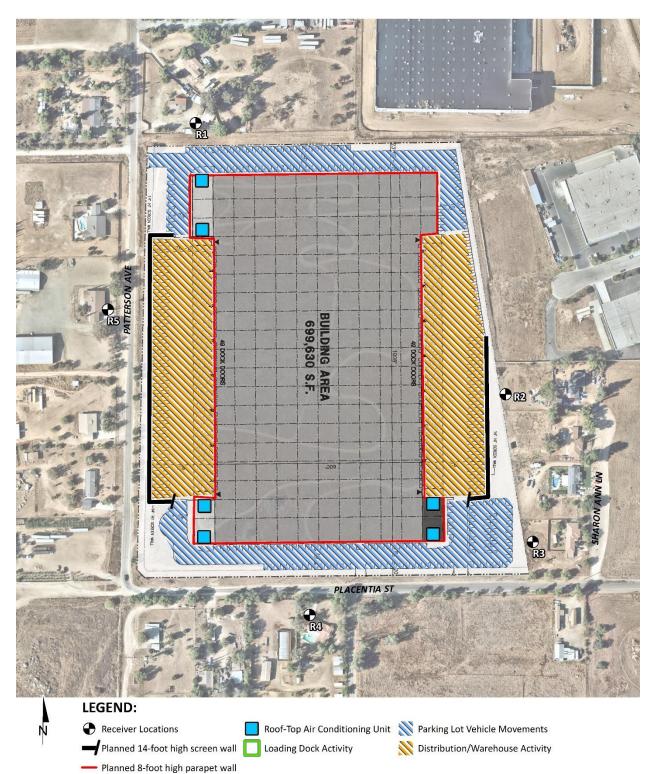


EXHIBIT 9-A: OPERATIONAL NOISE SOURCE LOCATIONS



Noise Source	Duration	Ref. Distance	Noise Source	Reference Noise Level (dBA L _{eq})		Sound Power
Noise source	(hh:mm:ss)	(Feet)	Height (Feet)	@ Ref. Dist.	@ 50 Feet	Level (dBA)⁴
Truck Unloading/Docking Activity ¹	00:15:00	30'	8'	67.2	62.8	94.5
Roof-Top Air Conditioning Units ²	96:00:00	5'	5'	77.2	57.2	88.9
Parking Lot Vehicle Movements ³	01:00:00	10'	5'	52.2	41.7	73.4

TABLE 9-1: REFERENCE NOISE LEVEL MEASUREMENTS

¹ Reference noise level measurements were collected from the existing operations of the Motivational Fulfillment & Logistics Services distribution facility located at 6810 Bickmore Avenue in the City of Chino on Wednesday, January 7, 2015.

² As measured by Urban Crossroads, Inc. on 7/27/2015 at the Santee Walmart located at 170 Town Center Parkway.

³ As measured by Urban Crossroads, Inc. on 5/17/2017 at the Panasonic Avionics Corporation parking lot in the City of Lake Forest.

⁴ Calculated using the CadnaA noise model at the reference distance to the noise source.

9.2.1 MEASUREMENT PROCEDURES

The reference noise level measurements presented in this section were collected using a Larson Davis LxT Type 1 precisions 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. (21)

9.2.2 TRUCK IDLING, DELIVERIES, BACKUP ALARMS, UNLOADING/LOADING, AND DOCKING

Short-term reference noise level measurements were collected on Wednesday, January 7th, 2015, by Urban Crossroads, Inc. at the Motivational Fulfillment & Logistics Services distribution facility located at 6810 Bickmore Avenue in the City of Chino. The noise level measurements represent the typical weekday dry goods logistics warehouse operation in a single building, of roughly 285,000 square feet, with a loading dock area on the western side of the building façade. Up to ten trucks were observed in the loading dock area including a combination of tractor trailer semi-trucks, two-axle delivery trucks, and background forklift operations. The unloading/docking activity noise level measurement was taken over a fifteen-minute period and represents multiple noise sources taken from the center of loading dock activities generating a reference noise level of 62.8 dBA L_{eq} at a uniform reference distance of 50 feet.

At this measurement location, the noise sources associated with employees unloading a docked truck container included the squeaking of the truck's shocks when weight was removed from the truck, employees playing music over a radio, as well as a forklift horn and backup alarm. In addition, during the noise level measurement a truck entered the loading dock area and proceeded to reverse and dock in a nearby loading bay, adding truck engine, idling, and air brakes noise, in addition to on-going idling of an already docked truck



9.2.3 ROOF-TOP AIR CONDITIONING UNITS

To assess the impacts created by the roof-top air conditioning units at the Project buildings, reference noise levels measurements were taken over a four-day total duration at the Santee Walmart on July 27th, 2015. Located at 170 Town Center Parkway in the City of Santee, the noise level measurements describe mechanical roof-top air conditioning units on the roof of an existing Walmart store with additional roof-top units operating in the background. The reference noise level represents Lennox SCA120 series 10-ton model packaged air conditioning units. At 5 feet from the closest roof-top air conditioning unit, the highest exterior noise level from all four days of the measurement period was measured at 77.2 dBA L_{eq} . Using the uniform reference distance of 50 feet, the noise level is 57.2 dBA L_{eq} .

9.2.4 PARKING LOT VEHICLE MOVEMENTS (AUTOS)

To determine the noise levels associated with parking lot vehicle movements, Urban Crossroads collected reference noise level measurements over a 24-hour period on May 17^{th} , 2017 at the parking lot for the Panasonic Avionics Corporation in the City of Lake Forest. The peak hour of activity measured over the 24-hour noise level measurement period occurred between 12:00 p.m. to 1:00 p.m., or the typical lunch hour for employees working in the area. The measured reference noise level at 50 feet from parking lot vehicle movements was measured at 41.7 dBA L_{eq}. The parking lot noise levels are mainly due to cars pulling in and out of spaces during peak lunch hour activity and employees talking.

9.3 CADNAA NOISE PREDICTION MODEL

To fully describe the exterior operational noise levels from the Project, Urban Crossroads, Inc. developed a noise prediction model using the CadnaA (Computer Aided Noise Abatement) computer program. CadnaA can analyze the noise level of multiple types of noise sources and calculates the noise levels at any location using the spatially accurate Project site plan and includes the effects of topography, buildings, and multiple barriers in its calculations using the latest standards to predict outdoor noise impacts. Appendix 9.1 includes the detailed noise model inputs used to estimate the Project operational noise levels presented in this section.

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

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



Using the ISO 9613 protocol, the CadnaA noise prediction model will calculate the distance from each noise source to the noise receiver locations, using the ground absorption, distance, and barrier/building attenuation inputs to provide a summary of noise level calculations at each receiver location and the partial noise level contributions by noise source.

The reference sound power level (PWL) for the highest noise source expected at the Project site was input into the CadnaA noise prediction model. While sound pressure levels (e.g. L_{eq}) quantify in decibels the intensity of given sound sources at a reference distance, sound power levels (PWL) are connected to the sound source and are independent of distance. Sound pressure levels vary substantially with distance from the source, and also diminish as a result of intervening obstacles and barriers, air absorption, wind, and other factors. Sound power is the acoustical energy emitted by the sound source and is an absolute value that is not affected by the environment.

The operational noise level calculations provided in this noise study account for the distance attenuation provided due to geometric spreading, when sound from a localized stationary source (i.e., a point source) propagates uniformly outward in a spherical pattern. Hard site conditions are used in the operational noise analysis which result in noise levels that attenuate (or decrease) at a rate of 6.0 dBA for each doubling of distance from a point source, based on existing conditions in the Project study area.

9.3 **PROJECT OPERATIONAL NOISE LEVELS**

Using the reference noise levels to represent the proposed Project operations that include idling trucks, delivery truck activities, backup alarms, as well as loading and unloading of dry goods, roof-top air conditioning units, and parking lot vehicle 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. As indicated on Table 9-2, the Project-only operational noise levels will range from 36.8 to 42.4 dBA L_{eq} at the receiver locations. Exhibit 9-B shows the unmitigated Project operational noise level contours.

	Noise Leve	Combined			
Receiver Location ¹	Truck Unloading/ Docking Activity Units		Parking Lot Vehicle Movements	Operational Noise Levels (dBA L _{eq})	
R1	36.4	35.8	28.2	39.5	
R2	41.8	33.6	18.6	42.4	
R3	38.6	35.3	28.9	40.6	
R4	22.8	36.4	22.5	36.8	
R5	40.0	36.0	14.5	41.5	

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

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

² Reference noise sources as shown on Table 9-1.





EXHIBIT 9-B: UNMITIGATED PROJECT OPERATIONAL NOISE LEVEL CONTOURS

LEGEND:

 • Practional Noise Level Contours (dBA Leq)

 • Receiver Locations

 • Planned 14-foot high screen wall

N



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 9-3 shows the operational noise levels associated with Barker Logistics Project will satisfy the County of Riverside 65 dBA L_{eq} daytime and 45 dBA L_{eq} nighttime exterior noise level standards at all nearby receiver locations. Therefore, the operational noise impacts are considered *less than significant* at the nearby noise-sensitive receiver locations.

Threshold Exceeded?³ Noise Level Receiver at Receiver Locations Daytime Nighttime Location¹ $(dBA L_{eq})^2$ (65 dBA L_{ea}) (45 dBA Lea) R1 39.5 No No R2 42.4 No No R3 40.6 No No R4 36.8 No No R5 41.5 No No

TABLE 9-3: UNMITIGATED OPERATIONAL NOISE LEVEL COMPLIANCE

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

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

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

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

9.4 **PROJECT OPERATIONAL NOISE LEVEL CONTRIBUTIONS**

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

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

Where "SPL1," "SPL2," etc. are equal to the sound pressure levels being combined, or in this case, the Project-operational and existing ambient noise levels. The difference between the combined Project and ambient noise levels describe the Project noise level contributions to the existing ambient noise environment. Noise levels that would be experienced at receiver locations when Project-source noise is added to the daytime and nighttime ambient conditions are presented on Tables 9-4 and 9-5, respectively.

As indicated on Tables 9-4 and 9-5, the Project will generate an unmitigated daytime and nighttime operational noise level increases ranging from 0.0 to 0.2 dBA L_{eq} at the nearby receiver locations. Since the Project-related operational noise level contributions will satisfy the operational noise level increase significance criteria presented in Table 4-2, the increases at the sensitive receiver locations will be *less than significant*



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	Threshold ⁷	Threshold Exceeded? ⁷
R1	39.5	L1	61.4	61.4	0.0	3.0	No
R2	42.4	L3	56.4	56.6	0.2	5.0	No
R3	40.6	L3	56.4	56.5	0.1	5.0	No
R4	36.8	L4	60.7	60.7	0.0	3.0	No
R5	41.5	L5	58.9	59.0	0.1	5.0	No

TABLE 9-4: PROJECT DAYTIME NOISE LEVEL CONTRIBUTIONS

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

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

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

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

⁵ Represents the combined ambient conditions plus the Project activities.

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

⁷ Significance Criteria as defined in Section 4.

TABLE 9-5: PROJECT NIGHTTIME NOISE LEVEL CONTRIBUTIONS

Receiver Location ¹	Total Project Operational Noise Level ²	Measurement Location ³	Reference Ambient Noise Levels ⁴	Combined Project and Ambient⁵	Project Increase ⁶	Threshold ⁷	Threshold Exceeded? ⁷
R1	39.5	L1	58.5	58.6	0.1	5.0	No
R2	42.4	L3	55.3	55.5	0.2	5.0	No
R3	40.6	L3	55.3	55.4	0.1	5.0	No
R4	36.8	L4	58.2	58.2	0.0	5.0	No
R5	41.5	L5	55.5	55.7	0.2	5.0	No

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

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

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

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

⁵ Represents the combined ambient conditions plus the Project activities.

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

⁷ Significance Criteria as defined in Section 4.

9.5 **REFLECTION**

Field studies conducted by the FHWA have shown that the reflection from barriers and buildings does not substantially increase noise levels. (11) If all the noise striking a structure was reflected back to a given receiving point, the increase would be theoretically limited to 3 dBA. Further, not all of the acoustical energy is reflected back to same point. Some of the energy would go over the structure, some is reflected to points other than the given receiving point, some is scattered by ground coverings (e.g., grass and other plants), and some is blocked by intervening structures and/or obstacles (e.g., the noise source itself). Additionally, some of the reflected energy is lost due to the longer path that the noise must travel. FHWA measurements made to quantify

reflective increases in traffic noise have not shown an increase of greater than 1-2 dBA; an increase that is not perceptible to the average human ear.

9.6 **OPERATIONAL VIBRATION IMPACTS**

To assess the potential vibration impacts from truck haul trips associated with operational activities the County of Riverside threshold for vibration of 0.01 in/sec RMS is used. Truck vibration levels are dependent on vehicle characteristics, load, speed, and pavement conditions. According to the FTA *Transit Noise Impact and Vibration Assessment*, (28 p. 113) trucks rarely create vibration that exceeds 70 VdB or 0.003 in/sec RMS (4 p. 7) (unless there are bumps due to frequent potholes in the road. Trucks transiting on site will be travelling at very low speeds so it is expected that delivery truck vibration impacts at nearby homes will satisfy the County of Riverside vibration threshold of 0.01 in/sec RMS, and therefore, will be *less than significant*.





10 CONSTRUCTION IMPACTS

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

10.1 CONSTRUCTION NOISE LEVELS

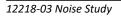
Noise generated by the Project construction equipment will include a combination of trucks, power tools, concrete mixers, and portable generators that when combined can reach high levels. The number and mix of construction equipment is expected to occur in the following stages, based on the *Barker Logistics Air Quality Impact Analysis* for the Project: (28)

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

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

10.2 CONSTRUCTION REFERENCE NOISE LEVELS

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





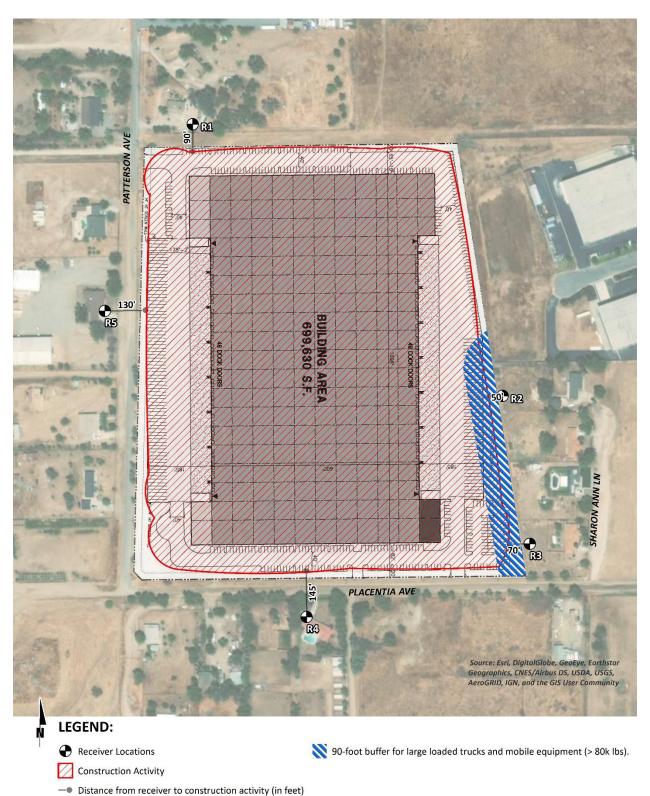


EXHIBIT 10-A: CONSTRUCTION NOISE SOURCE LOCATIONS

12218-03 Noise Study



ID	Noise Source	Duration (h:mm:ss)	Reference Distance From Source (Feet)	Reference Noise Levels @ Reference Distance (dBA L _{eq})	Reference Noise Levels @ 50 Feet (dBA L _{eq}) ⁶
1	Truck Pass-Bys & Dozer Activity ¹	0:01:15	30'	63.6	59.2
2	Dozer Activity ¹	0:01:00	30'	68.6	64.2
3	Construction Vehicle Maintenance Activities ²	0:01:00	30'	71.9	67.5
4	Foundation Trenching ²	0:01:01	30'	72.6	68.2
5	Rough Grading Activities ²	0:05:00	30'	77.9	73.5
6	Framing ³	0:02:00	30'	66.7	62.3
7	Dozer Pass-By ⁴	0:00:32	30'	84.0	79.6
8	Concrete Mixer Truck Movements ⁵	0:01:00	50'	71.2	71.2
9	Concrete Paver Activities ⁵	0:01:00	30'	70.0	65.6
10	Concrete Mixer Pour & Paving Activities ⁵	0:01:00	30'	70.3	65.9
11	Concrete Mixer Backup Alarms & Air Brakes⁵	0:00:20	50'	71.6	71.6
12	Concrete Mixer Pour Activities ⁵	1:00:00	50'	67.7	67.7

 TABLE 10-1:
 CONSTRUCTION REFERENCE NOISE LEVELS

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

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

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

⁴ As measured by Urban Crossroads, Inc. on 10/30/15 during grading operations within an industrial construction site located in the City of Ontario.

⁵ Reference noise level measurements were collected from a nighttime concrete pour at an industrial construction site, located at 27334 San Bernardino Avenue in the City of Redlands, between 1:00 a.m. to 2:00 a.m. on 7/1/15.

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



10.3 CONSTRUCTION NOISE ANALYSIS

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

Reference Construction Activity ¹	Reference Noise Level @ 50 Feet (dBA L _{eq})	
Truck Pass-Bys & Dozer Activity	59.2	
Dozer Activity	64.2	
Dozer Pass-By	79.6	
Highest Reference Noise Level at 50 Feet (dBA L _{eq}):	79.6	

TABLE 10-2: SITE PREPARATION EQUIPMENT NOISE LEVELS

Receiver Location			Estimated Noise Barrier Attenuation (dBA L _{eq}) ⁴	Construction Noise Level (dBA L _{eq})
R1	86'	-4.7	0.0	74.9
R2	50'	0.0	0.0	79.6
R3	70'	-2.9	0.0	76.6
R4	145'	-9.2	0.0	70.3
R5	130'	-8.3	0.0	71.3

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

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

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



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

TABLE 10-3: GRADING EQUIPMENT NOISE LEVELS

Receiver Location	Distance to Construction Activity (Feet) ²	Distance Attenuation (dBA L _{eq}) ³	Estimated Noise Barrier Attenuation (dBA L _{eq}) ⁴	Construction Noise Level (dBA L _{eq})
R1	86'	-4.7	0.0	68.8
R2	50'	0.0	0.0	73.5
R3	70'	-2.9	0.0	70.5
R4	145'	-9.2	0.0	64.2
R5	130'	-8.3	0.0	65.2

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

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

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



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

TABLE 10-4: BUILDING CONSTRUCTION EQUIPMENT NOISE LEVELS

Receiver Location	Distance to Construction Activity (Feet) ²	Distance Attenuation (dBA L _{eq}) ³	Estimated Noise Barrier Attenuation (dBA L _{eq}) ⁴	Construction Noise Level (dBA L _{eq})
R1	86'	-4.7	0.0	63.5
R2	50'	0.0	0.0	68.2
R3	70'	-2.9	0.0	65.2
R4	145'	-9.2	0.0	58.9
R5	130'	-8.3	0.0	59.9

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

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

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



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

TABLE 10-5: ARCHITECTURAL COATING EQUIPMENT NOISE LEVELS

Receiver Location	Distance to Construction Activity (Feet) ²	Distance Attenuation (dBA L _{eq}) ³	Estimated Noise Barrier Attenuation (dBA L _{eq}) ⁴	Construction Noise Level (dBA L _{eq})
R1	86'	-4.7	0.0	62.8
R2	50'	0.0	0.0	67.5
R3	70'	-2.9	0.0	64.5
R4	145'	-9.2	0.0	58.2
R5	130'	-8.3	0.0	59.2

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

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

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



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

TABLE 10-6: PAVING EQUIPMENT NOISE LEVELS

Receiver Location	Distance to Construction Activity (Feet) ²	Distance Attenuation (dBA L _{eq}) ³	Estimated Noise Barrier Attenuation (dBA L _{eq}) ⁴	Construction Noise Level (dBA L _{eq})
R1	86'	-4.7	0.0	66.9
R2	50'	0.0	0.0	71.6
R3	70'	-2.9	0.0	68.7
R4	145'	-9.2	0.0	62.4
R5	130'	-8.3	0.0	63.3

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

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

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

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

10.4 CONSTRUCTION NOISE LEVEL COMPLIANCE

The construction noise analysis shows that the highest construction noise levels will occur when construction activities take place at the closest point from primary Project construction activity to each of the nearby receiver locations. As shown on Table 10-7, the unmitigated construction noise levels are expected to range from 58.2 to 79.6 dBA L_{eq} at the nearby receiver locations.

		Construction Noise Level (dBA L _{eq})						
Receiver Location ¹	Site Preparation	Grading	Building Construction	Architectural Coating	Paving	Highest Activity Noise Levels ²		
R1	74.9	68.8	63.5	62.8	66.9	74.9		
R2	79.6	73.5	68.2	67.5	71.6	79.6		
R3	76.6	70.5	65.2	64.5	68.7	76.6		
R4	70.3	64.2	58.9	58.2	62.4	70.3		
R5	71.3	65.2	59.9	59.2	63.3	71.3		

TABLE 10-7: UNMITIGATED CONSTRUCTION EQUIPMENT NOISE LEVEL SUMMARY

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

² Estimated construction noise levels during peak operating conditions.

To evaluate whether the Project will generate potentially significant short-term noise levels at off-site sensitive receiver locations a construction-related the NIOSH noise level threshold of 85 dBA L_{eq} is used as acceptable thresholds for construction noise at the nearby sensitive receiver locations. Table 10-8 shows the highest construction noise levels at the potentially impacted receiver locations are estimated at 79.6 dBA L_{eq} and will satisfy the NIOSH 85 dBA L_{eq} significance threshold during temporary Project construction activities. The noise impact due to unmitigated Project construction noise levels is, therefore, considered a *less than significant* impact at all nearby sensitive receiver locations.

TABLE 10-8: CONSTRUCTION EQUIPMENT NOISE LEVEL COMPLIANCE

	Const	ruction Noise Levels (dB	A L _{eq})
Receiver Location ¹	Highest Construction Noise Levels ²	Threshold ³	Threshold Exceeded? ⁴
R1	74.9	85	No
R2	79.6	85	No
R3	76.6	85	No
R4	70.3	85	No
R5	71.3	85	No

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

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

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

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



10.5 CONSTRUCTION VIBRATION IMPACTS

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

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

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

At distances ranging from 50 to 145 feet from primary construction activities, construction vibration velocity levels are estimated at 0.022 in/sec RMS and will exceed County of Riverside RMS vibration threshold of 0.01 in/sec at receiver locations R2 and R3, as shown on Table 10-9. As such, the Project-related vibration impacts will be *potentially significant* during the construction activities at the Project site.

Therefore, a 90-foot buffer zone vibration mitigation measure is required which would restrict the use of large loaded trucks and dozers (greater than 80,000 pounds) within 90-feet of occupied sensitive receiver locations represented by R2 and R3. With the mitigation measures identified in this report, and shown on Exhibit 10-A, the mitigated vibration levels with the 90-foot buffer zone will be reduced to 0.0093 in/sec RMS, and will satisfy the County of Riverside perceptible vibration threshold of 0.01 in/sec RMS, as shown on Table 10-10. Therefore, impacts with the construction wibration measure identified in this study will be *less than significant*.

Further, the vibration levels due to Project construction do not represent vibration levels capable of causing building damage to nearby residential homes. The FTA identifies construction vibration levels capable of building damage ranging from 0.12 to 0.5 in/sec PPV. (5) The peak Project-construction vibration levels of 0.031 in/sec PPV will remain below the FTA vibration levels for building damage at the residential homes near the Project site. Further, the levels at the site of the closest sensitive receivers are unlikely to be sustained during the entire construction period but will occur rather only during the times that heavy construction equipment is operating adjacent to the Project site perimeter.



	Distance to		Receiver	PPV Levels	RMS					
Receiver ¹	Const. Activity (Feet)	Small Bulldozer	Jack- hammer	Loaded Trucks	Large Bulldozer	Peak Vibration	Velocity Levels (in/sec) ³	Threshold	Threshold Exceeded? ⁴	
R1	86'	0.0005	0.0055	0.0119	0.0139	0.0139	0.0099	0.01	No	
R2	50'	0.0011	0.0124	0.0269	0.0315	0.0315	0.0223	0.01	Yes	
R3	70'	0.0006	0.0075	0.0162	0.0190	0.0190	0.0135	0.01	Yes	
R4	145'	0.0002	0.0025	0.0054	0.0064	0.0064	0.0045	0.01	No	
R5	130'	0.0003	0.0030	0.0064	0.0075	0.0075	0.0053	0.01	No	

TABLE 10-9: UNMITIGATED PROJECT CONSTRUCTION VIBRATION LEVELS

¹Receiver locations are shown on Exhibit 10-A.

² Based on the Vibration Source Levels of Construction Equipment included on Table 6-10.

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

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

TABLE 10-10: MITIGATED PROJECT CONSTRUCTION VIBRATION LEVELS

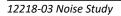
	Distance to	Mi	itigated Red	ceiver PPV	RMS					
Receiver ¹	Const. Activity (Feet)	Small Bulldozer	Jack- hammer	Loaded Trucks	Large Bulldozer	Peak Vibration	Velocity Levels (in/sec) ³	Threshold	Threshold Exceeded? ⁴	
R2	90'	-	-	0.0111	0.0130	0.0130	0.0093	0.01	No	
R3	90'	-	-	0.0111	0.0130	0.0130	0.0093	0.01	No	

¹Receiver locations are shown on Exhibit 10-A.

² Based on the Vibration Source Levels of Construction Equipment included on Table 6-10.

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

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







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- 24. **County of Riverside, Office of Industrial Hygiene.** *Requirements for Determining and Mitigating Traffic Noise Impacts to Residential Structures.* April 2015.
- 25. Urban Crossroads, Inc. Barker Logistics Air Quality Impact Analysis. March 2019.



12 CERTIFICATION

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

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



EDUCATION

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

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

PROFESSIONAL REGISTRATIONS

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

PROFESSIONAL AFFILIATIONS

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

PROFESSIONAL CERTIFICATIONS

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





APPENDIX 3.1:

COUNTY OF RIVERSIDE MUNICIPAL CODE





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-l (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.



APPENDIX 5.1:

STUDY AREA PHOTOS





L2 East 33, 49' 33.810000", 117, 14' 49.180000"

89

L2 North 33, 49' 33.900000", 117, 14' 49.230000"





L1 South 33, 49' 35.990000", 117, 15' 9.810000"



33, 49' 35.990000", 117, 15' 9.810000"

L1 North 33, 49' 35.880000", 117, 15' 9.810000"



L1 East 33, 49' 35.920000", 117, 15' 9.810000"





L2 South 33, 49' 33.680000", 117, 14' 49.120000"



L2 West 33, 49' 33.940000", 117, 14' 49.230000"



L3 East 33, 49' 23.120000", 117, 14' 54.750000"



L3 North 33, 49' 23.110000", 117, 14' 54.780000"



L3 South 33, 49' 23.120000", 117, 14' 54.670000"



L3 West 33, 49' 23.120000", 117, 14' 54.620000"



L4 East 33, 49' 23.380000", 117, 15' 2.640000"



L4 North 33, 49' 22.990000", 117, 15' 2.610000"



33, 49' 22.990000", 117, 15' 2.640000"



L4 West 33, 49' 22.990000", 117, 15' 2.610000"



L5 East 33, 49' 30.300000", 117, 15' 9.830000"



L5 North 33, 49' 30.300000", 117, 15' 9.830000"



L5 South 33, 49' 30.320000", 117, 15' 9.830000"



L5 West 33, 49' 30.320000", 117, 15' 9.830000"

APPENDIX 5.2:

NOISE LEVEL MEASUREMENT WORKSHEETS





	Thursday, F Barker Prop	ebruary 07, 2 perty	2019		Location:	24-Ho L1 - Located residential I	on Patterso		jacent to exis		Meter:	Piccolo I				12218 R. Saber
							Hourly L _{ea} d	dBA Readings	(unadjusted)							
							eq -		(
85.0 80.0 75.0 70.0 65.0 65.0 1 60.0																
		51.6	56.0	61.5	62.7	62.8 60.3		62.3	62.6	63.4	60.8 65.0	63.6	60.0	26.0	<mark>56.2</mark> 58.2	55.6
40.0		- M M														
	0	1 2	3	4 5	6	7 8	9 1	l0 11	12 1	.3 14	15 16	17	18 19	20	21 22	23
									eginning					_		
Timeframe	Hour	L _{eq}	L _{max}	L min	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L _{eq}	Adj.	Adj. L _{eq}
	0	56.4	74.2	45.7	67.0	66.0	62.0	59.0	54.0	52.0	49.0	48.0	47.0	56.4	10.0	66.4
	1 2	51.6 51.2	58.8 59.7	46.5 47.1	55.0 54.0	54.0 54.0	53.0 53.0	53.0 53.0	52.0 52.0	51.0 50.0	49.0 48.0	48.0 48.0	48.0 47.0	51.6 51.2	10.0 10.0	61.6 61.2
Night	3	56.0	62.2	47.1	59.0	59.0	58.0	58.0	57.0	55.0	52.0	48.0 51.0	50.0	56.0	10.0	66.0
Birt	4	61.5	82.6	54.9	66.0	64.0	63.0	63.0	61.0	59.0	57.0	56.0	55.0	61.5	10.0	71.5
	5	59.9	83.5	53.5	66.0	64.0	63.0	62.0	59.0	57.0	55.0	55.0	54.0	59.9	10.0	69.9
	6	62.7	86.9	53.9	74.0	69.0	62.0	61.0	59.0	58.0	56.0	56.0	55.0	62.7	10.0	72.7
	7	62.8	89.0	49.6	75.0	70.0	63.0	60.0	58.0	55.0	52.0	51.0	50.0	62.8	0.0	62.8
	8	60.3 58.8	87.3 85.4	45.2 44.1	72.0 70.0	65.0 65.0	58.0 60.0	55.0 57.0	51.0 51.0	50.0 48.0	47.0 46.0	47.0 45.0	46.0 45.0	60.3 58.8	0.0 0.0	60.3 58.8
	9 10	62.3	85.4 90.5	44.1	70.0	68.0	59.0	56.0	49.0	48.0	46.0	45.0 45.0	45.0 44.0	62.3	0.0	62.3
	10	58.5	83.4	44.8	70.0	65.0	57.0	54.0	51.0	49.0	47.0	46.0	46.0	58.5	0.0	58.5
Day	12	62.6	86.3	43.7	76.0	72.0	68.0	62.0	55.0	50.0	46.0	45.0	44.0	62.6	0.0	62.6
Day	13	59.6	82.6	46.2	73.0	70.0	60.0	57.0	52.0	51.0	48.0	48.0	47.0	59.6	0.0	59.6
	14	63.4	86.5	47.5	76.0	72.0	64.0	60.0	55.0	53.0	50.0	49.0	48.0	63.4	0.0	63.4
	15 16	60.8 65.0	88.9 92.8	52.0 54.7	71.0 76.0	66.0 72.0	60.0 65.0	59.0 62.0	57.0 60.0	56.0 58.0	54.0 57.0	53.0 56.0	52.0 56.0	60.8 65.0	0.0 0.0	60.8 65.0
	10	63.6	85.8	56.4	76.0	69.0	65.0	63.0	60.0	58.0	58.0	58.0	57.0	63.6	0.0	63.6
	18	60.3	81.9	53.7	67.0	64.0	61.0	60.0	59.0	58.0	56.0	56.0	55.0	60.3	0.0	60.3
	19	60.0	82.5	51.6	70.0	65.0	60.0	58.0	56.0	55.0	53.0	53.0	52.0	60.0	5.0	65.0
Evening	20	56.0	79.7	51.2	62.0	58.0	57.0	56.0	55.0	54.0	53.0	52.0	52.0	56.0	5.0	61.0
	21	56.2	78.6	50.5	62.0	60.0	58.0	57.0	55.0	54.0	52.0	52.0	51.0	56.2	5.0	61.2
Night	22 23	58.2 55.6	85.1 80.6	49.6 49.3	65.0 62.0	61.0 60.0	58.0 57.0	57.0 56.0	55.0 55.0	54.0 54.0	51.0 51.0	51.0 51.0	50.0 50.0	58.2 55.6	10.0 10.0	68.2 65.6
Timeframe	Hour	L eq	L max	L min	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%		L _{eq} (dBA)	-00.0
Day	Min	58.5	81.9	43.4	67.0	64.0	57.0	54.0	49.0	47.0	45.0	45.0	44.0	24-Hour	Daytime	Nighttime
	Max	65.0	92.8	56.4	76.0	72.0	68.0	63.0	60.0	59.0	58.0	58.0	57.0	24=n0ur	Buytime	Mgmunne
Energy	Average	61.9		erage:	72.8	68.2	61.7	58.8	54.8	52.8	50.5	49.9	49.2	60.5	61.4	58.5
Evening	Min Max	56.0 60.0	78.6 82.5	50.5 51.6	62.0 70.0	58.0 65.0	57.0 60.0	56.0 58.0	55.0 56.0	54.0 55.0	52.0 53.0	52.0 53.0	51.0 52.0		Hour CNEL (d	
Energy	Average	57.8		erage:	64.7	61.0	58.3	57.0	55.3	54.3	52.7	52.3	51.7	- 24-		
	Min	51.2	58.8	45.7	54.0	54.0	53.0	53.0	52.0	50.0	48.0	48.0	47.0	1	65 7	
Night	Max	62.7	86.9	54.9	74.0	69.0	63.0	63.0	61.0	59.0	57.0	56.0	55.0		65.7	
Energy	Average	58.5	Ave	erage:	63.1	61.2	58.8	58.0	56.0	54.4	52.0	51.6	50.7			



	Thursday, F Barker Prop	ebruary 07, 2 perty	2019		Location:	L2 - Located	on Harvill A Daytona Bus	evel Measu venue northe iness Park ar	east of the Pind existing in	roject site idustrial lanc	Meter:	Piccolo I				12218 R. Saber
05.0							Hourly L _{eq} d	dBA Readings	(unadjusted)							
85.0 80.0 (Ygp) ^b 70.0 665.0 AlunoH 40.0 35.0	61.0	62.0	68.5	71.0	75.8	73.0	70.5	70.7		75.6	76.5	75.4	73.8		66.9 66.9	68.7
	0	1 2	3	4 5	6	7 8	9 1	LO 11 Hour Be	12 1	3 14	15 16	17	18 19	20	21 22	23
T :	11	,	,		140/	130/	1 = 0/			1500/	100%	105%	100%		0.11	
Timeframe	Hour 0	L _{eq}	L _{max} 81.5	L _{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L _{eq}	Adj.	Adj. L _{eq}
	0	61.0 62.0	81.5 81.2	46.8 48.7	74.0 75.0	71.0 72.0	61.0 67.0	58.0 63.0	55.0 57.0	53.0 55.0	51.0 52.0	50.0 51.0	49.0 50.0	61.0 62.0	10.0 10.0	71.0 72.0
	2	64.1	86.0	50.4	76.0	74.0	70.0	67.0	59.0	57.0	54.0	53.0	52.0	64.1	10.0	74.1
Night	3	68.5	87.8	52.9	78.0	77.0	75.0	73.0	66.0	61.0	58.0	57.0	55.0	68.5	10.0	78.5
	4	71.0	91.2	59.2	80.0	78.0	76.0	75.0	70.0	65.0	62.0	61.0	60.0	71.0	10.0	81.0
	5	74.0	90.0	60.2	81.0	80.0	79.0	78.0	75.0	71.0	63.0	62.0	61.0	74.0	10.0	84.0
	6	75.8	88.1	61.7	81.0	81.0	79.0	79.0	76.0	74.0	69.0	67.0	64.0	75.8	10.0	85.8
	7	73.0	86.3	53.7	80.0	79.0	78.0	77.0	74.0	70.0	60.0	59.0	56.0	73.0	0.0	73.0
	8	71.1	86.0	54.3	79.0	78.0	76.0	75.0	72.0	66.0	58.0	57.0	56.0	71.1	0.0	71.1
	9 10	70.5 70.7	86.2 85.5	53.9	79.0 70.0	77.0 78.0	76.0 76.0	75.0 75.0	71.0 71.0	66.0	58.0 56.0	57.0 55.0	55.0 53.0	70.5 70.7	0.0 0.0	70.5 70.7
	10	70.7	85.5 94.4	51.2 52.6	79.0 79.0	78.0	76.0	75.0	71.0	66.0 67.0	56.0	55.0 56.0	53.0 54.0	70.7	0.0	70.7
	11	71.5	83.8	52.0	79.0	78.0	77.0	75.0	72.0	67.0	57.0	55.0	54.0	71.5	0.0	71.5
Day	13	74.2	86.7	54.2	82.0	81.0	79.0	78.0	75.0	71.0	60.0	58.0	56.0	74.2	0.0	74.2
	14	75.6	86.8	56.2	83.0	82.0	80.0	79.0	77.0	73.0	62.0	60.0	57.0	75.6	0.0	75.6
	15	76.5	95.7	58.6	83.0	82.0	81.0	80.0	77.0	74.0	64.0	61.0	59.0	76.5	0.0	76.5
	16	76.4	92.3	60.2	83.0	82.0	81.0	80.0	77.0	74.0	64.0	62.0	61.0	76.4	0.0	76.4
	17	75.4	95.9	59.4	82.0	81.0	80.0	79.0	76.0	72.0	63.0	61.0	60.0	75.4	0.0	75.4
	18	73.8	93.8	56.4	82.0	81.0	79.0	78.0	74.0	69.0	61.0	60.0	58.0	73.8	0.0	73.8
Evening	19 20	70.7 69.9	89.7 84.9	54.8 54.6	80.0 80.0	78.0 79.0	77.0 76.0	76.0 75.0	71.0 69.0	64.0 61.0	58.0 57.0	58.0 56.0	56.0 55.0	70.7 69.9	5.0 5.0	75.7 74.9
Lvening	20	68.7	85.7	54.0	79.0	79.0	76.0	73.0	66.0	59.0	56.0	55.0	54.0	68.7	5.0	74.9
	22	66.9	86.6	53.1	78.0	77.0	74.0	71.0	62.0	58.0	56.0	55.0	54.0	66.9	10.0	76.9
Night	23	68.7	96.4	49.2	79.0	77.0	74.0	71.0	61.0	57.0	53.0	52.0	50.0	68.7	10.0	78.7
Timeframe	Hour	L _{eq}	L max	L _{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%		L _{eq} (dBA)	
Day	Min	70.5	83.8	51.2	79.0	77.0	76.0	75.0	71.0	66.0	56.0	55.0	53.0	24-Hour	Daytime	Nighttime
	Max	76.5	95.9	60.2	83.0	82.0	81.0	80.0	77.0	74.0	64.0	62.0	61.0			
Energy	Average Min	73.9 68.7	Ave 84.9	rage: 52.4	80.8 79.0	79.8 78.0	78.3 75.0	77.2 74.0	74.0 66.0	69.6 59.0	60.0 56.0	58.4 55.0	56.6 54.0	72.4	73.3	70.5
Evening	Max	70.7	84.9 89.7	52.4	79.0 80.0	78.0	75.0	74.0	71.0	64.0	58.0	55.0	54.0 56.0		Hour CNEL (a	
Energy	Average	69.8		rage:	79.7	78.3	76.0	75.0	68.7	61.3	57.0	56.3	55.0			
	Min	61.0	81.2	46.8	74.0	71.0	61.0	58.0	55.0	53.0	51.0	50.0	49.0	1	77 C	
Night	Max	75.8	96.4	61.7	81.0	81.0	79.0	79.0	76.0	74.0	69.0	67.0	64.0]	77.6	
Energy	Average	70.5	Ave	rage:	78.0	76.3	72.8	70.6	64.6	61.2	57.6	56.4	55.0			



	Thursday, F Barker Prop	ebruary 07, 2 verty	2019		Location:	L3 - Located	on Placentia	evel Measu a Avenue sou I residential	theast of the	-	e Meter:	Piccolo I				12218 R. Saber
							Hourly L _{eq} (dBA Readings	(unadjusted)							
85.0	2															
80.0 80.0 75.0 70.0 65.0 1																
0.0 ع 70.0																
- 60.0 - 55.0				<u>о</u>	~ <u>~</u>	%		<u>ه</u>		<mark></mark> ຄ	7 .6					
AlunoH 40.0	53.5	54.0	55.6	56.1	29.3	58.8 55.4	53.1	57. 53.4	54.7		57.7 60.	56. 3	53.8	22.3	<mark>52.1</mark> 49.8	51.3
- 40.0 35.0															<u> </u>	
	0	1 2	3	4 5	6	7 8	9 1	LO 11	12 1	3 14	15 16	17	18 19	20	21 22	23
Timoframe	Hour	,			110/	120/		Hour Be			100%	105%	100%	,	<u>A di</u>	Adi I
Timeframe	Hour 0	L _{eq} 53.5	L _{max} 65.1	L _{min} 52.2	L1% 57.0	L2% 56.0	L5% 54.0	L8% 54.0	L25% 53.0	L50% 53.0	L90% 52.0	L95% 52.0	L99% 52.0	L _{eq} 53.5	Adj. 10.0	Adj. L _{eq} 63.5
	1	54.0	65.2	52.6	59.0	57.0	55.0	54.0	53.0	53.0	53.0	53.0	52.0	54.0	10.0	64.0
	2	54.1	65.2	53.0	57.0	56.0	55.0	54.0	54.0	53.0	53.0	53.0	53.0	54.1	10.0	64.1
Night	3	55.6	68.1	53.7	59.0	58.0	56.0	56.0	55.0	55.0	54.0	54.0	54.0	55.6	10.0	65.6
	4 5	56.5 56.6	72.1 74.8	54.0 53.9	61.0 61.0	60.0 60.0	58.0 58.0	57.0 58.0	56.0 56.0	55.0 55.0	54.0 54.0	54.0 54.0	54.0 54.0	56.5 56.6	10.0 10.0	66.5 66.6
	6	59.3	74.8	55.1	67.0	65.0	62.0	61.0	59.0	57.0	56.0	55.0	55.0	59.3	10.0	69.3
	7	58.8	74.5	56.1	64.0	62.0	60.0	60.0	58.0	58.0	57.0	57.0	56.0	58.8	0.0	58.8
	8	55.4	70.7	48.8	64.0	61.0	58.0	57.0	55.0	53.0	51.0	50.0	49.0	55.4	0.0	55.4
	9	53.1	72.1	44.5	64.0	61.0	56.0	54.0	51.0	49.0	47.0	46.0	45.0	53.1	0.0	53.1
	10	57.6	87.4	44.3	66.0	61.0	56.0	54.0	51.0	49.0	46.0	46.0	45.0	57.6	0.0	57.6
	11 12	53.4 54.7	73.2 74.4	44.4 43.5	65.0 67.0	62.0 63.0	56.0 58.0	54.0 56.0	50.0 51.0	48.0 49.0	46.0 46.0	46.0 45.0	45.0 44.0	53.4 54.7	0.0 0.0	53.4 54.7
Day	12	56.1	76.1	44.4	69.0	66.0	59.0	57.0	53.0	50.0	47.0	47.0	46.0	56.1	0.0	56.1
	14	58.9	82.7	45.3	70.0	67.0	62.0	59.0	54.0	51.0	48.0	47.0	46.0	58.9	0.0	58.9
	15	57.7	79.3	47.8	68.0	66.0	61.0	59.0	55.0	52.0	50.0	50.0	49.0	57.7	0.0	57.7
	16	60.6	90.1	49.2	69.0	67.0	62.0	60.0	56.0	53.0	51.0	50.0	50.0	60.6	0.0	60.6
	17 18	56.3 54.8	77.0 72.5	49.7 48.5	65.0 64.0	63.0 62.0	60.0 59.0	58.0 57.0	55.0 53.0	53.0 52.0	51.0 50.0	51.0 50.0	50.0 49.0	56.3 54.8	0.0 0.0	56.3 54.8
	18	53.8	72.3	46.4	65.0	61.0	57.0	55.0	51.0	50.0	48.0	48.0	49.0	53.8	5.0	58.8
Evening	20	52.3	70.2	45.4	63.0	61.0	56.0	54.0	50.0	48.0	47.0	46.0	46.0	52.3	5.0	57.3
	21	52.1	73.4	44.6	62.0	58.0	55.0	53.0	50.0	48.0	46.0	46.0	45.0	52.1	5.0	57.1
Night	22 23	49.8	68.9 72 5	44.2	58.0	55.0	51.0 52.0	50.0	49.0	48.0	46.0 44.0	45.0	45.0 43.0	49.8	10.0 10.0	59.8
Timeframe	23 Hour	51.3 L _{eq}	73.5 L _{max}	43.4 L _{min}	60.0 L1%	57.0 L2%	53.0 L5%	52.0 L8%	49.0 L25%	47.0 L50%	44.0 L90%	44.0 L95%	43.0 L99%	51.3	L _{eq} (dBA)	61.3
	Min	53.1	70.7	43.5	64.0	61.0	56.0	54.0	50.0	48.0	46.0	45.0	44.0	24 Hour		Nighttime
Day	Max	60.6	90.1	56.1	70.0	67.0	62.0	60.0	58.0	58.0	57.0	57.0	56.0	24-Hour	Daytime	Nighttime
Energy	Average	57.0		erage:	66.3	63.4	58.9	57.1	53.5	51.4	49.2	48.8	47.8	56.1	56.4	55.3
Evening	Min Max	52.1 53.8	70.2 73.4	44.6 46.4	62.0 65.0	58.0 61.0	55.0 57.0	53.0 55.0	50.0 51.0	48.0 50.0	46.0 48.0	46.0 48.0	45.0 47.0		-Hour CNEL (d	
Energy	Average	52.8		erage:	63.3	60.0	56.0	54.0	50.3	48.7	47.0	48.0	46.0			
Night	Min	49.8	65.1	43.4	57.0	55.0	51.0	50.0	49.0	47.0	44.0	44.0	43.0	1	62.1	
	Max	59.3	74.8	55.1	67.0	65.0	62.0	61.0	59.0	57.0	56.0	55.0	55.0	1	UZ.1	
Energy /	Average	55.3	Ave	erage:	59.9	58.2	55.8	55.1	53.8	52.9	51.8	51.6	51.3			



Data	Thursday, E	obruary 07 2	010		Location	L4 - Located		evel Meas u a Avenue sou		-	Motor	Piccolo I			101-	12210
	Barker Prop	ebruary 07, 2 erty	.019		Location.	adjacent to	Tobacco Roa	ad and existir	ig rural resid	lential land	wieter:					12218 R. Saber
,	•					use.	Hourly I	dBA Readings	(unadiusted)						,	
							nouny L _{eq}	abA neuumgs	(unuujusteu)							
85.0	ע און אין אין אין אין אין אין אין אין אין אי															
80.0 80.0 75.0 70.0 65.0 60.0																
e5.0	ğ 🕂 🕂			_												
ال ا				ຍິ ຍິ	62.8	2		<u>2</u>	— -i — - ,	2.5	63.9	5.3	- <mark>``</mark> i -		<u> </u>	
Ajuno 45.0 45.0 40.0	52.5	52.4	56.5	61.3	<u> </u>	61. 58.5		<mark>00</mark> 00	60.1	0 <mark></mark>	63 63 62 0	6	60.1 60.1	2001	58.6 56.0	56.1
± 40.0 35.0		- <u>0</u> - <u>0</u> -					<u> </u>									
	0	1 2	3	4 5	6	7 8	9 :	10 11 Hour Be	12 1 ginning	3 14	15 16	17	18 19	20	21 22	23
Timeframe	Hour	L _{eq}	L _{max}	L _{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L _{eq}	Adj.	Adj. L _{eq}
	0	52.5	61.2	46.5	57.0	56.0	55.0	55.0	53.0	51.0	49.0	48.0	47.0	52.5	10.0	62.5
	1	52.4	64.8	46.8	58.0	56.0	55.0	54.0	53.0	51.0	49.0	48.0	47.0	52.4	10.0	62.4
	2	51.0	56.7	47.1	54.0	53.0	53.0	52.0	51.0	50.0	49.0	48.0	48.0	51.0	10.0	61.0
Night	3 4	56.5 61.3	78.7 83.7	48.4 55.3	59.0 68.0	58.0 64.0	58.0 63.0	57.0 62.0	56.0 61.0	55.0	51.0 57.0	50.0 56.0	49.0 56.0	56.5 61.3	10.0	66.5 71.3
	4 5	59.9	86.9	53.8	68.0 64.0	62.0	61.0	61.0	58.0	59.0 56.0	57.0	56.0	56.0	59.9	10.0 10.0	69.9
	6	62.8	84.1	55.2	74.0	70.0	65.0	63.0	60.0	58.0	57.0	56.0	55.0	62.8	10.0	72.8
	7	61.2	81.7	51.1	71.0	67.0	63.0	62.0	60.0	57.0	53.0	52.0	51.0	61.2	0.0	61.2
	8	58.5	80.7	46.6	71.0	66.0	60.0	57.0	53.0	52.0	48.0	48.0	47.0	58.5	0.0	58.5
	9	55.6	78.0	46.2	67.0 72.0	62.0	57.0	54.0	51.0	49.0	48.0	47.0	46.0	55.6	0.0	55.6
	10 11	60.2 59.2	86.8 81.1	44.9 45.6	73.0 72.0	67.0 68.0	58.0 60.0	55.0 57.0	50.0 51.0	48.0 49.0	46.0 47.0	46.0 47.0	45.0 46.0	60.2 59.2	0.0 0.0	60.2 59.2
_	12	60.1	82.2	46.4	73.0	70.0	62.0	59.0	54.0	52.0	48.0	48.0	47.0	60.1	0.0	60.1
Day	13	61.2	84.7	48.6	73.0	72.0	65.0	61.0	55.0	54.0	51.0	50.0	49.0	61.2	0.0	61.2
	14	62.5	83.0	48.8	76.0	73.0	65.0	61.0	55.0	53.0	51.0	50.0	49.0	62.5	0.0	62.5
	15	62.4	85.9	52.5	75.0	71.0	64.0	61.0	58.0	56.0	54.0	54.0	53.0	62.4	0.0	62.4
	16 17	63.9 62.3	85.1 85.9	55.9 56.2	76.0 71.0	72.0 68.0	66.0 63.0	62.0 62.0	59.0 60.0	58.0 59.0	57.0 58.0	57.0 57.0	56.0 57.0	63.9 62.3	0.0 0.0	63.9 62.3
	18	60.7	80.8	53.9	69.0	66.0	62.0	61.0	59.0	58.0	57.0	56.0	55.0	60.7	0.0	60.7
	19	60.1	81.9	52.6	73.0	66.0	59.0	58.0	56.0	55.0	54.0	54.0	53.0	60.1	5.0	65.1
Evening	20	56.7	79.5	51.3	62.0	59.0	57.0	56.0	55.0	54.0	53.0	52.0	52.0	56.7	5.0	61.7
	21	58.6	84.2	50.3	66.0	62.0	58.0	56.0	55.0	54.0	52.0	52.0	51.0	58.6	5.0	63.6
Night	22 23	56.0 56.1	77.1 80.0	48.8 49.3	64.0 63.0	59.0 60.0	56.0 58.0	56.0 57.0	54.0 55.0	53.0 53.0	51.0 51.0	51.0 50.0	50.0 50.0	56.0 56.1	10.0 10.0	66.0 66.1
Timeframe	Hour	L _{eq}	L max	L _{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%		L _{eq} (dBA)	
Day	Min	55.6	78.0	44.9	67.0	62.0	57.0	54.0	50.0	48.0	46.0	46.0	45.0	24-Hour	Daytime	Nighttime
	Max	63.9	86.8	56.2	76.0	73.0	66.0	62.0	60.0	59.0	58.0	57.0	57.0			
Energy	Average Min	61.1 56.7	Ave 79.5	erage: 50.3	72.3 62.0	68.5 59.0	62.1 57.0	59.3 56.0	55.4 55.0	53.8 54.0	51.5 52.0	51.0 52.0	50.1 51.0	59.9	60.7	58.2
Evening	Max	60.1	79.5 84.2	50.3	73.0	66.0	59.0	58.0	55.0	54.0	52.0 54.0	52.0 54.0	53.0		Hour CNEL (d	
Energy	Average	58.7		erage:	67.0	62.3	58.0	56.7	55.3	54.3	53.0	52.7	52.0			
Night	Min	51.0	56.7	46.5	54.0	53.0	53.0	52.0	51.0	50.0	49.0	48.0	47.0		65.3	
	Max	62.8	86.9	55.3	74.0	70.0	65.0	63.0	61.0	59.0	57.0	56.0	56.0		0	
Energy	Average	58.2	AVE	erage:	62.3	59.8	58.2	57.4	55.7	54.0	52.1	51.2	50.7			



	Thursday, F Barker Prop	ebruary 07, 2 perty	2019		Location:	L5 - Located	on Patterso		est of the Pro		Meter:	Piccolo I				12218 R. Saber
							Hourly L _{eq} d	IBA Readings	(unadjusted)							
85.0 80.0 75.0 (Ygp) ^b 65.0 ^ 66.0 45.0 45.0 45.0 45.0 35.0 35.0	20.2	51.4 51.4 49.3	54.0	58.7 57.8	23.0	58.7 54.7		56.9 54.1		63.4 63.4	56.9 6.3 62.3	63.8 63.8	57.3	22.9	54.5 54.1	53.3
	0	1 2	3	4 5	6	7 8	9 1	0 11 Hour B e	12 1 eginning	3 14	15 16	17	18 19	20	21 22	23
Timeframe	Hour	L _{eq}	L _{max}	L _{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L _{eq}	Adj.	Adj. L _{eq}
	0	50.5	59.4	44.3	55.0	54.0	53.0	53.0	51.0	49.0	47.0	46.0	45.0	50.5	10.0	60.5
	1	51.4	63.6	46.1	56.0	55.0	54.0	53.0	52.0	50.0	48.0	48.0	47.0	51.4	10.0	61.4
	2	49.3	54.0	45.6	52.0	51.0	51.0	50.0	49.0	49.0	47.0	47.0	46.0	49.3	10.0	59.3
Night	3	54.0	61.2	46.4	57.0	57.0	57.0	56.0	55.0	53.0	49.0	49.0	48.0	54.0	10.0	64.0
	4	58.7 57.8	75.6 76.7	53.2 52.8	63.0 61.0	62.0 61.0	61.0 60.0	61.0 60.0	59.0 58.0	57.0 56.0	55.0 54.0	54.0 54.0	54.0 53.0	58.7 57.8	10.0 10.0	68.7 67.8
	6	59.0	70.7	53.2	68.0	63.0	60.0	59.0	58.0	57.0	55.0	55.0	53.0 54.0	57.8	10.0	69.0
	7	58.7	79.6	49.8	68.0	63.0	61.0	60.0	58.0	55.0	52.0	51.0	50.0	55.0	0.0	58.7
	8	54.7	78.6	46.1	65.0	61.0	56.0	54.0	52.0	51.0	48.0	47.0	47.0	54.7	0.0	54.7
	9	53.6	75.2	45.0	65.0	61.0	56.0	54.0	50.0	48.0	46.0	46.0	46.0	53.6	0.0	53.6
	10	56.9	83.7	44.2	68.0	64.0	57.0	54.0	49.0	47.0	46.0	45.0	45.0	56.9	0.0	56.9
	11	54.1	75.6	44.8	67.0	61.0	54.0	52.0	50.0	49.0	47.0	46.0	45.0	54.1	0.0	54.1
Day	12	58.2	78.3	44.2	72.0	68.0	61.0	57.0	52.0	50.0	46.0	45.0	45.0	58.2	0.0	58.2
Duy	13	57.7	80.4	46.5	71.0	68.0	59.0	56.0	52.0	51.0	49.0	48.0	47.0	57.7	0.0	57.7
	14	63.4	89.3	47.1	73.0	69.0	60.0	58.0	53.0	51.0	49.0	48.0	48.0	63.4	0.0	63.4
	15	56.9	81.3	49.8	67.0	63.0	57.0	56.0	54.0	53.0	52.0	51.0	50.0	56.9	0.0	56.9
	16 17	62.3 63.8	79.7 83.3	53.8 54.8	71.0 77.0	69.0 75.0	66.0 71.0	65.0 63.0	61.0 58.0	59.0 57.0	56.0 56.0	56.0 55.0	55.0 55.0	62.3 63.8	0.0 0.0	62.3 63.8
	17	57.3	83.3 73.0	54.8 51.9	64.0	62.0	59.0	58.0	58.0	57.0	55.0	55.0 54.0	55.0 54.0	57.3	0.0	57.3
	19	58.0	82.4	49.0	67.0	62.0	57.0	55.0	54.0	53.0	51.0	51.0	50.0	58.0	5.0	63.0
Evening	20	52.9	75.1	48.8	57.0	55.0	54.0	54.0	52.0	51.0	50.0	50.0	49.0	52.9	5.0	57.9
	21	54.5	78.0	48.1	61.0	58.0	55.0	54.0	53.0	52.0	50.0	50.0	49.0	54.5	5.0	59.5
Night	22	54.1	75.3	48.2	59.0	56.0	55.0	54.0	53.0	52.0	50.0	50.0	49.0	54.1	10.0	64.1
	23	53.3	68.6	48.5	60.0	58.0	55.0	55.0	53.0	52.0	50.0	49.0	49.0	53.3	10.0	63.3
Timeframe	Hour			L _{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%		L _{eq} (dBA)	
Day	Min Max	53.6 63.8	73.0 89.3	44.2 54.8	64.0 77.0	61.0 75.0	54.0 71.0	52.0 65.0	49.0 61.0	47.0 59.0	46.0 56.0	45.0 56.0	45.0 55.0	24-Hour	Daytime	Nighttime
Energy	Average	59.5		erage:	69.0	65.3	59.8	57.3	53.8	52.3	50.2	49.3	48.9			
	Min	52.9	75.1	48.1	57.0	55.0	54.0	54.0	52.0	51.0	50.0	50.0	49.0	57.9	58.9	55.5
Evening	Max	58.0	82.4	49.0	67.0	62.0	57.0	55.0	54.0	53.0	51.0	51.0	50.0	24-	Hour CNEL (a	IBA)
Energy	Average	55.7	Ave	erage:	61.7	58.3	55.3	54.3	53.0	52.0	50.3	50.3	49.3			
Night	Min	49.3	54.0	44.3	52.0	51.0	51.0	50.0	49.0	49.0	47.0	46.0	45.0		62.8	
-	Max	59.0	77.8	53.2	68.0	63.0	61.0	61.0	59.0	57.0	55.0	55.0	54.0		02.0	
Energy	Average	55.5	AVe	erage:	59.0	57.4	56.2	55.7	54.2	52.8	50.6	50.2	49.4			





APPENDIX 7.1:

OFF-SITE TRAFFIC NOISE CONTOURS



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	FH\	WA-RD-77-108	HIGHW	AY NO	DISE PR	EDICTIO	N MO	DEL			
Road Nam	io: Existing W ne: Patterson / nt: n/o Walnut	Av.				Project Na Job Nur					
	SPECIFIC IN	IPUT DATA							L INPUT	S	
Peak H Ve	Traffic (Adt): Percentage: lour Volume: hicle Speed: ne Distance:	293 vehicle 10% 29 vehicle 40 mph			Mee	ditions (H dium Truci avy Trucks Mix	ks (2 /	Autos: Axles):	15 15 15 15		
	ne Distance.	36 feet			Vehi	cleType		Day	Evening	Night	Daily
Barrier Type (0-W		0.0 feet 0.0				Au dium Truc leavy Truc		68.6% 74.3% 74.4%	5.2%	20.1% 20.5% 19.7%	
	to Observer: to Observer:	50.0 feet 50.0 feet 5.0 feet 0.0 feet 0.0 feet 0.0 feet			Mediur Heav	Autos: Autos: n Trucks: y Trucks: iivalent D	0. 2. 8.	000 297 004	Grade Ad	ljustment	± 0.0
	Road Grade: Left View: Right View:	0.0% -90.0 degree 90.0 degree				Autos: n Trucks: y Trucks:	46.	915 726 744			
FHWA Noise Mod	el Calculation REMEL	s Traffic Flow	Distar		Finite	Bood	Fresr		Barrier Att	Ion Ro	rm Atten
VehicleType Autos: Medium Trucks: Heavy Trucks:	66.51 77.72 82.99	-17.21 -28.18	Distar	0.31 0.34 0.34	Fillite	-1.20 -1.20 -1.20		-4.65 -4.87 -5.43	0.0	<u>еп ве</u> 000 000 000	0.00 0.00 0.00
Unmitigated Nois	e Levels (with	out Topo and	barrier a	ttenu	ation)						
VehicleType	Leq Peak Ho	ur Leq Day	Le	eq Eve	ning	Leq Ni	ght		Ldn	С	NEL
Autos: Medium Trucks: Heavy Trucks:	48	.7	46.0 46.6 50.4		44.2 41.1 45.4		41.9 42.2 45.9	2	49. 49. 53.	4	49. 49. 53.
Vehicle Noise:	55	i.0	52.9		48.6		48.5	5	55.7	7	55.
Centerline Distan	ce to Noise C	ontour (in feet)								
			Ldn:	70 dl	BA	65 dE 12	BA	6	0 dBA 26		dBA 56
			VEL:	6		12			27		58

	FH\	NA-RD-77-108	HIGH	IWAY N	IOISE PF	REDICTIO	ом мо	DEL			
Road Nan	io: Existing Wi ne: Patterson A nt: n/o Placent	Av.				Project I Job Nu	Vame: E Imber: 1				
SITE	SPECIFIC IN	IPUT DATA				N	OISE N	IODE	L INPUT	s	
Highway Data				4	Site Con	ditions (Hard =	10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	337 vehicl	es				A	Autos:	15		
Peak Hour	Percentage:	10%			Me	dium Tru	cks (2 A	xles):	15		
Peak H	lour Volume:	34 vehicle	s		Hea	avy Truci	ks (3+ A	xles):	15		
Ve	hicle Speed:	40 mph		1	Vehicle I	Niv					
Near/Far La	ne Distance:	36 feet		H		cleType		Day	Evening	Night	Daily
Site Data								68.6%	•		87.95%
Ba	rrier Height:	0.0 feet			Me	dium Tru	icks:	74.3%	5.2%	20.5%	7.05%
Barrier Type (0-W		0.0			F	leavy Tru	icks:	74.4%	5.9%	19.7%	5.009
Centerline Di		50.0 feet		L.							
Centerline Dist.	to Observer:	50.0 feet		'	Noise So				eet)		
Barrier Distance	to Observer:	0.0 feet				Autos					
Observer Height	(Above Pad):	5.0 feet				n Trucks			Grade Ad	instructor	
P	ad Elevation:	0.0 feet			Heav	y Trucks	: 8.0	004	Grade Adj	usunen	. 0.0
Ro	ad Elevation:	0.0 feet		1	Lane Equ	uivalent	Distanc	e (in :	feet)		
	Road Grade:	0.0%				Autos	: 46.9	915			
	Left View:	-90.0 degre	es		Mediur	n Trucks	46.7	26			
	Right View:	90.0 degre	es		Heav	y Trucks	46.7	744			
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Dis	tance	Finite	Road	Fresn	el	Barrier Att	en Ber	m Atten
Autos:	66.51	-16.61		0.31	1	-1.20		-4.65	0.0	000	0.00
Medium Trucks:	77.72	-27.57		0.34	4	-1.20		-4.87	0.0	000	0.00
Heavy Trucks:	82.99	-29.06		0.34	4	-1.20		-5.43	0.0	000	0.00
Unmitigated Nois	e Levels (with	out Topo and	barrie	er atten	uation)						
VehicleType	Leq Peak Hou			Leg Ev		Leq N			Ldn		NEL
Autos:	49		46.6		44.8		42.5		49.7		50.
Medium Trucks:			47.2		41.7		42.9		50.0		50.
Heavy Trucks:			51.0		46.0		46.5		53.7		53.
Vehicle Noise:			53.5		49.3		49.1		56.3	3	56.
Centerline Distan	ce to Noise Co	ontour (in feet)								
			L	70 c		65 a		6	60 dBA		dBA
			Ldn:	6	5	13	5		28		61 63
		~	NEL:	6		14			29		

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	FH\	VA-RD-77-108	HIGH	WAY N	IOISE PF	EDICTIO	N MOL	DEL			
Road Nan	rio: Existing Wi ne: Harvill Av. ent: s/o Cajalco	,				Project N Job Nur					
	SPECIFIC IN	IPUT DATA							L INPUT	s	
Highway Data					Site Con	ditions (F			,		
Average Daily	Traffic (Adt):	15,861 vehicl	es					lutos:	15		
Peak Hour	Percentage:	10%				dium Truc			15		
Peak H	Hour Volume:	1,586 vehicle	s		Hea	avy Truck	s (3+ A	xles):	15		
Ve	ehicle Speed:	50 mph			Vehicle I	Nix					
Near/Far La	ane Distance:	48 feet		F		cleType		Day	Evening	Night	Daily
Site Data				-				58.6%	•	20.1%	
Pa	rrier Height:	0.0 feet			Me	dium Tru	cks: 1	74.3%	5.2%	20.5%	5 7.059
Barrier Type (0-V	Vall, 1-Berm):	0.0			H	leavy Tru	cks:	74.4%	5.9%	19.7%	
	ist. to Barrier:	59.0 feet		1	Noise So	urce Ele	ations	: (in fe	eet)		
Centerline Dist.		59.0 feet				Autos:	0.0	00			
Barrier Distance		0.0 feet			Mediur	n Trucks:	2.2	97			
Observer Height	· /	5.0 feet			Heav	v Trucks:	8.0	04	Grade Ad	iustmen	t: 0.0
-	ad Elevation:	0.0 feet		H							
	ad Elevation:	0.0 feet		1	Lane Equ	uivalent L			eet)		
	Road Grade:	0.0%				Autos:	54.1				
	Left View: Right View:	-90.0 degre 90.0 degre				n Trucks: v Trucks:	53.9 53.9				
FHWA Noise Moo	°	0									
VehicleType	REMEL	Traffic Flow	Dist	ance	Finite	Road	Fresn	e/	Barrier Att	en Be	rm Atter
Autos:	70.20	-0.85		-0.62	2	-1.20	-	4.69	0.0	000	0.00
Medium Trucks:	81.00	-11.81		-0.60	D	-1.20		4.88	0.0	000	0.00
Heavy Trucks:	85.38	-13.30		-0.60	C	-1.20	-	5.35	0.0	000	0.00
Unmitigated Nois	e Levels (with	out Topo and	barrie	r atten	uation)						
VehicleType	Leq Peak Hou	ir Leq Day	/	Leq E	/ening	Leq N	ght		Ldn	0	NEL
Autos:	67	.5	65.1		63.3		61.0		68.2	2	68
Medium Trucks:	67		65.3		59.8		61.0		68.1		68
Heavy Trucks:	70	.3	68.2		63.2		63.7		70.9)	71
Vehicle Noise:	73	.4	71.2		67.1		66.9		74.1		74
Centerline Distan	ce to Noise Co	ontour (in feet)								
			L	70 0		65 dE		6	0 dBA		5 dBA
			Ldn:	11	0	237			510	1	,100
			NFI :	11	-	245			529		.139

FHW	4-RD-77-108 HIGI	HWAY N	IOISE PF	REDICTIO	N MODE	EL		
Scenario: Existing With Road Name: Harvill Av. Road Segment: s/o Rider St.	out Project			Project Na Job Nun				
SITE SPECIFIC INP	UT DATA			NO	ISE MO	DEL INPU	TS	
Highway Data			Site Con	ditions (H	lard = 10	0, Soft = 15)		
Average Daily Traffic (Adt): 1	3,941 vehicles				AL	itos: 15		
Peak Hour Percentage:	10%		Me	dium Truci	ks (2 Ax	les): 15		
Peak Hour Volume: 1	,394 vehicles		Hea	avy Trucks	s (3+ Ax	les): 15		
Vehicle Speed:	50 mph	-	Vehicle I	Mix				
Near/Far Lane Distance:	48 feet	-		icleType		ay Evenin	q Night	Daily
Site Data			VCIII	Au		3.6% 11.3%		
Barrier Height:	0.0 feet		Me	edium Truc	cks: 74	1.3% 5.2%	% 20.5%	
Barrier Type (0-Wall, 1-Berm):	0.0		F	leavy Truc	cks: 74	1.4% 5.9%	% 19.79	5.00%
Centerline Dist. to Barrier:	59.0 feet	F		·				
Centerline Dist. to Observer:	59.0 feet	4	Noise So	ource Elev		,		
Barrier Distance to Observer:	0.0 feet			Autos:	0.00			
Observer Height (Above Pad):	5.0 feet			n Trucks:	2.29			
Pad Elevation:	0.0 feet		Heav	y Trucks:	8.00	4 Grade A	Adjustmer	t: 0.0
Road Elevation:	0.0 feet		Lane Equ	uivalent D	istance	(in feet)		
Road Grade:	0.0%			Autos:	54.12	9		
Left View:	-90.0 degrees		Mediur	n Trucks:	53.96	6		
Right View:	90.0 degrees		Heav	y Trucks:	53.98	2		
FHWA Noise Model Calculations								
VehicleType REMEL	Traffic Flow Di	stance	Finite	Road	Fresnel	Barrier A	Atten Be	rm Atten
Autos: 70.20	-1.41	-0.6	2	-1.20	-4	.69 (0.000	0.000
Medium Trucks: 81.00	-12.37	-0.6	0	-1.20	-4	.88	0.000	0.000
Heavy Trucks: 85.38	-13.86	-0.6	0	-1.20	-5	.35 (0.000	0.000
Unmitigated Noise Levels (without								
VehicleType Leq Peak Hour	Leq Day	Leq E	·	Leq Ni	·	Ldn		NEL
Autos: 67.0			62.7		60.5	-	7.7	68.0
Medium Trucks: 66.8	••		59.2		60.4		7.6	67.7
Heavy Trucks: 69.7			62.6		63.1		0.3	70.5
Vehicle Noise: 72.8	70.7		66.6		66.3	73	3.5	73.7
Centerline Distance to Noise Con	tour (in feet)						1	
	l		dBA	65 dB		60 dBA		5 dBA
	Ldn:	10		217		468		,009
	CNEL:	10)5	225		485	1	,046

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	FHV	VA-RD-77-108	HIGHW	AY NO	ISE PF	REDICTI	ON MO	DEL			
	o: Existing Wi	thout Project				Project	Name: umber:				
Road Name Road Seamen		ia St				JOD INL	imber:	12218			
				-							
	PECIFIC IN	IPUT DATA		0.14	- 0					S	
Highway Data				Sn	e con	ditions (,		
Average Daily 7	()	8,663 vehicle	es					Autos:			
Peak Hour F		10%				dium Tru					
	our Volume:	866 vehicles	5		не	avy Truc	KS (3+7	axies):	15		
	icle Speed:	50 mph		Ve	hicle l	Mix					
Near/Far Lan	e Distance:	48 feet			Veh	icleType		Day	Evening	Night	Daily
Site Data						A	utos:	68.6%	11.3%	20.1%	87.95
Bari	rier Height:	0.0 feet			Me	edium Tr	ucks:	74.3%	5.2%	20.5%	7.05
Barrier Type (0-Wa	all, 1-Berm):	0.0			ŀ	leavy Tr	ucks:	74.4%	5.9%	19.7%	5.00
Centerline Dis	t. to Barrier:	59.0 feet		No	isa Sr	ource Ele	vation	s (in f	oof)		
Centerline Dist. te	o Observer:	59.0 feet		110	130 00	Autos		000			
Barrier Distance to	o Observer:	0.0 feet			Modiuu	n Trucks		297			
Observer Height (A	Above Pad):	5.0 feet				v Trucks		004	Grade Ad	liustmen	t: 0.0
	d Elevation:	0.0 feet				,					
	d Elevation:	0.0 feet		La	ne Eq	uivalent			feet)		
R	load Grade:	0.0%				Autos		129			
	Left View:	-90.0 degree		1		n Trucks		966			
	Right View:	90.0 degree	es		Heav	y Trucks	: 53.	982			
FHWA Noise Mode		-									
VehicleType	REMEL	Traffic Flow	Distar		Finite	Road	Fresr	-	Barrier Att		rm Atter
Autos:	70.20	-3.48		-0.62		-1.20		-4.69		000	0.00
Medium Trucks:	81.00	-14.44		-0.60		-1.20		-4.88		000	0.00
Heavy Trucks:	85.38	-15.93		-0.60		-1.20		-5.35	0.0	000	0.00
Unmitigated Noise					<u> </u>			1			
VehicleType Autos:	Leq Peak Hou 64		62.5	eq Evel	ning 60.7	Leq I	vignt 58.4		Ldn 65.6	-	NEL 66
Medium Trucks:	64		62.5 62.7		57.1		58.3		65.5		65
Heavy Trucks:	67		62.7 65.6		60.6		61.1		68.3	-	68.
Vehicle Noise:	70		68.6		64.5		64.2		71.4	-	71
Centerline Distanc	e to Noise Co	ontour (in feet)		-						
			,	70 dB.	4	65 c	IBA	6	60 dBA	55	i dBA
			Ldn:	73		15	8		341	1	735

F	HWA-RD-77-108	3 HIGH	WAY NC	ISE PREDIC		DEL			
Scenario: Existing Road Name: Harvill A Road Segment: s/o Oran	<i>.</i>				t Name: Number:				
SITE SPECIFIC	INPUT DATA				NOISE	MODE		s	
Highway Data			Si	te Conditions					
Average Daily Traffic (Adt).	8.370 vehic	les				Autos:	15		
Peak Hour Percentage				Medium T	rucks (2	Axles):	15		
Peak Hour Volume	837 vehicle	es		Heavy Tru	icks (3+ .	Axles):	15		
Vehicle Speed.	50 mph		14	hicle Mix					
Near/Far Lane Distance.	48 feet		Ve	VehicleTvp	0	Dav	Evening	Night	Dailv
Site Data					Autos:	68.6%	•	20.1%	
				Medium 1		74.3%		20.1%	
Barrier Height					rucks:			19.7%	
Barrier Type (0-Wall, 1-Berm). Centerline Dist. to Barrier				,				.0.170	0.007
Centerline Dist. to Barrier Centerline Dist. to Observer			Ne	oise Source E	levation	s (in fe	eet)	_	
Barrier Distance to Observer	00.0 1001			Auto	os: 0.	000			
				Medium Truci	ks: 2.	297			
Observer Height (Above Pad) Pad Elevation				Heavy Truck	(s: 8.	004	Grade Ad	justment.	0.0
Road Elevation			1:	ne Equivaler	t Distan	co (in i	foot)		
Road Elevation. Road Grade				Auto		129	000		
Left View				Medium Truci		966			
Right View.	oo.o dogre			Heavy Truck		982			
FHWA Noise Model Calculation									
VehicleType REMEL	Traffic Flow		tance	Finite Road	Fres		Barrier Att		m Atten
Autos: 70.2			-0.62	-1.20		-4.69		000	0.00
Medium Trucks: 81.0			-0.60	-1.20		-4.88		000	0.00
Heavy Trucks: 85.3	-16.08		-0.60	-1.20		-5.35	0.0	000	0.00
Unmitigated Noise Levels (wi	thout Topo and	l barrie	r attenu	ation)					
VehicleType Leq Peak H			Leq Eve		Night		Ldn		VEL
	64.8	62.3		60.5	58.		65.4		65.8
	64.6	62.5		57.0	58.		65.3		65.
	67.5	65.4		60.4	60.		68.1		68.3
Vehicle Noise:	70.6	68.4		64.3	64.	1	71.3	3	71.
Centerline Distance to Noise	Contour (in fee	t)							
			70 dE		dBA	6	i0 dBA		dBA
		Ldn:	72		55		333	7	18
		NEL:	74		60		345		44

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0	. Estado a 1443	have Designed			_	Designed		al cara	_		
	: Existing Wit	thout Project				Project N	lame: Ba mber: 12				
Road Name Road Segment						JOD INU	mber: 12	218			
Road Seyment	. S/U A SI.										
	PECIFIC IN	PUT DATA							INPUTS	5	
Highway Data				S	Site Con	ditions (l	lard = 10), Sofi	t = 15)		
Average Daily T	raffic (Adt):	12,417 vehicle	6				Au	tos:	15		
Peak Hour F	Percentage:	10%			Med	dium Truc	ks (2 Axl	les):	15		
Peak Ho	our Volume:	1,242 vehicles			Hea	avy Truck	s (3+ Axl	les):	15		
Veh	icle Speed:	50 mph		L.	/ehicle N	Niv					
Near/Far Lan	e Distance:	48 feet		-		cleType	Da	av E	vening	Night	Dailv
Site Data							itos: 68	3.6%	11.3%	20.1%	87.95%
Barr	ier Heiaht:	0.0 feet			Me	dium Tru	cks: 74	.3%	5.2%	20.5%	7.05%
Barrier Type (0-Wa		0.0			H	leavy Tru	cks: 74	.4%	5.9%	19.7%	5.00%
Centerline Dist	to Barrier:	59.0 feet			laise Sa	urce Ele	vations (in foo	<i>t</i>)		
Centerline Dist. to	o Observer:	59.0 feet			10/30 00	Autos:			9		
Barrier Distance to	o Observer:	0.0 feet			Modium	n Trucks:		-			
Observer Height (A	bove Pad):	5.0 feet				v Trucks:		-	ade Adj	istmont	0.0
Pad	d Elevation:	0.0 feet			neav	y muchs.	0.00	+ 0	nauc Auj	Journerin.	0.0
Road	d Elevation:	0.0 feet		L	ane Equ	ivalent l	Distance	(in fe	et)		
R	oad Grade:	0.0%				Autos:	54.12	9			
	Left View:	-90.0 degree	5		Mediun	n Trucks:	53.96	6			
	Right View:	90.0 degree	S		Heav	y Trucks:	53.98	2			
HWA Noise Model	Calculation:	5									
VehicleType	REMEL	Traffic Flow	Distar	се	Finite	Road	Fresnel	В	arrier Atte	en Ber	m Atten
Autos:	70.20	-1.91		-0.62		-1.20	-4	.69	0.0	00	0.00
Medium Trucks:	81.00	-12.87		-0.60		-1.20	-4	.88	0.0	00	0.00
Heavy Trucks:	85.38	-14.37		-0.60		-1.20	-5	.35	0.0	00	0.00
Unmitigated Noise	Levels (with	out Topo and L	arrier a	attenu	uation)						
	eq Peak Hou			eq Ev	ening	Leq N	•	L	.dn	-	VEL
Autos:	66.		4.0		62.2		60.0		67.2		67.
Medium Trucks:	66.		4.2		58.7		59.9		67.1		67.
Heavy Trucks:	69.		7.1		62.1		62.6		69.8		70.
Vehicle Noise:	72	.3 7	0.2		66.1		65.8		73.0		73.
Centerline Distance	e to Noise Co	ontour (in feet)									
				70 d		65 di			dBA		dBA
		,	dn:	93	>	201		4	34	9	34
		CN		97		20			49	-	68

	FHW	A-RD-77-108 HIG	SHWAY I	NOISE PF	REDICTIO	ON MOE	DEL			
Road Nam	io: Existing With e: Rider St. nt: e/o Patterso				Project I Job Nu	Vame: B mber: 1				
SITE	SPECIFIC IN	PUT DATA						L INPUT	S	
Highway Data				Site Con	ditions (Hard = 1	10, So	oft = 15)		
Average Daily	Traffic (Adt):	1,788 vehicles				Α	Autos:	15		
Peak Hour	Percentage:	10%		Me	dium Tru	cks (2 A	xles):	15		
Peak H	lour Volume:	179 vehicles		He	avy Truck	ks (3+ A	xles):	15		
Ve	hicle Speed:	40 mph	ŀ	Vehicle I	Mix					
Near/Far La	ne Distance:	36 feet			icleType	L	Day	Evening	Night	Daily
Site Data					A	utos: 6	58.6%	11.3%	20.1%	87.95%
Ba	rrier Height:	0.0 feet		Me	edium Tru	icks: 7	74.3%	5.2%	20.5%	7.05%
Barrier Type (0-W		0.0		ŀ	leavy Tru	icks: 7	74.4%	5.9%	19.7%	5.00%
Centerline Dis	st. to Barrier:	50.0 feet	ŀ	Noise So	ource Ele	vations	: (in fe	et)		
Centerline Dist.	to Observer:	50.0 feet	ŀ		Autos					
Barrier Distance	to Observer:	0.0 feet		Mediur	n Trucks					
Observer Height (Above Pad):	5.0 feet			y Trucks.			Grade Ad	iustment	0.0
Pa	ad Elevation:	0.0 feet			, 		-			
Roa	ad Elevation:	0.0 feet		Lane Eq	uivalent	Distanc	e (in f	feet)		
	Road Grade:	0.0%			Autos.		15			
	Left View:	-90.0 degrees		Mediur	n Trucks.	46.7	26			
	Right View:	90.0 degrees		Heav	y Trucks.	46.7	'44			
FHWA Noise Mod	el Calculations									
VehicleType	REMEL	Traffic Flow D	Distance	Finite	Road	Fresne	el i	Barrier Att	en Bei	m Atten
Autos:	66.51	-9.36	0.3	31	-1.20	-	4.65	0.0	000	0.000
Medium Trucks:	77.72	-20.32	0.3	34	-1.20	-	4.87	0.0	000	0.000
Heavy Trucks:	82.99	-21.81	0.3	34	-1.20	-	5.43	0.0	000	0.000
Unmitigated Noise	e Levels (witho	ut Topo and ban	rier attei	nuation)						
VehicleType	Leq Peak Hour	Leq Day	Leq E	vening	Leq N	light		Ldn	C	NEL
Autos:	56.3	3 53.8	3	52.0		49.8		56.9)	57.3
Medium Trucks:	56.	5 54.5	5	48.9		50.1		57.3	3	57.4
Heavy Trucks:	60.3	3 58.2	2	53.2		53.7		60.9)	61.1
Vehicle Noise:	62.9	9 60.7	,	56.5		56.4		63.6	6	63.8
Centerline Distant	ce to Noise Co	ntour (in feet)								
				dBA	65 d		6	i0 dBA		dBA
		Ldn		19	40			86		86
		CNEL	: 1	19	42	2		89	1	93

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	FHV	VA-RD-77-108	HIGHW	AY NOI	SE PREDIO		IODEL			
Scenario: Road Name: Road Segment:	Placentia S						e: Barker r: 12218			
SITE SP	ECIFIC IN	IPUT DATA				NOISE	MODE	L INPUTS	5	
Highway Data				Site	e Conditio	ıs (Hard	= 10, So	oft = 15)		
Average Daily Tra	ffic (Adt):	381 vehicl	es				Autos:	15		
Peak Hour Pe	rcentage:	10%					2 Axles):			
Peak Hou		38 vehicle	s		Heavy T	rucks (3-	+ Axles):	15		
	le Speed:	40 mph		Vel	icle Mix					
Near/Far Lane	Distance:	36 feet			VehicleTy	pe	Day	Evening	Night	Daily
Site Data						Autos:	68.6%	11.3%	20.1%	87.95%
Barrie	r Height:	0.0 feet			Medium	Trucks:	74.3%	5.2%	20.5%	7.05%
Barrier Type (0-Wall,	1-Berm):	0.0			Heavy	Trucks:	74.4%	5.9%	19.7%	5.00%
Centerline Dist. t		50.0 feet		Noi	se Source	Elevatio	ons (in fe	eet)		
Centerline Dist. to		50.0 feet			AL	tos:	0.000			
Barrier Distance to		0.0 feet		٨	1edium Tru	cks:	2.297			
Observer Height (Ab	ove Pad): Elevation:	5.0 feet			Heavy Tru	cks:	8.004	Grade Adj	ustment	0.0
	Elevation: Elevation:	0.0 feet 0.0 feet		Lar	e Equival	nt Dist	nce (in	foot)		
	ad Grade:	0.0%		Lui			6.915			
	eft View:	-90.0 deare	00	٨	/edium Tru		6.726			
	ight View:	90.0 degre			Heavy Tru		6.744			
FHWA Noise Model C	Calculation	s								
VehicleType	REMEL	Traffic Flow	Distan	ce	Finite Road	Fre	snel	Barrier Atte	en Ber	m Atten
Autos:	66.51	-16.07		0.31	-1.2	0	-4.65	0.0	00	0.00
Medium Trucks:	77.72	-27.03		0.34	-1.2	-	-4.87	0.0		0.00
Heavy Trucks:	82.99	-28.53		0.34	-1.2	0	-5.43	0.0	00	0.00
Unmitigated Noise L					,					
	q Peak Hou			eq Even		eq Night		Ldn		NEL
Autos:	49 49		47.1 47 7		45.3 42.2		3.0 3.4	50.2 50.6		50.0 50.0
Medium Trucks:	49 53		47.7 51.5		42.2		3.4 7.0	50.6 54.2		50. 54.4
Heavy Trucks: Vehicle Noise:	53		51.5 54.0		46.5		7.0 9.6	54.2		54.4
Centerline Distance	to Noise Co	ontour (in feet)							
		1	, 				1 .			
Contonnio Dictanco (70 dB/		65 dBA	6	60 dBA	55	dBA
Contoninio Dictance (Ldn:	70 dB/ 7		35 dBA 14	6	31 31		<i>dBA</i> 66

	FHV	VA-RD-77-108	HIGH	WAY N		REDICTIC	ON MOE	DEL			
	o: Existing Wit e: Placentia Si nt: e/o Dwy. 2					Project N Job Nui					
SITE S	SPECIFIC IN	PUT DATA							L INPUT	s	
Highway Data				:	Site Con	ditions (F	Hard =	10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	399 vehicle	es				A	utos:	15		
Peak Hour	Percentage:	10%			Me	dium Truc	ks (2 A	xles):	15		
Peak H	our Volume:	40 vehicles	s		Hea	avy Truck	s (3+ A	xles):	15		
Vel	nicle Speed:	40 mph		-	Vehicle I	Also					
Near/Far Lar	ne Distance:	36 feet		-		cleType		Day	Evening	Night	Daily
Site Data					Veni			38.6%	•		87.959
		0.0 feet			Me	dium Tru		74.3%		20.5%	
Barrier Type (0-W	rier Height:	0.0 reet			F	leavy Tru	cks: 7	74.4%	5.9%	19.7%	
Centerline Dis		0.0 50.0 feet									
Centerline Dist.		50.0 feet		1	Noise So	urce Ele	vations	in fe	eet)		
Barrier Distance		0.0 feet				Autos:		00			
Observer Height (5.0 feet			Mediur	n Trucks:	2.2	97			
0 1	d Elevation:	0.0 feet			Heav	y Trucks:	8.0	04	Grade Adj	justment	: 0.0
	d Elevation:	0.0 feet		-	l ane Fru	uivalent I	Distanc	e (in :	feet)		
	Road Grade:	0.0%		F		Autos:			,		
,	Left View:	-90.0 degree			Mediur	n Trucks:					
	Right View:	90.0 degree			Heav	y Trucks:					
FHWA Noise Mode	Calculation	5									
VehicleType	REMEL	Traffic Flow	Dist	tance	Finite	Road	Fresne	e/	Barrier Att	en Ber	m Atten
Autos:	66.51	-15.87		0.3	1	-1.20	-	4.65	0.0	000	0.00
Medium Trucks:	77.72	-26.83		0.34	4	-1.20	-	4.87	0.0	000	0.00
Heavy Trucks:	82.99	-28.33		0.34	4	-1.20	-	5.43	0.0	000	0.00
Unmitigated Noise			barrie	er atten	uation)						
	Leq Peak Hou			Leq E		Leq N			Ldn		NEL
Autos:	49.		47.3		45.5		43.2		50.4		50.
Medium Trucks:	50.		47.9		42.4		43.6		50.8		50.
Heavy Trucks:	53.	-	51.7		46.7		47.2		54.4		54.
Vehicle Noise:	56.		54.2		50.0		49.8		57.1	I	57
Centerline Distanc	e to Noise Co	ontour (in feet,)	70	-04	05.			0.00		-10.4
			L	70 0		65 dl		6	0 dBA		dBA
			Ldn: VFL:	7		15 15			32 33		69 71

Tuesday, March 12, 2019

	FHV	/A-RD-77-108	HIGHW	VAY N	IOISE PF	EDICTIO	N MOI	DEL			
	 Existing Wite Patterson A n/o Walnut 	v.				Project N Job Nur					
	PECIFIC IN	PUT DATA								S	
Highway Data					Site Con	ditions (H					
Average Daily 1	, ,	589 vehicle	s					Autos:			
Peak Hour I	•	10%				dium Truc					
Peak Ho	our Volume:	59 vehicles	5		Hea	avy Truck	s (3+ A	xles):	15		
Veh	icle Speed:	40 mph			Vehicle I	Nix					
Near/Far Lar	e Distance:	36 feet				cleType		Day	Evening	Night	Daily
Site Data						Au	tos:	- 68.6%	11.3%	20.1%	6 86.88
Bar	rier Heiaht:	0.0 feet			Me	dium Tru	cks:	74.3%	5.2%	20.5%	6.56
Barrier Type (0-Wa	all, 1-Berm):	0.0			H	leavy Tru	cks:	74.4%	5.9%	19.7%	6.56
Centerline Dis		50.0 feet		1	Noise So	urce Ele	ation	s (in fe	eet)		
Centerline Dist. t		50.0 feet				Autos:	0.0	000	,		
Barrier Distance t		0.0 feet			Mediur	n Trucks:	2.2	297			
Observer Height (A	,	5.0 feet			Heav	v Trucks:	8.0	004	Grade Ad	iustmen	t: 0.0
	d Elevation:	0.0 feet		H							
	d Elevation:	0.0 feet		1	Lane Equ	ivalent E			leet)		
F	Road Grade:	0.0%				Autos:	46.9				
	Left View:	-90.0 degree	s			n Trucks:	46.7				
	Right View:	90.0 degree	es		Heav	y Trucks:	46.7	744			
FHWA Noise Mode											
VehicleType	REMEL	Traffic Flow	Dista		Finite		Fresn	-	Barrier Att		erm Atter
Autos:	66.51	-14.23		0.3		-1.20		-4.65	0.0		0.00
Medium Trucks:	77.72	-25.45		0.34		-1.20		-4.87	0.0		0.00
Heavy Trucks:	82.99	-25.45		0.34		-1.20		-5.43	0.0	00	0.00
Unmitigated Noise											
<i>,</i> ,	Leq Peak Hou			Leq Ei	vening	Leq N	· ·		Ldn		NEL
Autos:	51.		49.0		47.1		44.9		52.1		52
Medium Trucks:	51.	-	49.3		43.8		45.0		52.1		52
Heavy Trucks:	56.		54.6		49.6		50.1		57.3		57
Vehicle Noise:	58	7	56.6		52.2		52.2		59.4	Ļ	59
Centerline Distanc	e to Noise Co	ntour (in feet)								
				70 d		65 dE	BA	6	60 dBA	55	5 dBA
			Ldn: JFL:		0	21 22			45 47		98 101

Fł	HWA-RD-77-108	HIGHW	AY N		EDICT		DEL			
Scenario: Existing V Road Name: Patterson Road Segment: n/o Place	Av.					t Name: lumber:				
SITE SPECIFIC	INPUT DATA				ſ	NOISE N	IODE	L INPUT	s	
Highway Data				Site Con	ditions	(Hard =	10, So	oft = 15)		
Average Daily Traffic (Adt):	443 vehicle	s				,	Autos:	15		
Peak Hour Percentage:	10%			Med	dium Tr	ucks (2 A	xles):	15		
Peak Hour Volume:	44 vehicles			Hea	avy Tru	cks (3+ A	(xles):	15		
Vehicle Speed:	40 mph		H	Vehicle N	Also .					
Near/Far Lane Distance:	36 feet		H		cleType		Day	Evening	Night	Daily
Site Data				VCIII			68.6%	•	20.1%	
Barrier Height:	0.0 feet			Me	dium T	rucks:	74.3%	5.2%	20.5%	9.43%
Barrier Type (0-Wall, 1-Berm):				h	leavy T	rucks:	74.4%	5.9%	19.7%	9.23%
Centerline Dist. to Barrier:			H							
Centerline Dist. to Observer:	50.0 feet			Noise So				eet)		
Barrier Distance to Observer:	0.0 feet			Mediun	Auto		000 297			
Observer Height (Above Pad):	5.0 feet						297 004	Grade Ad	i cheron	4 0 0
Pad Elevation:	0.0 feet			Heav	y Truck	S: 8.0	104	Grade Ad	Jusunen	1. 0.0
Road Elevation:	0.0 feet		1	Lane Equ	ıivalen	t Distan	ce (in	feet)		
Road Grade:	0.0%				Auto	s: 46.	915			
Left View:	-90.0 degree	s		Mediun	n Truck	s: 46.	726			
Right View:	90.0 degree	s		Heav	y Truck	's: 46.	744			
FHWA Noise Model Calculatio	ons									
VehicleType REMEL	Traffic Flow	Distar	nce	Finite	Road	Fresn	el	Barrier Att	en Be	rm Atten
Autos: 66.5	1 -15.76		0.31	1	-1.20		-4.65	0.0	000	0.000
Medium Trucks: 77.7	2 -25.12		0.34	4	-1.20		-4.87	0.0	000	0.000
Heavy Trucks: 82.9	9 -25.21		0.34	4	-1.20		-5.43	0.0	000	0.000
Unmitigated Noise Levels (with										
VehicleType Leq Peak H			eq Ev	vening	Leq	Night		Ldn		NEL
		7.4		45.6		43.3		50.5		50.9
		9.7		44.1		45.3		52.5	-	52.6
		4.8		49.8		50.3		57.5	-	57.7
		6.6		52.0		52.1		59.3	3	59.5
Centerline Distance to Noise	Contour (in feet)		70	10.4	05	-/0.4		-0.4		ID A
		dau	70 c			dBA 21		60 dBA 45	53	5 dBA 97
		.dn: IFI :	10	-	-	21 22		45 47		97 101
	CA	EL.	10	U	4	~~		47		101

FHWA-R	D-77-108 HIGH	WAY N	NOISE PR	EDICTION	N MODEL			
Scenario: Existing With Pr Road Name: Harvill Av. Road Segment: s/o Cajalco Exp					ame: Barke aber: 12218			
SITE SPECIFIC INPUT	DATA			NO	SE MODE		s	
Highway Data			Site Con	ditions (Ha	ard = 10, S	oft = 15)		
Peak Hour Percentage: 1 Peak Hour Volume: 1,67	69 vehicles 0% 7 vehicles				Autos s (2 Axles) (3+ Axles)	: 15		
	0 mph		Vehicle N	lix				
Near/Far Lane Distance: 4	8 feet		Vehi	cleType	Day	Evening	Night	Daily
Site Data				Auto	os: 68.6%	6 11.3%	20.1%	87.36%
Barrier Height: 0	0.0 feet		Me	dium Truc	ks: 74.3%	6 5.2%	20.5%	7.20%
Barrier Type (0-Wall, 1-Berm):	0.0		H	eavy Truc	ks: 74.4%	6 5.9%	19.7%	5.44%
	0.0 feet		Noise So	urce Eleva	ations (in i	feet)		
	0.0 feet			Autos:	0.000			
	0.0 feet		Mediun	1 Trucks:	2.297			
	5.0 feet		Heav	/ Trucks:	8.004	Grade Ad	iustment:	0.0
	0.0 feet	F	Lane Eau	ivalent Di	istance (in	feet)		
).0%	F		Autos:	54.129			
	0.0 degrees		Mediun	1 Trucks:	53,966			
00	0.0 degrees			/ Trucks:	53.982			
FHWA Noise Model Calculations								
VehicleType REMEL Trai	ffic Flow Dis	stance	Finite	Road	Fresnel	Barrier Att	en Bern	n Atten
Autos: 70.20	-0.64	-0.6	2	-1.20	-4.69	0.0	000	0.00
Medium Trucks: 81.00	-11.48	-0.6	0	-1.20	-4.88	0.0	000	0.00
Heavy Trucks: 85.38	-12.69	-0.6	0	-1.20	-5.35	0.0	000	0.00
Unmitigated Noise Levels (without 7	opo and barri	er atter	nuation)					
VehicleType Leq Peak Hour	Leq Day	Leq E	vening	Leq Nig		Ldn	CN	
Autos: 67.7	65.3		63.5		61.2	68.4		68.8
Medium Trucks: 67.7	65.6		60.1		61.3	68.5		68.6
Heavy Trucks: 70.9	68.8		63.8		64.3	71.5		71.7
Vehicle Noise: 73.8	71.7		67.5		67.3	74.5	5	74.
Centerline Distance to Noise Contou	ır (in feet)							
	L		dBA	65 dB/	A	60 dBA	55 0	
	Ldn:	11	18	253		546	1.1	76
	CNFL:		22	262		565	1.2	

	FHV	VA-RD-77-108	HIGH	IWAY N	IOISE PR	REDICTIC	ON MO	DEL			
Scenario: Exist Road Name: Harvi		th Project				Project N Job Nu					
Road Segment: s/o R		t.				JOD IVU	mber:	12218			
SITE SPECIF	IC IN	PUT DATA							L INPUT	s	
Highway Data				1	Site Con	ditions (l	Hard =	10, Sc	oft = 15)		
Average Daily Traffic (/	Adt):	14,552 vehicle	es				,	Autos:	15		
Peak Hour Percent	age:	10%			Med	dium Truc	:ks (2 A	(xles)	15		
Peak Hour Volu	me:	1,455 vehicles	s		Hea	avy Truck	:s (3+ A	(xles)	15		
Vehicle Sp	eed:	50 mph		H	Vehicle I	Niv					
Near/Far Lane Dista	nce:	48 feet		-		cleType		Dav	Evening	Night	Dailv
Site Data					1011			68.6%			87.329
	a ht.	0.0 feet			Me	dium Tru		74.3%		20.5%	
Barrier Hei Barrier Type (0-Wall, 1-Be		0.0 reet			h	leavy Tru		74.4%		19.7%	
Centerline Dist. to Ba		59.0 feet									
Centerline Dist. to Obse		59.0 feet		1	Noise So	urce Ele	vation	s (in fe	eet)		
Barrier Distance to Obse		0.0 feet				Autos:	0.0	000			
Observer Height (Above F		5.0 feet			Mediun	n Trucks:	2.2	297			
Pad Eleva		0.0 feet			Heav	y Trucks:	8.0	004	Grade Ad	ljustment.	: 0.0
Road Fleva		0.0 feet			ane Equ	uivalent l	Distan	ce (in	feet)		
Road Gr		0.0%		F		Autos:					
l eft V		-90.0 degree	20		Mediun	n Trucks:		966			
Right V	ïew:	90.0 degree			Heav	y Trucks:					
FHWA Noise Model Calcu	lations			-							
VehicleType REM		Traffic Flow	Dis	tance	Finite		Fresn	-	Barrier At		m Atter
	70.20	-1.25		-0.62	-	-1.20		-4.69		000	0.00
	81.00	-12.07		-0.60		-1.20		-4.88		000	0.00
Heavy Trucks:	85.38	-13.31		-0.60)	-1.20		-5.35	0.0	000	0.00
Unmitigated Noise Levels			barrie	er atten	uation)						
VehicleType Leq Pea				Leq Ev		Leq N			Ldn	-	NEL
Autos:	67.		64.7		62.9		60.6		67.		68.
Medium Trucks:	67.		65.1		59.5		60.7		67.		68.
Heavy Trucks:	70.		68.2		63.2		63.7		70.		71.
Vehicle Noise:	73.	-	71.1		66.9		66.7	·	73.	9	74.
Centerline Distance to No	ise Co	ontour (in feet)								
			L	70 c		65 d		6	60 dBA		dBA
			Ldn:	10		231			497		071
			VFI :	11		239	2		515	1	110

Tuesday, March 12, 2019

Road Name Road Segmen	b: Existing Wit					Project N						
Road Segmen	C Harvill Av					Job Nu						
-		a St.										
	PECIFIC IN	PUT DATA							L INPUT	s		
Highway Data					Site Con	ditions (l	Hard = 1	10, So	oft = 15)			
Average Daily 1	raffic (Adt):	9,305 vehicles	6				A	utos:	15			
Peak Hour I	Percentage:	10%			Mee	dium Truc	:ks (2 A)	xles):	15			
Peak Ho	our Volume:	931 vehicles			Hea	avy Truck	is (3+ A)	kles):	15			
Veh	icle Speed:	50 mph		-	Vehicle I	Mix						
Near/Far Lar	e Distance:	48 feet				cleType	Γ	Day	Evening	Nigh	ŧ	Daily
Site Data				-				8.6%	v	20.1		38.03
		0.0 feet		_	Me	dium Tru		4.3%		20.5		6.89
Barrier Type (0-Wa	rier Height:	0.0 reet			H	leavy Tru	cks: 7	4.4%		19.7		5.08
Centerline Dis	. ,	59.0 feet										
Centerline Dist. t		59.0 feet		1	Noise So	ource Ele			eet)			
Barrier Distance f		0.0 feet				Autos:						
Observer Height (A		5.0 feet				n Trucks:						
0 1	d Elevation:	0.0 feet			Heav	y Trucks:	8.00	04	Grade Ad	iustme	nt: (0.0
	d Elevation:	0.0 feet			Lane Equ	uivalent l	Distance	e (in	feet)			
	load Grade:	0.0%				Autos:	54.1	29	,			
	Left View:	-90.0 degrees			Mediur	n Trucks:	53.9	66				
	Right View:	90.0 degrees			Heav	y Trucks:	53.9	82				
FHWA Noise Mode	Calculations	5										
VehicleType	REMEL	Traffic Flow	Distan	се	Finite	Road	Fresne	e/	Barrier Att	en E	erm	Atter
Autos:	70.20	-3.16		-0.6	2	-1.20		4.69	0.0	000		0.0
Medium Trucks:	81.00	-14.23		-0.6	0	-1.20		4.88	0.0	000		0.0
Heavy Trucks:	85.38	-15.55		-0.6	0	-1.20	-	5.35	0.0	000		0.0
Unmitigated Noise												
,	Leq Peak Hou			eq E	vening	Leq N	•		Ldn		CNE	
Autos:	65.		2.8		61.0		58.7		65.9			66
Medium Trucks:	65.		2.9		57.3		58.5		65.7			65
Heavy Trucks:	68.		6.0		60.9		61.4		68.7			68
Vehicle Noise:	71.	1 6	8.9		64.8		64.6		71.8	3		72
Centerline Distanc	e to Noise Co	ntour (in feet)	-	70	10.4	05.5			0.404			04
					dBA	65 di		6	60 dBA	1 3	55 dl	
		CN	dn:	7		166 172	-		358 371		772 800	-

	FHW	A-RD-77-108 HI	GHWAY	NOISE PF	REDICT		DEL			
Road Nan	<i>io:</i> Existing With ne: Harvill Av. nt: s/o Orange A	,				Name: E umber: 1				
SITE	SPECIFIC INF	PUT DATA			N	IOISE N	IODE	L INPUT	S	
Highway Data				Site Con	ditions	(Hard =	10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	9,012 vehicles				A	Autos:	15		
Peak Hour	Percentage:	10%		Me	dium Tru	ucks (2 A	xles):	15		
Peak H	lour Volume:	901 vehicles		He	avy Truc	cks (3+ A	xles):	15		
Ve	hicle Speed:	50 mph		Vehicle I	Mix					
Near/Far La	ne Distance:	48 feet			icleType		Day	Evening	Night	Daily
Site Data				VOIN			58.6%	•	20.1%	
Ba	rrier Height:	0.0 feet		Me	edium Ti		74.3%		20.5%	
Barrier Type (0-W		0.0 1001		F	leavy Tr	ucks:	74.4%	5.9%	19.7%	5.09%
Centerline Di	. ,	59.0 feet			-					
Centerline Dist.		59.0 feet		Noise Sc				eet)		
Barrier Distance		0.0 feet			Autos					
Observer Height	(Above Pad):	5.0 feet			n Truck					
	ad Flevation:	0.0 feet		Heav	y Truck	s: 8.0	04	Grade Adj	ustmen	2: 0.0
	ad Elevation:	0.0 feet		Lane Eq	uivalent	Distanc	e (in	feet)		
	Road Grade:	0.0%			Auto	s: 54.1	29			
	Left View:	-90.0 degrees		Mediur	n Truck	s: 53.9	66			
	Right View:	90.0 degrees		Heav	y Truck	s: 53.9	82			
FHWA Noise Mod	el Calculations									
VehicleType	REMEL	Traffic Flow	Distance	Finite	Road	Fresn	e/	Barrier Att	en Be	rm Atten
Autos:	70.20	-3.30	-0.6	62	-1.20		4.69	0.0	000	0.000
Medium Trucks:	81.00	-14.37	-0.6	60	-1.20		4.88	0.0	000	0.000
Heavy Trucks:	85.38	-15.68	-0.6	60	-1.20		5.35	0.0	000	0.000
Unmitigated Nois	e Levels (witho	ut Topo and bar	rrier atte	nuation)						
VehicleType	Leq Peak Hour	Leq Day	Leq E	vening	Leq	Night		Ldn	-	NEL
Autos:	65.1	62.	7	60.8		58.6		65.8	3	66.1
Medium Trucks:	64.8		-	57.2		58.4		65.6		65.7
Heavy Trucks:	67.9	65.8	8	60.8		61.3		68.5	5	68.7
Vehicle Noise:	70.9	68.	8	64.7		64.4		71.6	6	71.8
Centerline Distan	ce to Noise Cor	ntour (in feet)								
				dBA		dBA	e	60 dBA		dBA
		Ldr		76		63		351		756
		CNEL	. 1	78	10	69		363		783

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	FHV	VA-RD-77-108	HIGHW	AY N	DISE PF	EDICTIO	N MO	DEL			
	 Existing Wi Harvill Av. s/o A St. 	th Project				Project N Job Nur					
	PECIFIC IN	IPUT DATA							L INPUT	s	
	Percentage: our Volume: iicle Speed:	13,059 vehicle 10% 1,306 vehicle 50 mph 48 feet			Mee Hea 'ehicle I	ditions (H dium Truc avy Truck: Mix cleType	ks (2 A s (3+ A	Autos: Axles):	15 15 15 15 <i>Evening</i>	Night	Dailv
Site Data					1011			68.6%	•	<u> </u>	88.019
Barrier Type (0-Wa		0.0 feet 0.0				edium Truc leavy Truc		74.3% 74.4%		20.5% 19.7%	
	o Observer: o Observer:	59.0 feet 59.0 feet 0.0 feet 5.0 feet 0.0 feet 0.0 feet			Mediur Heav	Autos: Autos: n Trucks: y Trucks: uivalent D	0.0 2.2 8.0	297 2004	Grade Ad	ljustment	: 0.0
R	Road Grade: Left View: Right View:	0.0% -90.0 degree 90.0 degree			Mediur	Autos: n Trucks: y Trucks:	54. 53. 53.	129 966			
FHWA Noise Mode		-	D · · ·		E 1 11						
VehicleType Autos: Medium Trucks: Heavy Trucks:	REMEL 70.20 81.00 85.38	Traffic Flow -1.69 -12.73 -14.09		-0.62 -0.60 -0.60		-1.20 -1.20 -1.20 -1.20		el -4.69 -4.88 -5.35	0.0	200 200 200 200	r <u>m Atten</u> 0.00 0.00 0.00
Unmitigated Noise	Levels (with	out Topo and	barrier a	ttenu	uation)						
VehicleType	Leq Peak Hou	ir Leq Day	' Le	eq Ev	ening	Leq Ni	ght		Ldn	С	NEL
Autos: Medium Trucks: Heavy Trucks:	66 66 69	.5	64.3 64.4 67.4		62.4 58.8 62.4		60.2 60.0 62.9		67.4 67.2 70.1	2	67. 67. 70.
Vehicle Noise:	72	.5	70.4		66.3		66.0		73.2	2	73.
Centerline Distanc	e to Noise Co	ontour (in feet)								
			Ldn: NEL:	70 d 97 100		65 dE 208 216		6	0 dBA 449 465	9	67 002

	FH\	WA-RD-77-108	HIGH	WAY N	IOISE PF	REDICTIO	ON MC	DEL			
	rio: Existing W	ith Project				Project N Job Nu					
	nt: e/o Patters	on Av.				JUD NU	mber.	12210			
SITE	SPECIFIC IN	IPUT DATA							L INPUT	s	
Highway Data				5	Site Con	ditions (I	Hard =	: 10, So	oft = 15)		
Average Daily	Traffic (Adt):	2,084 vehicle	es					Autos:	15		
Peak Hour	Percentage:	10%			Me	dium Truc	cks (2 .	Axles):	15		
Peak H	lour Volume:	208 vehicle	s		Hea	avy Truck	(3+ .	Axles):	15		
Ve	hicle Speed:	40 mph		1	Vehicle I	Mix					
Near/Far La	ne Distance:	36 feet		F		cleType		Day	Evening	Night	Daily
Site Data							itos:	68.6%	•	•	87.65
Pa	rrier Height:	0.0 feet			Me	dium Tru	icks:	74.3%	5.2%	20.5%	
Barrier Type (0-V		0.0			F	leavy Tru	icks:	74.4%	5.9%	19.7%	5.44
	ist. to Barrier:	50.0 feet		L.							
Centerline Dist.		50.0 feet		1	Noise So	ource Ele			eet)		
Barrier Distance		0.0 feet				Autos:		000			
Observer Height		5.0 feet				n Trucks:		297			
	ad Elevation:	0.0 feet			Heav	y Trucks:	8.	004	Grade Ad	justment.	0.0
	ad Elevation:	0.0 feet		1	Lane Equ	uivalent	Distan	ce (in	feet)		
	Road Grade:	0.0%				Autos:	46	.915			
	Left View:	-90.0 degree	es		Mediur	n Trucks:	46	726			
	Right View:	90.0 degree	es		Heav	y Trucks:	46	.744			
FHWA Noise Mod	lel Calculation	s									
VehicleType	REMEL	Traffic Flow	Dis	tance	Finite	Road	Fres	nel	Barrier Att	en Ber	m Atter
Autos:	66.51	-8.71		0.31	1	-1.20		-4.65	0.0	000	0.00
Medium Trucks:	77.72	-19.74		0.34	1	-1.20		-4.87	0.0	000	0.00
Heavy Trucks:	82.99	-20.78		0.34	1	-1.20		-5.43	0.0	000	0.00
Unmitigated Nois	e Levels (with	out Topo and	barrie	er atten	uation)						
VehicleType	Leq Peak Hou	ur Leq Day	/	Leq Ev	/ening	Leq N	light		Ldn		VEL
Autos:			54.5		52.7		50.		57.6		58
Medium Trucks:			55.0		49.5		50.		57.8		58
Heavy Trucks:		-	59.3		54.3		54.	-	62.0		62
Vehicle Noise:			61.6		57.3		57.	2	64.4	1	64
Centerline Distan	ce to Noise C	ontour (in feet)								
			L	70 c		65 d		6	60 dBA		dBA
			Ldn:	2	1	46			98	2	12
		-	NFI :	22		47			102		19

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0											
	rio: Existing W					Project N Job Nui					
	ne: Placentia S ent: e/o Patters					JOD INUI	nber: 1	2218			
·				1							
SITE Highway Data	SPECIFIC IN	IPUT DATA		S	Site Con	NC ditions (H			L INPUT:	S	
Average Daily	Troffic (Adt):	487 vehicle				1100110 [1		utos:	15		
• •	Percentage:	10%	55		Mer	dium Truc	-		15		
	Hour Volume:	49 vehicles				avy Truck		/	15		
	hicle Speed:	40 mph	,				010171		10		
	ane Distance:	36 feet		V	/ehicle N						
	ine Distance.	30 1661			Vehi	cleType		Day	Evening	Night	Daily
Site Data								8.6%		20.1%	
Ba	rrier Height:	0.0 feet				edium Tru		4.3%		20.5%	
Barrier Type (0-V	Vall, 1-Berm):	0.0			H	leavy Tru	cks: 1	4.4%	5.9%	19.7%	8.85
Centerline D	ist. to Barrier:	50.0 feet			loise So	urce Ele	vations	(in fe	et)		
Centerline Dist.	to Observer:	50.0 feet		-		Autos:	0.0				
Barrier Distance	to Observer:	0.0 feet			Mediun	n Trucks:	2.2				
Observer Height	(Above Pad):	5.0 feet				v Trucks:	8.0		Grade Ad	iustment	0.0
P	ad Elevation:	0.0 feet						-			
Ro	ad Elevation:	0.0 feet		L	ane Equ	livalent L			eet)		
	Road Grade:	0.0%				Autos:	46.9				
	Left View:	-90.0 degree				n Trucks:	46.7				
	Right View:	90.0 degree	es		Heav	y Trucks:	46.7	44			
FHWA Noise Mod	lel Calculation	s									
VehicleType	REMEL	Traffic Flow	Distan		Finite		Fresn		Barrier Att		rm Atter
Autos:		-15.32		0.31		-1.20		4.65		000	0.00
Medium Trucks:	77.72	-24.81		0.34		-1.20	-	4.87	0.0	000	0.00
Heavy Trucks:	82.99	-24.99		0.34		-1.20	-	5.43	0.0	000	0.0
Unmitigated Nois											
VehicleType	Leq Peak Hou			eq Ev	ening	Leq N	•		Ldn		NEL
Autos:			47.9		46.0		43.8		51.0		51
Medium Trucks:			50.0		44.4		45.6		52.8		52
Heavy Trucks:			55.1		50.0		50.6		57.8		58
,	59	0.0	56.8		52.3		52.4		59.6	6	59
Vehicle Noise:)								
,	ce to Noise C	ontour (in feet	· · · · · · · · · · · · · · · · · · ·								
Vehicle Noise:	ce to Noise C			70 d		65 dl	3A	0	0 dBA		dBA
Vehicle Noise:	ce to Noise C		Ldn:	70 d 10)	65 dE 22 23	3A	0	0 dBA 47 49	1	01 01

	FHW	/A-RD-77-108 HIG	GHWAY I		REDICTIC	N MOE	EL			
	: Existing Wit : Placentia St : e/o Dwy. 2				Project N Job Nui					
SITE S	PECIFIC IN	PUT DATA			NC	DISE M	ODEL IN	PUTS		
Highway Data				Site Con	ditions (F	lard = '	10, Soft = 1	15)		
Average Daily T	raffic (Adt):	1,077 vehicles				A	utos: 15	5		
Peak Hour F	Percentage:	10%		Me	dium Truc	ks (2 A	xles): 15	5		
Peak Ho	ur Volume:	108 vehicles		He	avy Truck	s (3+ A	xles): 15	5		
Veh	icle Speed:	40 mph	ŀ	Vehicle I	Mise					
Near/Far Lan	e Distance:	36 feet	ŀ		icleType		Day Eve	ning Ni	ight D	aily
Site Data				ven				•	•	.64%
Born	ier Height:	0.0 feet		Me	edium Tru					.28%
Barrier Type (0-Wa		0.0		F	leavy Tru	cks: 7	4.4% 5	.9% 1	9.7% 4	.08%
Centerline Dist	. ,	50.0 feet			,					
Centerline Dist. to		50.0 feet	-	Noise Sc	ource Ele		. /			
Barrier Distance to	Observer:	0.0 feet			Autos:					
Observer Height (A		5.0 feet			n Trucks:					
0 1	d Flevation:	0.0 feet		Heav	y Trucks:	8.0	04 Grad	le Adjust	ment: 0.	D
	d Elevation:	0.0 feet		Lane Eq	uivalent I	Distanc	e (in feet)			
	oad Grade:	0.0%	ľ		Autos:	46.9	15			
	Left View:	-90.0 degrees		Mediur	n Trucks:	46.7	26			
	Right View:	90.0 degrees		Heav	y Trucks:	46.7	44			
FHWA Noise Mode	Calculations	;								
VehicleType	REMEL	Traffic Flow E	Distance	Finite	Road	Fresne	el Barri	er Atten	Berm A	tten
Autos:	66.51	-11.38	0.3	31	-1.20	-	4.65	0.000		0.000
Medium Trucks:	77.72	-24.69	0.3	34	-1.20	-	4.87	0.000		0.000
Heavy Trucks:	82.99	-24.90	0.3	34	-1.20	-	5.43	0.000		0.000
Unmitigated Noise				,						
	eq Peak Hou			vening	Leq N		Ldn		CNEL	
Autos:	54.		-	50.0		47.7		54.9		55.3
Medium Trucks:	52.			44.5		45.7		52.9		53.1
Heavy Trucks:	57.			50.1		50.6		57.9		58.1
Vehicle Noise:	59.	8 57.6	6	53.6		53.3		60.5		60.7
Centerline Distance	e to Noise Co	ntour (in feet)								
				dBA	65 dl		60 dB	A	55 dB/	۹
		Ldn		12	25		54		116	
		CNEL	: 1	12	26		56		120	

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	FH\	WA-RD-77-108	HIGHW	AY NO	ISE PRE	EDICTION	I MODE	L			
	: EA Withou					Project Na					
	e: Patterson /					Job Num	ber: 122	18			
Road Segmen	t: n/o Walnut	St.									
SITE S	PECIFIC IN	IPUT DATA				NO	SE MO	DEL INF	PUTS		
Highway Data				Sit	e Cond	itions (Ha	ard = 10	Soft = 1	5)		
Average Daily 1	raffic (Adt):	305 vehicl	es				Aut	os: 15			
Peak Hour F	Percentage:	10%			Medi	um Truck	s (2 Axle	es): 15			
Peak Ho	our Volume:	31 vehicle	s		Heav	/y Trucks	(3+ Axle	es): 15			
Veh	icle Speed:	40 mph		Ve	hicle Mi	ix					
Near/Far Lan	e Distance:	36 feet			Vehici	leType	Da	v Ever	ning N	light	Daily
Site Data						Auto	os: 68.	6% 11	.3% 2	0.1%	87.95%
Bari	rier Height:	0.0 feet			Mea	lium Truc	ks: 74	3% 5	.2% 2	0.5%	7.05%
Barrier Type (0-Wa	all, 1-Berm):	0.0			He	eavy Truc	ks: 74	4% 5	.9% 1	9.7%	5.00%
Centerline Dis		50.0 feet		No	ise Sou	rce Eleva	ations (i	n feet)			
Centerline Dist. to		50.0 feet				Autos:	0.000				
Barrier Distance to		0.0 feet		1	Medium	Trucks:	2.297				
Observer Height (A	Above Pad): d Elevation:	5.0 feet			Heavy	Trucks:	8.004	Grad	e Adjus	tment.	0.0
	d Elevation: d Elevation:	0.0 feet 0.0 feet		12	no Faui	valent Di	stanco	(in foot)			
	oad Grade:	0.0 reet		Lu	ne Equi	Autos:	46.915				
n n	Left View:	-90.0 deare	00		Medium	Trucks:	46.726				
	Right View:	90.0 degre				Trucks:	46.744				
FHWA Noise Mode	I Calculation	s									
VehicleType	REMEL	Traffic Flow	Distan		Finite R		Fresnel	Barrie	er Atten	Ber	m Atten
Autos:	66.51	-17.04		0.31		-1.20	-4.		0.000)	0.00
Medium Trucks:	77.72	-28.00		0.34		-1.20	-4.		0.000		0.00
Heavy Trucks:	82.99			0.34		-1.20	-5.	43	0.000		0.00
Unmitigated Noise			-							-	
	Leq Peak Hou			eq Ever		Leq Nig		Ldn	49.3	CI	VEL 49.
Autos: Medium Trucks:		1.6 1.9	46.2 46.8		44.3 41.2		42.1 42.4		49.3 49.6		49. 49.
Heavy Trucks:		.9 .6	46.8 50.6		41.2 45.5		42.4		49.6 53.3		49. 53.
Vehicle Noise:		5.2	53.1		45.5		48.7		55.9		56.
Centerline Distanc	e to Noise C	ontour (in fee	t)								
				70 dB	4	65 dB/	4	60 dB/	4	55	dBA
				70 UD/	4	00 UD/	-				
			Ldn:	6	4	12		27			57

	FH\	WA-RD-77-108	HIGH	IWAY N	IOISE PF	REDICTIC	on Mo	DEL			
Scenar	io: EA Withou	t Project				Project N	lame:	Barker			
Road Nan	e: Patterson /	λv.				Job Nu	mber:	12218			
Road Segme	nt: n/o Placent	tia St.									
	SPECIFIC IN	IPUT DATA								s	
Highway Data				4	Site Con	ditions (l	Hard =	: 10, So	oft = 15)		
Average Daily	Traffic (Adt):	351 vehicl	es					Autos:	15		
Peak Hour	Percentage:	10%			Me	dium Truc	cks (2)	Axles):	15		
Peak H	lour Volume:	35 vehicle	s		Hea	avy Truck	(3+)	Axles):	15		
Ve	hicle Speed:	40 mph			Vehicle I	Nix					
Near/Far La	ne Distance:	36 feet				cleType		Day	Evening	Night	Daily
Site Data						AL	itos:	68.6%	11.3%	20.1%	87.95%
Ba	rrier Height:	0.0 feet			Me	edium Tru	icks:	74.3%	5.2%	20.5%	7.05%
Barrier Type (0-V		0.0			F	leavy Tru	icks:	74.4%	5.9%	19.7%	5.00%
	st. to Barrier:	50.0 feet		E.	Noine C-	ource Ele	votic	o (in f	a		
Centerline Dist.	to Observer:	50.0 feet		4	voise So	Autos:			eet)		
Barrier Distance	to Observer:	0.0 feet			1.4 m all 1. m	Autos: n Trucks:		000			
Observer Height	(Above Pad):	5.0 feet						297 004	Grade Ad	iustmont	
P	ad Elevation:	0.0 feet			Heav	y Trucks:	8.	004	Graue Au	usuneni	0.0
Ro	ad Elevation:	0.0 feet		1	Lane Equ	uivalent l	Distan	ce (in i	feet)		
	Road Grade:	0.0%				Autos:	46.	915			
	Left View:	-90.0 degre	es		Mediur	n Trucks:	46.	726			
	Right View:	90.0 degre	es		Heav	y Trucks:	46.	744			
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite	Road	Fresi	nel	Barrier Att	en Ber	m Atten
Autos:		-16.43		0.31		-1.20		-4.65	0.0	000	0.00
Medium Trucks:	77.72			0.34	4	-1.20		-4.87	0.0	000	0.00
Heavy Trucks:	82.99	-28.88		0.34	4	-1.20		-5.43	0.0	000	0.00
Unmitigated Nois	e Levels (with	out Topo and	barri	er atten	uation)						
VehicleType	Leq Peak Hou			Leq Ev		Leq N	·		Ldn		VEL
Autos:	49		46.8		44.9		42.		49.9		50.
Medium Trucks:			47.4		41.8		43.0		50.2		50.
Heavy Trucks:			51.2		46.2		46.		53.9		54.
Vehicle Noise:			53.7		49.4		49.3	3	56.5	5	56.
Centerline Distan	ce to Noise C	ontour (in feet)	=0	-						10.4
			L	70 0		65 di		6	0 dBA		dBA
			Ldn:	6	5	14			29	6	53
			NFI :	7		14			30		35

Tuesday, March 12, 2019

Scenario:	A Without	Droject				Drojoot A	lame: Bai	lion	_	
Road Name: 1		Project					nber: 122			
Road Segment: s		Expy				300 140	1001. 122	10		
	,	.,								
SITE SPE Highway Data	CIFIC IN	PUT DATA			Cito Con			DEL INPUTS Soft = 15)	S	
* *					Sile Com	unions (i				
Average Daily Trat	, ,	16,502 vehicles	5				Aut			
Peak Hour Per		10%					ks (2 Axle	,		
Peak Hour		1,650 vehicles			Hea	avy Truck	s (3+ Axle	es): 15		
	e Speed:	50 mph			Vehicle I	/lix				
Near/Far Lane D	Distance:	48 feet			Vehi	cleType	Da	y Evening	Night	Daily
Site Data						AL	itos: 68.	.6% 11.3%	20.1%	87.95%
Barrie	·Height:	0.0 feet			Me	dium Tru	cks: 74	.3% 5.2%	20.5%	7.05%
Barrier Type (0-Wall,		0.0			H	leavy Tru	cks: 74	.4% 5.9%	19.7%	5.00%
Centerline Dist. to	Barrier:	59.0 feet		H	Noise So	urce Ele	vations (i	n feet)		
Centerline Dist. to C	bserver:	59.0 feet		F		Autos:		,		
Barrier Distance to C	bserver:	0.0 feet			Modium	n Trucks:				
Observer Height (Abo	ve Pad):	5.0 feet				v Trucks:			ustment	0.0
Pad E	levation:	0.0 feet							uounoni	0.0
Road E	levation:	0.0 feet			Lane Equ	ivalent l	Distance	,		
Roa	d Grade:	0.0%				Autos:	54.129			
L	eft View:	-90.0 degrees	5		Mediun	n Trucks:	53.966	6		
Rig	ght View:	90.0 degrees	5		Heav	y Trucks:	53.982	2		
FHWA Noise Model C	alculations	:								
VehicleType F	REMEL	Traffic Flow	Dist	ance	Finite	Road	Fresnel	Barrier Atte	en Ber	m Atten
Autos:	70.20	-0.68		-0.6	2	-1.20	-4.	69 0.0	00	0.00
Medium Trucks:	81.00	-11.64		-0.6	0	-1.20	-4.	88 0.0	00	0.00
Heavy Trucks:	85.38	-13.13		-0.6	0	-1.20	-5.	35 0.0	00	0.00
Unmitigated Noise Le	vels (witho	ut Topo and b	arrie	r atten	nuation)					
VehicleType Leo	g Peak Houi			Leq E	vening	Leq N		Ldn		VEL
Autos:	67.	7 6	5.3		63.5		61.2	68.4	l .	68.
Medium Trucks:	67.	6 6	5.5		59.9		61.1	68.3	3	68.
Heavy Trucks:	70.4	4 6	8.4		63.4		63.9	71.1		71.
Vehicle Noise:	73.	6 7	1.4		67.3		67.0	74.2	2	74.
Centerline Distance to	o Noise Co	ntour (in feet)								
					dBA	65 di		60 dBA		dBA
			dn:		13	243		524	,	129
			FI :	11		252		543		170

	FH\	VA-RD-77-108	HIGHWA	Y NO		EDICTI		DEL			
Road Nan	io: EA Withou ne: Harvill Av. nt: s/o Rider S						Name: I umber: ·				
SITE	SPECIFIC IN	IPUT DATA				N	OISE N	IODE		s	
Highway Data				S	ite Cona	litions (Hard =	10, S	oft = 15)		
Average Daily	Traffic (Adt):	14,504 vehicle	s					Autos:	15		
Peak Hour	Percentage:	10%			Med	lium Tru	icks (2 A	xles).	15		
Peak F	lour Volume:	1,450 vehicles			Hea	vy Truc	ks (3+ A	xles).	15		
Ve	hicle Speed:	50 mph			ehicle M						
Near/Far La	ne Distance:	48 feet		V		leTvpe		Day	Evening	Night	Daily
Site Data				_	venic			68.6%	~	· ·	5 87.95%
						A dium Tr		68.6% 74.3%		20.1%	
	rrier Height:	0.0 feet				eavy Tr		74.3% 74.4%		20.5%	
Barrier Type (0-V	. ,	0.0			H	eavy In	UCKS:	74.4%	o 5.9%	19.7%	5.00%
Centerline Di		59.0 feet		N	loise Sol	urce Ele	evation	s (in f	eet)		
Centerline Dist.		59.0 feet				Autos	: 0.0	000			
Barrier Distance		0.0 feet			Medium	Trucks	: 2.2	297			
Observer Height	· ,	5.0 feet			Heavy	Trucks	: 8.0	004	Grade Ad	justmen	t: 0.0
	ad Elevation:	0.0 feet									
	ad Elevation:	0.0 feet		L	ane Equ				teet)		
	Road Grade:	0.0%				Autos					
	Left View:	-90.0 degree			Medium						
	Right View:	90.0 degree	s		Heavy	r Trucks	53.9	982			
	ol Calculation	s									
FHWA Noise Mod											
FHWA Noise Mod VehicleType	REMEL	Traffic Flow	Distan	ce	Finite F	Road	Fresn	el	Barrier Att	en Be	rm Atten
		Traffic Flow -1.24		ce 0.62		Road -1.20		el -4.69		en Be	
51	REMEL		-						0.0		0.000
VehicleType Autos:	REMEL 70.20	-1.24		0.62		-1.20		-4.69	0.0 0.0	000	0.000
VehicleType Autos: Medium Trucks: Heavy Trucks:	REMEL 70.20 81.00 85.38	-1.24 -12.20 -13.69	-	0.62		-1.20 -1.20		-4.69 -4.88	0.0 0.0	000	0.000
VehicleType Autos: Medium Trucks: Heavy Trucks:	REMEL 70.20 81.00 85.38	-1.24 -12.20 -13.69 out Topo and I	oarrier a	0.62 0.60 0.60		-1.20 -1.20		-4.69 -4.88	0.0 0.0	000	0.000
VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Nois	REMEL 70.20 81.00 85.38 e Levels (with	-1.24 -12.20 -13.69 out Topo and I Ir Leq Day	oarrier a	0.62 0.60 0.60	uation)	-1.20 -1.20 -1.20		-4.69 -4.88 -5.35	0.0 0.0 0.0	000	0.000 0.000 0.000
VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Nois VehicleType	REMEL 70.20 81.00 85.38 e Levels (with Leq Peak Hou	-1.24 -12.20 -13.69 out Topo and I rr Leq Day .1 6	oarrier a	0.62 0.60 0.60	lation) ening	-1.20 -1.20 -1.20	Vight	-4.69 -4.88 -5.35	0.0 0.0 0.0	000 000 000 000	0.000 0.000 0.000 0.000 CNEL 68.2
VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Nois VehicleType Autos:	REMEL 70.20 81.00 85.38 e Levels (with Leq Peak Hou 67	-1.24 -12.20 -13.69 out Topo and I rr Leq Day .1 6 .0 6	parrier a	0.62 0.60 0.60	uation) ening 62.9	-1.20 -1.20 -1.20	Vight 60.6	-4.69 -4.88 -5.35	0.0 0.0 0.0 <i>Ldn</i> 67.8	000 000 000 000 7	0.000 0.000 0.000 CNEL 68.2 67.5
VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Nois VehicleType Autos: Medium Trucks:	REMEL 70.20 81.00 85.38 e Levels (with Leg Peak Hou 67 67 69	-1.24 -12.20 -13.69 out Topo and I <i>Ir</i> Leq Day .1 6 .0 6 .9 6	0arrier a Le 4.7 4.9	0.62 0.60 0.60	<i>iation)</i> ening 62.9 59.4	-1.20 -1.20 -1.20	Vight 60.6 60.6	-4.69 -4.88 -5.35	0.0 0.0 0.0 <i>Ldn</i> 67.8 67.3	000 000 000 000 3 7 5	0.000 0.000 0.000 CNEL 68.2 67.5 70.7
VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Nois VehicleType Autos: Medium Trucks: Heavy Trucks:	REMEL 70.20 81.00 85.38 e Levels (with Leq Peak Hot 67 63 73	-1.24 -12.20 -13.69 out Topo and I rr Leq Day .1 6 .0 6 .9 6 .0 7	Darrier a Le 44.7 44.9 7.8 0.8	0.62 0.60 0.60 ttenu q Evi	<i>lation)</i> ening 62.9 59.4 62.8 66.7	-1.20 -1.20 -1.20 <i>Leq I</i>	Vight 60.6 63.3 66.5	-4.69 -4.88 -5.35	0.0 0.0 0.0 67.8 67.7 70.5 73.7	000 000 000 3 7 5 7	0.000 0.000 0.000 CNEL 68.2 67.5 70.7 73.5
VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Nois VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise	REMEL 70.20 81.00 85.38 e Levels (with Leq Peak Hot 67 63 73	-1.24 -12.20 -13.69 out Topo and I II II 0 6 0 6 0 6 0 7 0 7 0 0 7 0 0 7	Darrier a Le 44.7 44.9 7.8 70.8	0.62 0.60 0.60 ttenu q Eve	ening 62.9 59.4 62.8 66.7 BA	-1.20 -1.20 -1.20 <i>Leq I</i>	Vight 60.6 63.3 66.5	-4.69 -4.88 -5.35	0.0 0.0 0.0 67.8 67.7 70.5 73.7	000 000 000 3 7 5 7	0.000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.000000
VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Nois VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise	REMEL 70.20 81.00 85.38 e Levels (with Leq Peak Hot 67 63 73	-1.24 -12.20 -13.69 out Topo and I rr Leq Day .1 6 0.0 6 0.0 7 0.0 7 0.0 7	Darrier a Le 44.7 44.9 7.8 0.8	0.62 0.60 0.60 ttenu q Evi	<i>ation)</i> ening 62.9 59.4 62.8 66.7 <i>BA</i> 4	-1.20 -1.20 -1.20 <i>Leq I</i>	Vight 60.6 63.3 66.5 IBA 3	-4.69 -4.88 -5.35	0.0 0.0 0.0 67.8 67.7 70.5 73.7	000 000 000 7 5 7 5 7	0.000 0.000 0.000 CNEL 68.2 67.9 70.7 73.9

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	FH\	WA-RD-77-108	HIGHWA	Y NO	SE PREDI		IODEL			
	p: EA Withou	t Project					e: Barker			
	e: Harvill Av.				Job	Numbe	r: 12218			
Road Segmen	t: s/o Placent	tia St.								
	SPECIFIC IN	NPUT DATA						L INPUT	5	
Highway Data				Sit	e Conditio	ns (Harc	i = 10, So	oft = 15)		
Average Daily 1	Traffic (Adt):	9,013 vehicl	es				Autos:	15		
Peak Hour I	Percentage:	10%			Medium	Trucks (2 Axles):	15		
Peak Ho	our Volume:	901 vehicle	s		Heavy T	rucks (3	+ Axles):	15		
	nicle Speed:	50 mph		Ve	hicle Mix					
Near/Far Lar	ne Distance:	48 feet			VehicleTy	pe	Day	Evening	Night	Daily
Site Data					,	Autos:	68.6%	11.3%	20.1%	87.95%
Bar	rier Height:	0.0 feet			Medium	Trucks:	74.3%	5.2%	20.5%	7.05%
Barrier Type (0-Wa	all, 1-Berm):	0.0			Heavy	Trucks:	74.4%	5.9%	19.7%	5.00%
Centerline Dis		59.0 feet		No	ise Source	Elevati	ons (in fe	eet)		
Centerline Dist. t		59.0 feet			AL	itos:	0.000			
Barrier Distance t		0.0 feet		1	Medium Tru	cks:	2.297			
Observer Height (/	,	5.0 feet			Heavy Tru	cks:	8.004	Grade Adj	iustment	0.0
	d Elevation: d Elevation:	0.0 feet		12	ne Equival	ont Dict	anco (in	faat)		
	a Elevation: Road Grade:	0.0 feet 0.0%		La			54.129	eel)		
r	Left View:	-90.0 degre			Ac Medium Tru		53.966			
	Right View:	90.0 degre			Heavy Tru		53.982			
FHWA Noise Mode	l Calculation	IS								
VehicleType	REMEL	Traffic Flow	Distan	се	Finite Road	f Fre	esnel	Barrier Atte	en Ber	m Atten
Autos:	70.20	-3.30		0.62	-1.2	20	-4.69	0.0	00	0.00
Medium Trucks:	81.00			0.60	-1.2		-4.88	0.0		0.00
Heavy Trucks:	85.38			0.60	-1.2	20	-5.35	0.0	00	0.00
Unmitigated Noise										
	Leq Peak Ho			q Ever		eq Night		Ldn		NEL
Autos:	65		62.7		60.8	-	8.6	65.8		66.
Medium Trucks:		1.9	62.9		57.3		8.5	65.7		65.
Heavy Trucks:		⁷ .8	65.7		60.7	-	1.2	68.5		68.
Vehicle Noise:).9	68.8		64.7	6	4.4	71.6	ō	71.
Centerline Distanc	e to NOISE C	ontour (in fee	9	70 dB,	4 0	65 dBA	6	0 dBA	55	dBA
			I dn:	75		100		350		'54
			Lun.	75		163		330		54

	FHV	VA-RD-77-108	HIGH	WAY N	OISE PR	EDICTI	ON MO	DEL						
Road Nam	io: EA Without ne: Harvill Av. nt: s/o Orange				Project Name: Barker Job Number: 12218									
SITE	SPECIFIC IN	IPUT DATA				N	OISE N	/ODE	L INPUT	s				
Highway Data				S	ite Con	ditions ((Hard =	10, Sc	oft = 15)					
Average Daily	Traffic (Adt):	8,708 vehicle	s				,	Autos:	15					
Peak Hour	Percentage:	10%			Med	dium Tru	cks (2 A	(xles):	15					
Peak H	lour Volume:	871 vehicles			Hea	avy Truc	ks (3+ A	(xles):	15					
Ve	hicle Speed:	50 mph		L.	ehicle N	<i>Ni</i> v								
Near/Far La	ne Distance:	48 feet		-		cleType		Day	Evening	Night	Daily			
Site Data					VCIII			68.6%		20.1%				
	wier Height	0.0 feet			Me	dium Tr		74.3%		20.5%	7.05%			
ва Barrier Type (0-W	rrier Height:	0.0 feet 0.0				leavy Tri		74.4%		19.7%	5.00%			
Centerline Di		59.0 feet				,								
Centerline Dist.		59.0 feet		Λ	loise So	urce Ele			eet)					
Barrier Distance		0.0 feet				Autos		000						
Observer Height		5.0 feet				n Trucks		297						
	ad Elevation:	0.0 feet			Heav	y Trucks	: 8.0	004	Grade Adj	justment.	0.0			
Ro	ad Elevation:	0.0 feet		L	ane Equ	iivalent	Distan	ce (in i	feet)					
	Road Grade:	0.0%				Autos	: 54.	129						
	Left View:	-90.0 degree	s		Mediun	n Trucks	53.	966						
	Right View:	90.0 degree	s		Heav	y Trucks	53.9	982						
FHWA Noise Mod	el Calculation	s												
VehicleType	REMEL	Traffic Flow	Dist	tance	Finite	Road	Fresh	el	Barrier Att	en Ber	m Atten			
Autos:	70.20	-3.45		-0.62		-1.20		-4.69	0.0	000	0.00			
Medium Trucks:	81.00	-14.41		-0.60		-1.20		-4.88	0.0	000	0.00			
Heavy Trucks:	85.38	-15.91		-0.60		-1.20		-5.35	0.0	000	0.00			
Unmitigated Nois	e Levels (with	out Topo and	barrie	er attenu	lation)									
VehicleType	Leq Peak Hou			Leq Ev		Leq I			Ldn		VEL			
Autos:	64		62.5		60.7		58.4		65.6		66.0			
Medium Trucks:	64		62.7		57.2		58.4		65.5		65.			
Heavy Trucks:	67		65.6		60.6		61.1		68.3		68.			
Vehicle Noise:			6.88		64.5		64.3		71.5	5	71.			
Centerline Distan	ce to Noise Co	ontour (in feet)		70 d	ол Г	65 c	ND A	4	0 dBA	FF	dBA			
			_dn:	70 a		15			342		ава 37			
			_an: IEL:	74		15			342 355		37 64			
		Ch	-L.	70		10			555					

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	WA-RD-77-108 HIG		Project Name: Barker							
Scenario: EA Withou Road Name: Harvill Av.	it Project				lame: Bark mber: 122					
Road Segment: s/o A St.				JOD IVU	niber. 122	8				
Road Segment. S/0 A St.										
SITE SPECIFIC I	NPUT DATA					EL INPUTS				
Highway Data			Site Con	ditions (I	Hard = 10,					
Average Daily Traffic (Adt):	12,918 vehicles				Auto					
Peak Hour Percentage:	10%				ks (2 Axles	/				
Peak Hour Volume:	1,292 vehicles		He	avy Truck	s (3+ Axles	s): 15				
Vehicle Speed:	50 mph	-	Vehicle I	Vix						
Near/Far Lane Distance:	48 feet	-		cleType	Dav	Evening	Night Daily			
Site Data					itos: 68.6	•	20.1% 87.95			
Barrier Height:	0.0 feet		Me	edium Tru	cks: 74.3	% 5.2%	20.5% 7.05%			
Barrier Type (0-Wall, 1-Berm):	0.0		F	leavy Tru	cks: 74.4	% 5.9%	19.7% 5.00%			
Centerline Dist. to Barrier:	59.0 feet	-								
Centerline Dist. to Observer:	59.0 feet	-	Noise Sc		vations (in	feet)				
Barrier Distance to Observer:	0.0 feet			Autos:						
Observer Height (Above Pad):	5.0 feet			n Trucks:		Ora da Arti				
Pad Elevation:	0.0 feet		Heav	y Trucks:	8.004	Grade Adju	stment: 0.0			
Road Elevation:	0.0 feet		Lane Equ	uivalent	Distance (i	n feet)				
Road Grade:	0.0%			Autos:	54.129					
Left View:	-90.0 degrees		Mediur	n Trucks:	53.966					
Right View:	90.0 degrees		Heav	y Trucks:	53.982					
FHWA Noise Model Calculation	ıs									
VehicleType REMEL	Traffic Flow D	Distance	Finite	Road	Fresnel	Barrier Atte	n Berm Atten			
Autos: 70.20	-1.74	-0.6	2	-1.20	-4.6	9 0.00	0.00			
Medium Trucks: 81.00	-12.70	-0.6	i0	-1.20	-4.8	8 0.00	0.00			
Heavy Trucks: 85.38	-14.19	-0.6	0	-1.20	-5.3	5 0.00	00.00			
Unmitigated Noise Levels (with			,				0.15			
VehicleType Leq Peak Ho Autos: 6			ivening	Leq N	•	Ldn 67.3	CNEL			
	6.6 64.2 6.5 64.4		62.4 58.9		60.1 60.1	67.3	67. 67.			
	9.4 67.3		58.9 62.3		62.8	70.0	67. 70.			
						70.0	70.			
		5	66.2		66.0	73.2	73.			
Centerline Distance to Noise C	contour (in feet)	70	dBA	65 d	BA	60 dBA	55 dBA			
benternine Distance to Noise e										
	Ldn		96	20		445	959			

	FHV	/A-RD-77-108 HIC	GHWAY	NOISE PF	REDICTIO	ON MOE	DEL			
Road Nam	io: EA Without e: Rider St. nt: e/o Patterso				Project I Job Nu	Vame: B mber: 1				
SITE	SPECIFIC IN	PUT DATA			N	DISE M	ODEL	INPUTS	5	
Highway Data				Site Con	ditions (Hard = 1	10, Soft	t = 15)		
Average Daily	Traffic (Adt):	1,861 vehicles				A	utos:	15		
Peak Hour	Percentage:	10%		Mee	dium Tru	cks (2 A	xles):	15		
Peak H	lour Volume:	186 vehicles		Hea	avy Truck	ks (3+ A	xles):	15		
Ve	hicle Speed:	40 mph		Vehicle I	Niv					
Near/Far La	ne Distance:	36 feet			cleType		Day E	vening	Night	Daily
Site Data				10.11			\$8.6%	11.3%	20.1%	
Bai	rrier Heiaht:	0.0 feet		Me	dium Tru	icks: 7	74.3%	5.2%	20.5%	7.05%
Barrier Type (0-W		0.0		F	leavy Tru	icks: 7	74.4%	5.9%	19.7%	5.00%
Centerline Di	. ,	50.0 feet		Noise So			11-1	4		
Centerline Dist.	to Observer:	50.0 feet		Noise So	Autos			t)		
Barrier Distance	to Observer:	0.0 feet		Modium	Autos. n Trucks					
Observer Height (Above Pad):	5.0 feet			y Trucks.			ade Adj	ustmont	0.0
Pa	ad Elevation:	0.0 feet		neav	y mucks.	0.0	04 6	naue Auj	usunem.	0.0
Roa	ad Elevation:	0.0 feet	[Lane Equ	uivalent	Distanc	e (in fe	et)		
1	Road Grade:	0.0%			Autos.	46.9	15			
	Left View:	-90.0 degrees		Mediur	n Trucks.	46.7	26			
	Right View:	90.0 degrees		Heav	y Trucks.	46.7	44			
FHWA Noise Mod	el Calculations	5								
VehicleType	REMEL	Traffic Flow	Distance	Finite	Road	Fresne	el Bi	arrier Atte	en Ber	m Atten
Autos:	66.51	-9.19	0.3	31	-1.20	-	4.65	0.0	00	0.000
Medium Trucks:	77.72	-20.15	0.3	34	-1.20	-	4.87	0.0	00	0.000
Heavy Trucks:	82.99	-21.64	0.3	34	-1.20	-	5.43	0.0	00	0.000
Unmitigated Noise	e Levels (with	out Topo and bar	rier atte	nuation)						
VehicleType	Leq Peak Hou	r Leq Day	Leq E	vening	Leq N	light	L	.dn	CI	VEL
Autos:	56.	4 54.0)	52.2		49.9		57.1		57.5
Medium Trucks:	56.		-	49.1		50.3		57.4		57.6
Heavy Trucks:	60.			53.4		53.9		61.1		61.3
Vehicle Noise:	63.	1 60.9	9	56.7		56.5		63.7		64.0
Centerline Distant	ce to Noise Co	ntour (in feet)								
				dBA	65 d			dBA		dBA
		Ldn		19	41			89		91
		CNEL	: :	20	43	5	ę	92	1	98

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FI	IWA-RD-77-108	HIGHWA	Y NOISE P	REDICTION	MODEL			
Scenario: EA Witho	ut Project			Project Na	me: Barke	r		
Road Name: Placentia	St.			Job Num	ber: 12218			
Road Segment: e/o Patte	rson Av.							
SITE SPECIFIC	NPUT DATA				SE MODE		s	
Highway Data			Site Cor	nditions (Ha		,		
Average Daily Traffic (Adt):	397 vehicle	es			Autos.			
Peak Hour Percentage:	10%			edium Truck				
Peak Hour Volume:	40 vehicles	s	He	eavy Trucks	(3+ Axles)	15		
Vehicle Speed:	40 mph		Vehicle	Mix				
Near/Far Lane Distance:	36 feet		Veh	icleType	Day	Evening	Night	Daily
Site Data				Aut	os: 68.6%	5 11.3%	20.1%	87.95%
Barrier Height:	0.0 feet		М	edium Truc	ks: 74.3%	5.2%	20.5%	7.05%
Barrier Type (0-Wall, 1-Berm):	0.0			Heavy Truc	ks: 74.4%	5.9%	19.7%	5.00%
Centerline Dist. to Barrier.	00.0 1001		Noise S	ource Eleva	ations (in f	eet)		
Centerline Dist. to Observer.	00.0 1001			Autos:	0.000			
Barrier Distance to Observer.	0.0 1001		Mediu	m Trucks:	2.297			
Observer Height (Above Pad):			Hear	vy Trucks:	8.004	Grade Ad	justment	0.0
Pad Elevation:	0.0 1001		1			64		
Road Elevation:	0.0 feet		Lane Eq	uivalent Di Autos:	46.915	reet)		
Road Grade:	0.070		14-5	m Trucks:				
Left View: Right View:	00.0 009.00			vy Trucks:	46.726 46.744			
FHWA Noise Model Calculatio								
VehicleType REMEL	Traffic Flow	Distanc	e Finite	Road	Fresnel	Barrier Att	en Ber	rm Atten
Autos: 66.5	1 -15.90	(0.31	-1.20	-4.65	0.0	000	0.00
Medium Trucks: 77.7	2 -26.86		0.34	-1.20	-4.87	0.0	000	0.00
Heavy Trucks: 82.9	9 -28.35		0.34	-1.20	-5.43	0.0	000	0.00
Unmitigated Noise Levels (wi	thout Topo and	barrier at	tenuation)					
VehicleType Leq Peak H			r Evening	Leq Nig		Ldn		NEL
		47.3	45.5		43.2	50.4		50.8
		47.9	42.4		43.6	50.7		50.
		51.7	46.7		47.2	54.4		54.0
Vehicle Noise:	56.4	54.2	50.0		49.8	57.0)	57.3
Centerline Distance to Noise	Contour (in feet			I	1		1	
			70 dBA	65 dB/	4	60 dBA	55	dBA
		Ldn: VFI :	7 7	15 15		32 33		68 71

	FHW	/A-RD-77-108	HIGHW	AY NO	DISE PR	REDICTI	ON MOE	DEL			
	o: EA Without e: Placentia St nt: e/o Dwy. 2	.,					Name: E umber: 1				
	SPECIFIC IN	PUT DATA								s	
Highway Data				S	ite Con	ditions	(Hard =	10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	415 vehicle	5				A	utos:	15		
Peak Hour	Percentage:	10%			Med	dium Tru	icks (2 A	xles):	15		
Peak H	our Volume:	42 vehicles			Hea	avy Truc	ks (3+ A	xles):	15		
Ve	hicle Speed:	40 mph		V	ehicle N	Nix					
Near/Far La	ne Distance:	36 feet				cleType		Day	Evening	Night	Daily
Site Data					1011			38.6%	•		87.95
Pa	rier Height:	0.0 feet			Me	edium Tr	ucks: 1	4.3%	5.2%	20.5%	
Barrier Type (0-W		0.0			H	leavy Tr	ucks: 7	74.4%	5.9%	19.7%	5.00
Centerline Dis		50.0 feet									
Centerline Dist.		50.0 feet		N	oise So		evations		eet)		
Barrier Distance		0.0 feet				Autos					
Observer Height (5.0 feet				n Trucks					
	ad Elevation:	0.0 feet			Heav	y Trucks	8.0	04	Grade Ad	lustmen	: 0.0
Roa	ad Elevation:	0.0 feet		Li	ane Equ	uivalent	Distanc	e (in i	feet)		
1	Road Grade:	0.0%				Autos	: 46.9	15			
	Left View:	-90.0 degree	s		Mediun	n Trucks	: 46.7	26			
	Right View:	90.0 degree			Heav	y Trucks	: 46.7	44			
FHWA Noise Mode	el Calculations	;									
VehicleType	REMEL	Traffic Flow	Distar	ice	Finite	Road	Fresne	e/	Barrier Att	en Be	m Atten
Autos:	66.51	-15.70		0.31		-1.20	-	4.65	0.0	000	0.00
Medium Trucks:	77.72	-26.66		0.34		-1.20	-	4.87	0.0	000	0.00
Heavy Trucks:	82.99	-28.16		0.34		-1.20	-	5.43	0.0	000	0.00
Unmitigated Noise			arrier a	ttenu	ation)						
VehicleType	Leq Peak Hou			eq Eve		Leq I			Ldn		NEL
Autos:	49.		7.5		45.7		43.4		50.6		51.
Medium Trucks:	50.		8.1		42.6		43.8		50.9		51.
Heavy Trucks:	54.		1.9		46.9		47.4		54.6		54.
Vehicle Noise:	56.		4.4		50.2		50.0		57.2	2	57.
Centerline Distant	e to Noise Co	ntour (in feet)		70 dE	24	65 (6	0 dBA	55	dBA
		,	dn:	70 02		1		, c	33		70
		-	EL:	7		1	6		34		73

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0		/A-RD-77-108							_	
	io: EA With Pro e: Patterson A						Vame: Bar mber: 122			
	nt: n/o Walnut					<i>JUD INU</i>	111Del. 122	18		
	SPECIFIC IN	PUT DATA			04+ O++			DEL INPUTS	S	
Highway Data				-	Site Con	aitions (Soft = 15)		
Average Daily	, ,	601 vehicle	s				Aut			
	Percentage:	10%					cks (2 Axle	- / -		
	lour Volume:	60 vehicles			Hea	avy Truck	ks (3+ Axle	s): 15		
	hicle Speed:	40 mph		1	Vehicle I	<i>lix</i>				
Near/Far La	ne Distance:	36 feet			Vehi	cleType	Da	y Evening	Night	Daily
Site Data						A	utos: 68.	6% 11.3%	20.1%	86.919
Pa	rrier Heiaht:	0.0 feet			Me	dium Tru	icks: 74.	3% 5.2%	20.5%	6.57%
Barrier Type (0-W		0.0			E	leavy Tru	icks: 74.	4% 5.9%	19.7%	6.53%
Centerline Di	. ,	50.0 feet				·				
Centerline Dist.		50.0 feet		/	Voise So		vations (i	,		
Barrier Distance		0.0 feet				Autos:				
Observer Height (5.0 feet				n Trucks.				
	ad Elevation:	0.0 feet			Heav	y Trucks:	8.004	Grade Adj	ustment.	0.0
	ad Elevation:	0.0 feet		L	ane Equ	livalent	Distance (in feet)		
	Road Grade:	0.0%				Autos	46.915	í		
·	Left View:	-90.0 degree	s		Mediur	n Trucks	46.726			
	Right View:	90.0 degree				y Trucks				
FHWA Noise Mod	el Calculation:	5								
VehicleType	REMEL	Traffic Flow	Dista	nce	Finite	Road	Fresnel	Barrier Atte	en Ber	m Atten
Autos:	66.51	-14.14		0.31	1	-1.20	-4.0	65 0.0	00	0.00
Medium Trucks:	77.72	-25.36		0.34	1	-1.20	-4.8	37 0.0	00	0.00
Heavy Trucks:	82.99	-25.39		0.34	1	-1.20	-5.4	43 0.0	00	0.00
Unmitigated Nois										
VehicleType	Leq Peak Hou			leq Ev	/ening	Leq N	0	Ldn	-	VEL
Autos:	51.	-	19.1		47.2		45.0	52.2		52.
Medium Trucks:	51.	-	19.4		43.9		45.1	52.2		52.
Heavy Trucks:	56.		54.7		49.6		50.2	57.4		57.
Vehicle Noise:	58		56.6		52.3		52.2	59.4		59.
Centerline Distan	ce to Noise Co	ontour (in feet)								
			ட	70 a		65 d		60 dBA		dBA
			dn:	10)	21		46	9	99
			IFI :	10	-	22		47		02

Scenario: EA With Project Road Name: Patterson Av. Project Name: Barker Job Number: 12218 Stand Segment: r/o Placentia St. Stite Smoother 12218 SITE SPECIFIC INPUT DATA NOISE MODEL INPUTS Highway Data Site Conditions (Hard = 10, Soft = 15) Average Daily Traffic (Adt): 457 vehicles Autos: 15 Peak Hour Procentage: 10% Medium Trucks (2 Axles): 15 Peak Hour Volume: 46 vehicles Heavy Trucks (3+ Axles): 15 Vehicle Speed: 40 mph Vehicle Mix Near/Far Lane Distance: 36 feet Steice Mix	
Highway Data Site Conditions (Hard = 10, Soft = 15) Average Daily Traffic (Adt): 457 vehicles Autos: 15 Peak Hour Percentage: 10% Medium Trucks (2 Avles): 15 Peak Hour Volume: 46 vehicles Heavy Trucks (3+ Avles): 15 Vehicle Speed: 40 mph Vehicle Mix Vehicle Mix	
Average Daily Traffic (Adt): 457 vehicles Autos: 15 Peak Hour Percentage: 10% Medium Trucks (2 Axles): 15 Peak Hour Volume: 46 vehicles Heavy Trucks (3+ Axles): 15 Vehicle Speed: 40 mph Vehicle Mix	
Peak Hour Percentage: 10% Medium Trucks (2 Axles): 15 Peak Hour Volume: 46 vehicles Heavy Trucks (3+ Axles): 15 Vehicle Speed: 40 mph Vehicle Mix	
Peak Hour Volume: 46 vehicles Heavy Trucks (3+ Axles): 15 Vehicle Speed: 40 mph Venicle Mix	
Vehicle Speed: 40 mph Vehicle Mix Vehicle Mix	
Venicie Mix	
Near/Fas Lana Distance: 26 feet	
VehicleType Day Evening Night D	Daily
Site Data Autos: 68.6% 11.3% 20.1% 81	
Barrier Height: 0.0 feet Medium Trucks: 74.3% 5.2% 20.5% 9	9.36%
	9.10%
Orthogonal Dist to Destring 50.0 fact	
Contactino Dist. to Observar: 50.0 feet	
Parrier Distance to Observar: 0.0 feet Autos: 0.000	
Observer Height (Above Pad): 5.0 feet Medium Trucks: 2.297	
Pad Elevation: 0.0 feet Heavy Trucks: 8.004 Grade Adjustment: 0.0	J
Road Elevation: 0.0 feet Lane Equivalent Distance (in feet)	
Road Grade: 0.0% Autos: 46.915	
Left View: -90.0 degrees Medium Trucks: 46.726	
Right View: 90.0 degrees Heavy Trucks: 46.744	
FHWA Noise Model Calculations	
VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm A	Atten
Autos: 66.51 -15.62 0.31 -1.20 -4.65 0.000	0.000
Medium Trucks: 77.72 -25.02 0.34 -1.20 -4.87 0.000	0.000
Heavy Trucks: 82.99 -25.14 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: 50.0 47.6 45.8 43.5 50.7	51.0
Medium Trucks: 51.8 49.8 44.2 45.4 52.6	52.7
Heavy Trucks: 57.0 54.9 49.9 50.4 57.6	57.8
Vehicle Noise: 58.8 56.6 52.1 52.2 59.4	59.6
Centerline Distance to Noise Contour (in feet)	
70 dBA 65 dBA 60 dBA 55 dB/	٩
Ldn: 10 21 46 99	
CNEL: 10 22 47 102	

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	FHV	VA-RD-77-108	HIGHWA	Y NO	ISE PF	EDICTIO	N MOD	EL			
Scenario Road Name Road Segment						Project Na Job Nurr					
	PECIFIC IN	IPUT DATA								s	
Highway Data				Si	te Con	ditions (H	ard = 1	10, So	oft = 15)		
Average Daily T	raffic (Adt):	17,410 vehicle	es					utos:	15		
Peak Hour P		10%				dium Truck		/	15		
	ur Volume:	1,741 vehicles	5		Hea	avy Trucks	: (3+ A)	kles):	15		
	icle Speed:	50 mph		Ve	hicle I	/lix					
Near/Far Lan	e Distance:	48 feet			Vehi	cleType	Ľ	Day	Evening	Night	Daily
Site Data						Aut	os: 6	8.6%	11.3%	20.1%	87.38%
Barr	ier Height:	0.0 feet				edium Truc		4.3%		20.5%	
Barrier Type (0-Wa	ll, 1-Berm):	0.0			H	leavy Truc	ks: 7	4.4%	5.9%	19.7%	5.42%
Centerline Dist	to Barrier:	59.0 feet		No	oise So	urce Elev	ations	(in fe	pet)		
Centerline Dist. to		59.0 feet				Autos:	0.0				
Barrier Distance to		0.0 feet			Mediur	n Trucks:	2.2				
Observer Height (A	,	5.0 feet			Heav	y Trucks:	8.00	04	Grade Ad	iustment	: 0.0
	Elevation:	0.0 feet				ıivalent D		- () ((4)		
	l Elevation: oad Grade:	0.0 feet		La	ne Equ	Autos:	54.1		eel)		
R	Left View:	0.0% -90.0 dearee			Modiur	n Trucks:	53.9				
1	Right View:	90.0 degree				y Trucks:	53.9				
FHWA Noise Model	Calculation	s									
VehicleType	REMEL	Traffic Flow	Distan	ce	Finite	Road	Fresne))	Barrier Att	en Bei	rm Atten
Autos:	70.20	-0.47	-	0.62		-1.20	-	4.69	0.0	000	0.00
Medium Trucks:	81.00	-11.32		0.60		-1.20		4.88	0.0		0.00
Heavy Trucks:	85.38	-12.54		0.60		-1.20	-	5.35	0.0	000	0.00
Unmitigated Noise					- í -					-	
VehicleType L Autos:	eq Peak Hot. 67		5.5 Le	q Eve	ning 63.7	Leq Nig	9ht 61.4		Ldn 68.6		NEL 69.0
Medium Trucks:	67		55.8		60.3		61.5		68.6		68.
Heavy Trucks:	71		55.5 69.0		63.9		64.4		71.7		71.9
Vehicle Noise:	74		71.8		67.7		67.4		74.7		74.
Centerline Distance	to Noise Co	ontour (in feet))								
				70 dB	A	65 dB	A	6	0 dBA	55	dBA
			Ldn:	120		260			559	1	205
						200					

Fł	IWA-RD-77-108	HIGHW	AY NO	ISE PREDIC		ODEL			
Scenario: EA With I Road Name: Harvill Av Road Segment: s/o Rider					t Name. Number.				
SITE SPECIFIC	NPUT DATA				NOISE	MODE	L INPUT	s	
Highway Data			Si	te Condition:	6 (Hard	= 10, S	oft = 15)		
Average Daily Traffic (Adt):	15,115 vehicl	es				Autos:	15		
Peak Hour Percentage:	10%			Medium T	rucks (2	Axles):	15		
Peak Hour Volume:	1,512 vehicle	s		Heavy Tru	icks (3+	Axles):	15		
Vehicle Speed:	50 mph		14						
, Near/Far Lane Distance:	48 feet		VE	hicle Mix	-	0	Guardian	Allenter	Deile
0.0				VehicleTyp		Day	Evening	Night	Daily
Site Data				Mar allowers	Autos:	68.6%			87.349
Barrier Height:	0.0 feet			Medium		74.3%		20.5%	
Barrier Type (0-Wall, 1-Berm):	0.0			Heavy	rucks:	74.4%	5.9%	19.7%	5.439
Centerline Dist. to Barrier:			No	oise Source E	levatio	ns (in f	eet)		
Centerline Dist. to Observer:				Auto		.000	,		
Barrier Distance to Observer:				Medium Truc		.297			
Observer Height (Above Pad):	5.0 feet			Heavy Truc		.004	Grade Ad	liustment.	0.0
Pad Elevation:	0.0 feet								
Road Elevation:	0.0 feet		La	ne Equivaler			feet)		
Road Grade:	0.0%			Auto	os: 54	1.129			
Left View:	-90.0 degre	es		Medium Truc		3.966			
Right View:	90.0 degre	es		Heavy Truc	ks: 53	8.982			
FHWA Noise Model Calculatio	-								
VehicleType REMEL	Traffic Flow	Distan		Finite Road	Fres		Barrier At		m Atter
Autos: 70.2			-0.62	-1.20		-4.69		000	0.00
Medium Trucks: 81.0			-0.60	-1.20		-4.88		000	0.00
Heavy Trucks: 85.3	8 -13.16		-0.60	-1.20		-5.35	0.0	000	0.00
Unmitigated Noise Levels (with				,					
VehicleType Leq Peak H			eq Eve		Night		Ldn	-	VEL
		64.9		63.0	60		68.		68
		65.2		59.7	60		68.		68.
	-	68.3		63.3	63		71.		71
		71.2		67.1	66	.8	74.	0	74
Centerline Distance to Noise	Contour (in feet)	70 dB	4	dBA		60 dBA	55	dBA
		Ldn:	110		236		509		097
		Lan: NFL:	110		236 245		509 528		097 137

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		/A-RD-77-108 I		MACT IN						
	EA With Pro	oject					Vame: Ba			
Road Name:						Job Ni	imber: 12	218		
Road Segment:	s/o Placentia	a St.								
	ECIFIC IN	PUT DATA						DEL INPUTS	S	
Highway Data					Site Con	ditions (, Soft = 15)		
Average Daily Tra	, ,	9,655 vehicle	S					tos: 15		
Peak Hour Per		10%					cks (2 Axl	,		
Peak Hour	Volume:	966 vehicles			He	avy Truc	ks (3+ Axl	es): 15		
	e Speed:	50 mph			Vehicle I	Mix				
Near/Far Lane I	Distance:	48 feet				cleType	Da	y Evening	Night	Daily
Site Data						A	utos: 68	.6% 11.3%	20.1%	88.03%
Barrio	r Height:	0.0 feet			Me	edium Tr	ucks: 74	.3% 5.2%	20.5%	6.89%
Barrier Type (0-Wall,		0.0			F	leavy Tr	ucks: 74	.4% 5.9%	19.7%	5.08%
Centerline Dist. te	,	59.0 feet		-						
Centerline Dist. to (59.0 feet		4	Noise Sc		evations (,		
Barrier Distance to C)bserver:	0.0 feet				Autos		-		
Observer Height (Abo	ove Pad):	5.0 feet				n Trucks				
0 1	levation:	0.0 feet			Heav	y Trucks	: 8.004	Grade Adj	ustment	: 0.0
Road E	levation:	0.0 feet			Lane Equ	uivalent	Distance	(in feet)		
Roa	d Grade:	0.0%				Autos	: 54.12	9		
L	eft View:	-90.0 degree	s		Mediur	n Trucks	: 53.96	6		
Rię	ght View:	90.0 degree	s		Heav	y Trucks	53.98	2		
FHWA Noise Model C	alculations	;								
VehicleType I	REMEL	Traffic Flow	Dista	ance	Finite		Fresnel	Barrier Atte	en Ber	m Atten
Autos:	70.20	-3.00		-0.6	-	-1.20		69 0.0		0.00
Medium Trucks:	81.00	-14.06		-0.6		-1.20		88 0.0		0.000
Heavy Trucks:	85.38	-15.39		-0.6	0	-1.20	-5.	35 0.0	00	0.00
Unmitigated Noise Le										
VehicleType Lee Autos:	Peak Hour		3.0	Leq E	vening 61.1	Leq I	58.9	Ldn 66.1	-	NEL 66.4
Autos: Medium Trucks:	65.		3.0 3.1		57.5		58.9	65.9		66.0
Heavy Trucks:	68.		6.1		61.1		56.7 61.6	68.8		69.0
Vehicle Noise:	71.		9.1		65.0		64.7	71.9		72.
			9.1		65.0		04.7	71.9	,	12.
Centerline Distance to	o Noise Co	ntour (in feet)		70 0	dBA	65 0	IBA	60 dBA	55	dBA
		L	.dn:		9	17		367		91

	FH\	VA-RD-77-108	HIGHW	AY NO	ISE PR	EDICTI		EL			
Road Nan	io: EA With Pr ne: Harvill Av. nt: s/o Orange	,					Name: Ba Imber: 12				
	SPECIFIC IN	IPUT DATA					OISE MO			5	
Highway Data				Si	te Cond	litions (Hard = 1	0, Sof	t = 15)		
Average Daily	Traffic (Adt):	9,350 vehicl	es				AL	itos:	15		
Peak Hour	Percentage:	10%			Med	lium Tru	cks (2 Ax	les):	15		
Peak H	lour Volume:	935 vehicle	s		Hea	vy Truc	ks (3+ Ax	les):	15		
Ve	hicle Speed:	50 mph		Ve	hicle N	liv					
Near/Far La	ne Distance:	48 feet				leType	D	ay E	vening	Night	Daily
Site Data								3.6%	11.3%	20.1%	,
Ba	rrier Height:	0.0 feet			Me	dium Tri	ucks: 74	4.3%	5.2%	20.5%	6.89%
Barrier Type (0-W		0.0			н	eavy Tri	ucks: 74	4.4%	5.9%	19.7%	5.08%
Centerline Di	. ,	59.0 feet		Ale	lee Ce	uree Ek	evations	(in foo	41		
Centerline Dist.	to Observer:	59.0 feet		NC	ise so	Autos		·	9		
Barrier Distance	to Observer:	0.0 feet			Madium	n Trucks					
Observer Height	(Above Pad):	5.0 feet				/ Trucks			ade Adj	iustmont	. 0.0
P	ad Elevation:	0.0 feet								usunon	. 0.0
Ro	ad Elevation:	0.0 feet		La	ne Equ	ivalent	Distance	(in fe	et)		
	Road Grade:	0.0%				Autos	: 54.12	9			
	Left View:	-90.0 degre	es			n Trucks					
	Right View:	90.0 degre	es		Heavy	/ Trucks	: 53.98	2			
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Distan	ice	Finite I	Road	Fresnel	B	arrier Atte	en Ber	m Atten
Autos:	70.20	-3.14		-0.62		-1.20	-4	1.69	0.0	00	0.000
Medium Trucks:	81.00	-14.21		-0.60		-1.20	-4	1.88	0.0	00	0.000
Heavy Trucks:	85.38	-15.52		-0.60		-1.20	-5	5.35	0.0	00	0.00
Unmitigated Nois	e Levels (with	out Topo and	barrier a	ttenua	ation)						
VehicleType	Leq Peak Hou	, ,		eq Eve		Leq I		L	.dn		NEL
Autos:	65		62.8		61.0		58.7		65.9		66.3
Medium Trucks:			62.9		57.4		58.6		65.7		65.9
Heavy Trucks:	68		66.0		61.0		61.5		68.7		68.9
Vehicle Noise:	71	.1	68.9		64.8		64.6		71.8		72.0
Centerline Distan	ce to Noise Co	ontour (in feet)								
			1	70 dB	A	65 c	IBA	60	dBA	55	dBA
			Ldn: NFI :	77 80		16 17			59 72		74 102

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Scenario: EA With Project Road Name: Harvill AV. Project Name: Barker Job Number: 12218 Road Segment: slo A St. Stre SPECIFIC INPUT DATA NOISE MODEL INPUTS Highway Data Site Conditions (Hard = 10, Soft = 15) Average Daily Traffic (Adt): 13,560 vehicles Autos: 15 Peak Hour Percentage: 10% Autos: 15 Vehicle Speed: 50 mph Medium Trucks (2 Avles): 15 Vehicle Speed: 50 mph Medium Trucks: 74.3% 5.2% 20.5% Barrier Height: 0.0 feet Medium Trucks: 74.3% 5.2% 20.5% Barrier Type (O-Wall, 1-Berm): 0.0 Centerline Dist. to Darrier: 59.0 feet Noise Source Elevations (in feet) Observer Height (Above Pad): 5.0 feet Heavy Trucks: 8.3.04 Grade Adjustment: Road Grade: 0.0% Left View: 90.0 degrees Heavy Trucks: 53.966 Heavy Trucks: 74.4% 5.9% Itel View: 90.0 degrees Heavy Trucks: 53.966 Heavy Trucks: 70.20 -1.53 -0.62	
Highway Data Site Conditions (Hard = 10, Soft = 15) Average Daily Traffic (Adt): 13,560 vehicles Autos:: 15 Peak Hour Percentage: 10% Autos:: 15 Peak Hour Volume: 1,356 vehicles Autos:: 15 Vehicle Speed: 50 mph Medium Trucks (2 Avles): 15 Near/Far Lane Distance: 48 feet Vehicle Mix Vehicle Mix Barrier Height: 0.0 feet Autos:: 68.6% 11.3% 20.1% Barrier Dist. to Observer: 59.0 feet Autos:: 0.00 Heavy Trucks: 74.4% 5.9% 19.7% Observer Height (Abov Pad): 5.0 feet Autos:: 0.00 Medium Trucks: 2.297 Observer Height (Abov Pad): 5.0 feet Autos:: 0.00 Medium Trucks: 53.966 Road Grade: 0.0 feet Autos:: 53.982 Heavy Trucks: 53.982 FHWA Noise Model Calculations VehicleType Read Elevation: 0.125 -0.60 -1.20 -4.69 0.000 Medium Trucks:	
Average Daily Traffic (Adt): 13,560 vehicles Autos: 15 Peak Hour Percentage: 10% Medium Trucks: 15 Peak Hour Volume: 1,3560 vehicles Medium Trucks: 15 Vehicle Speed: 50 mph Heavy Trucks (2 Axles): 15 Vehicle Speed: 50 mph Vehicle Mix Vehicle Mix Site Data Autos:: 68.6% 11.3% 20.1% Barrier Height: 0.0 feet Medium Trucks: 74.3% 5.2% 20.5% Barrier Type (0-Wall, 1-Berm): 0.0 0 feet Medium Trucks: 74.3% 5.2% 20.5% Barrier Type (0-Wall, 1-Berm): 0.0 0 feet Autos: 0.000 Medium Trucks: 74.3% 5.2% 20.5% Barrier Height (Above Pad): 5.0 feet Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: Road Grade: 0.0% Left View: -90.0 degrees Medium Trucks: 63.966 Heavy Trucks: 53.966 Heavy Trucks: 70.20 -15.3 <th></th>	
Near/Far Lane Distance: 48 feet Venicle MiX Site Data Autos: 68.6% 11.3% 20.1% Barrier Height: 0.0 feet Autos: 68.6% 11.3% 20.1% Barrier Height: 0.0 feet Autos: 68.6% 11.3% 20.1% Barrier Height: 0.0 feet Medium Trucks: 74.3% 5.2% 20.5% Barrier Dist. to Barrier: 59.0 feet Moise Source Elevations (in feet) Noise Source Elevations (in feet) Centerline Dist. to Dserver: 59.0 feet Autos: 0.000 Medium Trucks: 2.297 Deserver Height (Above Pad): 5.0 feet Autos: 8.004 Grade Adjustment: Road Elevation: 0.0 feet Autos: 53.966 Heavy Trucks: 53.966 Heavy Trucks: 53.968 Heavy Trucks: 53.968 Heavy Trucks: 53.968 FHWA Noise Model Calculations VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berrier Atten Berrier Atten Berrier Atten	
Site Data Vehicle type Day Evening Institution Barrier Height: 0.0 feet Autos: 68.8% 11.3% 20.1% Barrier Type (0-Wall, 1-Berm): 0.0 Heavy Trucks: 74.3% 5.2% 20.5% Centerline Dist. to Diserver: 59.0 feet Heavy Trucks: 74.4% 5.9% 19.7% Observer Height (Abov Pad): 5.0 feet Molese Source Elevations (in feet) Autos: 6.000 Road Grade: 0.0 feet Medium Trucks: 8.004 Grade Adjustment: Road Grade: 0.0% Left View: 90.0 degrees Medium Trucks: 53.966 FHWA Noise Model Calculations VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berrier Atten VehicleType ReMet Traffic Flow Distance Finite Road Fresnel Barrier Atten Berrier Atten Berrier Atten Berrier Atten Berrier Atten Berrier Atten Leg Peak Hour Leg Peak Hour Leg Peak Hour Cono Attos: Cono <td></td>	
Barrier Height: 0.0 feet Medium Trucks: 74.3% 5.2% 20.5% Barrier Type (0-Wall, 1-Berm): 0.0 Heavy Trucks: 74.3% 5.2% 20.5% Centerline Dist. to Barrier: 59.0 feet Heavy Trucks: 74.4% 5.9% 19.7% Deserver 50.0 feet Moise Source Elevations (in feet) Autos: 0.00 Barrier Distance to Observer: 0.0 feet Heavy Trucks: 8.004 Grade Adjustment: Pad Elevation: 0.0 feet Left View: -90.0 degrees Medium Trucks: 63.982 FHWA Noise Model Calculations VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berrier Atten VehicleType ReMet Traffic Flow Distance -1.20 -4.69 0.000 Medium Trucks: 81.00 -12.56 -0.60 -1.20 -4.69 0.000 Medium Trucks: 81.33 -0.60 -1.20 -4.69 0.000 Medium Trucks: 81.33 -0.60 -1.20 <td< td=""><td>Daily</td></td<>	Daily
Centerline Dist. to Observer: 59.0 feet Note Source Levators (in feet) Barrier Distance to Observer: 0.0 feet Autos: 0.000 Observer Height (Above Pad) 5.0 feet Medium Trucks: 2.297 Pad Elevation: 0.0 feet Medium Trucks: 8.004 Grade Adjustment: Road Grade 0.0% Left View: -90.0 degrees Medium Trucks: 53.982 FHWA Noise Model Calculations VehicleType REME Traffic Flow Distance Frinte Road Fresnel Barrier Atten Berrier Atten Weikum Trucks: 8.38 -12.56 -0.60 -1.20 -4.69 0.000 Medium Trucks: 8.38 -13.93 -0.60 -1.20 -4.69 0.000 Medium Trucks: 8.538 -13.93 -0.60 -1.20 -4.69 0.000 Medium Trucks: 8.538 -13.93 -0.60 -1.20 -5.55 0.000 Unnitigated Noise Levels (without Topo and barrier attenuation) Leg Evening Leg Night Lch CN Medium Trucks:	88.00° 6.94° 5.06°
Centerline Dist. to Observer: 59.0 teet Autos: 0.000 Barrier Distance to Observer: 0.0 feet Medium Trucks: 2.297 Observer Height (Above Pad): 5.0 feet Heavy Trucks: 2.297 Pad Elevation: 0.0 feet Heavy Trucks: 8.004 Grade Adjustment: Road Grade: 0.0% Left View: -90.0 degrees Medium Trucks: 53.966 Heavy Trucks: 53.966 Heavy Trucks: 53.966 Heavy Trucks: 53.966 FHWA Noise Model Calculations VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berrier Atten Berrier Atten Berrier Atten Berrier Atten Berrier Atten Description Doot Childing Trucks: 53.982 Context Co	
Left View: -90.0 degrees Medium Trucks: 53.966 Right View: 90.0 degrees Heavy Trucks: 53.982 FHWA Noise Model Calculations Distance Finite Road Fresnel Barrier Atten Berrier Atten VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berrier Atten Medium Trucks: 81.00 -12.56 -0.60 -1.20 -4.68 0.000 Heavy Trucks: 85.38 -13.93 -0.60 -1.20 -5.35 0.000 Unnittigated Noise Levels (without Topo and barrier attenuation) VehicleType Leg Peak Hour Leq Evening Leq Night Ldn CN Autos: 66.9 64.4 62.6 60.3 67.5 Medium Trucks: 66.6 64.6 59.0 60.2 67.4	0.0
VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berr Autos: 70.20 -1.53 -0.62 -1.20 -4.69 0.000 Medium Trucks: 81.00 -12.56 -0.60 -1.20 -4.88 0.000 Heavy Trucks: 85.38 -13.93 -0.60 -1.20 -5.35 0.000 Unnitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leg Peak Hour Leq Day Leg Evening Leg Night Ldn CN Autos: 66.9 64.4 62.6 60.2 67.4 Medium Trucks: 66.6 64.6 59.0 60.2 67.4	
Autos: 70.20 -1.53 -0.62 -1.20 -4.69 0.000 Medium Trucks: 81.00 -12.56 -0.60 -1.20 -4.88 0.000 Heavy Trucks: 85.38 -13.93 -0.60 -1.20 -5.35 0.000 Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CN Autos: 66.9 64.4 62.6 60.3 67.5 Medium Trucks: 66.6 64.6 59.0 60.2 67.4	m Attor
Unmitgated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CN Autos: 66.9 64.4 62.6 60.3 67.5 Medium Trucks: 66.6 64.6 59.0 60.2 67.4	0.00
VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CN Autos: 66.9 64.4 62.6 60.3 67.5 Medium Trucks: 66.6 64.6 59.0 60.2 67.4	
Autos: 66.9 64.4 62.6 60.3 67.5 Medium Trucks: 66.6 64.6 59.0 60.2 67.4	VEI
	67
Heavy Trucks: 69.6 67.6 62.5 63.1 70.3	67
10day 11doks. 05.0 01.0 02.3 03.1 10.3	70
Vehicle Noise: 72.7 70.5 66.4 66.2 73.4	73
Centerline Distance to Noise Contour (in feet)	
	dBA
	92
CNEL: 103 221 477 1,0	028

	FH\	WA-RD-77-108	HIGH	WAY N	IOISE PF	REDICTIC	ON MO	DEL			
	io: EA With Pr	oject				Project N					
	ne: Rider St.					Job Nu	mber:	12218			
Road Segme	nt: e/o Patters	on Av.									
	SPECIFIC IN	IPUT DATA								5	
Highway Data				3	Site Con	ditions (l	Hard =	10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	2,157 vehicle	es					Autos:	15		
Peak Hour	Percentage:	10%			Me	dium Truc	cks (2 /	Axles):	15		
Peak H	lour Volume:	216 vehicle	s		Hea	avy Truck	:s (3+ A	Axles):	15		
Ve	hicle Speed:	40 mph		1	Vehicle I	Nix					
Near/Far La	ne Distance:	36 feet		F		cleType		Day	Evening	Night	Daily
Site Data						AL	itos:	68.6%	11.3%	20.1%	87.669
Ba	rrier Height:	0.0 feet			Me	edium Tru	cks:	74.3%	5.2%	20.5%	6.92
Barrier Type (0-V		0.0			F	leavy Tru	cks:	74.4%	5.9%	19.7%	5.43
	st. to Barrier:	50.0 feet		-		ource Ele		- //- 6	- 41		
Centerline Dist.	to Observer:	50.0 feet		1	voise So	Autos:			eet)		
Barrier Distance	to Observer:	0.0 feet			14-16-1	Autos: n Trucks:		000 297			
Observer Height	(Above Pad):	5.0 feet				n Trucks: y Trucks:		297 004	Grade Ad	iustmont	
P	ad Elevation:	0.0 feet			neav	y mucks.	0.	004	Orade Au	usunoni	0.0
Ro	ad Elevation:	0.0 feet		1	Lane Equ	uivalent l	Distan	ce (in i	feet)		
	Road Grade:	0.0%				Autos:	46.	915			
	Left View:	-90.0 degree	es		Mediur	n Trucks:	46.	726			
	Right View:	90.0 degree	es		Heav	y Trucks:	46.	744			
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Dist	tance	Finite	Road	Fresr	nel	Barrier Att	en Ber	m Atter
Autos:		-8.56		0.31		-1.20		-4.65	0.0	000	0.00
Medium Trucks:				0.34		-1.20		-4.87		000	0.00
Heavy Trucks:	82.99	-20.64		0.34	1	-1.20		-5.43	0.0	000	0.00
Unmitigated Nois	e Levels (with	out Topo and	barrie	r atten	uation)						
VehicleType	Leq Peak Hou	ur Leq Day	/	Leq Ev	/ening	Leq N	light		Ldn		VEL
Autos:	57		54.6		52.8		50.6		57.7		58.
Medium Trucks:			55.2		49.6		50.8		58.0		58.
Heavy Trucks:		-	59.4		54.4		54.9		62.1		62.
Vehicle Noise:			61.7		57.5		57.4	ļ	64.6	6	64.
Centerline Distan	ce to Noise C	ontour (in feet)			05.					10.4
			L	70 c		65 di		6	0 dBA		dBA
			Ldn:	22	-	47			101 104		17 24
			NFI :	22		48					

Tuesday, March 12, 2019

	FHW	/A-RD-77-108	HIGH	WAYN	IOISE PR	EDICTIC	N MOI	DEL			
Scenario: Road Name: Road Segment:						Project N Job Nu					
	ECIFIC IN	PUT DATA							L INPUT	s	
Highway Data					Site Con	ditions (l		· ·	,		
Average Daily Tra	, ,	503 vehicle	s					Autos:	15		
Peak Hour Pe		10%				dium Truc			15		
Peak Hou	r Volume:	50 vehicles	6		Hea	avy Truck	s (3+ A	xles):	15		
Vehic	le Speed:	40 mph		-	Vehicle I	<i>lix</i>					
Near/Far Lane	Distance:	36 feet		-	Vehi	cleType		Day	Evening	Night	Daily
Site Data						AL	itos:	, 68.6%	11.3%	20.1%	82.13
Barrie	er Height:	0.0 feet			Me	dium Tru	cks:	74.3%	5.2%	20.5%	9.15
Barrier Type (0-Wall,	1-Berm):	0.0			H	leavy Tru	cks:	74.4%	5.9%	19.7%	8.72
Centerline Dist.		50.0 feet			Noise So	urce Ele	vations	s (in fe	et)		
Centerline Dist. to		50.0 feet				Autos:	0.0	00			
Barrier Distance to		0.0 feet			Mediur	n Trucks:	2.2	97			
Observer Height (Ab	,	5.0 feet			Heav	V Trucks:	8.0	04	Grade Ad	iustmen	t: 0.0
	Elevation:	0.0 feet		-							
	Elevation:	0.0 feet		1	Lane Equ				eet)		
	ad Grade:	0.0%				Autos:					
	Left View: ight View:	-90.0 degree 90.0 degree				n Trucks: v Trucks:					
FHWA Noise Model (Calculations	-									
	REMEL	Traffic Flow	Dist	tance	Finite	Road	Fresn	el	Barrier Att	en Be	rm Atter
Autos:	66.51	-15.17		0.3	1	-1.20		4.65	0.0	000	0.00
Medium Trucks:	77.72	-24.70		0.3	4	-1.20		4.87	0.0	000	0.00
Heavy Trucks:	82.99	-24.91		0.3	4	-1.20		5.43	0.0	000	0.00
Unmitigated Noise L			-								
<i>,</i> ,	eq Peak Hou			Leq E	vening	Leq N	<u> </u>		Ldn	-	NEL
Autos:	50.	-	18.0		46.2		43.9		51.1		51
Medium Trucks:	52.	- '	50.1		44.5		45.7		52.9		53
Heavy Trucks:	57.	-	55.1		50.1		50.6		57.9		58
Vehicle Noise:	59.		56.9		52.4		52.5		59.7	7	59
Centerline Distance	to Noise Co	ntour (in feet)	1	70	dBA	65 di	24		0 dBA		ō dBA
			∟					6	48		103
			Ldn: IFL:		0 1	22 23			48 49		105

	FHW	A-RD-77-108 I	IIGH	WAY N		REDICTI	ON MO	DEL			
Scenario: E Road Name: P Road Segment: e	Placentia St.					Project Job Ni	Name: umber:				
SITE SPE	CIFIC INF	PUT DATA				N	OISE N	/IODE	L INPUT	s	
Highway Data				:	Site Con	ditions	(Hard =	10, So	oft = 15)		
Average Daily Traft	fic (Adt):	1,093 vehicles	3					Autos:	15		
Peak Hour Perc	centage:	10%			Mee	dium Tru	icks (2 /	(xles):	15		
Peak Hour	Volume:	109 vehicles			Hea	avy Truc	:ks (3+ A	(xles)	15		
Vehicle	Speed:	40 mph		H	Vehicle I	Ai y					
Near/Far Lane D	listance:	36 feet		-		cleType	1	Day	Evening	Night	Daily
Site Data					VCIII			68.6%	v	· ·	91.58%
Barrier	Hoight:	0.0 feet			Me	edium Tr		74.3%		20.5%	
Barrier Type (0-Wall, 1		0.0			F	leavy Tr	ucks:	74.4%	5.9%	19.7%	4.09%
Centerline Dist. to	,	50.0 feet		H		·					
Centerline Dist. to O		50.0 feet		1	Noise So				eet)		
Barrier Distance to O	bserver:	0.0 feet				Autos		000			
Observer Height (Abo	ve Pad):	5.0 feet				n Trucks		297	~		
0 1	levation:	0.0 feet			Heav	y Trucks	5. 8.0	004	Grade Ad	ustment	0.0
Road E	levation:	0.0 feet		1	Lane Equ	uivalent	Distan	ce (in	feet)		
Road	d Grade:	0.0%				Autos	s: 46.	915			
Le	eft View:	-90.0 degrees	5		Mediur	n Trucks	s: 46.	726			
Rig	ht View:	90.0 degrees	6		Heav	y Trucks	s: 46.	744			
FHWA Noise Model Ca	alculations										
VehicleType R	REMEL	Traffic Flow	Dist	ance	Finite	Road	Fresr	el	Barrier Att	en Ber	m Atten
Autos:	66.51	-11.32		0.31	1	-1.20		-4.65	0.0	000	0.000
Medium Trucks:	77.72	-24.58		0.34	4	-1.20		-4.87	0.0	000	0.000
Heavy Trucks:	82.99	-24.82		0.34	4	-1.20		-5.43	0.0	000	0.000
Unmitigated Noise Le			arrie	r atten	uation)						
,, ,	Peak Hour			Leq E	vening	Leq I			Ldn		VEL
Autos:	54.3		1.9		50.0		47.8		55.0		55.3
Medium Trucks:	52.3		0.2		44.6		45.8		53.0		53.2
Heavy Trucks:	57.3		5.2		50.2		50.7		57.9		58.1
Vehicle Noise:	59.9	9 5	7.7		53.7		53.4	Ļ	60.6	6	60.8
Centerline Distance to	Noise Cor	ntour (in feet)									
			. L	70 0		65 0		6	60 dBA		dBA
			dn:	1:	-	2			54		17
		CN	EL:	1:	2	2	o		57	1	22

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	FH\	WA-RD-77-108	HIGHV	VAY N	OISE PR	EDICTIO	N MODEL	-		
	o: EAC Witho e: Patterson A at: n/o Walnut	Av.				Project Na Job Nurr	ame: Barl hber: 122			
	SPECIFIC IN	IPUT DATA						DEL INPUT	S	
Highway Data				S	Site Con	ditions (H	ard = 10,	Soft = 15)		
	Traffic (Adt): Percentage: our Volume:	305 vehicl 10% 31 vehicle				dium Truck avy Trucks		s): 15		
Vel	hicle Speed:	40 mph		v	/ehicle /	lix				
Near/Far Lar	ne Distance:	36 feet		F		cleType	Day	/ Evening	Night	Daily
Site Data						Aut		0		6 87.95%
Par	rier Height:	0.0 feet			Me	dium Truc	ks: 74.	3% 5.2%	20.5%	6 7.05%
Barrier Type (0-Wa	all, 1-Berm):	0.0			H	leavy Truc	ks: 74.	4% 5.9%	19.7%	6 5.00%
Centerline Dis		50.0 feet		٨	loise So	urce Elev	ations (ii	n feet)		
Centerline Dist. t		50.0 feet				Autos:	0.000			
Barrier Distance t		0.0 feet			Mediun	n Trucks:	2.297			
Observer Height (/	,	5.0 feet			Heav	/ Trucks:	8.004	Grade Ad	djustmen	<i>it:</i> 0.0
	d Elevation:	0.0 feet				dura la má D		In 6 4)		
	d Elevation:	0.0 feet		-	ane Equ	Autos:	46.915	,		
F	Road Grade: Left View:	0.0%			1 4 m all 1 m	n Trucks:	46.726			
	Right View:	-90.0 degre 90.0 degre				y Trucks:	46.726			
FHWA Noise Mode	el Calculation	s								
VehicleType	REMEL	Traffic Flow	Dista	ance	Finite	Road	Fresnel	Barrier At	ten Be	erm Atten
Autos:	66.51	-17.04		0.31		-1.20	-4.6	65 0.	000	0.00
Medium Trucks:	77.72	-28.00		0.34		-1.20	-4.8	37 0.	000	0.00
Heavy Trucks:	82.99			0.34		-1.20	-5.4	13 0.	000	0.00
Unmitigated Noise										
	Leq Peak Hou			Leq Ev		Leq Nig		Ldn		CNEL
Autos:	48		46.2		44.3		42.1	49.	-	49.0
Medium Trucks:	48		46.8		41.2		42.4	49.	-	49.
Heavy Trucks:	-	2.6	50.6		45.5		46.0	53.		53.
Vehicle Noise:	55		53.1		48.8		48.7	55.	9	56.
Centerline Distanc	e to Noise Co	ontour (in fee)	70 -	DA	6E -10	4	CO dBA		EdDA
			I dn:	70 d	BA	65 dB 12	Α	60 dBA 27	5	5 dBA 57
		~	Lan: NEL	6		12		27		57 59
		C	VEL:	6		13		28		29

	FH\	WA-RD-77-108	HIGH	IWAY N	IOISE PF	REDICTIC	N MOI	DEL			
Scenar	io: EAC Witho	ut Project				Project N	lame: I	Barker			
Road Nan	e: Patterson A	Av.				Job Nu	mber: '	12218			
Road Segme	nt: n/o Placent	tia St.									
	SPECIFIC IN	IPUT DATA								S	
Highway Data				:	Site Con	ditions (F	lard =	10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	351 vehicl	es					Autos:	15		
Peak Hour	Percentage:	10%			Me	dium Truc	:ks (2 A	(xles):	15		
Peak F	lour Volume:	35 vehicle	s		Hea	avy Truck	s (3+ A	(xles):	15		
Ve	hicle Speed:	40 mph		5	Vehicle I	Niv					
Near/Far La	ne Distance:	36 feet				cleType		Day	Evening	Night	Daily
Site Data								68.6%	•	·	87.959
Ba	rrier Height:	0.0 feet			Me	edium Tru	cks:	74.3%	5.2%	20.5%	7.05%
Barrier Type (0-V		0.0			H	leavy Tru	cks:	74.4%	5.9%	19.7%	5.00%
	st. to Barrier:	50.0 feet		H	N-1 C				- 41		
Centerline Dist.	to Observer:	50.0 feet		1	Noise So	ource Ele			eet)		
Barrier Distance	to Observer:	0.0 feet				Autos:		000			
Observer Height	(Above Pad):	5.0 feet				n Trucks:		297	Grade Ad		
Р	ad Elevation:	0.0 feet			Heav	y Trucks:	8.0	004	Grade Adj	usimeni	0.0
Ro	ad Elevation:	0.0 feet		1	Lane Equ	uivalent I	Distand	ce (in i	feet)		
	Road Grade:	0.0%				Autos:	46.9	915			
	Left View:	-90.0 degre	es		Mediur	n Trucks:	46.7	726			
	Right View:	90.0 degre	es		Heav	y Trucks:	46.7	744			
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite	Road	Fresn	el	Barrier Att	en Ber	m Atten
Autos:	66.51	-16.43		0.31	1	-1.20		-4.65	0.0	000	0.00
Medium Trucks:	77.72			0.34	4	-1.20		-4.87	0.0	000	0.00
Heavy Trucks:	82.99	-28.88		0.34	4	-1.20		-5.43	0.0	000	0.00
Unmitigated Nois	e Levels (with	out Topo and	barri	er atten	uation)						
VehicleType	Leq Peak Hou			Leq E		Leq N	·		Ldn		VEL
Autos:	49		46.8		44.9		42.7		49.9		50.
Medium Trucks:			47.4		41.8		43.0		50.2		50.
Heavy Trucks:			51.2		46.2		46.7		53.9		54.
Vehicle Noise:			53.7		49.4		49.3		56.5	5	56.
Centerline Distan	ce to Noise C	ontour (in feet	:)								
			. L	70 c		65 dl		6	i0 dBA		dBA
			I dn:	6		14			29	6	53
			NFI :	7		14			30		35

Tuesday, March 12, 2019

Conneries EAC Mile	hout Dr-1	aat				Drains!	Nomo	Dork -			
Scenario: EAC Wit Road Name: Harvill A		lect				Project	imber:				
Road Segment: s/o Caja						300 14	iniber.	12210			
, ,											
SITE SPECIFIC Highway Data	INPUT	DATA		1	Site Con				L INPUTS	5	
Average Daily Traffic (Adt)	20.14	2 vehicles						Autos			
Peak Hour Percentage					Mei	dium Tru					
Peak Hour Volume		vehicles				avy Truc					
Vehicle Speed		mph				,					
Near/Far Lane Distance		feet		1	Vehicle I				1=		
	. 40	1001			Vehi	cleType		Day	Evening	Night	Daily
Site Data								68.6%		20.1%	
Barrier Height	: 0.	0 feet				edium Tr		74.3%		20.5%	
Barrier Type (0-Wall, 1-Berm)	: 0.	0			H	leavy Tr	ucks:	74.4%	5.9%	19.7%	5.00
Centerline Dist. to Barrier	59.	0 feet		1	Noise So	urce El	evation	s (in f	eet)		
Centerline Dist. to Observer	59.	0 feet				Autos		000	,		
Barrier Distance to Observer	: 0.	0 feet			Mediur	n Trucks	2.3	97			
Observer Height (Above Pad)		0 feet			Heav	y Trucks	: 8.0	004	Grade Ad	ustmen	t: 0.0
Pad Elevation		0 feet				·					
Road Elevation		0 feet		1	Lane Equ				feet)		
Road Grade		0%				Autos					
Left View		0 degrees				n Trucks					
Right View	: 90.	0 degrees			Heav	y Trucks	: 53.9	982			
FHWA Noise Model Calculati	ons			-							
VehicleType REMEL	Traffi	ic Flow	Distar		Finite	Road	Fresn	el	Barrier Atte	en Be	rm Atter
Autos: 70.2		0.19		-0.62	-	-1.20		-4.69	0.0		0.00
Medium Trucks: 81.0	00	-10.77		-0.60	-	-1.20		-4.88	0.0		0.00
Heavy Trucks: 85.3	38	-12.26		-0.60	C	-1.20		-5.35	0.0	00	0.0
Unmitigated Noise Levels (w	ithout To	opo and b	arrier a	atten	uation)						
VehicleType Leq Peak H		Leq Day		eq Ev	/ening	Leq I	· ·		Ldn	-	NEL
	68.6	6	6.1		64.3		62.1		69.3	5	69
	68.4		5.3		60.8		62.0		69.2		69
Heavy Trucks:	71.3	6	9.2		64.2		64.7		71.9)	72
Vehicle Noise:	74.4	7:	2.3		68.2		67.9		75.1		75
Centerline Distance to Noise	Contour	r (in feet)									
				70 c	1BA	65 0	<i>IBA</i>		60 dBA	55	i dBA
				4.0				_	599	4	.290
		L	dn:	12	9	27	8		620		,230

	FHW	A-RD-77-108 HI	IGHWAY	NOISE P	REDICTI	ON MODE	٤L		
Road Nan	io: EAC Without ne: Harvill Av. nt: s/o Rider St.	t Project				Name: Ba umber: 12			
SITE	SPECIFIC INF	PUT DATA			N	OISE MC	DEL INPUT	s	
Highway Data				Site Cor	nditions	(Hard = 10), Soft = 15)		
Average Daily	Traffic (Adt): 1	7,580 vehicles				Au	tos: 15		
Peak Hour	Percentage:	10%		Me	edium Tru	icks (2 Axl	es): 15		
Peak H	lour Volume: 1	,758 vehicles		He	avy Truc	ks (3+ Axl	es): 15		
Ve	hicle Speed:	50 mph		Vehicle	Mix				
Near/Far La	ne Distance:	48 feet			nicleType	Da	ay Evening	Night	Daily
Site Data				1011			.6% 11.3%	·	87.95%
Ba	rrier Height:	0.0 feet		М	ledium Tr	ucks: 74	.3% 5.2%	20.5%	7.05%
Barrier Type (0-W		0.0		1	Heavy Tr	ucks: 74	.4% 5.9%	19.7%	5.00%
Centerline Di	. ,	59.0 feet		Noine C	ouroo El	evations (in fact)		
Centerline Dist.	to Observer:	59.0 feet		NUISE 3	Autos		,		
Barrier Distance	to Observer:	0.0 feet		Modiu	m Trucks				
Observer Height	(Above Pad):	5.0 feet			vy Trucks			iustmont.	0.0
P	ad Elevation:	0.0 feet			·			justinent.	0.0
Ro	ad Elevation:	0.0 feet		Lane Eq	uivalent	Distance	(in feet)		
	Road Grade:	0.0%			Autos		9		
	Left View:	-90.0 degrees		Mediu	m Trucks				
	Right View:	90.0 degrees		Heav	vy Trucks	53.98	2		
FHWA Noise Mod	el Calculations								
VehicleType	REMEL	Traffic Flow	Distance	Finite	Road	Fresnel	Barrier Att	en Berr	n Atten
Autos:	70.20	-0.40	-0.0	62	-1.20	-4	.69 0.0	000	0.000
Medium Trucks:	81.00	-11.36	-0.6	60	-1.20	-4	.88 0.0	000	0.000
Heavy Trucks:	85.38	-12.86	-0.0	60	-1.20	-5	.35 0.0	000	0.000
Unmitigated Nois	e Levels (witho	ut Topo and ba	arrier atte	nuation)					
VehicleType	Leq Peak Hour	Leq Day	Leq I	Evening	Leq	Night	Ldn	CN	IEL
Autos:	68.0			63.7		61.5	68.7		69.0
Medium Trucks:	67.8			60.2		61.4	68.6		68.7
Heavy Trucks:	70.7	68	.6	63.6		64.1	71.4	4	71.5
Vehicle Noise:	73.8	3 71	.7	67.6		67.3	74.5	5	74.7
Centerline Distan	ce to Noise Cor	ntour (in feet)							
				dBA	65 (60 dBA		dBA
		Ld		18	25		547		78
		CNE	<i>L:</i> 1	22	26	33	566	1,2	220

Tuesday, March 12, 2019

	FHV	VA-RD-77-108	HIGHW	AY NOISE F	REDICTIO	N MODEL			
Scenario: Road Name:		ut Project				ame: Barke ber: 1221			
Road Seament:		ia St.			JOD MUN	IDel. 1221	D		
SITE SPI	ECIEIC IN	PUT DATA			NO		EL INPUT	\$	
Highway Data				Site Co.	nditions (H			5	
Average Daily Tra	ffic (Adt):	12,051 vehicl	es			Autos	s: 15		
Peak Hour Per	rcentage:	10%		M	edium Trucl	s (2 Axles): 15		
Peak Hour	Volume:	1,205 vehicle	s	H	eavy Trucks	(3+ Axles): 15		
Vehicle	e Speed:	50 mph		Vehicle	Mix				
Near/Far Lane L	Distance:	48 feet			nicleType	Day	Evening	Night	Daily
Site Data					Aut	os: 68.6	% 11.3%	20.1%	87.95%
Barrie	r Height:	0.0 feet		N	ledium Truc	ks: 74.3	% 5.2%	20.5%	7.05%
Barrier Type (0-Wall,	1-Berm):	0.0			Heavy Truc	ks: 74.4	% 5.9%	19.7%	5.00%
Centerline Dist. to		59.0 feet		Noise S	ource Elev	ations (in	feet)		
Centerline Dist. to C		59.0 feet			Autos:	0.000			
Barrier Distance to C		0.0 feet		Mediu	ım Trucks:	2.297			
Observer Height (Abo	,	5.0 feet		Hea	vy Trucks:	8.004	Grade Ad	justment	: 0.0
	Elevation: Elevation:	0.0 feet		Lano Er	uivalent D	istanco (ir	(foot)		
	d Grade:	0.0 feet 0.0%		Lune Le	Autos:	54.129	neety		
	eft View:	-90.0 degre	20	Mediu	im Trucks:	53,966			
-	ght View:	90.0 degre			vy Trucks:	53.982			
FHWA Noise Model C	alculation	s							
VehicleType I	REMEL	Traffic Flow	Distar	ce Finite	e Road	Fresnel	Barrier Att	en Ber	rm Atten
Autos:	70.20	-2.04		-0.62	-1.20	-4.69	0.0	000	0.00
Medium Trucks:	81.00	-13.00		-0.60	-1.20	-4.88		000	0.00
Heavy Trucks:	85.38	-14.50		-0.60	-1.20	-5.35	5 0.0	000	0.00
Unmitigated Noise Le			-	,	1			T	
	q Peak Hou			eq Evening	Leq Ni		Ldn		NEL
Autos:	66		63.9	62.1		59.8	67.0	-	67.4
Medium Trucks:	66 69	-	64.1 67.0	58.6		59.8 62.5	66.9 69.7		67. 69.9
Heavy Trucks: Vehicle Noise:	69		67.0 70.0	62.0		62.5	69. 72.9		69.9 73.1
Centerline Distance to		-		55.5	,	55.7	72.3		73.
Centernine Distance l	U MUISE CL	intour (in leel	/	70 dBA	65 dB	A	60 dBA	55	dBA
			Ldn:	92	197		425		916

I	HWA	A-RD-77-108	HIGH	HWAY N	OISE PR	EDICT	ION MC	DEL			
Scenario: EAC Wi Road Name: Harvill A Road Segment: s/o Orar	w.	,					Name: lumber:				
SITE SPECIFIC	5.						IOIEE	MODE		c .	
Highway Data	INP	UTDATA		\$	Site Con					5	
* /		. =00				anuona	(11414-		,		
Average Daily Traffic (Adt		1,732 vehicle	es					Autos:			
Peak Hour Percentage		10%					ucks (2	/			
Peak Hour Volume		,173 vehicles	5		Hea	avy Iru	cks (3+	Axles):	15		
Vehicle Speed		50 mph		V	/ehicle N	lix					
Near/Far Lane Distance) :	48 feet			Vehi	cleType)	Day	Evening	Night	Daily
Site Data							Autos:	68.6%	5 11.3%	20.1%	87.95%
Barrier Heigh	t:	0.0 feet			Me	dium T	rucks:	74.3%	5.2%	20.5%	7.05%
Barrier Type (0-Wall, 1-Berm		0.0			H	leavy T	rucks:	74.4%	5.9%	19.7%	5.00%
Centerline Dist. to Barrie		59.0 feet		-							
Centerline Dist. to Observe		59.0 feet		^	Voise So				eet)		
Barrier Distance to Observe	r:	0.0 feet				Auto		.000			
Observer Height (Above Pad):	5.0 feet			Mediun			.297			
Pad Elevation		0.0 feet			Heav	y Truck	s: 8	.004	Grade Ad	justment	: 0.0
Road Elevation	ı:	0.0 feet		L	ane Equ	ıivalen	t Distar	ice (in	feet)		
Road Grade	ə:	0.0%				Auto	s: 54	.129			
Left Viev	v:	-90.0 degree	s		Mediun	n Truck	s: 53	.966			
Right Viev		90.0 degree			Heav	y Truck	s: 53	.982			
FHWA Noise Model Calculat	ions										
VehicleType REMEL	7	Traffic Flow	Dis	stance	Finite	Road	Fres	nel	Barrier Att	en Ber	m Atten
Autos: 70.	20	-2.16		-0.62	2	-1.20		-4.69	0.0	000	0.00
Medium Trucks: 81.	00	-13.12		-0.60)	-1.20		-4.88	0.0	000	0.00
Heavy Trucks: 85.	.38	-14.61		-0.60)	-1.20		-5.35	0.0	000	0.00
Unmitigated Noise Levels (w			-		í ,						
VehicleType Leq Peak		Leq Day		Leq Ev		Leq	Night		Ldn		NEL
Autos:	66.2		63.8		62.0		59.		66.9		67.
Medium Trucks:	66.1		64.0		58.5		59.	-	66.8	-	67.
Heavy Trucks:	69.0		66.9		61.9		62.		69.6	-	69.
Vehicle Noise:	72.1		69.9		65.8		65.	5	72.	7	73.
Centerline Distance to Noise	Con	tour (in feet,)	70 -	ID A	67	dD A	1	0 dB4		dD A
			l dn:	70 d			dBA		60 dBA		dBA
							94		417	8	99
			VFI :	93	-		01		433		32

Tuesday, March 12, 2019

					EDICTI					
Scenario: EAC With	out Project				Project I					
Road Name: Harvill Av.					JOD INL	mber: 1	2218			
Road Segment: s/o A St.										
SITE SPECIFIC I	NPUT DATA		-					L INPUTS	;	
Highway Data			SI	ite Con	ditions (- ·			
Average Daily Traffic (Adt):	15,942 vehicles	5					utos:			
Peak Hour Percentage:	10%				dium Tru					
Peak Hour Volume:	1,594 vehicles			Hea	avy Truc	ks (3+ A	xles):	15		
Vehicle Speed:	50 mph		V	ehicle I	Nix					
Near/Far Lane Distance:	48 feet		-		cleTvpe	[Day	Evening	Night	Daily
Site Data			-		A		8.6%	Ű	20.1%	
Barrier Height:	0.0 feet		1	Me	dium Tri	icks: 7	4.3%	5.2%	20.5%	7.05%
Barrier Type (0-Wall, 1-Berm):	0.0 feet			H	leavv Tri	icks: 7	4.4%		19.7%	5.00%
Centerline Dist. to Barrier:	59.0 feet									
Centerline Dist. to Observer:	59.0 feet		N	oise So	urce Ele			eet)		
Barrier Distance to Observer:	0.0 feet				Autos					
Observer Height (Above Pad):	5.0 feet				n Trucks					
Pad Elevation:	0.0 feet			Heav	y Trucks	: 8.0	04	Grade Adju	istment.	0.0
Road Elevation:	0.0 feet		Lá	ane Eau	iivalent	Distanc	e (in i	feet)		
Road Grade:	0.0%				Autos			,		
Left View:	-90.0 degrees	-		Mediur	n Trucks	53.9	66			
Right View:	90.0 degrees				v Trucks					
rugin non.	oolo doglool	5			,					
FHWA Noise Model Calculatio										
VehicleType REMEL	Traffic Flow	Distanc	-	Finite		Fresne		Barrier Atte		m Atten
Autos: 70.20			0.62		-1.20		4.69	0.0		0.00
Medium Trucks: 81.00			0.60		-1.20		4.88	0.0		0.00
Heavy Trucks: 85.38	-13.28	-1	0.60		-1.20	-	5.35	0.0	00	0.00
Unmitigated Noise Levels (with				· · ·						
VehicleType Leq Peak Ho			q Eve	ening	Leq I	0		Ldn	CI	VEL
		5.1		63.3		61.0		68.2		68.
		5.3		59.8		61.0		68.1		68.3
		8.2		63.2		63.7		70.9		71.
Vehicle Noise: 7	3.4 7	1.2		67.1		66.9		74.1		74.
Centerline Distance to Noise C	contour (in feet)									
			70 dE		65 a		6	60 dBA		dBA
		dn:	110		23	-		512		103
	CN		114		24			531	4	143

	FH	NA-RD-77-108	HIGHW	AY N	IOISE PR	EDICTI		DEL			
Road Nam	rio: EAC Witho ne: Rider St. nt: e/o Patters	,				Project I Job Ni	Name: I Imber: ·				
SITE	SPECIFIC IN	IPUT DATA							L INPUT	5	
Highway Data				5	Site Con	ditions (Hard =	10, So	oft = 15)		
Average Daily	()	1,861 vehicl	es					Autos:			
	Percentage:	10%				dium Tru	,				
Peak H	lour Volume:	186 vehicle	s		Hea	avy Truc	ks (3+ A	(xles):	15		
Ve	ehicle Speed:	40 mph		N	Vehicle N	<i>lix</i>					
Near/Far La	ne Distance:	36 feet		F		cleType		Day	Evening	Night	Daily
Site Data						A		, 68.6%	11.3%	20.1%	87.95%
Ba	rrier Heiaht:	0.0 feet			Me	dium Tr	ucks:	74.3%	5.2%	20.5%	7.05%
Barrier Type (0-W		0.0			h	leavy Tri	ucks:	74.4%	5.9%	19.7%	5.00%
Centerline Di	. ,	50.0 feet			Noise So	uree Ek	wation	n (in fi	0.041		
Centerline Dist.	to Observer:	50.0 feet		-	voise 30	Autos		000	eel)		
Barrier Distance	to Observer:	0.0 feet			1 4 m all 1 m	Autos n Trucks		297			
Observer Height	(Above Pad):	5.0 feet						297 004	Grade Ad		
Pi	ad Elevation:	0.0 feet			Heav	y Trucks	. 8.0	104	Grade Adj	usunen	. 0.0
Ro	ad Elevation:	0.0 feet		L	Lane Equ	ıivalent	Distand	ce (in	feet)		
	Road Grade:	0.0%				Autos	: 46.9	915			
	Left View:	-90.0 degre	es		Mediun	n Trucks	: 46.7	726			
	Right View:	90.0 degre	es		Heav	y Trucks	: 46.7	744			
FHWA Noise Mod	el Calculation	s									
VehicleType											
venicierype	REMEL	Traffic Flow	Dista	nce	Finite	Road	Fresn	el	Barrier Att	en Be	rm Atten
Autos:		Traffic Flow -9.19	Dista	nce 0.31		Road -1.20		el -4.65	Barrier Atte 0.0		
	66.51				1					00	0.000
Autos: Medium Trucks: Heavy Trucks:	66.51 77.72 82.99	-9.19 -20.15 -21.64		0.31 0.34 0.34	1 1	-1.20		-4.65	0.0	00	0.000
Autos: Medium Trucks: Heavy Trucks: Unmitigated Nois	66.51 77.72 82.99 e Levels (with	-9.19 -20.15 -21.64 out Topo and	barrier	0.31 0.34 0.34 attent	1 1 1 uation)	-1.20 -1.20 -1.20		-4.65 -4.87	0.0 0.0 0.0	00 00 00	0.000 0.000 0.000
Autos: Medium Trucks: Heavy Trucks: Unmitigated Nois VehicleType	66.51 77.72 82.99 e Levels (with Leq Peak Hou	-9.19 -20.15 -21.64 out Topo and Ir Leq Day	barrier	0.31 0.34 0.34 attent	l 1 1 <i>uation)</i> /ening	-1.20 -1.20	Vight	-4.65 -4.87 -5.43	0.0 0.0 0.0	00 00 00	0.000 0.000 0.000
Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos:	66.51 77.72 82.99 e Levels (with Leq Peak Hou 56	-9.19 -20.15 -21.64 out Topo and r Leq Day .4	barrier / L 54.0	0.31 0.34 0.34 attent	l 4 4 <i>vening</i> 52.2	-1.20 -1.20 -1.20	Vight 49.9	-4.65 -4.87 -5.43	0.0 0.0 0.0 <i>Ldn</i> 57.1	00 00 00	0.000 0.000 0.000 :NEL 57.5
Autos: Medium Trucks: Heavy Trucks: Unmitigated Nois VehicleType Autos: Medium Trucks:	66.51 77.72 82.99 e Levels (with Leg Peak Hou 56 56	-9.19 -20.15 -21.64 out Topo and ir Leq Day i.4 .7	barrier (/ L 54.0 54.6	0.31 0.34 0.34 attent	1 4 4 <i>uation)</i> <i>vening</i> 52.2 49.1	-1.20 -1.20 -1.20	Vight 49.9 50.3	-4.65 -4.87 -5.43	0.0 0.0 0.0 <i>Ldn</i> 57.1 57.4	00 00 00 C	0.000 0.000 0.000 NEL 57.5 57.6
Autos: Medium Trucks: Heavy Trucks: Unmitigated Noiss VehicleType Autos: Medium Trucks: Heavy Trucks:	66.51 77.72 82.99 e Levels (with Leq Peak Hou 56 56 60	-9.19 -20.15 -21.64 out Topo and <i>I</i> Leq Day .4 .7 .5	barrier / L 54.0 54.6 58.4	0.31 0.34 0.34 attent	1 4 4 <i>vening</i> 52.2 49.1 53.4	-1.20 -1.20 -1.20	Vight 49.9 50.3 53.9	-4.65 -4.87 -5.43	0.0 0.0 <i>Ldn</i> 57.1 57.4 61.1	00 00 00 C	0.000 0.000 0.000 <i>NEL</i> 57.5 57.6 61.3
Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise Vehicle Type Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	66.51 77.72 82.99 e Levels (with Leg Peak Hou 56 56 60 63	-9.19 -20.15 -21.64 out Topo and <i>Ir</i> Leq Day .4 .5 .5	barrier 1 / L 54.0 54.6 58.4 60.9	0.31 0.34 0.34 attent	1 4 4 <i>uation)</i> <i>vening</i> 52.2 49.1	-1.20 -1.20 -1.20	Vight 49.9 50.3	-4.65 -4.87 -5.43	0.0 0.0 0.0 <i>Ldn</i> 57.1 57.4	00 00 00 C	0.000 0.000 0.000 <i>NEL</i> 57.5 57.6 61.3
Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise Vehicle Type Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	66.51 77.72 82.99 e Levels (with Leg Peak Hou 56 56 60 63	-9.19 -20.15 -21.64 out Topo and <i>Ir</i> Leq Day .4 .5 .5	barrier 1 / L 54.0 54.6 58.4 60.9	0.31 0.34 0.34 attent eq Ev	uation) <i>vening</i> 52.2 49.1 53.4 56.7	-1.20 -1.20 -1.20 <i>Leq I</i>	Vight 49.9 50.3 53.9 56.5	-4.65 -4.87 -5.43	0.0 0.0 <i>Ldn</i> 57.1 57.4 61.1 63.7	00 00 00 C	0.000 0.000 0.000 <i>INEL</i> 57.5 57.6 61.3 64.0
Autos: Medium Trucks: Heavy Trucks: Unmitigated Noiss VehicleType Autos: Medium Trucks: Heavy Trucks:	66.51 77.72 82.99 e Levels (with Leg Peak Hou 56 56 60 63	-9.19 -20.15 -21.64 out Topo and rr Leq Day .4 .7 .5 .1 ontour (in feet	barrier (54.0 54.6 58.4 60.9 ()	0.31 0.34 0.34 eq Ev	uation) vening 52.2 49.1 53.4 56.7 IBA	-1.20 -1.20 -1.20 <i>Leq I</i>	Vight 49.9 50.3 53.9 56.5	-4.65 -4.87 -5.43	0.0 0.0 0.0 57.1 57.4 61.1 63.7	00 00 00 C	0.000 0.000 0.000 WEL 57.5 57.6 61.3 64.0
Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise Vehicle Type Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	66.51 77.72 82.99 e Levels (with Leg Peak Hou 56 56 60 63	-9.19 -20.15 -21.64 out Topo and <i>Ir</i> Leq Day .4 .5 .5 .1 Dontour (in feet	barrier 1 / L 54.0 54.6 58.4 60.9	0.31 0.34 0.34 attent eq Ev	uation) vening 52.2 49.1 53.4 56.7 IBA 9	-1.20 -1.20 -1.20 <i>Leq I</i>	Vight 49.9 50.3 53.9 56.5 IBA 1	-4.65 -4.87 -5.43	0.0 0.0 <i>Ldn</i> 57.1 57.4 61.1 63.7	00 00 00 C	0.000 0.000 0.000 <i>INEL</i> 57.5 57.6 61.3 64.0

Tuesday, March 12, 2019

	FHW	A-RD-77-108	HIGH	IWAY I	NOISE PR	REDICTIO	N MODEL			
Scenario: EA Road Name: Pla Road Segment: e/o	acentia St						ame: Barke nber: 1221			
SITE SPEC	IFIC IN	PUT DATA				NO	ISE MOD	EL INPUT	s	
Highway Data					Site Con	ditions (H	lard = 10, S	Soft = 15)		
Average Daily Traffic Peak Hour Perce Peak Hour V	entage:	397 vehicle 10% 40 vehicle					Autos ks (2 Axles, s (3+ Axles,): 15		
Vehicle		40 mph			Vehicle I	Mix				
Near/Far Lane Dis	stance:	36 feet		-		cleType	Dav	Evening	Night	Daily
Site Data							tos: 68.6	0	20.1%	
Barrier H	loiaht.	0.0 feet			Me	edium Truc	cks: 74.3	% 5.2%	20.5%	7.05%
Barrier Type (0-Wall, 1-	Berm):	0.0			H	leavy Truc	cks: 74.4	% 5.9%	19.7%	5.00%
Centerline Dist. to I		50.0 feet			Noise So	ource Elev	ations (in	feet)		
Centerline Dist. to Ob		50.0 feet				Autos:	0.000			
Barrier Distance to Ob		0.0 feet			Mediur	n Trucks:	2.297			
Observer Height (Above Pad Ele	,	5.0 feet 0.0 feet			Heav	y Trucks:	8.004	Grade Adj	justment	: 0.0
Road Ele	vation:	0.0 feet		E F	Lane Equ	uivalent D	istance (in	i feet)		
Road	Grade:	0.0%				Autos:	46.915			
Lei	t View:	-90.0 degree	es		Mediur	n Trucks:	46.726			
Righ	t View:	90.0 degree	es		Heav	y Trucks:	46.744			
FHWA Noise Model Cal	culations									
VehicleType RE	MEL	Traffic Flow	Dis	stance	Finite	Road	Fresnel	Barrier Att	en Bei	m Atten
Autos:	66.51	-15.90		0.3		-1.20	-4.65			0.00
Medium Trucks:	77.72	-26.86		0.3		-1.20	-4.87		000	0.00
Heavy Trucks:	82.99	-28.35		0.3		-1.20	-5.43	8 0.0	000	0.00
Unmitigated Noise Leve			barrie	er atter	nuation)					
	Peak Hour			Leq E	vening	Leq Ni		Ldn	-	NEL
Autos:	49.1		47.3		45.5		43.2	50.4		50.8
Medium Trucks:	50.0	-	47.9		42.4		43.6	50.7		50.9
Heavy Trucks:	53.8	-	51.7		46.7		47.2	54.4		54.0
Vehicle Noise:	56.4		54.2		50.0		49.8	57.0)	57.3
Centerline Distance to	Noise Co	ntour (in feet)							
			L		dBA	65 dE	BA	60 dBA		dBA
			Ldn:		7	15		32		68
		CI	VEL:		7	15		33		71

Average Daily Traffic (Adt): 415 vehicles Autos: 15 Peak Hour Percentage: 10% Medium Trucks: (2 Axles): 15 Peak Hour Volume: 42 vehicles Heavy Trucks (2 Axles): 15 Vehicle Speed: 40 mph Heavy Trucks (2 Axles): 15 Site Data Autos: 68.6% 11.3% 20.1% 87.4 Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Medium Trucks: 74.4% 5.9% 19.7% 5.0% Centerline Dist. to Diserver: 0.0 feet Autos: 0.8000 Medium Trucks: 0.00 Medium Trucks: 0.00 Medium Trucks: 74.4% 5.9% 19.7% 5.0 Deserver Height (Above Pad): 5.0 feet Autos: 0.00 Medium Trucks: 46.915 Medium Trucks: 46.915 Medium Trucks: 46.915 Medium Trucks: 46.726 Heavy Trucks: 46.744 FHWA Noise Model Calculations Vehicle Nive: 90.0 degrees Friesnel Barrier Atten Berm Att Meavy Trucks: 46.74 Mediu		FHW	/A-RD-77-108	IIGHWA	Y NO	DISE PF	REDICTI	ON MOI	DEL			
Highway Data Site Conditions (Hard = 10, Soft = 15) Average Daily Traffic (Adt): 415 vehicles Autos:: 5 Peak Hour Porcentage: 10% Medium Trucks (2 Avles): 15 Peak Hour Porcentage: 40 mph Medium Trucks (2 Avles): 15 Vehicle Speed: 40 mph Vehicle Mix Vehicle Mix Near/Far Lane Distance: 36 feet Vehicle Mix Night Day Barrier Height: 0.0 feet Autos:: 68.6% 11.3% 20.1% 87.7 Barrier Jise O(-Wail, 1-Berm): 0.0 feet Medium Trucks: 74.4% 5.9% 19.7% 5.4 Observer Height (Above Pad): 5.0 feet Notes Ste Gad Grade: 0.0% Medium Trucks: 2.297 Heavy Trucks: 46.915 1.0	Road Nam	e: Placentia St										
Average Daily Traffic (Adt): 415 vehicles Autos: 15 Peak Hour Percentage: 10% Medium Trucks: (2 Axles): 15 Peak Hour Vercentage: 10% Medium Trucks: (2 Axles): 15 Vehicle Speed: 40 mph Heavy Trucks (2 Axles): 15 Near/Far Lane Distance: 36 feet Vehicle Mix Vehicle Mix Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Desrver: 0.0 feet Medium Trucks: 7.4.3% 5.2% 20.5% 7.1 Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Desrver: 0.0 feet Medium Trucks: 7.4.4% 5.9% 19.7% 5.0 Barrier Distance to Observer: 0.0 feet Autos: 0.000 Medium Trucks: 0.00 Centerline Dist. to Deserver: 0.0 feet Autos: 0.000 Medium Trucks: 0.00 Road Elevation: 0.0 feet Autos: 6.61 1.5.70 10.7% Heavy Trucks: 46.915 Heavy Trucks: 77.2 -26.66 0.34 -1.20 -4.65		SPECIFIC IN	PUT DATA								s	
Peak Hour Percentage: 10% Medium Trucks (2 Akles): 15 Peak Hour Volume: 42 vehicles Heavy Trucks (2 Akles): 15 Vehicle Speed: 40 mph Heavy Trucks (2 Akles): 15 Near/Far Lane Distance: 36 feet Vehicle Type Day Evening Night Da Site Data Autos: 68.6% 11.3% 20.1% 87.7 Medium Trucks: 74.4% 5.9% 20.5% 7.0 Barrier Type (O-Wall, 1-Berm): 0.0 Centerline Dist. to Diserver: 50.0 feet Medium Trucks: 7.4.4% 5.9% 19.7% 5.0 Barrier Type (O-Wall, 1-Berm): 0.0 feet Moise Source Elevations (in feet) Moise Source Elevations (in feet) Moise Source Elevations (in feet) Medium Trucks: 2.29T Observer Height (Above Pad): 5.0 feet Heavy Trucks: 46.744 Elevation: 0.0 feet Road Elevation: 0.0 feet Mutos: 46.744 Elevation: 0.00 Medium Trucks: 65.1 -15.70 0.31 -1.20 -4.65 0.000 0.0	Highway Data				S	ite Con	ditions	(Hard =	10, So	oft = 15)		
Peak Hour Volume: 42 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 36 feet Vehicle Mix Site Data vehicle Type Day Evening Night Da Site Data vehicle Mix vehicle Mix Vehicle Mix Vehicle Mix Night Da Barrier Height: 0.0 feet Mutos: 68.6% 11.3% 20.1% 87.5 Barrier Jose (-0.Wail, 1-Berrn): 0.0 feet Medium Trucks: 74.3% 5.2% 20.5% 7.0 Centerline Dist. to Barrier: 5.0 feet Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0 Road Grade: 0.0% Left View: -90.0 degrees Medium Trucks: 46.726 Heavy Trucks: 46.726 Heavy Trucks: 77.72 -26.66 0.34 -1.20 -4.65 0.000 0 Medium Trucks: 82.99 -23.16 0.34 -1.20 -4.65 0.000 0 Medium Trucks: 82.99 -23.16	Average Daily	Traffic (Adt):	415 vehicles					A	utos:	15		
Vehicle Speed: Near/Far Lane Distance: 40 mph 36 feet Vehicle Mix Vehicle Mix Vehicle Mix Vehicle Mix Vehicle Mix Vehicle Mix Vehicle Mix Site Data Autos: 68.6% 11.3% 20.1% 87.5 Barrier Type (0-Wall, 1-Berm): 0.0 Medium Trucks: 74.4% 5.9% 19.7% 5.0% Centerline Dist. to Desriver: 0.0 feet Medium Trucks: 74.4% 5.9% 19.7% 5.0% Barrier Distance to Observer: 0.0 feet Molise Source Elevations (in feet) Medium Trucks: 0.000 Medium Trucks: 8.004 Grade Adjustment: 0.0 Pad Elevation: 0.0 feet Autos: 46.915 Road Grade: 0.0% Autos: 46.744 FHWA Noise Model Calculations Vehicle Type REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Att Medium Trucks: 77.72 -26.66 0.34 -1.20 -4.45 0.000 0 Medium Trucks:	Peak Hour	Percentage:	10%			Mee	dium Tru	icks (2 A	xles):	15		
Venicie Mix Venicie Mix Venicie Mix Venicie Mix Site Data Autos: 68.6% 11.3% 20.1% 87.5 Barrier Height: 0.0 68.6% 11.3% 20.1% 87.5 Barrier Height: 0.0 68.6% 11.3% 20.1% 87.5 Barrier Height: 0.0 Centerline Dist. to Barrier: 50.0 feet Medium Trucks: 74.3% 5.2% 20.5% 7.0 Centerline Dist. to Dserver: 50.0 feet Moise Source Elevations: (in feet) Autos: 68.6% 11.3% 5.0 5.0 Doserver Height (Above Pad): 5.0 feet Moise Source Elevations: (in feet) Autos: 0.00 Medium Trucks: 2.97 Meay Trucks: 8.004 Grade Adjustment: 0.0 Grade Adjustment: 0.0 0.0 Autos: 6.915 Medium Trucks: 46.726 Right View: 9.0.0 degrees Finite Road Fresnel Barrier Atten Berm Att VehicleType REMEL Traffic Flow Distance Finite Road Fresnel	Peak H	lour Volume:	42 vehicles			Hea	avy Truc	ks (3+ A	xles):	15		
Near/Far Lane Distance: 36 feet VehicleType Day Evening Night Day Site Data Autos: 68.6% 11.3% 20.1% 87.4 Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Deserver: 50.0 feet Medium Trucks: 74.4% 5.2% 20.5% 7.1 Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Deserver: 50.0 feet Medium Trucks: 74.4% 5.9% 19.7% 5.0 Barrier Distance to Observer: 0.0 feet Molse Source Elevations (in feet) Autos: 0.000 Medium Trucks: 0.000 Centerline Odd Grade: 0.0% Left Ivew: 90.0 degrees Medium Trucks: 46.915 Heavy Trucks: Right View: 90.0 degrees Friesnel Barrier Atten Berner Atten VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berner Atten WehicleType Leg Viewu 90.0 and barrier attenuation) Leg Night Ledn Concenter attenuation) <t< td=""><td>Ve</td><td>hicle Speed:</td><td>40 mph</td><td></td><td>v</td><td>ehicle I</td><td>Mix</td><td></td><td></td><td></td><td></td><td></td></t<>	Ve	hicle Speed:	40 mph		v	ehicle I	Mix					
Site Data Autos: 68.6% 11.3% 20.1% 87.5 Barrier Height: 0.0 feet Medium Trucks: 74.3% 5.2% 20.5% 7.0 Barrier Type (0-Wall, 1-Berm): 0.0 Centerine Dist. to Barrier: 50.0 feet Medium Trucks: 74.4% 5.9% 19.7% 5.0 Centerine Dist. to Diserver: 50.0 feet Autos: 4.00 Moise Source Elevations (in feet) Autos: 0.00 Observer Height (Above Pad): 5.0 feet Autos: 8.004 Grade Adjustment: 0.0 Road Grade: 0.0% Left View: 90.0 degrees Medium Trucks: 46.714 FHWA Noise Model Calculations VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Att Autos: 66.51 -15.70 0.31 -1.20 -4.65 0.000 0.0 Medium Trucks: 77.72 -26.66 0.34 -1.20 -4.65 0.000 0.0 Medium Trucks: 82.99 -28.16	Near/Far La	ne Distance:	36 feet		-				Dav	Evenina	Niaht	Daily
Barrier Type (IV) Oto feet Heavy Trucks: 74.4% 5.9% 19.7% 5.0 Centerline Dist. to Diserver: 50.0 feet Noise Source Elevations (in feet) Autos: 0.000 Barrier Type (IV) Diserver: 5.0 feet Autos: 0.000 Medium Trucks: 2.297 Observer Height (Above Pad): 5.0 feet Autos: 8.004 Grade Adjustment: 0.0 Road Elevation: 0.0 feet Autos: 46.915 Heavy Trucks: 46.726 WehicleType REMEL Traffic Flow Distance Friesnel Barrier Atten Bern Atten VehicleType REMEL Traffic Flow Distance Friesnel Barrier Atten Bern Atten VehicleType Leg Peak Hour Leg Day Leg Night Ldn CNO0 0.00 Medium Trucks: 82.99 -28.16 0.34 -1.20 -5.43 0.000 0.00 Unnitigated Noise Levels (without Topo and barrier atternuation) Vehicle Noise: 50.2 48.1 42.6 43.8 50.6	Site Data									•		
Barrier Type (0-Wall, 1-Berm): 0.0 Heavy Trucks: 74.4% 5.9% 19.7% 5.0 Centerline Dist. to Desriver: 50.0 feet Noise Source Elevations (in feet) Autos: 0.000 Barrier Distance to Observer: 0.0 feet Autos: 0.000 Medium Trucks: 2.297 Pad Elevation: 0.0 feet Autos: 8.004 Grade Adjustment: 0.0 Road Grade: 0.0% Autos: 46.726 Heavy Trucks: 46.915 FHWA Noise Model Calculations UehileType REMEL Traffic Flow Distance Friesnel Barrier Atten Berm Att Autos: 66.51 -15.70 0.31 -1.20 -4.65 0.000 0.0 Medium Trucks: 77.72 -26.66 0.34 -1.20 -4.65 0.000 0.0 Medium Trucks: 82.99 -28.16 0.34 -1.20 -5.43 0.000 0.0 Medium Trucks: 50.2 48.1 42.6 43.8 50.9 46.9 46.9 46.9	Ba	rrior Hoiaht	0.0 feet			Me	edium Tr	ucks:	74.3%	5.2%	20.5%	6 7.059
Centerline Dist. to Dbserver: 50.0 feet Centerline Dist. to Observer: 50.0 feet Deserver Height (Above Pad): 5.0 feet Autos: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: 90.0 degrees Right View: 90.0 degrees VehicleType REMEL VehicleType REMEL Nate: 66.51 -15.70 0.31 -1.20 -4.65 Medium Trucks: 82.99 -28.16 0.34 -1.20 -4.67 Medium Trucks: 82.99 -28.16 0.34 -1.20 -5.43 Outos: 49.9 VehicleType Leq Peak Hour Leq Verving Leq Night Led Night Leq Night Log -5.43 Medium Trucks: 50.2 48.1 42.6 Autos: 50.9 VehicleNoise: 56.6 5						F	leavy Tr	ucks:	4.4%	5.9%	19.7%	5.009
Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees Vehicle Type REMEL Traffic Flow Distance Autos: 66.51 -15.70 0.31 -1.20 -4.65 Medium Trucks: 77.72 -26.66 0.34 -1.20 -4.65 Medium Trucks: 82.99 -28.16 0.34 -1.20 -5.43 Outos: 49.9 VehicleType Leq Page Hour Leq Page Leq Night Lane Equivalence Chele Medium Trucks: 50.2 48.1 42.6 43.3 50.6 48.1 42.6 43.3 50.9 <												
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 Heavy Trucks: 8.004 Grade Adjustment: 0.0 Road Elevation: 0.0 feet Advice: 46.915 Heavy Trucks: 46.726 Right View: -90.0 degrees Medium Trucks: 46.726 Heavy Trucks: 46.726 VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Attain Autos: 66.51 -15.70 0.31 -1.20 -4.65 0.000 0.0 Medium Trucks: 77.72 -26.66 0.34 -1.20 -4.67 0.000 0.0 Unitigated Noise Levels (without Topo and barrier attenuation) Use Night Left Night CNEL VehicleType Leg Pask Hour Leg Day Leg Vening Leg Night Ldn CNEL Autos: 49.9 47.5 45.7					N	oise So				eet)		
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) Lane Equivalent Distance (in feet) Lane Equivalent Distance (in feet) Autos: 46.915 Road Grade: 0.0% Autos: 46.726 Heavy Trucks: 46.726 FHWA Noise Model Calculations VehicleType REMEL Traffic Flow Distance Friesnel Barrier Atten Berm Att Addum Trucks: 66.51 -15.70 0.31 -1.20 -4.65 0.000 0 Medium Trucks: 77.72 -26.66 0.34 -1.20 -5.43 0.000 0 Medium Trucks: 82.99 -28.16 0.34 -1.20 -5.43 0.000 0 Unnitigated Noise Levels (without Topo and barrier atternuation) VehicleType Leq Peak Hour Leq Previning Leq Night Ldn CNEL Autos: 50.2 48.1 42.6 43.8 50.9 46.9 47.4 54.6 44.9 <t< td=""><td>Barrier Distance</td><td>to Observer:</td><td>0.0 feet</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>	Barrier Distance	to Observer:	0.0 feet									
Pad Elevation: 0.0 teet Heavy Trucks: 8.04 Grade Adjustment. 0.0 Road Elevation: 0.0 teet Lane Equivalent Distance (in feet) Road Grade Xalps -90.0 degrees Heavy Trucks: 46.744 FHWA Noise Model Calculations Finite Road Fresnel Barrier Atten Berm Att VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Att Matum Trucks: 77.72 -26.66 0.34 -1.20 -4.65 0.000 0. Heavy Trucks: 82.99 -28.16 0.34 -1.20 -4.67 0.000 0. Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Day Leq Day Leq Night Ldn CNEL Autos: 49.9 47.5 45.7 43.4 50.6 44.9 Heavy Trucks: 50.2 48.1 42.6 43.8 50.9 44.9 </td <td>Observer Height</td> <td>Above Pad):</td> <td>5.0 feet</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>Our de Ad</td> <td></td> <td></td>	Observer Height	Above Pad):	5.0 feet							Our de Ad		
Road Grade 0.0% Autos: 46.915 Left View: -90.0 degrees Medium Trucks: 46.726 FHWA Noise Model Calculations Heavy Trucks: 46.744 VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berner Atten Autos: 66.51 -15.70 0.31 -1.20 -4.65 0.000 0. Medium Trucks: 77.72 -26.66 0.34 -1.20 -4.67 0.000 0. Heavy Trucks: 82.99 -28.16 0.34 -1.20 -5.43 0.000 0. Unmitigate Moise Levels (without Topo and barrier attenuation) Heavy Trucks: 43.4 50.6 9.4 Autos: 49.9 47.5 45.7 43.4 50.6 9.4 Medium Trucks: 50.2 48.1 42.6 43.8 50.9 9.4 Heavy Trucks: 50.2 51.9 46.9 47.4 54.6 9.4 Vehicle Noise: 56.6 54.4<		· · · ·				Heav	y Trucks	8.0	04	Grade Adj	ustmer	t: 0.0
Left View: -90.0 degrees Medium Trucks: 46.726 Right View: 90.0 degrees Heavy Trucks: 46.744 FHWA Noise Model Calculations Emerit Flow Distance Finite Road Fresnel Barrier Atten Berm Atten VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 66.51 -15.70 0.31 -1.20 -4.65 0.000 0. Medium Trucks: 77.72 -26.66 0.34 -1.20 -4.67 0.000 0. Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Deak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 49.9 47.5 45.7 43.4 50.6 45.9 Medium Trucks: 50.2 48.1 42.6 43.8 50.9 45.9 Heavy Trucks: 56.6 54.4 50.2 50.0 57.2 45.0	Ro	ad Elevation:	0.0 feet		L	ane Equ	uivalent	Distanc	e (in	feet)		
Right View: 90.0 degrees Heavy Trucks: 46.744 FHWA Noise Model Calculations Heavy Trucks: 46.744 VehicleType REIMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Att Autos: 66.51 -15.70 0.31 -1.20 -4.65 0.000 0. Medium Trucks: 77.72 -26.66 0.34 -1.20 -4.67 0.000 0. Heavy Trucks: 82.99 -28.16 0.34 -1.20 -5.43 0.000 0. Unmitgated Noise Levels (without Topo and barrier attenuation) Leq Right Ldn CNEL VehicleType Leg Peak Hour Leg Day Leg Pening Leg Night Ldn CNEL Autos: 49.9 47.5 45.7 43.4 50.6 54.9 Heavy Trucks: 50.2 48.1 42.6 43.8 50.9 54.6 54.9 56.6 54.4 50.0 57.2 55.0		Road Grade:	0.0%				Autos	: 46.9	15			
FHWA Noise Model Calculations FHWA Noise Model Calculations VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Att Autos: 66.51 -15.70 0.31 -1.20 -4.65 0.000 0.0 Medium Trucks: 77.72 -26.66 0.34 -1.20 -4.67 0.000 0.0 Heavy Trucks: 82.99 -28.16 0.34 -1.20 -5.43 0.000 0.0 Unnitigated Noise Levels (without Topo and barrier attenuation) Leq Evening Leq Night Ldn CNEL VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 49.9 47.5 45.7 43.4 50.6 9 4 Heavy Trucks: 50.2 48.1 42.6 43.8 50.9 9 4 Heavy Trucks: 54.0 51.9 46.9 47.4 54.6 54.0 55.6 54.4 50.2 50.0		Left View:	-90.0 degrees			Mediur	n Trucks	s: 46.7	26			
VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Bern Atten Autos: 66.51 -15.70 0.31 -1.20 -4.65 0.000 0.0 Medium Trucks: 77.72 -26.66 0.34 -1.20 -4.67 0.000 0. Heavy Trucks: 82.99 -26.16 0.34 -1.20 -5.43 0.000 0. Unmitigated Noise Levels (without Topo and barrier attenuation) -1.20 -5.43 0.000 0. VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 49.9 47.5 45.7 43.4 50.6 9 4 Medium Trucks: 50.2 48.1 42.6 43.8 50.9 4 Heavy Trucks: 54.0 51.9 46.9 47.4 54.6 4 Vehicle Noise: 56.6 54.4 50.2 50.0 57.2 4		Right View:	90.0 degrees			Heav	y Trucks	: 46.7	44			
Autos: 66.51 -15.70 0.31 -1.20 -4.65 0.000 0. Medium Trucks: 77.72 -26.66 0.34 -1.20 -4.67 0.000 0. Heavy Trucks: 82.99 -28.16 0.34 -1.20 -4.67 0.000 0. Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leg Peak Hour Leg Day Leg Evening Leg Night Ldn CNEL Autos: 49.9 47.5 45.7 43.4 50.6 9 Medium Trucks: 50.2 48.1 42.6 43.8 50.9 9 Heavy Trucks: 54.0 51.9 46.9 47.4 54.6 9 Vehicle Noise: 56.6 54.4 50.2 50.0 57.2 3	FHWA Noise Mod	el Calculations	;		-							
Medium Trucks: 77.72 -26.66 0.34 -1.20 -4.87 0.000 0 Heavy Trucks: 82.99 -28.16 0.34 -1.20 -5.43 0.000 0 Unmitigated Noise Levels (without Topo and barrier attenuation) VerbicleType Leg Peak Hour Leg Day Leg Night Ldn CNEL Autos: 49.9 47.5 45.7 43.4 50.6 4edium Trucks: 50.9 4edium Trucks: 51.9 46.9 47.4 54.6 4edium Trucks: 56.6 54.4 50.0 57.2 4edium Trucks: 50.0 57.2 50.0 57.2 50.0 57.2 50.0 57.2 50.0 57.2 50.0	VehicleType	REMEL	Traffic Flow	Distand	e	Finite	Road	Fresn	e/	Barrier Att	en Be	erm Atten
Heavy Trucks: 82.99 -28.16 0.34 -1.20 -5.43 0.000 0. Unmitigated Noise Levels (without Topo and barrier attenuation) Leq Day Leq Evening Leq Night Ldn CNEL VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 49.9 47.5 45.7 43.4 50.6 24 Medium Trucks: 50.2 48.1 42.6 43.8 50.9 44.9 Heavy Trucks: 54.0 51.9 46.9 47.4 54.6 24.6 Vehicle Noise: 56.6 54.4 50.2 50.0 57.2 34.5	Autos:	66.51	-15.70	1	0.31		-1.20		4.65	0.0	000	0.00
Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 49.9 47.5 45.7 43.4 50.6 4 Medium Trucks: 50.2 48.1 42.6 43.8 50.9 4 Heavy Trucks: 54.0 51.9 46.9 47.4 54.6 4 Vehicle Noise: 56.6 54.4 50.2 50.0 57.2 4	Medium Trucks:	77.72	-26.66		0.34		-1.20		4.87	0.0	000	0.00
VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 49.9 47.5 45.7 43.4 50.6 9 Medium Trucks: 50.2 48.1 42.6 43.8 50.9 9 Heavy Trucks: 54.0 51.9 46.9 47.4 54.6 9 Vehicle Noise: 56.6 54.4 50.2 50.0 57.2 9	Heavy Trucks:	82.99	-28.16		0.34		-1.20		5.43	0.0	000	0.00
Autos: 49.9 47.5 45.7 43.4 50.6 9 Medium Trucks: 50.2 48.1 42.6 43.8 50.9 9 Heavy Trucks: 54.0 51.9 46.9 47.4 54.6 9 Vehicle Noise: 56.6 54.4 50.2 50.0 57.2 9				arrier at	tenu	ation)						
Medium Trucks: 50.2 48.1 42.6 43.8 50.9 44.9 Heavy Trucks: 54.0 51.9 46.9 47.4 54.6 54.6 54.6 54.6 54.6 54.6 54.6 54.6 54.6 54.6 54.7 50.0 57.2 54.6 54.7 54.6 54.7 54.6 54.7 54.6 54.7 54.6 54.7 54.7 54.6 54.7 54.6 54.7 54.6 54.7 54.7 54.6 54.7 54.6 54.7 54.6 54.7 54.7 54.6 54.7 54.7 54.6 54.7 54.7 54.6 54.7 54.7 54.6 54.7<	1				q Eve		Leq I					
Heavy Trucks: 54.0 51.9 46.9 47.4 54.6 51.9 Vehicle Noise: 56.6 54.4 50.2 50.0 57.2 51.9												51.
Vehicle Noise: 56.6 54.4 50.2 50.0 57.2												51.
				-								54.
				4.4		50.2		50.0		57.2	2	57.
Centerline Distance to Noise Contour (in feet) 70 dBA 65 dBA 60 dBA 55 dBA	Centerline Distan	ce to Noise Co	ntour (in feet)		70 di	DA DA	65 /	ND A		SO dBA	5	5 dBA
I dn: 7 15 33 70			1.			_ <i>n</i> -1					5	
CNEL: 7 16 34 73			_					-				
			0.11					-				

Tuesday, March 12, 2019

-										
	o: EAC With F						lame: Bar mber: 122			
	e: Patterson A nt: n/o Walnut					JOD INU	mber: 122	18		
Road Segme	nt: n/o vvainut	51.								
	SPECIFIC IN	PUT DATA						DEL INPUTS	5	
Highway Data				S	ite Con	ditions (l	Hard = 10,	Soft = 15)		
Average Daily	Traffic (Adt):	601 vehicle	s				Aut	os: 15		
Peak Hour	Percentage:	10%			Mee	dium Truc	ks (2 Axle	s): 15		
Peak H	our Volume:	60 vehicles			Hea	avy Truck	is (3+ Axle	s): 15		
Ve	hicle Speed:	40 mph		L.	ehicle l	<i>li</i> v				
Near/Far La	ne Distance:	36 feet		-		cleType	Da	v Evening	Night	Daily
Site Data				-				6% 11.3%	·	36.919
	wier Height	0.0 feet			Me	dium Tru				6.57%
Barrier Type (0-W	rier Height:	0.0 feet				leavy Tru		4% 5.9%		6.53%
Centerline Dis	. ,	50.0 feet								
Centerline Dist.		50.0 feet		۸	loise So		vations (i	,		
Barrier Distance		0.0 feet				Autos:				
Observer Height (5.0 feet				n Trucks:				
	ad Elevation:	0.0 feet			Heav	y Trucks:	8.004	Grade Adj	ustment: 0	0.0
	ad Elevation:	0.0 feet		1	ane Equ	ivalent	Distance (in feet)		
	Road Grade:	0.0%				Autos		,		
,	Left View:	-90.0 degree	^		Modiur	n Trucks:				
	Right View:	90.0 degree				v Trucks:				
	rugin view.	Solo degree	3		mour	, 1140110.	10.7 11			
FHWA Noise Mode	el Calculation:	5								
VehicleType	REMEL	Traffic Flow	Dista	nce	Finite		Fresnel	Barrier Atte	en Berm	Atten
Autos:	66.51	-14.14		0.31		-1.20	-4.0		00	0.00
Medium Trucks:	77.72	-25.36		0.34		-1.20	-4.8	37 0.0	00	0.00
Heavy Trucks:	82.99	-25.39		0.34		-1.20	-5.4	43 0.0	00	0.00
Unmitigated Noise	e Levels (with	out Topo and b	oarrier	atteni	uation)					
VehicleType	Leq Peak Hou	r Leq Day	L	eq Ev	ening	Leq N	light	Ldn	CNE	L
Autos:	51.	5 4	9.1		47.2		45.0	52.2		52.
Medium Trucks:	51.	5 4	9.4		43.9		45.1	52.2		52.4
Heavy Trucks:	56.	.7 5	4.7		49.6		50.2	57.4		57.0
Vehicle Noise:	58	.8 5	6.6		52.3		52.2	59.4		59.
Centerline Distand	ce to Noise Co	ontour (in feet)								
				70 d	BA	65 d	BA	60 dBA	55 dE	ЗA
		,	dn:	10		21		46	99	
		L	un.	10	,	21		40	33	

	FHV	VA-RD-77-108	HIGHW	AY N	IOISE PR	EDICTI	ON MO	DEL			
	 EAC With F Patterson A n/o Placenti 	.v.					Name: I umber:				
	SPECIFIC IN	PUT DATA							L INPUT	s	
Highway Data				3	Site Con	ditions	(Hard =	10, So	oft = 15)		
Average Daily	Traffic (Adt):	457 vehicle	s					Autos:	15		
Peak Hour I	Percentage:	10%			Med	dium Tru	icks (2 A	xles):	15		
Peak Ho	our Volume:	46 vehicles			Hea	avy Truc	:ks (3+ A	xles):	15		
Vel	nicle Speed:	40 mph			Vehicle N	Aiy.					
Near/Far Lar	ne Distance:	36 feet		Ľ		cleType		Day	Evening	Night	Daily
Site Data				-	VCIII			68.6%	•		81.54%
Bar	rier Height:	0.0 feet			Me	dium Tr	ucks:	74.3%	5.2%	20.5%	9.36%
Barrier Type (0-Wa		0.0			h	leavy Tr	ucks:	74.4%	5.9%	19.7%	9.10%
Centerline Dis	. ,	50.0 feet		-							
Centerline Dist. t		50.0 feet		'	Voise So				eet)		
Barrier Distance t		0.0 feet				Autos		000			
Observer Height (/	Above Pad):	5.0 feet				n Trucks		297	Our de Ad		
	d Elevation:	0.0 feet			Heav	y Trucks	5: 8.0	004	Grade Ad	ustmen	. 0.0
Roa	d Elevation:	0.0 feet		1	Lane Equ	iivalent	Distan	e (in	feet)		
F	Road Grade:	0.0%				Autos	s: 46.	915			
	Left View:	-90.0 degree	s		Mediun	n Trucks	s: 46.	726			
	Right View:	90.0 degree	s		Heav	y Trucks	s: 46.	744			
FHWA Noise Mode	l Calculations	s									
VehicleType	REMEL	Traffic Flow	Distan	ce	Finite	Road	Fresh	el	Barrier Att	en Be	rm Atten
Autos:	66.51	-15.62		0.31	1	-1.20		-4.65	0.0	000	0.000
Medium Trucks:	77.72	-25.02		0.34	1	-1.20		-4.87	0.0	000	0.000
Heavy Trucks:	82.99	-25.14		0.34	1	-1.20		-5.43	0.0	000	0.000
Unmitigated Noise											
,1	Leq Peak Hou	1 1		eq E∖	/ening	Leq	Night		Ldn	-	NEL
Autos:	50.	-	7.6		45.8		43.5		50.7		51.0
Medium Trucks:	51.		9.8		44.2		45.4		52.6	-	52.7
Heavy Trucks:	57.	-	4.9		49.9		50.4		57.6	-	57.8
Vehicle Noise:	58.	.8 5	6.6		52.1		52.2		59.4	1	59.6
Centerline Distanc	e to Noise Co	ontour (in feet)									
				70 c		65 (6	60 dBA		dBA
			.dn:	10	-	2			46		99
		CA	EL:	1(D	2	2		47		102

	FH\	WA-RD-77-108	HIGHW	AY N	OISE PF	REDICTIO	N MO	DEL			
Scenar	io: EAC With	Project				Project N	lame:	Barker			
	e: Harvill Av.					Job Nur	mber:	12218			
Road Segme	nt: s/o Cajalco	о Ехру.									
	SPECIFIC IN	NPUT DATA								s	
Highway Data				3	ite Con	ditions (F			,		
Average Daily	, ,	21,050 vehicl	es					Autos:	15		
	Percentage:	10%				dium Truc			15		
	lour Volume:	2,105 vehicle	S		He	avy Truck	s (3+ A	axies):	15		
	hicle Speed:	50 mph		V	/ehicle l	Nix					
Near/Far La	ne Distance:	48 feet			Vehi	icleType		Day	Evening	Night	Daily
Site Data						Au	itos:	68.6%	11.3%	20.1%	87.48%
Ba	rrier Height:	0.0 feet			Me	edium Tru	cks:	74.3%	5.2%	20.5%	7.179
Barrier Type (0-W	/all, 1-Berm):	0.0			ŀ	leavy Tru	cks:	74.4%	5.9%	19.7%	5.35%
Centerline Di		59.0 feet		٨	loise Sc	ource Elev	vation	s (in fe	et)		
Centerline Dist.		59.0 feet				Autos:	0.0	000			
Barrier Distance		0.0 feet			Mediur	n Trucks:	2.3	297			
Observer Height (,	5.0 feet			Heav	v Trucks:	8.0	004	Grade Ad	justment	0.0
	ad Elevation:	0.0 feet		-	_						
	ad Elevation:	0.0 feet		L	ane Equ	uivalent L			eet)		
	Road Grade:	0.0%				Autos:		129			
	Left View:	-90.0 degre				n Trucks:		966			
	Right View:	90.0 degre	es		Heav	y Trucks:	53.	982			
FHWA Noise Mod											
VehicleType	REMEL	Traffic Flow	Dista		Finite		Fresr		Barrier Att		m Atten
Autos:	70.20			-0.62		-1.20		-4.69		000	0.00
Medium Trucks:	81.00			-0.60		-1.20		-4.88		000	0.00
Heavy Trucks:	85.38			-0.60		-1.20		-5.35	0.0	000	0.00
Unmitigated Nois								1			
VehicleType	Leq Peak Hou			.eq Ev		Leq N			Ldn		NEL
Autos:		3.7	66.3		64.5		62.2		69.4	-	69.
Medium Trucks:			66.6		61.1		62.3		69.4 72.4	-	69.
Heavy Trucks:		.8	69.7		64.7		65.2				72.
Vehicle Noise:		1.8	72.6		68.5		68.2		75.4	1	75.
Centerline Distan	ce to Noise C	ontour (in fee)	70 d	RΔ	65 dE	34	6	0 dBA	55	dBA
			I dn:	13		293			631		360
		0	NFL:	14	-	304			654		409
		0.		.4		304			004	1,	

	FHV	VA-RD-77-108 I	IIGHW	AY NO	DISE PF	REDICTIO	ом мо	DEL			
Scenari	p: EAC With F	roject		-		Project N	Vame:	Barker			
Road Nam	e: Harvill Av.					Job Nu	mber:	12218			
Road Segmen	it: s/o Rider Si	t.									
	SPECIFIC IN	PUT DATA								s	
Highway Data				S	ite Con	ditions (I	Hard =	10, So	oft = 15)		
Average Daily	Traffic (Adt):	18,191 vehicles	s					Autos:	15		
Peak Hour	Percentage:	10%			Mee	dium Truo	cks (2 A	Axles):	15		
Peak H	our Volume:	1,819 vehicles			Hea	avy Truck	ks (3+ A	Axles):	15		
	nicle Speed:	50 mph		V	ehicle I	Mix					-
Near/Far Lar	ne Distance:	48 feet		-		icleType		Dav	Evening	Night	Daily
Site Data		-					utos:	68.6%	•		87.449
Bar	rier Height:	0.0 feet			Me	edium Tru	icks:	74.3%	5.2%	20.5%	7.20%
Barrier Type (0-W	•	0.0			F	leavy Tru	icks:	74.4%	5.9%	19.7%	5.35%
Centerline Dis		59.0 feet		-							
Centerline Dist. t		59.0 feet		N	oise So	ource Ele			eet)		
Barrier Distance t	o Observer:	0.0 feet				Autos:		000			
Observer Height ()	Above Pad):	5.0 feet				n Trucks:		297	Grade Ad	i colmont	
Pa	d Elevation:	0.0 feet			Heav	y Trucks:	8.0	004	Grade Adj	usuneni	0.0
Roa	d Elevation:	0.0 feet		L	ane Equ	uivalent	Distan	ce (in	feet)		
F	Road Grade:	0.0%				Autos:	54.	129			
	Left View:	-90.0 degrees	5		Mediur	n Trucks:	53.	966			
	Right View:	90.0 degrees	s		Heav	y Trucks:	53.	982			
FHWA Noise Mode	l Calculation	s									
VehicleType	REMEL	Traffic Flow	Dista	nce	Finite	Road	Fresr	nel	Barrier Att	en Ber	m Atten
Autos:	70.20	-0.28		-0.62		-1.20		-4.69	0.0	000	0.00
Medium Trucks:	81.00	-11.12		-0.60		-1.20		-4.88	0.0	000	0.00
Heavy Trucks:	85.38	-12.41		-0.60		-1.20		-5.35	0.0	000	0.00
Unmitigated Noise	Levels (with	out Topo and L									
	Leq Peak Hou			.eq Eve		Leq N			Ldn		NEL
Autos:	68.		5.7		63.8		61.6		68.8		69.
Medium Trucks:	68.		6.0		60.5		61.6		68.8	-	69.
Heavy Trucks:	71.		9.1		64.1		64.6		71.8		72.
Vehicle Noise:	74		2.0		67.8		67.6	6	74.8	3	75.
Centerline Distanc	e to Noise Co	ontour (in feet)		70 -11	04	05 -1	04		0.104		-/0.4
		,	de	70 dl		65 d			60 dBA		dBA
			.dn:			26			573		236
		CN	EL:	128	5	270	b		594	1,	280

Tuesday, March 12, 2019

		/A-RD-77-108 I									
Scenario: E		roject					<i>lame:</i> Ba				
Road Name: H						Job Nu	mber: 12	218			
Road Segment: s	/o Placentia	a St.									
	CIFIC IN	PUT DATA		_	0				INPUTS		
Highway Data					Site Con	ditions (Hard = 10		,		
Average Daily Trafi	, ,	12,693 vehicles	6					itos:	15		
Peak Hour Perc		10%					cks (2 Axl		15		
Peak Hour	Volume:	1,269 vehicles			He	avy Truck	(3+ Axl	les):	15		
Vehicle	Speed:	50 mph			Vehicle I	Лix					
Near/Far Lane D	istance:	48 feet				cleType	Da	ay E	vening	Night	Daily
Site Data						A	itos: 68	3.6%	11.3%	20.1%	88.01
Barrier	Heiaht:	0.0 feet			Me	dium Tru	icks: 74	1.3%	5.2%	20.5%	6.939
Barrier Type (0-Wall,		0.0			F	leavy Tru	icks: 74	1.4%	5.9%	19.7%	5.069
Centerline Dist. to	,	59.0 feet		-	Noiso Sa	urco Ela	vations (in foo	F]		
Centerline Dist. to O	bserver:	59.0 feet		H	NUISE SC	Autos:			9		
Barrier Distance to O	bserver:	0.0 feet			Modiu	n Trucks		-			
Observer Height (Abo	ve Pad):	5.0 feet				v Trucks.		-	rade Adju	istmont	0.0
Pad E	levation:	0.0 feet			neav	y mucks.	0.00	4 0	raue Auji	isuneni.	0.0
Road E	levation:	0.0 feet		1	Lane Equ	livalent	Distance	(in fee	et)		
Road	Grade:	0.0%				Autos:	54.12	9			
Le	eft View:	-90.0 degrees	6		Mediur	n Trucks.	53.96	6			
Rig	ht View:	90.0 degrees	6		Heav	y Trucks:	53.98	2			
FHWA Noise Model Ca	alculations	;									
VehicleType R	REMEL	Traffic Flow	Distar	псе	Finite	Road	Fresnel	Bá	arrier Atte	n Ber	m Atter
Autos:	70.20	-1.81		-0.62	2	-1.20	-4	.69	0.00	00	0.00
Medium Trucks:	81.00	-12.85		-0.60	0	-1.20	-4	.88	0.00	00	0.00
Heavy Trucks:	85.38	-14.22		-0.60	0	-1.20	-5	.35	0.00	00	0.00
Unmitigated Noise Le											
	Peak Hour			eq Ei	vening	Leq N	•	L	dn	CI	VEL
Autos:	66.		4.1		62.3		60.1		67.3		67
Medium Trucks:	66.		4.3		58.7		59.9		67.1		67
Heavy Trucks:	69.4		7.3		62.3		62.8		70.0		70
Vehicle Noise:	72.	4 7	0.3		66.2		65.9		73.1		73
Centerline Distance to	Noise Co	ntour (in feet)	1								
				70 0		65 d			dBA		dBA
		L	dn:	9	5	20			41	-	49 83
		CN		9		21			56		

	FH\	VA-RD-77-108	HIGHW	VAY N	IOISE PR	EDICTI	ON MOI	DEL			
Road Nan	io: EAC With F ne: Harvill Av. nt: s/o Orange						Name: E umber: 1				
SITE	SPECIFIC IN	IPUT DATA				N	OISE N	IODE	L INPUT	S	
Highway Data				:	Site Cond	ditions	(Hard =	10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	12,374 vehicle	es				A	Autos:	15		
Peak Hour	Percentage:	10%			Med	lium Tru	icks (2 A	xles):	15		
Peak H	lour Volume:	1,237 vehicles	S		Hea	avy Truc	ks (3+ A	xles):	15		
Ve	hicle Speed:	50 mph		-	Vehicle N	Niv					
Near/Far La	ne Distance:	48 feet		-		cleType		Day	Evening	Night	Daily
Site Data				-	v on m			68.6%	~		88.01%
Pa	rrier Height:	0.0 feet			Me	dium Tr	ucks:	74.3%	5.2%	20.5%	
Barrier Type (0-W		0.0			н	leavy Tr	ucks:	74.4%	5.9%	19.7%	5.06%
Centerline Di	. ,	59.0 feet		H	Noise So				- 41		
Centerline Dist.	to Observer:	59.0 feet		-	Noise So	Autos			eet)		
Barrier Distance	to Observer:	0.0 feet			1 4 m - 15 - 10	Autos 1 Trucks					
Observer Height	(Above Pad):	5.0 feet							Crada Ad	i un tem ne tet	
P	ad Elevation:	0.0 feet			Heavy	/ Trucks	8.0	104	Grade Adj	usunen	. 0.0
Ro	ad Elevation:	0.0 feet		1	Lane Equ	iivalent	Distanc	e (in i	feet)		
	Road Grade:	0.0%				Autos	: 54.1	29			
	Left View:	-90.0 degree	es		Mediun	n Trucks	s: 53.9	966			
	Right View:	90.0 degree	es		Heavy	/ Trucks	: 53.9	82			
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Dista	nce	Finite I	Road	Fresn	el	Barrier Att	en Ber	m Atten
Autos:	70.20	-1.92		-0.62	2	-1.20		4.69	0.0	000	0.000
Medium Trucks:	81.00	-12.96		-0.60	0	-1.20		4.88	0.0	000	0.000
Heavy Trucks:	85.38	-14.33		-0.60	0	-1.20		-5.35	0.0	000	0.000
Unmitigated Nois	e Levels (with	out Topo and	barrier	atten	uation)						
VehicleType	Leq Peak Hou			Leg Ev	vening	Leq I			Ldn		NEL
Autos:	66		64.0		62.2		59.9		67.1		67.5
Medium Trucks:	66		64.2		58.6		59.8		67.0		67.1
Heavy Trucks:	69	-	67.2		62.2		62.7		69.9		70.1
Vehicle Noise:	72	.3	70.2		66.1		65.8		73.0)	73.2
Centerline Distan	ce to Noise Co	ontour (in feet)							T	
			∟	70 c		65 0		6	0 dBA		dBA
			Ldn:	9		20			433		33
		CI	VEL:	9	7	20	8(449	g	67

Tuesday, March 12, 2019

Scenario: EAC With Project Project Name: Barker Road Name: Harvill Av. Job Number: 12218 Road Segment: s/o A St. Site Specific INPUT DATA Site Specific INPUT DATA NOISE MODEL INPUTS Highway Data Site Conditions (Hard = 10, Soft = 15)	
Highway Data Site Conditions (Hard = 10, Soft = 15)	
Average Daily Traffic (Adt): 16,584 vehicles Autos: 15 Peak Hour Percentage: 10% Medium Trucks (2 Axles): 15	
Peak Hour Volume: 1,658 vehicles Heavy Trucks (3+ Axles): 15	
Vahiala Spaad: 50 mph	
Near/Far Lano Distance: 48 feet	
Venicle Type Day Evening	Night Daily
oko butu	20.1% 87.99%
Barrier Height: 0.0 feet Medium Trucks: 74.3% 5.2%	20.5% 6.96%
barrier Type (0-Waii, 1-berrii). 0.0	19.7% 5.05%
Centerline Dist. to Barrier: 59.0 feet Noise Source Elevations (in feet)	
Centerline Dist. to Observer: 59.0 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 Adju	stment: 0.0
Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Lane Equivalent Distance (in feet)	
Left View: -90.0 degrees Medium Trucks: 53.966 Right View: 90.0 degrees Heavy Trucks: 53.982	
FHWA Noise Model Calculations	
VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten	n Berm Atten
Autos: 70.20 -0.65 -0.62 -1.20 -4.69 0.00	0 0.000
Medium Trucks: 81.00 -11.67 -0.60 -1.20 -4.88 0.00	0 0.000
Heavy Trucks: 85.38 -13.07 -0.60 -1.20 -5.35 0.00	0 0.00
Unmitigated Noise Levels (without Topo and barrier attenuation)	
VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn	CNEL
Autos: 67.7 65.3 63.5 61.2 68.4	68.8
Medium Trucks: 67.5 65.4 59.9 61.1 68.3	68.4
Heavy Trucks: 70.5 68.4 63.4 63.9 71.1	71.3
Vehicle Noise: 73.6 71.4 67.3 67.1 74.3	74.
Centerline Distance to Noise Contour (in feet) 70 dBA 65 dBA 60 dBA	55 dBA
I dn: 113 244 526	1.134
Lan: 113 244 526 CNEL: 117 253 545	1,134
GIVEL. 117 203 545	1,175

	FHV	/A-RD-77-108	HIGHW	VAY N	OISE PR	EDICTI	ON MO	DEL			
Scenario: EAC		roject				Project					
Road Name: Rider						Job Ni	umber:	12218			
Road Segment: e/o P	atterso	on Av.									
SITE SPECIF	IC IN	PUT DATA							L INPUT	s	
Highway Data				S	Site Con	ditions ((Hard =	10, So	oft = 15)		
Average Daily Traffic (/	Adt):	2,157 vehicle	S					Autos:	15		
Peak Hour Percent	age:	10%			Med	dium Tru	icks (2 A	(xles)	15		
Peak Hour Volu	me:	216 vehicles			Hea	avy Truc	ks (3+ A	(xles)	15		
Vehicle Sp	eed:	40 mph		L.	ehicle N	Nix					
Near/Far Lane Dista	nce:	36 feet		F		cleType		Day	Evening	Night	Daily
Site Data							utos:	68.6%	•		87.66
Barrier Hei	aht	0.0 feet			Me	dium Tr	ucks:	74.3%	5.2%	20.5%	6.92
Barrier Type (0-Wall, 1-Be		0.0			H	leavy Tr	ucks:	74.4%	5.9%	19.7%	5.43
Centerline Dist. to Ba		50.0 feet		-							
Centerline Dist. to Obser	ver:	50.0 feet		^	loise So				eet)		
Barrier Distance to Obser	ver:	0.0 feet				Autos		000			
Observer Height (Above F	ad):	5.0 feet				n Trucks		297	Grade Ad	iustmont	
Pad Eleva	tion:	0.0 feet			Heav	y Trucks	: 8.0	004	Graue Au	Jusuneni	0.0
Road Eleva	tion:	0.0 feet		L	ane Equ	iivalent	Distan	ce (in	feet)		
Road Gr	ade:	0.0%				Autos	: 46.	915			
Left V	ïew:	-90.0 degree	S			n Trucks		726			
Right V	iew:	90.0 degree	S		Heav	y Trucks	46.	744			
FHWA Noise Model Calcu	lations	5									
VehicleType REM	EL	Traffic Flow	Dista	ance	Finite	Road	Fresr	el	Barrier At	en Ber	m Atter
Autos:	66.51	-8.56		0.31		-1.20		-4.65	0.0	000	0.00
	77.72	-19.59		0.34		-1.20		-4.87		000	0.00
Heavy Trucks:	82.99	-20.64		0.34		-1.20		-5.43	0.0	000	0.00
Unmitigated Noise Levels			-		í ,						
VehicleType Leq Pea				Leq Ev		Leq I			Ldn		VEL
Autos:	57.		4.6		52.8		50.6		57.		58
Medium Trucks:	57.		5.2		49.6		50.8		58.		58
Heavy Trucks:	61.		9.4		54.4		54.9		62.		62
Vehicle Noise:	63.		1.7		57.5		57.4		64.	5	64
Centerline Distance to No	ise Co	ntour (in feet)		70 -	DA I	65	JD A		C dBA	57	dDA
		,	.dn:	70 d		65 c 4'			60 dBA 101		dBA 17
			an: FL:	22		4			101 104		17 24

Tuesday, March 12, 2019

	FHW	/A-RD-77-108	HIGH	IWATI	NOISE PR	EDICTIO		EC			
Scenario: EAC						Project N					
Road Name: Place						Job Nur	nber: 1	2218			
Road Segment: e/o P	atterso	on Av.									
SITE SPECIF	IC IN	PUT DATA			011 0					S	
Highway Data					Site Con	ditions (F		· ·	,		
Average Daily Traffic (/		503 vehicle	es					utos:	15		
Peak Hour Percent		10%				dium Truc			15		
Peak Hour Volu		50 vehicles	S		He	avy Truck	s (3+ A)	des):	15		
Vehicle Sp		40 mph		F	Vehicle I	Лix					
Near/Far Lane Dista	nce:	36 feet		F		cleType	L	Day	Evening	Night	Daily
Site Data						Au	tos: 6	8.6%	11.3%	20.1%	82.139
Barrier Hei	aht.	0.0 feet			Me	dium True	cks: 7	4.3%	5.2%	20.5%	9.159
Barrier Type (0-Wall, 1-Be	erm):	0.0			ŀ	leavy Tru	cks: 7	4.4%	5.9%	19.7%	8.72
Centerline Dist. to Ba		50.0 feet			Noise Sc	urce Elev	ations	(in fe	et)		
Centerline Dist. to Obse		50.0 feet				Autos:	0.00	00	í		
Barrier Distance to Obse		0.0 feet			Mediur	n Trucks:	2.29	97			
Observer Height (Above F		5.0 feet			Heav	v Trucks:	8.00)4	Grade Ad	iustmen	t: 0.0
Pad Eleva		0.0 feet		L							
Road Eleva		0.0 feet		L	Lane Eq				eet)		
Road Gr		0.0%				Autos:	46.9				
Left V		-90.0 degree				n Trucks:	46.72				
Right V	'iew:	90.0 degree	es		Heav	y Trucks:	46.74	14			
FHWA Noise Model Calcu											
VehicleType REM		Traffic Flow	Dis	stance	Finite		Fresne		Barrier Att		rm Atten
	66.51	-15.17		0.3		-1.20		4.65		000	0.00
	77.72	-24.70		0.3		-1.20		4.87		000	0.00
Heavy Trucks:	82.99	-24.91		0.3	4	-1.20	-{	5.43	0.0	000	0.00
Unmitigated Noise Levels											
VehicleType Leq Pea				Leq E	vening	Leq Ni	~		Ldn		NEL
Autos:	50.	-	48.0		46.2		43.9		51.1		51.
Medium Trucks:	52.		50.1		44.5		45.7		52.9		53.
Heavy Trucks:	57.		55.1		50.1		50.6		57.9		58.
Vehicle Noise:	59.	0	56.9		52.4		52.5		59.7	7	59.
Centerline Distance to No	ise Co	ntour (in feet)								
			L		dBA	65 dE	BA	6	0 dBA		5 dBA
											103
			Ldn: VFL:		10 1	22 23			48 49		105

	FHV	VA-RD-77-108 I	IIGHWA	Y NO	ISE PR	EDICTI	ON MO	DEL			
Road Nam	io: EAC With F le: Placentia S nt: e/o Dwy. 2					Project Job Ni	Name: umber:				
SITE	SPECIFIC IN	IPUT DATA							L INPUT	s	
Highway Data				Si	te Con	ditions ((Hard =	10, So	oft = 15)		
Average Daily	Traffic (Adt):	1,093 vehicles	6				,	Autos:	15		
Peak Hour	Percentage:	10%			Med	dium Tru	icks (2 A	(xles)	15		
Peak H	lour Volume:	109 vehicles			Hea	avy Truc	ks (3+ A	(xles)	15		
Ve	hicle Speed:	40 mph		Ve	ehicle N	<i>Ni</i> v					
Near/Far La	ne Distance:	36 feet		ve		cleType		Day	Evening	Night	Daily
Site Data								68.6%	~	20.1%	
Bai	rrier Height:	0.0 feet			Ме	dium Tr	ucks:	74.3%	5.2%	20.5%	4.32%
Barrier Type (0-W		0.0			H	leavy Tr	ucks:	74.4%	5.9%	19.7%	4.09%
Centerline Dis	st. to Barrier:	50.0 feet		No	nise So	urce Ele	evation	s (in fi	pet)		
Centerline Dist.	to Observer:	50.0 feet				Autos		000	,		
Barrier Distance	to Observer:	0.0 feet			Mediun	n Trucks		297			
Observer Height (Above Pad):	5.0 feet				v Trucks		004	Grade Ad	iustmen	0.0
Pa	ad Elevation:	0.0 feet									
Roa	ad Elevation:	0.0 feet		La	ane Equ	iivalent			feet)		
1	Road Grade:	0.0%				Autos					
	Left View:	-90.0 degrees	5			n Trucks					
	Right View:	90.0 degrees	5		Heav	y Trucks	: 46.	744			
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Distant	ce	Finite	Road	Fresn	el	Barrier Att	en Be	rm Atten
Autos:	66.51	-11.32		0.31		-1.20		-4.65	0.0	000	0.000
Medium Trucks:	77.72	-24.58		0.34		-1.20		-4.87	0.0	000	0.000
Heavy Trucks:	82.99	-24.82		0.34		-1.20		-5.43	0.0	000	0.000
Unmitigated Noise	e Levels (with	out Topo and b	arrier a	ttenua	ation)						
VehicleType	Leq Peak Hou	r Leq Day	Le	q Eve	ning	Leq I	Vight		Ldn	С	NEL
Autos:	54		1.9		50.0		47.8		55.0		55.3
Medium Trucks:	52		0.2		44.6		45.8		53.0		53.2
Heavy Trucks:	57		5.2		50.2		50.7		57.9		58.1
Vehicle Noise:	59	.9 5	7.7		53.7		53.4	ł	60.6	6	60.8
Centerline Distant	ce to Noise Co	ontour (in feet)									
				70 dB	BA	65 0		e	60 dBA		i dBA
			dn:	12		2	-		54		117
		CN	EL:	12		2	6		57		122

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	FH\	WA-RD-77-108	HIGH	VAY N	OISE PF	REDICTIO	n Moi	DEL				
	e: Patterson /		hange			Project N Job Nun						
	PECIFIC IN	IPUT DATA								s		
Peak Hour I Peak Ho Ver	erage Daily Traffic (Adt): 305 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 31 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 36 feet					ditions (H dium Truci avy Trucks Mix) ks (2 A	Autos: Ixles):	15 15 15			
	e Distance.	30 Teel			Vehi	icleType		Day	Evening	Night	Daily	
Barrier Type (0-Wa	Barrier Height: 0.0 feet arrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet					Autos: 68.6% 11.3% 20.1% 87.5 Medium Trucks: 74.3% 5.2% 20.5% 7.0 Heavy Trucks: 74.4% 5.9% 19.7% 5.0						
Centerline Dist. t Barrier Distance t Observer Height (/ Pa	Centerline Dist. to Barrier: 50,0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet bbserver Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet					Autos: Autos: m Trucks: y Trucks: uivalent D	0.0 2.2 8.0	000 297 004	Grade Ad	iustment	: 0.0	
	Road Grade: Left View: Right View:	0.0% -90.0 degre 90.0 degre				Autos: n Trucks: y Trucks:	46.9 46.7 46.7	726				
FHWA Noise Mode	I Calculation REMEL	s Traffic Flow	Diat	ance	Finite	Dood	Fresn	al	Barrier Att	on Bo	m Atten	
VehicleType Autos: Medium Trucks: Heavy Trucks:	66.51 77.72 82.99	-17.04 -28.00		0.31 0.34 0.34		-1.20 -1.20 -1.20		-4.65 -4.87 -5.43	0.0		0.00 0.00 0.00	
Unmitigated Noise	Levels (with	out Topo and	barrier	atten	uation)							
VehicleType	Leq Peak Hou	ur Leq Da	/	Leq Ev	ening	Leq Ni	ght		Ldn	C	NEL	
Autos: Medium Trucks: Heavy Trucks:	48 48 52		46.2 46.8 50.6		44.3 41.2 45.5		42.1 42.4 46.0		49.3 49.6 53.3	5	49. 49. 53.	
Vehicle Noise:	55	5.2	53.1		48.8		48.7		55.9)	56.	
Centerline Distanc	e to Noise C	ontour (in fee	t)									
		-	Ldn:	70 a	BA	65 dE 12	BA	6	0 dBA 27		dBA 57	
		С	NEL:	6		13			28		59	

	FH\	VA-RD-77-108	HIGH	WAY N	IOISE PR	REDICTIO	N MOD	EL				
Road Nam	io: EA w/o Pro ne: Patterson A nt: n/o Placent		nange			Project N Job Nur						
SITE	SPECIFIC IN	IPUT DATA				NC	ISE M	ODE	L INPUT	S		
Highway Data				:	Site Con	ditions (H	lard = 1	10, Sc	oft = 15)			
Average Daily	Traffic (Adt):	351 vehicle	es				A	utos:	15			
Peak Hour	Percentage:	10%			Med	dium Truc	ks (2 A	xles):	15			
Peak H	lour Volume:	35 vehicles	s		Hea	avy Truck	s (3+ A	xles):	15			
Ve	hicle Speed:	40 mph		H	Vehicle N							
Near/Far La	ne Distance:	36 feet		H		cleType		Day	Evening	Night	Daily	
Site Data					Veni			68.6%	•		87.95%	
					Me	dium Tru		4.3%		20.5%		
	rrier Height:	0.0 feet			Heavy Trucks: 74.3% 5.2% 20.5% 7.0 Heavy Trucks: 74.4% 5.9% 19.7% 5.0							
Barrier Type (0-W Centerline Di		0.0 50.0 feet								10.170	0.007	
Centerline Dist.		50.0 feet		1	Noise So	urce Ele	vations	(in fe	et)			
Barrier Distance		0.0 feet				Autos:	0.0	00				
					Mediun	n Trucks:	2.2	97				
Observer Height	ad Elevation:	5.0 feet			Heav	y Trucks:	8.0	04	Grade Adj	iustment	0.0	
	ad Elevation: ad Elevation:	0.0 feet		-	l ano Fai	uivalent E	Distanc	o (in i	foot)			
	Road Grade:	0.0 feet 0.0%		- F	Lane Ly	Autos:			001)			
	Left View:				Modium	n Trucks:						
	Right View:	-90.0 degree 90.0 degree				y Trucks:						
FHWA Noise Mod	el Calculation	s										
VehicleType	REMEL	Traffic Flow	Dist	ance	Finite	Road	Fresne	el	Barrier Att	en Ber	m Atten	
Autos:	66.51	-16.43		0.3	1	-1.20	-	4.65	0.0	000	0.00	
Medium Trucks:	77.72	-27.39		0.34	4	-1.20	-	4.87	0.0	000	0.00	
Heavy Trucks:	82.99	-28.88		0.34	4	-1.20	-	5.43	0.0	000	0.00	
Unmitigated Nois	e Levels (with	out Topo and	barrie	r atten	uation)							
VehicleType	Leq Peak Hou	ir Leq Day	,	Leg E	vening	Leq N	ight		Ldn	C	VEL	
Autos:	49	.2	46.8		44.9		42.7		49.9)	50.	
Medium Trucks:	49		47.4		41.8		43.0		50.2		50.	
Heavy Trucks:	53		51.2		46.2		46.7		53.9)	54.	
Vehicle Noise:			53.7		49.4		49.3		56.5	5	56	
Centerline Distan	ce to Noise Co	ontour (in feet)	70	10.4	05 -1			0 -10 4		-10.4	
			L day	70 0		65 dE		6	0 dBA		dBA 53	
Ldn:							53 55					
	CNEL:											

Tuesday, March 12, 2019

	FHW	/A-RD-77-108 H	IGHW.	AT N	IOISE PH	EDICTIC		JEL				
	: Harvill Av.	ect w/o Intercha Expy.	nge			Project N Job Nui						
	PECIFIC IN	PUT DATA				NC	DISE N	IODE		s		
Highway Data				1	Site Con	ditions (F	lard =	10, So	oft = 15)			
Average Daily 1	raffic (Adt):	16,837 vehicles						Autos:	15			
Peak Hour I	Percentage:	10%			Me	dium Truc	ks (2 A	xles):	15			
Peak Ho	our Volume:	1,684 vehicles			He	avy Truck	s (3+ A	xles):	15			
Veh	icle Speed:	50 mph			Vehicle I	liv						
Near/Far Lar	e Distance:	48 feet		H		cleTvpe		Day	s): 15 <u>Evening Night E</u> 6% 11.3% 20.1% 87 3% 5.2% 20.5% 7 4% 5.9% 19.7% 5			
Site Data						AL		68.6%	0	· ·		
Bar	rier Height:	0.0 feet			Me	dium Tru	cks:	74.3%	5.2%	20.5	% 7.05%	
Barrier Type (0-Wa		0.0			ŀ	leavy Tru	cks:	74.4%	5.9%	19.7		
Centerline Dis		59.0 feet		1	Noise Sc	urce Ele	vation	s (in fe	eet)			
Centerline Dist. t	o Observer:	59.0 feet				Autos:						
Barrier Distance t		0.0 feet			Mediur	n Trucks:	2.2	97				
Observer Height (A	,	5.0 feet			Heav	v Trucks:	8.0	104	Grade Ad	iustme	nt: 0.0	
	d Elevation:	0.0 feet										
	d Elevation:	0.0 feet		1	Lane Equ	livalent L			feet)			
F	load Grade:	0.0%				Autos:	54.1					
	Left View:	-90.0 degrees				n Trucks:						
	Right View:	90.0 degrees			Heav	y Trucks:	53.9	982				
FHWA Noise Mode	l Calculations	;										
VehicleType	REMEL	Traffic Flow	Distar		Finite		Fresn		Barrier Att		erm Atten	
Autos:	70.20	-0.59		-0.62	-	-1.20		4.69		000	0.00	
Medium Trucks:	81.00	-11.55		-0.60	-	-1.20		4.88		000	0.00	
Heavy Trucks:	85.38	-13.04		-0.60	-	-1.20		-5.35	0.0	000	0.00	
Unmitigated Noise												
<i>,</i> ,	Leq Peak Hou			eq Ev	vening	Leq N	<u> </u>		Ldn		CNEL	
Autos:	67.				63.5		61.3		68.5		68.	
Medium Trucks:	67.		.6		60.0		61.2		68.4		68.	
Heavy Trucks:	70.		1.5		63.4		63.9		71.2	-	71.	
Vehicle Noise:	73.	6 7 [.]	.5		67.4		67.1		74.3	3	74.	
Centerline Distanc	e to Noise Co	ntour (in feet)										
				70 c		65 di		6	60 dBA		5 dBA	
		Lo	in:	11	14	247	r		531		1,144	
		CNE		11		255			550		1.186	

	FHW	A-RD-77-108 F	IIGHWA	Y N	IOISE PF	REDICT	ION MO	DEL			
	Harvill Av.	ect w/o Intercha	nge				Name: I lumber:				
SITE S	PECIFIC INF	PUT DATA				N	IOISE N	/IODE	L INPUT	s	
Highway Data				;	Site Con	ditions	(Hard =	10, So	oft = 15)		
Average Daily T	raffic (Adt): 1	8,088 vehicles					,	Autos:	15		
Peak Hour F		10%			Me	dium Tri	ucks (2 A	(xles)	15		
Peak Ho	ur Volume:	1,809 vehicles			Hea	avy True	cks (3+ A	(xles)	15		
Veh	icle Speed:	50 mph		H	V-6-1-1- 1	<i>a</i>					
Near/Far Lan	e Distance:	48 feet		H	Vehicle I	nix cleType		Day	Evening	Night	Dailu
Site Data				-	veni			68.6%	v	20.1%	Daily 87.95%
				_	M	, dium T		74.3%		20.1%	
	ier Height:	0.0 feet						74.4%		19.7%	
Barrier Type (0-Wa	. ,	0.0			,	icavy n	uons.	74.47	0.070	13.17	0.0070
Centerline Dist Centerline Dist. to		59.0 feet 59.0 feet		1	Noise So	urce E	levation	s (in fe	eet)		
		0.0 feet				Auto	s: 0.0	000			
Barrier Distance to					Mediur	n Truck	s: 2.2	297			
Observer Height (A	d Flevation:	5.0 feet 0.0 feet			Heav	y Truck	s: 8.0	004	Grade Ad	justmen	t: 0.0
	d Elevation:	0.0 feet			Lane Equ	ivalen	t Distan	ce (in	feet)		
	oad Grade:	0.0%		F	Lano Lq.	Auto					
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	Left View:	-90.0 degrees			Modiur	n Truck					
	Right View:	90.0 degrees				y Truck					
FHWA Noise Mode	Calculations			_							
VehicleType	REMEL	Traffic Flow	Distand	ce	Finite	Road	Fresh	el	Barrier Att	en Be	rm Atten
Autos:	70.20	-0.28	-	0.62	2	-1.20		-4.69	0.0	000	0.000
Medium Trucks:	81.00	-11.24	-	0.60	0	-1.20		-4.88	0.0	000	0.000
Heavy Trucks:	85.38	-12.73	-	0.60	0	-1.20		-5.35	0.0	000	0.000
Unmitigated Noise											
	eq Peak Hour			q Ev	vening	Leq	Night		Ldn	-	NEL
Autos:	68.1		5.7		63.8		61.6		68.8		69.1
Medium Trucks:	68.0		5.9		60.3		61.5		68.7		68.9
Heavy Trucks:	70.8		3.8		63.7		64.3		71.5		71.7
Vehicle Noise:	74.0	) 7'	1.8		67.7		67.4		74.6	6	74.9
Centerline Distance	e to Noise Cor	ntour (in feet)	T		1			r			
					dBA		dBA	6	60 dBA		dBA
			dn:	12		-	59		557		,200
		CNI	:L:	12	24	2	68		577	1	,244

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	FH\	VA-RD-77-108	HIGHV	VAY N	OISE PF	EDICTIO	N MO	DEL				
	e: Harvill Av.	ject w/o Interch ia St.	nange			Project N Job Nun						
	PECIFIC IN	IPUT DATA								s		
	Percentage: our Volume:	13,512 vehicle 10% 1,351 vehicle			Mee	ditions (H dium Truci avy Trucks	ks (2 /	Autos: Axles):	15 15 15 15			
Ver Near/Far Lan	icle Speed:	50 mph 48 feet		۱	/ehicle I							
	e Distance.	40 1661			Vehi	cleType		Day	Evening	Night	Daily	
Site Data Barri Barrier Type (0-Wa	r <b>ier Height:</b> all, 1-Berm):	0.0 feet 0.0				Au dium Truc leavy Truc	cks:	68.6% 74.3% 74.4%	11.3% 5.2% 5.9%	20.1% 20.5% 19.7%		
Centerline Dis	t. to Barrier:	59.0 feet			Voise So	urce Elev	ation	s (in fe	et)			
Barrier Distance to Observer Height (A Pa	Conterine Dist. to Observer: 59.0 feet Barrier Distance to Observer: 0.0 feet bserver Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet					Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0 Lane Equivalent Distance (in feet)						
	load Grade: Left View: Right View:	0.0% -90.0 degree 90.0 degree				Autos: n Trucks: y Trucks:	53.	129 966 982				
FHWA Noise Mode	I Calculation	s										
VehicleType Autos:	REMEL 70.20	Traffic Flow -1.55	Dista	ance -0.62	Finite	Road -1.20	Fresr	nel 1 -4.69	Barrier Att 0.0	en Bei 000	m Atten 0.00	
Medium Trucks: Heavy Trucks:	81.00 85.38	-12.51 -14.00		-0.60 -0.60		-1.20 -1.20		-4.88 -5.35		000 000	0.00 0.00	
Unmitigated Noise	Levels (with	out Topo and	barrier	atten	uation)							
VehicleType	Leq Peak Hou	ır Leq Day	/ I	Leg Ev	ening	Leq Ni	ght		Ldn	С	NEL	
Autos:	66	.8	64.4		62.6		60.3	3	67.5	5	67.	
Medium Trucks:	66		64.6		59.1		60.3		67.4		67.	
Heavy Trucks:	69		67.5		62.5		63.0	-	70.2	-	70.	
Vehicle Noise:	72		70.5		66.4		66.2	2	73.4	1	73.	
Centerline Distance	e to Noise Co	ontour (in feet	)	70 -	IDA I	6E -15	2.4	-	0 dBA		dD A	
			Ldn:	70 a 99		65 dE 213			0 dBA 459		dBA 88	
			VEL:	10		213			459 475		024	

	FHV	VA-RD-77-108	HIGH	WAY N	OISE PF	REDICTIO	ON MO	DEL			
Road Nam	e: Harvill Av.	ject w/o Interch	ange			Project N Job Nu					
Road Segme	nt: s/o Orange	Av.									
	SPECIFIC IN	IPUT DATA							L INPUT	S	
Highway Data				s	Site Con	ditions (l	Hard =	10, So	oft = 15)		
Average Daily	Traffic (Adt):	11,469 vehicle	s					Autos:	15		
Peak Hour	Percentage:	10%			Me	dium Truo	cks (2 A	Axles):	15		
Peak H	our Volume:	1,147 vehicles			He	avy Truck	(3+ A	Axles):	15		
	hicle Speed:	50 mph		v	ehicle l	Mix					
Near/Far La	ne Distance:	48 feet		Ē		icleType		Dav	Evening	Night	Daily
Site Data							itos:	68.6%	•		87.95
Pa	rier Heiaht:	0.0 feet			Me	edium Tru	icks:	74.3%	5.2%	20.5%	7.05%
Barrier Type (0-W		0.0			F	leavy Tru	icks:	74.4%	5.9%	19.7%	5.00%
Centerline Di		59.0 feet									
Centerline Dist.		59.0 feet		Λ	loise Sc	ource Ele			eet)		
Barrier Distance		0.0 feet				Autos:		000			
Observer Height (		5.0 feet				n Trucks:		297			
	ad Flevation:	0.0 feet			Heav	y Trucks:	8.	004	Grade Ad	justment.	0.0
Ro	ad Elevation:	0.0 feet		L	ane Eq	uivalent	Distan	ce (in	feet)		
	Road Grade:	0.0%				Autos:	54.	129	í		
	Left View:	-90.0 degree	s		Mediur	n Trucks:	53.	966			
	Right View:	90.0 degree			Heav	y Trucks:	53.	982			
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Dist	ance	Finite	Road	Fresr	nel	Barrier Att	en Ber	m Atten
Autos:	70.20	-2.26		-0.62		-1.20		-4.69	0.0	000	0.00
Medium Trucks:	81.00	-13.22		-0.60		-1.20		-4.88	0.0	000	0.00
Heavy Trucks:	85.38	-14.71		-0.60		-1.20		-5.35	0.0	000	0.00
Unmitigated Noise	e Levels (with	out Topo and I	barrie								
VehicleType	Leq Peak Hou			Leq Ev		Leq N			Ldn		VEL
Autos:	66		3.7		61.9		59.6		66.8		67.
Medium Trucks:	66		3.9		58.4		59.6		66.7		66.
Heavy Trucks:	68	-	6.8		61.8		62.3		69.5		69.
Vehicle Noise:	72		9.8		65.7		65.4	ļ	72.6	6	72.
Centerline Distan	ce to Noise Co	ontour (in feet)		70 d	RΔ	65 d	RA		0 dBA	55	dBA
		,	.dn:	89		19			411		86
			EL:	92		19			426		18
		Ch		32		134	5		720	5	10

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		VA-RD-77-108 H		AT N	OISE PH			JEL.			
	e: Harvill Av.	ect w/o Intercha	nge			Project N Job Nu					
	SPECIFIC IN	PUT DATA								S	
Highway Data				5	Site Con	ditions (I	lard =	10, So	oft = 15)		
Average Daily	Traffic (Adt):	18,545 vehicles	5					Autos:	15		
Peak Hour	Percentage:	10%			Mee	dium Truc	ks (2 A	xles):	15		
Peak H	our Volume:	1,855 vehicles			Hea	avy Truck	s (3+ A	xles):	15		
Ve	hicle Speed:	50 mph		1	/ehicle I	<i>Ni</i> v					
Near/Far La	ne Distance:	48 feet		-		cleType		Day	Evening	Night	Daily
Site Data						Autos: 68.6% 11.3% 20.19					
Pa	rier Height:			Me	dium Tru	cks:	74.3%	5.2%	20.5%	6 7.059	
Barrier Type (0-W	all, 1-Berm):	0.0			H	leavy Tru	cks:	74.4%	5.9%	19.7%	6 5.009
Centerline Dis		59.0 feet		^	loise So	urce Ele	vations	s (in fe	eet)		
Centerline Dist.		59.0 feet				Autos:	0.0	00	,		
Barrier Distance		0.0 feet			Mediur	n Trucks:	2.2	97			
Observer Height (	,	5.0 feet			Heav	v Trucks:	8.0	04	Grade Ad	iustmer	nt: 0.0
	ad Elevation:	0.0 feet		L							
	ad Elevation:	0.0 feet		1	ane Equ	ivalent l			feet)		
1	Road Grade:	0.0%				Autos:	54.1				
	Left View:	-90.0 degrees				n Trucks:					
	Right View:	90.0 degrees	5		Heav	y Trucks:	53.9	982			
FHWA Noise Mode	el Calculation:	5									
VehicleType	REMEL	Traffic Flow	Distar		Finite		Fresn		Barrier Att		erm Atten
Autos:	70.20	-0.17		-0.62		-1.20		4.69		00	0.00
Medium Trucks:	81.00	-11.13		-0.60		-1.20		4.88		00	0.00
Heavy Trucks:	85.38	-12.62		-0.60		-1.20		-5.35	0.0	00	0.00
Unmitigated Noise										-	
VehicleType	Leq Peak Hou			eq Ev	ening	Leq N			Ldn		CNEL
Autos:	68.		5.8		64.0		61.7		68.9		69.
Medium Trucks:	68.		6.0		60.4		61.6		68.8		69.
Heavy Trucks:	71.		8.9		63.9		64.4		71.6	· · · · · · · · · · · · · · · · · · ·	71.
Vehicle Noise:	74.	.1 7	1.9		67.8		67.5		74.7	,	75.
Centerline Distand	e to Noise Co	ontour (in feet)		70		05.0				-	
				70 d		65 dl		6	60 dBA		5 dBA
		L	dn:	12	2	263	5		567	1	1,221
		CN		12	~	272			587		.265

	FHV	/A-RD-77-108 HI	GHWAY	NOISE PF	REDICTI	ION MOD	EL			
Road Nam	io: EA w/o Proj e: Rider St. nt: e/o Patterso	ect w/o Interchan on Av.	ige			Name: B umber: 1:				
SITE	SPECIFIC IN	PUT DATA			N	IOISE M	ODEL I	NPUTS	5	
Highway Data				Site Con	ditions	(Hard = 1	0, Soft	= 15)		
Average Daily		1,861 vehicles					utos:	15		
	Percentage:	10%				icks (2 A)	,	15		
	our Volume:	186 vehicles		Hea	avy Truc	cks (3+ A)	des):	15		
	hicle Speed:	40 mph		Vehicle I	Mix					
Near/Far La	ne Distance:	36 feet		Vehi	icleType	E	Day E	vening	Night	Daily
Site Data								11.3%		87.95%
Bai	rier Height:	0.0 feet			edium Tr		4.3%	5.2%	20.5%	7.05%
Barrier Type (0-W	all, 1-Berm):	0.0		F	leavy Tr	rucks: 7	4.4%	5.9%	19.7%	5.00%
Centerline Dis	st. to Barrier:	50.0 feet		Noise So	ource Fl	evations	(in feet	)		
Centerline Dist.	to Observer:	50.0 feet			Autos		. /	/		
Barrier Distance	to Observer:	0.0 feet		Modiur	n Trucks					
Observer Height (	Above Pad):	5.0 feet			y Trucks			ade Adi	ustment:	0.0
Pa	ad Elevation:	0.0 feet			,			,		
Roa	ad Elevation:	0.0 feet		Lane Equ	uivalent			t)		
1	Road Grade:	0.0%			Autos	s: 46.9	15			
	Left View:	-90.0 degrees		Mediur	n Trucks					
	Right View:	90.0 degrees		Heav	y Trucks	s: 46.74	44			
FHWA Noise Mode										
VehicleType	REMEL		Distance	Finite		Fresne		rrier Atte		m Atten
Autos:	66.51	-9.19	0.3		-1.20		4.65	0.0		0.000
Medium Trucks:	77.72	-20.15	0.3		-1.20		4.87	0.0		0.000
Heavy Trucks:	82.99	-21.64	0.3		-1.20	4	5.43	0.0	00	0.000
Unmitigated Noise				,						
<i>,</i>	Leq Peak Hou			vening	Leq	Night	Lo			VEL
Autos:	56.			52.2		49.9		57.1		57.5
Medium Trucks:	56.			49.1		50.3		57.4		57.6
Heavy Trucks:	60.			53.4		53.9		61.1		61.3
Vehicle Noise:	63.		.9	56.7		56.5		63.7		64.0
Centerline Distant	ce to Noise Co	ntour (in feet)	70		0.5	10.4				
				dBA		dBA	60 0			dBA
		Ldi		19		1	8			91
		CNE	L: :	20	4	.3	93	2	1	98

Tuesday, March 12, 2019

	FHV	VA-RD-77-108 I	HIGHWA	Y NC	ISE PR	EDICTIO	N MO	DEL				
Scenario: Road Name: Road Segment:	Placentia S		ange			Project N Job Nun						
	PECIFIC IN	PUT DATA							L INPUT	s		
	, ,	397 vehicle 10% 40 vehicles 40 mph	3		Mee Hea	ditions (H dium Truci avy Trucks	ks (2 )	Autos: Axles):	15 15 15 15			
Near/Far Lane		36 feet		Ve	hicle I		1	Dav	Evenina	Niaht	Dailv	
	Barrier Height: 0.0 feet rrier Type (0-Wall, 1-Berm): 0.0					Autos: 68.6% 11.3% 20.1% 87 Medium Trucks: 74.3% 5.2% 20.5% 7						
Centerline Dist. Centerline Dist. to	to Barrier: Observer:	50.0 feet 50.0 feet		N		ource Elev Autos:	ation			19.7%	5.00%	
	bove Pad): Elevation:	0.0 feet 5.0 feet 0.0 feet		Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0 Lane Equivalent Distance (in feet)								
Ro	Elevation: bad Grade: Left View: Right View:	0.0 feet 0.0% -90.0 degree 90.0 degree		-	Mediur	Autos: n Trucks: y Trucks:	46. 46.	915 726 744				
FHWA Noise Model	Calculation	s										
VehicleType Autos: Medium Trucks:	REMEL 66.51 77.72 82.99	Traffic Flow -15.90 -26.86 -28.35		e 0.31 0.34 0.34	Finite	Road -1.20 -1.20 -1.20	Fresi	-4.65 -4.87 -5.43	0.0	en Bei 000 000	r <u>m Atten</u> 0.00 0.00 0.00	
Heavy Trucks:						-1.20		-5.43	0.0	000	0.00	
VehicleType	<b>Levels (with</b> ea Peak Hou				ation) ning	Leg Ni	aht		Ldn	С	NEL	
Autos:	49.	.7 4	7.3		45.5		43.2	-	50.4	4	50.	
Medium Trucks: Heavy Trucks:	50. 53.		7.9 1.7		42.4 46.7		43.6 47.2	-	50. 54.		50. 54.	
Vehicle Noise:	56	.4 5	4.2		50.0		49.8	3	57.	)	57.	
Centerline Distance	to Noise Co	ontour (in feet)										
			dn:	70 dE 7	BA	65 dE 15	BA	6	0 dBA 32		dBA 68	
		CN		7		15			33		71	

	FH\	VA-RD-77-108	HIGHW	AY N	IOISE PF	REDICTIC	N MOD	EL			
Road Nan	rio: EA w/o Pro ne: Placentia S nt: e/o Dwy. 2	ject w/o Interch t.	ange			Project N Job Nui					
SITE	SPECIFIC IN	IPUT DATA				NC	ISE M	ODE	L INPUT	S	
Highway Data					Site Con	ditions (H	lard = 1	0, Sc	oft = 15)		
Average Daily	Traffic (Adt):	415 vehicle	s				Α	utos:	15		
Peak Hour	Percentage:	10%			Me	dium Truc	ks (2 A)	des):	15		
Peak H	our Volume:	42 vehicles			Hea	avy Truck	s (3+ A)	des):	15		
Ve	hicle Speed:	40 mph		-	Vehicle I	Mix					
Near/Far La	ne Distance:	36 feet		-		cleTvpe	Г	)av	Evening	Night	Dailv
Site Data					1011			8.6%	•		87.95
Pa	rrier Height:	0.0 feet			Me	edium Tru	cks: 7	4.3%	5.2%	20.5%	7.059
Barrier Type (0-V		0.0			F	leavy Tru	cks: 7	4.4%	5.9%	19.7%	5.009
	ist. to Barrier:	50.0 feet		-							
Centerline Dist.		50.0 feet		1	Noise So	urce Ele			eet)		
Barrier Distance		0.0 feet				Autos:	0.00				
Observer Height		5.0 feet				n Trucks:	2.29		Out de Ad		
	ad Elevation:	0.0 feet			Heav	y Trucks:	8.00	)4	Grade Adj	ustment	: 0.0
Ro	ad Elevation:	0.0 feet		1	Lane Equ	uivalent I	Distance	e (in i	feet)		
	Road Grade:	0.0%				Autos:	46.9	15			
	Left View:	-90.0 degree	s		Mediur	n Trucks:	46.7	26			
	Right View:	90.0 degree	s		Heav	y Trucks:	46.74	44			
FHWA Noise Mod	lel Calculation	s									
VehicleType	REMEL	Traffic Flow	Dista	nce	Finite	Road	Fresne	1	Barrier Att	en Ber	m Atter
Autos:	66.51	-15.70		0.31	1	-1.20	7	4.65	0.0	000	0.00
Medium Trucks:	77.72	-26.66		0.34	4	-1.20	~	4.87	0.0	000	0.00
Heavy Trucks:	82.99	-28.16		0.34	4	-1.20	4	5.43	0.0	000	0.00
Unmitigated Nois	e Levels (with	out Topo and	barrier	atten	uation)						
VehicleType	Leq Peak Hou	ır Leq Day	L	eq Ev	vening	Leq N	ight		Ldn	C	NEL
Autos:			17.5		45.7		43.4		50.6		51.
Medium Trucks:			18.1		42.6		43.8		50.9		51
Heavy Trucks:			51.9		46.9		47.4		54.6		54.
Vehicle Noise:		-	54.4		50.2		50.0		57.2	2	57.
Centerline Distan	ce to Noise Co	ontour (in feet)									
				70 c	3BA	65 dl	3A	6	i0 dBA		dBA
			_dn: IFI :	7		15 16			33 34		70 73

Tuesday, March 12, 2019

FI	HWA-RD-77-108	HIGHW	AY NO	DISE PR	EDICTI	ON MO	DEL			
Scenario: EAP w/o Road Name: Pattersor Road Segment: n/o Waln	Av.	change			Project Job N	Name: umber:				
SITE SPECIFIC	INPUT DATA				N	OISE	NODE		s	
Highway Data			S	ite Con	ditions	(Hard =	10, S	oft = 15)		
Average Daily Traffic (Adt):	432 vehicl	es					Autos:	15		
Peak Hour Percentage:	10%			Med	dium Tru	icks (2 )	Axles):	15		
Peak Hour Volume:	43 vehicle	s		Hea	avy Truc	ks (3+ )	Axles):	15		
Vehicle Speed:	40 mph		V	ehicle N	<i>Niv</i>					
Near/Far Lane Distance:	36 feet		-		cleType		Dav	Evenina	Night	Dailv
Site Data			_			utos:	68.6%		20.1%	
Barrier Height:	0.0 feet			Me	dium Tr	ucks:	74.3%	5.2%	20.5%	4.98%
Barrier Type (0-Wall, 1-Berm):				H	leavy Tr	ucks:	74.4%	5.9%	19.7%	3.53%
Centerline Dist. to Barrier.	50.0 feet			loise So	uree El		o (in f	0.04)		
Centerline Dist. to Observer.	50.0 feet		N	101se 50				eet)		
Barrier Distance to Observer.	0.0 feet			1 4 m - Fr	Autos n Trucks		000 297			
Observer Height (Above Pad):	5.0 feet						297 004	Grade Ad	i otmoni	
Pad Elevation:	0.0 feet			Heav	7 Trucks	. 8.	004	Grade Ad	usunem	. 0.0
Road Elevation:	0.0 feet		L	ane Equ	iivalent	Distan	ce (in	feet)		
Road Grade:	0.0%				Autos	: 46.	915			
Left View:	-90.0 degre	es		Mediun	n Trucks	: 46.	726			
Right View:	90.0 degre	es		Heav	y Trucks	: 46.	744			
FHWA Noise Model Calculatio	ons									
VehicleType REMEL	Traffic Flow	Distar	псе	Finite	Road	Fresi	nel	Barrier Att	en Bei	m Atten
Autos: 66.5	1 -15.36		0.31		-1.20		-4.65	0.0	000	0.000
Medium Trucks: 77.7	2 -28.00		0.34		-1.20		-4.87	0.0	000	0.000
Heavy Trucks: 82.9	9 -29.49		0.34		-1.20		-5.43	0.0	000	0.000
Unmitigated Noise Levels (wi	thout Topo and	barrier a	attenu	uation)						
VehicleType Leq Peak H			eq Eve	ening	Leq	Vight		Ldn	-	NEL
Autos:	50.3	47.8		46.0		43.8	3	51.0	)	51.3
Medium Trucks:		46.8		41.2		42.4	4	49.6	6	49.8
	52.6	50.6		45.5		46.0	)	53.3	3	53.5
Vehicle Noise:	55.6	53.5		49.5		49.1	1	56.3	3	56.5
Centerline Distance to Noise	Contour (in feet	)								
			70 dl	BA	65 (			60 dBA		dBA
		Ldn:	6			3		28		61
		NFL:	6			4		29		63

	FHW	A-RD-77-108 H	HIGHWA	Y NOISE P	REDICTI	ON MOI	DEL			
Road Nam	io: EAP w/o Proj le: Patterson Av nt: n/o Placentia		nange			Name: E umber: 1				
SITE	SPECIFIC INP	UT DATA			N	OISE N	10DE	L INPUTS	5	
Highway Data				Site Co	nditions	(Hard =	10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	542 vehicles	5				Autos:	15		
Peak Hour	Percentage:	10%		M	edium Tru	icks (2 A	xles):	15		
Peak H	lour Volume:	54 vehicles		He	eavy Truc	:ks (3+ A	xles):	15		
Ve	hicle Speed:	40 mph		Vehicle	Mix					
Near/Far La	ne Distance:	36 feet			nicleType		Day	Evening	Night	Daily
Site Data				Ver			68.6%	•	· ·	92.19%
					-ر ledium Tr		74.3%		20.1%	
	rrier Height:	0.0 feet			Heavy Tr		74.4%		19.7%	
Barrier Type (0-W Centerline Dis		0.0 50.0 feet							10.170	0.2170
Centerline Dist.		50.0 feet		Noise S	ource El	evations	s (in fe	et)		
Barrier Distance		0.0 feet			Autos		000			
Observer Height (		5.0 feet		Mediu	im Trucks	s: 2.2	97			
0 1	ad Elevation:	0.0 feet		Hea	vy Trucks	s: 8.0	04	Grade Adj	ustment	: 0.0
	ad Elevation:	0.0 feet		Lane Ed	uivalent	Distanc	e (in i	eet)		
	Road Grade:	0.0%			Autos			,		
,		-90.0 degrees		Mediu	m Trucks					
	Right View:	90.0 degrees			vy Trucks					
FHWA Noise Mode	el Calculations									
VehicleType	REMEL	Traffic Flow	Distanc	e Finite	Road	Fresn		Barrier Atte	en Bei	m Atten
Autos:	66.51	-14.34		0.31	-1.20		4.65	0.0		0.000
Medium Trucks:	77.72	-27.39		0.34	-1.20		-4.87	0.0		0.000
Heavy Trucks:	82.99	-28.88		0.34	-1.20		-5.43	0.0	00	0.000
Unmitigated Noise	e Levels (withou									
,	Leq Peak Hour			r Evening	Leq			Ldn		NEL
Autos:	51.3		8.9	47.0		44.8		52.0		52.3
Medium Trucks:	49.5		7.4	41.8		43.0		50.2		50.4
Heavy Trucks:	53.2	-	1.2	46.2		46.7		53.9		54.1
Vehicle Noise:	56.4	5	4.2	50.3	5	49.8		57.0		57.3
Centerline Distant	ce to Noise Con	tour (in feet)								
				70 dBA	65 0		6	0 dBA		dBA
		-	dn:	7 15 32 68						
		CN	EL:	7	1	5		33		71

FH	WA-RD-77-108	HIGHWA	Y NOISE	PREDICTI	ON MO	DEL			
Scenario: EAP w/o F Road Name: Harvill Av. Road Segment: s/o Cajalc	,	change		Project I Job NL	Name: ımber:				
SITE SPECIFIC I	NPUT DATA		0/4- 0					s	
Highway Data Average Daily Traffic (Adt): Peak Hour Percentage: Peak Hour Volume: Vehicle Speed: Near/Far Lane Distance:	17,119 vehicle 10% 1,712 vehicles 50 mph 48 feet			Conditions ( Medium Tru Heavy Truc Ie Mix	cks (2 )	Autos: Axles):	15 15 15		
	48 reet		V	ehicleType		Day	Evening	Night	Daily
Site Data Barrier Height: Barrier Type (0-Wall, 1-Berm):	0.0 feet 0.0			A Medium Tri Heavy Tri		68.6% 74.3% 74.4%	5.2%	20.1% 20.5% 19.7%	7.00%
Centerline Dist. to Barrier: Centerline Dist. to Observer: Barrier Distance to Observer: Observer Height (Above Pad): Pad Elevation:	59.0 feet 59.0 feet 0.0 feet 5.0 feet 0.0 feet		Mee He	Source Ele Autos dium Trucks eavy Trucks	: 0. : 2. : 8.	000 297 004	Grade Ad	justment	± 0.0
Road Elevation: Road Grade: Left View: Right View:	0.0 feet 0.0% -90.0 degree 90.0 degree		Me	Equivalent Autos dium Trucks eavy Trucks	: 54. : 53.	129 966 982			
FHWA Noise Model Calculatio									
VehicleType         REMEL           Autos:         70.20           Medium Trucks:         81.00           Heavy Trucks:         85.38	-11.51		0.60 0.60	ite Road -1.20 -1.20 -1.20	Fresi	-4.69 -4.88 -5.35	0.0	en Bei 000 000 000	r <u>m Atten</u> 0.00 0.00 0.00
Unmitigated Noise Levels (with	hout Topo and	barrier a	ttenuatio	n)					
VehicleType Leq Peak Ho			q Evening	1	Vight		Ldn	С	NEL
Medium Trucks: 6	7.7	65.4 65.6	60	3.6 ).1	61.4 61.3	3	68.6 68.4	4	68. 68.
	••••	68.5 71.5		3.5 7.5	64.0 67.2		71.2	-	71. 74.
Centerline Distance to Noise C	contour (in feet)	)							
		Ldn: VEL:	70 dBA 116 120	65 d 24 25	9	6	0 dBA 537 556	1,	dBA 157 199

I	HWA-RD-77-10	08 HIGH	WAY NO	DISE PRI	EDICTIO	ON MOI	DEL			
Scenario: EAP w/o Road Name: Harvill A Road Segment: s/o Ride	v.	erchange	•	1	Project I Job Nu	lame: E mber: 1				
SITE SPECIFIC	INPUT DATA	1			N	DISE N	IODE	L INPUT	s	
Highway Data			S	ite Cond	litions (	Hard =	10, So	oft = 15)		
Average Daily Traffic (Adt	: 18,243 vehi	cles				A	Autos:	15		
Peak Hour Percentage	: 10%			Med	ium Tru	cks (2 A	xles):	15		
Peak Hour Volume	: 1,824 vehic	les		Hea	vy Trucl	(3+ A	xles):	15		
Vehicle Speed	: 50 mph		V	ehicle M	114					
Near/Far Lane Distance	: 48 feet		v		leType	- 1	Davi	Evening	Night	Daily
Site Data				venic			Day 58.6%	•	v	87.90%
				Ma	dium Tru		74.3%		20.1%	
Barrier Heigh					avy Tru		74.4%		19.7%	
Barrier Type (0-Wall, 1-Berm					avy III	ICKS.	4.470	5.9%	19.7%	5.057
Centerline Dist. to Barrie			N	oise Sou	urce Ele	vations	; (in fe	eet)		
Centerline Dist. to Observe	0010 1001				Autos.	0.0	00			
Barrier Distance to Observe	0.0 1001			Medium	Trucks.	2.2	97			
Observer Height (Above Pad				Heavy	Trucks.	8.0	04	Grade Ad	justment:	0.0
Pad Elevation	0.0 1001		-							
Road Elevation	0.0 1001		L	ane Equ				eet)		
Road Grade	0.070				Autos.					
Left Viev				Medium						
Right Viev	90.0 degr	ees		Heavy	Trucks.	53.9	82			
FHWA Noise Model Calculat										
VehicleType REMEL	Traffic Flow		ance	Finite F		Fresn		Barrier Att		m Atten
Autos: 70.			-0.62		-1.20		4.69		000	0.00
Medium Trucks: 81.	00 -11.2	0	-0.60		-1.20		4.88	0.0	000	0.00
Heavy Trucks: 85.	38 -12.6	6	-0.60		-1.20		-5.35	0.0	000	0.00
Unmitigated Noise Levels (w									1	
VehicleType Leq Peak			Leq Eve		Leq N			Ldn		VEL
Autos:	68.1	65.7		63.9		61.6		68.8		69.
Medium Trucks:	68.0	65.9		60.4		61.6		68.7		68.
Heavy Trucks:	70.9	68.8		63.8		64.3		71.6		71.
Vehicle Noise:	74.0	71.8		67.7		67.5		74.7	7	74.
Centerline Distance to Noise	Contour (in fe	et)	70 //							10.4
			70 dl		65 d		6	0 dBA		dBA
		Ldn:	121		26	1		562	1,2	211
		CNEL:	125		27			582		255

Tuesday, March 12, 2019

Scenario: EAP w/	Drei	ioct w/o Interes	anc	~		Project A	<i>lame:</i> Ba	rkor			
Road Name: Harvill A		ect w/o interci	lang	e			mber: 12:				
Road Segment: s/o Plac		St.				000 144	111001. 12.	210			
SITE SPECIFIC	INP	UT DATA				N	DISE MO	DEL IN	IPUTS		
Highway Data					Site Con		Hard = 10				
Average Daily Traffic (Adt	): 1:	3,703 vehicles	5				Au	tos: 1	5		
Peak Hour Percentage	<del>)</del> :	10%			Me	dium Truc	cks (2 Axl	es): 1	5		
Peak Hour Volum	e: 1	,370 vehicles			He	avy Truck	is (3+ Axl	es): 1	5		
Vehicle Speed	1:	50 mph		+	Vehicle I	liv					
Near/Far Lane Distance	e:	48 feet		F		cleType	De	V Eve	ening I	Vight	Dailv
Site Data								/	•	20.1%	88.129
Barrier Heigh	f-	0.0 feet			Me	dium Tru	cks: 74	.3%	5.2%	20.5%	6.95%
Barrier Type (0-Wall, 1-Berm		0.0			F	leavy Tru	cks: 74	.4%	5.9%	19.7%	4.93%
Centerline Dist. to Barrie	r:	59.0 feet		-	Noise Sr	urco Elo	vations (	in foot)			
Centerline Dist. to Observe	r:	59.0 feet		F	10/30 00	Autos:					
Barrier Distance to Observe	r:	0.0 feet			Modiur	n Trucks:					
Observer Height (Above Pad	):	5.0 feet				v Trucks:			de Adju:	stment [.]	0.0
Pad Elevation	n:	0.0 feet									
Road Elevation	n:	0.0 feet			Lane Equ	ivalent l	Distance	. /			
Road Grad	ə:	0.0%				Autos:		-			
Left View	V:	-90.0 degrees	5		Mediur	n Trucks:		-			
Right View	V:	90.0 degrees	5		Heav	y Trucks:	53.982	2			
FHWA Noise Model Calculat	ions										
VehicleType REMEL	1	Traffic Flow	Dis	tance	Finite	Road	Fresnel	Barr	ier Atter	Berr	m Atten
Autos: 70	20	-1.48		-0.6	2	-1.20	-4.	69	0.00	0	0.00
Medium Trucks: 81		-12.51		-0.6	-	-1.20		88	0.00	-	0.00
Heavy Trucks: 85	38	-14.00		-0.6	0	-1.20	-5.	35	0.00	0	0.00
Unmitigated Noise Levels (v	rithou	ut Topo and b	arrie	er atter	nuation)						
VehicleType Leq Peak				Leq E	vening	Leq N	•	Ldr		CI	IEL
Autos:	66.9	-	4.5		62.7		60.4		67.6		68.0
Medium Trucks:	66.7	-	4.6		59.1		60.3		67.4		67.0
Heavy Trucks:	69.6	6	7.5		62.5		63.0		70.2		70.4
Vehicle Noise:	72.7	7	0.5		66.5		66.2		73.4		73.
Centerline Distance to Noise	Con	tour (in feet)									
					dBA	65 d		60 dE			dBA
		L	dn:	9	19	214	4	460	1	9	91

	FHW	/A-RD-77-108 HIG	GHWAY		REDICTIC		DEL			
Road Name	<ul> <li>EAP w/o Pro</li> <li>Harvill Av.</li> <li>s/o Orange</li> </ul>	oject w/o Interchar Av.	nge		Project N Job Nu					
SITE S	SPECIFIC IN	PUT DATA			NC	DISE N	IODEL	INPUTS	5	
Highway Data				Site Con	ditions (I	Hard =	10, So	ft = 15)		
Average Daily	raffic (Adt):	11,660 vehicles				A	Autos:	15		
Peak Hour I	Percentage:	10%		Me	dium Truc	ks (2 A	xles):	15		
Peak Ho	our Volume:	1,166 vehicles		He	avy Truck	s (3+ A	xles):	15		
Vel	nicle Speed:	50 mph		Mahiata I			-			
Near/Far Lar	e Distance:	48 feet		Vehicle I			D	E un aliana	Allerlad	Deile
Site Data				veni	icleType			Evening	Night	Daily
							58.6%	11.3%		88.15%
	rier Height:	0.0 feet			edium Tru		74.3%	5.2%	20.5%	6.93%
Barrier Type (0-Wa	. ,	0.0		r	leavy Tru	CKS:	74.4%	5.9%	19.7%	4.92%
Centerline Dis		59.0 feet		Noise Sc	ource Ele	vations	; (in fe	et)		
Centerline Dist. t		59.0 feet			Autos:	0.0	00	-		
Barrier Distance t		0.0 feet		Mediur	m Trucks:	2.2	97			
Observer Height (/	,	5.0 feet		Heav	v Trucks:	8.0	04	Grade Adj	ustment:	0.0
	d Elevation:	0.0 feet								
	d Elevation:	0.0 feet		Lane Eq	uivalent l			eet)		
F	Road Grade:	0.0%			Autos:					
	Left View:	-90.0 degrees			m Trucks:					
	Right View:	90.0 degrees		Heav	y Trucks:	53.9	82			
FHWA Noise Mode	Calculations	:								
VehicleType	REMEL		Distance	Finite		Fresn		Barrier Atte	en Ber	m Atten
Autos:	70.20	-2.18	-0.6	62	-1.20	-	4.69	0.0	00	0.000
Medium Trucks:	81.00	-13.22	-0.6	60	-1.20	-	4.88	0.0	00	0.000
Heavy Trucks:	85.38	-14.71	-0.6	60	-1.20		-5.35	0.0	00	0.000
Unmitigated Noise				,						
,1	Leq Peak Hou			vening	Leq N			Ldn		VEL
Autos:	66.		-	62.0		59.7		66.9		67.3
Medium Trucks:	66.			58.4		59.6		66.7		66.9
Heavy Trucks:	68.			61.8		62.3		69.5		69.7
Vehicle Noise:	72.		3	65.7		65.5		72.7		72.9
Centerline Distanc	e to Noise Co	ntour (in feet)	70	dBA	65 d	DA	6	0 dBA	55	dBA
		Ldn		ава 39	65 di 192			413		ава 89
		CNEL		39 92	192	-		413 428		89 21
		UNEL	. :	22	198	,		420	9	21

#### Tuesday, March 12, 2019

	FH\	WA-RD-77-108	HIGHW	AY NO	DISE PF	REDICTIO	N MO	DEL			
	ne: Harvill Av.	roject w/o Inter	change			Project N Job Nur					
	SPECIFIC IN	NPUT DATA								5	
Peak F Ve	Traffic (Adt): Percentage: Jour Volume: hicle Speed: ne Distance:	18,736 vehicle 10% 1,874 vehicle 50 mph 48 feet			Me He <b>ehicle I</b>	ditions (F dium Truc avy Truck Mix icleType	) ks (2 A s (3+ A	Autos: Ixles):	15 15 15 Evening	Night	Daily
Site Data								68.6%		20.1%	
Barrier Type (0-W		0.0 feet 0.0				edium Tru Ieavy Tru		74.3% 74.4%		20.5% 19.7%	
Centerline Di		59.0 feet		N	oise Sc	ource Elev	vation	s (in fe	et)		
	to Observer:	59.0 feet 0.0 feet 5.0 feet 0.0 feet			Heav	Autos: n Trucks: y Trucks: u <b>ivalent E</b>	2.2 8.0	000 297 004	Grade Adj	ustment	: 0.0
	ad Elevation: Road Grade:	0.0 feet 0.0%		-	апе сч	Autos:	54.		eel)		
	Left View: Right View:	-90.0 degree 90.0 degree				n Trucks: y Trucks:	53.9 53.9	966			
FHWA Noise Mod	el Calculation	IS									
VehicleType	REMEL	Traffic Flow	Distar		Finite		Fresn	-	Barrier Atte	en Ber	m Atten
Autos:				-0.62		-1.20		-4.69	0.0		0.00
Medium Trucks: Heavy Trucks:				-0.60 -0.60		-1.20 -1.20		-4.88 -5.35	0.0 0.0		0.00 0.00
Unmitigated Nois	e Levels (with	out Topo and	barrier a	ttenu	ation)						
VehicleType	Leq Peak Hou	ur Leq Day	' Le	eq Eve	ening	Leq N	ight		Ldn		NEL
Autos:			65.8		64.0		61.8		68.9		69.
Medium Trucks:			66.0		60.4		61.6		68.8		69.
Heavy Trucks: Vehicle Noise:			68.9 71.9		63.9 67.8		64.4 67.5		71.6		71.
					8.10		07.5		14.1		15.
Centerline Distan	ce to Noise C	ontour (in feet	,	70 di	RA	65 dE	84	6	0 dBA	55	dBA
			I dn:	122		263			568		223
			VEL:	127	-	203			588		267
		-								.,	

	FHW	/A-RD-77-108	HIGH	WAY N		REDICTIC	ON MOL	DEL			
Scenario: EAP Road Name: Rider Road Segment: e/o P	St.		change	e		Project N Job Nu					
SITE SPECIF	IC IN	PUT DATA				NC	DISE N	IODE	L INPUT	s	
Highway Data				;	Site Con	ditions (l	Hard =	10, Sc	oft = 15)		
Average Daily Traffic (A	Adt):	1,988 vehicle	s				A	Autos:	15		
Peak Hour Percent	age:	10%			Me	dium Truc	ks (2 A	xles):	15		
Peak Hour Volu	me:	199 vehicles	5		Hea	avy Truck	is (3+ A	xles):	15		
Vehicle Spe	eed:	40 mph			Vehicle I	liv					
Near/Far Lane Dista	nce:	36 feet		-		cleType		Day	Evening	Night	Daily
Site Data					VCIII			58.6%	•		88.72 ⁹
Barrier Hei	a ht.	0.0 feet			Me	dium Tru		74.3%		20.5%	
Barrier Type (0-Wall, 1-Be		0.0 reet			F	leavy Tru	cks:	74.4%	5.9%	19.7%	
Centerline Dist. to Bar		50.0 feet									
Centerline Dist. to Obser		50.0 feet		1	Noise So				eet)		
Barrier Distance to Obser		0.0 feet				Autos:					
Observer Height (Above P		5.0 feet				n Trucks:					
Pad Eleva		0.0 feet			Heav	y Trucks:	8.0	04	Grade Adj	justment	: 0.0
Road Eleva		0.0 feet		7	Lane Equ	uivalent l	Distanc	e (in	feet)		
Road Gr		0.0%				Autos:			,		
Left V	iew:	-90.0 degree	s		Mediur	n Trucks:	46.7	26			
Right V	ïew:	90.0 degree			Heav	y Trucks:	46.7	'44			
FHWA Noise Model Calcu	lations	;									
VehicleType REM	EL	Traffic Flow	Dis	tance	Finite	Road	Fresn	el	Barrier Att	en Ber	m Atter
Autos:	66.51	-8.86		0.3	1	-1.20		4.65	0.0	000	0.00
Medium Trucks:	77.72	-20.15		0.34	4	-1.20		4.87	0.0	000	0.00
Heavy Trucks:	82.99	-21.64		0.34	4	-1.20		5.43	0.0	000	0.00
Unmitigated Noise Levels			barrie	er atten	uation)						
VehicleType Leq Pea				Leg E	vening	Leq N			Ldn		NEL
Autos:	56.		54.3		52.5		50.3		57.4		57.
Medium Trucks:	56.		54.6		49.1		50.3		57.4		57.
Heavy Trucks:	60.		58.4		53.4		53.9		61.1		61
Vehicle Noise:	63.		61.0		56.8		56.6		63.8	3	64
Centerline Distance to No	ise Co	ntour (in feet,	)	=0	10.4						
			L		dBA	65 di		6	0 dBA		dBA
Ldn:			1				93				
		~	VFI :	~	~	43			93		0.00

Tuesday, March 12, 2019

	FHW	/A-RD-77-108	HIGH	I YAWH	NOISE PR	REDICTI	ION MO	DDEL						
Scenario: EAP Road Name: Place Road Segment: e/o P	entia St		chang	je	Project Name: Barker Job Number: 12218									
SITE SPECIF	IC IN	PUT DATA							EL INPU					
Highway Data					Site Con	ditions	(Hard :		,					
Average Daily Traffic (/		588 vehicle	es					Autos						
Peak Hour Percent		10%				dium Tru								
Peak Hour Volu	ime:	59 vehicles	3		He	avy Truc	cks (3+	Axles)	: 15					
Vehicle Sp	eed:	40 mph		-	Vehicle I	Mix								
Near/Far Lane Dista	nce:	36 feet		-		icleType		Day	Evenin	g Ni	ght	Daily		
Site Data						A	Autos:	68.69	6 11.39	% 20	).1%	91.86%		
Barrier Hei	abt	0.0 feet			Me	edium Ti	ucks:	74.3%	6 5.29	% 20	).5%	4.76%		
Barrier Type (0-Wall, 1-Be		0.0			ŀ	leavy Ti	ucks:	74.4%	6 5.99	% 19	9.7%	3.389		
Centerline Dist. to Ba	rrier:	50.0 feet			Noise So	ource El	evatio	ns (in i	feet)					
Centerline Dist. to Obse	rver:	50.0 feet				Auto		.000	,					
Barrier Distance to Obse	rver:	0.0 feet			Mediu	n Truck		.297						
Observer Height (Above F	Pad):	5.0 feet				v Trucks		.004	Grade	Adiusti	nent:	0.0		
Pad Eleva	tion:	0.0 feet				,				,				
Road Eleva	tion:	0.0 feet			Lane Eq	uivalent	Dista	nce (in	feet)					
Road Gr	ade:	0.0%				Autos	s: 46	6.915						
Left V	'iew:	-90.0 degree	s		Mediur	n Truck	s: 46	6.726						
Right V	'iew:	90.0 degree	es		Heav	y Truck	s: 46	6.744						
FHWA Noise Model Calcu														
VehicleType REM		Traffic Flow	Dis	stance	Finite		Fres		Barrier		Berr	n Atten		
	66.51	-14.00		0.3		-1.20		-4.65		0.000		0.00		
	77.72	-26.86		0.3		-1.20		-4.87		0.000		0.00		
Heavy Trucks:	82.99	-28.35		0.3	4	-1.20		-5.43		0.000		0.00		
Unmitigated Noise Levels														
VehicleType Leq Pea				Leq E	vening	Leq	Night		Ldn		C٨			
Autos:	51.	-	49.2		47.4		45			2.3		52.		
Medium Trucks:	50.		47.9		42.4		43		-	0.7		50.		
Heavy Trucks:	53.	-	51.7		46.7		47	-	-	4.4		54.		
Vehicle Noise:	56.	8	54.7		50.7		50	.3	5	7.5		57.		
Centerline Distance to No	ise Co	ntour (in feet)	)					-						
			L		dBA		dBA		60 dBA		55 0			
			Ldn: JFL :		7 8		6 6		34 35		7			
												6		

	FHV	VA-RD-77-108	HIGHW	AY N	OISE PR	EDICTI		DEL			
Scenario: E Road Name: F Road Segment: e	Placentia S	oject w/o Intere t.	change				Name: E Imber: 1				
SITE SPE	CIFIC IN	PUT DATA				N	OISE N	IODE	L INPUT	S	
Highway Data				S	Site Cond	litions (	Hard =	10, So	oft = 15)		
Average Daily Trafi	fic (Adt):	1,178 vehicle	es				A	Autos:	15		
Peak Hour Perc	centage:	10%			Med	lium Tru	cks (2 A	xles):	15		
Peak Hour	Volume:	118 vehicles	6		Hea	vy Truc	ks (3+ A	xles):	15		
Vehicle	Speed:	40 mph			/ehicle N	liv					
Near/Far Lane D	istance:	36 feet				leType		Day	Evening	Night	Daily
Site Data					VOIIIC			58.6%	•	20.1%	
Barrier	Height:	0.0 feet			Me	dium Tr	ucks:	74.3%	5.2%	20.5%	2.48%
Barrier Type (0-Wall,		0.0			н	eavy Tr	ucks:	74.4%	5.9%	19.7%	1.76%
Centerline Dist. to	,	50.0 feet							4)		
Centerline Dist. to O	bserver:	50.0 feet		n	Voise So				eet)		
Barrier Distance to O	bserver:	0.0 feet				Autos					
Observer Height (Abo	ve Pad):	5.0 feet			Medium				Grade Ad		
Pad E	levation:	0.0 feet			Heavy	/ Trucks	8.0	04	Grade Adj	usunem	. 0.0
Road E	levation:	0.0 feet		L	.ane Equ	ivalent	Distanc	e (in	feet)		
Road	d Grade:	0.0%				Autos	: 46.9	15			
Le	eft View:	-90.0 degree	es		Medium	n Trucks	: 46.7	26			
Rig	ht View:	90.0 degree	es		Heavy	/ Trucks	: 46.7	'44			
FHWA Noise Model Ca	alculation	s									
VehicleType R	REMEL	Traffic Flow	Distan	ce	Finite I	Road	Fresn	el	Barrier Att	en Be	rm Atten
Autos:	66.51	-10.80		0.31		-1.20		4.65	0.0	000	0.00
Medium Trucks:	77.72	-26.66		0.34		-1.20		4.87	0.0		0.000
Heavy Trucks:	82.99	-28.16		0.34	ļ	-1.20		5.43	0.0	000	0.00
Unmitigated Noise Le											
,	Peak Hou			eq Ev	ening	Leq I	v		Ldn		NEL
Autos:	54		52.4		50.6		48.3		55.5		55.9
Medium Trucks:	50		48.1		42.6		43.8		50.9		51.
Heavy Trucks:	54	-	51.9		46.9		47.4		54.6		54.8
Vehicle Noise:	58	-	55.9		52.6		51.7		58.9	)	59.1
Centerline Distance to	Noise Co	ontour (in feet	)	70			10.4				
			L	70 d		65 0		6	60 dBA		5 dBA
			Ldn: VFL:	9		1	-		42 44		90 94

Tuesday, March 12, 2019

	FH\	WA-RD-77-108	HIGHW	AY NO	DISE PF	REDICTIC	N MO	DEL			
	e: Patterson /		change			Project N Job Nui					
	SPECIFIC IN	IPUT DATA								s	
Highway Data Average Daily Peak Hour Peak Ho	, ,	305 vehicle 10% 31 vehicle		s	Me	ditions (F dium Truc avy Truck	:ks (2 )	Autos: Axles):	15 15 15 15		
Vel Near/Far Lar	nicle Speed: ne Distance:	40 mph 36 feet		v	<b>ehicle I</b> Vehi	Mix cleType		Day	Evening	Night	Daily
Barrier Type (0-Wa		0.0 feet 0.0		_		Au edium Tru leavy Tru		68.6% 74.3% 74.4%	5.2%	20.1% 20.5% 19.7%	
	o Observer: o Observer:	50.0 feet 50.0 feet 5.0 feet 0.0 feet 0.0 feet			Mediur Heav	Autos: Autos: n Trucks: y Trucks: uivalent I	0. 2. 8.	000 297 004	Grade Ad	iustment	: 0.0
	Road Grade: Left View: Right View:	0.0 leet 0.0% -90.0 degree 90.0 degree			Mediur	Autos: n Trucks: y Trucks:	46. 46.	915 726 744			
FHWA Noise Mode		-					_				
VehicleType Autos: Medium Trucks: Heavy Trucks:	REMEL 66.51 77.72 82.99	Traffic Flow -17.04 -28.00 -29.49	Distan	0.31 0.34 0.34	Finite	-1.20 -1.20 -1.20	Fresi	-4.65 -4.87 -5.43			m Atten 0.00 0.00 0.00
Unmitigated Noise	Levels (with	out Topo and	barrier a	ttenu	ation)						
VehicleType	Leq Peak Ho	ur Leq Day	/ Le	q Ev	ening	Leq N	ight		Ldn	C	NEL
Autos: Medium Trucks: Heavy Trucks:	48 48 52	1.9	46.2 46.8 50.6		44.3 41.2 45.5		42.4 42.4 46.0	1	49.3 49.6 53.3	5	49. 49. 53.
Vehicle Noise:	55	5.2	53.1		48.8		48.	7	55.9	)	56.
Centerline Distanc	e to Noise C	ontour (in feet	)								
			Ldn:	70 d	BA	65 dl		6	0 dBA 27		dBA 57
		CI	NEL:	6		13			28		59

	FH\	NA-RD-77-108	HIGH	WAY N		REDICTIC		DEL				
Road Nan	io: EAC w/o P ne: Patterson A nt: n/o Placent		change	e		Project N Job Nu						
SITE	SPECIFIC IN	IPUT DATA				NC	DISE M	ODE	L INPUT	s		
Highway Data				:	Site Con	ditions (l	Hard = 1	10, Sc	oft = 15)			
Average Daily	Traffic (Adt):	351 vehicle	es				A	utos:	15			
Peak Hour	Percentage:	10%			Med	dium Truc	ks (2 A	xles):	15			
Peak F	lour Volume:	35 vehicle	s		Hea	avy Truck	s (3+ A	xles):	15			
Ve	hicle Speed:	40 mph		H	Vehicle N	Nu						
Near/Far La	ne Distance:	36 feet		H		cleType		Day	Evening	Night	Daily	
Site Data					veni			38.6%	•		87.95%	
		0.0 feet			Medium Trucks: 74.3% 5.2% 20.5% 7.							
ва Barrier Type (0-И	rrier Height:	0.0 reet			H	leavy Tru	cks: 7	74.4%	5.9%	19.7%		
Centerline Di		0.0 50.0 feet										
Centerline Dist.		50.0 feet		1	Noise So	urce Ele	vations	in fe	et)			
Barrier Distance		0.0 feet				Autos:		00				
Observer Height		5.0 feet			Mediun	n Trucks:	2.2	97				
	ad Elevation:	0.0 feet			Heav	y Trucks:	8.0	04	Grade Adj	justment	: 0.0	
	ad Elevation:	0.0 feet			Lane Equ	uivalent l	Distanc	e (in i	feet)			
	Road Grade:	0.0%		F		Autos:						
	Left View:	-90.0 degree	29		Mediun	n Trucks:						
	Right View:	90.0 degree			Heav	y Trucks:						
FHWA Noise Mod	el Calculation	s										
VehicleType	REMEL	Traffic Flow	Dist	ance	Finite	Road	Fresne	el	Barrier Att	en Ber	m Atten	
Autos:	66.51	-16.43		0.31	1	-1.20	-	4.65	0.0	000	0.00	
Medium Trucks:	77.72	-27.39		0.34	4	-1.20	-	4.87	0.0	000	0.00	
Heavy Trucks:	82.99	-28.88		0.34	4	-1.20	-	5.43	0.0	000	0.00	
Unmitigated Nois	e Levels (with	out Topo and	barrie	r atten	uation)							
VehicleType	Leq Peak Hou			Leg Ev		Leq N			Ldn		NEL	
Autos:	49		46.8		44.9		42.7		49.9		50.	
Medium Trucks:			47.4		41.8		43.0		50.2		50.	
Heavy Trucks:			51.2		46.2		46.7		53.9		54.	
Vehicle Noise:			53.7		49.4		49.3		56.5	5	56.	
Centerline Distan	ce to Noise Co	ontour (in feet	)	70	-104	05	-				-/04	
					dBA	65 di		6	0 dBA		dBA	
Ldn:				6 14 29 63 7 14 30 65			63 65					
	CNEL:											

Tuesday, March 12, 2019

	FHW	/A-RD-77-108	HIGI	I YAWH	NOISE PR	REDICTI	ON MO	DDEL				
		oject w/o Intere	chang	ge		Project						
Road Name: Road Segment:		Evov				JOD IN	umber:	12218				
•	,	.,								-		
SILE SE Highway Data	PECIFIC IN	PUIDAIA			Site Con				EL INPU oft = 15)	15		
Average Daily Tr	affic (Adt)	20.379 vehicle	is.					Autos	,			
Peak Hour Pe	, ,	10%			Me	dium Tru	icks (2	Axles)	15			
		2,038 vehicles	5			avy Truc						
Vehic	cle Speed:	50 mph		-	Mahiala I							
Near/Far Lane	Distance:	48 feet		-	Vehicle I	<b>viix</b> icleType		Dav	Evening	g Nic	tht	Dailv
Site Data					ven		utos:	68.6%				87.95%
					M	adium Tr		74.39			.5%	7.05%
Barrier Type (0-Wali	er Height:	0.0 feet 0.0				leavy Tr		74.49	• ••=•		.7%	5.00%
Centerline Dist.		59.0 feet										
Centerline Dist. to		59.0 feet		H	Noise So				eet)			
Barrier Distance to		0.0 feet				Autos		.000				
Observer Height (At		5.0 feet				n Trucks		.297	Our de la	A		
0 1	Elevation:	0.0 feet			Heav	y Trucks	8: 8	.004	Grade A	Aajustr	nent:	0.0
Road	Elevation:	0.0 feet			Lane Eq	uivalent	Distar	nce (in	feet)			
Ro	ad Grade:	0.0%				Autos	s: 54	.129				
	Left View:	-90.0 degree	s		Mediur	n Trucks	s: 53	.966				
R	Right View:	90.0 degree	s		Heav	y Trucks	s: 53	.982				
FHWA Noise Model	Calculations	;										
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite	Road	Fres	nel	Barrier A	Atten	Berr	n Atten
Autos:	70.20	0.24		-0.6	2	-1.20		-4.69	(	0.000		0.000
Medium Trucks:	81.00	-10.72		-0.6	0	-1.20		-4.88	(	0.000		0.000
Heavy Trucks:	85.38	-12.21		-0.6	0	-1.20		-5.35	(	0.000		0.000
Unmitigated Noise L												
	eq Peak Hou			Leq E	vening	Leq	Night		Ldn		C٨	
Autos:	68.		6.2		64.4		62.			9.3		69.7
Medium Trucks:	68.	-	6.4		60.9		62.			9.2		69.4
Heavy Trucks:	71.		59.3		64.3		64.	-		2.0		72.2
Vehicle Noise:	74.	5	72.3		68.2		67.	.9	7	5.1		75.4
Centerline Distance	to Noise Co	ntour (in feet)										
			L		dBA	65 0			60 dBA		55 0	
			Ldn: IFL :		30 35	28			603		1,3	
									625		1.3	4/

	FHW	A-RD-77-108 HI	GHWAY	NOISE PI	REDICTIO	ON MO	DEL			
Road Nam	io: EAC w/o Pro e: Harvill Av. nt: s/o Rider St.	ject w/o Intercha	inge		Project I Job Nu	Vame: E Imber: 1				
SITE	SPECIFIC INF	PUT DATA			N	OISE N	IODE	L INPUTS	5	
Highway Data				Site Con	ditions (	Hard =	10, Sc	oft = 15)		
Average Daily	Traffic (Adt): 2	21,068 vehicles				A	Autos:	15		
Peak Hour	Percentage:	10%		Me	dium Tru	cks (2 A	xles):	15		
Peak H	our Volume:	2,107 vehicles		He	avy Truci	ks (3+ A	xles):	15		
Ve	hicle Speed:	50 mph		Vehicle	Mix					
Near/Far La	ne Distance:	48 feet			icleType		Day	Evening	Night	Daily
Site Data							68.6%	•	· ·	87.95%
Bai	rier Height:	0.0 feet		Me	edium Tru	icks:	74.3%	5.2%	20.5%	7.05%
Barrier Type (0-W		0.0		F	leavy Tru	icks:	74.4%	5.9%	19.7%	5.00%
Centerline Dis	st. to Barrier:	59.0 feet		Noise So	ource Ele	vations	: (in fe	pet)		
Centerline Dist.	to Observer:	59.0 feet			Autos					
Barrier Distance	to Observer:	0.0 feet		Modiu	n Trucks					
Observer Height (	Above Pad):	5.0 feet			v Trucks			Grade Adj	ustment	0.0
Pa	ad Elevation:	0.0 feet					-		uoumoni	0.0
Roa	ad Elevation:	0.0 feet		Lane Eq	uivalent	Distanc	e (in i	feet)		
I	Road Grade:	0.0%			Autos	: 54.1	29			
	Left View:	-90.0 degrees		Mediu	m Trucks	: 53.9	966			
	Right View:	90.0 degrees		Heav	y Trucks	53.9	982			
FHWA Noise Mode	el Calculations									
VehicleType	REMEL	Traffic Flow	Distance	Finite	Road	Fresn	el	Barrier Atte	en Ber	m Atten
Autos:	70.20	0.38	-0.6		-1.20		4.69	0.0		0.000
Medium Trucks:	81.00	-10.58	-0.6		-1.20		-4.88	0.0		0.000
Heavy Trucks:	85.38	-12.07	-0.6	60	-1.20		-5.35	0.0	00	0.000
Unmitigated Noise	e Levels (witho	ut Topo and bai	rrier atte	nuation)						
VehicleType	Leq Peak Hour	Leq Day	Leq E	Evening	Leq N	light		Ldn	C	NEL
Autos:	68.8	3 66.	3	64.5		62.3		69.4		69.8
Medium Trucks:	68.6	66.	5	61.0		62.2		69.4	ļ.	69.5
Heavy Trucks:	71.5	5 69	4	64.4		64.9		72.1		72.3
Vehicle Noise:	74.6	6 72.	5	68.4		68.1		75.3		75.5
Centerline Distant	e to Noise Co	ntour (in feet)								
				dBA	65 a		6	i0 dBA		dBA
		Ldr		33	28	-		617		329
		CNEL	.: 1	38	29	7		639	1,	377

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	FHV	VA-RD-77-108	HIGHW	AY NO	ISE PR	EDICTIO	N MO	DEL			
	: Harvill Av.	roject w/o Inter ia St.	change			Project N Job Nur					
	PECIFIC IN	PUT DATA							L INPUT	s	
Highway Data				Si	te Con	ditions (H			,		
Average Daily T	. ,	16,522 vehicle	es					Autos:	15		
Peak Hour F		10%				dium Truc			15		
	our Volume:	1,652 vehicle	S		Hea	avy Truck	s (3+ A	Axles):	15		
	icle Speed:	50 mph		Ve	hicle I	/lix					
Near/Far Lan	e Distance:	48 feet			Vehi	cleType		Day	Evening	Night	Daily
Site Data						Au	tos:	68.6%	11.3%	20.1%	87.95%
Barr	ier Height:	0.0 feet			Me	edium Tru	cks:	74.3%	5.2%	20.5%	7.05%
Barrier Type (0-Wa	ull, 1-Berm):	0.0			H	leavy Tru	cks:	74.4%	5.9%	19.7%	5.00%
Centerline Dist	t. to Barrier:	59.0 feet		No	oise So	urce Ele	vation	s (in fe	et)		
Centerline Dist. to		59.0 feet				Autos:		200			
Barrier Distance to		0.0 feet			Mediur	n Trucks:		297			
Observer Height (A	,	5.0 feet			Heav	v Trucks:	8.0	004	Grade Ad	justment	: 0.0
	d Elevation:	0.0 feet					N-4	(! )	( 4)		
	d Elevation:	0.0 feet		La	ne Equ	Autos:	54.		eet)		
R	oad Grade: Left View:	0.0%			Modium	n Trucks:	53.				
	Right View:	-90.0 degree 90.0 degree				y Trucks:	53.				
FHWA Noise Model	Calculation	s									
VehicleType	REMEL	Traffic Flow	Distan	се	Finite	Road	Fresr	iel 🛛	Barrier Att	en Bei	rm Atten
Autos:	70.20	-0.67		-0.62		-1.20		-4.69	0.0	000	0.00
Medium Trucks:	81.00	-11.63		-0.60		-1.20		-4.88		000	0.00
Heavy Trucks:	85.38	-13.12		-0.60		-1.20		-5.35	0.0	000	0.00
Unmitigated Noise			-								
	eq Peak Hou			eq Eve		Leq N			Ldn		NEL
Autos: Medium Trucks:	67 67		65.3 65.5		63.5 59.9		61.2 61.1		68.4 68.3	-	68. 68.
Heavy Trucks:	70		68.4		59.9 63.4		63.9		71.7		68. 71.
Vehicle Noise:	70	-	71.4		67.3		67.0		74.2		71.
Centerline Distance	e to Noise Co	ontour (in feet	)								
				70 dB	Δ	65 dF	RΔ	6	0 dBA	55	dBA
						00 01					
			Ldn:	113		243			525		130

	FHW	/A-RD-77-108	HIGH	HWAY N	OISE PF	REDICT		ODEL			
Scenario: EAC w Road Name: Harvill Road Segment: s/o Or	Av.		chanç	ge			t Name. Number.				
SITE SPECIFI	C IN	PUT DATA					NOISE	MODE	L INPUT	S	
Highway Data				4	Site Con	ditions	6 (Hard	= 10, S	oft = 15)		
Average Daily Traffic (Ad	tt):	14,433 vehicle	es					Autos.	15		
Peak Hour Percentag	ge:	10%			Me	dium T	rucks (2	Axles)	15		
Peak Hour Volun	ne:	1,443 vehicle	s		Hea	avy Tru	icks (3+	Axles)	15		
Vehicle Spee	ed:	50 mph			/ehicle I	Mix.					
Near/Far Lane Distan	ce:	48 feet		H		cleTyp	~	Day	Evening	Night	Daily
Site Data					veni		e Autos:	68.6%	•		87.95
					M		rucks:	74.39			
Barrier Heig		0.0 feet					rucks:				
Barrier Type (0-Wall, 1-Berr		0.0			,	icavy i	TUCKS.	/4.4/	5 3.5%	15.770	5.00
Centerline Dist. to Barn		59.0 feet		1	Voise So	urce E	levatio	ns (in f	eet)		
Centerline Dist. to Observ		59.0 feet				Auto	os: 0	000.			
Barrier Distance to Observ		0.0 feet			Mediur	n Truci	ks: 2	2.297			
Observer Height (Above Pa		5.0 feet			Heav	y Trucl	ks: 8	3.004	Grade Ad	ljustment	0.0
Pad Elevati		0.0 feet		L,	5		. Diete		641		
Road Elevati		0.0 feet		4	.ane Equ				teet)		
Road Gra		0.0%				Auto		1.129			
Left Vie		-90.0 degree			Mediur			3.966			
Right Vie	9W.'	90.0 degree	es		Heav	y Truci	KS: 53	3.982			
FHWA Noise Model Calcula	tions	i									
VehicleType REME	L	Traffic Flow	Dis	stance	Finite	Road	Fres	snel	Barrier At	ten Bei	m Atter
Autos: 7	0.20	-1.26		-0.62	2	-1.20		-4.69	0.	000	0.00
Medium Trucks: 8	1.00	-12.22		-0.60	)	-1.20		-4.88	0.	000	0.00
Heavy Trucks: 8	5.38	-13.71		-0.60	)	-1.20		-5.35	0.	000	0.00
Unmitigated Noise Levels (			-		<b>(</b>						
VehicleType Leq Peak				Leq Ev		Leq	Night		Ldn		NEL
Autos:	67.		64.7		62.9		60		67.		68
Medium Trucks:	67.	-	64.9		59.4		60		67.		67
Heavy Trucks:	69.	•	67.8		62.8		63		70.	-	70
Vehicle Noise:	73.	-	70.8		66.7		66	.4	73.	6	73
Centerline Distance to Nois	se Co	ntour (in feet	)								
			L	70 c			i dBA		60 dBA		dBA
			Ldn:	10	3		222		479		033 070
			VFI :	10			231		497		

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	: Harvill Av.	oject w/o Interc	hange			Project N Job Nu					
	PECIFIC IN	PUT DATA							L INPUT	S	
Highway Data				5	Site Con	ditions (I	lard =	10, Sc	oft = 15)		
Average Daily T	raffic (Adt):	21,509 vehicle	6				/	Autos:	15		
Peak Hour F	Percentage:	10%			Mee	dium Truc	:ks (2 A	xles):	15		
Peak Ho	our Volume:	2,151 vehicles			Hea	avy Truck	is (3+ A	xles):	15		
Veh	icle Speed:	50 mph			Vehicle I	Niv					
Near/Far Lan	e Distance:	48 feet		H		cleType		Dav	Evening	Night	Dailv
Site Data								68.6%	•	20.1%	
		0.0 feet			Me	dium Tru		74.3%		20.5%	
Barrier Type (0-Wa	rier Height:	0.0 reet			H	leavv Tru	cks:	74.4%	5.9%	19.7%	
Centerline Dis	. ,	59.0 feet									
Centerline Dist. to		59.0 feet		/	Voise So	urce Ele			eet)		
Barrier Distance to		0.0 feet				Autos:		000			
Observer Height (A		5.0 feet				n Trucks:		297			
0 1	d Elevation:	0.0 feet			Heav	y Trucks:	8.0	004	Grade Adj	ustment	: 0.0
	d Elevation:	0.0 feet		1	ane Eau	ivalent l	Distand	e (in t	feet)		
	oad Grade:	0.0%				Autos:			,		
	Left View:	-90.0 degree	-		Mediur	n Trucks:					
	Right View:	90.0 degree				y Trucks:					
FHWA Noise Mode	I Calculations	5									
VehicleType	REMEL	Traffic Flow	Distar	се	Finite	Road	Fresn	el	Barrier Atte	en Ber	m Atten
Autos:	70.20	0.47		-0.62	2	-1.20		-4.69	0.0	00	0.000
Medium Trucks:	81.00	-10.49		-0.60	)	-1.20		-4.88	0.0	00	0.000
Heavy Trucks:	85.38	-11.98		-0.60	)	-1.20		-5.35	0.0	00	0.000
Inmitigated Noise					,						
VehicleType I Autos:	Leq Peak Hou 68.		6.4	eq Ev	ening 64.6	Leq N	ignt 62.3		Ldn 69.5		NEL
					• · · •						69.9
Medium Trucks:	68.		6.6		61.1 64.5		62.3 65.0		69.4 72.2		69.6 72.4
Heavy Trucks:	71.		9.5		00				12.2		
Vehicle Noise:	74.		2.5		68.4		68.2		75.4	+	75.6
Centerline Distance	e to Noise Co	ntour (in feet)		70 0	IRA	65 di	RA	6	0 dBA	55	dBA
										00	G 1
		1	dn:	13	5	290	)		625	1	347

	FH\	NA-RD-77-108	HIGHWA	Y NOISE I	PREDICTI	ON MOD	EL			
Road Nam	io: EAC w/o P e: Rider St. nt: e/o Patters	roject w/o Inter on Av.	change			Name: B umber: 1				
SITE	SPECIFIC IN	IPUT DATA			N	OISE M	ODEL	. INPUTS	5	
Highway Data				Site Co	onditions	(Hard = 1	10, Sof	ft = 15)		
Average Daily	Traffic (Adt):	1,861 vehicle	es			A	utos:	15		
Peak Hour	Percentage:	10%		N	ledium Tru	icks (2 A)	xles):	15		
Peak H	lour Volume:	186 vehicle	S	H	leavy Truc	:ks (3+ A)	xles):	15		
Ve	hicle Speed:	40 mph		Vehicle	Mix					
Near/Far La	ne Distance:	36 feet			hicleTvpe	[	Day	Evening	Night	Daily
Site Data							68.6%	11.3%	•	87.95%
		0.0 feet			, Medium Tr		4.3%	5.2%	20.5%	
вал Barrier Type (0-W	rrier Height:	0.0 feet			Heavy Tr		4.4%	5.9%	19.7%	
Centerline Dis	. ,	50.0 feet								
Centerline Dist.		50.0 feet		Noise :	Source El			et)		
Barrier Distance		0.0 feet			Autos					
Observer Height (		5.0 feet			um Trucks			~		
0 1	ad Elevation:	0.0 feet		Hea	avy Trucks	s: 8.0	04 0	Grade Adj	ustment.	0.0
Roa	ad Elevation:	0.0 feet		Lane E	quivalent	Distance	e (in fe	eet)		
1	Road Grade:	0.0%			Autos	s: 46.9	15			
	Left View:	-90.0 degree	es	Medi	um Trucks	s: 46.7	26			
	Right View:	90.0 degree	es	Hea	avy Trucks	s: 46.7	44			
FHWA Noise Mode	el Calculation	s								
VehicleType	REMEL	Traffic Flow	Distan	ce Finit	e Road	Fresne	el E	Barrier Atte	en Ber	m Atten
Autos:	66.51	-9.19		0.31	-1.20	-	4.65	0.0	00	0.000
Medium Trucks:	77.72	-20.15		0.34	-1.20	-	4.87	0.0	00	0.000
Heavy Trucks:	82.99	-21.64		0.34	-1.20	-	5.43	0.0	00	0.000
			harrior a	ttenuation	)					
Unmitigated Noise	e Levels (with	out Topo and	burrier a							VEL
Unmitigated Noise VehicleType	e Levels (with Leq Peak Hou			q Evening		Night	l	Ldn	CI	VLL
VehicleType Autos:	Leq Peak Hou 56	ur Leq Day	/ Le 54.0	q Evening 52.	Leq 2	49.9		57.1		57.5
VehicleType Autos: Medium Trucks:	Leq Peak Hou 56 56	ur Leq Day .4 .7	, Le 54.0 54.6	q Evening 52. 49.	Leq 2 1	49.9 50.3	l	57.1 57.4		57.5
VehicleType Autos:	Leq Peak Hou 56	ur Leq Day .4 .7	/ Le 54.0	q Evening 52.	Leq 2 1	49.9		57.1		57.5 57.6
VehicleType Autos: Medium Trucks:	Leq Peak Hou 56 56	ur Leq Day 5.4 5.7 5.5	, Le 54.0 54.6	q Evening 52. 49.	2 1 4	49.9 50.3		57.1 57.4		57.5 57.6 61.3
VehicleType Autos: Medium Trucks: Heavy Trucks:	Leq Peak Hou 56 56 60 63	ur Leq Day 4.4 5.7 5.5 5.1	/ Le 54.0 54.6 58.4 60.9	q Evening 52. 49. 53. 56.	2 2 1 4 7	49.9 50.3 53.9 56.5		57.1 57.4 61.1 63.7		57.5 57.6 61.3 64.0
VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	Leq Peak Hou 56 56 60 63	<i>I</i> Leq Day 4.4 5.5 6.1 <b>Dontour (in feet</b>	/ Le 54.0 54.6 58.4 60.9	q Evening 52. 49. 53. 56. 70 dBA	Leq 1 2 1 4 7 65 0	49.9 50.3 53.9 56.5	60	57.1 57.4 61.1 63.7 0 dBA	55	57.5 57.6 61.3 64.0 dBA
VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	Leq Peak Hou 56 56 60 63	ur Leq Day 4.4 5.5 5.1 5 5 6.1	/ Le 54.0 54.6 58.4 60.9	q Evening 52. 49. 53. 56.	2 2 1 4 7	49.9 50.3 53.9 56.5 dBA 1	60	57.1 57.4 61.1 63.7	55	57.5 57.6 61.3 64.0

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	FH\	VA-RD-77-108	HIGHW	AY NO	ISE PR	EDICTIO	N MOI	DEL			
Scenario: Road Name: Road Segment:	Placentia S		change			Project N Job Nun					
	PECIFIC IN	IPUT DATA								S	
Highway Data				Si	te Con	ditions (H			,		
Average Daily Tr	. ,	397 vehicl	es					Autos:	15		
Peak Hour Pe		10%				dium Truci		/	15		
	ir Volume:	40 vehicle	s		Hea	avy Trucks	s (3+ A	xles):	15		
	cle Speed:	40 mph		Ve	hicle I	Лix					
Near/Far Lane	Distance:	36 feet			Vehi	cleType		Day	Evening	Night	Daily
Site Data						Au	tos:	68.6%	11.3%	20.1%	87.95%
Barrie	er Height:	0.0 feet				edium Truc		74.3%	5.2%	20.5%	
Barrier Type (0-Wall	l, 1-Berm):	0.0			H	leavy Truc	cks:	74.4%	5.9%	19.7%	5.00%
Centerline Dist.	to Barrier:	50.0 feet		No	oise So	urce Elev	ation	s (in fe	et)		
Centerline Dist. to	Observer:	50.0 feet				Autos:		000			
Barrier Distance to	Observer:	0.0 feet			Mediur	n Trucks:		297			
Observer Height (At	,	5.0 feet			Heav	v Trucks:			Grade Ad	ustment	0.0
	Elevation:	0.0 feet		-							
	Elevation:	0.0 feet		Lá	ine Equ	ivalent D			eet)		
	ad Grade:	0.0%			1 4 m all 1 m	Autos: n Trucks:	46.9				
	Left View: Right View:	-90.0 degre 90.0 degre				y Trucks:	46.7 46.7				
FHWA Noise Model	Calculation	s									
VehicleType	REMEL	Traffic Flow	Distan	се	Finite	Road	Fresn	el	Barrier Att	en Ber	m Atten
Autos:	66.51	-15.90		0.31		-1.20		-4.65	0.0	00	0.00
Medium Trucks:	77.72	-26.86		0.34		-1.20		-4.87		00	0.00
Heavy Trucks:	82.99	-28.35		0.34		-1.20		-5.43	0.0	00	0.00
Unmitigated Noise L										T	
	eq Peak Hou			eq Eve		Leq Ni			Ldn		NEL
Autos:	49		47.3		45.5		43.2		50.4		50.
Medium Trucks:	50 53		47.9 51.7		42.4 46.7		43.6 47.2		50.7 54.4		50.
Heavy Trucks: Vehicle Noise:	53	-	51.7		46.7		47.2		54.4		54. 57.
Centerline Distance					20.0		.0.0		07.0		01.
2 Distance			/	70 dE	8A	65 dE	A	6	0 dBA	55	dBA
			Ldn:	7		15		•	32		68
			NFL:	7							71

	FH\	NA-RD-77-108	HIGH	WAY N	IOISE PF	REDICTIO	ON MOD	EL			
Road Nan	rio: EAC w/o P ne: Placentia S nt: e/o Dwy. 2	roject w/o Inter St.	change	e		Project N Job Nu	lame: B mber: 1				
SITE	SPECIFIC IN	IPUT DATA				N	DISE M	ODE	L INPUT	s	
Highway Data				5	Site Con	ditions (l	Hard = 1	10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	415 vehicle	es				A	utos:	15		
Peak Hour	Percentage:	10%			Me	dium Truc	cks (2 A)	des):	15		
Peak H	our Volume:	42 vehicles	s		He	avy Truck	(3+ A)	des):	15		
Ve	hicle Speed:	40 mph		1	Vehicle I	Mix					
Near/Far La	ne Distance:	36 feet		-		cleType	ſ	Day	Evening	Night	Daily
Site Data					10.11			i8.6%	•		87.95
	rrier Height:	0.0 feet			Me	dium Tru		4.3%		20.5%	
Barrier Type (0-V		0.0			ŀ	leavy Tru	icks: 7	4.4%	5.9%	19.7%	5.009
	ist, to Barrier:	50.0 feet									
Centerline Dist.		50.0 feet		/	Voise So	ource Ele			eet)		
Barrier Distance	to Observer:	0.0 feet				Autos:					
Observer Height		5.0 feet				n Trucks:					
	ad Elevation:	0.0 feet			Heav	y Trucks:	8.0	04	Grade Adj	lustment	: 0.0
Ro	ad Elevation:	0.0 feet		L	Lane Eq	uivalent	Distance	e (in i	feet)		
	Road Grade:	0.0%				Autos:	46.9	15			
	Left View:	-90.0 degree	es		Mediur	n Trucks:	46.7	26			
	Right View:	90.0 degree	es		Heav	y Trucks:	46.7	44			
FHWA Noise Mod	lel Calculation	s									
VehicleType	REMEL	Traffic Flow	Dist	tance	Finite	Road	Fresne	e/	Barrier Att	en Ber	m Atten
Autos:	66.51	-15.70		0.31	1	-1.20	-	4.65	0.0	000	0.00
Medium Trucks:	77.72	-26.66		0.34	1	-1.20	-	4.87	0.0	000	0.00
Heavy Trucks:	82.99	-28.16		0.34	1	-1.20	-	5.43	0.0	000	0.00
Unmitigated Nois	e Levels (with	out Topo and	barrie	r atten	uation)						
VehicleType	Leq Peak Hou			Leq Ev		Leq N			Ldn		NEL
Autos:			47.5		45.7		43.4		50.6		51.
Medium Trucks:			48.1		42.6		43.8		50.9		51.
Heavy Trucks:		-	51.9		46.9		47.4		54.6		54.
Vehicle Noise:			54.4		50.2		50.0		57.2	2	57.
Centerline Distan	ce to Noise C	ontour (in feet	)								
			L	70 a		65 d		6	0 dBA		dBA
			Ldn:	7		15			33		70
		CI	VEL:	7		16			34		73

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FH	NA-RD-77-108 I	HIGHWA	N NO	OISE PF	REDICT	ON MO	DDEL				
Scenario: EAPC w/o Road Name: Patterson / Road Segment: n/o Walnut	Av.	chang			Project Job N	Name: umber:					
SITE SPECIFIC IN	IPUT DATA							el inpu	TS		
Highway Data			S	ite Con	ditions	(Hard :	= 10, S	oft = 15)			
Average Daily Traffic (Adt):	432 vehicle	5					Autos	: 15			
Peak Hour Percentage:	10%			Mee	dium Tru	ıcks (2	Axles)	: 15			
Peak Hour Volume:	43 vehicles			Hea	avy Truc	cks (3+	Axles)	: 15			
Vehicle Speed:	40 mph		V	ehicle l	<i>Ni</i> v						
Near/Far Lane Distance:	36 feet		-		cleType		Dav	Evenin	a Nie	ght	Daily
Site Data			-			Autos:	68.69			-	91.50%
Barrier Height:	0.0 feet			Me	dium Ti	ucks:	74.3%	6 5.29	6 20	).5%	4.98%
Barrier Type (0-Wall, 1-Berm):	0.0			E	leavy Tr	ucks:	74.4%	6 5.99	6 19	9.7%	3.53%
Centerline Dist. to Barrier:	50.0 feet			loise So	uree El	ovetie	no (in	fa a 4)			
Centerline Dist. to Observer:	50.0 feet		~	ioise so	Auto:		000	ieel)			
Barrier Distance to Observer:	0.0 feet			1 4 m all 1 m	n Truck:		.297				
Observer Height (Above Pad):	5.0 feet				v Truck		.004	Grade /	Adjust	mont	0.0
Pad Elevation:	0.0 feet			neav	y TTUCK	s. a	.004	Graue	lujusu	nem.	0.0
Road Elevation:	0.0 feet		L	ane Equ	uivalent	Dista	nce (in	feet)			
Road Grade:	0.0%				Autos	s: 46	6.915				
Left View:	-90.0 degree	5		Mediur	n Truck	s: 46	6.726				
Right View:	90.0 degree	5		Heav	y Trucks	s: 46	6.744				
FHWA Noise Model Calculation	S										
VehicleType REMEL	Traffic Flow	Distan	се	Finite	Road	Fres	nel	Barrier /	Atten	Berr	n Atten
Autos: 66.51	-15.36		0.31		-1.20		-4.65		0.000		0.000
Medium Trucks: 77.72	-28.00		0.34		-1.20		-4.87	· (	0.000		0.000
Heavy Trucks: 82.99	-29.49		0.34		-1.20		-5.43		0.000		0.000
Unmitigated Noise Levels (with	out Topo and L	arrier a	ttenı	uation)							
VehicleType Leq Peak Ho	ur Leq Day	Le	q Ev	ening	Leq	Night		Ldn		CN	IEL
Autos: 50	0.3 4	7.8		46.0		43	.8	5	1.0		51.3
		6.8		41.2		42	.4	4	9.6		49.8
Heavy Trucks: 52	.6 5	0.6		45.5		46	.0	5	3.3		53.5
Vehicle Noise: 55	5.6 5	3.5		49.5		49	.1	5	6.3		56.5
Centerline Distance to Noise C	ontour (in feet)										
			70 d	BA		dBA		60 dBA		55 0	
		dn:	6			3		28		6	
		FL:	6			4		29		6	2

FHW	/A-RD-77-108 HIG	HWAY I	NOISE PR	EDICTIO	N MODI	EL		
Scenario: EAPC w/o F Road Name: Patterson A Road Segment: n/o Placenti	v.	ing		Project N Job Nur	ame: Ba nber: 12			
SITE SPECIFIC IN	PUT DATA			NO	ISE MO	DDEL INPU	TS	
Highway Data			Site Cond	ditions (H	lard = 1	0, Soft = 15)		
Average Daily Traffic (Adt):	542 vehicles				AL	itos: 15		
Peak Hour Percentage:	10%		Med	lium Truc	ks (2 Ax	les): 15		
Peak Hour Volume:	54 vehicles		Hea	vy Truck	s (3+ Ax	les): 15		
Vehicle Speed:	40 mph	ŀ	Vehicle N	liv				
Near/Far Lane Distance:	36 feet	ŀ		cleType	D	ay Evening	Night	Daily
Site Data			1011			3.6% 11.3%		
Barrier Height:	0.0 feet		Me	dium Tru	cks: 74	4.3% 5.2%	6 20.5	% 4.57%
Barrier Type (0-Wall, 1-Berm):	0.0		н	leavy Tru	cks: 74	4.4% 5.9%	6 19.7	% 3.24%
Centerline Dist. to Barrier:	50.0 feet	ŀ	Noise So	uree Eler	ations	(in fact)		
Centerline Dist. to Observer:	50.0 feet	ł	Noise 30	Autos:	0.00	, ,		
Barrier Distance to Observer:	0.0 feet		Modium	n Trucks:	2.29			
Observer Height (Above Pad):	5.0 feet			/ Trucks:	8.00	-	djustme	nt: 0.0
Pad Elevation:	0.0 feet		Tieav	/ ITUCKS.	0.00	4 0/0007	lujustino	n. 0.0
Road Elevation:	0.0 feet		Lane Equ	ivalent D	Distance	(in feet)		
Road Grade:	0.0%			Autos:	46.91	5		
Left View:	-90.0 degrees		Mediun	n Trucks:	46.72	:6		
Right View:	90.0 degrees		Heavy	/ Trucks:	46.74	4		
FHWA Noise Model Calculations	3	I						
VehicleType REMEL	Traffic Flow Di	istance	Finite I	Road	Fresnel	Barrier A	tten B	erm Atten
Autos: 66.51	-14.34	0.3	51	-1.20	-4	.65 0	0.000	0.000
Medium Trucks: 77.72	-27.39	0.3	14	-1.20	-4	.87 (	0.000	0.000
Heavy Trucks: 82.99	-28.88	0.3	14	-1.20	-5	i.43 (	0.000	0.000
Unmitigated Noise Levels (with	out Topo and barr	ier atter	nuation)					
VehicleType Leq Peak Hou	r Leq Day	Leq E	vening	Leq Ni	ight	Ldn		CNEL
Autos: 51.			47.0		44.8		2.0	52.3
Medium Trucks: 49.			41.8		43.0		0.2	50.4
Heavy Trucks: 53.			46.2		46.7		3.9	54.1
Vehicle Noise: 56.	4 54.2		50.3		49.8	57	7.0	57.3
Centerline Distance to Noise Co	ntour (in feet)							
	l		dBA	65 dE	BA	60 dBA	ŧ	5 dBA
	Ldn:		7	15		32		68
	CNEL:		7	15		33		71

Tuesday, March 12, 2019

	FHV	VA-RD-77-108	HIGHW	AY NOISI		ON MOI	DEL			
Scenario: Road Name: Road Segment:	Harvill Av.	Project w/o Inte Expy.	erchang		Project I Job Nu	Vame: E Imber: 1				
SITE SP	PECIFIC IN	IPUT DATA			N	OISE N	IODE		s	
Highway Data				Site	Conditions (	Hard =	10, So	ft = 15)		
Average Daily Tr	affic (Adt):	20,661 vehicl	es				Autos:	15		
Peak Hour Pe	ercentage:	10%			Medium Tru	cks (2 A	xles):	15		
Peak Hou	ır Volume:	2,066 vehicle	s		Heavy Truc	ks (3+ A	xles):	15		
Vehio	cle Speed:	50 mph		Vehi	le Mix					
Near/Far Lane	Distance:	48 feet			VehicleType		Dav	Evening	Night	Daily
Site Data					A	utos:	68.6%	11.3%	20.1%	87.98%
Barri	er Height:	0.0 feet			Medium Tru	ucks:	74.3%	5.2%	20.5%	7.01%
Barrier Type (0-Wal	l, 1-Berm):	0.0			Heavy Tri	ucks:	74.4%	5.9%	19.7%	5.01%
Centerline Dist.		59.0 feet		Nois	e Source Ele	evations	s (in fe	et)		
Centerline Dist. to		59.0 feet			Autos	: 0.0	000			
Barrier Distance to		0.0 feet		Me	dium Trucks	: 2.2	297			
Observer Height (Al	,	5.0 feet		F	leavy Trucks	: 8.0	004	Grade Ad	iustment	: 0.0
	Elevation: Elevation:	0.0 feet		Land	Equivalent	Distand	o (in f	inot)		
	Elevation: ad Grade:	0.0 feet 0.0%		Lane	Autos			eelj		
Ru	Left View:	-90.0 degre		Ma	dium Trucks					
F	Right View:	90.0 degre			leavy Trucks					
FHWA Noise Model	Calculation	s								
VehicleType	REMEL	Traffic Flow	Distan	ce Fi	nite Road	Fresn	el i	Barrier Att	en Ber	rm Atten
Autos:	70.20	0.30		-0.62	-1.20		-4.69	0.0	000	0.00
Medium Trucks:	81.00	-10.69		-0.60	-1.20		-4.88		000	0.00
Heavy Trucks:	85.38	-12.15		-0.60	-1.20		-5.35	0.0	000	0.00
Unmitigated Noise L							r			
	eq Peak Hou			eq Evenin				Ldn		NEL
Autos:	68 68		66.3 66.4	-	4.4	62.2 62.1		69.4 69.2		69. 69.
Medium Trucks: Heavy Trucks:	68 71		66.4 69.4		0.9 4.3	62.1		69.2 72.1		69.4 72.3
Vehicle Noise:	71		69.4 72.4	-	4.3 8.3	68.0		72.	·	72.
Centerline Distance	to Noise Co	ontour (in feet	)							
			, 	70 dBA	65 0	IBA	6	0 dBA	55	dBA
			I dn:	131	28	2		609	. 1	311
				131	28	3			1,	311

FF	IWA-RD-77-108 I	HIGHWA	AY NO	ISE PREDICT	ON MO	DEL			
Scenario: EAPC w/c Road Name: Harvill Av Road Segment: s/o Rider		chang			Name: I umber:				
SITE SPECIFIC I	NPUT DATA			N	OISE N	IODE	L INPUT	S	
Highway Data			Si	te Conditions	(Hard =	10, So	ft = 15)		
Average Daily Traffic (Adt):	21,223 vehicles	6				Autos:	15		
Peak Hour Percentage:	10%			Medium Tri	icks (2 A	(xles):	15		
Peak Hour Volume:	2,122 vehicles			Heavy True	:ks (3+ A	(xles):	15		
Vehicle Speed:	50 mph		Ve	hicle Mix					
Near/Far Lane Distance:	48 feet			VehicleType		Day	Evening	Night	Daily
Site Data				,,		68.6%	11.3%	20.1%	
	0.0 feet			, Medium T		74.3%	5.2%	20.5%	7.05%
Barrier Height: Barrier Type (0-Wall, 1-Berm):	0.0 feet 0.0			Heavy T		74.4%		19.7%	5.04%
Centerline Dist. to Barrier:	59.0 feet								
Centerline Dist. to Observer:	59.0 feet		No	oise Source E			et)		
Barrier Distance to Observer:	0.0 feet			Auto		000			
Observer Height (Above Pad):	5.0 feet			Medium Truck		297			
Pad Elevation:	0.0 feet			Heavy Truck	s: 8.0	004	Grade Adj	ustment:	0.0
Road Elevation:	0.0 feet		La	ne Equivalen	Distan	ce (in f	eet)		
Road Grade:	0.0%			Auto	s: 54.	129	í		
Left View:	-90.0 degrees			Medium Truck	53.9	966			
Right View:	90.0 degrees			Heavy Truck	s: 53.	982			
FHWA Noise Model Calculatio	ns								
VehicleType REMEL	Traffic Flow	Distan	се	Finite Road	Fresn	el	Barrier Att	en Ber	m Atten
Autos: 70.20			0.62	-1.20		-4.69	0.0		0.00
Medium Trucks: 81.0			0.60	-1.20		-4.88	0.0		0.00
Heavy Trucks: 85.3	3 -12.00		0.60	-1.20		-5.35	0.0	000	0.00
Unmitigated Noise Levels (wit		-		,				1	
VehicleType Leq Peak Ho			q Eve		Night		Ldn		VEL
		6.4		64.5	62.3		69.5		69.
		6.6		61.0	62.2		69.4		69.
		9.5		64.5	65.0		72.2		72.
		2.5		68.4	68.1		75.3	8	75.
Centerline Distance to Noise (	Contour (in feet)		70 dB	A 05	dBA	0	0 dBA	FE	dBA
						0			
	,	dn:	134	2	38		621		339

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Scenario: EAPC w	lo Dro	ioct w/o Interr	hong			Project N	lama:	arker			
Road Name: Harvill A		ject w/o intert	mang			Job Nu					
Road Segment: s/o Plac						<i>300 Mu</i>	nuer.	2210			
SITE SPECIFIC Highway Data	INPU	JI DATA			Site Con	ditions ()			L INPUTS	•	
Average Daily Traffic (Adt	1. 16	713 vehicles				and one (i		utos:			
Peak Hour Percentage		10%			Mer	dium Truc					
Peak Hour Volume		571 vehicles				avy Truck					
Vehicle Speed		50 mph					0 101 71	,	10		
Near/Far Lane Distance		48 feet		۱	/ehicle l						
	<i>.</i> .	40 1001			Vehi	cleType		Day	Evening	Night	Daily
Site Data								68.6%		20.1%	
Barrier Heigh	t:	0.0 feet				edium Tru		74.3%		20.5%	
Barrier Type (0-Wall, 1-Berm	):	0.0			H	leavy Tru	cks:	74.4%	5.9%	19.7%	4.94
Centerline Dist. to Barrie	r: l	59.0 feet		1	Voise So	urce Ele	vations	in fe	et)		-
Centerline Dist. to Observe	r: l	59.0 feet		F		Autos					-
Barrier Distance to Observe	r:	0.0 feet			Mediur	n Trucks:					
Observer Height (Above Pad	):	5.0 feet			Heav	v Trucks:	8.0	04	Grade Adj	ustment	: 0.0
Pad Elevation		0.0 feet						-			
Road Elevation		0.0 feet		1	ane Equ	livalent			leet)		
Road Grade		0.0%				Autos:					
Left View		90.0 degrees				n Trucks:					
Right Viev	V: !	90.0 degrees			Heav	y Trucks:	53.9	82			
FHWA Noise Model Calculat	ions										
VehicleType REMEL	Tı	affic Flow	Distar	се	Finite	Road	Fresn	e/	Barrier Atte	en Ber	m Atter
Autos: 70.	20	-0.62		-0.62	2	-1.20		4.69	0.0	00	0.00
Medium Trucks: 81.	00	-11.63		-0.60	)	-1.20		4.88	0.0	00	0.00
Heavy Trucks: 85.	38	-13.12		-0.60	)	-1.20		5.35	0.0	00	0.0
Unmitigated Noise Levels (w	ithout	Topo and b	arrier a	tten	uation)						
VehicleType Leq Peak I	Hour	Leq Day	Le	eq Ev	rening	Leq N	ïght		Ldn	C	NEL
Autos:	67.8	65	i.3		63.5		61.3		68.5		68
Medium Trucks:	67.6	65	.5		59.9		61.1		68.3		68
Heavy Trucks:	70.5	68	.4		63.4		63.9		71.1		71
Vehicle Noise:	73.6	71	.4		67.3		67.0		74.2		74
Centerline Distance to Noise	Cont	our (in feet)									
				70 a	IBA	65 d	BA	6	60 dBA	55	dBA
		Lo	in:	11	3	24 25			526		133 174

	FHV	VA-RD-77-108	HIGHW.	AY N	OISE PR	EDICT	ION MO	DEL			
	: Harvill Av.	Project w/o Inte Av.	rchang				Name: lumber:				
SITE S	PECIFIC IN	PUT DATA				Ν	IOISE N	<b>IODE</b>	L INPUT	s	
Highway Data				S	ite Cond	ditions	(Hard =	10, So	oft = 15)		
Average Daily	· · ·	14,624 vehicle	s					Autos:	15		
Peak Hour I		10%					ucks (2 /		15		
Peak Ho	our Volume:	1,462 vehicles			Hea	avy Tru	cks (3+ A	Axles):	15		
	icle Speed:	50 mph		v	ehicle N	lix					
Near/Far Lar	e Distance:	48 feet		-		cleType		Dav	Evening	Night	Daily
Site Data								68.6%	~	20.1%	
Bar	rier Height:	0.0 feet			Me	dium T	rucks:	74.3%	5.2%	20.5%	6.96%
Barrier Type (0-Wa		0.0			н	leavy Ti	rucks:	74.4%	5.9%	19.7%	4.93%
Centerline Dis	t. to Barrier:	59.0 feet			loise So	urco E	lovation	s (in fi	oot)		
Centerline Dist. t	o Observer:	59.0 feet		~	0130 00	Auto		200			
Barrier Distance t	o Observer:	0.0 feet			Mediun			297			
Observer Height (/	Above Pad):	5.0 feet				/ Truck		004	Grade Ad	iustmen	· 0.0
Pa	d Elevation:	0.0 feet								Juoumoni	0.0
Roa	d Elevation:	0.0 feet		L	ane Equ	iivalen	t Distan	ce (in	feet)		
F	load Grade:	0.0%				Auto		129			
	Left View:	-90.0 degree	S		Mediun			966			
	Right View:	90.0 degree	S		Heavy	/ Truck	s: 53.	982			
FHWA Noise Mode	I Calculation:	s									
VehicleType	REMEL	Traffic Flow	Distar	ice	Finite I		Fresr		Barrier Att	en Be	rm Atten
Autos:	70.20	-1.19		-0.62		-1.20		-4.69	0.0	000	0.000
Medium Trucks:	81.00	-12.22		-0.60		-1.20		-4.88	0.0	000	0.000
Heavy Trucks:	85.38	-13.71		-0.60		-1.20		-5.35	0.0	000	0.000
Unmitigated Noise											
,1	Leq Peak Hou	1 1		eq Ev	ening	Leq	Night		Ldn		NEL
Autos:	67.		64.8		62.9		60.7		67.9		68.2
Medium Trucks:	67.		64.9		59.4		60.5		67.3		67.9
Heavy Trucks:	69	-	67.8		62.8		63.3		70.5	-	70.7
Vehicle Noise:	73		70.8		66.7		66.5	5	73.	7	73.9
Centerline Distanc	e to Noise Co	ontour (in feet)		70 .	D.4	05	-10.4		0.104		-10.4
				70 d			dBA	6	60 dBA		dBA
			_dn: IFI :	10			23		481		,035
		Ch	IEL:	10	'	2	31		498	1,	,073

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	FH\	WA-RD-77-108	HIGHV	VAY NO	DISE PI	REDICTIO	on Mo	DEL			
	e: Harvill Av.	Project w/o Inte	erchang	l		Project I Job Nu					
SITE : Highway Data	SPECIFIC IN	NPUT DATA			ita Can	N( ditions (				s	
Average Daily Peak Hour Peak H Veak H	Percentage: lour Volume: hicle Speed:	21,700 vehicl 10% 2,170 vehicle 50 mph			Ме	dium True avy Truck	cks (2	Autos: Axles):	15		
Near/Far Lai	ne Distance:	48 feet			Veh	icleType		Day	Evening	Night	Daily
Site Data Bar Barrier Type (0-W	r <b>ier Height:</b> 'all, 1-Berm):	0.0 feet 0.0				Ai edium Tru Heavy Tru		68.6% 74.3% 74.4%	5.2%	20.1% 20.5% 19.7%	6.99
Centerline Dis Centerline Dist. Barrier Distance Observer Height ( Pa	to Observer: to Observer:	59.0 feet 59.0 feet 0.0 feet 5.0 feet 0.0 feet			Mediui Heav	Autos: Autos: m Trucks: y Trucks:	: 0 : 2 : 8	.000 .297 .004	Grade Ad	ljustmen	t: 0.0
	ad Elevation: Road Grade: Left View: Right View:	0.0 feet 0.0% -90.0 degre 90.0 degre			Mediu	uivalent Autos: m Trucks ny Trucks:	: 54 : 53	.129 .966 .982			
FHWA Noise Mode	el Calculation	IS									
VehicleType Autos: Medium Trucks: Heavy Trucks:	REMEL 70.20 81.00 85.38	-10.49	Dista	-0.62 -0.60 -0.60	Finite	Road -1.20 -1.20 -1.20	Fres	nel -4.69 -4.88 -5.35	0.0	ten Be 000 000 000	rm Atter 0.00 0.00 0.00
Unmitigated Noise	e Levels (with	out Topo and	barrier	attenu	ation)						
VehicleType	Leg Peak Ho			Leg Eve		Leq N	light		Ldn	C	NEL
Autos: Medium Trucks:	68	3.9 3.7	66.5 66.6		64.6 61.1	,	62. 62.	3	69.6 69.4	4	69 69
Heavy Trucks: Vehicle Noise:		1.6 1.7	69.5 72.6		64.5 68.5		65. 68.	-	72.2	-	72 75
Centerline Distand	ce to Noise C	ontour (in fee	)								
			Ldn:	70 dE 135 140		65 d 29 30	1	e	60 dBA 626 649	1	<i>dBA</i> ,350 ,399
		L	VEL.	140		30			049	1	,599

	FHV	VA-RD-77-108 I	HIGHW	AY NO	DISE PR	EDICTIO	ON MOE	EL			
Road Nam	o: EAPC w/o F e: Rider St. nt: e/o Patterso	Project w/o Inter on Av.	chang			Project I Job Nu	<i>lame:</i> B mber: 1				
SITE	SPECIFIC IN	PUT DATA				N	DISE M	ODE	L INPUT	s	
Highway Data				S	ite Cond	ditions (	Hard = 1	10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	1,988 vehicle	6				A	utos:	15		
Peak Hour	Percentage:	10%			Med	lium Tru	cks (2 A	xles):	15		
Peak H	our Volume:	199 vehicles			Hea	avy Truck	(3+ A	xles):	15		
Vei	hicle Speed:	40 mph		V	ehicle N	Niv					
Near/Far Lai	ne Distance:	36 feet				cleType		Day	Evening	Night	Daily
Site Data					VCIIIC			58.6%		20.1%	
					Me	dium Tri		4.3%		20.5%	
	rier Height:	0.0 feet 0.0				leavy Tru		4.4%		19.7%	
Barrier Type (0-W Centerline Dis		0.0 50.0 feet									
Centerline Dist		50.0 feet		N	loise So	urce Ele	vations	(in fe	eet)		
Barrier Distance		0.0 feet				Autos.	0.0	00			
Observer Height (		5.0 feet				n Trucks.					
0,1	d Flevation:	0.0 feet			Heavy	/ Trucks.	8.0	04	Grade Adj	iustment.	0.0
	d Elevation:	0.0 feet		L	ane Equ	ivalent	Distanc	e (in t	feet)		
	Road Grade:	0.0%				Autos			,		
	Left View:	-90.0 degree			Medium	n Trucks.	46.7	26			
	Right View:	90.0 degree			Heavy	/ Trucks.	46.7	44			
FHWA Noise Mode	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Distar	се	Finite F	Road	Fresne	e/	Barrier Att	en Ber	m Atten
Autos:	66.51	-8.86		0.31		-1.20	-	4.65	0.0	000	0.00
Medium Trucks:	77.72	-20.15		0.34		-1.20	-	4.87	0.0	000	0.00
Heavy Trucks:	82.99	-21.64		0.34		-1.20	-	5.43	0.0	000	0.00
Unmitigated Noise											
	Leq Peak Hou			eq Eve		Leq N			Ldn		VEL
Autos:	56.		4.3		52.5		50.3		57.4		57.8
Medium Trucks:	56		4.6		49.1		50.3		57.4		57.
Heavy Trucks:	60.		8.4		53.4		53.9		61.1		61.3
	63		1.0		56.8		56.6		63.8	3	64.0
Vehicle Noise:		ntour (in foot)									
Centerline Distance	e to Noise Co	intour (in reet)		70 4							
	e to Noise Co		dn	70 dl		65 d		6	0 dBA		dBA
	e to Noise Co	L	dn: EL:	70 dl 19 20		65 d 42 43		6	0 dBA 90 93	1	08A 93 00

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		VA-RD-77-108									
Road Nan	io: EAPC w/o I ne: Placentia S nt: e/o Patterso	t.	rchan	g		Project N Job Nur					
÷	SPECIFIC IN					NC	ISE	IODE	L INPUT	s	
Highway Data	01 2011 10 11				Site Con	ditions (F				<u> </u>	
Average Daily	Traffic (Adt):	588 vehicle	s					Autos:	15		
Peak Hour	Percentage:	10%			Me	dium Truc	ks (2 /	Axles):	15		
Peak H	lour Volume:	59 vehicles	5		He	avy Truck	s (3+ /	Axles):	15		
Ve	hicle Speed:	40 mph		-	Vehicle I	Mix					
Near/Far La	ne Distance:	36 feet		-		cleType		Dav	Evening	Night	Dailv
Site Data							tos:	68.6%	•	20.1%	91.86
Ba	rrier Heiaht:	0.0 feet			Me	dium Tru	cks:	74.3%	5.2%	20.5%	4.76
Barrier Type (0-W	/all, 1-Berm):	0.0			ŀ	leavy Tru	cks:	74.4%	5.9%	19.7%	3.38
Centerline Di		50.0 feet		F	Noise Sc	ource Elev	vation	s (in fe	eet)		
Centerline Dist.		50.0 feet				Autos:	0.	000	,		
Barrier Distance		0.0 feet			Mediur	n Trucks:	2.	297			
Observer Height	· · · ·	5.0 feet			Heav	y Trucks:	8.	004	Grade Ad	justmen	t: 0.0
	ad Elevation:	0.0 feet		-	1 E		Natan	(!	(		
	ad Elevation:	0.0 feet		-	Lane Eq	uivalent L			reet)		
	Road Grade:	0.0%				Autos:		915			
	Left View: Right View:	-90.0 degree 90.0 degree				n Trucks: y Trucks:		726 744			
FHWA Noise Mod	el Calculation	- s									
VehicleType	REMEL	Traffic Flow	Dist	tance	Finite	Road	Fresr	nel	Barrier Att	en Be	rm Atter
Autos:	66.51	-14.00		0.3	1	-1.20		-4.65	0.0	000	0.00
Medium Trucks:	77.72	-26.86		0.3	4	-1.20		-4.87	0.0	000	0.00
Heavy Trucks:	82.99	-28.35		0.3	4	-1.20		-5.43	0.0	000	0.00
Unmitigated Nois											
VehicleType	Leq Peak Hou			Leq E	vening	Leq N	<u> </u>		Ldn		NEL
Autos:	51	-	19.2		47.4		45.1		52.3	-	52
Medium Trucks:	50		17.9		42.4		43.6		50.		50
Heavy Trucks:	53	-	51.7		46.7		47.2	-	54.4		54
Vehicle Noise:	56	.8	54.7		50.7		50.3	3	57.5	5	57
Centerline Distan	ce to Noise Co	ontour (in feet)	1								
			L		dBA	65 dE	зA	6	0 dBA	55	dBA
			Ldn:		7	16			34		74
			IFI :		8	16			35		76

	FHV	VA-RD-77-108 H	IGHWA	NOISE PR	REDICTI	ION MOI	DEL			
Road Nam	io: EAPC w/o l le: Placentia S nt: e/o Dwy. 2	Project w/o Inter t.	chang			Name: I umber: ·				
	SPECIFIC IN	PUT DATA			N	IOISE N	IODE	L INPUT	s	
Highway Data				Site Con	ditions	(Hard =	10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	1,178 vehicles	5			/	Autos:	15		
Peak Hour	Percentage:	10%		Me	dium Tru	ucks (2 A	xles):	15		
Peak H	lour Volume:	118 vehicles		He	avy Truc	cks (3+ A	(xles):	15		
Ve	hicle Speed:	40 mph		Vehicle	Mix					
Near/Far La	ne Distance:	36 feet			icleType		Day	Evening	Night	Daily
Site Data							68.6%	•	20.1%	
Bai	rrier Height:	0.0 feet		Me	edium Tr	rucks:	74.3%	5.2%	20.5%	2.48%
Barrier Type (0-W		0.0		ŀ	leavy Tr	rucks:	74.4%	5.9%	19.7%	1.76%
Centerline Dis	st. to Barrier:	50.0 feet		Noise So	urce El	evation	s (in fa	aat)		
Centerline Dist.	to Observer:	50.0 feet		110/30 00	Autos		000			
Barrier Distance	to Observer:	0.0 feet		Modiu	n Trucks		297			
Observer Height (	Above Pad):	5.0 feet			v Trucks		004	Grade Ad	iustment	. 0.0
Pa	ad Elevation:	0.0 feet							Juoumoni	. 0.0
Roa	ad Elevation:	0.0 feet		Lane Eq	uivalent	Distanc	ce (in i	feet)		
	Road Grade:	0.0%			Autos		915			
	Left View:	-90.0 degrees	5		m Trucks					
	Right View:	90.0 degrees	6	Heav	ry Trucks	s: 46.7	744			
FHWA Noise Mod	el Calculation	s		1						
VehicleType	REMEL	Traffic Flow	Distance	e Finite		Fresn		Barrier Att	en Bei	m Atten
Autos:	66.51	-10.80		.31	-1.20		-4.65		000	0.000
Medium Trucks:	77.72	-26.66		.34	-1.20		-4.87		000	0.000
Heavy Trucks:	82.99	-28.16	C	.34	-1.20		-5.43	0.0	000	0.000
Unmitigated Noise	e Levels (with	out Topo and b	arrier att	enuation)						
VehicleType	Leq Peak Hou	1 1		Evening	Leq	Night		Ldn		NEL
Autos:	54		2.4	50.6		48.3		55.5		55.9
Medium Trucks:	50		B.1	42.6		43.8		50.9		51.1
Heavy Trucks:	54		1.9	46.9		47.4		54.0		54.8
Vehicle Noise:	58	.2 5	5.9	52.6		51.7		58.9	Э	59.1
Centerline Distant	ce to Noise Co	ontour (in feet)								
				0 dBA		dBA	6	i0 dBA		dBA
			dn:	9		9		42		90
		CN	EL:	9	2	0		44		94

Tuesday, March 12, 2019

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APPENDIX 9.1:

CADNAA NOISE MODEL INPUTS



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# 12218

CadnaA Noise Prediction Model 12218_35 GRID.cna Date: 07.12.19 Analyst: B. Lawson

### **Receiver Noise Levels**

Name	М.	ID		Level Lr		Lir	nit. Valı	ue		Land	l Use	Height		C	oordinates	
			Day	Night	CNEL	Day	Night	CNEL	Туре	Auto	Noise Type			Х	Y	Z
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)				(ft)		(ft)	(ft)	(ft)
R1		R1	39.4	39.4	46.1	0.0	0.0	0.0		х	Total	5.00	r	6257313.90	2245945.71	476.43
R2		R2	42.5	42.5	49.1	0.0	0.0	0.0		x	Total	5.00	r	6258228.48	2245144.32	470.41
R3		R3	40.5	40.5	47.2	0.0	0.0	0.0		х	Total	5.00	r	6258308.78	2244708.12	472.68
R4		R4	36.7	36.7	43.4	0.0	0.0	0.0		x	Total	5.00	r	6257650.14	2244492.19	481.78
R5		R5	41.5	41.5	48.1	0.0	0.0	0.0		x	Total	5.00	r	6257054.44	2245394.97	480.19

### Point Source(s)

_																								
	Name	М.	ID	R	esult. PW	/L		Lw/L	i		Correction	n	Soun	d Reduction	Attenuation	Op	erating Ti	me	К0	Freq.	Direct.	Height	C	oordinates
Γ				Day	Evening	Night	Туре	Value	norm.	Day	Evening	Night	R	Area		Day	Special	Night					x	Y
				(dBA)	(dBA)	(dBA)			dB(A)	dB(A)	dB(A)	dB(A)		(ft ² )		(min)	(min)	(min)	(dB)	(Hz)		(ft)	(ft)	(ft)
F	oint_01		AC_01	88.9	88.9	88.9	Lw	88.9		0.0	0.0	0.0							0.0	500	(none)	5.00 g	6257331.70	2245775.83
F	oint_02		AC_02	88.9	88.9	88.9	Lw	88.9		0.0	0.0	0.0							0.0	500	(none)	5.00 g	6257333.00	2245630.5C
F	oint_05		AC_05	88.9	88.9	88.9	Lw	88.9		0.0	0.0	0.0							0.0	500	(none)	5.00 g	6258014.20	2244820.84
F	oint_06		AC_06	88.9	88.9	88.9	Lw	88.9		0.0	0.0	0.0							0.0	500	(none)	5.00 g	6258014.20	2244731.31
F	oint_04		AC_04	88.9	88.9	88.9	Lw	88.9		0.0	0.0	0.0							0.0	500	(none)	5.00 g	6257338.19	2244722.23
F	oint_03		AC_03	88.9	88.9	88.9	Lw	88.9		0.0	0.0	0.0							0.0	500	(none)	5.00 g	6257339.49	2244814.36

### Area Source(s)

Name	м.	ID	R	esult. PW	/L	R	esult. PW	L''		Lw / L	i	(	Correction	ı	Soun	d Reduction	Attenuation	Op	erating Ti	me	ко	Freq.	D
			Day	Evening	Night	Day	Evening	Night	Type	Value	norm.	Day	Evening	Night	R	Area		Day	Special	Night			
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)			dB(A)	dB(A)	dB(A)	dB(A)		(ft ² )		(min)	(min)	(min)	(dB)	(Hz)	
PARKING		PARKING00007	73.4	73.4	73.4	34.3	34.3	34.3	Lw	73.4		0.0	0.0	0.0							0.0	500	(r
PARKING		PARKING00008	73.4	73.4	73.4	33.7	33.7	33.7	Lw	73.4		0.0	0.0	0.0							0.0	500	(r
DISTRIBUTION		DISTRIBUTION00001	94.5	94.5	94.5	53.5	53.5	53.5	Lw	94.5		0.0	0.0	0.0							0.0	500	(r
DISTRIBUTION		DISTRIBUTION00002	94.5	94.5	94.5	53.8	53.8	53.8	Lw	94.5		0.0	0.0	0.0							0.0	500	r)

### Barrier(s)

Name	м.	ID	Abso	rption	Z-Ext.	Canti	ilever	F	lei	ght	_
			left	right		horz.	vert.	Begin		End	
					(ft)	(ft)	(ft)	(ft)		(ft)	
BARRIERPLANNED		BARRIERPLANNED00001						14.00	r		Γ
BARRIERRECOMMENDED		BARRIERRECOMMENDED00002						14.00	r		
PARAPET		PARAPET00001						8.00	g	8.00	g

## Building(s)

Name	М.	ID	RB	Residents	Absorption	Height	
						Begin	
						(ft)	
BUILDING		BUILDING00001	х	0		35.00	r
BUILDING		BUILDING00002	х	0		14.00	r
BUILDING		BUILDING00003	х	0		14.00	r
BUILDING		BUILDING00004	х	0		14.00	r
BUILDING		BUILDING00005	x	0		14.00	r
BUILDING		BUILDING00006	x	0		14.00	r
BUILDING		BUILDING00007	х	0		14.00	r
BUILDING		BUILDING00008	x	0		14.00	r
BUILDING		BUILDING00009	х	0		14.00	r
BUILDING		BUILDING00010	х	0		14.00	r
BUILDING		BUILDING00011	х	0		14.00	r
BUILDING		BUILDING00012	x	0		14.00	r
BUILDING		BUILDING00013	х	0		14.00	r
BUILDING		BUILDING00014	x	0		25.00	r
BUILDING		BUILDING00015	x	0		25.00	r
BUILDING		BUILDING00016	х	0		14.00	r
BUILDING		BUILDING00017	х	0		25.00	r

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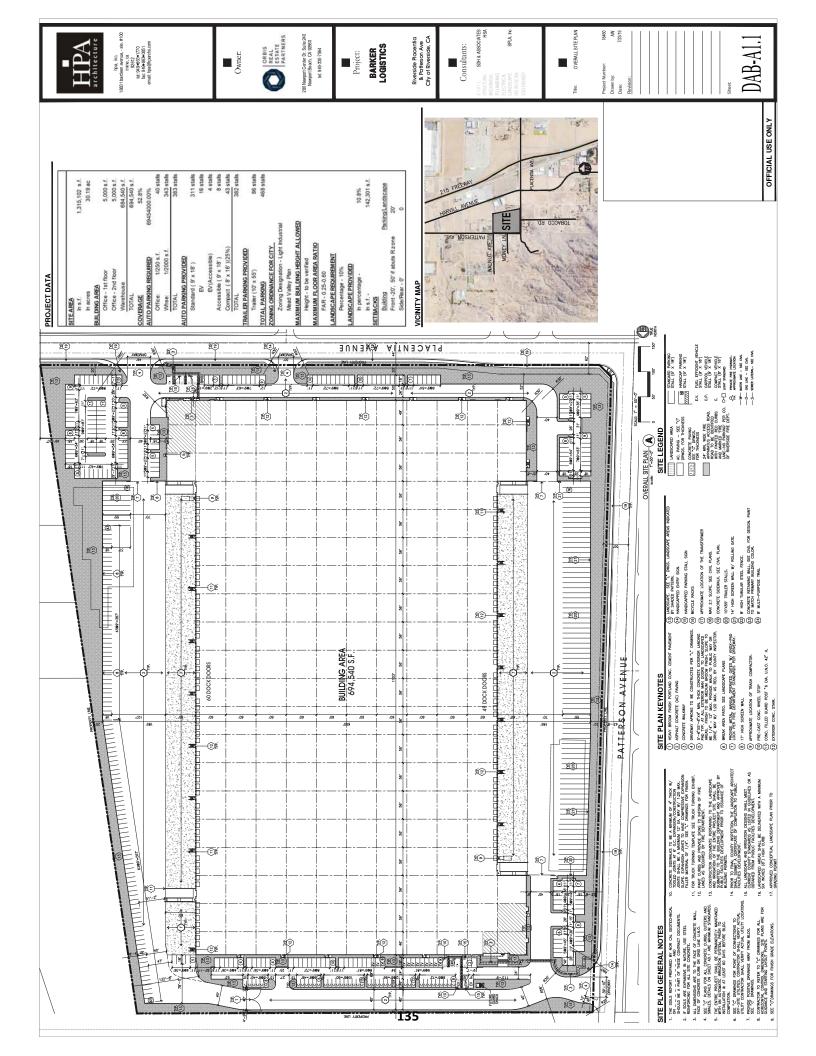


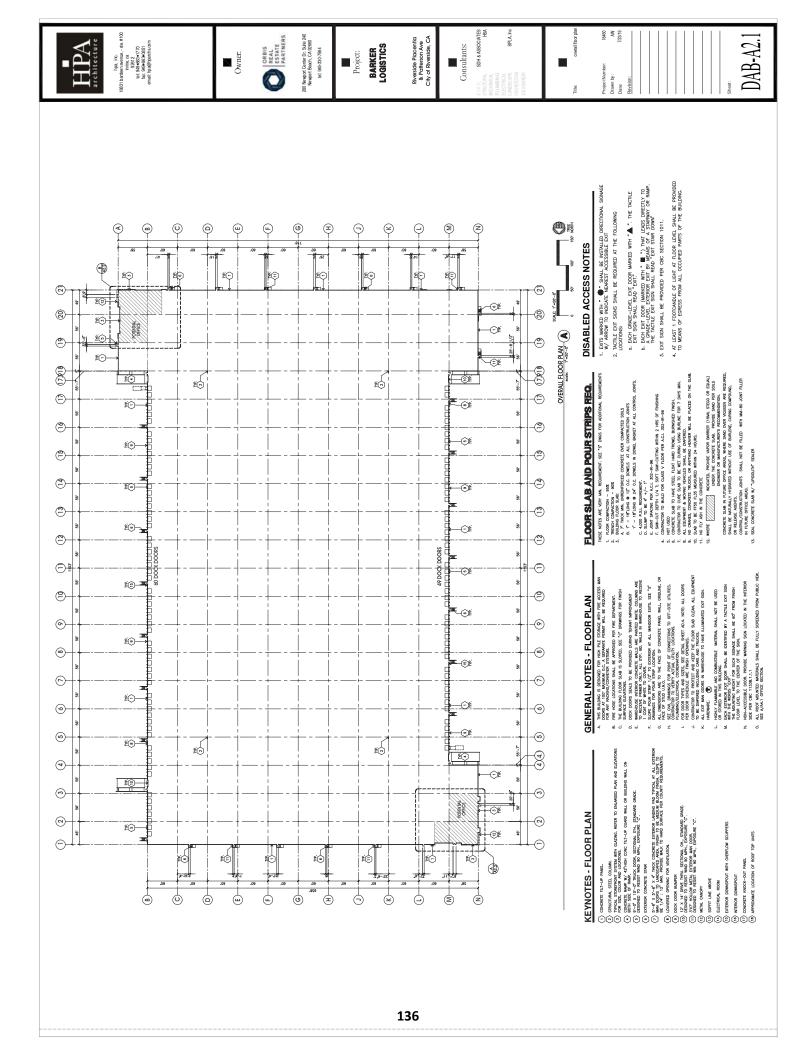
APPENDIX 9.2:

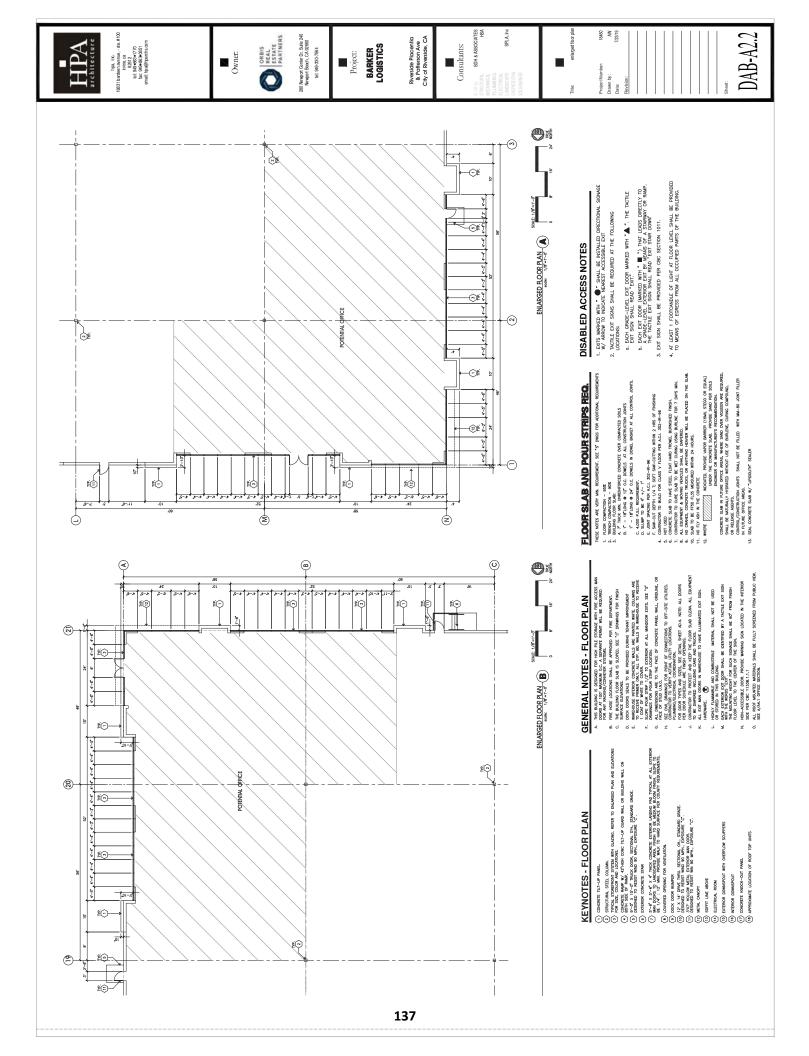
**PROJECT SITE PLAN AND ELEVATIONS** 

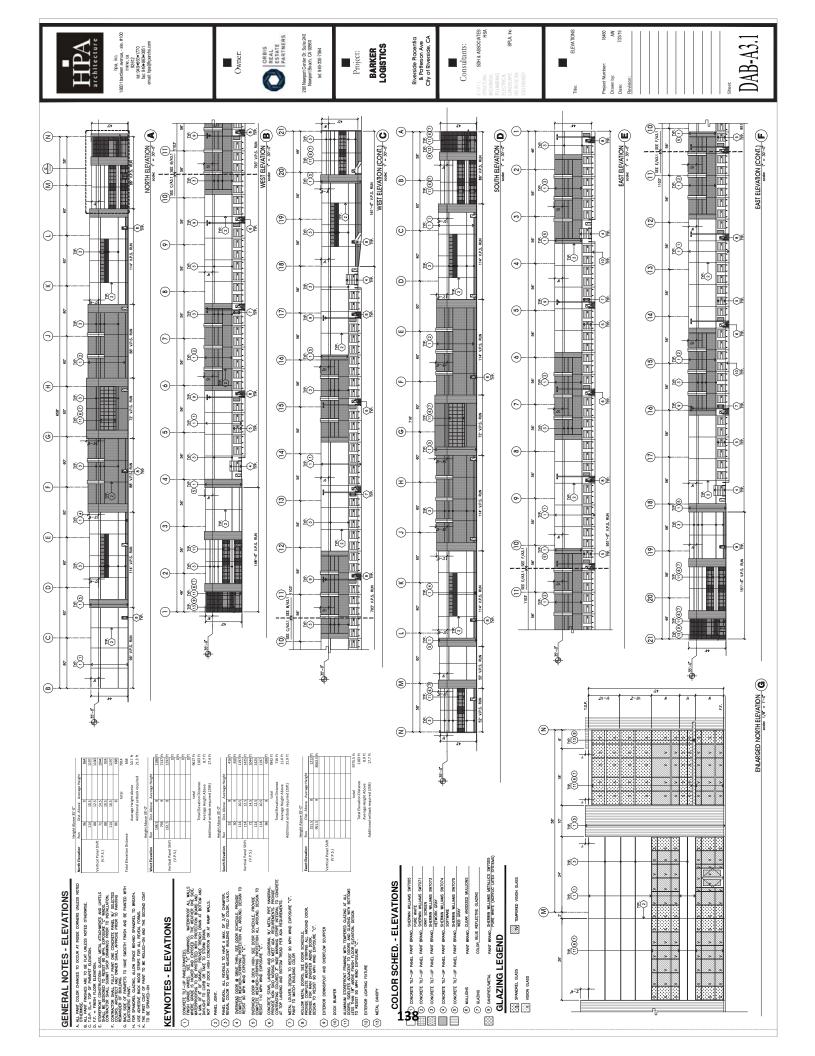
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December 7, 2019

Mr. Russell Brady Riverside County Planning Department 4080 Lemon Street, 12th Floor Riverside, CA 92501

## SUBJECT: BARKER LOGISTICS NOISE IMPACT ANALYSIS RESPONSE TO COMMENTS LETTER

Dear Mr. Russell Brady:

Urban Crossroads, Inc. is pleased to submit this Response to Comments for the Barker Logistics ("Project"), which is in the County of Riverside. This letter has been prepared in response to the November 5th, 2019 comments prepared by AECOM on the *Barker Logistics Noise Impact Analysis* ("NIA") prepared on March 15, 2019 by Urban Crossroads, Inc.

## **RESPONSE 1**

The NIA has been revised to reflect the comment.

### **RESPONSE 2**

The ownership restriction has been removed in the revised NIA.

### **RESPONSE 3**

All exhibits have been updated to reflect Placentia Street.

### **Response 4**

The reference to Exhibit 2-A has been removed.

### **Response 5**

Section 2.5 has been modified consistent with other recent reports to read "Effective noise barriers can reduce noise levels by up to 10 to 15 dBA".

### **Response 6**

Section 2.7 has been modified consistent with other recent reports. Reference to the 1 dBA change in sound level has been removed.

### **Response 7**

Section 3.5 has been revised to reflect the comment.

Mr. Russell Brady Riverside County Planning Department December 7, 2019 Page 2 of 3

# **RESPONSE 8**

Section 4.3 has been revised to reflect the comment.

# **RESPONSE 9**

The footnotes on Table 4-2 have been updated to reflect this comment.

# **RESPONSE 10**

A brief discussion of the Placentia Interchange was added from the Project Traffic Impact Analysis.

# **RESPONSE 11**

Land uses adjacent to Rider Street east of Patterson Avenue have been updated to include Residential. This change has been reflected in all the subsequent tables throughout the report.

# **RESPONSE 12**

The existing vehicle mix is generally limited to the availability of nearby vehicle classification counts. We typically try to identify a representative segment to describe the condition within the project study area. This is intended to better describe the without project conditions and requires additional work effort. Alternatively, we can start using the typical County mix data for existing conditions to describe all segments. Please advise if you feel it is better to rely on the typical County mix to describe existing without project conditions.

## **RESPONSE 13**

Section 6.3 has been revised to reflect the comment.

## **RESPONSE 14**

The Existing plus Project (E+P) Condition is provided for information purposes only. The first paragraph under Section 7.2 of the report indicates that while evaluation is included in the report (for consistency with the TIA) this condition will not actually occur. Therefore, no impact significance determinations are made based on E+P conditions.

## **RESPONSE 15**

The table references in Section 7.7 were verified.

## **RESPONSE 16**

Section 4.3 has been revised to reflect the comment.



Mr. Russell Brady Riverside County Planning Department December 7, 2019 Page 3 of 3

# **RESPONSE 17**

Entry Gate & Truck Movements have been removed from Table 9-1.

# RESPONSE 18

Section 9.3 has been revised to reflect the comment.

# **RESPONSE 19**

Comment noted.

# **RESPONSE 20**

The operational noise analysis has been completely updated using CadnaA noise prediction software. The CadnaA noise model is better able to account for the angle of view, topography, multiple noise sources etc. In addition, the operational noise analysis has been updated to account for the planned 8foot high parapet wall as shown on the project site plans and elevations provided in Appendix 9.2

Respectfully submitted,

URBAN CROSSROADS, INC.

Bilde

Bill Lawson, P.E., INCE Principal



